

*Excerpts From...*

**REVIEW OF INNOVATIVE  
FINANCING MECHANISMS  
FOR AIRPORT ACCESS PROJECT**

**February, 1997**

**BY**

**ROBERT E. PAASWELL, DIRECTOR  
YUKO J. NAKANISHI, ASSISTANT TO THE DIRECTOR FOR RESEARCH**

**UNIVERSITY TRANSPORTATION RESEARCH CENTER  
THE CITY COLLEGE  
NEW YORK, NY 10031  
Y-BUILDING, ROOM 220**

# AIRPORT ACCESS FINANCING ALTERNATIVES

## Table of Contents

I.	Introduction .....	1
	A. Current Proposal - PFCs.....	3
II.	Alternative Financing Methods.....	5
	A. Istea, FTA Programs .....	5
	B. <b>SIBs</b> .....	7
	C. Joint Development.....	11
	1. Turnkey.....	11
	2. Telecommunications ROW.....	15
	3. Teleport.....	16
	4. Freight Movement.....	16
	D. FTA and FHWA Innovative Financing Initiatives.....	18
	E. Leases .....	26
	1. COPs.....	28
	2. International Financing.....	28
	F. Fund Swaps.....	31
	G. Toll Revenues .....	32
	H. Taxes.....	33
	1. Motor Fuel and Value Added Tax.....	33
	2. Sales Tax.....	33
III.	Assessment of Options.....	34
IV.	Conclusion .....	38
V.	Attachments	

## **I. Introduction**

The airport access project addresses a longstanding problem affecting New York City travelers and residents, as well as out-of-town travelers. The project plans to link **JFK** International Airport to two transit terminals, Jamaica Station and Howard Beach Station. It is expected that over 34,000 passengers and employees will use the light rail system annually. The benefits of the project are expected to be increased airport accessibility, air quality, decreased traffic congestion, and enhanced economic activity and jobs during the construction phase as well as the operational phase of the project.

The construction of the light rail system will cost approximately **\$1.2 billion**; the current financing proposal would add another \$0.28 billion. While Port Authority (PA) capital contribution is expected to be \$0.3 billion, the Passenger Facility Charge (PFC) contribution is expected to shoulder the bulk of the financing burden - **\$1.2 billion**.

The PFC which is \$3 per enplaned passenger is collected by the airlines for the PA. According to Federal law, PFC money must be used for projects directly related to the airports. This means that 1) the light rail system can only serve airport-bound passengers and 2) the project would use a substantial amount of the **PFC** funds over a 13-year period; these funds would then be unavailable for other high priority airport-related projects.

The purpose of the project is to review and identify alternative funding/financing mechanisms for the airport access project. The study is organized as follows:

### **Task 1**

Review current strategy with PA staff

### **Task 2**

Review current practice in financing/funding methods for infrastructure projects (with a special emphasis on more innovative methods)

### **Task 3**

Determine the relevancy of Task 2 items for the airport access project

### **Task 4**

Recommend financing/funding strategies based on Task 3

### **Task 5**

Perform briefings and discussions with appropriate PA officials

The Principal Investigator (PI) of this project, Robert Paaswell, met with the following PA officers and staff to discuss current funding and financing strategies and obtain data relevant to this project: the director of the Airport Access Program, A. Cracchiolo; the Chief Financial Officer, C. McClafferty; the Treasurer, B. Bohlen; the Assistant

Comptroller, Michael Fabiano: and the Chief of the Public Securities Law Division, Darrell Buchbinder.

### **Financing Methods**

The PI, along with other UTRC staff members, met with key budget personnel at FTA and FHWA in Washington, D.C. and also contacted the FHWA in Albany and NYSDOT to obtain information about and initiate an analysis of innovative financing methods in practice by transportation agencies across the U.S. Detailed lists of contacts are provided in *Appendix 1*.

The results of this study have been summarized in a matrix of options in *Figure 1*. The three options with the highest revenue-generating potential that are also feasible are: leasing right-of-way to telecommunications companies, using the LRT to transport light cargo as well as passengers, and the generation of LRT passenger fees. Detailed assessment analysis is given in Section **III** of this report.

### III. Assessment of Options

The following three revenue generating items were considered individually and as a group because they would be generated directly by the project.

