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DIGGING UP THE FACTS: INSPECTING THE BIG DIG AND THE PERFORMANCE OF FEDERAL AND STATE GOVERNMENT IN PROVIDING OVERSIGHT OF FEDERAL FUNDS

HEARING

BEFORE THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

APRIL 22, 2005

Serial No. 109–29

Printed for the use of the Committee on Government Reform

Available via the World Wide Web: http://www.gpo.gov/congress/house
http://www.house.gov/reform

U.S. GOVERNMENT PRINTING OFFICE

21–590 PDF WASHINGTON : 2005

For sale by the Superintendent of Documents, U.S. Government Printing Office
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DIGGING UP THE FACTS: INSPECTING THE BIG DIG AND THE PERFORMANCE OF FEDERAL AND STATE GOVERNMENT IN PROVIDING OVERSIGHT OF FEDERAL FUNDS

FRIDAY, APRIL 22, 2005

HOUSE OF REPRESENTATIVES,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The committee met, pursuant to notice, at 2 p.m., in the En Banc Courtroom, Moakley Courthouse, Boston, MA, Hon. Tom Davis (chairman of the committee) presiding.

Present: Representatives Davis of Virginia, and Lynch.

Also present: Representative Capuano.

Staff present: Teresa Austin, chief clerk; Sarah D'Orsie, deputy clerk; Brian Stout, professional staff member; John Hunter, counsel; Drew Crockett, deputy director of communications; and Krista Boyd, minority counsel.

Chairman TOM DAVIS. Good afternoon. A quorum being present, the committee will come to order. We are conducting this field hearing in Boston today to assess the status of the Central Tunnel/Artery Project, or the Big Dig, one of the largest and most expensive Federal highway projects in the history of the United States.

My colleague and good friend and member of this committee, Congressman Stephen Lynch, requested that this congressional committee convene a hearing here in Boston to witness firsthand the steps being taken to address the outstanding concerns and issues in terms of safety and cost associated with the Big Dig.

As this project nears completion, it is vital that we assess the lessons learned here in Boston and determine how to prevent such cost growth and improve oversight and coordination in the future. These are significant areas of concern to the Committee on Government Reform, and indeed to the entire Nation, as we seek solutions to increased urban congestion throughout the country.

It is imperative for the Federal Government, which often pays 80 percent of the major highway projects, to play a role to ensure that taxpayer dollars, whether Federal or State, are being used effectively. In addition, the increase in the number of projects and the rapidly growing competition for both Federal and State funding demand that major transportation and infrastructure projects be managed efficiently and cost effectively, so we are able to fund the many needs we have across the Nation.

It is for these important reasons that we decided to come to Boston today and hold this important hearing. I am pleased that Con-

gressman Lynch is with us this morning, and I also want to welcome Congressman Capuano to this field hearing as well. And I would ask unanimous consent that he be allowed to sit here as a member of the committee and ask questions. And, Mike, we appreciate you being here as well.

I don't need to remind anyone here about the traffic and related highway safety problems of the Central Artery in the 1980's that led to the planning for this massive project. Preliminary designs began in the 1980's, and construction commenced in 1991.

As with all State highway projects such as this, the Federal Highway Administration is responsible for protecting the Federal funding of this project. As part of the Metropolitan Highway System, the Massachusetts Turnpike Authority has given construction and operational authority for this project.

The figures associated with the Big Dig are staggering. The nature and scope of the project, the time involved in planning and construction, and the cost overruns and safety concerns are unparalleled. What began in 1980 as a $2 billion project grew to $8 billion in 1995, and the Authority currently estimates the project cost to be $14.625 billion.

Upon completion, scheduled for later this year, the project will encompass 7.8 miles of highway, with 161 lane miles of pavement, 3 interstate tunnels, over 200 bridge structures, and 6 major interchanges. So it comes close to $2 billion a mile.

While it is hard to imagine another federally funded project—public works project of this magnitude, there is a growing need nationwide to plan, build, and support major highway and infrastructure improvements. It is, therefore, vital for us to learn what happened here in Boston and implement procedures that will ensure against cost overruns of highway projects and assure the safety and confidence of the traveling public that utilizes those highways.

Certain steps have already been undertaken as a result of the problems associated with the Big Dig. Congress now requires initial financial plans and annual updates to be submitted and approved by the U.S. Department of Transportation for all projects costing over $1 billion.

These financial plans for the mega projects must identify project costs and financial resources to implement and complete the planned project. Annual updates must report actual cost and revenue performance in comparison to original estimates and revision of estimates.

This process has been implemented. The Woodrow Wilson Bridge Project, which is the Potomac River crossing northern Virginia, which I represent, and Maryland. Right now that is on schedule and under budget.

I hope that this hearing will give us an accurate picture of the current status of the Big Dig and the efforts to remedy the tunnel leaks, which has been learned from this mega highway—what else has been learned, and implementation of safeguards for other federally funded projects.

Now, we have assembled an impressive group of witnesses today. We will hear from the Federal Highway Administration, the U.S. Department of Transportation Inspector General, the Commonwealth of Massachusetts, the attorney general of the Common-

wealth of Massachusetts, the Massachusetts Turnpike Authority, the overall management consultant for the project hired by the Massachusetts Highway Department, and a safety engineer who evaluated the project.

I want to thank our witnesses for appearing before the committee, and I look forward to their testimony.

I now yield to Mr. Lynch.

[The prepared statement of Chairman Tom Davis follows:]

Opening Statement of Chairman Tom Davis
Committee on Government Reform Field Hearing – Boston, MA
"Digging Up the Facts: Inspecting the Big Dig and the Performance of Federal and State Government in Providing Oversight of Federal Funds"
April 22, 2005

Good afternoon. A quorum being present, the Committee on Government Reform will come to order. We are conducting this field hearing in Boston today to assess the status of the Central Tunnel/Artery Project, or the "Big Dig," one of the largest and most expensive federal highway projects in the history of the United States. My colleague and good friend and a member of this committee, Congressman Steve Lynch, requested that this Congressional committee convene a hearing here in Boston to witness first-hand the steps being taken to address the outstanding concerns and issues, in terms of safety and cost, associated with the Big Dig.

As this project nears completion, it is vital that we assess the lessons learned here in Boston and determine how to prevent such cost growth and improve oversight and coordination in the future. These are significant areas of concern to the Government Reform Committee, and indeed to the entire nation, as we seek solutions to increased urban congestion throughout the country. It is imperative for the federal government, which often pays 80 percent of major highway projects, to play a role to ensure taxpayer dollars, whether federal or state, are being used effectively. In addition, the increase in the number of projects and the rapidly growing competition for both federal and state funding demand that major transportation and infrastructure projects be managed efficiently and cost effectively so we are able to fund the many needs across our nation.

It is for these important reasons that we decided to come to Boston today and hold this important hearing. I am pleased that Congressman Lynch is with us this morning, and I would also like to welcome Congressman Capuano, representing the Eight Congressional District.

I don't need to remind anyone here about the traffic and related highway safety problems of the Central Artery in the 1980's that led to the planning for this massive project. Preliminary designs began in the 1980s and construction commenced in 1991. As with all state highway projects such as this, the Federal Highway Administration is responsible for protecting the federal funding of the project. As a part of the Metropolitan Highway System, the Massachusetts Turnpike Authority was given construction and operational authority for the project.

The figures associated with the Big Dig are staggering - the nature and scope of the project, the time involved in planning and construction, and the cost overruns and safety concerns are unparalleled. What began in 1980 as a $2 billion project grew to $8 billion in 1995 and the Authority currently estimates the project cost to be $14.625 billion. Upon completion, scheduled for later this year, the project will encompass 7.8

miles of highway with 161 lane miles of pavement, 3 interstate tunnels, over 200 bridge structures and 6 major interchanges.

While it is hard to imagine another federally funded public works project of this magnitude, there is a growing need nationwide to plan, build and support major highway and infrastructure improvements.

It is therefore vital for us to learn from what has happened here in Boston and implement procedures that will ensure against cost overruns of highway projects and assure the safety and confidence of the traveling public that utilizes those highways.

Certain steps have already been undertaken as a result of the problems associated with the Big Dig. Congress now requires initial financial plans and annual updates to be submitted and approved by the U.S. Department of Transportation for all projects costing $1 billion or more. These financial plans for "Mega Projects" must identify project costs and financial resources to implement and complete the planned project. Annual updates must report actual cost and revenue performance in comparison to original estimates and revision of estimates.

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I hope that this hearing will give us an accurate picture of the current status of the Big Dig and the efforts to remedy the tunnel leaks, what has been learned from this mega-highway project, and implementation of safeguards for other federally funded projects.

We have assembled an impressive group of witnesses for this afternoon's hearing. We will hear from the Federal Highway Administration, the U.S. Department of Transportation Inspector General, the Commonwealth of Massachusetts Attorney General, the Massachusetts Turnpike Authority, the overall management consultant for the project hired by the Massachusetts Highway Department, and a safety engineer who evaluated the project.

I would like to thank all of our witnesses for appearing before the Committee, and I look forward to their testimony. I now yield to Mr. Lynch for his opening statement.

Mr. LYNCH. Thank you, Mr. Chairman. First, I would like to begin by thanking you for convening this hearing, and also it was necessary for me to get the agreement of our ranking member, Henry Waxman, and I appreciate you coming here to Boston.

This committee is the Committee on Government Reform. And as the name suggests, it is the continuing problems that we have encountered on the Central Artery/Tunnel Project that brings us here today. Very simply, this committee is charged with asking the tough questions, and using the powers that are afforded to this committee, and to the Congress, to determine where the shared responsibilities lie in completing and maintaining this project in a manner that meets the high standards that taxpayers and toll payers expect.

In a national regulatory context, we also seek to ensure that the systemic problems that resulted in cost overruns are not allowed to happen again. There is frequent criticism of partisan bickering in Congress that sometimes hampers our work. And, in fairness, I must confess that sometimes that criticism is warranted and well deserved.

However, I must say that my experience on this committee, under the leadership of Chairman Tom Davis, the gentleman from Virginia, has been a shining exception to that rule. In my brief tenure on the committee, we have conducted investigations of the Boston Office of the FBI and their involvement with organized crime, we continue to investigate the U.N.'s complicity in the Iraqi Oil for Food scandal, we are investigating contract irregularities with Halliburton in the Middle East, and most recently steroid abuse in Major League Baseball and professional sports.

And through it all, I have seen Chairman Davis has personally gone to great lengths to maintain a level of fairness and to encourage the work of all members together, regardless of their political affiliation. So, again, my thanks.

Chairman TOM DAVIS. Thank you. If you want to take more than your 5 minutes, you are doing real well. [Laughter.]

Mr. LYNCH. Well, he wrote this, so—[laughter]—not at all. Turning to the difficulties of the Central Artery Project, as somebody who literally grew up in the construction industry, I have taken a natural interest in this project. Let me state at the outset that I do not for a moment discount the colossal scale of this undertaking, which is, again, as the chairman has said, the largest and most complex construction project in the history of the United States.

And also, I fully and personally appreciate the pride and skill of the men and women of the building trades who built it. I have enormous pride in them, and I am not questioning their work.

And I am mindful, most of all, of the memories of workers who actually gave their lives on this project, men like John Hegarty, an old friend from Savin Hill, in the neighborhood, in the Savin Hill section of Dorchester, a proud member of Pile Drivers Local 56, who left a wife and young children; men like Fook Choi Kan, who was a union carpenter from Springfield, who also died on this project; and Lonnie Avant, a member of Local 4 Operating Engineers from Roxbury, who on all accounts was considered a true gentleman and someone who took great pride in his work.

And men like my young friend, Frank Shea, of south Boston, who was an accomplished boxer and a Golden Glove champ, who lived by the simple truth that there was honor in hard work. Those gentlemen were reflections of what was and is best about America.

There were common threads that ran through each of their lives. They, like their parents, Irish, Asian, African-American, by their labor they found dignity in their work, and that has been an enduring truth in this country.

It is also directly related to America's sense of shared sacrifice and our willingness, as citizens, to support projects like this, that probably benefit future generations more than they benefit us today, not simply to reduce the length of a traffic jam or cut our morning commute time, but because we hope that our work can become our legacy, to improve the lives of future generations. And as noble as that may sound, it takes more than good intentions to build that legacy, as this project has shown.

I think the best example of how quickly good intentions can succumb to failure is the story of greed following national need during World War II. The people of this Nation were bound to a unified cause because of the attacks on Pearl Harbor, and they rallied to superhuman acts during World War II.

And yet as the country grappled with logistics of the war effort, terrible examples of waste and mismanagement and abuse in our defense contractor practices threatened that effort until Senator Harry Truman and the members of the Truman Commission investigated the causes of those deficiencies and that waste and got the war production effort back on track.

The risk then was not just in wasted tax dollars but in lost lives, shoddy materials, and missed deadlines in delivery. Then, Senator Truman got in his car and went around the country visiting installations and talking with the people working for defense contractors. He knew that the key to reform—true reform—would be found where the work was actually occurring.

And so now we are here today in the spirit of that earlier effort, and it is my hope, with at least a small fraction of the clarity and the sense of mission that Senator Harry Truman brought to his work.

Why is this as important as the earlier investigations? Our transportation system is the key to our economic stability, and we have just approved in the House a brand-new $285 billion transportation bill. This Nation will continue to undertake huge public works projects, but, whether large or small, the taxpayer deserves value for each dollar spent.

This project was and is a courageous endeavor of breathtaking ambition—make no question about it—an effort that was equal to the people who have built it. And we are trying to—what we are trying to do here is preserve the legacy of this monumental effort and bring it back into respectability, and that can only happen when all the parties are held accountable and share in that responsibility.

I have followed the chronology of this project from its inception to today, and I must say through all of its twists and turns and conflicts and mediations I have yet to find a single example when

the interests of the taxpayers and of ordinary citizens have prevailed. Well, we are hoping in this hearing that will change.

If we reexamine how we got to this place, and take note, as the chairman has said, of lessons learned from our experience, if we work together thoughtfully and in good faith to find a way to ensure that the public is a partner in this effort, we can restore dignity to this project, and we can protect the people's interests from this day forward.

Thank you, Mr. Chairman. I yield back.

[The prepared statement of Hon. Stephen F. Lynch follows:]

CONGRESSMAN

STEPHEN F. LYNCH

9th District, Massachusetts *http://www.house.gov/lynch/*

FOR IMEMDIATE RELEASE
April 22, 2005

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OPENING STATEMENT OF CONGRESSMAN STEPHEN F. LYNCH
COMMITTEE ON GOVERNMENT REFORM HEARING
"Digging Up the Facts: Inspecting the Big Dig and the Performance of Federal and State Government in Providing Oversight of Federal Funds"
April 22, 2005

Thank you Chairman Davis, I'd like to begin by thanking you and our ranking member Henry Waxman for your willingness to convene this hearing and to come here to Boston.

This is the Committee on Government Reform, and, as the name suggests, it is the continuing problems that we have encountered on the Central Artery/Tunnel Project that bring us here today. Very simply, we must ask the tough questions, and use the powers that are afforded to this Committee and to the Congress to determine where the shared responsibilities may lie in completing and maintaining this project in a manner that meets the high standards that taxpayers and toll payers may reasonably expect. In a national regulatory context, we also seek to ensure that the systemic problems that resulted in cost overruns are not allowed to happen again.

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Turning to the difficulties on the Central Artery Project, as someone who literally grew up in the construction industry, I've taken a natural interest in this project.

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I have followed the chronology of this project from its inception to today. I must say that through all its twists and turns and conflicts and mediations, I have found no example where the interests of the taxpayers and of ordinary citizens have prevailed.

Well, we're hoping that this hearing can change that. If we reexamine how we got to this place and take note of the lessons learned from our experience, if we work thoughtfully and in good faith to find a way to ensure that the public is a partner in this effort, we can restore dignity to this project and we can protect the people's interests from this day forward.

Thank you, Mr. Chairman. I yield back.

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Chairman TOM DAVIS. Thank you very much.

Mr. Capuano.

Mr. CAPUANO. Thank you, Mr. Chairman. First of all, thank you for allowing me to sit with you and to share some time with you. Welcome to Boston. Actually, welcome back to Boston.

Chairman TOM DAVIS. Thank you.

Mr. CAPUANO. And, again, I would echo everything Mr. Lynch said about your tenure, both in this chairmanship and as a human being. I find you to be one of the most fair and honorable people in Congress, and I am pleased and honored to sit here for a few minutes with you.

Chairman TOM DAVIS. Thank you.

Mr. CAPUANO. As far as today's hearings go, there are only a couple of things that I am deeply interested in. I am the least interested person here in the headlines that are going to be in tomorrow's papers or in tonight's news, because I think that's part of the problem with this particular project is too many people interested in too many headlines and not enough people interested in the facts and the realities of the project.

First of all, as everything I understand, and I am going to ask every single witness today to answer the question, as I understand it today, the project is safe. And everything I have read, everything I have heard from everybody involved has indicated that it is safe, but I want to hear it from every person who testifies here today.

No. 2, the project is working. I took it to get here today. My expectation is that many of you took it to get here today and will take it as you leave. And if you didn't take it, I would suggest that you do. The project, though not complete, is working.

It is doing what it was promised to do, which is to ease traffic flow, improve our environment, and improve the quality of life in greater Boston, and hopefully to set an example of the kinds of construction projects that are wanted across this country to improve the quality of life in other especially older cities.

As far as what we learned from this project, my hope is that we learn a couple of things. No. 1 is that we know that this project will continue to be safe. That is the top priority, that it continues to be safe tomorrow, next week, next month, and in the next generation.

I would hope that over time, maybe not today but over time we learn on issues of accountability—who is responsible for what, how much, and hopefully none of that will go to the taxpayers. But I think that will be part—it will clearly be part of the discussion today, and it will take a while to work all those things out.

I also want to hear some of the lessons that we have learned from this project, both on a State level and on a Federal level. I have been involved in major construction projects in the past, and every time you do one you learn something.

This project, as you have heard, is the biggest project in the history of the country. There are lots of lessons that have been learned, and hopefully they will allow us to improve our process in the future, again, both on a State and on a Federal level.

And, finally, I want to make sure that the costs relative to this project don't have a negative impact on, No. 1, taxpayers; and, No. 2, on future projects.

I was a former mayor of a city close to Boston, Summerville, and during that time when I was mayor I personally experienced projects in Summerville that were stopped or delayed because the financing on this project sucked up every single dollar the State had.

That was unacceptable, and the solution was a few years ago the Congress passed basically a rule or a regulation, a law, that said the State must have minimum spending on projects in Massachusetts other than the Big Dig. To my knowledge, that is still working. That is still in place and still being adhered to.

I want to make sure that the future costs of this project don't lead to the same results, both on maintenance and in completion. Everything I have heard thus far on completion I think we are in good shape. Obviously, maybe we will hear different today, but that also goes for maintenance. It doesn't do us any good if the maintenance costs of this project are 100-fold what we expect, so that they suck up future dollars.

I know that the House just passed a bill, as Mr. Lynch mentioned, that for Massachusetts will mean $5.1 billion. It means 7,500 new jobs—40,000 jobs but 7,500 new jobs per year every year for the next 5 years.

Now, I happen to think that is the way government should work, both for the jobs and economic aspects of it, even for the transportation aspect of it. And I don't want those jobs jeopardized by the concerns of this project.

Mr. Chairman, thank you for the opportunity to be with you today. Thank you for the opportunity to sit here with you. And, again, I hope you enjoy your brief time here in Boston.

Chairman TOM DAVIS. Well, thank you very much.

Members will have 7 days to submit opening statements for the record, and we are going to recognize our first panel. We have Mr. D.J. Gribbin, who is the Chief Counsel for the Federal Highway Administration. Mr. Gribbin is accompanied by Mr. Stanley Gee, the Administrator of the Massachusetts Division of the Federal Highway Administration.

Joining Mr. Gribbin and Mr. Gee is the Inspector General of the Department of Transportation, the Honorable Kenneth Mead, whose office plays a vital role in promoting the effectiveness of and preventing waste, fraud, and abuse in departmental programs and initiatives.

And we are also pleased to have the Honorable Tom Reilly, the attorney general for the Commonwealth of Massachusetts, who has been tasked with leading the current cost recovery efforts. We appreciate your being here, too, Mr. Attorney General.

It is the policy of this committee we swear everyone before you testify. So if you could just rise with me and raise your right hands.

[Witnesses sworn.]

Chairman TOM DAVIS. Thank you.

Your entire statements are in the record.

Mr. Gribbin, we will start with you and move straight on down. And thank you, once again, for being with us up here.

STATEMENTS OF D.J. GRIBBIN, CHIEF COUNSEL, FEDERAL HIGHWAY ADMINISTRATION, ACCOMPANIED BY STANLEY GEE, ADMINISTRATOR, MASSACHUSETTS DIVISION, FEDERAL HIGHWAY ADMINISTRATION; KENNETH MEAD, INSPECTOR GENERAL, U.S. DEPARTMENT OF TRANSPORTATION; AND TOM REILLY, ATTORNEY GENERAL, COMMONWEALTH OF MASSACHUSETTS

STATEMENT OF D.J. GRIBBIN

Mr. GRIBBIN. Thank you, Mr. Chairman. Mr. Chairman, members of the committee, thank you again for the opportunity to testify today on issues concerning the Boston Central Artery/Tunnel Project.

I have asked, as you mentioned, Mr. Chairman, Stan Gee, who is Federal Highways' Massachusetts Division Administrator, to join me today. Stan is our point person on this project, and he has been overseeing it since the year 2000.

The Central Artery/Tunnel Project is 96 percent complete, and substantial completion is scheduled by October of this year. This $14.6 billion project has been the largest, most expensive, and most complex highway project in U.S. history. This ambitious project will provide countless benefits to the city of Boston in the way of enhancing safety, easing traffic congestion, providing acres of open park land to city residents, and reconnecting communities severed by the old elevated highway.

In my time here today, I will touch on three issues—the safety of the tunnel, the recent problems with leaks, and the cost of the project. First, I wish to take this opportunity to restate Federal Highways' conclusion that the Central Artery, including the tunnels that are part of this project, is safe for public travel. We will not compromise on safety. Safety is the Department of Transportation's top priority, and I agree with Mr. Capuano that we need to ensure that this project will continue to be safe into the future.

Second, one of the most recent areas of concern with the project involves water intruding into the tunnels. This water is causing two types of leaks. The most serious of these leaks occurred on September 15, 2004, when a slurry wall panel was breached, allowing a substantial amount of water to enter into the northbound tunnel of I–93 for a few hours.

In response to this incident, Federal Highway Administrator Mary Peters requested an independent Federal highway engineering assessment of all tunnel leaks. The Federal Highways' tunnel leak assessment team issued its interim report on March 23rd of this year.

The team reports that the project is appropriately addressing the tunnel leaks. The September 15 breach appears to be isolated to a discrete section of the tunnel and is primarily the result of poor quality control during construction. It is not a result of a defective design.

The contractor responsible for this section of the tunnel has successfully installed an interim repair, has submitted a design for a permanent fix, and has agreed that repairs will be made at their expense, not at the public's.

The MTA is reviewing plans for the permanent repair, and Federal Highways will approve plans for the repair once we are satisfied that it provides for a structure that is sound, durable, watertight, and relatively maintenance free. We will also assess the degree to which the repair disrupts nearby structures and the traveling public.

As a result of the September 15 breach, emphasis has been placed on the second kind of leak in the tunnels. Federal Highways' leak report noted that the project continues to manage the tunnel leak sealing efforts in a very methodical way. As of April 13 of this year, almost 1,100 leak sealings have been performed, and it is estimated that the project is on track to have all of the low-level leaks sealed by October.

Once again, the cost of this work is the responsibility of the mainline tunnel contractors, not the taxpayers. Federal Highways will continue to monitor these efforts, and will issue a report upon completion of all repairs.

Finally, perhaps the most publicly criticized aspect of the Central Artery/Tunnel Project has been its dramatic cost escalation. Federal Highways has worked closely with Inspector General Mead and his office to ensure Federal Highways' oversight practices and procedures to avoid similar occurrences. Together we have been able to create a framework for major project oversight that will serve us well for the remainder of this project and for future major projects.

Mr. Chairman, members of the committee, thank you for this opportunity to testify. I will be pleased to answer any questions you may have at the appropriate time.

[The prepared statement of Mr. Gribbin follows:]

STATEMENT OF D.J. GRIBBIN
CHIEF COUNSEL
FEDERAL HIGHWAY ADMINISTRATION
UNITED STATES DEPARTMENT OF TRANSPORTATION
BEFORE THE COMMITTEE ON GOVERNMENT REFORM
UNITED STATES HOUSE OF REPRESENTATIVES
APRIL 22, 2005

Mr. Chairman and Members of the Committee, thank you for the opportunity to testify today on issues concerning the Boston Central Artery/Tunnel (CA/T) project.

