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

by

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Submitted to the Department of Civil and Environmental Engineering  
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MASTER OF SCIENCE IN TRANSPORTATION  

and  

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Abstract

As developing countries face rapid urbanization, the need for efficient public transportation systems is being increasingly felt. Rail transit systems are best suited to meet the capacity requirements in several large cities. However, such systems are very expensive and take several years to build. Most such systems face operating losses and are a continual drain on public budgets. Traditional procurement methods have also resulted in severe time and cost overruns during the construction stage.

It is for these reasons that several countries are looking at alternative procurement strategies, particularly those that integrate design, construction and operation. These strategies also seek to benefit from private sector efficiencies in the construction and operation of infrastructure facilities. The Tren Urbano, a rail transit system in San Juan, Puerto Rico, is being procured through such a novel approach. It can offer important lessons for similar procurements being contemplated around the world.

This thesis looks at the responsibilities of a public agency during the operations and maintenance phase of such procurement. As no two situations can be exactly alike, and a universal model is not possible, it does so by examining the case of the Tren Urbano. It highlights the role of the government under different procurement options and suggests institutional arrangements for the proper management of the system.

It also focuses on certain problems with regard to tort liability, ability to raise finances and dispute resolution that are likely to be encountered and suggests administrative and legislative measures to remedy them.

Thesis Supervisor: John B. Miller
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Biographical Note

Om P. Agarwal graduated in Electrical Engineering from the Indian Institute of Technology, Madras in 1976. He worked for about a year each with the BHEL, the largest manufacturer of power generation and distribution equipment in India, and the Indian Railways. In 1979, he joined the Indian Administrative Service, the premier civil service in India.

During his last 18 years in the Indian Administrative Service, he has worked on several infrastructure projects in India, prominent among them being a new rail transit system for the capital city of Delhi, a new oil refinery in Assam and a refinery cum petrochemical complex in Mangalore. He was the Trade Adviser to the Government of Seychelles, being seconded under a bilateral technical cooperation agreement. He was the Director of the Urban Transport division in the Ministry of Urban Development, of the Government of India, from May 1995 to May 1996. From May 1991 to March 1993, he headed the “Plantations” division of the Ministry of Commerce. He was the Secretary of the Departments of Industries and Power of the Government of Assam from August 1989 to April 1991.

Om was in MIT from 1996 to 1998, to study for Master's degrees in Transportation as well as in Technology and Policy. His interests are mostly in privatization and infrastructure procurement and delivery strategies.
Acknowledgments

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Professor John B. Miller, picked me up as a research assistant, knowing very little about me, and supported me all through my stay at MIT. It is from him that I learnt about infrastructure procurement strategies, the field in which I will be seeking a future career. I really do not know how to thank you, John.

My thanks to Nigel Wilson and Fred Salvucci, for giving me the opportunity to work on a very exciting project. Their constant advice and guidance was an education in itself. It was my good fortune to have been able to interact so closely with people of their eminence. My thanks to Richard Tabors and Paul Levy for their advice and guidance on my thesis. Their comments contributed immensely to improving my work.

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Finally, my thanks to Mukesh and Dolly, whose house was virtually my home in the US. I knew they were always around for any help I needed.
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PART I

Chapter 1

INTRODUCTION & BACKGROUND

The Problems of Urban Growth

Urbanization is a companion and stimulus of development. The rapid growth of cities in developing countries is nearly universal. While less than 22% of the developing world's population lived in urban areas in 1960, it averaged 34% in 1990 and is expected to exceed 50% by 2015. By then the number of city residents will reach 4 billion and there will be 225 urban agglomerations with a population of more than 2 million each.

The share of urban population in some of the countries has been shown in Appendix 1\(^1\). While the developed countries already have over 70% of their people living in urban areas, the more populous developing countries still have less than 30% of their population in the cities. 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. There has been a virtual explosion in the number of registered motor vehicles, the number having gone up from only 46 million in 1946 to around 600 million by 1991. Such traffic congestion affects the health of the people, their quality of life and the productivity of the economy, in both positive and negative ways. In Asian cities, for example, rush hour traffic moves at

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\(^1\) See World Development Indicators, 1997, The World Bank - pages 114 - 118
an average of just 16 km/h and an average car is estimated to spend the equivalent of 44 days a year “stuck in traffic”.\(^2\) Thus, even though increasing congestion is a sign of economic growth, congested city streets exact a big toll on economic productivity.

Is it possible to usher in economic growth and yet avoid such congestion and pollution? That is the problem bothering most urban planners today.

Congestion usually results from the failure of urban transportation planning and the failure to foresee required investments in public transit systems. This generally happens because inadequacies in urban transport infrastructure do not invite public pressures to invest in them as quickly as do inadequacies in water supply, housing or waste-water treatment facilities. Such pressures for urban transport infrastructure generally build up only after the needed investments have become far overdue. By this time, the now familiar cycle of congestion – deteriorating public transit services – greater auto use – enhanced congestion has already been set in motion. The only remedy that policy makers are left with at such a late stage is to opt for high cost technologies like grade separated transit systems. Had the need for such investments been recognized earlier, it would have been possible to take proactive measures and opt for lower cost solutions.

High cost investments also mean a long appraisal and approval process. High cost alternatives affect a large cross-section of the people and securing a political consensus takes a long time. There is resistance from those who may lose their land or may be required to relocate. Constituents are also apprehensive of higher taxation to finance such investments. Several cities have had to undertake years

\(^2\) See World Development Indicators, 1997, The World Bank - page 119
of preliminary work before final approvals for high cost transit systems were forthcoming.

By the time such approvals become available, alternatives for faster implementation become necessary. Such alternatives usually combine the design and construction stages, at times integrating even the operations phase, in what are better known as Design-Build (DB) / Design-Build-Operate (DBO) procurement strategies. The need for quick progress, at such a point, often results in the lack of time, or inclination, to set up well thought out institutional structures. Existing institutions get called upon to undertake such investments, either because they have the financial resources or because they have the capability to undertake high cost capital projects. No thought is given to whether such institutions are really suited for managing transit systems.

A classic example is in Puerto Rico, where an agency responsible for the construction and management of highway systems has been called upon to procure a rail transit system because it had the financial and institutional capability to do so. How well such an institution would be able to manage the actual operation and maintenance of the system is an important question. What kind of institutional arrangements need to be made to ensure that high cost facilities are efficiently operated is what this research seeks to identify.

**Public Transportation Technologies and Policy Options**

There is a virtual continuum of public transportation technologies ranging from low capacity traditional bus systems, operating on a shared right of way, to very high capacity, underground, rapid rail systems. Each of these technologies has its own characteristics in terms of capacity, speed, capital cost, operating cost, requirements of urban space and impact on the environment. Each has its own suitability for given demand patterns and urban forms.
While bus systems have a lower capacity and are better suited to meet the demands of a more dispersed urban form, rapid rail systems are better suited for high demand linear corridors. Bus systems offer a lot of operational flexibility whereas rail systems can operate only on fixed tracks. Bus systems need far lower capital investments compared to rail systems, but may have higher per unit operating costs. Recent innovations in bus systems, with articulated buses operating on dedicated lanes, have demonstrated the ability to match light rail systems in their passenger carrying capacity, and at a much lower capital costs.

A choice of technologies, thus, depends on the nature of the demand, the urban form and the capital investments possible. Of late, innovative procurement methods, using the private sector have become popular. These also determine the choice of technologies, with bus systems being more amenable to private procurement than rail systems.

**Growing Attractiveness of Alternative Procurement and Delivery Methods**

In the post World War II era, most infrastructure projects in developing countries have been built under the direct supervision of government or of a government agency and have been financed through budgetary resources or sovereign borrowings. Several trends, in the late 70's and early 80's, seem to have led to a search for alternative ways of financing these projects.³

- With continued population and economic growth the need for additional infrastructure continues to grow

• The growing third world debt crisis has meant that developing countries have had less borrowing capacity and fewer resources of their own to finance such projects.

• Major international contracting firms were facing a significant downturn in business after the developments in the oil rich middle east and were looking for creative ways to promote additional projects.

• In the course of the 80's a number of governments as well as international lending institutions became increasingly interested in promoting the development of the private sector and in the "privatization of traditionally public sector enterprises.

Among the benefits sought through such novel financing methods has been an increase in the efficiency of service provision and a way to circumvent public sector budget constraints.

Yet another recent trend has been the adoption of design-build procurement strategies instead of the traditional design-bid-build strategies as these offer substantial advantages in terms of better coordination between the design and construction phases as also considerable savings in time.

**Quadrant Analysis**

John Miller analyzed procurement methods using two fundamental strategies in the development of infrastructure⁴. The first was to procure them through government financed ("direct") or through private sector financed ("indirect") means. The second was either segmenting each stage in the procurement process (planning, design, construction, operation and maintenance) or

---

combining them into single 'system' procurement. Arrayed on two axes, these strategies fell into four quadrants, as shown below:

```
  Direct
     IV       I
  Segmented
     III      II
     Indirect
  Combined
```

Miller's work\(^5\) was analyzed. He concluded that the advantages of infrastructure development through Quadrant I and II strategies included:

- Independent, multiple verifications of project feasibility and the opportunity for the government to select best value from different combinations of quality, price and time of delivery
- Use and application of 'State of the Art' technology
- Substantial savings in time
- Savings in capital costs
- Reduced need for large temporary additions to public engineering staffs
- Private financing of capital costs
- Significant leveraging of public financial contributions to projects
- Predictable future public expenditure for operations and maintenance
- Improved public fiscal management of infrastructure development
- Reduced concern over conflicts of interest, and
- Improved management of project risk.

\(^5\) (Miller 1995; Miller 1996a; Miller 1996b; Miller 1997a; Miller 1997b; Miller 1997c; Miller 1998a; Miller 1998b; Miller 1998c; Miller and Evje 1998)
Relevance to Rail Transit Systems

Many cities have begun to look at urban rail transit systems again as a way of mitigating the problems of congestion and air pollution. The advantages they see in such systems are the:

- High carrying capacity
- Low emission levels
- Low requirements of urban space
- High average speeds
- Low per unit operating costs

Rail transit systems are, however, expensive to build and take several years to become operational, as evident from the following:

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Cost ($ Million)*</th>
<th>Years to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>Heavy rail, 60.5 line miles, 57 stations</td>
<td>7968</td>
<td>14</td>
</tr>
<tr>
<td>Atlanta</td>
<td>Heavy Rail, 26.8 line miles, 26 stations</td>
<td>2720</td>
<td>9</td>
</tr>
<tr>
<td>Baltimore</td>
<td>Heavy Rail, 7.6 line miles, 9 stations</td>
<td>1289</td>
<td>9</td>
</tr>
<tr>
<td>Miami</td>
<td>Heavy Rail, 21 line miles, 20 stations</td>
<td>1341</td>
<td>6</td>
</tr>
<tr>
<td>Buffalo</td>
<td>Light Rail, 6.4 line miles, 14 stations</td>
<td>722</td>
<td>7</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>Light rail, 10.5 line miles, 13 stations</td>
<td>622</td>
<td>7</td>
</tr>
<tr>
<td>Portland</td>
<td>Light Rail, 15.1 line miles, 24 stations</td>
<td>266</td>
<td>5</td>
</tr>
<tr>
<td>Sacramento</td>
<td>Light Rail, 18.3 line miles, 28 stations</td>
<td>188</td>
<td>4</td>
</tr>
</tbody>
</table>

* In 1988 dollars

These difficulties have led planners to seek alternative methods of procurement and delivery, through the involvement of the private sector. These methods offer an opportunity to secure considerable savings in time and cost.

Recent Private Procurements of Urban Transit Systems

There have been some recent initiatives in getting the private sector to operate rail transit systems. Argentina has contracted with a private party to improve and operate the subway in Buenos Aires. The Manila Light Rail Transit System had been contracted to a private company for operation (though it has since been brought back to public operation). A private concessionaire is operating the London subway. Puerto Rico has opted for the DBO procurement, through a private party, of a new rail transit system, the Tren Urbano.

Brief write-ups on the Buenos Aires, Manila and London procurements have been enclosed at Appendix 2. The case of the Tren Urbano, in San Juan, has been examined in greater detail in Part II below.

Problems with the Private Procurement of Rail Transit Systems

The private procurement of rail transit systems poses unique problems. The high cost, long gestation and uncertain ridership discourage private investors. Large economies in scale make competition counterproductive. It is for this reason that private initiatives in rail transit systems have not been forthcoming in the recent past, although such systems were largely built as private ventures in the pre-motor car era. The initiatives in Buenos Aires and London are contracts for the operation of an existing system and not the construction and operation of a new one. It is the Tren Urbano that appears to offer a novel approach for securing private sector efficiencies in construction and operation. It could be a model for similar systems being contemplated elsewhere in the world, not just in terms of
the procurement strategy but, more importantly, in terms of the institutional arrangements made to manage the system under a range of procurement options. It would, thus, be interesting to study how such private procurements can be managed by the government and what problems they may pose.

**Research Objectives**

The objective of this research, thus, is to investigate the role of the government under different options for the private procurement of rail transit systems. It seeks to identify the specific functions that a government agency would need to perform 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 looks at the Tren Urbano and seeks 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.

**Organization of Chapters**

Chapter 2 gives a broad overview of the government’s role in managing urban transportation systems and identifies how this role would change with changes in procurement methods. It also looks at institutional models for discharging these responsibilities, focusing on the advantages and disadvantages of separating production from provisioning.
Chapter 3 makes a comparison of institutional arrangements that may be necessary under different procurement alternatives, by examining the likely responsibilities of a government agency under each of these alternatives. It details the organization structure of the Massachusetts Bay Transportation Authority (MBTA) essentially to serve as a base case for the comparison.

Chapter 4 provides a background on the doctrine of “Sovereign Immunity” and its possible relevance to rail transit systems. The essential point being made is the need to limit the tort liability of transit systems.

Chapter 5 is a background on Puerto Rico and explains the motivation for the Tren Urbano as well as the procurement strategy that has been adopted.

Chapter 6 analyses different organizational options for transportation provisioning and production in the San Juan Metropolitan Area (SJMA) and especially options for managing the Tren Urbano system. It concludes with a recommendation on the structure that would best meet the needs of San Juan and the Tren Urbano.

Since the current contract is to run for a minimum period of five years, and the procurement strategy may change after this period, chapter 7 looks at the likely changes in the institutional arrangements that may be necessary.

Chapter 8 looks at liability issues in the context of the Tren Urbano and makes suggestions for special provisions that may be necessary. Chapter 9 makes recommendations with regard to special powers that may be needed to raise finances and chapter 10 suggests possible methods for dispute resolution.

Chapter 11 is a summary of all the recommendations.
Chapter 2

ROLE OF THE GOVERNMENT AND MODELS FOR URBAN TRANSIT PROVISIONING

Role of the Government
The role of the government in urban transport can be divided into two broad categories – provisioning and production\(^7\). Provisioning involves traditional government functions such as deciding what is necessary for the common good and collecting taxes to pay for it. It includes responsibilities such as:

- Strategic planning
- Capital financing
- Monitoring and regulation of environmental concerns, and
- Monitoring safety concerns

Production is the actual operation of services. This could either be done by a government agency like the MBTA or could be contracted out to private operators. There are several cities that offer a mix of both publicly operated and privately operated services.

In the event of services being contracted out for private operation, the government has a role in contract enforcement, i.e. insuring that the terms of the contract are being met. In some cases, private operators are merely licensed to operate on certain routes. In such cases, government is required to ensure that the terms of the license are not violated. These terms usually include the fares that can be charged, the routes on which services can be run, the quality of the vehicles that can be used and minimum skill requirements for the operators.

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\(^7\) Paper by Salvucci, Fred, Wilson, Nigel H.M. and Yagi, Sadayuki, "Organizational Options for Public Transport: A Critical Appraisal of Experience to Date and Prospects for the Future in North America".
Public Transit Provisioning Models

Organizational models for provisioning of urban public transit services in the United States can be classified into the following four broad categories:

- Traditional Regional Public Transport Authority Models
- Enhanced Public Transportation Authority Models
- Split policy/planning and operations Models
- Privatization of operations Models

The traditional Regional Transit Authority (RTA) model integrates policy and operations responsibilities in a single agency. This agency has only a limited role beyond the provisioning of transit services and usually operates on fixed routes. Among examples are the Massachusetts Bay Transportation Authority (MBTA) and Rhode Island Public Transportation Authority (RIPTA). The major advantage of such a structure is that of strong coordination and control with clear accountability. There is limited possibility for conflict among agencies and overheads are low (an advantage for smaller cities). However, such a structure has no or little incentive for providing efficient services. It is vulnerable to labor and political pressures and is usually resistant to change.

The Enhanced Public Transportation Authority model also integrates policy and operations responsibilities but offers an expanded range of services, including services such as van pooling and para-transit. It also plays a role in land use planning. Intervention in land use planning offers the advantage of being able to better match service with needs and enables securing a market share for public transport. However, it is more complex to manage and it is difficult to measure its performance. Like traditional RTAs, it is also vulnerable to political and labor.

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8 Proceedings of a TRB conference on "New Organizational Responses to the Changing Transit Environment", held in Norfolk, Virginia, on December 2-4, 1987.
pressures. An example of the Enhanced Public Transportation Authority model is the Seattle metro.

In the split policy and operations model, a “Policy Board” is generally responsible for definition of the service area, capital planning, setting revenue goals and performance measures. One or several service providers are responsible for delivery of the service including marketing, route planning, maintenance and workforce management. Examples of such split policy and operations models are seen in Minneapolis - St. Paul, and San Diego. The major advantage of this model is that it limits the extent of political influence on operations thus allowing it to function efficiently. It allows operations staff to focus on service provision. A disadvantage is the difficulty of defining a clear separation or roles. Channels of accountability are unclear, particularly if there are several service providers. There may some duplication of roles and there is no particular incentive for image building. With several providers the difficulties of periodic contracting and regular monitoring also exist.

A typical example of the privatization of operations model is U.K (outside London), which has free market entry and represents complete deregulation of private providers. In such a model there may be no public operator at all with public involvement being called for only when social needs require a service not provided by the market. Such socially desirable, but not profitable services, are bid competitively. The advantage of such a model is that it minimizes costs. Its introduction has stimulated innovation. It offers the opportunity to penetrate new markets as well as reduce costs. It is also highly responsive to changing consumer demands. A key concern, however, is its social equity basis. It is likely that many urban areas have routes are services that are warranted but can not be operated at a profit. Further a completely unregulated market offers no assurance of maintenance of service and occasional discontinuities may result. If the number
of operators are too many there could be problems of dangerous “passenger
capture” practices.