- 1) LRT Passenger Fees
- 2) Leasing Right-of-Way (ROW)
- 3) Freight Movement

Once a decision has been made to proceed with any of the alternatives, more in-depth demand and industry analysis are recommended due to the volatility of the revenue stream resulting from fluctuations in the input factors.

Before actually delving into the assessment of the three items, the value of several innovative financing mechanisms already mentioned in this report should be noted.

1) SIB – If NYS is approved for a SIB, a favorable loan could reduce the PA’s costs of borrowing. SIB could also act as a credit enhancement, providing PA bonds with more favorable terms. Through funds may initially be limited in terms of size and usage due to SIB funding constraints, with the second and third generation of funds, increased amount of funds should become available.

2) Turnkey – Whatever the financing mechanism, a turnkey could alleviate many of the cost overruns and delays that frequently occur in public projects.

3) Fund Swap – If PA funds are available for another strictly “airport-only” project; the PFCs would be more suitable for that project. The PA funds could then fully or partially fund the airport access project.

*Note: for the following three items, operations and maintenance costs were not taken into consideration, as their exact values were not known. The costs may easily be input into the proposals and scenarios described below.*

#### **LRT Passenger Fees**

LRT passenger fees will generate an average of about \$130 million per year and total revenue of about \$4 billion. Assumed is an initial demand of 34,000 trips a day at 300 days a year and an initial fee of \$5 per trip. The passenger growth rate was assumed to be 2.5% the forecasted rate of JFK’s passenger traffic. The fares were expected to grow at a rate of 3% per year. It was assumed that price per trip had insignificant effect on ridership. See Figures 27 and 28 for details.

## Leasing ROW to Telecommunications Companies

Leasing ROW would generate considerable amount of revenue. The total revenues would amount to \$4.9 billion, \$0.9 billion more than the LRT fees. Assumed is a 10% increase in demand for the first 10 years and 5% thereafter, and an annual 3% increase in cable charges. The initial demand is set at 200 cables and the initial cost is set at \$580,800/cable/year (22 miles x \$26,400/cable-mile/year.) The distance from JFK to Manhattan is set at 22 miles. The costs to install the fiber optics are considered insignificant relative to total revenues generated by this option.

Since telecommunications companies are particularly interested in the JFK to Manhattan corridor, one of the requisites of this proposal is to convince the MTA to become a partner in this project.

## Freight Movement

This proposal also requires MTA participation. This proposal would generate an average of \$11 million a year and total revenues of \$339 million. It is assumed that a third of JFK air cargo is light freight (540,000 tons) and will utilize the time-saving freight movement device from JFK to Manhattan. At \$1.00 per ton-mile and 22 miles from JFK to Manhattan, the cost would be \$22/ton-mile, which is expected to increase 3% annually. JFK air cargo traffic is expected to increase about 5% annually. The PA share of the revenues would be 22.5%; the rest would go to the MTA. Again, the cost to install or refurbish LRT and subway cars for cargo use is considered insignificant relative to the total amount of revenues generated by the project.

It is important to note that both the Freight Movement and ROW proposals address current goods distribution and telecommunications system needs, both of which affect the economic vitality of the NYC region. In doing so, these proposals are likely to attract participation by private sector organizations that benefit from them.

## Sensitivity Analyses

After performing sensitivity analyses for all three revenue generating items, it is clear that should demand scenarios change, the resulting revenues will change as well. See Figure 29 for details. A bleak scenario assumes passenger growth drops to 1%, passenger fees per trip to increase only \$0.50 every 5 years; cable demand starts out at 5% a year and remains constant, cost/cable/yr. increases at 1% annually; cargo growth is 3% and \$ per ton-mile increases only 1% a year. Total revenues would decrease by \$2 billion, \$2.7 billion, and \$180 million for LRT fees, ROW, and freight, respectively. The total revenues would amount to \$4.3 billion versus the original \$9.3 billion, a decline of almost 50%.

The \$4.3 billion would, however, still cover debt service on a municipal bond issued by the PA for the project. Details about the bond are briefly discussed later in this section.

