
Office of Inspector General

*Report on Baseline Reviews of
Four Highway/Transit Mega Projects*

*Federal Highway Administration
Federal Transit Administration*

Report Number: TR-2000-043

Date Issued: February 4, 2000





Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
Of Transportation

Office of Inspector General

Subject: **ACTION**: Report on Baseline Reviews of
Four Highway/Transit Mega Projects
TR-2000-043

Date: February 4, 2000

From: Alexis M. Stefani
Assistant Inspector General for Auditing

Reply to JA-30
Attn of:

To: Federal Highway Administrator
Federal Transit Administrator

This report provides the results of our baseline reviews of four projects identified as “mega” projects. Mega projects are those projects estimated to cost over \$1 billion or having congressional interest. The specific objective of this review was to provide information on the current status, estimated cost, funding sources, and completion schedule, as well as to identify outstanding issues that may affect each project. Our baseline reviews are also intended to enable us to perform more timely audits of those projects experiencing cost, financing, or scheduling problems. The four projects reviewed were:

- Miami (Florida) East-West Multimodal Corridor Project;
- Gowanus (New York) Expressway Project;
- California State Route 210 Project (formerly State Route 30); and
- Monongahela/Fayette (Mon/Fayette) Expressway Project in Pennsylvania and West Virginia.

RESULTS-IN-BRIEF

Our review disclosed that sufficient funding to complete three of the four projects has not been identified. The planned \$1.5 billion transit line from the Palmetto Expressway to the Port of Miami (the major component of the Miami Multimodal Corridor project) has been placed on hold. The \$2.5 billion Mon/Fayette Expressway from Morgantown, West Virginia, to Pittsburgh, Pennsylvania, is being built in usable segments as funds become available. The Gowanus Expressway project in New York, which includes a viaduct from 6th Avenue and

65th Street to the Brooklyn Battery Tunnel, is in its early stages of design. The Gowanus alternatives range from \$800 million for rehabilitation of the existing highway and tunnel to \$9 billion for a complete replacement. Since the project is still in early design, funding has not been identified. The Transportation Equity Act for the 21st Century (TEA-21) requires finance plans for all projects with costs exceeding \$1 billion. If and when these projects (or their remaining segments) proceed to construction, finance plans will be needed.

The \$1 billion State Route 210 highway project from Los Angeles to San Bernardino, California, has sufficient funding committed to complete the 29 miles of construction. The project was approved in 1996 before the TEA-21 requirements and was not required to have a financial plan. Since the project will not be completed until 2005 and unexpected cost increases are not unusual in projects of this magnitude, we are recommending that a finance plan be required for the remaining work on the project (see page 4).

Below are summaries of the information and baseline data points on the four mega projects that we reviewed. A detailed discussion of the results of our review of each of the four projects is contained in the four exhibits attached to this memorandum.

SUMMARIES OF THE FOUR MEGA PROJECTS

Miami East-West Multimodal Corridor The Miami East-West Multimodal Corridor project originally included a new 12-mile rail transit line from the Palmetto Expressway to the Port of Miami and 9 miles of highway improvements on State Route (SR) 836. The project was estimated to cost \$1.6 billion, comprised of \$1.5 billion for the transit line and \$103 million for the highway improvements. However, the transit portion of the project has been placed on hold because of the July 29, 1999 rejection by voters of a local sales tax referendum to provide the state and local funding for the project. According to FHWA, FTA, and Florida state officials, the SR 836 improvements will proceed. We calculated that, as of December 1999, \$1.1 million (\$610,000 Federal funds and \$450,000 state funds) had been spent on the highway component for preliminary planning and environmental studies. Miami-Dade County officials stated that no additional Federal funds would be used to complete the highway improvements since toll revenues will be used. Construction of the highway portion of this project is scheduled to begin in 2000 and be completed by 2005.

Gowanus Expressway The Gowanus Expressway is a 6-mile highway serving the New York boroughs of Brooklyn, Manhattan, Queens, and Staten Island. The viaduct portion of the Gowanus Expressway is a continuous highway bridge from 6th Avenue and 65th Street to the Brooklyn Battery Tunnel. The expressway was

built in 1941 and has not had a major rehabilitation since it was expanded in the 1960s. The project is in the early stages of the environmental study process, with various project alternatives under consideration, from rehabilitation to a full tunnel replacement. Cost estimates for the various project alternatives range from \$800 million (for rehabilitation) to \$9 billion (for replacement with a full tunnel). As of December 1999, \$77.7 million (\$58.3 in Federal-aid highway funds, \$1.2 million in TEA-21 funds and \$18.2 million in state funds) had been spent on studies and other planning for the project. FHWA expects a Final Environmental Impact Statement to be issued in 2003. According to FHWA, the present schedule calls for construction of this project to begin around 2006; completion dates cannot be estimated until the preferred alternative is selected.

California State Route 210 The SR 210² project will replace the existing SR 30, which is an undivided two- to four-lane through-traffic roadway, with an eight-lane freeway including three general-purpose lanes and one High Occupancy Vehicle lane in each direction. The new freeway will extend 29 miles from Interstate 210 in eastern Los Angeles County to Interstate 215 in San Bernardino County. The current estimated cost of the SR 210 project is \$1.1 billion, which is below the original environmental review estimate of \$1.2 billion. As of December 1999, a total of \$156 million had been spent on the project (this number was not tracked to show Federal and non-federal dollars). Adequate funding (including \$602 million in Federal funds, \$69 million in state funds, and \$458 million in local funds) to meet the current estimated cost of the SR 210 project has been identified and committed. As of December 1999, work on the San Bernardino County portion of the project was about 11 percent complete, and the Los Angeles County portion was about 5 percent complete. Construction on SR 210 started in 1997, and the entire project is scheduled to be completed by 2005.