The Central Artery/Tunnel project is nearing completion. This $14.6 billion project has been the largest, most expensive, and most complex highway project in U. S. history. With the opening of the full I-93 southbound portion of the project in March, the Central Artery/Tunnel project is 96% complete, and substantial completion is scheduled by October of this year.

This ambitious project will provide countless benefits to the city of Boston in the way of enhancing safety, easing traffic congestion, improving mobility, providing acres of open parkland to city residents, and reconnecting communities severed by the old elevated highway. And the Central Artery/Tunnel project has reshaped the way the Department of Transportation approaches major project oversight. This project has taught us many important lessons in highway project management and has provided us with a solid framework for oversight of major projects in the future. Today, I would like to share with the Committee the efforts underway within the Federal Highway Administration (FHWA) to ensure proper oversight on this important project, and in the areas of Oversight of Federal Funding and Cost Recovery in Major Projects, Construction and Quality Assurances, and Major Project Oversight in general.

Before I go further, however, in response to concerns that we have heard I wish to take this opportunity to restate our conclusion that the Central Artery, including the tunnels that are part of this project, are safe for public travel. We will not compromise on safety. Safety is the Department of Transportation's top priority. Later in this statement I will describe our ongoing oversight activities that lead us to conclude that these tunnels are safe. And, I will describe the recommendations contained in our Interim Tunnel Leak Assessment Report that will ensure the long-term safety of the CA/T tunnels and protect the public's investment in this project.

Oversight of Federal Funds in Major Projects

Within the Federally assisted, State-administered Federal-aid highway program, FHWA responsibilities are governed by Title 23 of the United States Code. The FHWA's primary responsibility is to protect the Federal investment by ensuring Federal funds disbursed to the States are spent consistent with Federal requirements and national transportation policy objectives.

In March 2000, a Federal Task Force on the Boston Central Artery/Tunnel Project, established by FHWA in response to recommendations from the Department of Transportation's (DOT) Office of the Inspector General (OIG), made 34 recommendations for improved FHWA oversight activities. Key among these were greater disclosure, the need for more timely information being made available to the public and the public oversight agencies, and the independent annual FHWA assessment of costs and revenues. FHWA has since implemented each of the 34 Task Force recommendations. We believe that the processes and procedures we have implemented as a result of the Inspector General's report and the Task Force recommendations will not only keep the Central Artery/Tunnel project on track for successful completion, but have further provided a strong framework for oversight of all major projects.

Seventeen of the thirty-four Task Force recommendations dealt with items concerning the preparation of a Finance Plan. These items included establishing a national policy on the preparation and review of Finance Plans for major projects; providing an independent cost estimate of the project by FHWA on an annual basis; providing an independent certification of the Finance Plan information by another state agency; and including contingency plans to cover potential revenue shortfalls or cost overruns.

Finance Plan Guidance for all major projects, which incorporated all of the Task Force recommendations, was issued by FHWA on May 23, 2000. A major milestone occurred in June 2000, when FHWA, Massachusetts Turnpike Authority (MTA) and Massachusetts Highway Department (MHD) executed a Partnership Agreement that formally implemented the Task Force recommendations. This agreement delineates and strengthens the oversight responsibilities of, and improves communications between, the parties. FHWA's November 29, 2000, acceptance of the October CA/T Finance Plan and the OIG Report issued the same day indicated that the Task Force recommendations have been completed to the satisfaction of the FHWA and the Office of the Inspector General. Implementation of the Finance Plan Guidance is a continuing activity and is reviewed each annual update cycle.

The FY 2001 DOT Appropriations Act included an $8.549 billion Federal funding cap for the CA/T and required the Office of the Inspector General to concur in the annual Finance Plan Updates before FHWA approval. Congress also included a requirement that the Secretary withhold obligation of Federal funds and all project approvals for the CA/T project until the Inspector General reviews the annual financial plan updates for compliance with FHWA guidance. With the Inspector General's concurrence, FHWA accepted the October 2003 Update of the CA/T project's Finance Plan showing a $14.625 billion project cost estimate on June 9, 2004. Approval of the October 2004 CA/T Finance Plan Update is pending completion of the Federal review. Given the likelihood that the 2004 Update will be the last formal Finance Plan because the project is nearing completion, additional time for review may be required.

FHWA recognizes that providing financial oversight to major projects is an ongoing responsibility that does not end when the financial plans are approved. As part of its

oversight responsibilities concerning the CA/T, the FHWA approved the Massachusetts Turnpike Authority's Revised Errors and Omissions Procedure and its Cost Recovery Program Action Plan in 2003, with the requirement for a quarterly status report to monitor progress in resolving more than 700 potential cost recovery items. The MTA and the State Attorney General entered into an agreement to transfer MTA's responsibility for the cost recovery efforts to the State Attorney General's Office effective February 1, 2005. Any cost recovery monies realized from the Cost Recovery Program will be shared according to the original Federal participation percentage ratio.

Construction and Quality Assurances

FHWA has a three-pronged approach to construction oversight of the CA/T Project. This construction oversight is primarily carried out by our Massachusetts Division Office. First, FHWA is involved at a general level to ensure that MTA and the CA/T Project have appropriate processes and procedures in place to staff and manage construction activities and ensure the quality of construction. Some examples of this are quality control and quality assurance procedures, contract administration and financial systems to account for all monies, and audit protocols.

Second, FHWA undertakes specific reviews of the actual construction as outlined in FHWA's Annual Construction Monitoring Plan. The Annual Construction Monitoring Plan is developed based on the construction activities underway at the time and the knowledge of FHWA Division engineering personnel. This annual plan prescribes the number and scope of routine inspections, phase (in-depth) inspections, and process reviews of the ongoing construction.

The third element of construction oversight is FHWA's participation at regularly scheduled project status and issues meetings or on technical working groups. This is another opportunity for FHWA to keep abreast of current issues and concerns, provide technical advice, promote good engineering and managerial practices, and to provide input in the evaluation and resolution of areas of concern. Examples of these meetings include weekly meetings with CA/T Project senior staff to discuss, evaluate, and decide the course of action on major issues; area meetings; and issue resolution team meetings.

One of the recent areas of concern with the CA/T project involved leaks within the slurry wall tunnels, one of five types of tunnels constructed as part of this project. On September 15, 2004, a breach in a Central Artery slurry wall panel allowed water to enter the northbound tunnel of I-93 for a few hours, closing down traffic lanes for repair and causing significant traffic delays. In response, FHWA Administrator Mary Peters requested an independent FHWA engineering assessment of all tunnel leaks. The FHWA Tunnel Leak Assessment Team conducted a leak assessment and issued its Interim Report on March 23, 2005.

In its report, the Leak Assessment Team states that the project is appropriately addressing the tunnel leaks. The September 15, 2004, slurry wall breach appears to be isolated to a discrete section of the tunnel and is primarily the result of poor quality control during

construction, not a defective design. The contractor responsible for this section of the tunnel has successfully installed an interim repair and has submitted a design for the permanent fix while the Massachusetts Turnpike Authority completes an investigation of all slurry wall panels. The MTA is reviewing plans for the permanent repair and has sent plans to FHWA for review. FHWA will approve the proposal once it is satisfied that it will fully provide for a repair that is structurally sound, is durable and watertight, is relatively maintenance-free, and minimizes disruption to nearby structures, property, and the traveling public.

As of April 13, 2005, approximately 1,600 of the 2,000 panels, or 80%, had been inspected. 102 defects have been discovered to date, of which two require major repair. Repair of some of the minor defects was initiated on March 28, 2005. The contractor and the management consultant will bear the costs associated with the investigation and repair of these panels.

As a result of the September 15, 2004, breach, emphasis has been placed on other low-level leaks (defined in the Leak Assessment Team's report as leaks of lesser magnitude ranging from dampness to dripping type leaks) that the project has been fixing as a normal part of the construction of the I-93 tunnels. The Leak Assessment Team's Interim Report notes that the project continues to manage the tunnel leak sealing efforts in a methodical way. The total number of points where sealant needs to be injected to complete all leak repairs is estimated to be between 1,800 and 3,585 injection points. As of April 13, 2005, almost 1,100 low-level leaks had been sealed, and it is estimated that the project is on track to have all of the low-level leaks sealed by the October project completion date. The cost of this work is the responsibility of the mainline tunnel contractors, not the taxpayers. Based on the Leak Assessment Team's analysis, adequate resources have currently been allocated to ensure this work is completed by the substantial completion date of the project, and progress is being monitored to determine if additional resources may be required in the future. FHWA will continue to monitor these efforts and will issue a subsequent report upon completion of all repairs.

Major Project Oversight

The Central Artery/Tunnel project has pioneered many aspects of mega-project development, engineering, and construction. As a result of the unprecedented scope and complexity of this project, FHWA has reshaped the approach we take in major project oversight. The CA/T experience has taught us many lessons on how we must oversee major projects and has raised the bar on standards for highway project management.

Major projects present unique challenges and require a different approach to oversight than the typical Federally assisted project. It is not uncommon for a major project to consist of hundreds of contracts over a period of a decade or more, potentially costing a significant portion of a State's annual program. They also differ from typical projects in that once a commitment is made to build the project, many years may separate the initial contracts and the final contracts. This long timeframe increases the risks for cost escalation and schedule delays, which can severely impact a State's overall program.

To address these risks, Congress enacted legislation to require finance plans for all projects with an estimated cost of $1 billion or more. Review and approval of finance plans and annual updates, along with project-level review and approval authority, enable us to measure and track costs over the life of major projects.

FHWA is committed to assigning a Major Project Oversight Manager to each major project. These managers are involved on a daily basis with the project owners and can avail themselves of the current data that are captured by the project's accounting and management systems. FHWA, in coordination with the Office of the Inspector General, has developed a monthly reporting system for all active and potential mega projects, which managers of major projects can use to update the status of such projects on a monthly basis.

FHWA also has established a Major Projects Team, which provides support to the major project managers from FHWA headquarters. The Team has developed and maintains a Resource Manual for Oversight Managers which is posted on FHWA Mega-projects website. The Manual includes information in the areas of "Core Competencies" and "Lessons Learned," as well as guidance for developing project management plans and estimating costs for mega-projects.

We are ensuring that appropriate performance objectives exist for each Project Oversight Manager and are establishing a common set of personnel objectives for each manager that will clearly establish their roles and responsibilities. To this end, the FHWA has developed a training course on project management for executives involved in the oversight of mega-projects.

Beyond these oversight activities that FHWA already has in place, the Administration's reauthorization proposal, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act (SAFETEA), includes several key proposals with regard to stewardship and oversight. Many of these changes are the direct result of the suggestions offered by the Office of the Inspector General. Among these are:

1. The establishment of an oversight program to monitor the effective and efficient use of funds authorized under Title 23 with a specific focus on financial integrity and project delivery. Annual reviews will be performed to address elements of State's financial management systems and project delivery systems based on risk assessments.
2. The development of standards/guidance for estimating project costs, and the periodic evaluation of State practices for estimating project costs, awarding contracts, and reducing project costs.
3. The establishment of a requirement that project management plans are submitted for projects with an estimated cost of $1 billion or more.
4. The establishment of a requirement that a finance plan be prepared for projects with an estimated cost of $100 million or more.

Additionally, FHWA is implementing a Risk Management Program that will facilitate the development of an overall agency plan for FHWA stewardship and oversight initiatives that links to high-risk areas, and, in the FY 2006 budget, FHWA is proposing to add an additional six FTEs in order to provide a dedicated project oversight manager for each active mega-project.

Conclusion

FHWA remains committed to constantly improving its oversight practices and procedures for the CA/T, and for all major projects. We are pleased to have implemented all of the Office of the Inspector General's recommendations, and we believe that with the Inspector General's assistance, we have created a major projects oversight plan that will serve us well in the future.

Chairman TOM DAVIS. Thank you very much.
Mr. Mead.

STATEMENT OF KENNETH MEAD

Mr. MEAD. Yes. Thank you, Mr. Chairman. Thanks for holding this hearing today, and Congressmen Lynch and Capuano. This is the most expensive public highway project in U.S. history, actually. But it is extremely important to the Commonwealth, to the entire northeast, indeed to U.S. interstate commerce.

I should say, as the chairman alluded to in his opening remarks, that the lessons learned on this project have just had a huge impact on the oversight approach of the Federal Government, as well as on the highway bill that is now pending before the Congress. And the lessons learned have already had a very positive impact on major construction and other multi-million dollar projects.

The chairman mentioned the Wilson Bridge, which crosses the Potomac—Virginia, Maryland, and D.C. That project is actually—I think it is a little bit under budget, it is certainly on target, and that project—we are really all I think very proud of the progress that project is making.

It has also been applied to—the lessons learned on the Central Artery have also been applied to other projects like the Sound Transit/Light Rail Project in Washington State. It is the largest transit project in the country at this time. Trentabono in Puerto Rico, and it will have impact on the other major projects, such as the Bay Bridge Project in California, which is experiencing some problems.

And I dare say it will probably have an impact on the Chicago O'Hare Airport runway expansion program. So I think this one will go down in history.

Our office has been reviewing this project since about 1991, well before my time. And we are now finding ourselves reviewing the 2004 finance plan. We can't approve this plan, though, until, among other things, they have in place a credible time table to fix the leaks, know approximately how much they will cost to fix, and who will pay.

The project's troubled history of delays and cost increases is well known. The Central Artery was to be finished initially in December 1998; the new completion date is September/October 2005. It is almost 7 years later. Their price tag moved from $2.6 billion in the beginning to today's $14.6 billion, and that estimate of $14.6 has been holding now for 2 or 3 years. And I certainly hope it doesn't change.

Congress has, with respect to the Central Artery Project, taken the unprecedented step of actually capping the amount of money that the Federal Government would have going to it, and it is for the reasons that Congressman Capuano alluded to.

Four months ago, our testimony to a State legislative committee here in Boston detailed two kinds of leaks on the I–93 tunnels. The taxpayers ought not to have to pay for the repairs to these leaks, regardless of whether the project manages to come in at $14.6 billion on the button or even under $14.6 billion. The taxpayers should not have to pick up the tab here.

Mr. Gribbin outlined the two types of leaks. One is the slurry wall leak. This became a public concern last September 15 when a panel breached, and I think you had 300 gallons per minute coming out of that, so that was a pretty big leak. That breach was, as he pointed out, caused by a series of construction errors.

Actually, those construction errors were documented when the wall was built, but they were not corrected. Since then, inspections have found a total of 102 defective or leaking slurry wall tunnels. The numbers change daily, but this is—so this is as of about April 1.

There is about 1,900 wall panels, to give you a frame of reference, so 102 of them they found a problem with. Here is the breakdown on the types of problems. Two of them need major repairs, 33 of them need what I would call moderate repairs, and 67 of them need only patching; 10 of them have been repaired, but the Authority has not approved the repair yet.

So we have 400 of about 1,900 odd wall panels that still need to be inspected. That is about 20 percent. So I would like to see that get done.

Now, the Massachusetts Turnpike Authority is going to have to decide soon on how to repair the wall panels with the worst defects. There are three suggested methods. One is to install a steel plate over the hole, a second does the same thing, but adds a reinforced concrete, and a third requires rebuilding the wall.

The Authority faces the challenge of selecting one without being perceived by the public as picking just the most expedient method. I think that is very important, given this entire affair. A permanent, lasting fix to the walls ought to be the paramount concern, and obtaining the most cost-effective one at this point I think is probably secondary.

The second type of leak is found up at the roof wall joints, and these are worrisome because they have long-term maintenance implications. The number changes constantly as the leaks—as you seal one leak with the grout—I guess they are called grout injections, you seal one and the water goes down all over and you get two more leaks. And that is why you see these numbers keep fluctuating so dramatically.

Last summer, for example, there were more than 700 roof wall joint leaks. As of April 1, there were 662. More than 4,500 of the 9,000 odd roof wall joints still have to be reinspected for leaks. All of the roof wall joints have been inspected once, so now they are on the second round of inspections, and we still have 4,500 to check out.

We don't know yet the full cost of repairing all of the leaks. A consultant assessment of the cost is due next month, I think in the middle of the month. And, again, the Authority has said that its contractor is going to pay to fix the leaks. We are not entirely confident of this.

According to the Authority, contractors have already been paid $7 million for leak repairs, and they estimate they will have to be paid—have to pay another $10 million. We are concerned that the costs and payments related to leak and water problems may significantly exceed the $17 million.

And these payments may actually go back further in time than we thought. Certainly, they go back through all of 2004. They may go back for several years prior to that as well. Taxpayers may have already paid for some of them. Now these costs, if already paid, will have to be recovered.

I would like to turn now to the cost recovery program. The cost recovery program that we now have in place for the Artery will be helpful in returning some leak-related payments to the project. Maybe all of them. The previous efforts on cost recovery here, though, have been anemic.

In December, we recommended that the State form a bipartisan commission that was independent of the Authority to investigate the leaks and that this Commission would work with the attorney general. Well, the Commission wasn't recreated, but the Authority recently transferred its cost recovery program to the attorney general's office.

We see this as an improvement, as a positive step, because it served to remove the program from their project management structure, where it was hampered by all kinds of role conflicts, especially with Bechtel/Parsons Brinckerhoff, who was a partner of the Artery, who is responsible for quality assurance and portions of the project design, and who has been paid nearly $1.9 billion for its work.

So we know the attorney general, Mr. Reilly. We have talked several times on the phone. I know he has his work cut out for him, and we wish him the very best. But he has to not only look at the cost recovery issue for the leaks; he has to look for cost recovery for the entire project, for things that have nothing to do with the leaks, but have to do with change orders that have already been paid.

In fact, the cost of the leaks are only a modest portion of the cost recovery effort. Let me give you a frame of reference. Over the life of this project, there have been over $2 billion in contract change orders. A significant portion of these are claims by contractors for work they claim is beyond the scope of the original contract, or for work that they did because they felt they encountered significant problems that they had not expected.

As of February 28 of this year, there were over 3,600 unresolved contractor's claims for over $400 million. That is a large piece of change.

We are currently reviewing the 2004 finance plan, as I said before. By law, we must determine whether that plan contains reasonable estimates for cost schedules and funding sources, before the Department decides whether to release I think it is about $81 million remaining in Federal funds.

And we won't be in a position to do that until more information is known about the extent of the leaks, which means all of the inspections have to be done, and a cost has to be attached to them. And we would like a reasonable estimate as to what it is going to take to dispose of them.

And I think I would just like to close by starting out where I began, to say that there have been some important lessons learned in this project. The last project finance plan we reviewed from the

Central Artery, it is—I tell people as I go around the country and speak that it was probably among the best in the country.

I know the Wilson Bridge project used the improvements that the Central Artery had made in its finance plan, and there has been a lot of other lessons learned. And hopefully we can get this project done, no more cost overruns, we can get the leaks resolved, and move on.

And, again, thank you for holding the hearing, Mr. Chairman.

[The prepared statement of Mr. Mead follows:]

Before the Committee on Government Reform
United States House of Representatives

For Release on Delivery
Expected at
2:00 p.m. EST
Friday
April 22, 2005
CC-2005-027

Impact of Water Leaks on the Central Artery/Tunnel Project and Remaining Risks

Statement of
The Honorable Kenneth M. Mead
Inspector General
U.S. Department of Transportation

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to testify today on Federal oversight of Boston's Central Artery Tunnel Project (Project), the most expensive public highway project in U.S. history, and one that is important to Massachusetts and the entire Northeast. Our office has reviewed the use of Federal funds on this Project since 1991, and in 2000, Congress directed the Secretary of Transportation to withhold obligations of Federal funds and all Project approvals until we determine that the annual Finance Plan updates for the Central Artery reflects that there will be sufficient financial resources to complete the Project. We are currently reviewing the Project's 2004 Finance Plan.

The Project's troubled history of delays and cost increases is well known. The Central Artery was originally scheduled to be substantially completed by December 1998—almost 7 years earlier than the current estimate of September 2005. Costs have also steadily escalated from $2.6 billion to $14.625 billion, causing Congress to cap the Federal investment in the Project at $8.549 billion. As of September 2004, all but $81 million of Federal monies have been released and obligated.

The event that most galvanized the public's attention to the Central Artery problems occurred in February 2000, when the Artery had to finally admit that costs would be at least $12.2 billion rather than $10.8 billion shown in the Project's 1998 Finance Plan. We then reported in February 2000 that Project managers had made deliberate misrepresentations by not disclosing $1.4 billion of cost increases in the 1998 and 1999 finance plans. The Securities and Exchange Commission found the Massachusetts Turnpike Authority (Authority) and its former Chairman violated the Securities Act of 1933 on three municipal bond offerings. After making management changes in response to this unconscionable violation of the public's trust, the authority has been much more transparent in its disclosures and responsive to our recommendations on opportunities to improve disclosures in the finance plan.

Four months ago, we delivered testimony to a Massachusetts state legislative committee about the Central Artery and two types of leaks in the I-93 tunnels. Leaks in the concrete slurry wall panels became a public concern on September 15, 2004, when one panel was breached, spilling 300 gallons of water a minute onto the tunnel roadway. Public attention soon focused as well on a second type of leak, at the roof-wall joints of the tunnels, although the Authority and the Federal Highway Administration (FHWA) had been addressing them for years.

In our December 2004 testimony, we said that while there was much we did not know about the leaks, the taxpayers should not foot the bill for them. We also said

that the cost recovery effort had not accomplished enough, and we urged the Commonwealth to act expeditiously to repair the leaks, protect the taxpayers' interests, and restore the public's confidence.

The imperatives at that time were to identify the nature and extent of the leak problems, determine how and why they occurred, implement an appropriate and lasting solution, and ensure that the responsible parties (not the taxpayers) bear the burden. We also stated that taxpayers and people who use the Artery must have confidence that the Authority has taken these actions with all due diligence.

These remain the imperatives today. Seven months after the September breach, there is much about this problem that we still do not know, including how many leaks there are and their severity; how much it will cost to fix the leaks; and how you can be assured that the responsible parties, not the taxpayers, are made to bear the repair costs. For example, we do not yet know the extent to which errors or omissions in the design, construction, quality assurance, or oversight may have contributed to the leaks.

Determining this responsibility has implications for the liabilities of the multiple parties involved. These parties include the Authority itself, project oversight contractor Bechtel/Parsons Brinckerhoff (Bechtel/Parsons), and the design construction contractors, each of whom have vested interests that will be affected by determining responsibility and, accordingly, their financial liability.

In our testimony today we will update the Committee on the status of the leaks, risks to the taxpayers, current cost recovery efforts, and the impacts of the leaks on the Project's Finance Plan. We will also discuss two important lessons learned from this troubled project. The key points in our testimony are:

- There are two types of leaks in the I-93 tunnels: those in the slurry wall panels and those at the roof-wall joints. Regarding slurry wall panel leaks, the most recent tally shows there are 102 defective or leaking slurry wall panels, including two that need major repair, 33 that need moderate repair, and 67 that need only patching. To date seven panels with minor defects have been patched but not yet accepted by the Authority. The Authority is considering three methods to repair the two severely defective panels and must make its decision in a manner that assures the public that it has selected the best method, not the most expedient or just because it costs the least. More defective panels may be discovered because almost 400 of the 1,937 wall panels have yet to be inspected for defects.

  Regarding roof-wall joint leaks, the number of leaks is constantly changing because as leaks are sealed with grout injections, new ones emerge and sometimes old ones re-emerge. In the summer of 2004, the Authority had

counted 724 roof-wall joint leaks. Since then, a majority of those have been sealed with injections of grout, but new and re-emerging leaks have been found, leaving a balance of 662 leaks as of March 22, 2005. Roof-wall leaks are also likely to be a continuing problem because less than half of the 9,125 roof-wall joints have been inspected under the current inspection program. Unless a way is found to permanently seal these leaks, they could remain a long-term problem that leads to higher maintenance costs.

- While the Authority has said its contractors, and not the taxpayers, will pay to fix all the leaks, we are not entirely confident of this. The Authority does retain a portion of contractor payments until the work is accepted and it can use those funds to offset leak costs. However, it is not clear that the withheld amount will be adequate to cover all leak costs. In addition, the taxpayers have already paid some leak related costs. Last fall, the Authority estimated that it had spent $7 million to repair the leaks, and identified total cost exposure of $17 million. We are very concerned that they may have to pay even more. A consultant is now analyzing how much has been paid for leak expenses and expects to issue its report next month.

- The taxpayers will not recover the costs already paid for the leaks unless the Authority's newest cost recovery program is more successful than prior cost recovery efforts, which were anemic. Last year, we recommended that the cost recovery effort be removed from the control of the Authority because we believe the Authority lacks the independence needed to pursue cost recovery efforts vigorously against Bechtel/Parsons, its partner. In February 2005, the Massachusetts Attorney General's Office took over the Project's cost recovery program. We feel this is a positive step, but it is too soon to tell whether this effort will be more successful than its predecessors. The challenge will be to sift through all the conflicting facts and determine the cause of cost increases, the responsible party, and, unlike in years past, aggressively pursue the responsible party to recover costs.