A rosy scenario, on the other hand, would assume passenger growth of 4% a year and \$1 annual increase of LRT fees; cable demand growth of 15% for ten years and 10% thereafter, and a 5% increase in the cost per cable per year; growth in freight cargo of 10% a year and a 5% yearly increase in \$ per ton-mile. The total boost in revenues would amount to \$9.9 billion, \$16.6 billion, and \$1.1 billion for LRT fees, ROW, and freight, respectively, for a grand total of \$27.6 billion, a 396% increase.

A more in-depth analysis might include the sensitivity of the input factors to changes in the economy (interest rates, industry outlook, competition, etc.)

### **A Municipal Bond**

A municipal bond might be issued to cover the costs of the project. The bond is assumed to have a rating of BBB+, 30-year maturity, 7% interest, and 125% required revenues.

Although the annual required revenue will be about 25% more than debt service, and a shortfall occurs for several years initially, expected future revenues can compensate for this shortfall. See Figure 30-33 for details.

Due to the growth in future revenues, a private investor might wish to make an equity investment in this project. An equity stake means that the investor is willing to share the risks and rewards of the project with the public agency. This would be an ideal situation for the agency which wishes to minimize risk but does not care a great deal about making money. If there is no private investor willing to invest in the project, the question of the shortfall arises. Only the actual shortfall matters because total revenues are greater than total debt service.

Some of the ways in which the shortfall might be addressed:

- 1) PFCs - to avoid FAA and airlines' concerns, PFCs would be used only for the portion of the project within the perimeter of the airport. It makes sense to pay the "airport-only" portion with PFCs and the rest with a bond; the smaller the principal, lower the debt service.
- 2) SIBs - as mentioned earlier, SIB funds could be used to cover the shortfall.
- 3) Toll Revenue - toll revenues are continuous and relatively stable and could cover a substantial portion of the shortfall.

4) Motor Fuel Tax/VAT Tax - motor fuel tax and the VAT tax could also help cover the shortfall

5) Sales Tax - Under the current climate, there is no guarantee that the sales tax will generate a continuous stream of revenues. It is quite possible that the sales tax will be repealed.



#### IV. Conclusion

The matrix in Figure 1 summarizes each of the alternatives and ranks them by the following attributes: risk, benefits over costs, feasibility, and probability of private sector participation.

**Risk:** is defined as the demand or growth potential of the revenue stream for applicable options such as ROW Risk, for PFCs and taxes, is defined as the probability that the revenue sources will continue to be available on a stable and reliable basis.

**Benefits over costs:** examine average annual return versus costs involved in implementing the option. If average annual return is greater than \$100 million and costs are considered minimal, then this attribute is high. If it is greater than \$20 million with minimal costs, it is moderate. Otherwise, it is considered low. If the funds are available immediately, it is given at least a moderate ranking.

**Feasibility.** for options such as ROW describes the degree of technology and logistics involved in the option's implementation. For other options such as taxes, feasibility is defined as political feasibility. How likely is it that the tax will actually be approved by the appropriate governmental body?

**Private sector participation:** describes the attractiveness of the option to private investors. The higher the degree of private sector participation, the lower the costs for the Port Authority.

The best combination would be:

Risk:	Low
Benefits over costs:	High
Feasibility:	high
Private sector partic.:	High

Because the upfront costs of the project are high, and the revenue streams which might fund the project start low and grow over the years, a bond would be a suitable instrument to fund the project. Though a municipal bond was specified in this report, other types of bonds may work as well.

Private sector investors should be courted and encouraged to participate in this project. Private investors may desire an equity stake in the project to reap the benefits of the future revenue streams. This would be an ideal situation. With an equity stake, investors will have a genuine concern as to the successful outcome of the project. The major sticking point of the revenue-generating activities (ROW and freight) suggested in this report

could be MTA participation. (Note that in ranking the attributes, MTA participation was assumed.) Without it, the proposals would not be credible. Telecommunications companies would not want ROW from JFK to Jamaica or Howard Beach. Freight distributors would not pay to have their goods shipped from JFK to a location that is only a short distance away.

The general attractiveness of the project would be enhanced by extending the LRT to Manhattan. The Jamaica line could provide two Queens stops, perhaps one at Roosevelt and another at Jamaica. The Howard Beach LRT could provide two Brooklyn stops, one at Howard Beach and another in downtown Brooklyn. Adding two additional stops to Manhattan would not greatly impinge upon speed and reliability, which are the major concerns of airport riders. And, subway riders would benefit from the alternative travel option and less congested subway rides.

