Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

ACTION: Management Advisory Memorandum on Relocation of Utilities, Central Artery/Third Harbor Tunnel, FHWA Region 1
Report No. R2-FH-7-025

JA-1

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Over the past 4 years, we have provided a series of briefings, time-phased audits, and advisory memoranda presenting our concerns regarding Federal Highway Administration (FHWA) oversight of escalating costs on the Central Artery/Third Harbor Tunnel (CA/THT) Project (Project) in Boston, Massachusetts. The objective of our current audit was to evaluate FHWA oversight of costs associated with the relocation of utilities on the Project. We completed the survey phase of the audit, but must discontinue the audit due to higher priority work on the Project. However, we are issuing this management advisory memorandum to inform you of concerns regarding FHWA's participation in costs associated with the Project's relocation of a Boston Edison Company (BECo) transformer substation. Details are provided in the following paragraphs.

Background

Title 23, Code of Federal Regulations (CFR), defines a utility as a line, facility or system for producing, transmitting, or distributing communication, signals, electricity, heat, gas, water, steam, waste, or similar commodity, which serves the public. The term utility also refers to a utility company, or governmental organization, which provides or uses utilities. The CFR defines "betterments" as upgrades of a facility being relocated, that are not attributable to the highway construction, and are made solely for the benefit of, and at the election of, the

utility. Title 23 CFR paragraph 645.107(h) states, "Federal funds may not participate in the cost of relocations of utility facilities made solely for the benefit or convenience of a utility. . . ."

The Massachusetts Highway Department (State) contracted with the joint venture firm of Bechtel Civil Inc. and Parsons, Brinckerhoff, Quade and Douglas (Consultant) to manage Project operations, including relocation of utilities. For our survey, we reviewed the largest single relocation project from BECo, the utility having the most relocations on the Project. In January 1996, the Project completed relocation of an open-air BECo transformer substation (substation) on Atlantic Avenue in Boston. The substation was relocated approximately 400 feet across a divided roadway, to a new building paid for by the Project on Purchase Street. The relocation was undertaken to make way for the Project's construction of a ventilation building at the site of the original substation. Relocation and construction of the new substation cost $43.7 million. The Federal share of the relocation costs was more than $37 million.

Discussion

In October 1991, prior to start of construction, the Consultant prepared an independent assessment of relocation costs for the substation. The State had requested the assessment in response to FHWA concerns about potential credits for the betterments associated with the relocation. The independent assessment estimated the costs for this relocation at $22.9 million, significantly less than the $28.8 million which BECo estimated, based on its definition of current utility practice. In addition, the assessment focused on the most significant betterment of the relocation, the construction of the substation building. In discussing the various options for the relocation, the assessment noted:

> The existing substation has no buildings other than three blockhouses (control house, fire protection, and cable oil circulation) and metallic weather enclosures for items such as the switchgear and capacitor banks.
>
> BECo will therefore benefit from a significant betterment through ownership and use of a substation building. Equipment will be better protected. Equipment maintenance procedures are no longer weather restricted. Storage and testing facilities are provided.
>
> Both options also result in the replacement of existing equipment with new equipment. Several operational improvements are associated with this upgrade including higher equipment efficiency and reduced maintenance costs.

The relocation option proposed by BECo also provided further system betterments. These betterments included an increase from 24 to 32 feeder breakers, an increase from four to eight bus tie breakers, a change from two to four transformers, and an increase from initial design in the size of the building from 28,720 to 39,168 square feet. The assessment concluded these betterments would result in ". . . improved system reliability and flexibility while increasing the value of the substation building itself."

In July 1995, the Consultant's Principal Engineer, San Francisco Execution Unit, issued a second and final "Independent Assessment Report of Betterments" on the relocation. The assessment identified $5.9 million of betterments which the Project should have received, plus $2 million to $3 million of accrued depreciation, and $1.2 million of salvage value, for a total of approximately $10 million which should also have been recovered. In addition, the assessment refuted the Project's claims that the relocation was a "replacement in kind" and characterized as "unsupportable" BECo's assertion that the substation reflected current substation requirements. The assessment concluded, "BECo has not produced any Standard Practices, Engineering Standards or Design Standards to support their claim."