Institutional Organization

As evident from the above, transit management institutions could be organized in
a single tier or multiple tiers. In a single tier structure, provisioning and production
responsibilities are with a single agency. In a multiple tier arrangement, the
responsibility for planning and operations is split among different agencies. Thus,
the MBTA, RIPTA or Seattle would fall in the category of single tier systems with
Minneapolis - St. Paul and San Diego being multiple tier systems.

Some systems even have a three tiered structure with an intermediate tier being
responsible for a part of the area served by the system or for mid range planning.
An example is the Minneapolis - St. Paul system where a metropolitan council is
responsible for long range transit planing and policy making with a regional transit
board being responsible for short or mid range transit planning and for the review
and approval of transit operator budgets. The Metropolitan Transit Commission
performs route planning and transit operation functions\(^9\) (see Appendix 3). This
three tiered transit planning structure of the twin cities appears to be unique. Most
cities have a single-tier system, in which the operator does all of the planning, or
a two-tier system, with an operator and a separate planning agency.

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\(^9\) Report prepared by the Program Evaluation Division, Office of the Legislative Auditor, State of Minnesota and published in Metropolitan Transit Planning, January 1988,
Chapter 3

INSTITUTIONAL STRUCTURES UNDER PUBLIC AND PRIVATE PROCUREMENT

Private Procurement Alternatives

The principal methods of involving the private sector in providing transit services are through management contracts, concessions or divestiture. The main features of these methods and the corresponding role of a public agency are the following:

<table>
<thead>
<tr>
<th>Procurement Method</th>
<th>Features</th>
<th>Role of Government</th>
</tr>
</thead>
</table>
| Management Contract | - A private operator is contracted for operation and maintenance over 5/10 years.  
- Ownership of the assets remains with the public agency  
- Rates and level of service are laid down by a public agency  
- The operator receives a negotiated fee  
- Maintenance costs by owner  
- Demand risk with the public agency | - Monitor operations and quality of maintenance as compensation is linked to performance  
- Marketing the system.  
- Strategic planning and coordination.  
- Safety and environmental regulation. |
| Concessioning | - Private agency contracted to provide services over 30-35 years  
- The assets belong to the public agency  
- Demand risk lies on the operator  
- A ceiling on tariffs or a ceiling on profit margins is usually laid down  
- A minimum level of service is usually laid down | - Monitor fares or profits  
- Monitor maintenance  
- Ensure safety of operations and monitor environmental issues.  
- Strategic planning and coordination. |
| Divestiture | - Private agency buys the assets and operates services  
- No requirement to transfer the assets back to the public agency  
- All risks lie with owner-operator | - Ensure safety and environmental quality.  
- Strategic planning and coordination. |
As seen from the above, there is a virtual continuum in the extent of private sector involvement. Management contracts require the least involvement of the private sector and the greatest responsibility for a public agency, whereas, divestiture involves virtually no role for the public agency with the private party taking up the entire responsibility. The concessioning alternative seems to provide a more balanced sharing of risks and responsibilities between and public and private sector partners.

Organizational structures for management will, therefore, depend on the procurement option chosen and there can not be a universal model to fit all situations.

The MBTA offers a classic organizational example of publicly produced transit operations and is described in greater detail below. Examples of regulatory structures that have been set up in Buenos Aires and London, to monitor and control the recently concessioned transit systems there have already been described in Appendix 2. In brief, Buenos Aires has set up a special oversight agency to monitor and enforce each concession program. This agency responsible for monitoring the transit operations does not have very broad powers to set rates and or unilaterally modify the contracts. In London, the Office of Rail Regulator has been set up to prevent possible abuse of monopoly power by Railtrack, the sole owner and provider of fixed infrastructure. The Office of Franchising Director has been set up to administer and supervise the passenger service franchises. The Franchising Director receives broad policy instructions from the Secretary but finalizes further details himself. The Rail Regulator is, however, independent from the Secretary and is guided only by his statutory obligations.
Organizational Structure of the Massachusetts Bay Transportation Authority (MBTA)

The MBTA is the dominant public sector provider and producer of transit services in the Boston Metropolitan Area, integrating the planning and production responsibilities. It was formed in 1964, under an enabling Act, with a service district of 78 cities and towns (with a 79th added subsequently). An “Advisory Board” is empowered to approve the MBTA’s operating budget. The 1964 Act set up the organization to have a five man Board of Directors appointed by the Governor for a term of five years, with one member to be re-appointed each year. Originally the Board appointed a General Manager, Chief Counsel and Treasurer to handle the day to day affairs of the Authority. In 1973, however, this arrangement was changed and a chief executive officer serves as the full time chairman of the Board.\(^{10}\) Further changes were made in the structure of governance in 1980 and at present the MBTA has a General Manager, who functions under a Board of Directors, chaired by the Secretary for Transportation. The MBTA has the following major departments/divisions:

- Office of the General Manager
- Subway Operations
- Bus Operations
- Railroad Operations
- Engineering and Maintenance
- Planning
- Design and Construction
- Safety
- Real Estate
- Human Resources
- Industrial Relations

- Budget Office
- Audit Services
- Treasurer – Controller
- Organizational Diversity
- Law Department
- Public Affairs Department
- Marketing Operations
- Materials Management
- Information Systems Services
- Revenue

The duties and responsibilities of each of these divisions are given at Appendix 4\textsuperscript{11}. As seen from this, the three operations divisions, the private carrier services division and the engineering and maintenance divisions are involved in the actual operations. The remaining discharge support functions like financial management, marketing, labor relations, etc.

**Changes Needed Under Private Procurement**

The MBTA's management structure would not be appropriate if any of the private procurement alternatives is adopted. The role of a government agency would be limited largely to strategic planning, ensuring safety and environmental regulation. Depending on the nature of the procurement strategy, there may be additional responsibilities towards contract enforcement, service planning, maintenance of assets, etc. The organizational structure of a government agency would thus depend to a large extent on the nature of the private sector involvement, which, in turn, would determine the nature of the functions it would have to perform.

\textsuperscript{11} MBTA Financial Year 1997 Budget
Chapter 4

DOCTRINE OF SOVEREIGN IMMUNITY

Theoretical Background

In most democracies around the world, a person who is aggrieved by any governmental action, which is subject to judicial review, can seek an injunction or a declaration by a court that the action was illegal. If the action has caused a loss, he can sue for damages. However, these are possible only if the governmental unit has consented to be sued. The facility, under which a governmental unit can not be sued, unless it has consented to it, is known as the doctrine of “Sovereign Immunity”.

The doctrine of sovereign immunity originates from the ancient notion that a sovereign can do no wrong and so can not be sued. The Federal Tort Claims Act (FTCA), which was passed in 1946, is the vehicle through which the Federal Government in the US has consented to be liable for its torts (generally negligence).

Prior to the passage of the FTCA, when citizens were injured as a result of the government’s (or a government employee’s) negligence, they simply could not sue the government to recover damages. The only process available to them was to have their representative submit a private bill in Congress and thus make a claim for damages. In the 70th Congress (1927-29), 2,268 private bills claiming damages of over $100 million were introduced but Congress passed only 336 of them for a total of $2.83 million. Over the next eight Congresses (up to 1945), 2118 bills were introduced but only 408 were passed. 

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Because the government has the power to decide whether it can be sued, it can also decide the circumstances under which it will allow itself to be sued. Hence the FTCA has included certain exemptions or situations under which the government will not be liable. One such exemption is known as the 'discretionary exemption' and is found in section 2680 of the Act. It reads as follows:

"---- provisions of this chapter ---- shall not apply to ---- any claim based upon an act or omission of an employee of the government, exercising due care, in the execution of a statute or regulation, whether or not the statute or regulation be valid or based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the government, whether or not the discretion involved be abused."

While the first part of the above exemption seeks to bar citizens from using tort suits to challenge the legality of acts of Congress, the second part seeks to make the exercise of "discretion" immune from negligence suits. This has been done so that those in government will not hesitate to make decisions out of fear of a lawsuit.

**Remedies against Torts**

A tort is a legal wrong done to another person. There are two kinds of torts: intentional torts and unintentional torts. Intentional torts include invasion of privacy, defamation, assault, battery, false imprisonment, malicious prosecution, etc. Unintentional torts are those that usually result from negligence.

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12 Cann, Steven J., Administrative Law, SAGE publications, 1995, page 323
Remedies against torts fall into two categories: common law remedies and equitable remedies. Common law remedies involve money damages and equitable remedies are allowed only where a common law remedy is not adequate to take care of the plaintiff’s situation. The most common among equitable remedies are injunctions and declaratory judgments. An injunction is a court order stopping certain action and a declaratory judgment is one by which a court declares a law or agency activity to be unconstitutional or otherwise unlawful.

Hence, so long as the government is unwilling to waive its sovereign immunity, neither type of action - common law or equitable - is maintainable. Federal legislation permitting suits in equity against the government can be found in section 702 of the “Administrative Procedures Act”. The passage of the FTCA in 1946 permitted one type of common law remedy, i.e. torts. However, the FTCA contained 13 specific exemptions – circumstances in which there can be no governmental liability. Of these, two stand out as of the greatest importance. The first of these war tort actions based on certain intentional torts by public officers. The second exception, which has the more far-reaching implications, is the so-called “discretionary-function” exemption.

**Issues Involved in Deciding Negligence Suits**

Negligence suits often involve a decision on whether the defendant took reasonable care. The test of reasonable care is whether an average reasonable person would have been able to foresee the likely outcome and take appropriate precautions. It is also necessary to establish that the failure to take reasonable care was the proximate cause of the injuries.

**Immunity for Government Officials**

Apart from the issue of whether the government can be sued (general liability), there is the question of whether an individual government employee can be sued
(personal liability) for damages. A fairly high level of protection is available to many government officials who have acted in a reasonable manner and within the sphere of their duties, even if their actions have harmed private parties.

One of the things the FTCA does is to absolve the individual federal employee of liability and spread the financial burden to the taxpayers. Some government officials have absolute immunity, which means that they can not be sued at all in their official capacity. Judges, prosecutors and presidents are examples of such persons. Most government officials possess a qualified immunity, meaning that in certain situations they can be sued but otherwise they enjoy immunity from suit.

**Case Laws**

There are several cases that are frequently cited as judicial precedents for deciding future suits. The most common among them are the following:

- Dalehite V. United States, 346 US 15 (1953)
- Wood V. Strickland, 420 US 308 (1975)
- Butz V. Economu, 438 US 478 (1978)

A brief summary of each of these cases is at Appendix 5. These reveal that the courts have generally recognized the need to protect officials who are required to exercise their discretion, and the related public interest in encouraging the vigorous exercise of public authority. Yet they have held that holding an official liable, if he knows, or should know, that he is acting outside the law, and that insisting on an awareness of clearly established constitutional limitations will not unduly interfere with the exercise judgement. Many of these cases highlight the
difference between absolute immunity and qualified immunity, justifying the need for qualified immunity but not supporting absolute immunity. The Dalehite Vs United States case is the single most important case to be decided under the FTCA, not only because of the huge losses involved but also because of the significant pronouncements of the Supreme Court concerning the interpretation of the statute. This case highlighted the difficulties of deciding what constitutes discretion. The dissenting opinion differentiated between tasks performed only by a public agency, such as regulatory matters, and other managerial tasks that are performed by private entities as well and supported immunity only in the discharge of purely governmental tasks.

**Sovereign immunity and the States**

The doctrine of sovereign immunity has been consistently eroded and all but done away with in many states. Removal or drastic modification came through both judicial and legislative action. For example, Minnesota abolished most governmental immunity by legislative Act in 1963 and Florida in 1973. The Massachusetts Supreme Court reviewed immunity in that State in 1975 and ordered the legislature to redefine it and make it more consistent with judicial trends. Court decisions also abrogated governmental immunity in Wyoming and Kansas in 1978\(^{13}\).

The rush to abolish immunity emerged from a notion that such immunity was contradictory to the modern ideas of responsibility and accountability in democratic governments. However, the erosion of immunity was accompanied by a growing willingness to sue. Worse still, it was accompanied by a feeling that large institutions have lots of money and can afford to pay – what difference does a $1,000,000 award have on a $400 million budget. The result was several huge

\(^{13}\) See National League of Cities, Technical Assistance Bulletin on "The New World of Municipal Liability", April 1978
awards against state and local government entities, which they could not pay without severe cutbacks on essential services.

A short-term answer was liability insurance, but soon these were either not available or came at very high premiums. This prompted governments to look for legislative remedies. One method was to fix dollar limits on the liability of government bodies. Hence, several states have imposed such limits. These range from $50,000 in Wisconsin to $1,000,000 in Nebraska, for a single occurrence and from $300,000 in Alabama to $5,000,000 in Nebraska in the aggregate\textsuperscript{14}. The limits in some of the states are listed in Appendix 6.

Apart from imposing a limit on the liability, other methods adopted have been to re-impose immunity for certain types of activities like safety services and licensing as well as fixing a time limit within which suits can be brought.

**Sovereign Immunity and Transit Systems**

The relevance of sovereign immunity for transit systems essentially revolves around whether such transit agencies can be sued for causing any damage to others and, if so, to what extent. This section seeks to investigate whether such immunity is justified for transit agencies and their employees.

There are several situations in which a transit agency may cause damage or loss to others. Some of these arise:

- In the event of physical injuries caused to passengers, passersby or other non users, or employees
- In the event of any damage to the property of passengers, abutters, others, government or employees
• In the event of a breach of contract between the government and the operator, the government and vendors, the operator and vendors, the government and the employees or the operator and the employees

• In taking action to prevent fare evasion, vandalism, theft or other criminal activities

The justification for providing protection under sovereign immunity to any public agency would equally apply to a transit agency. However, the common counter argument is, how does one guard against negligence by the transit agency. Such negligence could hurt users and the general public.

**Tort Liability of the MBTA**

In the case of the MBTA, its tort liability is governed by Section 21 of Chapter 161A of the Massachusetts General Laws, which states as follows:

“The Authority shall be liable for the acts and negligence of the Directors and the servants and employees of the authority in the management and operations of the authority and of the properties owned, leased and operated by it to the same extent as though the authority were a street railway company, but the directors shall not be personally liable except for malfeasance in office.

The authority shall be liable in tort to passengers, and to persons in the exercise of due care who are not passengers or in the employment of the authority, for personal injury and for death and for damages to property in the same manner as

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though it were a street railway company; provided that any action for such personal injury or property damage shall be commenced only within two years next after the date of such injury or damage and in case of death only within two years next after the date of the injury which caused the death.

The directors shall have charge of and supervise the investigation, settlement and defense of all such claims and of all other suits or actions relating to the property or arising out of the construction, maintenance or operation of the authority."

Chapter 161 of the Massachusetts General Laws gives the liability of Street Railway Companies for a variety of violations. Some examples are:

- $500 for violation of regulations relating to speed, manner and extent of the use of tracks, number and routes of cars that run over such tracks, etc. (section 84)
- Not more than $500 and not less than $100 for violation of regulations relating to hours of employment (section 103)
- To the extent of the loss or injury in the event of any loss caused during repairs and operations (section 89)

This, in effect, means that the only protection MBTA has with regard to tort liability is that suits can not be brought against it for injuries caused more than two years ago. There is no limit on the amount for which MBTA can be sued. Directors of the MBTA, who are not its full time employees, however, have the protection that they shall not be personally liable except for malfeasance in office.

It seems that several attempts have been made to limit the amount for which MBTA can be sued but these have not, so far, succeeded in legislation limiting the
liability of the MBTA\textsuperscript{15}. As such MBTA has been paying liability claims of about $12 million annually and its liabilities continue to grow\textsuperscript{16}.

**Arguments in Support of and Against Limiting the Extent of Liability**

In short, there are arguments in favor of and against providing cover under sovereign immunity to a transit agency. These are:

**In Support**

- Transit agencies do not make profits and their services require an effective subsidy from the taxpayer. As such, any awards against them are ultimately borne by the taxpayer.
- Such a limitation may help the transit agency in securing better terms on its liability insurance and ultimately work out cheaper for the taxpayer.
- Capital financing of transit facilities would also become available at lower interest rates, as the risk of repayments would come down. This again would mean savings for the taxpayer.

**Against**

- The main argument against providing such protection is that it would destroy any motivation for being careful and may permit negligence. This would be dangerous for society and the users of the system.
- There are private agencies that also render such services and limiting the liability of only publicly provided services might be discriminatory. Private agencies may also seek such protection in order to have a level playing field. This can enhance the dangers from transit services as private agencies, unlike public agencies, have a profit motive and would seek opportunities to reduce costs. This would offer such an opportunity and it would be difficult to guard against the use of risky operating practices, unless there is a threat of lawsuits.

\textsuperscript{15} Interview with Fred Salvucci (ex Secretary, Transportation, Massachusetts) and Ron Busconi (Gadsby & Hannah)

\textsuperscript{16} Interview with Jonathan Feltner, in charge of Personal Claims, General Counsels Office of the MBTA
A balanced consideration seems to suggest that there be a limit on the liability of the transit agency. Such a limit should balance protection from very high awards against the risk of negligence. There should also be a time limit within which suits can be brought so that a clear nexus between the cause of action and the loss or injury can be established.

**Protection to Employees Against Suits**

Yet another issue is the question of official immunity or the protection given to public servants from suits being brought against them. This is usually done because public servants discharge responsibilities which often require decisions that may hurt a few even if they are in the larger good. Besides, they are discharging their responsibilities on behalf of the sovereign and on the directions of the sovereign and so need to be protected.

Further, providing immunity to the employees of a transit agency, like to any public official, would give them greater confidence in discharging their functions and especially in taking decisions that may injure some but are in the larger good. Such confidence enables better decision-making as fear of law suits can delay critical decisions and benefit no one.