  The Attorney General is now seeking many millions more through the cost recovery program for design errors and omissions made by Project design contractors that resulted in added construction expenses. To put some perspective on the potential amounts involved, contract modifications, which include payments to contractors for work they claim to be outside the scope of their original contract, have been a significant cause of costs overruns. As of January 31, 2005, the Authority had paid over $2.13 billion in approved construction contract modifications. An outstanding question is to what extent these modifications were due to errors or omissions on the part of design contractors. As of February 28,

2005, there were also 3,640 open, unresolved contractors' claims for additional payments, with a total contractor proposal value of $442 million. The Authority has budgeted $226 million to pay these unresolved claims.

- We are also reviewing the Project's 2004 Finance Plan. The $81 million in remaining unobligated Federal funds for the Project cannot be released until we report to the Department of Transportation that the Authority's annual Finance Plan contains reasonable Project cost and schedule estimates, as well as adequate funding sources. In February 2005, we advised FHWA that until unknowns about the leaks are substantially resolved, we will not have the information needed to conclude that the Finance Plan contains reasonable cost and schedule estimates and adequate funding sources. The Authority retained a consultant to perform an audit of leak-related costs and payments. The audit is expected to be completed by May 2005, and should provide information needed to assess the impact of leaks on the Project. We will perform a quality assurance review of the work and will then complete the remainder of our evaluation.

Regarding lessons learned, I would like to highlight two important lessons—one applies to the states and the other to FHWA.

- The Central Artery Project had a problematic history and presents many lessons learned. The Authority hired Bechtel/Parsons to provide preliminary designs, manage design consultants and construction contractors, track the Project's cost and schedule, advise the Authority on Project decisions and in some instances act as the Authority's representative. In 1998, the Authority combined some of its employees with Bechtel/Parsons employees in an Integrated Project Organization. This was intended to make management more efficient, but it hindered the Authority's ability to oversee Bechtel/Parsons, because the Authority and Bechtel/Parsons had effectively become partners in the Project. The Authority has already approved or paid more than $1.9 billion in invoices from Bechtel/Parsons for its work on the Project. Although the company has recently admitted some liability in failing to correct construction defects that it knew existed at the site of the panel that was breached on September 15, generally it has not been held liable for any design errors or omissions under the cost recovery program. The Authority's inability to recover any of these costs may be due at least in part to its partnering relationship with Bechtel/Parsons.

- FHWA has traditionally provided little oversight of the billions of dollars it provides to states and municipalities each year, and the lack of oversight contributed significantly to the Central Artery problems. The extensive

problems encountered in the Central Artery Project have had a huge impact on FHWA's understanding of its oversight role. These painful oversight lessons are now a central component of the Administration's highway reauthorization proposal, which aims to strengthen FHWA's oversight and stewardship provisions.

There has been a major shift in direction under Secretary Mineta and Federal Highway Administrator Peters, and FHWA has begun developing new policies, procedures, and practices to improve its oversight. FHWA has also begun to provide better oversight to major projects, including the Woodrow Wilson Bridge connecting Maryland and Virginia and the Springfield interchange in Virginia. For example, FHWA recently initiated its Financial Integrity Review and Evaluation (FIRE) Program, which requires extensive oversight of state management practices. Effectively implementing these improvements, however, will require significant changes to FHWA's culture.

The Authority is Still Assessing the Number and Significance of the I-93 Leaks

The Authority has made progress identifying the nature and extent of both the slurry wall panel leaks and the roof-wall joint leaks, but the effort is not complete. What it has found is surprising in that the problems are much more extensive than originally indicated. To date, the Authority has identified 102 wall panel leaks, including two with severe defects, and 662 remaining roof-wall joint leaks.

Notwithstanding that the project is in its final stage and is scheduled to be substantially complete in September 2005, it is imperative that the Authority promptly complete a thorough assessment and identify and implement corrective actions. Although engineers have not questioned the structural integrity of the tunnels, the leaks also present public perceptions and concerns about safety.

The Authority now faces a significant challenge—implementing solutions for the most defective wall panel and other defects and leaks that restore the public's confidence in tunnel safety and ensuring that the taxpayers will not bear the burden of the added costs. But, there is a major hurdle to overcome. Specifically the public must perceive that the fixes for these leaks are the right ones. Given the troubled history of the Project, restoring public confidence will be a significant challenge to the Authority.

Slurry Wall Panel Leaks. The history of the September 15 breach provides insight into this challenge. On that date, a leak breached the east wall of the I-93 northbound tunnel just south of Congress Street and about 70 feet below the surface of Atlantic Avenue. According to U.S. Department of Transportation

leakage criteria, a severe leak has an active flow of 30 or more drips per minute. The September leak had a water flow of roughly 300 gallons per minute.

The breached wall is made of concrete panels that were built using the slurry wall trench excavation technique. As the trench was excavated, it was filled with a special clay mix, called slurry, to support the earth around the trench. Deep structural steel piles were placed vertically in the trench, 4 to 6 feet apart. Once the excavation was complete, concrete was pumped into the trench from the bottom up with flexible pipes called "tremies" and the slurry was gradually displaced.

The Authority hired two experts—Mueser Rutledge Consulting Engineers (Mueser Rutledge) and Lemley & Associates—to review the slurry wall panel leaks. In a November 3, 2004 report, Mueser Rutledge concluded that the breach was caused by a series of construction deficiencies that were documented during the fabrication of the panel that leaked.

Specifically, Bechtel/Parsons reported that a leak in the same wall panel had occurred on July 20, 2001. Construction progress records from that period revealed that Modern Continental made a string of errors during the construction of the concrete panel where the leak occurred. The Mueser Rutledge review of Bechtel/Parsons' construction records found that:

- Before excavation, the contractor failed to remove the temporary steel endplate placed at the adjoining concrete panel built by another contractor, as well as the residual concrete around the endplate.

- The trench was not properly cleaned of debris at the completion of the excavation for the panel, or debris fell into the panel just before or during placement of the concrete. The inclusion of debris diminished the structural integrity of the panel.

- Because of an obstruction, the contractor could not install a steel reinforcing cage that according to specifications had to span the length of the panel within the concrete. The contractor reduced the size of the cage rather than remove the obstruction.

- The obstruction prevented the contractor from using two tremie pipes to lay the concrete as required by the contract. Using only one pipe caused an uneven distribution of the concrete in the trench.

- The bottom of the cage shifted out of position during concrete placement.

- Finally, during the tunnel excavation, a leak and debris inclusion were discovered in the slurry wall, but workers patched the defect, rather than remove the inclusion and permanently repair it.

The Mueser Rutledge report also faulted the Authority's Project management contractor, Bechtel/Parsons, for failing to ensure that the wall panel was repaired when the defect was first discovered in 1999. Bechtel/Parsons has admitted some liability in failing to correct construction defects that it knew existed at the site of the panel that was breached on September 15.

After the September 15 wall breach, the Authority began inspecting the 1,937 slurry wall panels in the tunnels for similar defects. As of April 13, 2005, about 80 percent of the panels had been inspected. Among them, inspectors found two panels that need major repair, including the panel that was breached on September 15, 33 that need moderate repair, and 67 that require minor patching. A majority of the defective panels, including the two with the most serious defects, were constructed by Modern Continental. To date, 10 panels requiring patching have been repaired but not yet accepted by the Authority.

When we testified in December, it was an open question whether the September breach was a one-of-a-kind event or a harbinger of systemic problems in the tunnel walls. However, based on the results of the Authority's inspections to date, it is clear, in our opinion, that the wall panel leaks are systemic and are not centered in just one contractor's section, as was originally suggested.

Questions remain about how to fix the wall panel with the most severe defects. The only formal proposals for repair of that wall panel are two proposed by Modern Continental, the company that constructed the wall panel. Both of Modern Continental's repair plans involve bolting a steel plate to the slurry wall, and one adds an encasement of reinforced concrete.

The slurry wall expert engineer that the Authority hired to assess the leaks and propose concepts for fixing them has identified another option. However, the Authority has not pursued this option further, which is the crux of the perception issue confronting the Authority.

Mueser Rutledge has suggested a more extensive repair method that brings the wall back as close as possible to the original design specifications. This method includes draining the groundwater from around the defective wall panel. The Authority has suggested that the "dewatering" necessary to carry out Mueser Rutledge's method poses unnecessary risk to the stability of the ground under the nearby Federal Reserve Bank garage. However, the Authority has not set specific criteria for what would be acceptable both in design and risks. Although the FHWA has reviewed each proposal, including the concept by Mueser Rutledge, it

too did not review all the information necessary to fully evaluate the Mueser Rutledge concept and its risks.

The challenge for the Authority is to analyze all of the possible repair methods in a manner that the public will perceive as reasoned, conscientious, and unbiased. The Authority must give the public confidence that it is selecting the best method of repair, and not the most expedient or the one that costs the least.

Roof-Wall Joint Leaks. The Authority is also assessing the second category of leaks, those at the roof-wall joints, and determining how they will affect the Project's schedule. As early as 2000, the Authority, Bechtel/Parsons, and the FHWA noted that roof leaks in the I-93 tunnels were occurring more frequently and at a higher rate than expected. In the summer of 2004, the Authority had counted 724 roof-wall joint leaks. Since then, a majority of those have been sealed with injections of grout, but new and re-emerging leaks have been found, leaving a balance of 662 leaks as of March 22, 2005.

In the Authority's current inspection program, less than half of the tunnel's 9,125 roof-wall girder bays have been checked for leaks, so it is likely that many more will be found. The cause of the roof-wall joint leaks has not been identified, but the suspects are poor construction, including use of improper equipment and inadequate surface preparation for applying a waterproofing membrane. The resolution of this issue may determine whether the construction contractor, the section design consultant, or the Authority pays for this cost. The Authority has said that some of the roof leaks are a normal occurrence in such tunnels, but if not corrected in a timely manner could corrode steel beams and electrical wiring.

We found evidence to suggest that the roof leaks may also be associated with the selection and installation of waterproofing systems. Construction documents indicated that the Project was experiencing waterproofing problems in the latter part of the 1990s. The Project established a Waterproofing Task Force in March 1997 to address problems being experienced with several of the Project construction contracts.

In its July 31, 1997, report, the task force attributed 95 percent of the Project's waterproofing problems to unsatisfactory quality control practices of the construction contractors. The report did not, however, address the adequacy of quality assurance, which is the responsibility of Bechtel/Parsons. The task force also found that waterproofing systems had not been adequately prepared and installed, and reported that the Project would continue to have problems unless contractors changed their surface preparation and installation practices. Finally, the task force recommended eliminating future use of two waterproofing

systems,[1] which had already been installed on segments of the I-93 tunnels, but were not working.

In 2000, the Project established a Leak Task Force composed of representatives from Bechtel/Parsons, FHWA, and the Authority to develop a response plan for the leaks in the I-93 tunnels. The task force identified leaks in seven segments of the tunnels. It found that the leaks seemed to be directly proportional to rainfall, suggesting that it was not the ground water that was penetrating the tunnels, but water originating in the area above the tunnel roof. Because construction of I-93 was not finished, the tunnels remained partially open to the weather, taking in water through uncovered ramps, unfinished roofs, openings around beams that held up the elevated highway, and unsealed utility conduits.

However, in a December 2001 draft report[2] on Project cost overruns, a consultant concluded that the original design of the waterproofing above the roof girders in one section of the I-93 tunnels provided insufficient protection against leaks. To address this issue, the original design specifications were later amended to require the application of waterproofing spray over an area greater than originally specified and the installation of a protective board.

In March 2005, Project engineers estimated that the roof-wall joint leaks will be reduced to a small number by October 2005 and will continue to be a maintenance task after 2007, when the Authority takes over tunnel maintenance. Nonetheless, who pays for keeping the leaks at bay and who bears responsibility has yet to be determined. Unless a way is found to permanently seal these leaks, they could remain a long-term problem that leads to higher maintenance costs.

Deficiencies in quality control processes. We also have concerns about the failures in the construction quality control process that the leaks have revealed. Investigation of the September 15 leak showed that both Modern Continental and Bechtel/Parsons representatives knew that the wall panel was defective when it was built, and that they had documented this in field reports, but no records have been found that show they followed up on the problem.

The fact that another 101 defective slurry wall panels have been found, including a second one with severe defects, so many years after they were constructed certainly shows that the Project's construction quality assurance process was not working as intended. This now raises question as to where else the quality assurance process may not have worked. The Authority and FHWA should be

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1 The Bentonite and Cold-Applied Polyurethane waterproofing systems—two of five waterproofing systems used on the Project.

2 Central Artery/Tunnel Project Review and Assessment of C15A2 Global Contract Modification, Deloitte & Touche, December 2001.

taking steps to ensure that there are no other construction quality lapses. They should consider implementing a Project-wide construction quality review. One step may be to conduct a review of a random sample of engineers' field reports for indications of other construction problems that were not properly corrected.

Taxpayers Must Not be Saddled With the Cost of the Leaks

The Authority has said it will require construction contractors to repair all identified leaks, of both types, before it will issue final acceptance of the tunnel sections. The Authority has also said that under the contract warranty provisions, the contractors will be required to fix additional leaks for at least 1 year after final acceptance, and some contracts contain a longer warranty period.

While the Authority has said its contractors, and not the taxpayers, will pay to fix all the leaks, we are not so confident. The primary risk to the taxpayers involves establishing the responsible party. Determining who is responsible is complex because the problems could be caused by poor construction, design errors, poor oversight, or a combination of those factors. In fact, some contractors have already been paid for leak-related expenses, and unless the Project's cost recovery team can recover those funds from the contractors, the taxpayers will have paid the tab for errors made by contractors.

It also remains to be seen to what extent construction contractors will file claims with the Authority for additional payments for leak-related work by alleging that poor design or site conditions, not poor construction, caused the leaks. Project management has a history of paying about 50 percent of all such claims from a construction contractor. The Authority could, in turn, recover some of the extra costs from those claims from other contractors responsible for design errors or omissions, but the Project has a dismal record in cost recovery.

Bechtel/Parsons officials, in testimony to a Massachusetts state legislative committee, said that it will pay its "fair share" of the cost to repair the wall panel that was breached. However, final costs will depend on how many leaks there are, their severity, the cost to repair, and whether leak-related costs—such as damage to electrical components—exist beyond the repair work. The key to protecting the taxpayers will be resolving the uncertainty about who is ultimately responsible for the leaks.

At this time, work is still ongoing and the ultimate cost is not known. With our assistance, the Authority has retained a consultant to identify past and current costs associated with both types of leaks and to assign them to specific contracts. The consultant will also gather information on contract liability clauses, liability limits, and whether the Project's budget, contingencies, and reserves are sufficient to cover leak-related expenses. The consultant's report will be issued next month.

According to the Authority, it has spent approximately $7 million over the last 3 years for leak repairs, all of which was paid to McCourt/Obiyashi, the tunnel finishing contractor. In November 2004, the Authority stated it had identified costs related to leak repairs of almost $17 million. However, it stated it had yet to back charge the responsible construction or oversight contractors for these costs. We are concerned that the total costs will be significantly larger.

In addition to the cost of fixing the leaks, other related costs should not be passed on to the taxpayers. These include the cost of the consultants employed to assess the leak damage; replacement of damaged wall panels, electrical components, and insulation; reapplication of waterproofing systems; and constant monitoring and patching of the leak sites.

It is Too Soon to Tell Whether the Current Cost Recovery Effort Will Bear Fruit

In general, "cost recovery" involves the Authority filing a claim against design consultants for any additional costs incurred during construction that can be attributed to errors, omissions, or other deficient or unsatisfactory performance in designing the project. While it is encouraging that the Authority's cost recovery program has been reassigned to the Attorney General's Office, historically the Central Artery's cost recovery program has not been effective.

In 2003, in response to a request by members of the House Transportation and Infrastructure Committee, we reviewed Project cost recovery and found that 8 years of effort had yielded only $30,000 in recoveries from a single consultant. We reported that the cost recovery effort had been hampered by conflicts of interest, failure to identify some change orders that might be due to design errors or omissions, and failure to review change orders and refer them for cost recovery in a timely manner.

The Project transferred the task of cost recovery to a team of Project and outside attorneys directed by a retired Probate Court judge. Over the next 2 years, the new team recovered $3.5 million and filed lawsuits seeking another $164 million. While the new cost recovery effort was an improvement over its predecessor, it recovered only a small percentage of funds.

In our December 2004 testimony we suggested that the Massachusetts legislature create an independent commission to investigate the leaks, determine the responsible parties, and ensure that they, and not the taxpayers, bear the costs of the leaks. We recommended that the Massachusetts Attorney General's Office participate in the commission, which would gather information that could be used to assist the cost recovery effort. The commission was not created, but in February 2005, the Authority and the Attorney General agreed that the Attorney

General's Office would take over the Project's cost recovery efforts until December 2006.

We see this as an improvement because the Attorney General's Office can pursue both civil and criminal court actions to recover funds paid to Project contractors. The Attorney General's Office has filed a motion to stay a $150 million lawsuit against the Bechtel/Parsons joint venture alleging financial malfeasance. The purpose of the stay is to provide an opportunity for the Attorney General to evaluate the lawsuit and attempt to settle it as he sees appropriate. Ten other lawsuits that the previous team filed against design consultants are in the discovery stage and future court dates have been scheduled.

The Attorney General's Office is in the process of hiring engineering consultants and has held a series of meetings with Bechtel/Parsons. While the transfer of cost recovery to the Attorney General appears to be a step in the right direction, we do not yet know whether it will return more funds than previous efforts did. Fundamental to achieving success in cost recovery will be establishing the responsible party, which has presented a formidable challenge to prior efforts.

The Cost of the Leaks Must be Addressed in the Central Artery Finance Plan

We are now reviewing the Project's 2004 Finance Plan. The $81 million in remaining unobligated Federal funds for the Project cannot be released until we report to the Department of Transportation that the Authority's annual finance plan contains reasonable Project cost and schedule estimates, as well as adequate funding sources.

Likewise, FHWA should not accept the Project's 2004 Finance Plan until the leaks are adequately identified and the appropriate solutions are under way. FHWA should also withhold its final acceptance of the Project and ensure that funds held in retainage by the Project are not released until cost and repair issues are resolved.

In February 2005, we advised FHWA that until unknowns about the leaks are substantially resolved, we do not have a credible basis on which to conclude that that the Finance Plan contains a cost estimate that is based on all known and reasonably expected costs, identifies appropriate and available funding sources sufficient to meet the total estimated costs, or provides a project construction schedule that is based on all known and reasonably anticipated delays.

To determine the impacts the tunnel leaks will have on the Project, the Authority in January 2005 retained Deloitte & Touche to perform an audit of related costs and payments. We reviewed the statement of work for this audit to ensure it

would generate the information needed to complete our assessment of the project's Finance Plan. The audit is expected to be completed by May 2005, and will provide the following information.

- Past and current costs associated with the leaks by contract.
- Contract requirements regarding contractual liability and limits on that liability for all relevant parties.
- Payments made for leak-related costs and amounts recovered to date.
- Whether the project's $14.625 billion budget, including contingencies and reserves, is sufficient to cover current leak-related expenses.
- Future maintenance costs that can reasonably be expected as a result of the roof leaks.

We will perform a quality assurance review of Deloitte & Touche's work to ensure that it is adequate in scope and conducted in a manner that meets applicable auditing standards. We will then complete the remainder of our evaluation of the 2004 Finance Plan.

Lessons Learned: FHWA Must Refocus Its Efforts on Project and Financial Oversight

You also asked us to talk about the lessons that this Project has taught us about oversight of major infrastructure construction projects. I would like to highlight two important lessons—one applies to the States and the other to FHWA:

States Should Maintain Their Oversight Role

At the state level, the Central Artery Project's problematic history presents many lessons in how not to manage a public works megaproject. The Authority hired Bechtel/Parsons to provide preliminary designs, manage design consultants and construction contractors, track the Project's cost and schedule, advise the Authority on Project decisions and in some instances act as the Authority's representative. In 1998, the Authority combined some of its employees with Bechtel/Parsons employees in an Integrated Project Organization. This was intended to make management more efficient, but it hindered the Authority's ability to oversee Bechtel/Parsons, because the Authority and Bechtel/Parsons had effectively become partners in the Project.

The Authority has already approved or paid more than $1.9 billion in invoices from Bechtel/Parsons for its work on the Project. Although the company has recently admitted some liability in failing to correct construction defects that it

knew existed at the site of the panel that was breached on September 15, it generally has not been held liable for any design errors or omissions under the cost recovery program. The Authority's inability to recover any of these costs may be due at least in part to its partnering relationship with Bechtel/Parsons.

FHWA Needs to Provide Effective and Independent Oversight

FHWA has traditionally provided little oversight of the billions of dollars it provides to states and municipalities each year, and the lack of oversight contributed significantly to the central Artery problems. The extensive problems encountered in the Central Artery Project have had a huge impact on FHWA's understanding of its oversight role.

We have reviewed a number of major projects that stand as examples of good project management—projects such as Utah's I-15 and the Alameda Corridor in California. In contrast, we have reviewed projects such as the Central Artery in Massachusetts and the Springfield Interchange in Virginia, in which management and oversight were ineffective, leading to significant cost increases, financing problems, schedule delays, or technical and construction difficulties.

We continue to find indications that other major projects also face similar problems. For example, in February 2005, we expressed our concern that cost estimates for the San Francisco-Oakland Bay Bridge (East Span) project in California have nearly doubled from $2.6 billion to $5.1 billion.

Although this project is in the early stages, the cost increase and a highly critical report from the state auditor raise significant concerns that the Bay Bridge is already a troubled project. For example, the state auditor found that the California Department of Transportation should have known as early as November 2003 that the program would experience large cost overruns. Yet we found that FHWA accepted the state's 2003 Finance Plan Update without evaluating the information provided to ensure the reasonableness of the state-reported cost projections.

FHWA Actions to Strengthen Oversight. FHWA has begun developing new policies, procedures, and practices to improve its oversight. In certain cases, FHWA is beginning to provide better oversight to major projects, including the Woodrow Wilson Bridge connecting Maryland and Virginia and the Springfield interchange in Virginia. For example, on February 28, 2005, FHWA initiated its Financial Integrity Review and Evaluation Program, which calls for Division Offices to perform extensive oversight of State management practices, including assessing management risks, reviewing financial management processes, and spot checking a sample of payments on highway projects to ensure that Federal funds are properly managed. This represents a significant shift in direction under Secretary Mineta and Administrator Peters to improve stewardship and oversight.

To fully exercise its oversight role, FHWA must ensure that state Departments of Transportation accomplish the following.

- **Preparing reliable project cost estimates.** We have repeatedly seen that unreliable costs estimates have led to significant cost increases. As with all of these items, the Central Artery stands out as the poster child for each problem, but the Artery is not alone. We found that the Virginia Department of Transportation understated the costs of the Springfield Interchange by $236.5 million, or 35 percent, because it excluded known, planned, and identifiable costs that are standard elements of major highway construction projects. When initial cost estimates are unreliable, decision makers do not have the information they need to choose cost-effective transportation solutions. In addition, subsequent cost increases erode the public's trust in Federal and state project managers' abilities to act as good stewards of taxpayers' funds.

- **Preparing finance plans to identify project cost, schedule, and funding risks.** A finance plan is a management tool that provides project managers, oversight groups, and the public with important information about how much a project is expected to cost, when it will be completed, whether sufficient funds have been committed to the project, and whether there are risks to being able to complete the project on time and within budget. Despite their usefulness, finance plans are generally not required for projects costing less than $1 billion. But even much smaller projects can burden a state's resources. We believe projects costing over $100 million but less than $1 billion should have finance plans.

- **Ensuring that statewide plans properly represent to the taxpayer how funds will be spent.** States are required to prepare financially constrained 3-year transportation plans and submit them concurrently to FHWA and Federal Transit Administration for joint approval. These plans are representations to the taxpayers of how states plan to use taxpayers funds to meet transportation needs and they identify which projects will be funded, their costs and funding sources. This is particularly important in states with large projects, because cost increases on one large project can adversely affect the states ability to complete many other important projects. We reviewed one state plan that was generally not realistic because the cost estimates cited for most projects were understated. As a result, only 30 percent of the projects were started on time, 57 percent were delayed, and 13 percent were eliminated. In Massachusetts, Congress intervened to ensure a balanced statewide transportation program by requiring the state plan to spend no less than $400 million each year for construction and specific transportation projects.