Nevertheless, the State actively supported BECo in obtaining the new building and the related betterments. We reviewed correspondence in which the State instructed BECo on how to maximize Federal participation on the relocation. In a March 27, 1995, letter to BECo, the State identified a number of potential FHWA concerns on the relocation and advised ". . . BECo to study the situation; establish either rebuttals or negotiable alternatives. . . ." in preparation for a meeting to ". . . generate an acceptable agreement." The State also provided a series of detailed suggestions for countering anticipated FHWA requests for credits. For example, regarding accrued depreciation, the letter advised BECo to "Take a look at Subsection (4) and check with your legal department. Could this make a case on your behalf for no credits for the depreciation?"

The State's letter concluded,

> . . . considering what FHWA is alluding to as creditable items, plus expenses that they feel there is no justification to participate in, by strict application of the URA (utility relocation agreement), the State of Massachusetts could be left in a position of considerable financial vulnerability. It is my hope, this can, if not be eliminated at least lessened.

In letters to the State's CA/THT Project Director, FHWA expressed its concerns that the Project receive proper credits for the relocation. For example, in

correspondence dated November 22, 1991, the Acting Massachusetts Division Administrator advised that:

> Participation in the reconstructed electric substation should be evaluated and identified in accordance with 23 CFR 645. Credits to the project will be required for items such as accrued depreciation, betterments, and salvage.

In a followup letter, dated April 19, 1994, the Massachusetts Division Administrator notified the State's CA/THT Project Director that FHWA had reviewed the State's request for funding for the relocation. The letter also warned the State that:

> We are currently unable to establish if any credits to the project have to be applied for such items as accrued depreciation, betterments and salvage value of the replaced equipment for the reconstructed substation. (This issue was contained in our November 22, 1991 letter . . .). Until these issues can be reconciled, we are unable to take any further action on your above referenced requests.

However, despite lack of resolution of these concerns, FHWA eventually participated in the relocation. Furthermore, FHWA agreed to reduce the $10 million recovery for betterments, accrued depreciation, and salvage value discussed in the 1995 independent assessment, and accepted a settlement of $1.6 million (see exhibit). FHWA thereby participated in $8.4 million of unnecessary costs.

We completed our survey and met with FHWA Massachusetts Division officials on June 4, 1997, to discuss our preliminary findings. We requested the Division Administrator and CA/THT Project Administrator to explain FHWA's rationale for agreeing to reduce the $10 million recovery. They were not prepared to answer our questions at the time of the meeting, but stated part of the unrecovered credits could have been negotiated under the right of way (ROW) settlement, by which the State acquired easement rights from BECo to build on the site of the original substation. FHWA officials subsequently informed us the ROW settlement included a $1 million credit for accrued depreciation. The $1 million credit reflected the retired value of the original substation, and was in addition to the $1.6 million credit for betterments and accrued depreciation, thereby resulting in a total recovery of $2.6 million.

We were also told that FHWA staff did not perform their own analysis on betterments, depreciation, and salvage in this relocation, but relied on the State's evaluation. During our survey, the State could not provide us documentation for

the negotiations leading to the unrecovered credits. On June 23, 1997, we spoke with the State's Director of Design and Engineering to confirm the lack of documentation. The Director stated that he had no documentation available to support the negotiations which had been held with BECo for the relocation of the substation. He also informed us that the negotiations were the result of meetings and telephone conversations between the State and BECo management. In addition, on June 23, 1997, we interviewed the Consultant's Deputy Project Manager's Engineer, who stated he had no documentation detailing the State's negotiation process with BECo.

Furthermore, although the Massachusetts Division participated in the settlement, FHWA did not perform any analyses or evaluations, but approved the documentation the State provided. In response to our request for information on the process used to review and approve participation in the reduced amount, the CA/THT Project Administrator asserted that:

> FHWA and the State viewed the $10 million as the outer bounds of potential exposure for a full discussion of betterment and other issues, rather than . . . a $10 million betterment. . . . FHWA and the State believe that they did well in arriving at the final negotiated number. . . .