Transit agencies, like any other agency, need good people to work for them. Fear of lawsuits can discourage competent people from seeking employment in such agencies. Immunity to the employees would go a long way in attracting competent people and thus save on costly mistakes.
PART II

Chapter 5

PUERTO RICO AND THE TREN URBANO

Background on Puerto Rico

Puerto Rico, located in the North East corner of the Caribbean Sea, is the smallest and easternmost of the Greater Antilles. It is about 2,000 miles south east of Miami and 500 miles due north of Caracas, Venezuela. It has an area of 8,876 sq. Kms and a population of 3.52 million according to the April 1990 census (3.75 million as per mid-1996 estimate). Between 1970 and 1980 Puerto Rico's population grew at 1.65% per year, but in the ten years from 1986 to 1996 it slowed down to 1.1%.

Over the last four decades the island has been transformed from a traditional agrarian economy to a modern industrial society, with the population growth slowing down and life expectancy rising sharply.

Puerto Rico has been defined as an upper middle industrial economy in which manufacturing accounts for more than 40% of the GDP while agriculture contributes less than 19%. There is a large high tech manufacturing sector, which has sizable operations in pharmaceuticals, electronics and scientific and precision instruments. Labor intensive manufacturing, especially of textile products and clothing, is also important, but these industries have been facing competition from overseas.

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17 Country Profile, Economic Intelligence Unit, 1997-98
18 Country Profile, Economic Intelligence Unit, 1997-98
Population Density and Urban Demographics

Puerto Rico is one of the most densely populated areas in the world, with an average of 422 persons per sq. Km. There is a high degree of urbanization, with the capital San Juan and its suburbs accounting for about one-third of the population. The major centers of population are San Juan (438,000), Bayamon (220,000), Ponce (188,000) and Carolina (178,000).

The San Juan Metropolitan Area (SJMA), with a population of 1.3 million, is the most important metropolitan area in Puerto Rico. It is composed of 13 municipalities and covers an area of about 1020 sq. Kms. One third of the population is concentrated in the San Juan municipality with another third being in the Bayamon and Carolina municipalities. The urban centers of Old San Juan, Santurce, Hato Rey and Rio Piedras form the north - south spine of the metropolitan area, while Bayamon and Carolina define the extreme points of the east - west spine.

Population densities in central San Juan are among the highest in the US. While the average density in the SJMA is 8500 persons per sq. mile, in some areas it exceeds 20,000 persons per sq. mile.

Domestic transport in Puerto Rico has evolved, as in several other metropolitan areas of the US, into one that is excessively reliant on roads and private vehicles. According to the 1990 census 68.5% of the households have at least one car. Regional travel is projected to grow by 45% from 1990 to 2010 to reach 4.65 million daily trips with increased per capita travel accounting for a significant part of the growth\(^{19}\). The regional population is projected to reach 1.55 million by 2001.

\(^{19}\) Tren Urbano project, Request for Participation, February 26, 1993
The familiar cycle of congestion – deteriorating public transit – greater auto use – greater congestion has been set in motion.

**Current Structure of Transportation Planning and Provisioning Agencies**

There are several agencies that are responsible for transportation planning and provisioning in Puerto Rico and the SJMA. The most important among them are:

**Department of Transportation and Public Works**

The overall responsibility for transportation planning and provisioning in Puerto Rico rests with the Department of Transportation and Public Works (DTO). Headed by a Secretary, the department implements its programs through several subordinate agencies and organizations. The organization chart of the department and its subordinate offices/organizations is at Appendix 7.

**The Puerto Rico Highways and Transportation Authority**

The most important agency, under the DTO is the Puerto Rico Highways and Transportation Authority (PRHTA). This was originally created as an autonomous public corporation under Act 74 of June 32, 1965 and named the “Puerto Rico Highway Authority” (PRHA). The original role envisaged for the PRHA was to construct and manage highways and toll roads throughout Puerto Rico. Highways built by them, but not operated as toll roads, were handed over to the Public Works Directorate, a subordinate office of the DTO, for maintenance and management. The roads retained by the PRHA are operated as toll roads.

Under the Reorganization Plan Number 6 of 1971, the PRHA was attached to DTO. Its Board of Directors was abolished and the powers of the Board were given to the Secretary of the DTO. Act 4 of August 24, 1990 enabled the PRHA to privatize transportation facilities and use a negotiated bid procurement process. Further, Act 1 of March 6, 1991 added the role of mass transportation and
changed the name of the organization to the "Puerto Rico Highway and Transportation Authority" (PRHTA). The primary objective of this change was to take advantage of the organization's revenues and its institutional capabilities in the procurement of capital projects to meet the needs of urban transit. The project that the government had in mind was a rail transit system for the SJMA - the "Tren Urbano".

The PRHTA has a single member Board of Directors, with the Secretary for Transportation being the sole member. Its Chief Executive is an Executive Director. Due to its lean structure, the PRHTA has the unique advantage of being able to take quick decisions and is not hindered by bureaucratic delays.

In order to enable the PRHTA to discharge its responsibilities, certain tax revenues have been earmarked for it and annual appropriations are not required. The most important among them is the gasoline tax, which brings in almost $172 million annually\(^\text{20}\). Others include a portion of the diesel tax and a recently approved petroleum tax. As a result, the finances of the PRHTA are very healthy enabling them to raise substantial bond funds for their works program. A statement of the financial position of the PRHTA is given at Appendix 8.

Given its financial strength and its responsibility towards construction and management of highways, it is indeed in a unique position to play a leading role in transportation planning, provisioning and coordination in Puerto Rico.

**AMA**

Another agency providing urban transport services is the "Autocridad Metropolitana de Autobuses" (AMA), which operates public bus systems in the SJMA.

\(^{20}\) Presentation of Dr. Sergio Gonzales, Executive Director of the PRHTA in January, 1998 at the Tren Urbano Office in Hato Rey, San Juan.
Unfortunately, its services are not reliable and do not enjoy a high level of patronage. This organization is plagued by financial constraints and is unable to invest in improving its services. Like the PRHTA, AMA too has a single member Board of Directors, with the Secretary for Transportation being the sole member.

**Puerto Rico Port Authority**
This agency provides water borne transit services in the SJMA, between the Terminals at Cataño, Old San Juan and Hato Rey.

**Public Service Commission**
A third agency that plays a role in Urban Transport is the “Public Service Commission”. This is an independent regulatory body that regulates the operation of the Publicos, the principal form of public transport in Puerto Rico. However, its responsibilities do not extend to any kind of planning and are only confined to approving specific publico services. Applications for operating on specific routes are scrutinized to verify whether such operation would adversely affect other publico operators on that route and also verify the reasonableness of the fare proposed to be charged. If considered necessary, the Public Service Commission seeks suggestions from the DTOP also.

**Current Public Transportation Systems**
Public transportation in San Juan is currently provided by three types of bus services\(^{21}\):

**Fixed Route Bus**
These are operated in two ways - publicly run service operated by AMA and Metrobus services contracted by the PRHTA.

\(^{21}\) Barr, Joseph E., *Intermodal Fare Integration: Application to the San Juan Metropolitan Area*, Master’s Thesis, MIT, 1997
AMA operates 43 routes in the central part of the SJMA, using 159 full sized buses. Headways vary from 15 and over 75 minutes, with very few being under 30 minutes. The current fare is 25 cents per trip. Routes for AMA buses tend to be circuitous as they aim for wider coverage. These buses run on generally infrequent schedules, and have the reputation of not even meeting them. Hence these services are generally perceived as being unreliable.

The Metrobus service currently consists of two routes that serve high demand corridors with frequent and reliable service. Route # 1 operates mainly on a reserved contra flow bus lane along the heaviest traffic flow route in the region (Rio Piedras - Hato Rey - Santurce - Old San Juan). This service is run by a private company, with a headway of 4-5 minutes during the peak period. Key features of this contract are at Appendix 9. Route # 2 operates partially on the same corridor, but branches off to run to Bayamon, an important urban node located on the western part of the SJMA. It is run by AMA but under a separate contract with the PRHTA and not as part of its other services. The fare on both routes is 50 cents per trip and both services have experienced considerable success since their introduction.

Publicos
Publicos are regulated, privately operated jitneys and are an important public transit mode in the SJMA. While they generally follow fixed routes, they are at liberty to deviate from these routes to let passengers off where these passengers indicate. They also tend to operate as a demand response service, with frequencies ranging from 30 to less than 1 per hour. Fares are based on distance and are collected directly by the driver. They follow no fixed schedules and few, if any, run after 6.00 p.m. They are of two types: those driven by the owners and those driven by licensed drivers. Many drivers are grouped into so called terminal associations (made up of drivers who serve a major terminal) that undertake
government lobbying efforts, jointly purchase parts for members, and perform other activities on behalf of their members. They are the primary transit mode on the island and serve a role in connecting outlying towns with the metropolitan area.

Public oversight of publico operation is fragmented\textsuperscript{22}. The Public Service Commission (PSC) regulates fares and route franchises. The PRHTA is responsible for publico planning. Operator and vehicle licensing fall under the jurisdiction of the Driver Services Directorate of the Department of Transportation and Public Works (DTOP). The Driver Services Directorate also regulates the location and design of terminals and stops along the right of way of the state roads. Individual municipalities regulate publico stops and terminals as well as traffic operations on municipal roadways. The PSC exercises a very limited planning role in dealing with the publicos. It is responsible for regulating several other public service sectors and publicos are only one of many. Hence, they concentrate mainly on route authorization and the establishment of fares.

In the last few years, the lack of formal regulations and enforcement on safety and regular upkeep of the publico fleet have become major concerns. As vehicles begin to age, there are concerns that publico safety and maintenance standards are in need of revision. Currently publicos, like all other vehicles have to pass an annual basic safety inspection when vehicle license fees are paid to DTOP.

**Motivation for the Tren Urbano**

There has been a steep rise in the number of motor vehicles. While the population growth between 1980 and 1990 was about 10\%, the number of vehicle

\textsuperscript{22} Lau, Samuel W., "Strategies for Improving Jitneys as a Public Transport Mode", Master's Thesis, MIT, 1997
registrations during this period skyrocketed by 56.9% to reach 1,321,627\(^{23}\). The growth in vehicle ownership has consequently led to the now familiar problems of severe congestion and pollution, witnessed in several other cities around the world. Heavy congestion coupled with an unreliable bus transit system only 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 in phases. Phase I is 17 km long with a combination of at grade, elevated, and underground sections. Current estimates place the cost of this phase at $1.5 billion and revenue service is slated to commence from November 2001. The government, through a combination of federal grants and revenue bonds, is financing it.

The Phase I system is scheduled to be open for service in 2001. It will operate 20 hours a day with 4-minutes headway during peak-hours. 64 vehicles will be purchased initially, with an option to purchase another 10 vehicles. The vehicles will have the following technical specifications:

- They will have a married pair configuration with up to 3 married pairs per train
- Power will be drawn from a third rail at 750 Volts DC
- They will be designed for an empty weight of 80,000 lbs.
- They can take 72 seated and passengers and a total of 181, including standees
- The designed maximum speed will be 100 km/hr

The project will include a maintenance/storage facility at the center of the system and will also have a central communication and train control system. The central

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\(^{23}\) Highway Statistics, 1980 and 1990
computers and controls will be located in an operations control center, in a yards and shops complex.

A map of the phase I alignment is at Appendix 10.

**Procurement Strategy for the Tren Urbano**

**Design and Construction**
The Tren Urbano is being procured as a DBO variant with design and construction being contracted out to private parties. The civil work, comprising of the permanent way and the buildings have been split into seven “alignment sections” and awarded to several parties. The entire “systems” portion, comprising of the track, signaling, vehicles, communications, etc. has been awarded to a single contractor, namely, Ms. Siemens Transportation Partnership Puerto Rico (referred to as Siemens), a partnership organized and existing under the laws of Puerto Rico and having the following partners:

- Siemens Transportation Systems Inc. of Delaware, USA
- Juan R. Requena y Asociados of Puerto Rico
- Alternate Concepts Inc. of Massachusetts, USA

Siemens has also been awarded the contract for one of the alignment sections. They have been made responsible for coordinating the work of the remaining “alignment section contractors” so that they have a responsibility for ensuring that the work of the other contractors is compatible with their system design. The contract also seeks to tie in sound O&M practices at the design stage itself.

**Operations & Maintenance**
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. Details of the contract are at Appendix 11. The main provisions of this contract are as follows:

- Responsibility for the maintenance of the system rests with Siemens, though the cost of all such maintenance, in excess of $25,000 per item will be reimbursed by PRHTA. However, if the repairs are necessitated due to any negligence or fault of Siemens, then no reimbursement would be made.

- The PRHTA would be responsible for setting the level of service and fares. It can require changes in the level of service with appropriate adjustments in the compensation payable. To the extent possible these would be based on unit rates that have been agreed upon.

- While the fares are to be set by the PRHTA and would accrue to PRHTA, they are to be collected by Siemens. The amount collected would be set off against the annual compensation payable to them.

- There is a provision for an elaborate Management Information and Decision Support System (MIDSS) to be developed by Siemens. This system is to be capable of generating the required monthly and daily reports that can be used for monitoring and service planning.

- Siemens would be responsible for security and the provision of security personnel. PRHTA will arrange for a public police force, with powers of arrest, to patrol the stations and/or trains for additional protection for patrons. Siemens is also responsible for public relations with the communities served by the project.

Siemens will be paid an “inflation linked” base compensation ranging from $27,360,927 to $34,398,939 for operating the system. This compensation will comprise of a labor component and a material component. The base compensation is to be adjusted for inflation in the labor component as per a labor index and the material component as per a materials index. The actual compensation would also depend on the performance standard achieved, with an offset for shortfalls and a bonus for better performance. There is a small incentive for higher ridership too.
Siemens is required to assume all risk of loss or damage to the service property. There would be an "Owner Controlled Insurance Program" instituted by PRHTA which would include a "Comprehensive General Liability Policy" and an "All Risk Property Policy". Siemens would be required to maintain a "Social Benefit Insurance" to cover workmen’s compensation and other similar claims by workers as well as a "Comprehensive Automobile Liability Insurance". Siemens shall not be liable to PRHTA for any indirect, special or consequential damages.

There is a provision for transfer of technology, with the basic objective being to develop technical capability within Puerto Rico to operate, maintain and manage the Tren Urbano system. This comprises of provisions for training students of the University of Puerto Rico as well as employees of the system. There are provisions for internships and also a collaborative training program involving the Massachusetts Institute of Technology and the University of Puerto Rico. Further details on the arrangements for transfer of technology are at Appendix 12.

**Differences between the Metrobus and Tren Urbano Contracts**

As stated earlier, contracts have been entered into with private parties to operate both the Metrobus and the Tren Urbano. While there are several similarities between the two contracts, there are many key differences, both in the contract terms as well as in the relevant technologies, which have important implications with regard to monitoring and contract enforcement. As such, a close look at these differences is important. The important differences in the contract terms are the following:
<table>
<thead>
<tr>
<th>Item</th>
<th>Metrobus</th>
<th>Tren Urbano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>3 years + 3 years</td>
<td>5 years + 5 years</td>
</tr>
<tr>
<td>Compensation</td>
<td>$ 4.1 to 4.6 million</td>
<td>$ 27 to 34 million</td>
</tr>
<tr>
<td>Repairs</td>
<td>Paid for by operator</td>
<td>Reimbursed, if they cost more than $ 25,000</td>
</tr>
<tr>
<td>Assets</td>
<td>Only buses</td>
<td>All vehicles and other fixed assets and support systems</td>
</tr>
</tbody>
</table>

**Important differences in the technologies**

- The life span of the assets of the Metrobus is only about 7-9 years whereas in the case of the Tren Urbano the vehicles have a life span of about 25 years and the fixed assets have life spans over 50 years.

- The residual life of the assets, after expiry of the contract, is quite long in the case of the Tren Urbano but limited in the case of the Metrobus.
Chapter 6

INSTITUTIONAL OPTIONS FOR MANAGING THE TREN URBANO SYSTEM

Likely functions of Government Agencies

Under the procurement strategy for the Tren Urbano, the principal task of operating and maintaining the system rests with the private operator, i.e. Siemens. However, this would not absolve the government of several other responsibilities that it would have to discharge. These responsibilities fall into four broad categories:

Strategic and Policy Functions

- Strategic Planning
- Capital Financing
- Inter-modal Coordination

Regulatory Functions

- Regulation of Safety Practices
- Regulation of Environmental Standards

Contract Enforcement & Oversight Functions

- Monitoring and Control of Operations
- Monitoring Quality of Maintenance
- Monitoring Fare Collection

Other Administrative Functions

- Managing Finances
- Marketing and Public Relations
- Handling Litigation
- Negotiation
- Security & Vigilance
- Public Accountability
- Management of Real Estate

These can be pictured as follows:

**Strategic & Policy**
- Strategic Planning
- Capital Financing
- Intermodal Coordination

**Regulatory**
- Safety
- Environment

**Oversight**
- Monitoring
  - Operations
  - Maintenance
  - Fare Collection

**Administrative**
- Managing finances
- Marketing & Public relations
- Litigation
- Negotiation
- Security & Vigilance
- Public Accountability
- Real estate management

A brief explanation of what these functions entail and why they are necessary in the Tren Urbano context is at Appendix 13.
Institutional Structures for Discharging These Functions

Separation of Operations from Policy
In examining a possible institutional framework for managing the Tren Urbano system, it is first essential to examine whether it would be better, in the San Juan context, to have the responsibilities for policy and operations combined in a single organization or have them separated into two tiers of institutions.

A combined policy planning and operations control arrangement would appear to be preferable if a single public sector agency has a dominant position in transportation provisioning and production, as in Massachusetts. If a single agency produces most of the transportation services it would appear logical and economical for it to also undertake the policy-making responsibility. However, if transportation services come from multiple producers and that too a mix of public and private producers, it would be better to separate policy planning and coordination from operations. An agency that handles policy matters would be well placed to take charge of coordination and strategic planning while getting the best out of a mix of operators.

The complexities of operating rail transit services, coupled with the lack of necessary skills within Puerto Rico, perhaps prompted the decision to contract out of the Tren Urbano services. Besides, the advantages that a DBO strategy offers in getting the system operating quickly may have weighed in favor of contracting out the services. However, this procurement strategy is not a long-term strategic decision. The government would, perhaps, like to retain its option to adopt other feasible alternatives in future. Therefore, institutional arrangements should be so structured as to provide adequate flexibility for alternative procurement strategies to be adopted in future.
A consideration of all the above factors appears to indicate that separating policy from production is a good strategy to adopt in the SJMA because:

- San Juan is served by a multiplicity of public transport services, some of which are produced, by private parties (publicos, para-transit, Metrobus route #1, Tren Urbano after it is commissioned). It would, therefore be essential that these services are appropriately integrated so that there is no unnecessary duplication or wasteful competition and a more efficient, economical and reliable service is available to the people. Doing this would require coordination among the different service providers and it would be best if the coordinating agency is not directly involved with the operations of any of the services.

- An agency that is not tied down with the day to day problems of operating services provision is in a better position to devote time to strategic planning. San Juan needs further extension of the Tren Urbano lines and investments in more transport facilities, if its goal of getting people off their cars is to be realized. Since there is a lot of strategic planning work yet to be done, it would be best to let one organization take care of that without being saddled with the day to day problems of operations.

- Separation of the policy making function from the operations function would offer greater flexibility in adopting alternative procurement strategies for the Tren Urbano operations in future.

- There is a need for greater involvement of users and the municipal bodies in decision making. Having a separate policy making agency would help securing the benefits of greater public involvement in the policy making process without creating the problems of greater political interference in actual service production.

**Integration of Transport and Land Use Planning**

The above recommendation, to separate operations from policy, has also been made in recognition of the importance of integrating transportation with land use planning. A separate policy making level is better equipped to facilitate such integration. The advantages of such integration are being recognized all over the world. Puerto Rico would also do well by structuring its institutions in a manner that facilitates effective integration of transportation with land use.
Need for a Policy Making and Coordination Forum

In view of the above, it is suggested that a high level policy making and strategic planning office or group be set up. This group could be called the "Metropolitan Transportation Planning and Provisioning Group" (MTPPG) and may be set up initially through an executive order. It should be headed by the Secretary of Transportation and include the heads of the public agencies responsible for the production of transportation services in San Juan. It should also seek the participation of land use planning agencies in San Juan for a better integration of land use with transportation planning. Such a group could take strategic decisions after taking into account a cross section of opinions so that the most optimal transportation policy could evolve. Such a policy would also have greater support and a better chance of success.

While this arrangement can be initially set up through executive action, it should, subsequently, be formalized by way of legislation to give it greater authority to effect coordination among the different modes of transportation and integration of transportation with land use planning.

The MTPPG will also need financial and staff support. To begin with, it could be serviced by an existing agency. The PRHTA would be best placed to do this because:

- It has substantial revenues dedicated to it and does not need to find resources through periodic appropriations.
- It has already taken the leadership in trying to improve transit facilities in the SJMA by contracting Metrobus services and getting the Tren Urbano project started after so many years of effort.

However, once the MTPPG has legislative backing, it could have its own funding sources and work as a separate body.

Accordingly, the following institutional framework is recommended for transportation planning and provisioning in the SJMA.
- 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.
Possible Institutional Forms to Manage the Tren Urbano System

Having decided on an institutional framework that separates operations from policy making, it is now necessary to look at what institutional form would be best suited to manage the Tren Urbano. It is also essential to look at how this organization should be positioned in the overall framework of transportation agencies in Puerto Rico. The following organizational options, for managing the Tren Urbano system, were examined:

**Unit within the Department of Transportation** - Under this option, a separate unit is set up within the Department of Transportation and is given the responsibility of handling all the work relating to the Tren Urbano.

**Unit within of the PRHTA** - Under this option a separate unit is set up within the PRHTA, similar to the unit that monitors the Metrobus contract. (The Tren Urbano office as it exists today is an unit within the PRHTA).

**Subordinate office of the DTOP** - Under this, a separate office is set up, subordinate to the Department of Transportation. This could be on lines similar to the Public Works Directorate.

**Separate organization subordinate to the PRHTA** - Under this arrangement, a new organization is set up under the PRHTA. It would have a separate legal identity with its own Board of Directors, but would be subordinate to the PRHTA. The PRHTA would have general control over it though it may not control its day to day activities. The PRHTA would, however, be responsible for the overall performance and financial health of this organization.
**New Tren Urbano Authority** - Under this option a separate Authority, similar in structure to the PRHTA, is set up under a new legislation. It would have its own revenue sources and Board of Directors and would be directly answerable to the Department of Transportation.

**New Tren Urbano Company** - Under this option also, a new entity is set up. However, it would not be an Authority but only as a government company, incorporated under the corporate laws of Puerto Rico. Its Articles of Organization would govern it.

**A Private Company (other than Siemens)** - Under this option the overall management of the Tren Urbano system is entrusted to a private company, other than Siemens. This company would thereby be responsible for meeting all the financial liabilities during the O&M phase, though it would be permitted to undertake other commercial activities within the Tren Urbano properties, to generate revenues beyond the fare-box.

**Criteria for Evaluating the Options**

The following criteria were used for evaluating the above options:

**Abilit' to represent Tren Urbano effectively in a coordinating forum** - The Tren Urbano would be the most capital intensive transportation facility in the SJMA and so it would be important to insure that it is utilized to the maximum extent possible. Other modes, which have greater flexibility in the way they can be operated, would have to supplement the Tren Urbano. As such Tren Urbano would need to have a strong say in the planning of transit facilities in the SJMA.

**Speed and flexibility in decision making** – Several situations would need quick decision making and it would not be possible for the entity managing the Tren
Urbano to keep seeking approval from several tiers of the government. A considerable amount of autonomy would have to be delegated to the entity with regard to its day to day functioning and management of the Tren Urbano. This has to be reflected in an appropriate institutional structure.

**Separate legal entity to avoid burdening another agency with complicated litigation** - The Tren Urbano operations may get involved in protracted litigation. It would, in fact be advisable if such litigation does not burden another agency and divert its attention from its primary task.

**Easy to wind up, modify or expand depending on future need** - The current procurement strategy for the Tren Urbano operations may change after 5/10 years and any one of the following alternatives may be adopted:

- Government may take over the operations and maintenance
- A fresh O&M contract may be signed after competitive bidding and with revised terms
- The operations and maintenance may be given out as a fixed period concession, with demand and revenue risk also being passed over to the private concessionaire
- Government may choose to sell off the Tren Urbano system to a private company for management and operations

Depending on the alternative chosen, the need and structure for a managing entity would change. It would be good to make sure that no permanent liabilities, that would make it difficult to amend or alter the structure in the future, are created.

**Minimize administrative costs** - a basic requirement with any facility is to minimize costs. Costs can be minimized if the new entity can tap the resources of another existing agency. For example if it can tap the technical resources of
another agency or receive support for discharging some of its administrative functions from another agency then its administrative costs can be brought down. An institutional form that gives it an advantage in tapping such resources would be preferable to a form that does not allow this.

**Ability to start with a clean image and further build on it** - Public transit services in San Juan do not enjoy a good reputation. Publicos are considered as uncomfortable and unsafe. AMA has the reputation of being unreliable. A new entity should be in a position to start with a clean image and build on it, rather than start with a poor image and struggle to improve it.

**Help usher in a transit culture** - The PRHTA was initially set up as an agency to build and manage highways. Its role was subsequently expanded to include other transportation services as well. However, given the speed of urbanization in San Juan and the increasing levels of congestion, there is a need to promote a “transit culture” among the residents. The new entity should be well placed to do that.

**Insulated from political pressures** - Political pressures are a problem faced by most transit systems. Public men have a public responsibility and often overlook larger social interests in favor of the narrower interests of their constituents. That can be a problem for any transit agency. An agency that can be insulated from such pressures, with another agency providing a useful cushion, can be a major advantage for rendering efficient services.

**Balances the pros and cons of the administrative ethos of Puerto Rico** - Institutions in Puerto Rico, unlike similar institutions in mainland countries, depend largely on the personality of their chief executives. It is not so much the position of the institution in the administrative hierarchy but more the ability of the chief executive to get things done that matter. Such an ethos facilitates quick
decisions and the ability to get large projects off the drawing board, as it has done in respect of the Tren Urbano. However, such an ethos has the disadvantage that a good initiative may be difficult to sustain if key personalities change. Choice of an institutional option should aim to balance these pros and cons.

**Analysis of Alternatives and Recommended Option**

Among the seven alternatives considered, three would appear to eliminate themselves quickly as they are out of tune with the emerging trends worldwide. An unit within the DTOP or even a subordinate office of the DTOP would be contrary to the worldwide trend of greater commercialization of infrastructure services. Government departments are inherently slow in decision-making and not well equipped to render commercial services. Hence, neither of these two options would be advisable and they can be eliminated from further consideration.

The option of a private company managing the Tren Urbano, when another private company is responsible for the operations and maintenance, would appear to be a duplication of efforts in trying to secure private sector efficiencies. It may, instead, be better to concession the operations and maintenance to one private agency. This may be an option at a later date, when the system's potential gets better known. It does not appear to be a viable alternative at this stage. Hence, this is also not considered any further.

This leaves us with the following four alternatives:

- Unit within the PRHTA
- Separate organization, subordinate to the PRHTA
- New Tren Urbano Authority
- New Tren Urbano Company

These four alternatives can be nested into two categories:
• Dependent on PRHTA
  ➢ Unit within PRHTA
  ➢ Subsidiary of PRHTA

• Independent of PRHTA
  ➢ Separate Authority
  ➢ Separate Company

**Dependent on PRHTA versus Independent of PRHTA**

It would be more appropriate to first look at whether the Tren Urbano would be better managed by an entity that is dependent on PRHTA or is independent of PRHTA.

The alternative of an entity that is dependent on PRHTA appears to be better for the following reasons:

• It would benefit from the resources of the PRHTA and if the chief executive of the PRHTA is made, say, the Chairman of the Board of Directors of the new entity, then it would benefit from the personal power and prestige that he has. This would be very useful for an important facility like the Tren Urbano.

• It can share resources like buildings, costly equipment and support staff of the PRHTA. This would help reduce administrative expenses considerably.

• Being such a high cost facility, it would make most sense for the Tren Urbano to be the core of the transit system with other modes supplementing the Tren Urbano services. As such, an organization that is dependent on PRHTA can be more effectively represented in a coordinating forum and get its viewpoints across more forcefully. It would draw on the strength of the PRHTA's
preeminent position in the transportation planning and provisioning hierarchy of Puerto Rico.

- Facilitate the development of a transit culture without the PRHTA feeling threatened about its role and working as a rival of the new entity.

**Separate organization under the PRHTA versus an unit within the PRHTA**

Having settled upon an entity that would be dependent on PRHTA, the next question is whether this entity could be a unit within PRHTA (like the Tren Urbano Office as it exists today) or it should have a separate legal identity under the PRHTA umbrella. Deciding this is more difficult. A major factor in taking such a decision will be the ability of a unit within the PRHTA to monitor and enforce the Tren Urbano contract.

The Metrobus contract is being monitored and enforced by a small unit within the PRHTA and there is an opinion that the Tren Urbano contract could also be similarly monitored. A comparison of the two contracts, done in Chapter 5, indicates that monitoring the Tren Urbano contract will be far more complex than monitoring the Metrobus contract for the following reasons:

- Monitoring the maintenance of the assets, particularly as the term of the current contract comes to a close, will be very critical in the case of the Tren Urbano. Added complexities in monitoring maintenance of the Tren Urbano system, as compared to the Metrobus arise from the following:

  - It will not be possible to contract out inspection of maintenance services for the Tren Urbano, as there are no private garages than can do this. Such garages and expertise are more easily available for motor vehicles but for rail systems they have to be procured from other transit systems or built up over several years.
➢ The life span of assets in rail systems is far longer than in the case of the Metrobus and so the quality of maintenance has to be monitored very closely. Rail vehicles would typically have a life span of 30 years against about 7 – 10 years for buses. Other fixed facilities like tracks and buildings would have even longer life spans.

➢ It is not necessary to monitor maintenance of the guideway in the case of the Metrobus but will be critical in the case of the Tren Urbano.

➢ It may be possible to contract out the monitoring of maintenance to an external agency like the MBTA, but the Tren Urbano is a long life asset and it will be prudent to develop capabilities within Puerto Rico to monitor the quality of maintenance of such an asset. That is, and rightly so, the principal objective of the Technology Transfer Agreement.

- Periodic changes in the level of service and negotiating corresponding revisions in compensation will be more complicated than in the case of the Metrobus largely because the compensation amounts involved are higher

- Marketing and public relations to generate adequate ridership is more critical in the case of the Tren Urbano as it is a high cost facility and needs to be better utilized

- Handling emergencies and accidents can be far more complicated for the Tren Urbano than similar contingencies with regard to the Metrobus

- Litigation problems can be far more severe and complicated than for the Metrobus

- Ensuring security will be far more difficult than for the Metrobus

- Handling power supply will be an additional responsibility that is not required for the Metrobus
Some of the other advantages of managing it through an entity that is separate from PRHTA, though subordinate to it, would be:

- Day to day operations control can be separated from strategic planning and coordination. The PRHTA would be well placed to perform the coordinating and strategic planning role and the new subordinate entity could manage the Tren Urbano. This way, being subordinate to the PRHTA, it would be in an advantageous position to direct urban transport planning in the SJMA, though not be directly responsible for it.

- Being a subsidiary, with a separate legal identity and its own Board of Management, it would not have to seek the approval of the PRHTA for routine decisions and would be in an advantageous position to react faster on day to day matters. This would not be possible if it were to be a part of the PRHTA, in which case it would need the approval of the senior officials of the PRHTA for routine operating and maintenance decisions. This may cause unnecessary delays, as the senior officials of the PRHTA would also have other responsibilities to discharge.

- As stated earlier, transit authorities can get into protracted litigation which may involve settling huge awards. In such a situation, it is better that the litigation does not affect the functioning of another organization that may have other responsibilities to discharge.

- If it is set up as a separate entity then it can easily be wound up or expanded to meet the future needs. Such expansion or winding up would not affect any parent organization. Managing the assets during such a restructuring process would be easier if the entity is distinct from the PRHTA.

- It may be necessary to provide special powers and facilities only for Tren Urbano operations but not for the other responsibilities that the PRHTA is required to perform. An example of this may be to have a limit on the amount
for which the Tren Urbano can be sued. Such a limit on just the Tren Urbano operations would be possible only if a separate entity controls it. Besides, if any special powers were to be vested in a new entity for acquisition or managing land, such as for the commercial exploitation of the fixed assets, then having a separate entity would be an advantage.

- A separate entity under PRHTA will be better placed, than the PRHTA itself, to promote a transit culture. PRHTA, with its responsibilities towards highways, would be constrained in trying to promote transit use.

In short, a decision on whether the Tren Urbano should be managed by a unit within PRHTA or by an entity subordinate to PRHTA essentially rests on the answers to the following questions:

- Will there be sufficient work for a separate organization?
- Can monitoring of maintenance be contracted out?
- Is it necessary to insulate PRHTA’s budget from fluctuations in the Tren Urbano needs?
- Is it necessary to insulate PRHTA from protracted litigation and negotiations?

Answers from the foregoing analysis seem to indicate that an entity subordinate to PRHTA rather than a unit within PRHTA would be better. If this alternative is chosen, the structure of the new entity could be as follows:

![Diagram of organizational structure]
If, however, it is decided to opt for a unit within PRHTA then the structure of the new unit could be as follows:

![Diagram showing the structure of the unit]

**The Tren Urbano Office**

A question that arises is where does the current Tren Urbano office fit in. This office is essentially performing the role of monitoring the construction contract and is functioning as an interface between the contractors/Siemens and PRHTA/Government. Its final positioning would depend on who takes responsibility for managing the construction program of the Tren Urbano extensions. If this responsibility remains with PRHTA then the Tren Urbano Office should remain part of the PRHTA. If, however, the construction management of the extensions is entrusted to the new entity that would manage the Tren Urbano operations then the Tren Urbano Office should form the projects division of the new entity.

The advantage of letting construction management responsibilities remain with PRHTA would be that PRHTA would be raising the capital in any case and they would be able to better coordinate management of several other projects at the same time. As against this, the advantage of entrusting this responsibility to the new entity would be a better integration of operations issues with the extension projects.
Recommendations

In short, the following recommendations are made in this chapter:

- Policy-making and operations should be separated and entrusted to different agencies.

- A San Juan Metropolitan Transport Planning Group (MTPPG) should be set up, within the Department of Transportation. It should oversee and make strategic plans on the transport system in the SJMA. It could be serviced by the PRHTA, which should also be responsible for implementing the decisions and recommendations of the MTPPG.

- The Tren Urbano could be managed either by a unit within the PRHTA or by a separate entity, subordinate to the PRHTA. The balance of advantage, however, lies in having a separate entity under PRHTA. This new organization is being referred to as the Tren Urbano Entity (TUE) for the time being, till a more appropriate name is decided for it.
Chapter 7

REQUIRED CHANGES WITH ALTERNATIVE FUTURE PROCUREMENT STRATEGIES

As stated in chapter 6, 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 in that chapter 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. Factors that dictated the adoption of this strategy may change and other alternatives may become more attractive.

Among important reasons that guided a choice of the current strategy were the following:

- The demand or ridership is very uncertain and projections of the demand may prove incorrect. As such, a private operator may not be willing to accept the demand or revenue risk associated with such a new venture. After 5/10 years the situation would change and ridership projections can be better estimated with the experience gained in the first few years. At such a time a private operator may be willing to take the revenue risk as well.

- Since rail transit systems have not existed in Puerto Rico and this is a new technology for them, there is no local capability for operating and maintaining such a system. Hence, the option for a government agency to operate the system does not exist and contracting with a private party was almost essential. However, after 5/10 years, local capability may get built up, particularly if the technology transfer arrangements prove successful. In such
a case the possibility for a public agency to take over the system and operate it will open up.

- The key officials who favored the current procurement strategy may change and the new officials may prefer a different strategy, with greater or lesser private involvement.

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 me 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.

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, seems to have the following advantages:

- It 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.
• The present officials, who are obviously in favor of such transit systems, will be able to take a more informed decision than would a new set of who had not been connected with the procurement process.

The possible methods through which O&M could be procured after the 10-year period is over (or after 5 years if the government chooses not to extend the contract) are:

• Takeover by government
• Fresh management contract
• Concession to a private company (including a worker's cooperative)
• Outright sale or divestiture (feasible only if there is very high ridership)

The institutional arrangements that were recommended in chapter 6 might, therefore, have to change if a different procurement strategy is adopted after the 5/10-year period. The changes that would be necessary, under each of these procurement options being adopted, are discussed below.

**Takeover by the Government**

In the event of the government deciding to take over the operations and maintenance responsibilities, the following would be the main changes in the role of a government entity:

• It will have to take over the entire O&M responsibilities that Siemens would be discharging under the current contract. Its operations and maintenance role will expand considerably, though its monitoring role will come down, as it will not have to determine any compensation to be paid to a private operator. Monitoring will be required only for service planning.

• Its workload on personnel management will go up, as there will be a substantial addition to its manpower, with the operations personnel becoming part of its work force. This will mean more work in terms of recruitment, training, career planning, wage settlements, etc.

• Its workload on financial management will also go up as it will have to maintain detailed information of the finances and costs with regard to the operations and maintenance as well.
• It will be required to collect fares and maintain accounts, which it is not required to do under the current contract.

• Its materials management responsibilities will go up as it has to manage all spares and undertake the work of placing orders and managing inventory, not required of it earlier.

• Its responsibilities towards providing security cover will go up, as the current contract requires Siemens to provide a security force and the government police force will only be a supplement.

• The litigation work will go up as all operations related litigation would also have to be defended by it.

• All other responsibilities, such as public relations, marketing, public accountability, as well as O&M financing, etc. will also increase considerably.

• The negotiation responsibility will come down considerably as the private operator is no longer involved and any disputes between different divisions of a single agency can easily be settled at higher levels within the organization. There would be no need for dispute resolution mechanisms or elaborate arbitration requirements.

• Inter-modal coordination may be much easier as the government would become the operator of most of the modes and coordination will be required only with the publicos. Interagency coordination will be necessary, but it will be easier than coordinating with a private operator running the services of a core system like the Tren Urbano.

In short, while some responsibilities will increase, others will come down. In sum, however, its role will be considerably expanded and it will have to be strengthened with extra manpower and capabilities to undertake these functions. TUE will be well placed to take over this responsibility, but again the question of how it should be positioned in the overall transportation planning and provisioning framework of Puerto Rico would arise. The arguments that supported its being positioned as a separate organization, subordinate to PRHTA, may not apply in this case. With a considerably expanded role it would have to be given greater powers and resources in discharging its functions. Separating it from the PRHTA and giving it the status of an independent Authority, directly under the DTOP,
would appear to be best alternative if the government were to take over the O&M of the Tren Urbano.

In such an event, dedicated financial resources will become necessary for the new Authority and some of the resources currently dedicated to the PRHTA may have to be diverted to the new Tren Urbano Authority. As stated, in greater detail, in chapter 9, it would be worth dedicating the revenues from motor vehicle registration fees (which brings in about $27 million annually) towards the Tren Urbano operations.

With regard to the Tier 1 functions, there would be a justification for the MTPPG, or another coordinating body, to continue.

**Fresh Management Contract**

In case a fresh management contract is entered into, then the changes in the role of the TUE will depend on the nature of the new contract vis a vis the current contract. The possible changes in the new contract could be in terms of:

- The duration of the contract - it could be longer or shorter than 5 years, though the expectation is that it would be longer
- Extent of ridership or demand risk passed on to the operator
- Reimbursement of repair costs - the entire expenditure on could be reimbursed on a cost plus basis or an agreed amount could be paid annually with the private operator taking the risks of the repairs and maintenance expenses.

Given the above possibilities, the functions of the TUE could change as follows:

- If the contract duration is longer then the responsibilities of a government agency in the oversight of maintenance quality comes down because it is expected that the operator will maintain the assets in good condition so as to reduce his operating costs.
• If the operator takes on a lot of the ridership/demand risk, the marketing and public relations responsibilities of the TUE would come down.

• If the operator is allowed full reimbursement for all repairs, then monitoring the quality of maintenance becomes easier as there is little incentive for the operator for delaying or not carrying out the maintenance. Timely maintenance would be an advantage to the operator in reducing his operating costs and so TUE may not have to do very intensive monitoring to check maintenance quality. All it needs to ensure is that maintenance has been carried out as claimed and reimbursement is not claimed for things not done at all. This may become a problem especially during the last few years of the contract period.

Apart from the above, their would be little change in the role of the TUE and it would continue to perform more or less the same responsibilities as it will be required to perform under the current contract. As such, there may not be a need to make any changes in the institutional arrangements in either Tier 1 or Tier 2.

Concession to a Private Party (including a worker’s cooperative)

A concession contract generally runs over a much longer time frame - of the order of 30 years. Besides, in concession arrangements the risks borne by the private concessionaire are far greater. Typically, both the demand and cost risks would be borne by the private concessionaire and a government entity would have little to do on that.

In such a situation, the responsibilities of a government entity would mainly revolve around coordination and strategic planning. The responsibilities with regard to the Tren Urbano operations would only be in enforcing the safety and environmental regulations. Apart from this the only other requirements may be in terms of ensuring that any commitments the government may have made, such as uninterrupted supply of power or provision of adequate security cover, are fulfilled. The failure of the government to meet these commitments may cause a
loss to the concessionaire and would open the government to damage suits and a host of tort claims.

The concession agreement could have certain requirements that the concessionaire may have to meet, such as minimum service standards or hours of operation. Payment of a committed government subsidy, if any, may be contingent on these standards being met. As such a government entity would have to make sure that these standards are met. Further, as the term of the concession comes to a close there will be need to closely monitor the quality of maintenance to make sure that the assets are not allowed to deteriorate to such an extent that it becomes very difficult for he next concessionaire to take it over.

Hence, a monitoring and control agency will be required, though the degree of oversight may not have to be a close as in the case of a management contract. In such a situation, it may be more economical to merge TUE with the PRHTA and let it function as a division within the PRHTA. By doing this, a lot of administrative expenses can be saved and no special benefits would accrue by retaining it as a separate body.

Once again, the MTPPG, or any other coordinating body, will continue to be needed and no change in its structure is called for.

**Outright Sale or Divestiture**

In case the government chooses to sell off the assets to a private operator, and let the system be operated under private ownership, the government may not be able to intervene in any matter except in the enforcement of safety and environmental regulations. There would still be a coordination and strategic role for a government entity but there would be no role in managing the Tren Urbano
operations. In such a situation, the TUE can be wound up. The MTPPG will, however, continue to be needed with its Tier 1 responsibilities remaining unchanged.

**Conclusion**

In conclusion, it can be stated that after 5 years the government will have to take a decision on whether to extend the current O&M contract with Siemens or to go in for a fresh procurement strategy. Even if they decide to extend the contract to 10 years, a fresh look at the procurement strategy will be necessary at the end of 10 years. Whatever procurement strategy is adopted, the MTPPG will have to continue, to discharge its Tier 1 responsibilities. However, the status of the TUE would depend on how the Tren Urbano operations are procured. The options are as follows:

<table>
<thead>
<tr>
<th>Procurement Option</th>
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<td>TUE can be merged with PRHTA and allowed to function as a unit within PRHTA</td>
</tr>
<tr>
<td>Divestiture</td>
<td>Wind up TUE</td>
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</tbody>
</table>
Chapter 8

ABILITY TO SUE AND BE SUED

Chapter 8 contained a theoretical background on "Sovereign Immunity" and the associated issue of "Tort Liability". It explained situations in which transit agencies could cause a loss or injury to passengers, abutters or its employees and argued for certain limits on the liability of such transit agencies.

These suggestions are equally valid in the case of the Tren Urbano and the following measures appear to be required:

- Limiting the amount for which the TUE or the operator (Siemens in this case) can be sued for any damages or injury caused to anyone and limiting the time within which suits for any cause of action can be brought against it
- Providing protection under the doctrine of sovereign immunity to the employees of TUE and the private operator.

Limiting Liability

As argued earlier, it is necessary to provide a limit on the amount for which the Tren Urbano system can be sued because the system will be operating at a cost that is far in excess of the revenues it is likely to generate. In rendering such services, it has to be treated differently from a service that operates for commercial profits. Further any financial awards against the Tren Urbano will ultimately have to be borne by the general taxpayers – the "Sovereign" in a democratic set up. Additional advantages in limiting the amount for which the TUE or Siemens can be sued would be in securing better terms on liability insurance policies. The project will also be able to secure better terms on bids for future...
concessions or management contracts. This would also reduce the burden on the taxpayer.

Accordingly, it would be advisable to bring in legislation fixing a limit on the amount for which suits for damages can be brought against the Tren Urbano Entity and Siemens.

The limits currently in force, in the different States of the US, are given at Appendix 6. These limits apply to government agencies and to municipal bodies but not to separate authorities like transit authorities. However, they can be made applicable to transit authorities as well, with some modifications in the ceilings, if necessary.

It is recommended that a ceiling of $250,000 be fixed on the suits that can be brought against the Tren Urbano system. This is higher than the ceiling of $150,000 that exists for other government entities in Puerto Rico but is being suggested in recognition of the greater potential for a loss or damage in transit operations.

Protection to Employees Against Suits

It is necessary to attract capable people to manage the Tren Urbano system. The nature of the tasks in managing public transit systems is such that mistakes can cause severe damage to people and there is a high possibility of suits being brought against operators or the managers of the system. Mistakes can take place due to bonafide errors of judgment or due to utter callousness and negligence. Besides, managing public systems often requires decisions that may hurt a few, even if they are in the larger good. In such cases, the people who are hurt may bring suits against the decision-makers. The fear of such suits may cause good and competent people to shy away from such risky jobs or avoid taking difficult
decisions. While this may help them in guarding against suits, it will not be in the interest of the system or the larger good. It will be demoralizing to the individual employees and prevent them from giving off their best. Hence, it is important that the public agency absorbs the risk of such suits and its employees are protected from being sued.

Providing immunity to individual employees and permitting suits only against TUE or the operating company can do this. To guard against misuse of this facility and to prevent employees from becoming negligent, the employer should look into why the damage was caused and to take action against its employees if they are found to have been negligent in their work or incapable of performing a certain task. It would also provide an added motivation for the employers to make sure that their employees are properly trained before they are entrusted with critical responsibilities.
Chapter 9

ABILITY TO RAISE FINANCES

Need for Finances
The O&M contract requires the payment of an annual operating fee to Siemens, ranging from $27 million to $35 million. Siemens is also to be reimbursed for carrying out any repairs that cost more than $25,000. In addition, TUE will have its own administrative costs and other incidentals that it may have to incur. Hence, adequate funds will be necessary for meeting the above needs.

Flow of Funds
It is envisaged that the PRHTA would credit a fixed annual, or monthly, amount to the account of TUE from out of its revenues, so that TUE can discharge its obligations. However, it is unlikely that the expenses TUE has to incur would remain steady. In particular, expenses on repairs and maintenance can not be predicted definitely and some monthly or annual fluctuations are bound to occur. Further, unexpected surges in financial needs due to a variety of reasons are quite normal in operations of this sort. Unexpected breakdowns or accidents can take a heavy toll on the finances. Costly court awards and other administrative requirements can also cause fluctuations in financial needs.

The flow of funds, as envisaged, can be pictured as follows:
As this indicates, the TUE would provide the pool into which all funds related to Tren Urbano operations are deposited and from which all expenses relating to the Tren Urbano operations are drawn. As such, fares will accrue to the TUE, as would any revenues from franchising, retail outlets and advertising. Revenues from property development would also accrue to this pool. The expenses towards operating fees payable to Siemens, the expenses on repairs and TUE's own administrative expenses, would all be met from this pool.

Since there is no dedicated revenue base for the TUE, it would be necessary for an agreed sum to be transferred to it by the PRHTA. This would have to be its main source of funds for meeting any gaps in O&M needs and earnings from the fare box. This amount could either be agreed upon contractually between the PRHTA and TUE or could be part of an enabling legislation for the TUE. In fact, proceeds of an existing tax like the motor vehicles registration fee could be earmarked for the TUE instead of the PRHTA. This tax nets about $27 million
annually and closely matches what the Tren Urbano operations would need to begin with. Future increases in Tren Urbano needs could be met from increases in fare revenues and revenues from other commercial activities.

**Rationale for Vesting TUE with Powers to Raise Finances**

Given the uncertainties in financial needs for the Tren Urbano, especially the fluctuating requirements, it would be advisable to insulate PRHTA's budget from such variations. This would enable the PRHTA to better plan its own work program and not be subject to the uncertainties of the Tren Urbano needs. This would be possible if TUE could have the authority to raise finances, through borrowings, to meet sudden surges in demand and invest surpluses, if any, for meeting future contingencies. Being a separate legal entity it would have the capability to raise loan finances, but an authorization in the enabling statute would be necessary.

The objective at this stage is not to vest it with powers to raise large amounts as may be necessary for capital projects. Such large borrowings would need guarantees from PRHTA or the Government, which may not be warranted at this stage. Hence, the idea for the present is merely to enable it to borrow short-term funds to finance working capital deficits.

**Commercial Exploitation of Fixed Assets**

The concept of "Transit Oriented Development" is fast becoming attractive for planners as a method of not just raising resources but also as a way of attracting more riders to a transit system. TUE would own valuable fixed assets such as its lands and buildings, at premium locations. These assets can be gainfully exploited for such transit-oriented development by developing commercial and residential property on them. By doing this it may become possible for TUE to substantially reduce its dependence on the PRHTA budget for meeting Tren
Urbano needs. In fact, this should be the long-term objective so that Tren Urbano operations can be financed from fares and other Tren Urbano related revenues.

Such commercial exploitation of property could either be undertaken directly by TUE or could be undertaken in collaboration with private developers. Undertaking the development by itself would entail TUE developing the property and then selling or leasing it for a financial gain. This would have the advantage of TUE retaining greater control on an integrated vision for transit oriented development. However, this also means greater risk in a business venture that is not meant to be TUE’s primary responsibility.

An alternative will be to lease its property to private developers who could be allowed to develop commercial or residential property. This has the advantage of being less risky for TUE though the future business interests of such property developers may not exactly match TUE’s long term vision for transit oriented development.

Given the current preference for private procurement of much of the transportation infrastructure in Puerto Rico, it would appear to be more in line with current trends if commercial property development is also taken up in collaboration with private property developers. It would be possible to lay down conditions in a manner that would narrow likely gaps between TUE’s vision and private developer interests.

A question that would arise here is whether there should be any limits on the property development that the TUE can go ahead with. This question becomes more important if property development requires the TUE to borrow funds with guarantees from the PRHTA or government.
The suggestion is that while all efforts should be made to maximize earnings and ridership through such property development and reduce dependence on the PRHTA’s budget, the following restrictions should apply:

- TUE should be allowed to undertake such development only on the land belonging to the Tren Urbano system. If fresh land is to be acquired it should seek the approval of the PRHTA and the government before doing so.
- There should be agreed ceilings on how much it can borrow for such purposes
- There should also be an approval procedure under which PRHTA and government scrutinize the property development plans of the TUE before they are implemented.

The objective of these restrictions is to ensure that the TUE does not detract from its primary objective of managing the Tren Urbano and get into a totally new venture.

**Recommendations**

It is, therefore, suggested that TUE be:

- Directly credited certain levies, which may be earmarked to meet the Tren Urbano needs. If possible, TUE may be authorized to even collect these levies.
- 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. Its plans for such exploitation should be approved by the PRHTA and government before they get implemented.
Chapter 10

DISPUTE RESOLUTION

Potential Areas of Dispute

Given the structure of the O&M contract, there are several areas where disputes may arise between the government/TUE and Siemens. Among them are:

Cost of repairs
As per the contract, expenses incurred on repairs that cost more than $25,000 alone will be reimbursed to Siemens. Further, these repairs should not be on account of any negligence on the part of Siemens, either during design, construction or O & M. Given the contract structure, Siemens may be tempted to delay repairs till such time as the damage gets aggravated to a level at which its repair would cost more than $25,000. It would be very difficult to establish that Siemens did not carry out the maintenance in time and thus disallow a reimbursement claim. It will also be very difficult to establish whether the repair was necessitated due to any negligence of Siemens. Hence, disputes may arise in settling such claims.

Cleanliness
Siemens is required to clean the interior and exterior of the train at specified intervals. They are also required to clean every spill on the train and on the platforms within half an hour of its occurrence. They are liable to penalties if this is not done. It is virtually impossible to monitor such levels of cleanliness, particularly when there is no definition of a spill. Hence this is another potential area for disputes to arise.
Inability to secure incentive ridership for reasons beyond the control of Siemens

Siemens is entitled to an incentive payment if they are able to secure a ridership higher than certain prescribed levels. It may so happen that services get disrupted due to reasons beyond the control of Siemens, for example power failure, and Siemens loses out on ridership. It can then make a claim for being compensated for this loss. This will also be a potential area for disputes.

Failure to provide police cover for security

While Siemens is required to provide a security force, this private force is unlikely to have the powers to detain or otherwise deal with trouble makers. It will have to depend on the timely provision of the State police force, which is the responsibility of the government. Any failure in such timely provisioning of the police force may lead to situations that would cause a loss to Siemens and they may make a claim for being compensated.

Compensation for changes in the level of service

While the level of service has been specified in the contract, there is a provision for this to be changed depending on the need. The base compensation can also be changed, though only if Siemens is able to establish that it actually means an additional cost to them. Similarly reductions in the base compensation would require establishing that Siemens will actually incur a saving. There are information asymmetries that will come in the way of trying to establish if changes in the base compensation are justified.

Disputes could also arise between Siemens or the Government and

- Employees, over wages and other employment benefits
- Passengers or the general public, for causing injury or damage, in the form of claims for compensation
Dispute Resolution Methods

The usual process for resolving a dispute is through negotiations. Often negotiations do not lead to a mutually acceptable solution and so other dispute resolution mechanisms have to be adopted. The contract does not provide for any specific dispute resolution mechanism or procedure. This means that the parties can choose any method they like, i.e., choose between mediation, arbitration or litigation.

While litigation is the traditional method of resolving disputes which fail to be settled through negotiation, it is time consuming and expensive. Besides, judicial decisions can be appealed against and they lack finality. As against this, mediation and arbitration offer simpler, quicker and cheaper methods of dispute resolution, even if the procedures are comparatively informal. A note on what mediation and arbitration involve is at Appendix 14.

Given the possible methods for the resolution of disputes, two questions that arise are:

- Which form of dispute resolution should be adopted, and
- Whether a permanent dispute resolution machinery needs to be in place.

Dispute Resolution Method to be Adopted

With regard to which dispute resolution method would be most appropriate, it would be too early, at this stage, to make a suggestion. Choice of a resolution method depends on the nature of the particular dispute, the history of resolution methods used in the past as well as the extent of mutual understanding and mutual respect that exists between the parties. This will only evolve over time and after the Tren Urbano has started operations. Hence, this question can appropriately be addressed only at that stage. The relative advantages and
disadvantages of the different resolution methods would, no doubt, have to be kept in mind.

However, it will be necessary to enable the TUE to opt for arbitration, if this happens to be the more appropriate option for resolving a certain dispute.

**Need for a Permanent Dispute Resolution Machinery**

The advantages of having a permanent dispute resolution machinery are the following:

- It provides greater confidence to the private operator as it can make a better assessment of its chances of success in a dispute. It is more certain about the outcome and is not faced with a situation of complete uncertainty.
- It facilitates faster resolution of disputes as time is not lost in selecting an arbitrator or mediator and going through long procedures, at high costs, in finding one.
- It may, at times, help in dispute avoidance, if the mental make up of a permanent arbitrator is known and an assessment can be made of the likely award. In such a situation, it may be possible for the parties to arrive at a settlement by negotiation itself.

As against the above the advantages, the disadvantages are:

- The considerable expense, particularly if the number of disputes is not very large. It may be cheaper to find an arbitrator or mediator each time or even opt for litigation rather than spend on a permanent dispute resolution machinery.
- Even simple matters may get referred to the arbitrator or mediator as both parties may feel that since they are spending on having such an agency it would be best left to that agency to resolve the issue. This, is however, not a very healthy trend as disputes are best settled by mutual discussion and it is such resolution that leads to more lasting solutions and a mutual respect for each other.
- If the arbitrator or mediator has a strong ideological bias, it can lead to consistent decisions in favor of one party and be damaging to the other party.
Contract Renegotiations

The experience of privatization in Argentina has been that contracts often needed to be renegotiated even after they were agreed and settled. This was because of the difficulties in visualizing every situation and providing for it in the original contract itself. As and when new and unforeseen developments take place, renegotiation becomes necessary.

In the case of the Buenos Aires metro, the increase in ridership was much higher than projected and so the contracted requirements for capital improvements were found to be inadequate\(^\text{24}\). In other situations, unexpected reduction in tariffs by competitors led to a substantial fall in the demand and the negotiated terms were no longer viable.

Renegotiating competitively bid contracts with a single party may seem antithetical to the whole idea of concession contracting. However, they are unavoidable in a fast changing environment as in the case of Argentina. As a result, contracts have to be looked upon as living documents, which can be modified, based on need. Traditional ideas of a contract being not renegotiable once they are agreed upon and settled have to be changed. One party trying to enforce an agreed upon contract may be legally in correct in doing so but does not serve the overall social objective.

This raises the question of how to fairly renegotiate such contracts, where competition is no longer possible.

\(^{24}\) World Bank Document, Argentina Transport Privatization and Regulation: The Next Wave of Challenges, June 1996
Experts have advanced three methods. One is the U. S. or British style regulatory commission with the discretion to make fairly broad changes in the terms of the concession as long as the concessionaire is allowed to earn a rate of return on his investments similar to that earned in comparable private but unregulated industries. This option is often criticized both because the technical tasks are difficult and because the commissions can be captured by various interest groups and politicized.

A second option is to rely on normal commercial contract law and the incentives and opportunities it creates for the voluntary renegotiations of contracts that no longer serve the interests of either party. In the US, contract law is focused on enforcement and the judges and courts are reluctant to get involved with issues of renegotiations. Enforcement is a fair threat for renegotiations, especially in cases where it is in no one’s interest to have the contract enforced in its present form.

An intermediate option is to establish a special commission to arbitrate such disputes using fair but clear rules. The key, then, is to find such rules. One method may be for the arbitrator to pick between the best and final offers of the two parties, in the event of an impasse. Since no further modifications are possible, both parties would have a strong incentive to be reasonable and to recognize each other’s legitimate interests.

In the Tren Urbano context, it is too early to say whether any renegotiation of the O&M contract will become necessary. However, with the experience of privatizations elsewhere, it would be good to recognize the fact that the need for renegotiation is a distinct possibility. If it becomes necessary, the option of having an independent arbitrator or commission appears to be fair and reasonable one.

Conclusion

The conclusion, therefore, is that a permanent dispute resolution machinery is not necessary to begin with. If, however, the volume of disputes becomes too large and a lot of time is lost in selecting arbitrators/mediators each time, it would be worthwhile having a mutually acceptable and qualified arbitrator/mediator retained on a more permanent basis. If several renegotiations of the contract become necessary, having such an independent arbitrator would be advantageous.

In any case, 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.
Chapter 11

CONCLUSIONS AND IMPLEMENTATION

The objectives of this research with regard to the Tren Urbano have been the following:

- To recommend institutional and administrative arrangements that would best meet the needs of providing an efficient public transportation system in the San Juan Metropolitan Area (SJMA).

- To recommend an organizational structure and its positioning in the overall transportation planning and provisioning set up of Puerto Rico, for governmental oversight of the Tren Urbano system.

- To identify the changes that would be necessary, in these organizational and institutional arrangements, if the future O&M procurement strategy changes.

- To suggest special legislative and administrative provisions that may be necessary to enable any new organization that may be set up with regard to its capacity to sue and be sued, ability to raise finances, and resolve disputes.

The conclusions and recommendations with regard to each of these are summarized in the following sections.

Institutional Arrangements

A two-tier structure for the management and control of transit services is recommended. One tier would 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, an office, which could be called the Metropolitan Transportation Planning and Provisioning Group (MTPPG), should be constituted. It can initially be set up through executive action but should have legislative backing subsequently. Such legislative backing would give it the
needed authority to co-ordinate among the different modes as well as to effect integration 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 following institutional possibilities were examined:

- Unit within the Department of Transportation
- Unit within of the PRHTA
- Subordinate office of the DTOP
- Separate organization subordinate to the PRHTA
- New Tren Urbano Authority
- New Tren Urbano Company
- A private company (other than Siemens)

The best alternative was found to be an entity that would be dependent on the PRHTA. The advantages of this arrangement were seen to be the following:

- Day to day operations control can be separated from strategic planning and coordination.
- It would have a more effective say in a coordinating forum
- It would benefit from the resources 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.

Among different alternatives for an agency that is dependent on PRHTA, an entity, which has a legal identity of its own is preferable, for the following reasons:

- 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.
- If it is set up as a separate entity then it can easily be expanded or contracted to meet the future needs.

This new organization, which would be subordinate to the PRHTA but would have a legal identity of its own, is being referred to as the Tren Urbano Entity (TUE) for convenience.

**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:

<table>
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</tr>
<tr>
<td>Divestiture</td>
<td>Wind up TUE</td>
</tr>
</tbody>
</table>

**Capacity to Sue and be Sued**

With regard to the capacity to sue and be sued, the basic questions addressed have been:
• 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

• May help to secure better insurance terms

• May help to get better terms on future bonds

As against the above, the main disadvantage would be that it may make service providers less cautious and compromise on safety issues.

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

On balance, the following appear desirable:

• A statutory limitation of $250,000 should be the maximum amount for which suits can be brought against the Tren Urbano Entity or Siemens with regard to the Tren Urbano operations.

• Employees of 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 TUE for the following:

• Pay annual contracted fee to Siemens

• Meet repairs and maintenance costs

• Meet its own administrative costs

It is recommended that TUE be:
• Directly credited certain taxes, such as fees on motor vehicle registrations, to meet the Tren Urbano needs.

• 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.

• Dedicating the motor vehicle registration fees or some other dedicated revenue stream, directly to the new entity. (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).

• 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.
## Appendix 1

### Urban Population Growth in Selected Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Urban Popln. in Millions (1995)</th>
<th>% of total</th>
<th>Av. annual % growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
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<td>83</td>
<td>88</td>
</tr>
<tr>
<td>Australia</td>
<td>15.3</td>
<td>86</td>
<td>85</td>
</tr>
<tr>
<td>Bangladesh</td>
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<tr>
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<td>17</td>
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<td>52.4</td>
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<tr>
<td>United States</td>
<td>200.5</td>
<td>74</td>
<td>76</td>
</tr>
</tbody>
</table>

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26 World Development Indicators, 1997, The World Bank
Privately Procured Rail Transit Systems:
Some Examples

Buenos Aires
Prior to 1990, Ferrocarriles Argentinos (FA), a wholly government owned company, operated a national railroad network of about 35,000 kms, employed 92,000 people and was losing about $1.4 billion annually. Of these about $585 were incurred by the freight services, about $350 by the inter-city passenger services and about $465 million by the metropolitan commuter services. These losses represented a major drain on the treasury.

In 1990, the government decided to embark on an ambitious privatization program, with the objective of reducing the financial burden of the railway system. A series of policy decisions adopted over the next three years ultimately resulted in a two-stage railway reform strategy. In the first stage, the fully integrated and centralized network was unbundled and split into separate businesses for freight services, intercity services and metropolitan commuter rail services. The second stage involved offering the operations to private consortia through concessions.

Therefore, as part of the first stage, a new state-owned company, Ferrocarriles Metropolitanos S.A. (FEMESA), was created to run the suburban passenger services, which were split into seven lines. The Buenos Aires metro (SBASE) was included with one of the suburban lines. In the second stage, each of these seven lines was concessioned for private operation.
The concessioning of the underground metro posed unique problems. The system was old and obsolete and needed complete rehabilitation. Investment needs were estimated at around $400 million. Further, unlike the freight concessions, the suburban rail operations were expected to need public financial support, not just to undertake the much-needed rehabilitation but also to operate the services. The government identified the amount and type of investments needed for each of the lines and the private operator was expected to undertake this rehabilitation program.

The main features of the metropolitan rail concessions were as follows:

<table>
<thead>
<tr>
<th>Length</th>
<th>10 years (20 for the metro) plus an optional 10-year extension indefinitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Ownership of fixed facilities would remain with the State</td>
</tr>
<tr>
<td>Labor</td>
<td>Concessionaires could introduce whatever labor practices they considered necessary to improve productivity. Labor redundancy would be financed by the government</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>The concessionaire, who would also be responsible for the maintenance of the track and rolling stock, would perform all commercial operations. The concessionaire would pay a fee for the use of the infrastructure. The government would set service levels and service quality for each concession.</td>
</tr>
<tr>
<td>Pricing</td>
<td>The government would set the maximum fares, which would be subject to automatic increases according to the service quality achieved. Non-achievement of quality levels would result in financial penalties.</td>
</tr>
<tr>
<td>Capital Investments</td>
<td>Concessionaire would undertake project-specific annual investments as specified in the terms of the concession. The government would finance these.</td>
</tr>
<tr>
<td>Financial performance</td>
<td>The concessionaires would pay a fee or receive a depending on the financial outcome of the operations. He would have to quote the amount of money required to execute the investment plan defined by the government.</td>
</tr>
</tbody>
</table>

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Given this, the criterion used to award the metropolitan railway concessions was the extent of subsidy required from the government. The subsidy was measured as the first ten-year present value of the annual subsidy flow required to operate the line and undertake the investment plans, net of the annual fee offered for the use of the fixed assets.

The metro has been concessioned to METROVIAS who took over operations from January 1st, 1994. The contract provides for a subsidy of $438.4 million from the government.

The government established specialized regulatory commissions to run the competition, conduct final contract negotiations, and then monitor and enforce the contracts. These commissions did not have the broad discretion to set rates or unilaterally modify the contracts. The one exception, however, was the freight railroad commission, which was granted broad powers to resolve disputes between the freight concessionaire and provincial authorities, who wanted to run inter-city passenger trains over freight tracks, as well as the right to overturn rail freight rates that were not “fair”.

The concession for the metro is supervised by the Unidad de Coordinacion of the Programa de Restructuracion Ferroviaria within the Ministry of the Economy. The government also hopes to create a new regulatory body to supervise all modes of urban transport within the Buenos Aires metropolitan area.

In general, a separate oversight agency was established for each concession program. There has been some debate over the large number of enforcement commissions. It is being felt that reducing the number of such enforcement commissions may have an advantage in attracting higher quality commissioners.
and staff as well as resisting capture by interest groups. It would also prevent the available talent from being spread too thinly.

Data from the revenue passengers carried after the first few months of private operations indicated an impressive growth over the traffic levels experienced during the same period of the previous year. While one of the reasons for this growth was the anti-fare evasion measures adopted by the operator, ridership also increased due to improvements in customer services, security and safety.

**London**

British Rail had been created in 1948, when Britain's private railroads were nationalized. It provided four main types of services:

- Freight
- Medium distance passenger services - regional
- Long distance passenger services – inter-city
- Commuter rail services, particularly in and around London

Over the years, British Rail's market share declined rapidly in all its services, due to competition from other modes. In the commuter services, however, the decline was comparatively lower as road congestion made auto and bus modes less attractive. Despite the privatization of the coal, gas, electricity and telecom markets in the UK during the 1980s, British Rail remained untouched, largely due to the sheer complexity of privatizing this industry. However, in 1992, a decision was taken to privatize British Rail as well. The Railway Act of 1993 laid down the policy framework for its privatization.

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28 Preston, J and Wheelan, G: "The Franchising of Passenger Rail Services in Britain", paper presented at the Fourth International Conference on Competition and Ownership in Land Passenger Transport, July '95
The strategy was to separate operations from infrastructure. Infrastructure itself was divided into fixed facilities and vehicles. While the fixed facilities, like track, stations and yards, would be owned and maintained by one company (Railtrack), separate companies would own and maintain the rolling stock. While the freight services were sold different private companies, passenger services were franchised through competitive bidding.

Such a privatization strategy called for certain regulatory and monitoring institutions. The following two important offices were set up:

**Office of the Rail Regulator** - To prevent Railtrack from abusing its potential monopoly power as the sole infrastructure provider, the government created the office of the Rail Regulator. The Rail Regulator was appointed for a period of five years and would be free from direction from the Secretary, being guided mainly by his statutory obligations.

The Rail Regulator had two main instruments for controlling Railtrack and the operating companies. One was the authority to issue a license to each operating company, which specified the operator's general and network obligations. The second was the authority to review the access agreements between the operating companies and Railtrack. These agreements specified not just the access fee to be paid but also the times during which the infrastructure would be available. They also established penalties for violation of the terms of the agreement.

**Office of the Franchising Director** - The Franchising Director was responsible for administering and supervising the passenger service franchises. The

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Nash, C: "Rail Privatization in Great Britain", paper presented at the Fifth International Conference on Competition and Ownership in Land Passenger Transport, May, '97

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Secretary, whose instructions he was obliged to follow with regard to the desirable level of service and the amount of public subsidy available, appointed him. However, the Franchising Director specified the other details like some of the fares, frequencies and other characteristics of the services required. He was responsible for the invitation of bids, award of franchises, supervision of performance and assessment of the penalties for non-compliance.

The Health and Safety Executive, a government agency responsible for enforcing health and safety standards throughout the British industry, would continue to monitor and enforce existing railway safety laws. It would license train crew, inspect conditions, investigate accidents, and order improvements where needed.

**Manila**

Line # 1 of the Manila Light Rail Transit System, also known as "Metrorail" was constructed in October 1981, after the Philippines and Belgium signed an economic and technical cooperation agreement for financing this project. A turnkey contract was then awarded to the "Association for Manila LRT Construction", a Filipino-Belgian consortium composed of ACEC (Ateliers de Constructions de Charleroi), BN (Construction Ferroviaires et Mettaliques), TEI (Tractionel Engineering International) and TC (Transurb Consult), that provided the cars, signaling, power control, telecommunication, telecommunications, training and technical assistance. A lone Philippine Contractor, the Philippine National Construction Corporation (PNCC) undertook all the detailed engineering and civil works construction of the system.

To assume responsibility for the management of the system, the Light Rail Transit Authority (LRTA) was created by virtue of Executive Order No. 603 on July 12, 1983.

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Based on information obtained from Evangeline M. Razon, Officer-in-charge, Light Rail Transit Authority, Manila.
1980. It was set up as a government owned and controlled corporation, attached to the Department of Transportation and Communications (DOTC). It is governed by a nine-man Board of Directors, with the Secretary of the DOTC as Chairman.

Subsequently, Meralco Transit Organization, Inc. (METRO), a subsidiary of corporation of MERALCO, a private corporation engaged in energy related businesses, was formed on July 31, 1980. METRO was contracted to manage and operate the system on a day to day basis under a ten-year management and operating agreement. However, on June 30, 1989, METRO became a wholly owned subsidiary of LRTA resulting from MERALCO's corporate decision to divest itself of non-energy related ventures.

METRO still operates the LRT line # 1 system but it now functions under the LRTA.
Appendix 3

Transit Planning in the Twin Cities of Minneapolis and St. Paul

In 1984, a Minnesota legislative study on metropolitan transit\(^{30}\) concluded that the transit planning functions were not properly allocated among the various agencies of the government. It believed that the region's public bus operator, the Metropolitan Transit Commission (MTC) could not objectively plan new transit services to meet local needs. As a result, the legislature established a transit planning structure that is unique among large metropolitan areas in the US.

The legislature limited the MTC to transit operations and short term planning, allowing the region's metropolitan planning organization, the Metropolitan Council, to undertake long range transit planning and policy setting. In addition, the legislature established a third agency, the Regional Transit Board (RTB), to conduct mid-range planning, implement the policies and plans of the Metropolitan Council, and arrange for transit services.

While some people distinguish the three transit agencies by the scope of their planning -

- Metropolitan Council does long range planning
- RTB does mid-range planning, and
- MTC does short range planning

others distinguish them by their main functions -

- Metropolitan Council sets the region's overall transit policies

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RTB arranges for transit service and implements council policy

MTC operates the main bus system

The RTB also contracts with two administrative agencies for Metro Mobility and ride share services. The RTB has also established advisory committees for these services.

This complex structure has, however, led to problems of inter-agency coordination, accountability and communications, which are among the major challenges that it faces.
Appendix 4

Functions of the Major Departments in MBTA

The distribution of work among the main departments of the Massachusetts Bay Transportation Authority (MBTA) is as follows:\(^{31}\):

Top Management

Office of the General Manager – the General Manager, guided by Administration goals and Board of Directors policy, directs the MBTA's daily operations and administrative functions, and charts the Authority's long term strategy. His office establishes management policies and practices and sets standards of excellence.

Operations

Subway Operations Department – this department provides transit service on four subway lines, which carry over 616,600 riders each weekday. Separate management teams, under the direction of the Director of Subway Operations oversee the transportation and maintenance activities for each line, while the Operations Control Center provides support for these services.

Bus Operations Department – This department is responsible for operating over 1,000 diesel buses and 50 trackless trolleys, providing services on 159 routes and transporting over 84 million passengers annually. Eight facilities provide operations and maintenance and others provide major bus overhauls, in addition to maintaining all of MBTA's non-revenue vehicles.

\(^{31}\) MBTA Financial Year 1997 Budget
**Railroad Operations Department** – This department oversees the operation and scheduling of commuter rail services on 11 lines, serving around 98,000 customers each weekday. It provides its services through a series of contracts with a third party, currently Amtrak.

**Private Carrier Services Department** – This department administers Water Transport and Private Carrier bus services.

**Office for Transportation Access** – This office manages transportation services for the disabled and the elderly.

**Engineering and Maintenance Department** – This department maintains and repairs the MBTA infrastructure, including 183 miles of track, cleans and repairs bus shelters, stations, car houses and garages. It also maintains the power, signaling and communication systems.

**Financial**

**Revenue Department** – This department has the responsibility for all of MBTA’s revenue collection and distribution system.

**Budget office** – This department implements and monitors the allocation of financial resources within the MBTA.

**Audit Services** – This department examines MBTA operations and outside contracting activities to assess risk, improve functional effectiveness and efficiency, identify cost savings, and detect fraud, waste and abuse.
Treasurer/Controller – This office manages the Authority's financial resources. These include payments, borrowings, investments, accounting, preparation of financial statements, billing, collection of receivables and purchase of insurance.

Planning & Projects

Planning Department – This department creates long term strategic plans for capital investment and systems operations and evaluates short-term service and schedule improvements. It analyzes the feasibility and impact of potential capital projects.

Design & Construction Department – This department administers and manages all construction projects under the MBTA's Capital Improvement Program. Its responsibility includes design, project management and scheduling as well as the coordination of environmental, operational and community relations activities relating to the program.

Personnel

Human Resources Department – This department performs employment services in response to inquiries and applications received from the general public. Its employment and training division is responsible for employee training and development, employee evaluation, testing and recruitment and the employee recognition programs. It also provides a number of vital services for the Authority's retired employees.

Industrial/Labor Relations Group – This group encompasses three departments that work together to fulfill many of the Authority's statutory and contractual obligations to employees and their unions and to recommend, develop and enforce policies and procedures designed to promote a healthy and productive
work force. The departments it encompasses are Labor Relations, Medical Operations and Worker’s Compensation.

Organizational Diversity – This department monitors the working environment of each of the 6000 employees to ensure an environment free from harassment and discrimination of any nature.

Marketing & Public Relations

Public Affairs Department – This is responsible for media relations, customer and employee communications and community relations.

Marketing Operations – This department supports the Authority’s mission by attracting and maintaining riders while improving their access to travel information.

Other Support Services

Police Department – The primary role of this department is to provide police services to the patrons and employees of the MBTA. It is responsible for the protection of life and property, the prevention and detection of crime, the arrest and prosecution of violators and the preservation of peace.

Safety Department – Their responsibilities include vehicle/system safety inspections, industrial hygiene and construction safety oversight, passenger safety awareness programs, training, product/plan specification reviews, accident/incident investigation, emergency preparedness drills, safety data analysis, and safety policies and procedures.
**Real Estate Department** – This department is responsible for the purchasing, selling, leasing, and licensing of property to support service expansions and cost efficient operations.

**Law Department** – It provides legal counsel to all levels of the Authority’s operations and prosecutes and defends the Authority’s legal rights in state and federal courts. The department is divided into four areas, covering General Law, Trials and Claims, Construction Contracts and Real Estate.

**Materials Department** – This department purchases, receives, stores and distributes materials and equipment and supplies to support the activities of all departments.

**Information Systems Services** – This department manages information technology at the Authority to help improve service quality, monitor service delivery and promote the efficient use of resources.
Appendix 5

Summary of Important Cases Cited in Sovereign Immunity Literature

Dalehite V. United States, 346 US 15 (1953)

The US decided to ship Fertilizer Grade Ammonium Nitrate (FGAN) to several countries in Europe as a policy to help them grow more food, after World War II. Ammonium Nitrate is a component found in explosives.

Two consignments that were loaded onto ships in June 1947 resulted in explosions and fire that claimed 560 lives, injured 3,000 people and caused property damage of the order of $200 million. The government was sued for negligence.

The plaintiffs claimed that the government had failed to exercise due care by:

- Discontinuing the testing of FGAN when tests at that point indicated "suspected but unverified" dangers
- Packaging the FGAN at temperatures that were too high, as also packing them in paper bags
- Ignoring the history of unexplained fires and explosions involving ammonium nitrate, and
- Failing to warn by labeling the sacks as "fertilizer" without cautioning about the explosive nature of the product (the cause of the fire was suspected to be due to a smoldering cigarette left by a longshoreman)

While the trial court ruled in favor of the plaintiffs, awarding a compensation of $75,000, the judgement was overturned in appeal at the Supreme Court. In the Supreme Court, the question narrowed to an interpretation of the discretionary
exemption clause, i.e. whether the decision to stop testing FGAN or bag it at high temperatures or label it as "Fertilizer" were acts of discretion within the meaning of the discretionary exemption clause. In a four to three decision, the court said that the "discretionary exemption" clause was meant to make immune acts of discretion in the exercise of government functions. The court said that the only negligence that could be liable was the "common law torts of the employees of public agencies" such as negligence in driving an automobile. Therefore, all the claims of the plaintiffs, whether there was negligence or not, were exempted under section 2680 of the FTCA.

The dissenting note drew a distinction between acts performed by the government as part of the house keeping side of their work and policy decisions of a regulatory or governmental nature. It saw no justification in extending immunity to the house keeping type of acts as they were similar to acts performed by all citizens, with no recourse to immunity. The dissenting judges were of the opinion that the negligence involved actions akin to those of a private manufacturer, contractor or shipper who would not be immune had he been guilty of such negligence.

**Bivens V. Six Unknown Named Agents of the Federal Bureau of Narcotics**

**403 US 388 (1971)**

This is a case of "Intentional Torts" and involves the issue of immunity available to an individual employee of a public agency.

In November 1965, agents of the Federal Bureau of Narcotics broke into Mr. Bivens' house, searched him and his apartment and arrested him for alleged narcotics violations, all without a warrant. Mr. Bivens sued the agents for violation of his 4th amendment rights.
According to the 4th amendment, the right of the people to be secure in their person, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated. The district court dismissed the complaint on the ground that it failed to state a cause of action. However, the Supreme Court reversed this ruling holding that the 4th amendment operated as a limitation upon the exercise of federal power.

**Scheuer V. Rhodes, 416 US 232 (1974)**

This is another case of immunity enjoyed by public officials. Representatives of three students, who died during an alleged civil disorder on the campus of the Kent State University, Ohio, sued the Governor, certain other officials and several enlisted members of the Ohio National Guard. The district court dismissed the complaints for lack of jurisdiction and on the opinion that they were barred under the 11th amendment.

However, the Supreme Court reversed these rulings on the ground that the district court acted prematurely thus precluding any opportunity for the plaintiffs to establish a claim. The Supreme Court also held that the district court had based its judgement on the existence of absolute executive immunity, which is not correct. It held that it was necessary to investigate whether the officials acted within the scope of their duties and within the range of discretion permitted to the holders of such office.

**Wood V. Strickland, 420 US 308 (1975)**

This is a case in which some students were expelled from a school, by the school board, for illegal possession of intoxicating drinks. When the school board was
sued, it claimed immunity. The district court dismissed the complaint but the court of appeals reversed the ruling of the District Court. The Supreme Court agreed with the Court of Appeals, holding that a school board member does not enjoy absolute immunity. He is not immune from damages if he knew, or reasonably should have known, that the action he took would violate the constitutional right of the student affected, or if he took the action with the malicious intention of causing a deprivation or other injury to the student.

**Butz V. Economu, 438 US 478 (1978)**

In this case an aggrieved commodity futures commission merchant sued the Department of Agriculture for having suspended his company's registration. He claimed that he was being victimized for criticizing the manner in which the Commodities Exchange was being run.

Again, the district court dismissed the complaint on the ground of immunity enjoyed by the officials of the Department of Agriculture. However, the Court of Appeals reversed this and the Supreme Court upheld the view of the Court of Appeals. The Supreme Court held that the Department Officials did not enjoy absolute immunity but only qualified immunity, i.e. they were liable in certain cases. The court held that immunity depends on the scope of the discretion and responsibilities of the office as well as all the circumstances, as they reasonably appeared at time of the cause of action.

Since judges have absolute immunity, the court also held that those who participate in adjudication within a federal administrative agency would also, similarly, enjoy absolute immunity.
## Liability Limits in Some States of the US

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<th>Aggregate</th>
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<td>Wisconsin</td>
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Organization Chart of the Puerto Rico Department of Transportation and its Subordinate Offices

Port Authority
- Runs the Acuaexpreso ferry system

PRHTA
- Responsible for construction of highways, managing toll roads, the Tren Urbano and the Metrobus

Public Works Directorate
- Responsible for managing the roads that are not toll roads

Autoridad Metropolitan a de Autobuses (AMA)
- Runs the public bus system in the SJMA.

Driver Services Directorate
- Responsible for the licensing of drivers

Traffic Safety Commission
- Responsible for safety regulation
### Revenues of the Puerto Rico Highway and Transportation Authority

(All values in Million $)

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<td><strong>308.5</strong></td>
<td><strong>327.6</strong></td>
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</tbody>
</table>

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33 source: Presentation made by Dr. Sergio Gonzales, Executive Director of the PRHTA, at the Tren Urbano office on January 13, 1998

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Key Features of the Metrobus Contract

Parties - The contract is between PRHTA and Metromovil ACL Inc. (operator).

Duration - The first contract was signed on October 10, 1991 and expired on October 26, 1994. It was further extended up to the end of August 1998.

Scope of Work – Operation of the Metrobus route # 1, which comprises of a round trip distance of 15.3 miles, running from the Capetillo Terminal in Rio Piedras to the Covadonga terminal in Old San Juan. There are exclusive lanes on which the buses are required to run, in a contra flow direction. They are also required to maintain the buses in good condition through a cleaning and preventive maintenance program, which has been specified in the contract.

Responsibilities of Metromovil

• Metromovil is required to operate the route with buses to be provided by the PRHTA. They are also required to maintain the vehicles and obtain insurance policies for physical damage to them.

• They cannot subcontract any services without the consent of the PRHTA and will have to be fully responsible for the acts and omissions of the subcontractor.

• The following reports are to be furnished by them:
1. Monthly report on operations including number of trips, number of riders, on time performance, etc.

2. Monthly report on operations including number of trips, number of riders, on time performance, etc.

3. Monthly report on the status of buses based on the oil analysis

4. Monthly report on the preventive maintenance of the buses

5. Monthly report on fuel purchases, along with supplier invoices

6. Monthly report on the daily interior and exterior cleaning of the buses

7. Annual report certifying the status of the licenses and authorizations required from the drivers and any personnel

8. Monthly reports on service complaints by users and the action taken thereon

9. Report on the monthly audits relating to reconciliation of the daily fare revenue with the bank deposits

10. Semi-annual reports on external audit of the above reconciliation

11. Quarterly preliminary financial statements

12. Annual certified financial statements

**PRHTA’s responsibilities**

- The PRHTA has to provide the agreed number of buses for running the services. These buses would continue to remain the property of the PRHTA but will be utilized by the operator for running the contracted services. PRHTA would be responsible for obtaining the necessary permits and licenses required for the buses.
• The PRHTA has to install the fare collection system on the buses. The operator would maintain them at the cost of the PRHTA.

• PRHTA has to set the service frequency and the level of service. It has to set the fare to be charged.

• The PRHTA has to monitor performance and also the quality of maintenance. It is required to report its findings to the operator who would be required to take corrective action and also prevent such shortcomings from occurring again.

Compensation

In consideration for these services, the operator would be paid a fee of $13,888,584 divided equally over the three-year period of the extended contract. These would be paid in equal monthly installments with adjustments made for:

• Additional trips due to special events or other non-routine events
• A change in the number of base daily trips that may be required
• Penalties and deductions for non-achievement of contract terms
• Fare box maintenance costs
• Compensation for changes in the fuel price (if it changes by more than 10 cents per gallon)

A number of unit costs have been agreed upon to allow changes to be made in the compensation payable with changes in service requirements, without the need for complicated negotiations.

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Incentives:

An incentive of 1% of the annual fare box revenue is payable to the operator if:

- The ridership increases by 5% or more in any year over the ridership in the previous year
- The operator passes more than 90% of the initial garage wheel chair inspections
- The operator provides 99% or more of the monitored scheduled trips

The operator is required to share the incentive payments with his employees. The PRHTA would furnish quarterly reports on the achievement of performance standards in formats that would be suitable for display to the employees.

In addition to the incentive fee the PRHTA would share a certain proportion of the excess fare box revenue in any year over that in the previous year. For example, in the second year of the extended contract the PRHTA would share 75% of the excess fare box revenue (excess over the revenue in the first year of the extended contract) subject to a limit of $184,452. In the third year of the extended contract, the limit would be $376,097.

Penalties

There would be a penalty of $100 for each missed trip. The number of missed trips during any sample check would be taken as an indicator of the proportion of missed trips during the month. (A missed trip is defined as a trip that does not depart within 10 minutes of the scheduled departure time).

Similarly, if the percentage of trips that are not in time is more than 15% of all scheduled trips then, a penalty of $30 per trip would be assessed on the number
of trips not on time that exceeds 15% of the scheduled trips. If the percentage is less than 15% then an incentive of $30 per trip will be paid for the difference between the number of total trips not on time and 15% of the scheduled trips.

There is also a penalty of $100 for every vehicle that leaves the garage without being properly cleaned.
Appendix 11

Features of the Tren Urbano O&M Contract

**Parties** – The contract is between the Puerto Rico Highway & Transportation Authority (on behalf of the Government) and Siemens Transportation Partnership, Puerto Rico (referred to as Siemens).

**Duration** – The contract is for a period of five years with the government having the option to extend it by another five years, if it so desires.

**Scope of Work** – Siemens is required to operate and maintain the Tren Urbano system during the contract period.

**Siemens’ Rights and Responsibilities**

Siemens is required to operate the Tren Urbano system in accordance with the level of service set by PRHTA. They are also required to maintain the system as per an agreed schedule and stock all necessary inventories for this purpose.

With regard to service property, Siemens is required to maintain this in good condition and submit an annual statement of the inventory and the condition of the property. They also have the right to enforce warranties given by vendors on behalf of PRHTA.

Siemens has to submit monthly reports on the operations that would indicate the level of performance achieved.
Since the monitoring and service planning function is dependent on reliable and accurate data, Siemens is required to develop a Management Information and Decision Support System (MIDSS). This system should be capable of generating the required monthly and daily reports to be used for monitoring and service planning.

An annual ridership survey is to be carried out by Siemens (or by a separate consultant, if so desired by PRHTA) to determine general public perceptions concerning the quality and efficiency of the services, with a view to determine the changes that are necessary to make the services better. Siemens is required to submit the results of such annual surveys along with their plan for increasing ridership.

Siemens is required to maintain an ongoing training program for the entire O&M period to ensure adequate training and testing of new employees. They are also required to implement a prescribed technology transfer program during this period. This would comprise of a university program, an employee mentorship program and a peer partnership program.

Siemens is allowed to grant retail concessions in any or all of the station buildings and retain these revenues. The concession plan has to be approved by PRHTA. Advertising may also be permitted, though this has not been decided finally and Siemens is required to submit a plan. Sharing of advertising revenues between Siemens and PRHTA would be mutually settled later. All parking facilities are to operated and maintained by Siemens.

Siemens is also responsible for public relations with the communities served by the project. They are required to disseminate information, develop constructive working relationships, maintain property in an attractive condition, and minimize
noise impact on adjacent residential areas. A quarterly community impact report is to be submitted by them.

**PRHTA’s Rights and Responsibilities**

The PRHTA would be responsible for taking policy decisions regarding the operation of the project. It shall determine fares, levels and hours of service and make changes in the performance standards and service characteristics. Initial ‘level of service’ has already been prescribed in terms of the hours of operation, headway and trip time. Performance standards have also been specified with corresponding penalties and rewards depending on the standards achieved.

**Fares**

The fares are to be specified by the PRHTA and would accrue to them. However, Siemens will have to collect and account for them.

**Compensation**

For operating the system Siemens will be paid an inflation linked base compensation as follows:

<table>
<thead>
<tr>
<th>Service Year</th>
<th>Labor</th>
<th>Materials</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20,773,059</td>
<td>6,587,868</td>
<td>27,360,927</td>
</tr>
<tr>
<td>2</td>
<td>20,400,892</td>
<td>7,449,680</td>
<td>27,850,572</td>
</tr>
<tr>
<td>3</td>
<td>20,790,754</td>
<td>8,708,461</td>
<td>29,499,215</td>
</tr>
<tr>
<td>4</td>
<td>20,763,915</td>
<td>8,594,502</td>
<td>29,358,417</td>
</tr>
<tr>
<td>5</td>
<td>20,874,054</td>
<td>8,902,069</td>
<td>29,776,123</td>
</tr>
<tr>
<td>6</td>
<td>22,354,361</td>
<td>10,284,579</td>
<td>32,638,940</td>
</tr>
<tr>
<td>7</td>
<td>22,504,204</td>
<td>10,680,818</td>
<td>33,185,022</td>
</tr>
<tr>
<td>8</td>
<td>22,764,833</td>
<td>10,342,845</td>
<td>33,107,678</td>
</tr>
<tr>
<td>9</td>
<td>23,076,306</td>
<td>10,790,129</td>
<td>33,866,435</td>
</tr>
<tr>
<td>10</td>
<td>23,395,136</td>
<td>11,003,803</td>
<td>34,398,939</td>
</tr>
</tbody>
</table>
In addition, Siemens will be paid an amount of $44,291,093 as an O&M preparation fee.

As stated above, the base compensation will be linked to inflation and is to be adjusted for the labor component as per a labor index and the material component as per a materials index. The actual compensation will also depend on the performance, with an offset for shortfalls and a bonus for better performance. Performance standards have been set with regard to the following:

- On time performance
- Vehicle preventive maintenance
- Facilities maintenance
- Train air conditioning
- Exterior and Interior cleaning of trains
- Cleaning of stations
- Customer service response quality

PRHTA can require changes in the level of service through change orders. Adjustments in the compensation are to be justified by Siemens for each such change. To the extent possible these are to be based on unit rates that have been agreed upon, though no adjustment would be allowed if it is possible for Siemens to carry out the change without any increase in its costs.

Cost of all such maintenance, in excess of $25,000 per item will be reimbursed by PRHTA. Per item expenses of less than this amount have to be paid for by Siemens. However, this is applicable only if such repairs are not necessitated due to any negligence or fault of Siemens. Separable items are not supposed to be aggregated. Claims would be investigated by PRHTA and if disputed, either party
may seek a declaratory judgment in court. The limit of $25,000 is subject to adjustment for inflation each year.

**Incentives**
There is an incentive payable to Siemens for higher ridership. For each of the first two years a ridership projection would be set and, if the actual ridership exceeds this, a bonus of $0.15 per patron would be payable. For subsequent years the bonus would depend on the increase in ridership during that year when compared to the previous year.

The total compensation, including ridership incentive, can not exceed 150% or be less than 75% of the base compensation.

**Penalties**
There is a severe penalty for any misstatement on the monthly operations report ($5,000 for the first such misstatement and $10,000 for each subsequent misstatement).

**Liabilities**
Siemens is required to assume all risk of loss or damage to the service property. It has to also indemnify the government and all its agencies against all liabilities arising out of:

- Breach of contract by Siemens or any of its subcontractors
- Claims on account of violation of any laws, permits or approvals, etc. by Siemens or its subcontractors in the discharge of their obligations under the contract
• Loss or damage arising out of personal injury, sickness, etc. directly or indirectly caused in the performance of the contract or otherwise relating to the services

• Loss or damage to any property of Siemens or its subcontractors

• Claims by subcontractors against Siemens

• Loss or damage to property owned by the PRHTA or third parties, located on or about the service property and resulting from the performance of the services

With respect to any claims of a type covered by an insurance policy to be maintained, Siemens' indemnity obligations would be absolute and complete. With regard to claims not covered by such insurance, the indemnity obligation shall not extend to any loss or damage caused by the negligence of an indemnitee. If there is a contributory negligence on the part of any indemnitee then the liability will be apportioned between them based upon relative degrees of fault.

Siemens shall not be liable to PRHTA for any indirect, special or consequential damages resulting from services. This is regardless of whether such damages arise by way of any claim of indemnity, breach of contract, warranty, tort or otherwise, except to the extent that any such damages are:

• Included in liquidated damages

• Recoverable under policies of insurance carried as per the contract, or

• Are based upon claims of third parties

Siemens aggregate liability to PRHTA for damages resulting from or arising out of performance of the services shall be limited to 25% of the sum of the total base
compensation during service years 1 to 5. However, with regard to claims relating to correction of defects, termination of the contract, willful misconduct by Siemens and claims covered by insurance, this limit would not apply.

Insurance
There would be an “Owner Controlled Insurance Program” instituted by PRHTA which would include a “Comprehensive General Liability Policy” and an “All Risk Property Policy”. Siemens would be required to maintain a social benefit insurance to cover workmen’s compensation and other similar claims by workers as well as a comprehensive automobile liability insurance. Policies to be maintained by PRHTA would include:

- Commercial General Liability Insurance for personal injury, bodily injury and property damage liability with limits of not less than $5,000,000
- Umbrella Liability Insurance of not less than $100,000,000 which will provide personal injury, bodily injury and property damage liability in excess of the cover available under other policies to be maintained by PRHTA or Siemens
- An All Risk Property Damage Insurance of not less than $150,000,000

Security
Siemens would be responsible for security and the provision of security personnel. PRHTA will arrange for a public police force, with powers of arrest, to patrol the stations and/or trains for additional protection for patrons. Siemens also has to provide adequate security for the project facilities and coordinate project security functions with local police forces and other emergency service providers.

Termination
The contract may be terminated for default, with default arising out of several situations such as making of a false statement, persistent failure to meet
performance standards, etc. PRHTA can also terminate the contract for convenience by giving 60 days notice. In the event of termination, Siemens is required to cooperate with PRHTA in facilitating the orderly transfer of its responsibilities to PRHTA or to any other assignee.
Appendix 12

The Technology Transfer Arrangements

A key goal in the Tren Urbano project is to transfer the technology of planning, designing, building, operating and maintaining rail transit systems to Puerto Ricans. Puerto Rico does not have professionals specialized in this area since there has never been a modern electric rail transit system on the Island. The long-range success of the system will depend on Puerto Rican professionals and technicians being trained in all aspects of this technology.

The efforts of the Puerto Rico Highway and Transportation (PRHTA) are geared towards achieving the following objectives:

- To transmit essential technological, administrative, financial, environmental, legal, and procedural knowledge to Puerto Rican professionals to enable them to be able to design, construct, operate, and maintain an optimal system
- To develop the skills and know-how of Puerto Rican professionals, technicians, workers, and businesses in all areas necessary for the development and management of urban rail transit systems
- To develop Puerto Rican experts in rail transit who can market their services to Latin America and other countries of the hemisphere

The responsibilities of the PRHTA are to:

- Oversee all training and technology transfer activities
- Coordinate the university program
- Oversee the compliance of mentoring, peer partnering, and other local employee development
- Monitor the availability of construction workers
• Coordinate TU training efforts with other agencies and departments
• Review and approve TU system operator’s training course outlines, the trainee selection plan, and the training plan for operations start-up.

UPR-MIT Professional Development Program

The Tren Urbano UPR-MIT Professional Development Program is a collaborative effort that brings together both universities to train professionals in rail transit. The program goals are to:

• Develop local expertise in rail transit design, construction, operations and maintenance.
• Promote the exchange of ideas, research and collaboration of MIT and UPR students and faculty.
• Provide students with a professional work internship with Tren Urbano contractors
• Promote research in areas related to the development of the Tren Urbano project
• Offer post-internship employment opportunities with a Tren Urbano contractor or consultant

The program has six (6) main elements:

• An intensive course on public transit at MIT during the month of July
• An intensive course on public transit and Tren Urbano at the UPR and Tren Urbano Office in January
• A summer internship with Tren Urbano contractors and consultants
• A student research project on a topic relevant to Tren Urbano
• A site tour to an operating rail transit system in a city other than Boston
• An employment opportunity with a Tren Urbano contractor or consultant after completing the program

Training of Employees

In addition to the UPR-MIT Professional Development Program, the Tren Urbano project’s technology transfer effort includes a program of professional
development serving employees of the Tren Urbano Office and its consultant companies and contractors. By bringing to Puerto Rico companies with a wide range of experts in various aspects of rail transit development, the Tren Urbano project has created opportunities for this kind of informal technology transfer.

The success of Tren Urbano will be determined in large measure by how well the system is operated and maintained. The private operator is responsible for training all the personnel needed to operate and maintain the system. They are required to develop the necessary curricula, recruit apprentices, and oversee a comprehensive education and training program. They have to certify that all the employees hired to run the system possess the knowledge and skills required to operate and maintain Tren Urbano in optimal condition. The education and training program will be a continuous function of the system operator, who will be required to re-certify all train operators and other employees each year, in accordance with the Federal Transit
Likely Functions of a Government Agency Set up to Manage Tren Urbano

Monitoring and Control of Operations

Since the payment of compensation to Siemens is dependent on the level of service and attainment of the laid down performance standards, the government would have to monitor the performance of the system. This would be required to make sure that the contracted service standards are being achieved and then to determine the compensation to be paid. Unless this is done, a private operator, with profits being its motivating factor, will be tempted to cut costs by lowering the performance standards.

Further, the contract requires the government to set the level of service and thus a government agency would have to undertake the responsibility of collecting data relating to ridership trends, crowding, public reaction to the system etc. in order to be able to discharge its service planning responsibility.

Monitoring Quality of Maintenance

The assets belong to the Government but the responsibility for maintenance lies with Siemens. Only repairs that cost more than $25,000 are to be compensated to Siemens and not the repairs of a lesser amount. In such a situation, a private operator would be tempted to:

- Delay repairs till such time as the likely cost exceeds $25,000, or
- Club several items of repair under a single charge
Repairs and maintenance will, therefore, need close oversight by the government so that it does not pay for something that is not due and to make sure that the repairs it has paid for are actually carried out.

**Marketing**

Siemens has no responsibility for increasing the ridership. It can earn some incentive for higher ridership but this amount is limited. Hence, the primary responsibility of marketing the system and securing greater patronage rests with the government.

**Monitoring fare collection**

Under the contract, the revenues from the fare box accrue to the government though fare collection is by Siemens. There would be a need to reconcile the collections with turnstiiie counts to make sure that there is no leakage or fare evasion.

**O&M Financing**

The government has to pay an annual fee to the operator for operating the system. It also has to pay for maintenance expenses in excess of $25,000. There would also be expenses on marketing and other administrative matters. Funds for operational and other needs would have to be found and properly managed. A government agency would have to do this.

**Legal Function**

Owning and operating a system of this magnitude means running the risk of defending suits or having to bring suits against others. These could arise for a variety of reasons ranging from disgruntled passengers seeking damages to vendors seeking compensation for non payment of dues or the private operator seeking a fair payment for services rendered. Regular management, monitoring and defense of the pending suits would be an important task of any government agency responsible for managing the Tren Urbano.
Negotiation
Given the nature of the contract, there would be several situations requiring negotiations. Many of these may be long drawn and difficult. This will be a critical responsibility of an agency representing the government. A sound negotiating team would help in limiting government expenses and maintaining a high level of service.

Public relations
The attractiveness of the system would depend to a large extent on proper public relations. While Siemens has the responsibility to respond to passenger inquiries, it would be necessary for a government agency to take up public relations and market the system among potential customers.

Security & Vigilance
Transit systems carry several people and are thus potential areas of crime. The security perception of a transit system is one of the important determinants of mode choice. Under the contract Siemens is responsible for providing a security force but such a private force will be limited in its abilities. It would need the support of the state police force, which has the legal authority to arrest and detain wrongdoers. A government agency has to arrange for this.

Management of Real Estate
The Tren Urbano system would be the owner of very valuable land and buildings. These assets could be commercially exploited to not just generate additional finances but also attract additional ridership. Examples would be joint development of property and sale or lease of commercial space in the station areas.

Strategic Planning
The current alignment is only the first phase of the Tren Urbano project. Some extensions are already being planned and others would be required. Besides,
there will be a need to restructure other services so that an integrated urban transport system is put in place. There will be a need to project future requirements and find resources to meet the additional demands. All this strategic planning has to necessarily be done by a government agency.

**Inter modal Coordination**
As mentioned earlier, the different modes serving the SJMA need to be restructured to provide an integrated and efficient urban transportation system. With the Tren Urbano as the core of such a system, the other services need to be restructured so that they best complement the Tren Urbano system. A government agency has to take responsibility to interface between all these modes so that they work according to an integrated plan.

**Capital Financing**
This responsibility is linked to the strategic planning function. Any decision to invest in new facilities or capacity expansions would require resources to finance such investments. Hence, there is capital financing role to be performed by a government agency.

**Public Accountability**
Like any public agency, the agency responsible for the Tren Urbano has to ultimately be accountable to the public. As such it should be able to reply to public questions and defend its decisions at public forums. This responsibility is critical in a democratic system and the agency responsible for the Tren Urbano system should be well prepared to discharge it.

**Safety and Environmental Regulation**
One of the principal responsibilities of a public agency, particularly when a private agency has been entrusted the responsibility of providing services is to make sure that safety and the environment are not compromised.
Dispute Resolution
As stated earlier, there are several areas where disputes may arise between parties associated in some way or other with the Tren Urbano. A government agency set up to direct and control Tren Urbano may be called upon to play a mediation or dispute resolution role in some of them and has to be prepared for that. For example, disputes between Siemens and its employees could easily be mediated upon by a government agency.
Mediation and Arbitration as Methods of Dispute Resolution

Mediation

Mediation is a process by which parties submit their dispute to a third-party (the mediator) who works with them to reach a settlement of their dispute. Mediation is an extension of the negotiating process. Mediators are usually experts in successful negotiation and they receive a fee from the parties for their services.

It is less formal than arbitration, which by itself is less formal than litigation. Unlike an arbitrator, a mediator does not have the power to render a binding decision. A mediator does not hold evidentiary hearings as in arbitration but conducts informal joint and separate meetings with the parties to understand the issues, facts, and positions of the parties. In contrast, arbitrators hear testimony and receive evidence in a joint hearing, based on which they render a final and binding decision, known as an award.

A mediator tries to obtain a candid discussion of the issues and priorities of each party and can selectively use the information learned from each side to:

- reduce the hostility between the parties and help them engage in a meaningful dialogue on the issues at hand;

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34 Compiled from publications of the American Arbitration Association
• open discussions into areas not previously considered or inadequately developed;
• communicate positions or proposals in understandable or more palatable terms;
• probe and uncover additional facts and the real interests of parties;
• help each party to understand better the other parties' views and evaluations of a particular issue, without violating confidences;
• narrow the issues and each party's positions, and deflate extreme demands;
• gauge the receptiveness for a proposal or suggestion;
• explore alternatives and search for solutions;
• identify what is important and what is expendable;
• prevent the raising of surprise issues; and
• structure a settlement to resolve current problems as well as to meet future needs of the parties.

Any type of civil dispute can be resolved by mediation. Mediations have been conducted in business disputes in the computer and construction fields, in disputes between labor and management, and in the insurance industry, to name a few. Just about any type of dispute that parties want resolved quickly and inexpensively can be submitted to mediation. The American Arbitration Association has established Mediation Rules, which lay out the guidelines for the mediation process.

The most common advantages of mediation are the following:
• The parties are directly engaged in negotiating the settlement;

• The mediator, as a neutral third party, can view the dispute objectively and can assist the parties in exploring alternatives that they might not have considered on their own;

• Because mediation can be scheduled at an early stage of the dispute, a settlement can be reached more quickly than in litigation or arbitration;

• Parties generally save money through reduced legal costs and less staff time;

• Parties enhance the possibility of continuing a business relationship with each other; and

• Creative solutions or accommodations to special needs of the parties can become a part of the settlement.

Mediations can originate in different ways. First, mediation can occur when a dispute initially arises and before a lawsuit is ever filed. Second, mediation can occur as an adjunct procedure to pending litigation. Third, mediation can occur during or immediately after a trial but before a decision is announced by a judge or jury. Fourth, mediation can occur after a judgment has been rendered in litigation. There might be a disagreement over the meaning or manner of carrying out a judgment, or concern about the possibility of lengthy court appeals. The parties can seek the assistance of a mediator to help them resolve these problems.

Mediation involves the following five steps:

1. Agreement to Mediate - Since mediation is voluntary, the parties must agree in writing that their dispute will be conducted under a set of applicable mediation rules.
2. Selection of the Mediator

3. Preparing for the Mediation Session

4. The Mediation Conference

5. The Settlement

Arbitration

A more formal method of dispute resolution, compared to mediation, is Arbitration. This involves referral of a dispute to one or more impartial persons for final and binding determination. It is private and informal, designed for quick, practical, and economical settlements. Parties can exercise additional control over the arbitration process by adding specific provisions to their contracts’ arbitration clauses or, when a dispute arises, by modifying certain of the arbitration rules to suit a particular dispute. Stipulations may be made regarding confidentiality of proprietary information used; evidence, locale, number of arbitrators; and issues subject to arbitration, as examples. The parties may also provide for expedited arbitration procedures, including the time limit for rendering an award, if they anticipate a need for hearings to be scheduled on short notice. All such mutual agreements will be binding on the arbitrator.

Like mediation, arbitration also involves several steps. These are:

1. **The Agreement to Arbitrate** - This agreement can be of two kinds. It could take the form of a future dispute arbitration clause in a contract or, where the parties did not provide in advance for arbitration, a submission of an existing dispute to arbitration.
2. **Selection of the Arbitrator** - Generally this is supposed to be spelt out in the agreement, but if it is not, the rules of the American Arbitration Association provide for procedures that can be used.

3. **Preparation for the Hearing**

4. **Presentation of the Case** - Arbitration hearings are conducted somewhat like court trials, except that they are less formal. Arbitrators are not required to follow strict rules of evidence. They must hear all of the evidence material to an issue but they may determine for themselves what is relevant. Arbitrators are therefore inclined to accept evidence that might not be allowed by judges. After both sides have had an equal opportunity to present all of their evidence, the arbitrator declares the hearing closed. Under AAA rules, the arbitrator has thirty days from that date, within which to render an award. If the case was administered under the expedited provisions in the rules, the arbitrator has fourteen days within which to render an award.

5. **The Award** - The award is the decision of the arbitrator on the matters submitted to him or her under the arbitration agreement. If the arbitration panel consists of more than one arbitrator, the majority decision, is binding. Arbitrators are not required to write opinions explaining the reasons for their decisions. As a general rule, AAA commercial awards consist of a brief direction to the parties on a single sheet of paper.

The power of the arbitrator ends with the making of the award. The arbitrator may not change an award, once it is made, unless the parties agree to restore the power of the arbitrator or unless the law provides otherwise.

Some of the principal features of the arbitration process, under the Federal Arbitration Act of 1947 are the following:
• Any issue referable, under a written agreement, to arbitration, must be settled through arbitration and not through the judicial mechanism (section 3 of the Act)

• Any party, aggrieved by the failure, neglect, or refusal of another to arbitrate under an agreement can obtain an order directing that the issue be taken up in arbitration (Section 4)

• A mechanism for appointing arbitrators is provided by the Act (Section 5) which is applicable if no appointment procedure is laid down in the agreement between the parties.

• Arbitrators have the powers to summon witnesses and subpoena documents (section 7) just like a federal district judge, but with the distinction that they can not punish failure or refusal to comply but can only apply to a federal court for impose such punishment.

• An arbitrator can issue orders for interim relief as may be deemed necessary

• Orders of an arbitrator can be vacated only on grounds of fraud or corruption, evident partiality, misconduct prejudicial to the rights of any party or where the arbitrators exceeded their powers in a manner that is fundamentally defective.

• The prevailing party in arbitration can not generally claim attorney’s fees. At times, such fees can be substantial.

• Ex-parte proceedings are possible if a party fails to present itself without sufficient cause at the hearings.
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