Mon/Fayette Expressway The Mon/Fayette Expressway project will extend about 75 miles from Interstate 68 east of Morgantown, West Virginia, through the Monongahela River Valley to Pittsburgh, Pennsylvania. Estimates provided by FHWA's Pennsylvania and West Virginia Division offices showed the projected cost of the Mon/Fayette Expressway project of \$2.5 billion. As of December 1999, about \$462 million (about \$20 million in Federal funds, and \$442 million in non-federal funds) had been spent on the project. However, neither West Virginia nor Pennsylvania has identified adequate funding to complete their respective parts of the project at this time. Funding of \$1.0 billion (\$58 million in Federal funds, \$968 million in state funds) has been committed to the project, but adequate funds to complete construction do not exist as of December 1999. Federal funding

² As of January 1, 1999, the official designation changed from SR 30 to SR 210. Eventually, the freeway will be designated as Interstate 210. Designation as an interstate will not occur until the construction is complete and applications are made to FHWA and the American Association of State Highway and Transportation Officials.

for the project to date is not substantial; however, project officials stated their intention to seek additional Federal funding and have identified potential Federal funding sources. Construction on two segments of this project started in 1994. The third segment began construction in 1999. The entire project is scheduled for completion in 2009 assuming timely identification of funding.

The states plan to start work on the remaining two of the five segments as funding becomes available. Since each of the segments is designed to function independently, this approach will enable some parts of the expressway to open for use sooner than if the states were to wait until full funding for the entire project became available. The combination of construction complexity for the Route 51-to-Pittsburgh segment (due to relocation of active rail tracks, construction of high-speed interchanges, and construction of an extensive amount of retaining walls and other structures) and the lack of sufficient funding may present a significant threat to meeting the scheduled completion date.

RECOMMENDATION

In keeping with the spirit of TEA-21, we recommend that FHWA require a finance plan for the remaining work to be done on the SR 210 project in California. This plan should be updated on an annual basis and, if warranted, include contingency plans for particular funding sources if these sources later are determined to be at risk.

We request that you provide written comments within 30 days. If you concur with our recommendation, please indicate the specific actions taken or planned and the target dates for completion. If you do not concur, please provide your rationale. Furthermore, you may provide alternative courses of action that you believe would resolve the recommendation.

If you have any questions or need further information, please contact me at (202) 366-1964, or Patricia J. Thompson, Deputy Assistant Inspector General for Highways and Highway Safety, at (202) 366-0687.

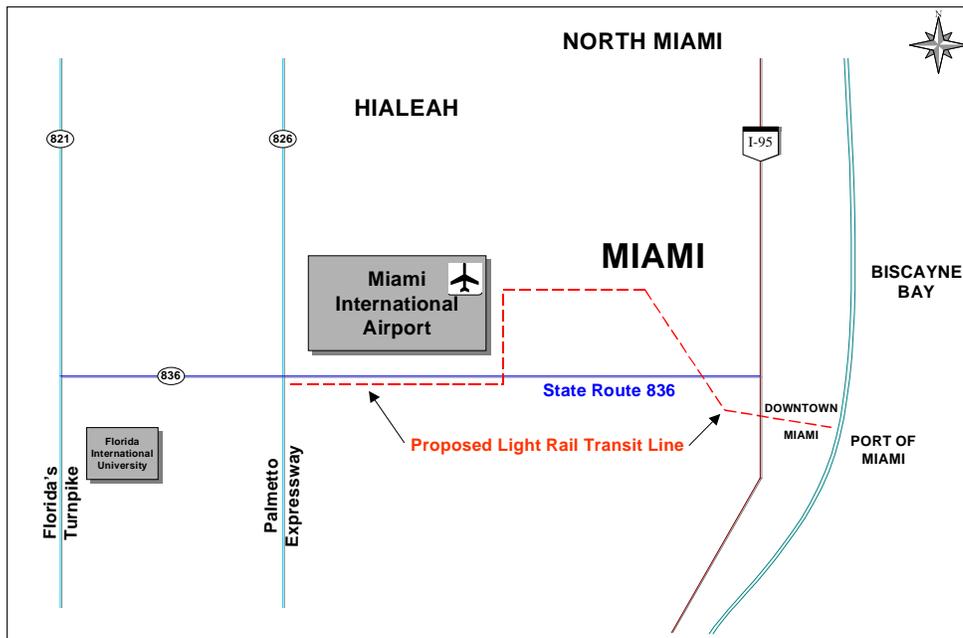
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EXHIBIT A. MIAMI EAST-WEST MULTIMODAL CORRIDOR PROJECT

Background -- Project Description

The purpose of the Miami East-West Multimodal Corridor Project was to combine highway and transit modes of transportation to reduce existing congestion on State Route (SR) 836 and create a fast, safe rail transit link between the airport and seaport (See Figure A). Additionally, the project would: (1) accommodate existing and future traffic demand, (2) increase highway safety, (3) improve transit accessibility, (4) promote transit as a preferred travel mode, (5) provide a multimodal transportation network, and (6) provide an acceptable and safe route for emergency evacuations. The project, as originally planned, consisted of highway improvements to SR 836 and construction of a new rail transit line. However, the transit portion of the project has been placed on hold because of the July 29, 1999 rejection by voters of a local sales tax referendum to provide the state and local funding for the project.