We do not agree with FHWA's conclusion. In May 1995, BECo wrote the Consultant to disagree with the results of the independent assessments. Although BECo had designed the building, BECo's CA/THT Project Group Manager now maintained that "Any notion that BECo will benefit from the erection of the station 53 building is false. To the contrary, a building imposes much greater operating and maintenance expense. . . ." Accordingly, the building might not have been needed, and the letter added that,

> Protection from weather is really not an improvement since all related electrical power equipment is usually located outdoors and is designed to withstand any/all weather extremes. In fact, an outdoor station is generally an advantage because of the superior heat dissipation available to the electrical equipment.

Based on BECo's comments and the issues raised by the Consultant's two independent assessments, we are concerned about the roles of the State and FHWA in this relocation. Given the circumstances of this relocation, it is important that FHWA recognize the potential impact on similar decisions regarding future utility relocations.

<u>Conclusion</u>

We are concerned that FHWA has continued to rely on the State's oversight, despite the State's emphasis on its own interests, as noted in our prior audits on the Project and again in the relocation of the BECo substation. In addition, we reaffirm our longstanding position that Federal funds should not be used to pay for inefficiencies and diseconomies resulting from local Project decisions not supported by demonstrated need.

In our opinion, whether the new substation is viewed as a betterment or considered as unnecessary, Federal participation was not justified. The FHWA Massachusetts Division Administrator reviewed a draft of this memorandum and confirmed that the BECo substation project was a utility relocation. Accordingly, we recommend FHWA reconsider its participation in the costs for the BECo substation, and increase its oversight of relocation of other utilities on the Project. We would appreciate a response within 30 days. If I can answer any questions or be of further assistance, please feel free to contact me on x61992.

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Exhibit
(2 Pages)

RESULTS OF NEGOTIATION FOR RELOCATION OF BECO SUBSTATION

	State's Initial Negotiating Position (1)	Settlement	Unrecovered Credits	Description
Betterments	$ 360,000	0	$ 360,000	15 kilovolt (kv) Breaker Increase (8 added for Dist. Spares)
	220,000	0	220,000	15 kv Breaker Increase (4 Added for Sectionalizing-Ring Bus)
	20,000	0	20,000	15 kv Dist. Cross Over (2 Added Sections for Bus Duct Connection)
	80,000	0	80,000	15 kv Aux Unit Increase (4 Added Sections, 1 for each added Bus)
	295,000	295,000	0	New Capacitors Bought for Substation
	330,000	330,000	0	Added Second Floor
Subtotal	1,305,000	625,000	680,000	
Configuration Improvements	150,000	0	150,000	Transformer Quantity/Size (2 @ 100% vs 4 @ 50% transformers)
	450,000	0	450,000	115 kv Interrupters/Disconnects (2 Added by 2 Added Transformers)
	4,000,000	0	4,000,000	Building Footprint Increase
Subtotal	4,600,000	0	4,600,000	

Exhibit

RESULTS OF NEGOTIATION FOR RELOCATION OF BECO SUBSTATION (continued)

	State's Initial Negotiating Position (1)	Settlement	Unrecovered Credits	Description
Accrued Depreciation	3,000,000	975,000(2)	1,000,000	Retired Value of Replaced Facility
		1,025,000(3)		" "
Subtotal	3,000,000	2,000,000	1,000,000	
Salvage Value	500,000	0	500,000	Disposal of Original Equipment
	750,000	0	750,000	Spare Transformer
Subtotal	1,250,000	0	1,250,000	
TOTAL	$10,155,000	$2,625,000	$7,530,000	

Explanatory Notes:

1. The State's initial negotiating position was based on the 1995 independent assessment.
2. Settlement was part of the initial betterment issue.
3. Settlement was part of the ROW agreement.

Source: Cost Reconciliation of BECo Utility Relocation Agreement for Vent Building No. 3 Site, provided as an attachment to a letter, dated October 13, 1995, from Massachusetts Highway Department to FHWA Massachusetts Division