Reliable airport access is long overdue. New York City is a multinational city of great economic strength and vitality. To continue to allow traffic congestion to handicap and enervate its residents and businesses, and those who wish to do business with the city would be a crime. This airport access, in one form or another, must be built so that everyone, including tourists and businesses around the world, can benefit.

**Figure 1** Matrix of Funding/Financing Options

Option	Availability	\$ Amount	Pro	Con	Ranking
LRT Fees	Project-Generated Revenue (starting first day of operations)	\$129 mil./year	Fees at discretion of PA	If fees too high, may discourage riders Revenues s.t. changes in demand	Risk: Low B/C: High Feas: High Private: Moderate
ROW	Project-Generated Revenue (starting first day of operations)	\$160 mil./year	Booming telecom industry Private sector interest	Revenues s.t. changes in demand MTA Cooperation required	Risk: Moderate B/C: High Feas: High Private: High
FREIGHT	Project-Generated Revenue (starting first day of operations)	\$11 mil./year	Address NYC freight movement problems Private sector interest	Revenues s.t. changes in demand MTA Cooperation required	Risk: Low B/C: Low Feas: Moderate Private: High
PFCs	Available Immediately	\$1.25 billion approved	Avail. immediately \$ available matches project needs	Limitations re: PFC use Airline opposition	Risk: Low B/C: High Feas: High Private: Low
TOLL REVENUE	Available Upon Approval	At 25 cents, \$45 mil./year	Stable source of revenue	Involves NYC politics Motorist opposition	Risk: Low B/C: Moderate Feas: Moderate Private: Low

**Figure 1** Matrix of Funding/Financing Options

Option	Availability	\$ Amount	Pro	Con	Ranking
MOTOR FUEL TAX	Available Upon Approval	½ cent rise, \$21 mil./year	Stable source of revenue	Highly political Motorist opposition	Risk: Low B/C: Moderate Feas: Moderate Private: Low
1% VALUE ADDED TAX	Available Upon Approval	\$80 mil./year	Stable source of revenue Not as political as gas/sales taxes	Motorist opposition	Risk: Low B/C: Moderate Feas: Moderate Private: Low
SALES TAX	Available Upon Approval	0.25% increase, \$239 mil./year		Current climate is anti-sales tax Retailer opposition	Risk: High B/C: High Feas: Low Private: Low
TELEPORT CENTER	Center must be constructed	\$50 mil./year	Demand is high for telecom services	Large up-front investment costs Private investor equity essential	Risk: High B/C: Moderate Feas: High Private: High
PFC FUND SWAP	Deal must be negotiated	Depends on internal fund availability	Easy to do		Risk: Low B/C: High Feas: High Private: Moderate

**Figure 1** Matrix of Funding/Financing Options

Option	Availability	\$ Amount	Pro	Con	Ranking
TURNKEY	Deal must be negotiated	Depends on whether equity stake taken by consortium	<p>Consortium responsible for all aspects of project delivery</p> <p>Cost overruns, delays avoided</p>	Agency usually still takes on economic risks	<p>Risk: Low</p> <p>B/C: n/a</p> <p>Feas: High</p> <p>Private: High</p>
STATE INFRA. BANK	SIB must be established in NYS	Max of 10% of federal funds can be deposited	<p>Flexible loan repayment terms</p> <p>Credit enhancement for bonds possible</p>	Loan amount would be small	<p>Risk: Low</p> <p>B/C: Low</p> <p>Feas: Moderate</p> <p>Private: Moderate</p>
CERTIFICATES OF PARTICIPATION	Available after requisite admin. items have been completed	\$60 mil. reduction in construction costs	<p>Maturity can match useful life of property</p> <p>Better matching of revenues/costs</p>	<p>Benefits difficult to calculate</p> <p>More often used for bus purchases</p>	<p>Risk: Low</p> <p>B/C: Moderate</p> <p>Feas: Moderate</p> <p>Private: Low</p>
CROSS BORDER LEASE	Available after deal has been negotiated	5% reduction in equipment costs	Up-front cost reduction yields immediate cash benefits	Requires financial expertise in international financing	<p>Risk: Low</p> <p>B/C: Low</p> <p>Feas: Moderate</p> <p>Private: Low</p>