Figure A. Map of Miami East-West Project



The highway component (see Table A) of the project involves 9 miles of SR 836. Improvements of substandard median shoulder widths and toll plaza facilities (including electronic toll collection technology), as well as the creation of two buffer-separated High Occupancy Vehicle lanes in the median, will cost \$103 million (based on 1995 dollars). Presently, SR 836 (also referred to as the

Dolphin Expressway) is the only east-west expressway between the Florida Turnpike and the Atlantic coast. SR 836, serving 174,700 vehicles daily, is the main thoroughfare serving the airport and the Port of Miami. It provides access to downtown Miami; Miami Beach; and major activity centers in South and Central Dade County, such as shopping malls, major office and residential complexes, and Florida International University.

Table A. Project Statistics for Highway Improvement Component of Miami East-West Corridor	
Cost of Improvements	\$ 103 million
Funding	Federal \$ 610,000 ^a
	State/Local \$ 102 million
Miles	9 ^b
Construction schedule	
Start	2000
End	2005
Traffic per day	
Current	174,700 vehicles
Projected by 2020	263,000 vehicles

^a This amount was calculated by prorating the Federal funding spent as of December 1999 (\$9.5 million), by the percentage of total estimated project costs attributable to the highway component (6 percent). We used this method because the funds spent to date (which were for preliminary engineering, design, and environmental studies of the overall project) were not tracked according to whether they were attributable to the highway or transit portion. No additional Federal funds are planned to be used constructing the highway improvements.

^b Approximately 7 miles of the improvements include the addition of HOV lanes.

High traffic volumes between the Miami International Airport and the Port of Miami, increased commercial activities near SR 836, and the growing population in the area contribute to congestion on SR 836. In addition, the airport and a civic and medical complex, which together provide 25 percent of the county's jobs, are located near SR 836.

The rating for the current level of service for the majority of SR 836 is level F, which is considered a “failing” level of service.³ Operational deficiencies (for example, insufficient roadway capacity, S-shaped curves, inadequate interchanges, and horizontal and vertical alignment deficiencies) on SR 836 create congestion,

³ The Level of Service describes traffic conditions as measured in three critical traffic variables: average travel speed, vehicle density, and maximum service flow rate. As defined in the Highway Capacity Manual (Transportation Research Board), Levels of Service range from Level A, in which there is a free flow of traffic with low vehicle volumes and high speeds, to Level F, which is characterized by bumper-to-bumper traffic.

inaccessibility, unsafe conditions, and reduced mobility in emergency evacuations for hurricanes and other civil emergencies.

The transit portion of the project, which is on hold, would have included the construction of a new transit line from the Palmetto Expressway west of Miami, to the Port of Miami. The proposed 12-mile light rail transit line consisted of about 8 miles of aerial guideway and 4 miles of bored tunnel. Rider capacity was projected at 18,000 to 20,000 passengers per hour, and average daily transit boardings on the line were projected to reach 31,400 per day by 2020.

Project History

Planning for this joint highway-transit project began in 1988 when the Florida Department of Transportation (FDOT) evaluated various options for roadway improvements on SR 836. In 1993, the Miami-Dade County Metropolitan Planning Organization (Planning Organization) completed its Year 2010 Metro-Dade Transportation Plan. The plan identified the need for a transit system together with SR 836 improvements. The addition of a transit line in this area was intended to result in travel timesavings, lower traffic volumes, and less congestion on SR 836. In 1996, the Metropolitan Planning Organization decided to proceed with the SR 836 highway improvements and a new rail transit line. Without the additional capacity of rail transit, SR 836 would need to be widened to at least 8 lanes in each direction to accommodate 15,000 to 16,000 vehicles per hour, the projected traffic volume for the year 2020.

FDOT finalized the Environmental Impact Statement in August 1998, and FHWA and FTA issued a Record of Decision in September 1998.

Costs, Funding, And Schedule

Costs. The estimated cost of the original project, including the transit line, was \$1.6 billion. Currently, with the suspension of the \$1.5 billion transit line, the cost of the project is estimated at \$103 million (based on 1995 dollars) for 9 miles of highway improvements to SR 836.

Funding. The Federal share (\$1.3 billion) of the funding for the entire project was to be provided jointly by FHWA (\$700 million) and FTA (\$600 million). State and local sources were to provide the remaining funding of \$300 million to meet total estimated costs.

As of December 1999, \$16.5 million (\$9.5 million in Federal funds and \$7 million in state funds) have been spent for preliminary engineering, design, and preparation of the Environmental Impact Statement for the combined transit and

highway project. Project officials said that costs were not tracked to show a breakdown of those funds between the highway improvements and the transit line. However, we noted that, of the \$1.6 billion estimated project cost, about 6.4 percent was for the highway work and 93.6 percent was for the transit work. By prorating the cost-to-date at that same rate, we calculated the Federal share of the cost-to-date of the highway component was \$610,000.

According to the Miami-Dade Expressway Authority's chief engineer, no additional Federal funding will be used to complete the improvements of SR 836. In January 2000, the Expressway Authority plans to issue bonds backed by toll revenues to pay the remaining costs needed for the highway improvements.

Federal funds for the transit line would have been provided through a Full Funding Grant Agreement from FTA to the Miami-Dade County Transit Authority. With the defeat of the sales tax referendum, no local funding exists. Consequently, the Full Funding Grant Agreement was not signed and this component of the project cannot proceed.

Schedule. Notwithstanding the suspension of the project's transit component, officials from FDOT and the Miami-Dade Expressway Authority stated that construction on the SR 836 improvements will begin in the year 2000. The Expressway Authority estimates that the highway improvement will take 5 years to complete, which will put completion at year 2005.

Construction of the transit line was to begin in year 2002, and the entire project was to have been completed and opened for service in year 2009. Since the suspension of the transit line, project officials have not developed a new project schedule.