- **Implementing more cost-effective engineering alternatives.** Our January 1993 report commended FHWA and Massachusetts Department of Public Works for value engineering activities that saved an estimated $400 million in Central Artery Project costs. But we noted that an additional $100 million in savings might have been achieved if the two agencies had thoroughly and objectively considered technically feasible but controversial value engineering recommendations. We also found that delays in finalizing value engineering reports and recommendations detracted from the overall success of the value engineering program. We are currently conducting an audit of value engineering to determine whether states are capitalizing on these cost-saving techniques and whether FHWA is ensuring that states are appropriately considering value engineering recommendations.

Challenges FHWA Faces. These initiatives in financial management are critical to strengthening FHWA's oversight and stewardship of major projects, but they present significant challenges.

First, they require a fundamental change in FHWA's culture, which has traditionally focused on being a supportive partner to the states rather than on providing independent oversight of state activities. FHWA itself has recognized that this relationship has sometimes blinded it to larger management issues. In its "Lessons Learned for Mega Projects," FHWA stated that the biggest lesson learned from the Central Artery project is that FHWA personnel need to remain independent from state officials and agencies to fulfill an oversight role. For example, when the Authority announced a $1.4 billion cost increase in 2000, FHWA officials were caught unaware, even though they had just approved the Project's Finance Plan earlier the same day.[3]

Second, FHWA faces a major challenge in recruiting, managing, and retaining its workforce. FHWA expects about 60 percent of its staff, some in mission-critical assignments, to leave between Fiscal Year (FY) 2003 and FY 2007. The silver lining to this huge flux in personnel is that it will provide an opportunity for FHWA to develop a new mix of workforce skills to address the new missions, new technologies, and new project oversight requirements. For example, FHWA needs staff with financial management skills to provide guidance on innovative financing techniques and to evaluate key state processes for managing federal funds. Last year, engineers held almost 40 percent of FHWA's 2,858 permanent positions, while financial specialists held less than 4 percent. It needs to take aggressive and quick action to resolve this human capital skills gap.

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3 U.S. Department of Transportation, Office of Inspector General, Report Number TR-2000-050, "Current Costs and Funding of the Central Artery/Ted Williams Tunnel Project," February 10, 2000. OIG reports can be accessed on our website: www.oig.dot.gov.

Administration's Highway Reauthorization Proposal Strengthens Stewardship and Oversight

The Central Artery Project has resulted in many lessons learned that are now central to the Administration's highway reauthorization proposals to strengthen oversight and stewardship of Federal highway funds. The Administration's proposed SAFETEA reauthorization includes key provisions requiring the following:

- An oversight program to monitor financial integrity and project delivery for projects funded under Title 23, including annual reviews of state financial management systems using risk assessment procedures;
- Project management plans for projects costing at least $1 billion, or other projects as may be identified by the Secretary;
- Finance plans for projects costing $100 million or more;
- Issuing minimum standards for the states to follow when estimating project costs; and
- Evaluating state practices for estimating project costs, awarding contracts, and reducing costs.

This concludes our testimony. We will be happy to answer any questions that you have.

Chairman TOM DAVIS. Thank you very much.

We will now hear from the Commonwealth's attorney general. Mr. Reilly, thank you for being with us.

STATEMENT OF TOM REILLY

Mr. REILLY. Mr. Chairman, thank you. And Congressman Lynch and Congressman Capuano, thank you for being here as well.

Mr. Chairman, I also want to thank you for your courtesy in scheduling my testimony this afternoon. I have submitted written testimony, so I will not repeat that at this point. There are a couple of points I do want to pick up on.

Ken Mead is right; we do have our work cut out for us in this endeavor in taking over cost recovery. Let me tell you why we agreed or actually volunteered for this task. This represents—and the importance all of you have noted—it is a very important project. It represents an enormous investment on the part of the Federal and State governments and to transportation improvements, not just for the city of Boston but also for this entire region.

But it is more than transportation. Any one of you that has been over the Zakim-Bunker Hill Bridge realize it is a magnificent structure, a wonderful introduction into a great city. And it is my hope that we will get to a point where we will all be proud of this project and appreciate what has been done here.

But we are not there yet; there are serious problems. And getting from the problems to the promise of a future of this project is why we stepped in. There were suggestions at the time of a commission; I did not agree with that approach. Cost recovery is going to go one of two ways. It is either going to be a negotiated settlement, or it is going to end up in litigation. Commissions don't litigate; commissions really don't negotiate. So we decided that we would step in.

Also, Mr. Chairman, I take this responsibility, and to Congressmen and the Federal Government, I take this responsibility very seriously. We want to demonstrate to you that we can do the job that you expect of us, and we will try and are committed to doing that.

Let me just bring you up to date very quickly as to where we are. Currently, we are reviewing 134 issues for cost recovery. The major ones—and Ken Mead spoke on the leak issues in the I–93, and clearly there has been poor construction. But our focus is not just on the construction companies; our focus is on Bechtel. They were hired to do a particular job, in terms of oversight, in terms of design. And our focus is on them.

There is a lot of focus and a lot of attention paid to the slurry walls. We are equally concerned with the wall and the roof joint with the continuing leaks. We are not confident with the approach that has been taken in terms of grouting, filling those leaks and those holes with—by grouting. You cannot—in our estimation, you cannot grout your way out of this problem.

We are concerned that this may not be solvable in the—for a permanent solution, and we may have on our hands a very long-range maintenance problem for the project. And certainly we will have to take some time to find out, if that is true, what is the cost and who is going to pay.

Again, we believe that the responsibility, the ultimate responsibility, is not with the taxpayer—the ultimate—the Federal Government or the State government. The ultimate responsibility lies Bechtel. Waterproofing is a major issue throughout the project.

Again, Bechtel was responsible for the concept for the entire project, and concerns have been raised about the choice of materials and design of certain of the waterproofing details. Again, we see that as the responsibility of Bechtel.

There is a serious matter involving the so-called Honeywell contract, which is a communications system throughout the project for alert to any problems in the systems. Again, Bechtel has a role in this.

There are roadway problems with pavement, causing not only regrinding but also repavement. That has been so-called—people went through it in the early stages of so-called rollercoaster effect. Again, we see that as the responsibility ultimately of Bechtel.

Last, there are problems with the water treatment system on Spectacle Island for the treatment of environmental waste. It is not functioning properly. Again, we see ultimately the responsibility—there is a lot of focus and a lot of fingerpointing back and forth, but ultimately we see the responsibility being with Bechtel.

In the end, our goal is to recover as much money as we can for taxpayers, both Federal and State, and to make sure that when all is said and done we got what we paid for.

Thank you, Mr. Chairman, and thank you for being here in Boston.

[The prepared statement of Mr. Reilly follows:]

Testimony of Attorney General Thomas F. Reilly
House Committee on Government Reform
April 22, 2005

Mr. Chairman, Congressman Lynch and other members of the committee, my name is Thomas Reilly and I am Attorney General of the Commonwealth of Massachusetts. Thank you for the opportunity to appear before you today and discuss the role the Attorney General's Office has assumed for cost recovery on the Central Artery/Tunnel Project.

The Central Artery/Third Harbor Tunnel Project represents an enormous investment by the Federal and state governments to improve transportation, not only for the city of Boston but also for the entire region. But it is more than that. The Zakim Bunker Hill Bridge is not simply a way to cross the Charles River. It provides a marvelous gateway to a great city. And soon there will be gardens in the North End that will be a source of community pride, one of many Boston neighborhoods that will be transformed by the addition of parks and new civic spaces. It is my hope and belief that these vast improvements will combine to form the lasting impression of this project.

But we are not there yet. Some very serious problems remain. As with any project, and certainly one of this size and scope, there were errors made in its design and construction. The public should not pay for those errors. The fault for those issues lies with the contractors and consultants the state used to help them get the job done.

Getting from the problems we face now to the promise of a project that reflects well on our state is the primary reason my office assumed responsibility for cost recovery. Before we took over in February 2005 there had been talk of turning over cost recovery to a commission. We did not think that was the way to go. There are only two possible paths to cost recovery -- a negotiated settlement or litigation. Commissions don't negotiate and they don't litigate. So we stepped in and offered to take on cost recovery, which is a role normally performed by the owner or managing agency, not the Attorney General. Our state's Post Audit and Oversight Committee agreed with us that the Commonwealth should speak with one voice and that voice should be the Office of the Attorney General.

By stepping in we also wanted to demonstrate to the Federal government and to U.S. taxpayers that Massachusetts is capable of dealing with these issues. We are capable of doing the job you expect to recover money on behalf of Massachusetts and U.S. taxpayers.

Now, a lot of numbers have been discussed as possible recoveries. We will not speculate. Instead, we will be fact-based in our approach. And we will not suggest an amount to be recovered unless we are sure that we can prove that amount in court.

We face a number of challenges to recovery, including the passage of time, the integrated project organization used by the Massachusetts Highway Department and the Massachusetts Turnpike Authority, and the structure of the project's insurance program and the amounts of insurance available. We will need to address these issues in a methodical way.

We also are looking at issues involving leaks in the I-93 tunnel. Clearly, there has been poor construction. But it would be wrong to focus solely on the contractors. Our focus is squarely on Bechtel which, as the recent FHWA report acknowledges, had responsibility for quality assurance on this project. Bechtel has previously told our state legislators that it will pay its fair share for its failure to detect and have contractors correct problems with the slurry walls. The public should not have to pay for their failures and Bechtel has a professional obligation to correct the problem. How they deal with this issue -- whether they are willing participants in a solution or only reluctantly cooperate -- will tell us a lot about whether we can reach a negotiated settlement with them over other issues.

Second, while much attention appropriately has been focused on slurry wall repair, we have substantial concern that merely grouting the roof leaks will not completely solve the problems there and there may be long-term, added operating and maintenance costs for the state. We know that the tunnel has experienced more leakage in the winter months. We need to understand whether that will happen each winter and, if so, what can and should be done about it. Simply put, there is far more water in this tunnel than was anticipated and if there is a long-term cost associated with that we need to know it and recover it from those responsible for it.

And, certainly, any leakage problems in the tunnel are suspected to be the result of errors and omissions in design, those issues would be appropriate for cost recovery review.

Currently, we are reviewing 134 issues for cost recovery. The major issues are:

· The so-called Integrated Project Control System in the I-93 tunnel that resulted in $84M contract modification paid to Honeywell. Among the items we are concerned about there are software design, problems with the fire detection/alarm equipment and a two-way radio system that needed to be replaced because it did not function.

· Leak issues in the I-93 tunnel.

·Waterproofing throughout the project. Bechtel was responsible for the concept for the entire project and concerns have been raised about the selection of materials and the design of certain waterproofing details.

· Roadway pavement. There have been some problems with rideability that required resurfacing roadways throughout the project.

· Spectacle Island. A water treatment system on the island currently isn't functioning as intended.

In each and every one of these cases, our goals remain the same: To recover as much money as possible on behalf of state and federal taxpayers and to make sure that, when all is said and done, we got what we paid for.

Thank you.

Chairman TOM DAVIS. Well, thank all of you for being here, and for the testimony, some of which is in the record and wasn't discussed here.

Mr. Mead, let me start with you. You said we have 3,600 claims for change orders that came through, basically?

Mr. MEAD. Yes, sir.

Chairman TOM DAVIS. Now, when these change orders came through, were they agreed to by whoever was administering the project, or did they just decide to make the change and resolve later who was going to pay for it and how it was going to—and who was to blame?

Mr. MEAD. All of the above. One of the problems with this project is that things that are now in dispute as to whether or not the Commonwealth ought to get money back that they already paid many years ago. I think there was a haste to pay some of these things, and now we still have a very large number outstanding.

I would just—some of these things just went unattended for many, many years, and now Attorney General Reilly has a task of trying to recover the cost of these things.

Chairman TOM DAVIS. He has to pick up the pieces.

Mr. MEAD. Yes, sir.

Chairman TOM DAVIS. Well, you—Mr. Mead, you said it was about $400 million in these change orders roughly.

Mr. MEAD. There's $400 million, sir, just pending now that still have to be resolved.

Chairman TOM DAVIS. Payment doesn't resolve it? The fact that these people were paid doesn't resolve it, in other words. There is——

Mr. MEAD. Well, it——

Chairman TOM DAVIS. Was it paid under protest, or how did that work?

Mr. MEAD. Well, they would just pay it, and there would be no protest. And now people are raising a protest, and saying, "We never should have paid this. This was somebody else's fault."

Chairman TOM DAVIS. Can you elaborate on that, Mr.——

Mr. REILLY. Yes, this is a big——

Chairman TOM DAVIS. I have never heard of that before.

Mr. REILLY. Well, there is a lot of things we haven't heard of before, and there is a lot of lessons to be learned.

Chairman TOM DAVIS. I was a government contracts attorney for 20 years. I was a general counsel for a $1 billion company, and we worked with the government a lot. And it was resolved or you didn't get paid. That is the way it used to work with us. Sometimes you would do the work, but they would hold the money until—you are telling me they paid this up front and then are trying to resolve it later?

Mr. REILLY. One of the big——

Chairman TOM DAVIS. Either one of you.

Mr. REILLY. One of the major problems here is that there was no cost recovery for a period of 10 years. This should have been done in a timely fashion.

Chairman TOM DAVIS. I understand.

Mr. REILLY. An ongoing fashion. Deal with the problem when it comes up, and decide who is going to be paid and for what, and some of the quality assurances. That wasn't done and——

Chairman TOM DAVIS. Who would make the decision to pay? Would it have been Federal Highways? Would it have been the State? Was it a low-level person? I mean, obviously you are trying to get the mission accomplished. You have the bulldozers out there, or the drillers, or whatever.

They say they need to get paid, but who would make the decision to pay versus saying, "Let us see if we should make this change?" I mean, at what level was that done? Was that done Federal or State or—can you explain that to me?

Mr. MEAD. I would say that first inside the Artery there is a great deal of closeness between the Artery and its project consultant, Bechtel/Parsons Brinckerhoff. It was almost a partnership, and I think there was some failures there.

At the Federal level, I have to candidly say that I think the Feds dropped the ball as well. There was very little oversight. I think the Feds were thinking that there was a great deal of oversight going on inside the project, and the project was thinking everything is going fine. But the Federal Government learned a lot of hard lessons from this, Mr. Davis.

Chairman TOM DAVIS. If the money is recovered at this point, the money that is recovered, who does it go to? Does it go to Federal Highways? Does it go to the State? Can somebody——

Mr. REILLY. Most of it—at least 60 cents on the dollar—goes to the Federal Government. It is Federal money.

Chairman TOM DAVIS. It will be shared basically in proportion——

Mr. MEAD. It will be a shared project.

Mr. REILLY. In proportion with the investment that was made in the project. Most of that money is Federal money, at least 60 cents on the dollar, maybe a bit more.

Mr. MEAD. I think, though, that a lot of that money might find its way back to the Commonwealth, because a lot of that money came to the Commonwealth as part of its annual apportionment.

Chairman TOM DAVIS. OK. So it is Federal money. And depending how it was apportioned, it could be returned to the State.

Mr. MEAD. Yes.

Chairman TOM DAVIS. Or to the Federal Government, or whatever. But there is a lot on the table.

Mr. MEAD. Yes, sir.

Chairman TOM DAVIS. General Reilly, do you have any idea how much money is on the table at this point?

Mr. REILLY. At this point, there has been a lot of speculation, a lot of numbers thrown out there. I am uncomfortable with doing that. We have——

Chairman TOM DAVIS. You set an expectation level when you——

Mr. REILLY [continuing]. And we have given assurances, and we will give assurances to you. This will be fact driven. We will make decisions based upon facts. When we have numbers that we believe we can prove in court, then we will inform—if you want to be notified, and the Congressman wants to be notified—and I know the Federal authorities, they will be——

Chairman TOM DAVIS. That is fine.

Mr. REILLY [continuing]. They will be notified when we have hard numbers that we can back up.

Chairman TOM DAVIS. I guess the last question before my time runs out—we may do a second round, because I think we all have a lot of questions as we go through this. Is there a statute of limitations problem with any of this, that money might have been paid off in the past, it probably shouldn't have been paid off, but the statute has run on our ability to get it back?

Mr. REILLY. In some cases——

Chairman TOM DAVIS. That is a possibility.

Mr. REILLY [continuing]. There are problems. There are problems with people being gone. It is with memories, it is with documents, it is with statute of limitations.

Chairman TOM DAVIS. The usual.

Mr. REILLY. On the other end of it, we have just got to work our way through those problems and get the best possible result that we can. But if there is a lesson to be learned here, cost recovery should have been taken on an on-time basis.

Chairman TOM DAVIS. Right. And I think you have heard the Woodrow Wilson Bridge project is going along, because of some of the mistakes made here. We are not replicating those mistakes in other parts of the country. I think from the committee's perspective, we would be interested as you move through to see if there are statute issues, things that might have fallen through because of timeliness and stuff, not to basically point a finger at anybody, but just to understand this. Historically, I think that is important for us moving ahead.

But we appreciate your cooperation in this. I am going to recognize Mr. Lynch.

Mr. MEAD. Mr. Chairman, if I might just, given your background, I think you can relate to this point really quickly. You asked Attorney General Reilly for, you know, does he have a sense of what the magnitude of cost recovery would be, and he I think quite properly——

Chairman TOM DAVIS. He said what I would have said.

Mr. MEAD. Yes. And when I was a lawyer would say, too. But you should know that up until a couple years ago, this is a $14.6 billion project. The total amount of cost recovery up until 2 years ago was roughly $30,000.

Chairman TOM DAVIS. There is a lot of money on the table. I got you. Thank you very much.

Mr. MEAD. I hope so.

Chairman TOM DAVIS. Thank you very much.

Mr. Lynch.

Mr. LYNCH. Thank you, Mr. Chairman.

Mr. Gribbin, I just wanted to followup very quickly with you. You answered rather forthrightly that you thought the tunnels were safe. When we heard from the two construction experts—Mr. Lemley and Mr. Tamaro—at the State hearing, they answered in a similar fashion, but they conditioned that response by saying, "The tunnels were safe for now."

They also said that if proper maintenance were not—was not conducted, and proper repairs not done in a timely fashion, then

an unfair—or an unsafe condition could arise. Do you—is that condition unstated in your answer?

Mr. GRIBBIN. I mean, our answer would be, first, as part of the September 15 incident, we created a leak assessment task force that did the interim report that I mentioned in my statement. At that point in time, our experts went through the tunnel and found it to be safe. We will continue, however, to monitor the leaks, to monitor the injections on the leaks, and we will be doing a final report once the project is complete.

And this project is still under construction from our standpoint. And so we will—this project is perfectly safe to be used. I don't think we are going to project forward into the future too far until we finish our report, which will be done after the project is completed.

Mr. LYNCH. Right. All I am saying is you have at least—right now you have 102 flaws that they have noted, a couple of them serious, 33 of them No. 2's as they say, moderate deficiencies, and then 67 light ones. I am just concerned about——

Mr. GRIBBIN. That is correct.

Mr. LYNCH. And not only that, but the patch that is on E–045, which is the burst panel, that is a temporary patch, so—I am just concerned about the completeness of your answer, whether or not you think that, if we don't have proper maintenance and repairs in a timely fashion, that there could be an unsafe condition that arises.

Mr. GRIBBIN. The assessment that we made was that the patch was appropriate. It is a temporary patch, but clearly appropriate to protect the integrity of that wall in the tunnel until a permanent patch can be made. But why don't I let Stan, since he is the engineer here, add to that answer.

Mr. GEE. Sure. To answer your question, Congressman, there have not been any discoveries of additional breaches of the type of September 15. So we are confident now that the tunnel is safe. The temporary repair is holding. We have recommended they go to a permanent repair as soon as they can.

For the long-term safety, we are recommending they do a tunnel—they create a tunnel inspection program similar to what we do for bridges. I think you are all familiar with the National Bridge Inspection Program that requires a periodic review of bridges. Well, we are going to institute—we have recommended, and will follow through, that the tunnel create an inspection program for the long-term safety.

Mr. LYNCH. Thank you. Inspector General Mead, I want to say how pleased I am with the work you have done on this, and you have been very helpful. I do note in your report this—for the record, "The Impact of Water Leaks on the Central Artery/Tunnel Project and Remaining Risks," by the Honorable Kenneth Mead, Friday, April 22.

You note that in your inspection you originally testified back in December that it was an open question whether the September breach was a one-of-a-kind event or a harbinger of systemic problems in the tunnel walls. And, however, based on the results of the Authority's inspections to date, it is clear in our opinion that the

wall panels leaks are systemic and are not centered in just one contractor's section, as was originally suggested.

That failure occurred 5 years ago. I am sorry. The wall was constructed 5 years ago. The defects sat latent 5 years ago. For that 5 years, Bechtel had a responsibility to inspect. For that whole 5 years, we never were informed of, even though they had the information in their possession, they never informed the public, and we never found out about this latent defect.

The fact that there is another 101 defective slurry wall panels that have been found, and the problems are more systemic, as you say, are there suggestions that you would make in terms of the approach that should be taken in order to guarantee the structural integrity of the tunnel? Not only in the short term, but in the long term as well?

Mr. MEAD. Well, I, too, have never had any question that the tunnel is safe, and it has integrity, and it will be safe for travel, and so forth. But I do think this leak situation, and the magnitude of it, does need to be resolved. And, yes, I do have a suggestion.

The first thing we need to do is we need to complete all these inspections, both the slurry walls and the roof wall joints. Then, we need to have a credible process for deciding how to fix them. You can already hear in this hearing that there is going to be some controversy about the fix. I think it is incredibly important that the public perceive that the fix is the right one.

Mr. LYNCH. I just want to—just for the sake of this—follow up on this question, sometimes a picture is worth 1,000 words. Leah, I don't know how you turn the lights down a little bit. I just want to show you, a lot of people have seen the flooding, the water on the street. But I want to go to Slide B2 if we could. These are pictures of the breach that occurred back on September 15.

I don't know if you can see that very well. There is sort of a waterfall thing going on there. That is the breach. And, notably, I wanted to bring your attention to the clock on this. This is midnight, basically, on September 16. This wall breached between 2 and maybe 3 and 5 o'clock I think on the 15th.

So this has been running. This actually burst, let us see, a number of hours, at least—let us see, I am not sure of my timing on the original breach. I think it was 8 or 9 hours previous to this picture being taken. So this is after the wall panel was taken apart.

Based on what you see here, and I can only imagine what the actual force of this spout of water out onto the interstate highway, by the way, which was being used by traffic traveling at, let us just say, 55 miles an hour. Do you have any sense on the safety aspect of this, you know, given the fact that now you have had an opportunity to see what the breach actually involved?

Mr. MEAD. Well, obviously, if you had a lot of breaches like that, you would have a safety problem. I mean, you would need a boat. But I think there is two walls—there is two panels where we have defects that are classified as serious, and there is 30 others, 30 odd others where I think the problem is moderate. It needs to be fixed, so it doesn't become serious.

Maybe you would like to speak to that.

Mr. GEE. Yes. You know, on that particular situation, the State Police shut down the lane, so it wasn't a danger in terms of traffic

flooding. In that particular situation, they had it sectioned off. There was one lane of traffic that was allowed to pass through. When the water was emptied, it was restored to full operation.

The other leak that goes all the way through the wall is the size of a tennis ball. OK? It is no longer leaking. It has actually been temporarily fixed. All of the other leaks that we have do not—are indentations or gouges in the wall, and this is a——

Mr. LYNCH. Are inclusions—is that included as well?

Mr. GEE. Excuse me?

Mr. LYNCH. Are there inclusions?

Mr. GEE. Yes.

Mr. LYNCH. Yes.

Mr. GEE. Yes. The foreign material, like dirt or whatever, that was mixed in——

Mr. LYNCH. That fell into the slurry during construction.

Mr. GEE. Right. And when we poured the concrete, they filled up the hole. My point is that those other ones don't go all the way through. This wall is almost 4 feet thick. So the other moderate defects—also, most of the—if many of the—let us see, I think very few of these defects, the numbers you—are wet, are actually leaking. These are defects that have foreign material in there, but they are not leaking water.

The last point I wanted to make is that these—the moderate ones, as the Inspector General has mentioned, these are defects that have inclusions that may be more than a foot deep. OK? But the wall is almost 4 feet. That is why I can say that there is not a structural integrity problem; it is a quality control issue as was pointed out.

Mr. MEAD. Now, you know, we have 400 of these panels of these—that still have to be inspected. And what is very troubling about this whole matter is that they knew that there was a problem, and it wasn't fixed. And that this happened so many years ago, and now there is a second one. Plus, they found these problems with almost 100 panels.

I would hope that this teaches us a lesson that there is something broken in the quality assurance process. And I hope that the remaining 400, when they get done with those inspections, they don't—that it doesn't turn up other problems.

Mr. LYNCH. I am going to—I know I have taken more than my time. My concern is this, Mr. Gee, and maybe you can address it at a later time. These defects are latent, just like the—this was a latent defect until it burst. These walls are 3½ feet thick. We shouldn't have water spouting through a wall 3½ feet thick. We shouldn't have a hole the size of a tennis ball through a wall 3½ feet thick.

And in my estimation, we shouldn't have traces of water filtering through a concrete wall 3½ feet thick. And the reason it was designed to be 3½ feet thick is we need that. We need that thickness to retain the soil and the water pressure behind it.

And all I am saying is that these inclusions that are treated so lightly by many are actually, over the long term, threatening the structural integrity of those panels, not of the tunnel itself but of those lateral panels that are holding back the soil.

OK. The last question I have—I know I am over——

Chairman TOM DAVIS. Can I just follow on to that? I will give you your last question. You said they knew about this. I mean, the contractor knew about this. Did State or Federal inspectors know about this, too?

Mr. MEAD. Well, it is not clear—it is——

Chairman TOM DAVIS. Or should they have known about it?

Mr. MEAD. Oh, yes, they should have known about it. We also know, though, sir, that Bechtel/Parsons Brinckerhoff, whose job it was to do quality assurance, knew about it. But they did not require its correction. And the paper trail that we traced down, it ends at problem identification. And there is no followup documentation that we were able to find.

Chairman TOM DAVIS. Why do you think that is?

Mr. MEAD. I don't——

Chairman TOM DAVIS. Is there any possibility of collusion here, that everybody is just so close here they are losing things?

Mr. MEAD. I think, at best, sloppiness.

Chairman TOM DAVIS. At best.

Mr. MEAD. At best, it is sloppiness.

Chairman TOM DAVIS. It could be collusion.

Mr. MEAD. Yes. And, you know, what the taxpayers want here is they want a wall panel that meets the specifications that were originally designed.

Chairman TOM DAVIS. So do the drivers.

Mr. MEAD. And that is going to be tough to do now. [Laughter.] That is right. The drivers that have to go through there.

Chairman TOM DAVIS. Thank you.

Mr. MEAD. Yes, sir.

Chairman TOM DAVIS. Mr. Lynch, one more question.

Mr. LYNCH. Just one last piece, and we are going to let Mr. Capuano finally say something. The inspections that we are talking about here—and I know we have a technical panel coming up behind us—but is this with non-destructive testing? Are we doing pulse echo? What are we—is this just visual detection of defects, or are we actually scanning these walls with, you know, pulse echo or ultrasound or—how are we detecting these panel defects so far?

Mr. GRIBBIN. I am going to volunteer Mr. Gee for that question. [Laughter.]

Mr. LYNCH. OK. That is a question for—that is called a question for the next panel.

Mr. GEE. We are doing—all of those are being done now. The initial screening is visual, OK, but when there is a question of a defect, all of the methods that you describe, non-destructive as well as actual picking away, is the inclusion of the material, the foreign material is being done, too.

Mr. LYNCH. But it requires some other indication before you do that, right?

Mr. GEE. Yes.

Mr. LYNCH. So you are not doing that with every single panel in the tunnel. You are not going through with non-destructive testing, making sure there is no flaw, no defect or deficiency within the panel.

Mr. GEE. Yes. At this point in time, the inclusions are obvious in terms of visually seeing those. OK? And if there is a leak, obviously you will see a wet wall.

Chairman TOM DAVIS. Mr. Capuano.

Mr. CAPUANO. Thank you, Mr. Chairman.

Gentlemen, I am going to ask you precisely the question I said I was going to. I know that some of you addressed it, but I want to make sure I hear it again. Based on what you know today, understanding that things can change tomorrow, but based on what you know today, is the tunnel safe today?

And on the presumption, I would imagine, Mr. Gribbin, I had heard before that you had suggested a national bridge-like inspection for this tunnel, which will be the first tunnel in America, if I understand, that would be on such an inspection. And I hope and presume and will do everything I can to assist you to make sure that gets enacted.

But on the presumption that ordinary maintenance and everything gets done, which to me that is a presumption, that every bridge I drive over has ordinary maintenance—on the presumption that ordinary maintenance gets done, is there any reason to suspect today that these tunnels will be unsafe in the near or distant future? Mr. Gribbin.

Mr. GRIBBIN. There is no reason to believe that these tunnels will be unsafe in the near or distant future. We have had a good number of experts looking at this, and all of them have concluded the same thing.

Mr. CAPUANO. And that today they are safe to your knowledge?

Mr. GRIBBIN. That is correct.

Mr. CAPUANO. Mr. Gee.

Mr. GEE. Yes. I have nothing to add to that. That is true. That is my opinion also.

Mr. CAPUANO. Mr. Mead.

Mr. MEAD. Yes. As I said before, the structural integrity of the tunnel I have no problems with. I think it is safe for the traveling public. I do think, though, that a very compelling case could be made that when you consider all the circumstances here that every one of these wall panels ought to be scanned.

It is going to cost some more money. But given what has happened here, given that picture, given the fact that this was a latent defect that nobody saw until, I mean, once the thing was built, they identified the problem, did nothing, I want to make sure that there is no others out there like that.

So I would go to the expense of scanning every one of the panels in this tunnel before we put this to bed.

Mr. CAPUANO. Mr. Attorney General.

Mr. REILLY. Congressman, my understanding is that the tunnel is safe. But there is a bottom line here, and the bottom line is that there is too much water coming into this tunnel, far more water than anyone anticipated. We also know that in the winter months there is more leakage than at other times of the year. And, you know, the last time I checked, winter comes every year here, and it comes harsher in some years than others.

Now, with that water in the tunnel, at places it shouldn't be and in amounts it shouldn't be, we have—there is a maintenance prob-

lem, and in terms of driving conditions, yes, it is not a good situation until we get to the bottom of this, find out what is causing the leakage, what is causing the water, and correct it.

So is it safe? Yes. But let us get to the bottom of it.

Mr. CAPUANO. But to your knowledge at the moment, the tunnel is safe, and there is no reason to suspect——

Mr. REILLY. Oh, yes.

Mr. CAPUANO [continuing]. That it won't be safe for the near future.

Mr. REILLY. What you have heard—and, again, I am not an engineer, but all of the information I have had, it is structurally sound, it is safe, but there is too much water coming into that tunnel.

Mr. CAPUANO. Thank you. Mr. Inspector General, first of all, I want to thank you for coming today. I also want to thank you for the assistance you have given both in this project and other projects with my office and me personally. And for those of you who don't know, the Inspector General is a son of Massachusetts. He is a proud product of us, and I am very pleased that he is back home today for a little while.

Mr. Inspector General, in your written report, and I think you also said in your comments, you had suggested an independent commission for this, and I had agreed with you. And I just want to know, in your perfect world, if you were the emperor of the universe tomorrow, right this minute, would you still stand by an independent commission?

Mr. MEAD. I am very encouraged by the fact that Attorney General Reilly has stepped up the Commonwealth to a place to control. I ought to say, to begin with, why—we came up with this idea of the independent commission. Why did we come up with it? Well, I am not a real good student maybe of Massachusetts politics.

But I did—I could see that the Massachusetts Turnpike Authority, which is—has this huge project and isn't part of your State Department of Transportation. First of all, that was kind of unusual. And the Massachusetts Turnpike Authority had a cost recovery effort set up inside itself, and I thought that was kind of strange because the Massachusetts Turnpike Authority itself may have been some—may bear some of the responsibility for the problems here.

In addition, their consultant, their partner, was the one that the cost recovery effort, or a large part of it, was directed against. We came up with the idea of the commission, sir, because it seemed to us that it needed to be defanged of politics. And it was our idea that, if you had a commission that was bipartisan, they could work with the attorney general, who is endowed with these enforcement powers, and proceed.

The decision was made that the attorney general, who has the legal authority, who has the skill set in his office—and we wish him well. I support the effort. We will continue to coordinate. And we were just trying to break a log jam by pushing the independent commission.

That is a long-winded way of saying I am not wedded to the idea of an independent commission.

Mr. CAPUANO. Mr. Inspector General, I am a student of Massachusetts politics. [Laughter.]

And I supported, and I still support, the concept of an independent commission. But I want to make it clear, it is not because of a lack of confidence in the attorney general or his office. I think they do a great job of everything that I am aware that they do. I think they will do a good job on this.

My concern is the future. Everybody in this room knows the attorney general is more than likely to run for Governor, and I wish him well. And everybody in this room knows that I thought about running for Governor and decided that Washington needs me more. [Laughter.]

So I don't—I am not trying to hide anything here, and I am not trying to play footsies about it. My concern is in a couple of months, or a year, or 2 years, whenever the attorney general's office comes up with whatever findings they have on any of these issues, it is going to be the middle of a gubernatorial campaign.

At this very moment, I myself am personally aware of only—I haven't done a whole full-blown research—two news articles already where the Governor himself or his people have already attacked the attorney general and his process when the attorney general hasn't done anything yet except begin the process. He has already been attacked on political—my opinion, politically motivated purposes.

And my concern is exactly what you repeat throughout your entire testimony, your written testimony, is the main aspect here is to restore public confidence. And as a student of Massachusetts, and probably international politics, when politics is involved—and I am a politician, there is a place and time for it—public confidence goes out the door.

And when the time comes, if the attorney general does everything perfectly correctly, and comes up with the perfect answer, no matter what he comes up with, it is going to be subject to political second-guessing and headline-grabbing. So, for me, I still support the independent commission, because I want politics out of this once and for all.

Mr. MEAD. Yes. I did think also—and I didn't say this in my response—another thought that went through our minds on the independent commission is what happens if it turns out that cost recovery is not possible, given some of the factors that Chairman Davis alluded to.

An independent commission, in our heads at the time, the—that would have taken—it would have made it so that the expectations of success wouldn't have carried a political implication if it was bipartisan. And I still think it is a very hard road on cost recovery. And you've waited many, many years on some of the claims that are—Mr. Reilly is going to be pursuing here.

And that is going to be a very hard road to tow. That is why I say, Mr. Reilly, I wish him well. [Laughter.]

Mr. CAPUANO. Thank you. I see that my time is up. Thank you very much.

Chairman TOM DAVIS. Thank you. Well, I am not a student of Massachusetts politics, but I won my first election here to the Freshman Council at Amherst College. I was elected that, and then I was elected president of the Young Republicans and that ended my career in politics in Massachusetts. [Laughter.]

Mr. CAPUANO. You should have stayed. You could have been Governor. [Laughter.]

Chairman TOM DAVIS. I hope everybody works together on this, regardless. Mr. Reilly, I am sure you will work with the Governor's office. I mean, this is—this really rises above politics at this point. There has been—so many bad things have happened to this, whatever our views, we just need to pull together.

But let me ask you this. Your MOU with the Turnpike Authority ends in 2006, is that right?

Mr. REILLY. Yes.

Chairman TOM DAVIS. And this is all not likely to be finished by that time. Obviously, you want to tie up as many loose ends as you can. What is the strategy to tying up the loose ends after that? Just to renew it?

Mr. REILLY. That is the end of my term, and I did not feel that it was appropriate to bind anyone else. I have accepted this responsibility. Someone else would decline it, and I understand that.

Chairman TOM DAVIS. And obviously you would love to wrap it up, but I doubt it. You know, if it happens, then—you don't think there will be a problem in renewing, though, do you, with whoever your successor is?

Mr. REILLY. No, I don't. But I should tell you what our strategy is, and we have shared it with everyone. The termination of the leaks and how we go about this and who pays for it and who has responsibility in finding a solution is going to go a long way.

We have indicated that if we get by that point, we are willing to enter into negotiation for a global settlement for all of the cost recovery efforts, if we get beyond that. If we do not, the likelihood would be litigation, which would be costly and very time-consuming. So, you know, I am not ruling out that these matters can be resolved.

The reason we stepped up here is I think you need, I think the American people need, the taxpayers need Massachusetts' decisions. A decision in an office and someone that is willing to accept responsibility for those decisions, and then what will come will come, and we will accept that. But that is what we are trying to be about.

We are trying to get into a point where we can make decisions, good decisions, fact-based decisions. And I agree with you that this is beyond politics. This is far beyond and far too important for politics. It involves the future of this State in terms of not just the immediate project but other projects that are coming down the road. I take that responsibility very seriously.

We will work in a bipartisan fashion, both the Federal and State officials, and with the Governor's office. You want results, and we are going to try to give you those results. And then people can measure them at the end.

Chairman TOM DAVIS. Sure. Let me ask another question. The individuals who approved the payments—I think, Mr. Mead, we talked about how close everybody was up here. The contractors were close to the people that were overseeing it, and how really outside the box—how unusual it is for people to just approve these change orders and not really get resolved who was to blame and what was within the scope of work, and that kind of thing.

We don't know yet if there is evidence of collusion. But is it possible, as we look back at these payments that were approved, is—if we find evidence of collusion or somebody acting in an ultravirus way of approving things they shouldn't have and money went out the door, that individuals could be held responsible who were in basically the State or Federal lines of authority?

Mr. MEAD. Yes. This project has been remarkably scandal-free from the standpoint of hard evidence of criminal activity at least to date. I think that this project, when it started, a lot of hard questions that should not—should have been asked were not asked. A lot of change orders were approved, that had the project been properly scoped to begin with, I don't think they would have—I don't think they would have occurred.

I don't think the jury is in yet on whether—the extent of—that we might find malfeasance on this project. You know, the tail on this project of claims was—I mentioned the $400 million. That is going to take some time to resolve, long after the project is complete.

Chairman TOM DAVIS. I understand. General Reilly, would you agree? As you look at some of these—some of the approvals that were given early on for these change orders, you are going to be looking behind it. Are you going to be looking for evidence that maybe people were—I don't want to say on the take, but the closeness of the people involved in this, is that going to be a factor as you look at this?

Mr. REILLY. Obviously, it will be a factor. But you have to bear in mind the very structure of this project, the way it was organized, integrated project management encouraged that type of——

Chairman TOM DAVIS. Collegial.

Mr. REILLY. Now, people did not think this thing through when they set up this structure, because now we are at the point where we are allocating and determining accountability and responsibility, and that is very difficult under the organizational setup. And if there are lessons to be learned, that is one of them. I am not sure you want to do this again on a project of——

Chairman TOM DAVIS. Right.

Mr. REILLY [continuing]. Of this magnitude. But, again, this is one of the things that we will have to deal with, but that is a lesson that should be learned.

And the last thing, in terms of some of the liability limitations, in terms of capping that, the insurance situation in terms of the amount of insurance for a project of this magnitude, it is totally unacceptable. And we will be speaking to that down the road, and I am sure you are aware of it and you will want further briefings. But there are a lot of lessons to be learned.

Chairman TOM DAVIS. Was that partly Federal responsibility, the fact that the insurance levels, the bonding was so low?

Mr. REILLY. Well, I think on both—you know, it is a shared responsibility.

Chairman TOM DAVIS. OK.

Mr. REILLY. But there are insurance problems in terms of the amount; $50 million obviously is not sufficient. There is a gap in that because of the failure of Reliant. That is a problem. There are a lot of problems, but they need to be dealt with.

Chairman TOM DAVIS. I understand.

Mr. REILLY. And we are going to try to do it.

Chairman TOM DAVIS. Thank you.

Mr. MEAD. And, you know, you asked about—this is not—this is not something I would characterize as collusion. I know you would be interested in this point. This project had an insurance program where they would bill the Federal Government for premiums, and it is an allowable expense under the Federal law to pay the premiums, a certain percentage of them.

It turned out that after we were billed that the insurance company would notify the project that the premium for the period that we had paid for was not as high as had been billed. That they had—and that was an annual review they would do of the claims experience and they said, "So the premium isn't as high."

And an arrangement was in place on this project where those premiums were retained and put in a trust account where they accrued interest. And the Federal Government was not aware of this particular arrangement.

In effect, I think they had an insurance program in place here where we were paying premiums for insurance billings, and we should have been refunded a great deal of the money that was kept in a trust account. That wasn't evidence of collusion, but I think it was evidence of an impropriety.

Chairman TOM DAVIS. Yes. I am sure the attorney general will look at that, among other things. Is that——

Mr. REILLY. We will take whatever information that is——

Chairman TOM DAVIS. OK.

Mr. REILLY [continuing]. That we have, and then call it as we see it at the end.

Chairman TOM DAVIS. OK. My last question—Mr. Gee, with the number of leaks and the type of leaks in a tunnel, with the engineering issues of this complexity, is it about normal? Is it more leaks than normal? Is it fewer leaks? I mean, how would you take a look at how it is complied from an engineering perspective and the construction basis, with what would be expected? I am not talking about the cost overruns. I am just talking about the performance.

Mr. GEE. Well, I guess that answered two parts. As we talked about—the picture you saw here, we would not expect that to happen. That is clearly a problem, and that was a—I would characterize that as a construction defect.

Chairman TOM DAVIS. That is a good answer, yes.

Mr. GEE. A latent defect. [Laughter.]

But we do expect some type of water to get in. When you build tunnels underwater, that is expected. The concern we would have in the long term is that water doesn't lie there and corrode the steel. That is when it becomes a problem.

Through our research, we have indicated—and we use as a gauge about 1 gallon per minute per thousand feet of tunnel as a rough estimate of the amount of water that we would expect that wouldn't be a problem. But even that amount could be a problem if it is left to corrode the steel. OK? So it is not actually the number of leaks, but the amount of water that could penetrate the tunnel and sit and allow it to corrode the steel. That would be a concern.

Chairman TOM DAVIS. And what you are saying is today—you think after you are through with everything you are going to probably render a decision that the tunnel is safe. But we don't want to be back here in 10 years looking at a $5 billion repair bill because of things that have corroded and——

Mr. GEE. No. We would expect through a maintenance and inspection program that any water that does come through would be a minimal amount and would not cause any problems, corrosion-wise or safety-wise.

Chairman TOM DAVIS. What are the maintenance costs for the tunnel? Do you have any idea?

Mr. GEE. No. I really do not. That would be something that I think the next panel, the Turnpike Authority——

Chairman TOM DAVIS. OK.

Mr. GEE [continuing]. Would be able to answer.

Chairman TOM DAVIS. Thank you very much.

Mr. Lynch.

Mr. LYNCH. Just a followup, Mr. Gee. You said that you thought that this tunnel was placed under the National Bridge Inspection Program. Is it, or isn't it? I was told that it was earlier, but——

Mr. GEE. No. What I—excuse me if I state something incorrectly, or misstate. We are proposing to institute a tunnel inspection program similar to our National Bridge Inspection Program.

Mr. LYNCH. OK.

Mr. GEE. The bridges on this project are subject to the bridge inspection program.

Mr. LYNCH. Right. Right. But you were going to include the tunnel——

Mr. GEE. Right.

Mr. LYNCH [continuing]. Which is not necessarily required, but under the circumstances is a good idea?

Mr. GEE. Right. Actually, the Turnpike Authority has been proactive in helping us design such a program, because of the complexity of this project and the scale of the project.

Mr. LYNCH. OK. Thank you. Attorney General Reilly, can you give us a snapshot on—I understand this is ongoing litigation, so you can't really—I wouldn't want you to disclose anything that might undermine your negotiating position with respect to cost recovery cases that you took over from Judge Ginsburg.

And I understand that for the first 8 years of this project—there was a cost recovery program instituted in 1994. And up until 2002, it had recovered a total of $35,000, is that what we are saying? $35,000?

Mr. MEAD. Yes, sir.

Mr. LYNCH. And we are at about—it was about——

Mr. MEAD. I was $5,000 off before. Let me correct the record. It was $35,000 not $30,000.

Mr. LYNCH. All right. And we are up to—on a project at that point that was $10.8 billion. So we had recovered $35,000.

And then, Judge Ginsburg came in under the directorship of Mr. Amorello. Now you are taking the cases that were begun by the Judge, and also you are handling any other aspect of recovery that we might hope to succeed in.

Mr. MEAD. Yes, sir.

Mr. LYNCH. All right. Can you give us a—without, again, divulging any sensitive information regarding the liability of certain lawsuits, could you give us a snapshot of where we are today?

Mr. REILLY. Yes. One lawsuit has been stayed that had to do with financial management. That lawsuit has been stayed.

Mr. LYNCH. Stayed on your part.

Mr. REILLY. Stayed on our part.

Mr. LYNCH. In other words, you made a determination that it was not viable and you pulled back.

Mr. REILLY. No. We made a determination to hold on that case to see where the overall effort goes.

Mr. LYNCH. OK.

Mr. REILLY. There are other—some eight section design lawsuits that are in effect. Those are going forward. I think the first one is scheduled for trial later this year, but they will proceed on a regular basis.

The strategy here is that we will either come to some resolution on the leak situation, both short term and long term, and allocate a dollar figure to that we believe is fair to both the Federal Government and the State government and the taxpayers, or this is headed for litigation, all of it, including the potential for additional lawsuits.

But we are—we believe it is in everyone's interest to resolve this matter if we can, but with no expense to any taxpayers and to recover as much money as we can. What that time table will be, I can't promise you that, but——

Mr. LYNCH. OK.

Mr. REILLY [continuing]. We would set a date on that, except that we are—we are proceeding with the leaks as No. 1. No. 2, we are setting up a structure for a global negotiation, if we get beyond this point. If it goes that way, it will go that way. If it doesn't, it is headed for litigation that will be very costly, and it will be long term.

Mr. LYNCH. All right. Well, that is in your hands, and it would be overreaching on my part to suggest how you might do it. But as an editorial comment, I would just like to say that settlement, if it were to occur, or the litigation were to occur, would depend greatly on the assessment of real damages within the tunnel and how much water we have in there and the prospective maintenance costs that we—the delta between what we should have had with the tunnel as it was advertised and what we end up with at the end of the day. That should be a factor in those settlements.

And all I am saying is that there is a pretty good audit going on right now, and I would just—my own—and, again, I don't want to influence you, but I would not enter into any negotiations with these folks until we get all of that information.

And, you know, based on what I have seen so far and the lack of willingness to negotiate in good faith, I would just say, you hang tough, and we are with you. And we realize that you didn't have to take on this case, and that you did it out of a spirit of good government and protecting the taxpayer.

I have a bad feeling about this. I think that the numbers that we are seeing here for—you know, just counting heads down in that tunnel, the number of people that are fixing those—that are

plugging those holes, and the number of leaks we have, and it didn't get any better this summer than it did last winter, I just think we have a whale of a problem down there.

And I would just not want to settle short and then end up with a huge bill later on behalf of the—you know, the taxpayers of the Commonwealth.

Mr. REILLY. I am in total agreement with you, Congressman. There will be no settlement, and there will be no detailed negotiations until we get the information that we need to make an assessment whether the problem has been fixed, to what extent it has been fixed, whether there are long-term maintenance, and what is that going to cost. And until we get to that point, we are not going far.

We expect them to do the job that they were paid to do. And until they do that—there is an old saying, if you broke it, fix it.

Mr. LYNCH. Right.

Mr. REILLY. Fix it, and step up and take responsibility for it, and pay for what you broke. And then we will move on. If we don't get to that point, then there will be no negotiations.

Mr. MEAD. Congressman Lynch, I would just like to supplement——

Mr. LYNCH. Sure.

Mr. MEAD [continuing]. Or amplify on something you said. In my statement, you will notice that we stress some cautionary notes about running to the bank with a $17 million estimate. I think that when we first started hearing about——

Mr. LYNCH. Now, let us—just for clarity, the $17 million is regarding leak——

Mr. MEAD. There was an earlier——

Mr. LYNCH [continuing]. Patching or waterproofing, right?

Mr. MEAD. Yes. And patching and—the early estimates were that, well, $7 million had been paid to fix leaks, and another—there might be another $10 million out there. And our testimony deliberately expresses some cautionary notes on taking that figure and running with it, and that is because, as you know, we have been working with the Artery and the Governor's office and the Federal Highway Administration to have Deloitte & Touche do an audit of the costs. They are reporting in mid-May.

Now, I think a lot of people with these leaks—their frame of reference is somehow the month of September in 2004. But if we all remember, in 1997, the Artery set up a task force called the Waterproofing Task Force. There was a reason they did that in 1997. By the year 2000, that task force was called—there was a new task force, and this one was called the Leak Task Force.

So we started out with a waterproofing one in 1997; in 2000/2001, we had a leak task force. So the costs associated with this—the cautionary note I am raising here go back longer in time than we had initially thought.

Mr. LYNCH. Right. And, you know, I noted that in my notes, that in the reports we are reading at some point in time—and I am not sure what precipitated that—but the Waterproofing Task Force became the Leak Task Force. And, you know, it begs the question.

One thing I wanted to ask both of you, it seems that in this long-term construction schedule—and this goes back—this is about 16

years that it spanned where we have had people actually on the site on this project. It was always my understanding that, well, on the average project, usually the completion of the job triggered the statute of limitations.

But I understand, now that you are explaining it to me, that phases of this contract were completed years ago, and that the statute of limitations was too old on some of these—some of the aspects of this.

It would make sense, don't you think, for Congress to have a special statute of limitations for work performed on long-term construction projects like this? Say, that they would go on beyond 8 years or 7 years, or some longer period of time that would not be properly addressed by the normal statute of limitations under contract law.

Mr. REILLY. A couple of things on the State side, and it certainly is worth looking at on the Federal side. The State statute of limitations has been extended for this project. We expect that to be contested, and that is—that will be an issue. But, you know, this business should have been taken care of, and we are all dealing with something very late in the game.

Mr. LYNCH. Right.

Mr. REILLY. And we shouldn't have to deal with the situation we are dealing with. But the State—on the State level, there is a State law that extended the statute of limitations to allow us to proceed.

Mr. LYNCH. All right.

Mr. MEAD. I would have to get back to you on the statute of limitations. But what was fundamentally wrong here is their closeness. Any project of this size—in fact, even smaller projects—there ought to be an independent part of the project that is watching.

What you had here is you had a partnership between Bechtel/Parsons Brinckerhoff and the Artery management. And now the Commonwealth is trying to get recovery against Bechtel/Parsons Brinckerhoff, who has been partners all these years with the Commonwealth of Massachusetts.

So I think that you needed to have more checkers in place from the beginning on all these change orders that we are now going back and saying, "Well, should we have paid these or not?" You should have had an apparatus in place then.

Mr. LYNCH. Right.

Mr. MEAD. That is a lesson learned. I don't want to keep coming back to the Wilson Bridge, but that is one of the things that the Wilson Bridge started doing right from day one. Well, not exactly from day one, but shortly after it got underway. And I know it costs the taxpayers a little bit of money to have some auditors around, but I think at the end of the day we will be very happy that we did so.

Mr. LYNCH. I agree. This integrated project organization, the IPO, that is sort of the source of a lot of problems that we are looking at today, under that—based on previous testimony in some of the pre-conference—prehearing conferences, it was Bechtel's responsibility to report to the Turnpike Authority.

But since they were so close that in many ways that reporting was internal, because their organizations were blended. And there was no reporting to an independent—as you describe, an independ-

ent agent on behalf of the taxpayer. And I was mystified that there is no requirement that there be an independent agent there that gets reports on a monthly or biweekly basis, so that they can track the project on behalf of the taxpayer, because that is who is ultimately paying the bill here.

And I am just wondering if there is any office or any structure that you are aware of that would allow us to provide that parallel reporting requirement, so that it is not all in-house. Either of you gentlemen.

Mr. MEAD. Well, no, I am not aware of an explicit such arrangement. I think perhaps there ought to be one. You do have the Federal Highway Administration.

Mr. LYNCH. Right.

Mr. MEAD. These people are getting taxpayer dollars. I mean, they are getting a lot of money from the Federal Government, and I don't think it is inappropriate to establish some reporting line. And you can go back in history on this project, and Bechtel/Parsons Brinckerhoff knew and did go and brief the head of the Central Artery about where the costs were headed on this project.

Mr. LYNCH. Right.

Mr. MEAD. And it sure would have been nice in—with the 20/20 hindsight we have today, if Bechtel/Parsons Brinckerhoff had come to my office at that time, or come to the Federal Highway Administration and said, "This project is headed north to the neighborhood of $13 or $14 billion."

Mr. LYNCH. Right.

Mr. MEAD. But that did not happen.

Mr. LYNCH. OK. Well, that is maybe something we can address in the regs with the Federal Highway Administration.

Thank you, Mr. Chairman. I yield back.

Chairman TOM DAVIS. Thank you. Mr. Capuano.

Mr. CAPUANO. Thank you, Mr. Chairman.

Gentlemen, I would like to just pursue—I mean, one of the—I am not an engineer, and I know that the next panel is supposed to be a little bit more technically oriented, except for Mr. Gee. But nonetheless, the engineering parts are one thing, and that is what the attorney general is going to do over the next several months or years, try and determine who is responsible for what engineering issues.

In the final analysis, though, let us assume that you find somebody is responsible for something. There has to be money on the table, and there has to be money to get. And in my limited experience, there is two places to go. No. 1 is holdbacks, money that was not paid to the contractors pending whatever negotiations you have. And No. 2 is to the surety bonds, which every major contract is supposed to have. I don't know if it is a regulation, but it certainly should have, never mind whether it is required or not.

And I guess I have a couple of questions, and my guess is that they would be addressed both to Mr. Mead and Mr. Reilly, most importantly. Are you satisfied now that either there are enough holdbacks on this general project to address, if not every dollar, you know, the bulk of the—well, and I know that some of these—much of these costs haven't been estimated. But are you comfortable with the percentages?

As I understand it right now, the Federal Government is just holding I think it is $81 million. That is 1 percent of the Federal dollars. So, in my mind, I mean, my uneducated mind, that is not enough. But it is what we have.

And as I understand it—and, again, I would like to be corrected, I am not the insurance expert. But as I understand it—and I think, Mr. Attorney General, you just mentioned it, that Bechtel/Parsons Brinckerhoff only has $50 million, with $10 million not even necessarily there, probably more like $40 million worth of insurance on this issue.

And Modern Continental, which, first of all, doesn't exist anymore, but the company that has taken them over, I guess as I understand it, picked up their insurance, which is $252 million, but that $252 million, as I understand it, may be subject to claims on Route 3, may be subject to claims in a Long Island project that may take up the whole thing, and probably other projects that Modern Continental is involved in.

And I guess, No. 1, are you satisfied that the numbers of dollars that are available to settle these issues are there? And, No. 2, are you looking at both the surety bonds, the other contractors, not just Modern—that is the big one at the moment—the subcontractors, the manufacturers—I mean, we have items that were manufactured, both roofing materials that may or may not come under scrutiny, some of the computer and some of the software issues and some of the intelligent transportation issues, etc.

And I guess for me, are you satisfied at the moment that the money is there on the table? Subject to debate and liability and lawsuits and negotiations, is it there for us to get?

Mr. REILLY. I can't say that at this point. I can tell you right now there are serious questions on the insurance, on the amount of insurance, and there is a gap in that insurance because of the failure of Reliant. And that is a problem.

In terms of what money will be available from what source, we are currently exploring that. But I can't represent to you right now that there is enough money that we are going—there is money that is being withheld by the project. Whether or not that will be—that will be enough in total to resolve these claims, I can't tell you that right now. I can tell you that we are looking at every source and every potential source.

And as I said, and as—there are bottom lines in all of this, and, yes, there are problems with the setup and the IPO and all of that. But we feel, and we feel very strongly, that the ultimate responsibility here lies with Bechtel. And we intend to hold Bechtel accountable, and they have represented to the public that they are willing to accept responsibility for what they did, and let us see.

Chairman TOM DAVIS. Will the gentleman yield? And I guess the question is that if the bond money isn't there, or if the money hasn't been held back, you can sue them directly, correct?

Mr. REILLY. Pardon?

Chairman TOM DAVIS. You could sue them directly and ask for the money back.

Mr. REILLY. Yes.

Chairman TOM DAVIS. You always have that option.

Mr. REILLY. Yes. Yes.

Chairman TOM DAVIS. And, of course, GSA or Federal Highways or anybody else always has the threat of debarment. There are a lot of—depending what you find, there are a lot of ways to get the money. It is not as easy as if we had the bond, as I think Mr. Capuano indicated. If you had the bond, or you were holding money back, it is a lot easier. But——

Mr. REILLY. It is a lot easier.

Mr. DAVIS [continuing]. We are not without having some remedies here.

Mr. REILLY. We have some remedies, and I believe very strongly that it is——

Chairman TOM DAVIS. Good question, though.

Mr. REILLY [continuing]. In everyone's best interest to step up here and accept responsibility for what they did and pay for what needs to take place in terms of fixing this problem. I believe that, and we will see. They made those representations; we will see.

Mr. MEAD. I concur with the attorney general. There is a thing called a retainage, that the Artery does have some retainage accounts for some of these contractors. Like Modern Continental, there is a retainage account. My recollection is that there is $15 or $20 million in it. But that probably—I don't know how sufficient that is going to be.

I do not believe in the case of Bechtel/Parsons Brinckerhoff that there is a retainage account. But the chairman is right; I mean, there is any number of different avenues for getting the money. The $81 million is what the feds owe the Commonwealth. You know, it is just money that is owed the Commonwealth. And by law, it will go to the Commonwealth when they get their finance plan in order, which I hope is soon.

Mr. CAPUANO. I hope so as well. I understand that there are other routes to take, but we all know that those routes get more difficult, particularly when you are dealing with the largest general contractor, the one with the most questions, at the moment is bankrupt.

And you are going to have to get in line, unless—I can't imagine we have a priority here somewhere that I am—and, again, I am not an expert in any of these things, but I am not aware that we would have any priority ahead of any other debtor or claimant against Modern Continental.

And if they are gone, that is my biggest concern. I mean, that is why I asked about subcontractors and other contractors, especially, as I understand it, this particular—the major breach that we are talking about, the one that everybody likes to show on TV, that was Modern Continental.

I understand they were the largest contractor on the project, and that is why—that is the main reason I asked the question is because, with them bankrupt, that adds a whole other layer of serious questions as to whether we will ever get the money, never mind the judgments.

Yes, Mr. Gee.

Mr. GEE. The only thing I would add is that on each contract they have a surety bond. So if they default on one, it might not affect the Route 3, because they have a separate bond on Route 3.

Mr. CAPUANO. I understand. I guess maybe I wasn't clear, but one of my concerns is, for the sake of discussion—again, I am no expert, but it just strikes me that a $50 million—well, it is not a surety bond, but a de facto surety bond, on Bechtel/Parsons is pretty small for a company that made—correct me if I am wrong—in the $2 billion range, which, fine, if the project works, maybe they are entitled to $2 billion.

But if you have $2 billion—I know that if a guy were building me a $2 billion house, I would want a little bit higher insurance rate than $50 million. And if that is all that is there, to me it is not whether they have it or not, it is how much.

And I understand that the attorney general would be the one hopefully that will pursue our interest to determine how much is ours. But if he gets a settlement for—pick a number, $100 million—if it is there in the surety, we don't have to go through the next rigmarole of trying to sue the individual company that may or may not have bank accounts. Who knows whether they are in Switzerland. I don't know any of those things.

But we all know that if it is in a surety, it is a lot easier. And I know I, for one, am tired of this whole dance, and we all want it over. And when it gets time to get it over, I don't want to have to go through another 10 years of chasing the money. But I guess we are where we are, and that is why I wanted to ask those questions.

Thank you.

Chairman TOM DAVIS. Very good questions. Thank you all very much. I think this has been very illuminating for us.

Mr. LYNCH. May I ask one last question?

Chairman TOM DAVIS. OK. Mr. Lynch wants the final question.

Mr. LYNCH. You know, it just kind of stuck in my head, you were describing—Inspector General Mead, you were describing this transaction where the Authority was overcharged for insurance, and they got a rebate back. They got the money from the Federal Government, right?

Mr. MEAD. I was——

Mr. LYNCH. Paid their insurance.

Mr. MEAD. Yes. The government——

Mr. LYNCH. Then, the insurance company says to them, "You overpaid. Here is a chunk of money back." I don't know how much money that was. They put it in a trust account, and then you never said what they did with the money in the trust account.

Mr. MEAD. Right. In fact, they had this accounting technique—I think it is an accounting gimmick—where the actual cost of the Artery, say just hypothetically, was known to be $10 billion. But if there was $800,000 of interest in this account, they would deduct the $800,000 and say, "Well, the project is only really costing $9.2 million instead of $10 million."

Mr. LYNCH. So it was a setoff. They are using it that way anyway.

Mr. MEAD. Yes. I mean, and later on, as I think Bechtel/Parsons Brinckerhoff notes in its testimony, they had to make an accounting adjustment where they had to reflect the fact that all of this money had accrued in this insurance trust.

Mr. LYNCH. Any idea how much money we are talking here?

Mr. MEAD. It might have been in the neighborhood of close to $800,000 or $900,000—$800 or $900 million.

Mr. LYNCH. $800 or $900 million?

Mr. MEAD. It might have been in that neighborhood.

Mr. LYNCH. You guys want to confer on that?

Mr. MEAD. It is not there now.

Mr. LYNCH. Right. No, no.

Mr. MEAD. I mean, they fixed it.

Mr. LYNCH. But——

Mr. MEAD. But I do think that it resulted in a fairly large accounting adjustment to reflect the change in the cost of the Artery—it might have been in the neighborhood—my recollection is it was around $1 billion.

Mr. LYNCH. Around $1 billion.

OK. Thank you, Mr. Chairman.

Chairman TOM DAVIS. Thank you, this panel, very much. It has been very illuminating for the committee, and I appreciate your time. We will take a 2-minute recess as we move to our next panel.

[Recess.]

Chairman TOM DAVIS. We have Chairman Matthew Amorello, who is the Massachusetts Turnpike Authority, the entity charged with overseeing the Big Dig. Thank you very much for being with us. We have John MacDonald, chairman of the Board of Control for Bechtel/Parsons Brinckerhoff, the management consultant for the project.

Mr. MacDonald, you are accompanied, I understand here, by Mr. Morris Levy, the senior vice president at Parsons Brinckerhoff, and Keith Sibley, the program manager for the project. Thank you all for being with us.

And we also have Mr. George Tamaro, who is a partner at Mueser Rutledge Consulting Engineers, and a former engineering consultant for the Big Dig. Mr. Tamaro's extensive experience in slurry wall technology and major infrastructure projects provides valuable insight to this committee's oversight efforts.

It is our policy we swear everybody in before you testify. If you would rise with me, raise your right hands.

Let me just identify the people in the back row who may be called on, so we can get your names on the record.

Mr. SWANSON. Mike Swanson, chief of operations and chief engineer for the Turnpike Authority.

Chairman TOM DAVIS. Thank you.

Mr. LEWIS. Michael Lewis, project director for the CA/T project.

Ms. BREEN. Marie Breen, CA/T chief counsel.

Mr. WILEY. Matt Wiley, former program manager.

Chairman TOM DAVIS. Thank you.

Mr. LANCELLOTTI. Tony Lancellotti, former engineering manager.

Chairman TOM DAVIS. OK. Thank you all for being with us. Now I am going to swear you in.

[Witnesses sworn.]

Chairman TOM DAVIS. Thank you very much.

Mr. Amorello, we will start with you. You have a key role in this. If you need to take more than 5 minutes, we certainly understand. But your entire testimony is in the record.

STATEMENTS OF MATTHEW J. AMORELLO, CHAIRMAN, MASSACHUSETTS TURNPIKE AUTHORITY; JOHN MacDONALD, CHAIRMAN, BOARD OF CONTROL, BECHTEL/PARSONS BRINCKERHOFF, ACCOMPANIED BY MORRIS LEVY, SENIOR VICE PRESIDENT, PARSONS BRINCKERHOFF, INC., AND KEITH S. SIBLEY, P.E., PROGRAM MANAGER, CENTRAL ARTERY/TUNNEL PROJECT, BECHTEL/PARSONS BRINCKERHOFF; AND GEORGE J. TAMARO, PARTNER, MUESER RUTLEDGE CONSULTING ENGINEERS

STATEMENT OF MATTHEW J. AMORELLO

Mr. AMORELLO. That is great, Mr. Chairman.

Mr. Chairman, I have a brief opening statement. I would like to read it into the record.

Chairman TOM DAVIS. That would be great. Thanks for being with us.

Mr. AMORELLO. Mr. Chairman, welcome to Massachusetts. Welcome home to Congressman Lynch and Congressman Capuano.

My name is Matthew Amorello, and I am the chairman of the Massachusetts Turnpike Authority. I welcome this opportunity to appear before you to discuss the current management of the Central Artery/Tunnel Project and the steps we are taking to ensure that this project fulfills its promise to the citizens, taxpayers, and tollpayers of this region and the Nation.

My mission upon taking office a little over 3 years ago was challenging, and I come here before you today to say that I believe we have met those challenges and continue to meet them on a daily basis. My first mission was to bring order and stability to a demoralized and chaotic Turnpike Authority.

We have done that, and today's Turnpike Authority is a well-organized, efficient, and highly motivated public authority focused on delivering quality service to the people of Massachusetts in a cost-effective manner. In fact, Moody's Investor Service has said that the turnpike "Board has shown strong commitment to rebuilding the Authority's financial position."

My second mission was to maintain the costs of this project and restore credibility to our financial management of the Big Dig. Again, I am pleased to report that we have accomplished these goals. This project, like all public projects, must be conducted in a transparent and forthcoming manner. I have made every effort since becoming chairman to ensure that our Federal and State partners and overseers have received all of the information they need, when they need it, in order to do their jobs effectively.

The project's budget today is exactly the same as it was when I took office—$14.625 billion. I think it might be useful to briefly review where and how these funds were spent. Approximately $6 billion was for the extension of the I–90 interstate, including the Ted Williams Tunnel and Four-Point Channel Tunnel, which now connect the Massachusetts Turnpike directly to Logan Airport and points north, diverting traffic away from downtown Boston. This part of the project has dramatically cut drive times to Logan and decreased traffic in the central corridor.

Approximately $8 billion has been spent building the new tunnel and ramps from Charlestown and Interstate 93 to the Tobin Bridge

and Route 1, the Zacamb Bridge, and the ramps connecting Sturrow Drive and Interstate 93, and, of course, the construction of the I–93 tunnels, which are still being completed beneath the city.

This project has expanded capacity and eliminated a dangerous choke point for the motorists traveling through the city. It is expected to reduce carbon monoxide levels in the metropolitan Boston area by 12 percent, and has removed the elevated highway which for 50 years separated the city's financial and historic centers from its waterfront and several of its neighborhoods.

In addition to holding the budget, we have taken several initiatives to protect this public investment, including the first meaningful effort in the history of the project to recover costs for design errors and omissions.

My third mission was to ensure that the project did not lose sight of its primary objective—to replace the old, ineffective highway network, which threatened to destroy mobility and economic growth in the city and region, with a modern, safe, and efficient interstate highway system for those who live, work, or visit New England.

I am pleased to report that we have opened almost every major component of this project to the public, who are now enjoying the benefits of this important investment. In 2003, we met three major milestones that marked the turning point toward completion of this project—the opening of the extension of Interstate 90, the opening of the Interstate 93 northbound and southbound tunnels. The entire project will reach substantial completion this fall.

I note these achievements, because I understand this project is often in the news, and the news, as reported, is not very encouraging. It is sometimes easy to forget all of the positive steps we have taken over the past 3 years.

The significant strides that have been made to set this project back on track, to keep faith with our Federal and State stakeholders, and to deliver on the promise of an urban interstate highway system, that when completed will be one of the marvels of this Nation's long and sustained effort that began with President Eisenhower over half a century ago, creating a national highway network second to none in the world.

As you came to this chamber today, you no doubt noticed that the old elevated highway is gone. It is being replaced by the Rose Fitzgerald Kennedy Greenway—a magnificent public amenity above ground and a modern, efficient interstate highway underground.

Let me now address two specific areas that are in the forefront of our current project oversight efforts. The first area concerns the issue related to leaks in the tunnels. The second concerns our efforts to establish a meaningful program for cost recovery.

With respect to the issue of tunnel leaks, the first thing I need to emphasize is that the tunnels are operating well, and, Congressman Capuano, they are safe. Earlier this month we received a report from the Federal Highway Administration as part of that agency's independent and ongoing oversight of the project. Federal Highway affirmed what I have been consistently saying; the tunnels are safe and structurally sound.

Slurry wall breach that occurred last September was an unacceptable result of poor workmanship and failed project oversight. The responsible parties are being held accountable by the Turnpike Authority, and they are undertaking to repair the slurry wall in an appropriate manner. After the September breach, I ordered an inspection of each of the 2,000 slurry wall panels in the I–93 tunnels, and I initiated a weekly update on the inspections and the identified defects in order to keep the public and our overseers informed.

This thorough investigation of the entire slurry wall system was undertaken to ensure that any additional defects are identified and corrected. At our insistence, each contractor to date has taken responsibility for identified defects, and is correcting those defects at their own expense.

The FHWA report notes the differences between slurry wall defects and the various low-level leaks that are largely attributable to the fact that this project is not yet complete. Federal Highways' report states, "The project is adequately addressing the tunnel leaks. We have confidence in the plan that is being followed by the Turnpike Authority and project staff, and we can expect that the work will be completed as offered by the Massachusetts Turnpike Authority."

Based on some media reports, public perception has been that the low-level leaks at the roof wall joints were "discovered" after the September 15 breach. This is false and has unfortunately confused two very different issues. On the evening news in the Boston area, we routinely see video of the September 15 slurry wall breach and hear talk of hundreds of leaks, leaving the impression that there were hundreds of issues like the breach, which is not true.

As I have said, the two breaches and more minor slurry wall defects are absolutely unacceptable, and the contractors must fix them at their own expense. With respect to low-level leaks, they are part of an ongoing construction, and contractors have been sealing them, doing injection grouting for some 4 years.

The FHWA report's first finding states that chronic low-level leaks were noted and expected to some degree due to the depth of the tunnel, and the sealing of all leaks is expected to be completed later this year.

I want each of you to be assured that I have insisted that project staff and consultants spare no effort to ensure that all water infiltration issues are identified and resolved to my satisfaction and the satisfaction of the Federal Highway Administration as promptly as possible. We are insisting upon a high level of attention to detail and quality control, as expected by FHWA, in the resolution of these issues. And we will continue to be completely transparent with the public and our Federal and State partners and overseers as we undertake this work.

We are currently inspecting the entire tunnel system for possible points of water infiltration, something that is part of our historic ongoing inspection protocol. I have with me today the project director, Michael Lewis; the turnpike's chief engineer/chief operating officer, Michael Swanson; his deputy chief engineer, Helmet Ernst; and John Christian, the technical advisor to the Massachusetts Turnpike Authority Board of Directors, along with the project chief counsel, Marie Breen and other turnpike senior staff, in order to

respond to more detailed questions that you may have on this subject.

There are many misunderstandings and false assumptions associated with the number and nature of the leaks that we will be happy to address in more detail.

The second area I would like to discuss today is our effort to take meaningful steps toward cost recovery. When I became chairman, the project had a weak record in recovering costs. I moved quickly to correct that. First, I hired the National Academy of Engineering from Washington to provide me with an objective study and report on the overall status of the project.

Next, I established an independent cost recovery team to begin an unprecedented effort to identify areas ripe for cost recovery and to take action. Led by a retired Massachusetts Judge, this cost recovery team built a strong foundation for this ongoing effort.

The team's work was fully supported by the Turnpike Authority, and if I may quote from the team's final report to the Federal Highway Administration, "Massachusetts Turnpike Authority Chairman Amorello created the independent team to hold the design professionals and construction managers of the Big Dig accountable for costs caused by their errors or omissions. He backed us up with a substantial budget, which gave us the ability to hire world-renowned engineers to assess the work and uncover deficiencies, and to hire the legal firepower to aggressively prosecute lawsuits."

Today, those cost recovery efforts are being ably led by our State's chief law enforcement officer, Attorney General Tom Reilly. The transition from our cost recovery team to the attorney general this February was the right thing to do, once a proper foundation was laid.

I have come to recognize that with a project of this size and notoriety, many will second-guess these efforts. But this project needs cost recovery oversight by an individual and an office of irrefutable independence with the clout to back up their work. That is why it was so important to transfer the responsibility for cost recovery to the attorney general.

I believe that Attorney General Reilly's leadership and commitment will bear substantial fruit for the taxpayers and restore public confidence and our efforts to ensure that we are getting what we paid for. He has, and will continue to have, our full cooperation with his ongoing efforts.

Like each of you, I am a public servant, and I take my responsibilities very seriously. The work we do will be judged in the short term by the motoring public, but it will also be judged by the history and by our children and grandchildren.

I am keenly aware of the obligation to close out this project in a way that ensures the delivery of a high-quality product that captures full value for our public funding agencies, and I am also aware of the generational responsibility we have to ensure that this project is completed to a standard that will stand the test of time.

I can assure you that we are working and will continue to work day and night to fulfill our responsibilities in this regard. We are here today to respond to any questions you may have, and I thank

you for the courtesy and allowing me this opportunity to make an opening remark.

[The prepared statement of Mr. Amorello follows:]

Testimony of Chairman Matthew J. Amorello
House Committee on Government Reform
April 22, 2005

Mr. Chairman, and members of the Committee, my name is Matthew Amorello and I am the Chairman of the Massachusetts Turnpike Authority. I welcome this opportunity to appear before you to discuss the current management of the Central Artery/Tunnel Project, and the steps we are taking to ensure that this Project fulfills its promise to the citizens, taxpayers and toll payers of this region, and the nation.

My mission upon taking office a little over three years ago was challenging, and I come before you today to say that I believe we have met those challenges, and continue to meet them on a daily basis.

My first mission was to bring order and stability to a demoralized and chaotic Turnpike Authority. We have done that, and today's Turnpike Authority is a well organized, efficient and highly motivated public authority focused on delivering quality services to the people of Massachusetts in a cost-effective manner. In fact, Moody's Investors Service has said that the Turnpike "board has shown strong commitment to rebuilding the authority's financial position."

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I think it might be useful to briefly review where and how these funds were spent:
Approximately $6 billion for the extension of I-90, including the Ted Williams Tunnel and Fort Point Channel Tunnel, which now connect the Massachusetts Turnpike directly to Logan Airport and points north diverting traffic away from downtown Boston. This part of the Project has dramatically cut drive times to Logan and decreased traffic in the central corridor.

Approximately $8 billion has been spent building: the new tunnel and ramps from Charlestown and I-93 to the Tobin Bridge and Route 1; the Zakim Bridge, and ramps connecting Storrow Drive and I-93; and of course the construction of the I-93 tunnels, which are still being completed beneath the city. This project has expanded capacity and eliminated a dangerous choke point for motorists traveling through the city. It is expected to reduce carbon monoxide levels in the Metropolitan Boston area by 12%, and has removed the elevated highway which for 50 years separated the city's financial and historic centers from its waterfront, and several of its neighborhoods. In addition to holding the budget, we have taken several initiatives to protect this public investment, including the first meaningful effort in the history of the Project to recover costs for design errors and omissions.

My third mission was to ensure that the Project did not lose sight of its primary objective: to replace the old ineffective highway network which threatened to destroy mobility and economic growth in this city and region, with a modern, safe and efficient interstate highway system for those who live, work or visit New England. I am pleased to report that we have opened almost every major component of this Project to the public, who are now enjoying the benefits of this important public investment. In 2003, we met three major milestones that marked a turning point toward completion of this Project: the opening of the extension of Interstate 90, and the opening of Interstate 93 Northbound and Southbound Tunnels. The entire Project will reach substantial completion this fall.

I note these achievements because I understand that this Project is often in the news, and the news as reported is often not very encouraging. It is sometimes easy to forget all of the positive steps we have taken over the past three years: the significant strides that have been made to set this Project back on track, to keep faith with our federal and state stakeholders, and to deliver on the promise of an urban interstate highway system that, when completed, will be one of the marvels of this nation's long and sustained effort - begun by President Eisenhower over half a century ago – to create a national highway network second to none in the world. As you came to this chamber today, you no doubt noticed that the old elevated highway is gone. It is being replaced by the Rose Fitzgerald Kennedy Greenway, a magnificent public amenity above ground, and a modern efficient interstate highway underground.

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This thorough investigation of the entire slurry wall system was undertaken to ensure that any additional defects are identified and corrected. At our insistence, each contractor to date has taken responsibility for identified defects, and is correcting those defects at their own expense.

The FHWA report notes the difference between slurry wall defects and the various low-level leaks that are largely attributable to the fact that the Project is not yet complete. Federal Highway's report states, and I quote:

> "The Project is adequately addressing the tunnel leaks. . . . We have confidence in the plan that is being followed by the Massachusetts Turnpike Authority and project staff, and we can expect that the work will be completed as offered by the Massachusetts Turnpike Authority."

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they are part of ongoing construction and contractors have been sealing them, doing injection grouting, for some four years. The FHWA Report's first finding states that chronic low level leaks were noted and expected to some degree due to the depth of the tunnel and the sealing of all leaks is expected to be completed by this summer.

I want each of you to be assured that I have insisted that Project staff and consultants spare no effort to ensure that all water infiltration issues are identified, and resolved to my satisfaction and the satisfaction of the Federal Highway Administration, as promptly as possible. We are insisting upon a high level of attention to detail and quality control, as expected by FHWA, in the resolution of these issues. And we will continue to be completely transparent with the public and our federal and state partners and overseers as we undertake this work. We are currently inspecting the entire tunnel system for possible points of water infiltration – something that is part of our historic ongoing inspection protocol. I have with me today Project Director Michael Lewis, the Turnpike's Chief Engineer Michael Swanson, his Deputy Chief Engineer Helmut Ernst and John Christian, the Technical Advisor to the Massachusetts Turnpike Authority Board of Directors joining me today in order to respond to more detailed questions that you may have on this subject. There are many misunderstandings and false assumptions associated with the number and nature of leaks that we will be happy to address in more detail.

The second area I would like to discuss today is our effort to take meaningful steps toward cost recovery. When I became Chairman, the Project had a weak record in recovering cost. I moved quickly to correct that. First, I hired the National Academy of Engineering to provide me with an objective study and report on the overall status of the Project. Next, I established an independent Cost Recovery Team to begin an unprecedented effort to identify areas ripe for cost recovery, and to take action. Led by a retired Massachusetts judge, this Cost Recovery Team built a strong foundation for this ongoing effort. The team's work was fully supported by the Turnpike Authority, and if I may quote from the Team's final report to FHWA:

> "Massachusetts Turnpike Authority Chairman Amorello created the independent Team to hold the design professionals and construction managers of the Big Dig accountable for costs caused by their errors or omissions. He backed this up with a substantial budget which gave us the ability to hire world-renowned engineers to assess the work and uncover deficiencies; and to hire the legal fire-power to aggressively prosecute law suits."

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Like each of you, I am a public servant and I take my responsibilities very seriously. The work we do will be judged in the short term by the motoring public, but it will also be judged by history, and by our children and grandchildren. I am keenly aware of the obligation to close out this Project in a way that ensures the delivery of a high quality product, and that captures full value for our public funding agencies. I am also aware of the generational responsibility we have to ensure that this Project is completed to a standard that will stand the test of time. I can assure you that we are working, and will continue to work, day and night to fulfill our responsibilities in this regard.

We are here to respond to any questions you may have, and I thank you for your courtesy in allowing me this opportunity to make these opening remarks.

Chairman TOM DAVIS. Thank you very much.
Mr. MacDonald.

STATEMENT OF JOHN MacDONALD

Mr. MACDONALD. Good afternoon. Thank you for the opportunity to appear before the committee. I am John MacDonald. And since mid-2001, I have been chairman of the Bechtel/Parsons Brinckerhoff Joint Venture. With me, Morris Levy, my fellow board member from Parsons Brinckerhoff, has been with the board since its inception. And on my left, Keith Sibley, who has been with the project since 1988, and has been our project program manager since mid-2004.

In my written statement, I have addressed broad topics of interest to this committee, including B/PB's responsibilities as management consultant on the Big Dig, the history of project costs, and our work with the State to accurately estimate and control costs. For the next few minutes, I will focus on leakage in the I–93 tunnels and the implications for project quality, cost, and schedule.

As much as half of the water intrusion in the tunnels is simply precipitation that enters through openings that remain while construction continues. Part of the genius behind the original concept of the Big Dig was allowing construction to progress while keeping the Central Artery open to the huge daily traffic flows.

And until construction ends and the tunnels are fully sealed later this year, water will continue to enter down uncovered traffic ramps and through manholes and utility conduits. Even so, these tunnels already conform to industry norms for water intrusion in completed tunnels. And when construction is finished, the I–93 tunnels will surpass these norms.

Only a small percentage of roof wall joints in the I–93 tunnel shows signs of low-level leaks. We and the MTA understood that sealing such seeps would be a normal part of the construction process, and that grouting is the industry standard practice for sealing these leaks.

Today, 13 crews are injecting wet locations with high-tech grout. The Federal Highway Administration reported this month that the process for sealing seeps is effective and should be continued through completion of construction in late September. Construction contractors who built the tunnel sections undertook the responsibility, as part of finishing their job. They, and not the taxpayers, will pay for the cost of the grouting program.

Last September an 8-inch hole opened in the I–93 northbound tunnel, temporarily flooding two lanes of traffic and closing one lane during rushhour before being plugged that evening. This wall breach reached—resulted from a series of construction contractor errors compounded by inadequate oversight.

We inadvertently missed an opportunity to direct the contractor to correct the specific wall problem earlier. We have publicly acknowledged our responsibilities, and we will pay our fair share of the costs of the permanent repair. We have worked closely with the MTA and the contractor to identify and analyze permanent repair options. A decision is pending by the MTA.

We are also working vigorously to avert similar problems through extensive physical inspection of the tunnel walls and thor-

ough review of our records. In fact, we have added personnel at our own expense to expedite this process. The inspection should be finished early next month, and repairs are now underway.

As we knew from the start, and as Federal Highways recently confirmed, all tunnels built below the water table experience some seepage throughout their life, including other slurry walls in Boston. After the I–93 tunnels are completed to standards, future leakage will be controlled by the owner as part of a normal maintenance program.

This program should cost well within industry norms, given the tunnel's length and their extensive traffic management and safety systems. We are confident that with normal care and proper maintenance these tunnels will provide excellent service to Boston into the next century.

In conclusion, our goal is to complete this project as quickly and as efficiently as possible. Already this project has delivered enormous benefits to the Boston area motorists and reshaped the urban landscape of the city.

We and our dedicated employees are extremely proud to be associated with this project, and having brought through innovative engineering and management the most complex urban project ever undertaken in the United States.

So, again, I appreciate the opportunity to be here today, and we look forward to responding to your questions.

Thank you.

[The prepared statement of Mr. MacDonald follows:]

Statement of
John MacDonald
Chairman of the Board of Control
Bechtel/Parsons Brinckerhoff
Committee on Government Reform
U.S. House of Representatives
April 22, 2005

The Boston Central Artery/Tunnel Project (CA/T) is the largest and most complex urban transportation project ever undertaken in the United States. Dubbed the "Big Dig" by Bostonians, it is the result of more than 30 years of planning and 14 years of construction to replace the elevated section of the Interstate 93 Central Artery through downtown Boston with a much wider underground highway, and to extend the Interstate 90 turnpike to Logan Airport via a third harbor tunnel. The Big Dig ranks on a scale with the Panama Canal and the Channel Tunnel.

When completed in the coming months, CA/T will comprise 161 lane-miles of interstate highway—over half underground. Its host of civil engineering firsts include the world's widest cable-stayed bridge, the deepest underwater connection in North America, state-of-the-art freeway segments built only inches above old public transit railways, an extensive deep-soil-mixing program to stabilize Boston's historic soils during construction, and an unprecedented ground freezing system to allow jacking of full-size highway tunnel sections. The project has already been widely recognized through dozens of awards for engineering and aesthetics.

Perhaps most remarkable, millions of residents and visitors have enjoyed continued access to the city during more than a decade of construction starting in 1991. Through it all, Boston's downtown financial and commercial district has stayed open for business and the needs of residential neighborhoods have been addressed. Now within months of completion, this engineering marvel will enable Boston and the state of Massachusetts to meet their critical transportation needs in the 21st century with a great sense of civic satisfaction and pride.

These major accomplishments have come at a significant cost—now estimated at $14.6 billion for completed construction. The price tag rose dramatically over more than two decades as the project was enlarged, redefined, and portions even put on hold by state officials to meet the many often-conflicting concerns of Boston's downtown business community, neighborhood and environmental groups, adjacent landowners, taxpayer groups, and federal agencies.

The Big Dig's cost has raised many questions over the years. Most recently, leaks and wall defects in the I-93 tunnels have also generated concerns. My statement to the Committee will:

- clarify the roles and responsibilities of the management consultant, Bechtel/Parsons Brinckerhoff (B/PB);
- place the Big Dig's cost growth in historical, political, and economic context;
- review the project's program to identify and remedy leaks and wall defects; and
- offer a reminder of the many reasons why Democrats and Republicans, business and community groups, local residents and national transportation experts, have come together to support this project over many years.

Managing a Megaproject: Roles and Responsibilities

As the management consultant retained by the Massachusetts Highway Department (MHD) in 1985, B/PB, a joint venture of Bechtel Corporation and Parsons Brinckerhoff Quade & Douglas, Inc., has helped manage the Big Dig according to widely accepted industry standards. As specified in 16 separate contracts, B/PB has been responsible for:

- providing preliminary design services;
- managing the performance of the final designers of record;
- managing the construction work of the various contractors;
- reporting on the project's overall cost and schedule to the Massachusetts Turnpike Authority, or MTA (which took over from MHD in 1997); and
- providing recommendations to MTA for decision making and, when asked, acting as MTA's representative

Throughout the life of the project, the state has determined what gets built, when, and for how much. B/PB has developed alternatives and provided its professional recommendations on the most practical, cost-effective solutions but has not been empowered to choose among them. The quality of B/PB's work has been well-documented in ongoing evaluations and oversight by state and federal agencies, including MTA, MHD, and the Federal Highway Administration (FHWA).

The biggest change in B/PB's role as management consultant occurred in 1998, when MTA combined key B/PB personnel with those of the state in an Integrated Project Organization. MTA's goal was to streamline project management and decision-making and efficiently move the project from the design phase to construction.

Growth in Project Cost

The concept of the Big Dig, as it took shape in the 1970s and early 1980s, reflected the conviction of Boston-area leaders and public officials that the old Central Artery, the most congested roadway in America, was nearing the end of its operational life. The multiyear job of redecking or even replacing it threatened to strangle the city by disrupting traffic in and around the city of Boston. The alternative concept of using "slurry wall" construction methods to build a new underground artery while keeping the old roadway open in the interim, proposed by the state Transportation Department, offered a way to free the city from gridlock in the long run without bringing its economy to a standstill in the short run.

The initial cost estimate of $2.6 billion dated back to 1985, before B/PB was hired, and was based on a preliminary concept developed by state officials before detailed technical studies had been undertaken. In the years that followed, state officials followed a deliberate and time-consuming process of consulting with various interest groups, negotiating settlements to lawsuits, and modifying project plans to minimize real or perceived harm to the Boston community. This process made the design more sensitive to community needs and increased public acceptance, but the resulting mitigation measures made the project much more expensive to design and build. With every extension of the project schedule, inflation took a bigger bite. Local concerns were minimized by the fact that the federal government, at least in the early years, was covering up to 90 cents on the dollar through the Interstate Highway Program.

As a result of this process, the cost of the Big Dig has always been a moving target. For example, state officials significantly shifted the configuration of a proposed tunnel in Fort Point Channel in response to objections from a large manufacturer and to take account of federal wetlands and historic preservation rules. The new route in turn required a host of mitigation discussions and measures to satisfy affected businesses and landowners.

To take account of local concerns in East Boston, the proposed airport interchange was redesigned in 1987 and then again in 1988, only to provoke the ire of an exceptionally vocal and determined owner of an off-airport parking lot. The state did not succeed in resolving his demands until 1991.

The Charles River Crossing—required to connect the Central Artery with four other roadways—triggered an even longer debate over concept and design. B/PB engineers and state officials analyzed more than 50 separate design alternatives in an effort to satisfy opposition from a host of groups, including the state's own Metropolitan District Commission and the city of Cambridge. The final concept was not approved by state officials until 1994—11 years after it was officially proposed in the first Environmental Impact Report—at an added cost of a billion dollars.

In all, according to state officials, the project undertook more than 1,500 separate mitigation agreements, accounting for at least one-third of the CA/T project's total costs. The most authoritative history of the project concluded that "what stands out most strikingly is the extraordinary difficulty and expense, yet supreme importance, of consensus-building." The study's authors, Harvard University scholars Alan Altschuler and David Luberoff, argued that "the most powerful explanatory factor" behind the rising cost of the Big Dig was

> a new paradigm (i.e. conceptual frame) that the state adopted for resolving conflicts between project beneficiaries and those negatively affected by project construction. . . . The traditional view was that large projects inevitably harm some bystanders, but that their self-interested objections should not be allowed to block the realization of broad public benefits—or indeed to drive up costs significantly. . . . Public projects are now subject to a multitude of environmental, citizen participation, and other regulations, and are far more vulnerable to legal challenges. As one consequence many fewer large public works projects go forward; but as another those which do are far more expensive—since their budgets include larger, often vastly larger, amounts for mitigation and compensation.[1]

Specific Cost Drivers

B/PB, working with state officials, has analyzed in much greater detail the specific drivers of cost growth on the project. This analysis shows that the single biggest contributor to rising costs was inflation, which by the end of the project will have added $6.4 billion to the original cost estimate made in the early 1980s. That sum alone is more than half the difference between the original estimate and projected final cost. Following federal rules, the original cost estimate included no allowance or calculation for inflation.

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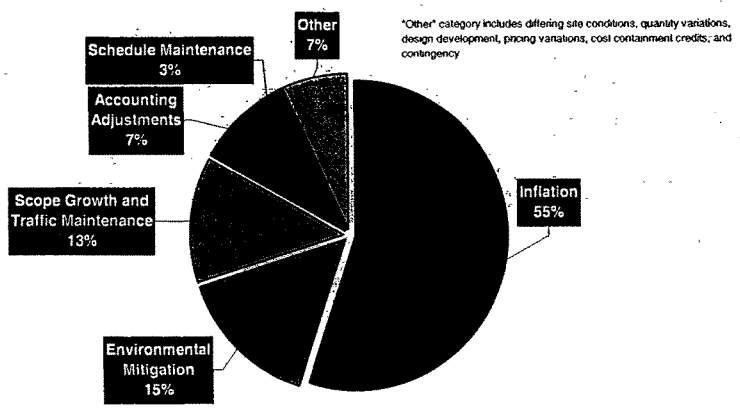
[1] David Luberoff and Alan Altschuler, *Mega-Project: A Political History of Boston's Multibillion Dollar Artery/Tunnel Project* (Cambridge, MA: John F. Kennedy School of Government, Harvard University, Rev. ed., April 1996)., VI-6 to VI-8. Such factors affect many other large projects as well, leading the authors to note in another study that dramatic cost escalation of the kind seen on the Big Dig is "not out of the ordinary for a major highway project." See Altschuler and Luberoff, *Megaprojects: The Changing Politics of Urban Public Investment* (Washington, D.C.: Brookings Institution, 2003), 116-117, citing the examples of Century Freeway and Woodrow Wilson Bridge.

Other key cost drivers (shown in current dollars) include:

1. Major growth in project scope and traffic maintenance added $2.7 billion to project costs. Some major costs that were not part of the 1982 concept include:
   - Rebuilding the Dewey Square Tunnels
   - Adding new interchanges at Logan Airport and Massachusetts Avenue
   - The use of more complex construction methods required for the Fort Point Channel Tunnel
   - The roofing of open-air tunnels in South and East Boston
   - Building of temporary ramps to maintain traffic flow during construction
2. Environmental compliance and mitigation increased project cost by $3 billion. Examples included:
   - Redesigning the Charles River Crossing
   - Disposing of material on Spectacle Island instead of in the waters of Boston Harbor to develop a public park
   - Adding high-occupancy vehicle lanes to the Interstate 90 and 93 alignments
3. Accelerating the construction schedule cost some $600 million. In 1995, MHD decided to increase the pace of the project after B/PB reported that trends pointed to a serious slippage in its future schedule. Paying for more workers, more equipment, and more work shifts cost the project about $600 million. As a result, the project's completion date has slipped only nine months in 11 years.
4. Accounting adjustments added $1.2 billion, reflecting changes in government guidelines for allocating costs. For example, until 1999, MTA showed an insurance credit of up to $800 million as an offset to the overall project cost. In 2000, after several years of recognizing the credit, the U.S. Department of Transportation disallowed this offset, effectively adding $800 million to the project's price tag.

Figure 1 shows the relative contribution of these and other factors to the overall growth in project cost estimates:

Figure 1



Causes of Growth in "Big Dig" Costs - From Concept to Reality

Cost Estimating and Disclosure

The process of developing cost estimates on the Big Dig was necessarily evolutionary. It is not possible at the beginning of such a large, lengthy, and complex project to anticipate, with precision, all final design and program decisions that will be made by the state and other interested parties, as well as the extent and nature of unanticipated conditions that impact cost and schedule. Nor is it possible to predict, with accuracy, the fluctuating bid climate and related market conditions that may exist throughout the life of a long project. As decisions were made and conditions evolved on the Big Dig, however, B/PB factored them into its cost assessments and kept the client fully informed, even in the face of strong political pressures.

In 1994, B/PB provided the governor and state officials with a total cost estimate of almost $14 billion to complete the project. MHD (and later MTA), under federal and state pressure to hold the line on project costs, was determined to maintain a total cost of $7.7 billion (about $10.4 billion counting inflation and third-party payments). It instructed B/PB to recommend scope reductions where possible and initiate cost containment and other efforts to offset any cost increases with cost savings. Then and later, the state transportation secretary's office forcefully reminded B/PB that responsibility for public discussion of project issues rested exclusively with the public officials managing the project, and that the contract prohibited B/PB from making any unauthorized statements to the public.

While advising that it would be very difficult to hold the line, B/PB worked aggressively with MHD and MTA to recommend and implement savings and cost containment measures necessary

to meet the state's objectives. By 2000, however, project scope changes, contractor claims, rising construction costs, and changes in allowable accounting practices made it impossible for MTA to maintain its zero-budget-growth mandate. MTA's chairman announced a revised cost estimate of $12.2 billion (including inflation). The new figure proved highly controversial, and various public officials as well as the media moved quickly to assign responsibility for what was widely termed a "cost overrun."

The Inspector General of Massachusetts stated in 2001 that "B/PB insisted upon and, in fact, made full disclosure to local FHWA officials of each exclusion, deduction, and accounting assumption" used in the project's cost estimates.

Cost Control

The full story of spending on the Big Dig would record the creative and sustained efforts by project personnel to save money and maximize value to taxpayers. Effective cost control starts with systems and practices that facilitate accurate and timely cost reporting. B/PB developed a state-of-the-art Construction Information System to track individual contract tasks, change orders, and other data used in the assembly of project cost reports for MTA.

Combining this information with insights from years of engineering experience, B/PB developed and recommended innovative cost-containment concepts that have saved close to $1.7 billion over the life of the project with the assistance of MHD, MTA, and FHWA. They include:

1. Savings of $480 million from value engineering. B/PB gathered independent third-party experts from around the world to review designs, ask questions, and make suggestions. For example, the project saved $200 million from changes to the South Boston interchange alignment.

2. Savings of $750 million from cost-containment actions. For instance, B/PB helped save $60 million for disposing of 17 million cubic yards of excavated material.

3. Savings of $500 million from reducing the cost of insurance. An owner-controlled insurance program eliminated the need for the contractor or consultant to buy commercial insurance. In conjunction with the Big Dig's excellent safety record, this approach eliminated overlapping coverage and allows MTA to realize economies of scale.

Public officials must balance a variety of factors and have not always accepted B/PB's recommendations for cost control. Two examples:

- B/PB proposed a Purchase Street bypass that would have saved approximately 18 months and, conservatively, more than $100 million; concerns about effects on traffic and opposition from within the neighborhood led MTA to reject the proposal.
- The joint venture proposed not to restore the Dorchester Avenue bridge, which would have saved tens of millions of dollars. MTA reversed its original acceptance after the adjacent U.S. Postal Service regional headquarters objected.

Water Intrusion, Leaks, and Tunnel Walls

The recent controversy over leaks in the I-93 tunnels has raised further questions about possible project cost overruns, schedule slips, and B/PB's performance. The matter has generated enormous public confusion, as ordinary and anticipated construction issues have been wrongly conflated with breakdowns in construction quality control.

There is no room for confusion on one matter, however: At no time has any expert claimed that the tunnels are unsafe. The massive tunnel walls are founded on deep rock and consist of 42"-thick concrete sections that span huge steel soldier piles placed about five feet apart, some with additional rebar reinforcement. MTA has repeatedly stated, and our own engineers have verified, that the tunnels are sound and motorists can use them with confidence. Following a three-month investigation by an expert panel of its engineers, the FHWA officially confirmed on April 4 that "the CA/T is structurally sound and remains safe for traffic."

At least three separate and distinct issues have been widely reported and discussed under the generic rubric of "leaks":

- weather-related water intrusion into the tunnels
- leaks through tunnel walls and roof/wall joints
- construction defects in the tunnel walls

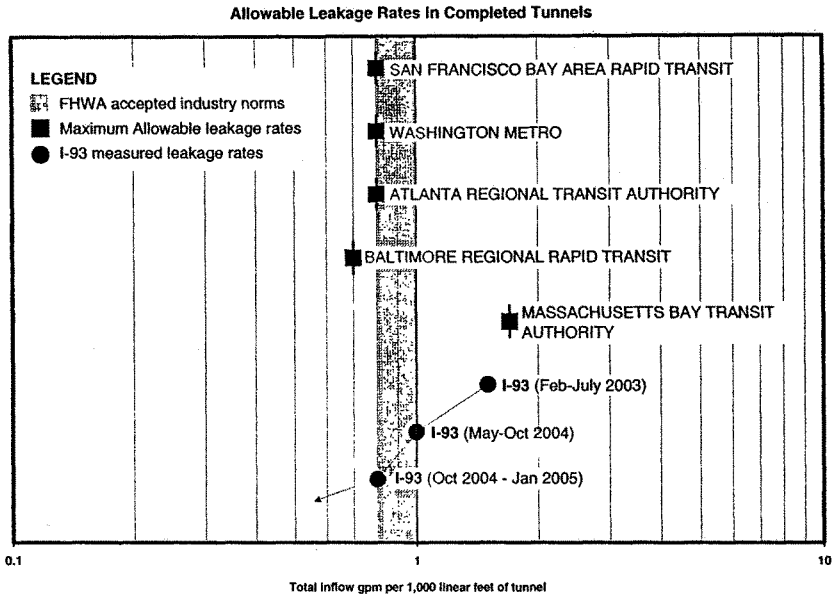
Weather-Related Water Intrusion

As much as half the water entering the incomplete tunnels is simply precipitation that intrudes through openings that remain while construction continues. For instance, water flows down traffic ramps that are still uncovered. There are open holes where underpinning beams that supported the old elevated artery once stood. Manholes and utility conduits must remain unsealed until final cabling is installed. Covering or sealing such pathways is a scheduled part of finishing the project.

Because the Big Dig has recently achieved so many milestone openings, many people have lost sight of the key fact that the tunnels—first opened to traffic in March 2003—are still under construction. Part of the genius behind the original concept of the Big Dig was finding ways to allow construction to progress while keeping the Central Artery open to huge daily traffic flows. That meant opening the tunnels to traffic–safely–long before they were finished. Only later, in the complex staging process to keep the city open, could we bring down the elevated artery, remove the artery supports, and finally close up the roofs of the tunnels.

Fortunately, construction should end later this year. In the meantime, any water still entering the partially opened tunnels is readily managed by permanently installed drains and pumps, which have hundreds of times more capacity than needed to handle the load. Even with the tunnels still under construction, they already conform to industry norms for water intrusion in completed tunnels, as referenced by the FHWA and European engineering bodies. When construction is finished, the I-93 tunnels should surpass those norms (see Figure 2).

Figure 2



Wall and Roof-Joint Leaks

As MTA Chairman Matthew Amorello and Project Director Mike Lewis testified before a state panel in December, project officials understood that sealing leaks would be a normal part of the construction process and that an inspection and maintenance program would be needed during the operational life of the tunnels. The "slurry wall" construction method made it impossible to waterproof the exterior tunnel walls. The state chose this method because it was the only way to build the tunnels wide enough to accommodate eight lanes of traffic to federal highway standards within extremely tight space constraints, without requiring more disruptive construction at street level or more extremely expensive land acquisitions. (Slurry walls have been used successfully to build underground structures and tunnels, such as Bay Area Rapid Transit stations in San Francisco and portions of the Red and Orange subway lines in Boston, for decades.)

In order to minimize inevitable leakage in the tunnels, project construction contracts in the early 1990s directed Big Dig contractors to apply waterproofing materials to the floors and roofs, where joints create opportunities for water intrusion. The waterproofing materials and techniques were selected by the contractors from those standard products acceptable to FHWA. As the project gained experience and reviewed materials performance, FHWA agreed to narrow the

range of approved waterproofing processes in order to use those best suited to contractor skills and specific conditions found on the project.

The basic waterproofing design of the tunnels is sound—as demonstrated by the fact that the majority of wall bays show no sign of leakage. Nonetheless, over the more than five linear miles of tunnel walls, our inspectors have identified hundreds of leaks, mostly from roof-wall joints.

Detecting and sealing inevitable leaks through walls and joints is an integral part of the normal construction process. It takes persistence and patience to block the multiple paths that water under pressure always finds or creates. As MTA's Project Director Michael Lewis put it in testimony last fall, "grouting is the industry standard practice for sealing fissures in concrete after construction. . . . [It] is an element of the construction completion."

To organize the process, B/PB formed a task force in 2000. Based on its direction, contractors responsible for each of the various sections of the tunnels systematically located wet spots and injected high-tech grout under pressure to seal the leaks. As water found new paths through the tunnel walls or joints, those leaks too were sealed. This program succeeded in controlling leaks in two of the first completed sections, confirming the project's approach. Similar methods are now being applied to remaining leaks in the tunnels.

In its March 23, 2005 Interim Report, FHWA found that chronic low level leaks "are to be expected to some degree due to tunnel depth below the water table." More specifically, FHWA stated:

> It should be recognized that the submerged nature of the tunnel system makes it unlikely that intrusion by water can be completely eliminated. The FHWA Tunnel Maintenance and Rehabilitation Manual cites the water intrusion rate that was used in the Bay Area Rapid Transit ("BART") system in California and since adopted by other tunnel owners as a workable criteria. This rate, approximately 1 [gallon per minute] per 1000' of tunnel, offers a practical point of reference to evaluate how successful the project is in achieving the specified requirement for a dry tunnel.

Based on our latest analysis, the current rate of water leakage through the tunnel walls and joints is already 20 percent or more below this industry norm for *completed* tunnels. The rate is expected to decrease further as the leaks program is completed later this year.

As MTA consulting engineers George Tamaro and Jack Lemley both testified in November 2004, and as FHWA experts confirmed this April, the grouting program should be continued. Since the last full inspection of the tunnels in the summer of 2004, the project has ramped up the number of crews devoted to sealing leaks from two to 13. More crews can be added as needed to assure that leaks are properly sealed in time to meet the schedule for substantial project completion later this year. The work is generally done by specialty contractors and is monitored by B/BP to ensure the consistency and adequacy of the grouting effort. The cost of the work will generally be borne by the contractors originally responsible for building the tunnel sections.

Based on a thorough investigation, an independent panel of FHWA engineers reported this April that they are "comfortable with the project's methodical approach" to sealing tunnel leaks. The agency concluded on the basis of their report that "The process for identifying and sealing low-level leaks at the interface of the tunnel roof and wall is effective and should be continued. . . . We expect the sealing operation to be completed by the end of September."

Fireproofing Issues

Repeated freezing and thawing of water leaking from the tunnel roof and wall joints damaged fireproofing materials in several places. At one location, small pieces fell from the ceiling. The compromised material has been removed. About 2,800 square feet of material needs to be replaced out of 1.8 million square feet of fireproofing materials throughout the tunnels. In a statement accompanying the release of its interim leak assessment report in early April, the Federal Highway Administration said, "Sealing the low-level leaks will resolve this problem with the fireproofing material."

The September 15 Wall Breach

On September 15, 2004, a breach occurred through the east wall of the I-93 northbound tunnel, about 71 feet below the surface at a location under Atlantic Avenue in front of the Federal Reserve Bank Plaza, in one of the deepest areas of the tunnel alignment. Water and sand poured out of a small hole, temporarily flooding two lanes and requiring an extended closure of one lane during peak afternoon traffic before the wall was patched that evening.

This wall breach resulted from a series of construction contractor errors, compounded by inadequate oversight. We at B/PB missed an opportunity to direct the contractor to correct the specific wall problem ahead of time. There is no satisfactory explanation for this. We have publicly acknowledged our responsibility and will pay our fair share of the cost of permanently fixing this portion of the wall. We are working with the contractor and with MTA to implement a long term fix. We are also working vigorously with our own and independent experts to anticipate and avert similar problems.

The conditions that led to the breach were extremely unusual—a combination of improper construction, poor soils, great water pressure at the deepest portion of the tunnel, and a breakdown in the inspection and acceptance procedures normally applied on the project.

A careful investigation showed that the breach was caused by improper construction of a single wall bay next to work by another contractor. The construction contractor failed to follow its own approved procedures, which called for removing an end stop and clearing away dirt and debris trapped by overflow concrete in its section of the wall. This pocket of material (clay inclusion) eventually allowed water—under high pressure at depth—to find a path through the wall and into the tunnel.

Our field engineer noted the construction defect in 1999 but inadvertently failed to issue a deficiency notice directing the contractor to fix it. The contractor identified a leak at the wall location in late 2001 and informed project representatives. Days later, our resident engineer called on the contractor to undertake nondestructive testing to assure that the wall panel met contract specifications, and to submit a procedure for repair.

Although responsibility lies with the contractor to ensure proper construction of the wall, we seriously regret that we did not do more to prevent the September incident. We should have directed the contractor to correct the problem during the initial inspection. Later we should have been more vigilant in making the contractor carry out necessary tests and repairs properly.

Following the wall breach, B/PB worked with engineers from MTA and the contractor, Modern Continental, to identify three permanent repair options. After several months of careful review,

the contractor selected and prepared an option consisting of a concrete-encased, structural steel panel on the inside (tunnel side) of the slurry wall. The new repair panel would extend from the walkway to the roof slab, and 1.5 feet on either side of the damaged slurry wall panel. This option would offer great structural integrity, minimize construction risk to adjacent property, and provide access to install a tight seal along the edges of the replacement wall. A decision by MTA is pending.

To minimize the possibility that similar issues might arise elsewhere, project teams have for several months been conducting extensive physical inspections and a thorough review of records. We have added personnel at our own expense to expedite this process. In addition, we and the state each hired independent experts to ensure the effectiveness of this review process. We made our records available to them.

As of April 13, careful physical inspection of approximately 1,600 tunnel wall panels (about 80 percent of the total) had identified defects in 102 wall panels. Of these, only two (including the panel breached last September) require major repairs. 33 panels require modest repairs and 67 will need only minor repairs. Repairs were complete on 10 panels and underway on 6 more. They will all be repaired at no cost to the public or to the project.

These issues are being resolved without delaying project completion. After thoroughly reviewing the facts, an independent panel of FHWA engineers recently concluded that "The September 15, 2004 Slurry Wall Breach appears to be isolated to a discrete section of the tunnel and primarily the result of poor quality control during construction. The project has successfully installed an interim repair and is actively designing the permanent fix while completing an investigation of all suspect slurry wall panels."

Tunnel Maintenance

As former MTA consulting engineer George Tamaro has noted, and an expert panel convened by the FHWA recently confirmed, all tunnels built below the water table inevitably experience some seepage, even when complete (see Figure 2). In Boston alone, leaks can be observed in such underground projects as the Red Line, North Station, Port Office Square, and the recently opened Seaport Hotel Garage.

Even after the I-93 tunnels are complete and existing leaks are sealed, some new seeps will almost certainly appear over time. They will be detected and sealed as part of a normal maintenance program, as with all tunnels. An Inspection Manual for Tunnels and Boat Structures has been prepared and submitted to the Massachusetts Turnpike Authority to provide assistance. The cost of this maintenance program should be well within the expected range, given the tunnels' length, their structural steel roof system, and the extent of their sophisticated traffic management and safety systems.

Visual inspections in areas of the tunnels where water leakage has been most significant have uncovered no significant corrosion issues. In general, the applied coating systems are providing adequate corrosion protection to the structural steel elements. There is no danger of joint failure assuming a level of maintenance standard for this type of structure. With proper inspection and maintenance, including continued attention to metal coatings, the tunnels should provide many decades of excellent service.

Conclusion

Bechtel/Parsons Brinckerhoff is proud of its role in helping the Commonwealth of Massachusetts manage one of the largest, most complex, and technically challenging infrastructure projects in U.S. history. In the course of successfully meeting those challenges, and responding to a multitude of public concerns and interests, the project has changed in myriad ways over the past quarter century, delaying its completion and increasing its cost. Through innovative engineering and management, we helped the state control costs and schedule, saving taxpayers hundreds of millions of dollars and bringing benefits more quickly to Boston-area motorists and residents.

The economic benefits to the region during construction have been enormous, and will continue long into the future. When complete later this year, the downtown Central Artery (I-93) will be capable of carrying 245,000 or more vehicles a day comfortably, far more than the old artery and without its infamous traffic jams. In addition, the Ted Williams Tunnel can carry more than 90,000 vehicles a day. By cutting downtown traffic congestion, residents and businesses will enjoy benefits estimated at about $500 million a year. That figure is based on lower accident rates, less wasted fuel from engines idling in stalled traffic, and reduced late-delivery charges. The health benefits should also be substantial, starting with a 12 percent reduction in carbon monoxide levels.

Property values in downtown Boston are soaring as the Big Dig reconnects neighborhoods severed by the old elevated highway and improves the quality of urban life beyond the limited confines of the new expressway. When the crumbling elevated roadway is fully demolished, it will be replaced by open space and modest development. The project will create more than 260 acres of open space, including 30 acres where the existing Central Artery now stands, more than 100 acres at Spectacle Island in Boston Harbor (where project soils are capping an abandoned dump), and 40 more acres of new parks in and around downtown Boston. The Central Artery is the first step toward an exciting urban renaissance.

Chairman TOM DAVIS. Mr. MacDonald, thank you very much.

Mr. Tamaro, thanks for being with us.

STATEMENT OF GEORGE J. TAMARO

Mr. TAMARO. Yes, thank you. I would reduce my presentation a little bit in the interest of brevity for the committee.

Chairman TOM DAVIS. OK.

Mr. TAMARO. Slurry wall construction is a particularly useful technology for installation of underground walls for both permanent and temporary construction. It is particularly useful in urban environments and difficult ground conditions.

It, in my opinion, was particularly appropriate for the construction of I–93 Central Artery and Tunnel, and perhaps was the only technology available. Slurry wall construction—its end product, by its very nature, is very rough textured, it is an unfinished concrete wall, and the end product is even more regular and could be more problematic if attempted by unskilled contractors.

The slurry wall work is started from ground level. It is carried down to predetermined depths. The work is done in the blind from ground level, and it requires intuition and a good deal of monitoring and testing of the process as it proceeds. Slurry wall construction can be expected to have some flaws as a result of this in the blind process.

These flaws are usually observed during the general excavation when the walls provide temporary support for the construction. Defects are usually repaired as the excavation is carried downward, and should be completed prior to the incorporation of the slurry wall and to the permanent construction. This is the procedure that should have been followed for the I–93 tunnel.

Of immediate concern with the I–93 tunnel are the problems associated with a number of slurry wall panels. The area of concern is the portion of the slurry wall exposed from the top of the walkway to the underside of the roof, where a defect in the slurry wall would permit flow of water and/or soil into the tunnel.

The defects are primarily in the slurry wall concrete. The steel beams that are the vertical spanning members are not affected by the defects in the concrete that spans horizontally from beam to beam. These structural concrete defects cannot remain and must be repaired as uncovered. The portions of the slurry wall above the roof and below the roadway are of no concern and have essentially been abandoned.

Field inspection records for one slurry wall panel, E–045, indicate that the panel was not constructed in accordance with specifications, and, furthermore, the wall was not adequately repaired during general excavation. This defective panel remained stable until September 15, 2004, when the defect could no longer resist the external water pressure.

The defect in the wall gave way and permitted the flow of water and soil into the I–93 tunnel. The defect in the panel is currently temporarily protected by wooden wedges, grout, and a steel plate. Alternative permanent repair schemes are currently under review.

As a result of the incident of September 15, the project engineering team has inspected slurry walls, as we have heard. Several major problems have been discovered, and a large number of minor

leaks have been identified. In addition, due to defects in the slurry wall concrete there is a problem of leakage at the contact between the roof—concrete roof and the slurry wall. At several locations, water has flowed down—flowed down the face of the wall and onto the roadway, where in the winter there is an icing problem.

There is also potential for corrosion at the roof girder connections. This is a long-term problem that has to be attended, and we have heard discussions about the inspection program that has to be undertaken. These connections are the main support of the roof system and will require regular inspection and maintenance throughout the life of the tunnel.

There is currently disagreement on the extent of the leaks and whether the leaks will be permanently sealed at the conclusion of construction. It is uncertain that a permanent sealing of the tunnel roof joint will be fully achievable.

There has been a lot of discussion about quality, and I would like to just make a comment—that there is an old adage that states that quality will be long remembered after schedule and the costs is forgotten. As a casual observer, I am forced to conclude that there has been a tremendous amount of potential cost overruns and schedule, and I am concerned that it may have had its effect upon attention to quality.

It is now necessary that the project assure the public that quality control issues have been addressed, and that they can use the tunnel without concern for their safety. This is going to take a bit of time to do. It will not happen overnight, because there has been this constant droning of difficulties associated with the tunnel.

Thank you very much for permitting me to testify. If you have any questions, I am available to answer them.

[The prepared statement of Mr. Tamaro follows:]

Mueser Rutledge Consulting Engineers
April 19, 2005

George J. Tamaro, P.E.
Page 1

Testimony before the United States Congressional Committee on Government Reform
Boston, MA
Friday, April 22, 2005

My name is George Tamaro, I am senior partner at Mueser Rutledge Consulting Engineers. Our firm specializes in the investigation, design and inspection of underground structures. I am a registered professional engineer in the state of Massachusetts and sixteen other states. I have worked in underground construction for 38 of my 46 years in the industry.

Slurry wall construction is as much an art form as a construction technology. The technology was initially developed in Northern Italy in the early 50's and was first used in the US to a major extent at the World Trade Center in New York City.

Slurry wall construction is particularly useful for the installation of underground walls of both a temporary and permanent nature in urban environments and in difficult ground conditions. Slurry wall construction technology was particularly appropriate for the construction of the I-93 Central Artery Tunnel in Boston. The end product, by its very nature, is a rough textured, unfinished concrete wall. The end product is even more irregular and can be problematic if attempted by unskilled contractors.

Slurry wall construction is started from ground level and is carried down to predetermined depths. The work in done in the blind from ground level and requires intuition and a good deal of monitoring and testing of the process as it proceeds. Slurry wall construction can be expected to have some flaws as a result of this "in the blind" process. These flaws are usually observed during the general excavation, when the walls provide temporary support for the construction. Defects are usually repaired as the excavation is carried downward and should be completed prior to the incorporation of the slurry wall into the permanent construction. This is the procedure that should have been followed for the I-93 Tunnel.

Of immediate concern with the I-93 Tunnel are the problems associated with a number of slurry wall panels. The area of concern is the portion of slurry wall exposed from the top of the walkway to the underside of the roof where a defect in the slurry wall would permit flow of water and/or soil into the Tunnel. The defects are primarily in the slurry wall concrete. The steel beams that are the vertical spanning members are not affected by the defects in the concrete that spans horizontally from steel beam to steel beam. These structural concrete defects can not remain and must be repaired. The portions of the slurry wall above the roof and below the roadway are of no concern.

Field inspection records for one of the slurry wall panels (Panel EO-45, Contract C17A1) indicate that that panel was not constructed in accordance with the specifications and furthermore, the wall was not adequately repaired during general excavation. This defective panel remained stable until September 15, 2004, when the defect could no longer resist the external water pressure. The defect in the wall gave way and permitted the flow of water and soil into the I-93 Tunnel. The defect in the EO-45 panel is currently temporarily protected by wooden wedges, grout and a steel plate. Alternative permanent repair schemes are currently under review.

As a result of the incident of September 15, the project engineering team has inspected slurry walls along the tunnel alignment. Several major problems and a good number of minor "leaks" have been identified

In addition to the defects in the slurry wall concrete there is a problem of leakage at the contact between the concrete roof slab and the slurry wall. At several locations water has flowed down the face of the wall and onto the roadway, where, during the winter it freezes on the roadway. There is also a potential for corrosion at the roof girder connections. These connections are the main support of the roof system and will require regular inspection and maintenance throughout the life of the tunnel.

There is currently disagreement on the extent of the leaks and whether the leaks will be permanently sealed at the conclusion of construction. It is uncertain that a permanent sealing of the tunnel roof joint will be achievable.

The Committee on Government Reform has asked that I share my thoughts on quality control issues. I would like to share with you my experiences at the World Trade Center in 1967. I was the owner's engineer responsible for the construction of the slurry walls. I was working for the Construction Division of the World Trade Center Department of the Port Authority. My engineering group consisted of approximately a dozen people working 24-hours a day, 6-days a week on the construction of the walls. The wall schedule was absolutely critical inasmuch as the structural steel for the Towers was being fabricated and delivered to storage in New Jersey. It was my job to assure that the work progressed in a timely manner and was constructed in accordance with the contract documents. The Engineering Department assigned an additional 6 people to provide an additional independent layer of oversight on the work. I was responsible for quality control and the Engineering Department was responsible for quality assurance. The Engineering Department had the authority to stop the work if quality was an issue. In my opinion the Engineering Department personnel provided a beneficial supporting activity, two pairs of eyes would provide extra oversight and assure that the work was done correctly. Based on that experience, I recommend that on future major public works projects a group of owners engineers be assigned responsibility for quality control, independent of the project management, cost control and scheduling people and with authority to stop work if quality is compromised.

There is an old adage that states that, "quality will be long remembered after the schedule and the cost is forgotten." As a casual observer I am forced to conclude that the focus on the cost overrun and the schedule distracted attention from quality control issues on the Central Artery Project. It is now necessary to assure the public that quality issues are being addressed and that the public can use the tunnels without concern for their safety. This will not happen overnight.

Thank you for allowing me to testify today. This concludes my testimony. I would be pleased to answer any questions that the Committee may have.

George J. Tamaro, PE

Chairman TOM DAVIS. So, Mr. Tamaro, how safe is it going to be?

Mr. TAMARO. That is a question I always hesitate to answer, because——

Chairman TOM DAVIS. Well, you are the independent guy here. I mean, you are the——

Mr. TAMARO. I am not really, because I am not working. I have not been working on the project for about 2 months now. I can only——

Chairman TOM DAVIS. How safe was it 2 months ago?

Mr. TAMARO. Two months ago, I saw nothing that was of concern to me.

Chairman TOM DAVIS. OK.

Mr. TAMARO. The safety question has—it is a difficult one to answer, because there are other things that occur within the tunnel that could cause concern to the public—the falling of debris into the tunnel for an example, which is totally unrelated to the question of the structure. The structure is safe, in my opinion.

There may be some leaks occasionally. There are problems that have to be addressed. I think that the structural safety question is not there. But there can be other problems.

Chairman TOM DAVIS. Well, from your work on other large-scale projects, like the World Trade Center recovery efforts, what are the major mistakes that we made here, and do you think they are at least technically corrected?

Mr. TAMARO. I think one of the biggest problems is when you have an integrated team, and you do not have someone who is very aggressive for that issue that he is responsible for. For example, quality control—the quality control issues begin to take a second step or begin to take a second role.

My experience at the World Trade Center was that I was responsible for schedule and costs for the construction of the slurry wall and the quality of the work. The Engineering Department felt that the schedule and costs may begin to take a more important element in my thought process, and assigned an independent engineering staff to oversee the quality control that I was responsible for.

So I had a totally independent quality assurance group overseeing what I was doing, and they had the authority to stop the work at any time, if quality was being violated in any way.

Chairman TOM DAVIS. OK. Mr. MacDonald, Federal Highways rewarded your company with the Excellence in Highway Design Award for the Ted Williams Tunnel portion of the project back in 1996. And to my knowledge, there have not been leak issues in that part of the project that we have seen in the I–93 tunnel.

In your opinion, what is the difference between those two? Were the specifications and requirements for the I–93 tunnels more difficult to complete? Or did we just have some oversight issues?

Mr. MACDONALD. I think there are two different types of tunnel construction. I think the tunnels leak. The Ted Williams Tunnel leaks, but it is within normal industry practice. And I think we have with the—you know, with the high profile issue that we had on I–93, there has obviously been a lot of attention, a lot of media

focus, a lot of other focus on the slurry wall construction and the I–93 tunnels.

So I think that is the primary difference—a very high profile, a very high——

Chairman TOM DAVIS. But the Williams Tunnel didn't have the kind of leak that Mr. Lynch put up there in construction, to my knowledge. I think that was——

Mr. MACDONALD. I am going to refer that one to my colleagues who were here at the time. Keith.

Mr. SIBLEY. Thanks very much, John.

As John said, the tunnels are two different types of structures. The I–90 tunnel is what we call a cut and cover box tunnel. That is, we excavated a deep trench in the ground, and we cast a floor, walls, and roof, all of reinforced concrete. As John described, we did have some leakage. There were cracks. Certain joints——

Chairman TOM DAVIS. You always get leakages below water, right? Don't you?

Mr. SIBLEY. That is correct. And the leak injection program, very similar, slightly different materials that we are using on I–93 was used there. I–93 is so different because it has the slurry walls. The slurry walls are cast, as my colleague Mr. Tamaro identified, in the blind, and you see what you get as you then excavate out.

So it is a different character of a wall to start with, and then the floor is joined to those, the roof is joined to those, and it is a different detail.

Chairman TOM DAVIS. Nevertheless, the kind of leak we saw here probably shouldn't have occurred, all things considered, should it in a case like that?

Mr. SIBLEY. Oh, absolutely correct. I think that has been clear, that the breach should not have happened.

Chairman TOM DAVIS. OK. And the I–93 tunnel just—it is more complex, because of the nature of the slurry. Is that fair to say?

Mr. SIBLEY. Yes, correct.

Chairman TOM DAVIS. OK. Mr. