

part of the profit the developer will share with the METRO by way of advance payments, guaranteed shares and amounts, and balance at risk

In the case of retail accommodations, the developer is not allowed to resell but must rent and offer METRO a share of the rental income for the duration of the leasehold.

E. The Bidding Process—Developer bids are evaluated and scored on technical and financial merits by separate panels. The technical and financial panels are expert groups and frequently international in makeup. The scoring results are merged and the bidder with the highest total score is awarded the contract.

F. Experience and Lessons Learned—There have been many lessons learned to date. Clearly, there is a need to proceed in a planned and targeted manner, and the transit elements and services must be available as promised. Since the developer bids not knowing the land costs, bids are frequently based on a range of land costs (high and low) with subsequent negotiation.

Mr. Brooke discussed the lessons learned from the perspective of the owner (METRO) and the developer. From the owner's perspective the lessons include:

- The inflexibility of the METRO approach, its unwillingness to consider design changes, development alternatives and profit sharing, discourages some developers. The process of dealing with a quasi-governmental body can be frustrating. The size of the bid packages is daunting with the minimum package equivalent to United States \$500 million. METRO can be a difficult client as the metro operation takes precedence. Interfacing of the METRO with the developer and between developers working on different phases is a problem.

- The large investment amounts and a lack of local know how makes it difficult for foreign investors and developers to compete, even if they have an interest. Only Singaporean consortia have been successful to date, but the latest series of bids include Malaysian and Indonesian interests.

- Some developers are reluctant to share profits and prefer to focus on schemes where they can enjoy the full profit and not share.

- The duration of the developments spans periods of eight to twelve years. Developers are exposed to fluctuations in the property cycle and it is difficult to anticipate what will be the situation that far ahead. For this reason, longer term potential profits are discounted heavily.

From the developer's perspective there is strong interest and competition. This is due to:

- The accessibility provided by the transit system to the entire urban region.

- Location. Location. Location.

- The station sites are attractive for the development of large flagship statements. The locations are likely to hold their value better even in the event of a downturn. The ready access of the transit system makes it possible to decentralize office locations to various transit station locations. The sites are especially attractive for regional shopping centers, new residential communities (New Town sites) and tourist and leisure attractions.

Federal Perspective

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Mr. Thomas discussed the Federal Transit Administration's Turnkey Demonstration Program. The program started in 1992 and to date has committed \$3.9 billion to five turnkey demonstration projects. The projects in the demonstration program are the Baltimore Light Rail Extensions (\$106 million), the Los Angeles Union Station Gateway (\$150 million), New Jersey Hudson-Bergen LRT Line (\$350 million), San Juan Tren Urbano (\$1.25 billion), and the Bay Area Rapid Transit (BART) San Francisco Airport Extension (\$1.17 billion). Mr. Thomas noted these projects range in their type and in their requirements and provide a base of experience for understanding the turnkey process.

The five FTA demonstration projects vary relative to their turnkey provisions. Baltimore and San Francisco are limited civil and systems design build contracts, San Juan and Los Angeles are modified turnkeys with systems operations and maintenance incorporated in the projects. New Jersey represents a full turnkey with the contracting consortium including important project finance provisions.

Mr. Thomas reviewed the outreach and assistance FTA has provided to the transit project sponsors and contractors in initiating turnkey projects. The major aspects of the technical assistance includes industry seminars and workshops; project sponsoring agency workshops; expert technical assistance, and project evaluations which are being conducted by independent contractors.

Between 1987 and 1992 there was a 300 percent increase in design-build projects, indicative of the growing importance of turnkey projects in the construction industry. By 1995, 30 percent of all non-residential construction was using the turnkey method according to the statistics provided by the *Engineering News Record*. The growing importance of turnkey approaches was credited to its benefits in saving time and costs with no reduction of quality relative to conventional project approaches.

The example of the Taipei Rapid Transit was cited as demonstrating the problems inherent in conventional transit construction projects, with 90 percent cost overruns and years behind schedule in completion. The problems in Taipei included:

- inadequate organizational support
- contracting difficulties resulting in disputes, claims and legal actions
- poor communications between the general engineering consultant, the owner, and contractors
- ineffective systems integration
- inadequate media and public relations
- inadequate documentation for operations.

Mr. Thomas observed that many U.S. projects experience problems similar to Taipei. Among the advantages of turnkey approaches are the systems view and partnerships they encourage involving project development, finance, cash flow and work flow. There have been a number of lessons learned in the five FTA turnkey demonstrations and these include:

- New Start Planning and Project Development
- Incorporating analyses of implementation options during major investment studies
- During preliminary engineering for turnkey projects as much as 60 percent of the final design for civil elements is completed as contrasted to only 30 percent for conventional projects
- Final design and construction for conventional projects are separate phases as compared to one implementation phase for turnkey projects.

Turnkey Design/Build Procurement Process

- Acquisition planning, research and strategic assessment preliminary to the turnkey project decision
- Industry review of draft solicitation documents can help the public agencies allocate risks and decide whether changes in traditional procedures are warranted. All interested firms should be invited to industry outreach events.

Early Project Development

- Complete preliminary engineering and environmental assessments before initiating a turnkey procurement
- Assess project costs, schedule and financial risks
- Tailor turnkey approach to local situation
- Agency roles include rights-of-way acquisition, utility relocation, environmental mitigation, public participation and geotechnical surveys.

Procurement

- Emphasize extensive project definition
- Consider changing Federal/State prequalification policies
- Avoid overly restrictive clauses and risk assessment
- Provide clear responsibility to control integration issues
- Ensure full and open competition through small and minority business participation
- Establish effective cost, schedule and quality control.

Project Financing

- Consider innovative financing alternatives including contractor assisted financing, joint development of station areas, construction financing and profit deferrals
- Avail all contractors of financing alternatives
- Because of the time and cost sensitivity of turnkey projects, documentation of payment procedures and processing of payment requests are extremely important.

Risk Management

- Define and clearly allocate identifiable risks
- Develop risk management approach.

Project Management

- Increased need for project management control systems

Session 2: Procurement and Subcontracting

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Session Highlights:

- A negotiated procurement or a two-step procurement is recommended for design-build/turnkey contracts. Discussions between the owner and proposers facilitates a true "meeting of the minds"; allows crafting of tailored solutions for contractor concerns; and achieves the optimum balance of risk and price.
- Federal, state and local procurement regulations