Conclusion

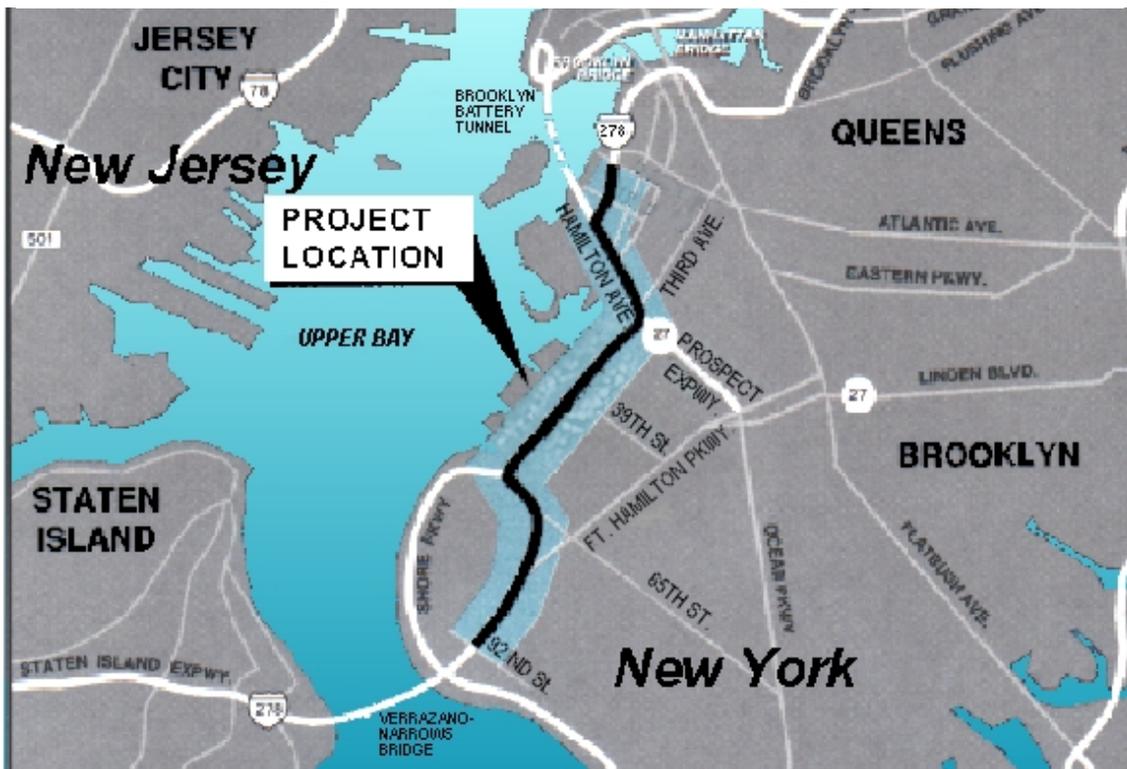
Project officials understand the importance of the transit component to the movement of traffic in the Miami area. Although the highway component of the project will improve traffic safety and increase capacity along SR 836, it will not reduce future congestion. Project officials are continuing to pursue avenues to obtain the necessary state and local funding so that the transit component can be restarted. We will follow up on this project once the transit component is incorporated into the project scope.

EXHIBIT B. GOWANUS EXPRESSWAY PROJECT

Background -- Project Description

The Gowanus Expressway project (part of Interstate 278) is in the early stages of the environmental study process. FHWA expects the Final Environmental Impact Statement to be issued in the year 2003. In the scope and design phase of the project, three basic alternatives are under consideration: 1) rehabilitation of the existing expressway, 2) replacement of the expressway with a partial tunnel, and 3) replacement of the expressway with a full tunnel. The project (see Figure B) is estimated to cost between \$800 million and \$9 billion, depending on the alternative chosen to replace or to rehabilitate the existing expressway.

Figure B. Map of Gowanus Project

***Project History***

The 6-mile Gowanus Expressway, in Brooklyn, New York, was built in 1941 and expanded in the 1950s and 1960s to become a component of the Interstate highway system. The viaduct portion of the Gowanus Expressway is a continuous highway bridge, stretching from 6th Avenue and 65th Street to the Brooklyn Battery Tunnel. The expressway has not had a major rehabilitation

since it was expanded in the 1960s, and sections of the viaduct portion of the expressway still stand on 1940s steel.

The Gowanus Expressway Project began in 1985 as a rehabilitation of the median of the expressway to create a bus lane. Preliminary studies indicated that there was extensive deterioration of the expressway. As a result, in 1990, the New York State Department of Transportation (NYSDOT) decided to rehabilitate the entire viaduct.

NYSDOT is in the process of preparing a Draft Environmental Impact Statement for the project. At the direction of Congress, detailed assessments of potential tunnel alternatives are being performed for inclusion into the draft environmental document.

A study completed by NYSDOT in the spring of 1999 produced 12 tunnel options, which assumed 1 large tunnel with exit ramps for connecting highways. The study was circulated for public comment. Based on the comments received, new alternatives containing multiple, smaller tunnels going to separate connecting routes are being developed. These new alternatives are expected to be considerably less expensive than the one-tunnel options contained in previous studies. All studies are expected to be completed, and a Draft Environmental Impact Statement is expected to be prepared by 2002.

On November 26, 1997, several local citizens' organizations filed a lawsuit against the New York Metropolitan Transit Council (the Council) and FHWA. The plaintiffs alleged that the Council and FHWA did not comply with applicable laws and regulations when the defendants chose not to perform a Major Investment Study (MIS) to identify traffic problems and to analyze solutions for the Gowanus Expressway. As of November 1999, the Council and FHWA were still negotiating with the plaintiffs. According to FHWA officials, the case will probably go to court, although no court date has been set.

Costs, Funding, And Schedule

Costs. The cost estimates for alternatives under consideration range from \$800 million to \$9 billion (see Table B). If project officials choose to rehabilitate the existing expressway, including the viaduct, the estimated cost would be \$800 million; however, if the officials choose to replace the entire expressway with one large tunnel, the estimated cost would be \$9 billion. The preferred alternative will be defined in the Draft Environmental Impact Statement.

Table B. Gowanus Expressway Project Cost Estimate Differentials	
Rehabilitation	Approximately \$800 million
Partial Tunnel Replacement	Up to \$7.0 billion
Full Tunnel Replacement	Up to \$9.0 billion

Funding. The Transportation Equity Act for the 21st Century (TEA-21) allocated a total of \$18 million for FYs 1998 through 2003 to “undertake studies, planning, engineering, design and construction of a tunnel alternative to reconstruction of [the] existing elevated expressway (Gowanus tunnel project).” Of that \$18 million, \$4.68 million had been obligated and \$1.16 million had been spent as of December 31, 1999. In addition to the funds provided specifically for the tunnel studies, the State of New York receives approximately \$1 billion in annual Federal-aid highway funds – about half of which is spent in the New York City area.

According to FHWA project officials, as of December 31, 1999, New York had spent \$77.7 million on the Gowanus Expressway – \$58.3 million in Federal-aid highway funds, \$1.2 million in TEA-21 funds, and \$18.2 million in state highway funds.

Schedule. The project is in the early stages of the environmental study process, and project officials have not determined the project’s scope and design. The current schedule calls for construction to begin on the project around 2006. The Draft Environmental Impact Statement, expected to be completed by spring 2002, will define the project’s preferred alternative and the expected schedule for completion of the project. However, the planned completion date for the Draft Environmental Impact Statement may be affected by the lawsuit described previously.

Conclusion

The Gowanus Expressway Project is in the early stages of environmental planning. The tunnel alternatives are expected to include multiple, smaller tunnels, which will provide lower-cost alternatives to one large tunnel with various exits. The preferred alternative will not be selected until at least the spring of 2002, when project officials expect to issue the Draft Environmental Impact Statement. Major decisions regarding cost, funding, and schedule will not be made until the issuance of the Final Environmental Impact Statement and the Record of Decision, which is not expected until 2003. If the alternative selected costs \$1 billion or more, a finance plan will be required under TEA-21. Finally, the pending lawsuit against the Council could further delay the project.

EXHIBIT C. CALIFORNIA STATE ROUTE 210 PROJECT

Background -- Project Description

The California State Route (SR) 210⁴ project will extend about 29 miles from Interstate 210 in eastern Los Angeles County to Interstate 215 in San Bernardino County. The project is divided into 18 segments. Of the 18 segments, 11, comprising 23 miles of the project, are in San Bernardino County and 7 segments, comprising 6 miles of the project, are in Los Angeles County. The SR 210 project will improve upon the existing SR 30, which is composed of undivided 2- to 4-lane through-traffic roadways.

The California Department of Transportation (Caltrans), San Bernardino Associated Governments (SANBAG)⁵, and Los Angeles County⁶ are responsible for the construction and funding of the various segments of the project. Caltrans is responsible for funding and constructing three segments of the San Bernardino County portion. Caltrans and SANBAG are sharing responsibility for two segments in San Bernardino County, with Caltrans being responsible for construction, and SANBAG being responsible for selecting consultants for the pre-construction work and right-of-way (ROW) funding. SANBAG is solely responsible for project funding and construction for the remaining six segments in San Bernardino County. Caltrans and Los Angeles County are responsible for funding and constructing the Los Angeles County portion of the project.

The goal of the SR 210 project is to facilitate the movement of people and goods, improve traffic safety, and alleviate congestion on east-west streets and Interstate 10, which runs parallel to the proposed new SR 210 freeway. The communities along the existing SR 30 corridor have been, and are projected to be, among the fastest growing areas in Southern California. The new freeway will follow approximately the same alignment as the existing SR 30, but will be an 8-lane freeway with three general-purpose lanes and one High Occupancy Vehicle lane in each direction. The SR 210 freeway will transform the current highway into an interstate, which is needed to meet projected future traffic demands.

⁴ As of January 1, 1999, the official designation changed from State Route 30 to State Route 210. Eventually, the freeway will be designated as Interstate 210. Designation as an interstate will not occur until the construction is complete and applications are made to FHWA and the American Association of State Highway and Transportation Officials.

⁵ SANBAG was formed in 1973 as a Council of Governments providing a forum for city and county elected officials to discuss mutual concerns. Since then, SANBAG's roles have encompassed transportation funding and planning, freeway improvements, commuter programs, clean air programs, and congestion management.

⁶ Los Angeles County's responsibilities for construction and funding of the seven segments are provided by the Los Angeles County Metropolitan Transportation Authority.

Costs, Funding, And Schedule

Costs. The 1996 Record of Decision for the project’s environmental review estimated the cost at \$1.2 billion. The cost estimate as of December 1999 is approximately \$1.1 billion (see Table C-1), \$363 million for the 7 project segments in Los Angeles County, and \$696 million for the 11 project segments in San Bernardino County.

According to a Caltrans official, several factors contributed to the lowering of the cost estimate from the amount shown in the 1996 Record of Decision. Specifically, the 1996 estimate was conservative (that is, it projected maximum expected costs), and it was based on the best information available at that time from the preliminary design and ROW requirements. In addition, the cost estimates were refined after approval of the environmental document at the final design stage. Another factor affecting the cost cited by the Caltrans official was the state of the Southern California economy. For example, fluctuating economic conditions affect ROW, labor, and materials costs, while increased competition among highway contractors can result in lower construction bids.

Table C–1. Cost and Expenditures for California State Route 210									
(in millions)									
County	Estimated Total Cost			Expenditures			Estimated Remaining Cost		
	Support	Construction	ROW	Support	Construction	ROW	Support	Construction	ROW
Los Angeles	\$49	\$247	\$67	\$13	\$10	\$19	\$36	\$237	\$48
San Bernardino	\$75	\$449	\$172	n/a*	\$50	\$64	\$75*	\$399	\$108
Total	\$1,059			\$156			\$903		

* San Bernardino County project officials were unable to provide current expenditure data for support costs so we are carrying the entire estimate for support costs as the “estimated remaining cost.”

In 1998, TEA-21 stipulated that projects costing more than \$1 billion are required to have finance plans. However, this project was approved by the FHWA California Division in 1996, prior to the finance plan requirement. Therefore, Caltrans has not prepared a finance plan for this project. Nonetheless, SANBAG did prepare a plan detailing proposed local funding for the San Bernardino County portion of the freeway.

As of December 1999, a total of \$156 million had been expended on the project, \$114 million on the San Bernardino County portion and \$42 million on the Los Angeles County portion. Of the amount expended for the San Bernardino County portion, approximately \$64 million was for ROW costs and \$50 million was for construction costs. San Bernardino County was unable to provide the amount it expended on support costs. Of the amount expended for the Los Angeles County portion, approximately \$19 million was for ROW costs, \$10 million was for construction, and \$13 million was for support costs.

Funding. Funding from Federal, state, and local sources has been obligated for the 18 segments of the project (see Table C-2). The obligated funding for the project was based on the original cost estimates, and totals approximately \$1.1 billion. Of that total, \$768 million is committed to the San Bernardino County portion of the project and \$362 million is committed to the Los Angeles County portion. The Federal Government has obligated about \$602 million to the dual-county project, whereas the state contribution is \$69 million and the local contribution is \$458 million. The total obligated funding is \$71 million (about 7 percent) more than the current projected cost because the funding was obligated based on the original cost estimates. However, the project is early in construction, and economic conditions that have contributed to lower costs in the early stages of the project may not continue. Furthermore, the full amount of obligated funding may be needed if unexpected conditions raise costs during construction.

Table C-2. Obligations for California State Route 210 (in millions)		
San Bernardino County	Federal:*	
	Surface Transportation Program Local	\$35.3
	Congestion Management	18.8
	Surface Transportation Program	196.6
	National Highway System	40.9
	Interstate Maintenance	44.6
	Subtotal	\$336.2
State:	Surface Transportation Program	\$25.5
	National Highway System	5.3
	Interstate Maintenance	4.1
	Subtotal	\$34.9
<i>Local:</i>		
San Bernardino County Measure I Sales Tax	\$396.7	
Total	\$767.8	
Los Angeles County	Federal:*	
	Surface Transportation Program	\$266.2
	State:	
	Surface Transportation Program	\$34.5
	Local:	
Los Angeles County Proposition 25	\$61.7	
Total	\$362.3	
Total Project Funding		\$1,130.1

* Federal Surface Transportation Program and National Highway System funding categories require an 11.47 percent state match, which is reflected under the state share. Federal Surface Transportation Program Local and Congestion Management funding categories are 100 percent federally funded and do not have a state share component. The Federal Interstate Maintenance funding category requires an 8.43 percent state match.

Schedule. Construction on the SR 210 project began in 1997, and was scheduled to be completed by 2005. The Los Angeles County portion of the project is to be completed by 2002, while construction on the San Bernardino County portion of the project is scheduled to extend through 2005. As of December 1999, the San Bernardino County portion of the project was about 11 percent complete, and the Los Angeles County portion was about 5 percent complete. Work completed to date has included construction of soundwalls, construction and widening of ramps and bridges, installation of traffic signals, construction of flood control channels, and construction of interchanges.

The schedule for two segments of the San Bernardino County portion of the project was delayed by 6 months because of funding problems encountered with a drainage channel in the City of Rialto. The city had indicated it did not have the funding to construct the channel, which will provide flood control to protect below-grade sections of the freeway. Caltrans was working with the City of Rialto to resolve the issue and, at the time of our review, did not anticipate that the problems would cause the project to extend its planned 2005 completion date.

Conclusion

The SR 210 project to improve upon the existing SR 30 will ultimately provide an east-west link between San Bernardino and Los Angeles counties. Caltrans, SANBAG, and Los Angeles County will continue to share responsibility in the funding and construction of portions of the project. The current estimated project cost of \$1.1 billion is closely in line with the original \$1.2 billion estimate, as stated in the 1996 Record of Decision. Funding has been identified and committed to the dual-county project, and it is in the early stages of construction. Although there was a 6-month delay affecting two segments in San Bernardino County, the entire project is expected to be completed by 2005.

Recommendation

In keeping with the spirit of TEA-21, we recommend that FHWA require a finance plan for the remaining work to be done on the SR 210 project in California. This plan should be updated on an annual basis and, if warranted, include contingency plans for particular funding sources if these sources later be determined to be at risk.

EXHIBIT D. MON/FAYETTE EXPRESSWAY PROJECT

Background -- Project Description

The Mon/Fayette Expressway will extend about 75 miles north from Interstate 68 east of Morgantown, West Virginia, through the Monongahela River Valley to Pittsburgh, Pennsylvania. The purpose of the project is to improve access to redevelopment sites in the economically depressed towns in the southwestern Pennsylvania and the greater Morgantown areas. In addition, the project aims to provide faster and safer travel for traffic, particularly commercial vehicles that use the existing north-south arteries between West Virginia and Pittsburgh.

Two segments of the Mon/Fayette Expressway, totaling about 10 miles, are already built and open to traffic. The first segment completed was a 6-mile toll road between Brownsville and Interstate 70. The Pennsylvania Department of Transportation (PennDOT) built this segment at a cost of \$64 million. Upon its opening in 1990, PennDOT turned this segment over to the Pennsylvania Turnpike Commission to operate as a toll road. By assigning the segment to the Pennsylvania Turnpike Commission, toll revenue, rather than tax dollars, is used to pay for maintenance. The second segment completed was a 3.5-mile non-toll road between Fairchance and Uniontown (Pennsylvania Route 857 to U.S. Route 119). This segment was completed in 1992 at a cost of \$26 million (\$21 million Federal funds and \$5 million state funds). Since it is a non-toll road, this segment is maintained by PennDOT.

The remaining portions of the Mon/Fayette Expressway will be completed in five separate segments - one in West Virginia and four in Pennsylvania - comprising about 68 miles of highway. These segments, like the first two, are designed to function independently, and each will be opened to traffic as it is completed. See the breakout of the segments in Table D-1. Because the four remaining Pennsylvania segments will be toll roads, the Pennsylvania Turnpike Commission will design, build, and operate these segments of the project. West Virginia Department of Transportation (WVDOT) has not decided whether the West Virginia segment will be a toll or non-toll highway.

Table D-1. Mon/Fayette Expressway Project as of December 1999			
State	Segment	Miles	Planned Completion Date
West Virginia	# 1: Extends north from Interstate 68 east of Morgantown, West Virginia, to the West Virginia/Pennsylvania state line	4	2002
Pennsylvania	# 2: Extends from the West Virginia/ Pennsylvania state line to PA Route 43 in Fairchance, Pennsylvania	8	2001
	# 3: Uniontown to Brownsville *	15	2007
	# 4: Interstate 70 to Pennsylvania Route 51 in Jefferson Hills Borough, Pennsylvania	17	2001
	# 5: Pennsylvania Route 51 to Pittsburgh *	24	2009
Total		68	

* Miles and completion dates subject to change in final design.

Costs, Funding, And Schedule

Costs. As of December 1999, the project to design and construct the remaining five segments of the Mon/Fayette Expressway was estimated to cost \$2.489 billion. About \$462 million had been spent on the five segments of the project as of December 1999 - \$8 million for the West Virginia segment and \$454 million for the four Pennsylvania segments (see Table D-2). The funds were used for preliminary engineering, environmental clearance, relocating utilities, final design, ROW acquisition, construction, and construction management.

Construction cost increases on the Mon/Fayette project have been minimal. Of the \$462 million expended as of December 1999, \$270 million was for construction contracts on the two segments currently under construction (segments 2 and 4). Cost increases resulting from contract changes on these segments increased costs by just \$2.1 million (0.78 percent) of expenditures. No construction cost expenditures are available for segment 1. Construction has not yet started on segments 3 and 5.

Table D-2. Cost and Expenditures of the Mon/Fayette Project By Segment as of December 1999 (in millions)				
	Segments	Estimated Total Cost	Expenditures As of 12/31/1999	Cost To Go
West Virginia	Segment 1 – Interstate 68 in West Virginia to the West Virginia state line	\$125	\$8	\$117
Pennsylvania	Segment 2 – Pennsylvania state line to Uniontown	\$145	\$138	\$7
	Segment 3 – Uniontown to Brownsville	\$407	\$10	\$397
	Segment 4 – Interstate 70 to Pennsylvania Route 51	\$577	\$292	\$285
	Segment 5 – Pennsylvania Route 51 to Pittsburgh	\$1,235	\$14	\$1,221
	Total Pennsylvania Segments	\$2,364	\$454	\$1,910
	Total	\$2,489	\$462	\$2,027

Funding. As of December 1999, about \$1.0 billion in funding had been identified for the Mon/Fayette project, \$982 million for the Pennsylvania segments and \$44 million for the West Virginia segment (see Table D-3). The Federal Government had provided about \$58 million, the State of Pennsylvania provided \$933 million, and the State of West Virginia provided \$35 million. Of the \$58 million provided by the Federal Government, \$49 million was committed for the Pennsylvania segments and \$9 million was committed for the West Virginia segment.

As of December 1999, about \$462 million of the \$1.0 billion in committed funding had been expended on the project. The \$564 million in remaining committed funding is adequate to complete segments 2 and 4, which are currently under construction and are expected to cost an additional \$292 million. However, as of December 1999, an additional \$1.5 billion in funding was needed to complete segments 1, 3, and 5 – \$1.4 billion to complete segments 3 and 5 in Pennsylvania, and \$81 million to complete segment 1 in West Virginia (see Table D-4).

According to the WVDOT chief engineer, the State of West Virginia plans to obtain the \$81 million needed to complete its segment of the project from (1) TEA-21 appropriations, (2) the National Corridor Planning and Development and the Coordinated Border Infrastructure programs, (3) revenue bonds, and (4) tax revenues. WVDOT officials did not identify the exact amounts they expect to get from each funding source, but stated that the amount from each funding source will be determined on a yearly basis.

For the \$1.4 billion needed to complete the Pennsylvania segments, Pennsylvania Turnpike Commission officials identified potential funding from a variety of Federal and state sources. Among the potential funding sources identified are

Table D-3. Sources of Funds Committed to the Mon/Fayette Expressway Project as of December 1999 (in millions)		
<i>West Virginia</i>	Federal:	
	TEA-21, FY 1999 appropriation	\$6
	High Priority Corridor Discretion	3
	<i>Subtotal</i>	\$9
	State:	
Revenue Bonds	\$32	
Tax Revenues	3	
	<i>Subtotal</i>	\$35
	<i>Total</i>	\$44
<i>Pennsylvania</i>	Federal:	
	FY 1991-1993 Department of Transportation Appropriation	\$10
	Intermodal Surface Transportation Efficiency Act of 1991	14
	TEA-21, FY 1998 appropriation	25
	<i>Subtotal</i>	\$49
	State:	
	Revenue bonds	\$525
Oil company franchise tax	270	
Motor vehicle registration fees	28	
Toll revenue	6	
West Virginia reimbursement*	4	
	<i>Subtotal</i>	\$933
	<i>Total</i>	\$982
Total Project Funding		\$1,026

* West Virginia reimbursed Pennsylvania for preparing the Environmental Impact Statement for the project.

Table D-4. Cost, Funding, and Shortfall Mon/Fayette Expressway Project (in millions)			
	Cost	Funding	Shortfall
West Virginia			
<i>Segment 1</i>	\$125	\$44	(\$81)
Pennsylvania			
<i>Segment 2</i>	\$145	\$145	\$0
<i>Segment 3</i>	\$407*	\$ 71	(\$336)
<i>Segment 4</i>	\$577	\$577	\$0
<i>Segment 5</i>	<u>\$1,235*</u>	<u>\$189</u>	<u>(\$1,046)</u>
PA Total	\$2,364	\$982	(\$1,382)
Project Totals	\$2,489	\$1,026	(\$1,463)

* The design of these segments has not been finalized, so the cost estimates could change.

(1) Federal-aid highway apportionments, (2) National Corridor Planning and Development and the Coordinated Border Infrastructure programs, (3) state registration fees, (4) the state's oil franchise accrual, and (5) public/private partnerships, that is, agreements with investors or land developers who want to provide financing or ROWs to the project.

Pennsylvania and West Virginia have identified and are actively seeking funding from a number of sources. The states plan to work on each segment as funding becomes available. Since each of the segments is designed to function independently, this approach will enable some parts of the expressway to open for use sooner than if the states were to wait until full funding for the entire project became available.

Schedule. All five segments that comprise the Mon/Fayette Expressway are scheduled to be completed by the year 2009, assuming adequate funding is provided on a timely basis (Table D-5). Two of the Pennsylvania segments (segments 2 and 4) are presently under construction, as well as segment 1 in West Virginia. Construction on segments 2 and 4 are 95 percent and 50 percent complete, respectively. The percentage complete figure is unavailable for segment 1 because construction has started fairly recently. The status of each segment is detailed below.

Table D-5. Status of Construction and Planned Completion Dates For the Mon/Fayette Expressway Segments as of December 1999			
Segment	Miles	Segment Status	Estimated Completion Date
1	4	Construction began October 1999	2002
2	8	Construction began October 1994 <i>Segment 95 percent complete</i>	End of 1999
3	15	Under environmental review Record of Decision expected July 2000	2007
4	17	Construction began September 1994 <i>Segment 50 percent complete</i>	2001
5	24	Under environmental review Record of Decision expected March 2001	2009

Segment 1 Delayed Due To Funding Shortfall. Construction on segment 1 in West Virginia did not begin on its originally scheduled April 1999 date due to WVDOT's inability to obtain funding. In June 1999, sufficient funding was obtained from the High Priority Corridor program and state sources to construct about 2.6 miles of this 4.2-mile segment. Construction on the 2.6 miles finally began in October 1999 with completion in the year 2001. WVDOT officials indicated that they would continue to apply for funding to complete the remainder of the work, and expected to obtain funding and complete construction of the

remaining 1.6 miles by the year 2002. The West Virginia segment will not be opened to traffic until the entire 4.2 miles is completed.

Segments 2 and 4 Under Construction. As of December 1999, construction was underway on segments 2 and 4. Approximately 95 percent of the planned construction work on segment 2 had been completed, while about 50 percent of construction work on segment 4 was completed. Information provided by officials of the FHWA Pennsylvania Division and the Pennsylvania Turnpike Commission indicated that both segments are on schedule for completion in the year 2001.

Final Designs of Segments 3 and 5 Must Be Completed. Segments 3 and 5 are still in the environmental review stage, and final designs and preferred alignments have not yet been approved. According to Pennsylvania Turnpike Commission officials, construction of segments 3 and 5 will begin shortly after their Records of Decision are completed, which is expected to occur in July 2000 and March 2001, respectively. Segment 5 will be the last segment to be completed because it will be the most complex segment of the project. According to the Assistant Chief Engineer of the Pennsylvania Turnpike Commission, this segment is more complex than the other Mon/Fayette project segments primarily because it traverses a heavily urbanized environment, passing through numerous well-developed communities and municipalities. Furthermore, segment 5 involves relocating approximately 8 miles of active rail tracks, involving three different railroad companies; constructing two interstate connections resulting in complex high-speed interchanges; obtaining ROW access in residential and commercial areas; and constructing an extensive amount of retaining walls and other structures.

Given the early stage of design for segments 3 and 5, and the complexity of the work included in segment 5, the scheduled completion dates for these segments could change as their designs are finalized. To keep the segments on track, Pennsylvania Turnpike Commission and FHWA officials intend to actively coordinate with local officials to ensure that this segment is designed to be consistent with local planning initiatives.

Conclusion

Sufficient funding to complete the Mon/Fayette Expressway project does not exist as of December 1999. A financial plan for the entire project does not exist since segments of the project were approved prior to TEA-21's finance plan requirement. However, segment 5, which has not yet been designed and approved and which is estimated to cost over \$1 billion, will be required to have a finance plan under TEA-21. In addition to the lack of funding, the major issue confronting project completion is the complexity of the construction of segment 5, PA Route 51 to Pittsburgh. The combination of this complexity and the lack of funding are a significant threat to completion of the project by the year 2009.