Procurement Strategies for Long-Term Control, Operation and Maintenance of Tren Urbano

Executive Summary

Executive summary for the thesis with same title submitted to the Department of Civil and Environmental Engineering in Partial Fulfillment of the Requirements for the Degree of Master of Science in Civil and Environmental Engineering by Lee Nii Noi Addo

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Abstract

This thesis presents long-term procurement strategies for control, operation and maintenance of the Tren Urbano project beyond the first five years of O & M, it focuses on the analysis and discussion of the issues that will influence the procurement decision-making process.

The basic questions that the research tries to address are:

- What position does the ACT find itself in (current O & M)?
- Where does the ACT want to be (Future O & M)?
- How does the ACT get where it wants to be(How to procure future O & M) ?

Five possible O & M alternatives are examined, and their merits and demerits are weighted. The strategies for preparing for each alternative are devised. Requirements for the successful implementation of each strategy are presented. In addition, the thesis examines the actions that have to be taken in order to performance monitor and assess the performance of system and contractor. Metrics and methods of evaluation are presented.

The alternatives are synthesized into one major strategy for consideration by the PRHTA. A proposal is made on when to make the long-term procurement decision and on how to arrive at the optimal decision. Finally, some realistic scenarios are simulated, and the recommendations for dealing with these scenarios are offered.

The thesis concludes by reviewing some realistic project scenarios that may arise and suggest specific actions that should be taken accordingly.

1. Background and motivation

Tren Urbano Project Phase I is the construction of a new 17.2, 16-station, heavy rail transit system in San Juan, Puerto Rico. In an effort to reduce the cost and shorten schedule, Tren Urbano project is embracing the concept of turnkey procurement procedure - one entity would deliver the project as a whole. In case of Tren Urbano project, the major contract, Systems and Test Track Turnkey (STTT) held by Siemens Transit Team (STT), has the aim of delivering the project to the owner (Puerto Rican Highway and Transportation Authority, or ACT) with all the parts integrated.

The purpose of the research is to analyze and develop strategic alternatives for the continued control, operations and maintenance of the Tren Urbano transit system after the expiration of 5-year operations and maintenance period currently awarded to STT.

2. Scenario Analysis

Five major scenarios for the future control and operations of Tren Urbano are to be examined:

- *Take over*

  ACT assuming direct responsibility for the day-to-day administration, operation and maintenance of the system in 2006 or 2011, upon the expiration of the STTT contract. The Authority may take direct responsibility for all aspects of the system or may contract out certain portions of it.

- *Re-compete:*

  Authority decides to invite from all interested operators and then awards the operating and maintenance of the system to a deserving contractor for a specified length of time.

- *Renewal for 5 more years*

  ACT simply exercise the renewal option in the present contract with Siemens for a new five-year term. This scenario will arise if the Authority is satisfied with the performance of Siemens, and/or ACT

feels that five-year time frame is too short to adequately prepare itself for the other scenarios.

- *Re-negotiation in 2006 for a longer term:*

  ACT and the contractor enter into a long-term Operations and Maintenance Contract which will be in effect when the current contract expires in 2006. This option is made possible by the new Internal Revenue Service Regulation that remits state and local government agencies to sign long-term management contracts with private sector agencies without giving up the benefit of tax-exempt financing.

- *Early Re-negotiation and extension*

  ACT immediately enters into negotiation with Siemens, with the two parties signing a long-term contract within the next year or two that will replace the current 5-year contract.

Each of these alternatives has it own merits and a set of related issues. They will arise under certain conditions and has specific requirements, as discussed in detail in first part of the chapter 2 of the thesis. Strategies for preparing for each of the scenarios are also outlined in the second part of chapter 2.

3. Performance Monitoring and Accessing

With the exception of the fifth scenario (i.e., Early Re-negotiation and extension), the strategies for each of the options have one common requirement: monitoring and assessment of the performance of the operator and of the system as a whole. Any decision made on future procurement of O & M after the start of system operations in 2001 will have to depend, to a large extent, on the assessment of the first few years of O & M.

In chapter 3, A monitoring plan is suggested. The monitoring methods available to the ACT are examined and evaluated, along with the discussion of monitoring personnel responsibility, data collection method, and performance standards and indicators. For the

purpose of effectively assessing the performance of overall Tren Urbano system, and of the system operator in particular, six main success/failure contributors are outlined:

- Financial efficiency: cost-effectiveness and maximization of revenue
- Operating and maintenance levels of equipment, facilities and systems
- Effective policies and procedures
- Financial efficiency
- Quality of personnel
- Workable plans and schedules

4. Synthesized strategy

In chapter 4, five strategies for preparing several O & M management situations are synthesized into a composite strategy that the Authority can work with, which can be summarized as following chart:

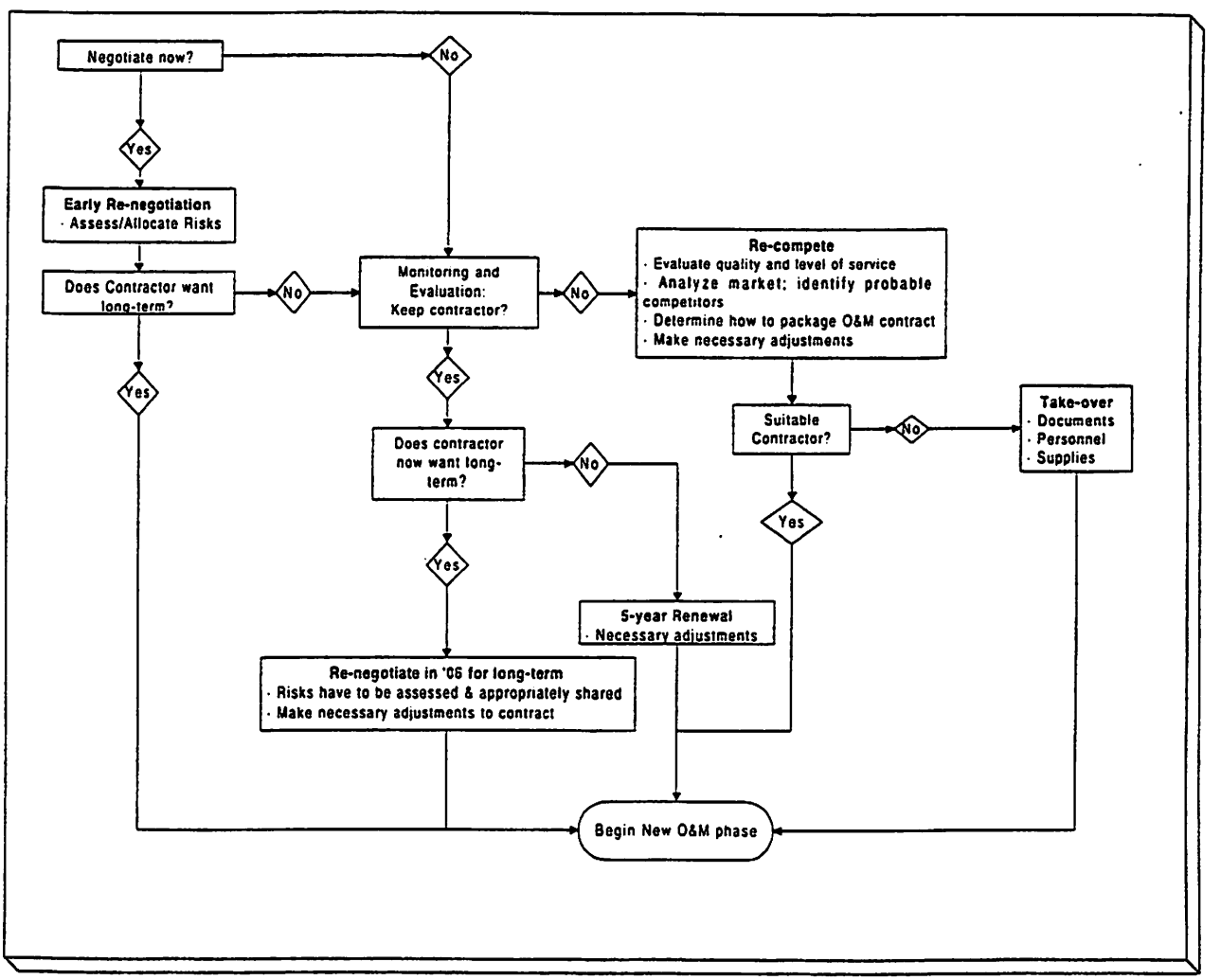

Figure 4.6: Flowchart for O & M Procurement decisions

5. Conclusion and Recommendation

In chapter 5, the specific circumstances and actions are considered for some realistic scenarios:

1. High ridership, high revenue, high profit
2. High cost, operator incurring losses, ACT may lose more upon take-over
3. High revenue, high costs, profitable but operator causing cost overruns
4. High ridership, high costs, little or no profit
5. Low ridership, low costs, with losses
6. High profitability but operator not in favor with long-term contract
7. Low profitability but operator in favor of long-term contract

The thesis concludes by stressing the importance of strategic planning in Tren Urbano Project. It also cautions that the strategy suggested are not to be taken as 'complete, as there are other factors that can determine the future of Tren Urbano.

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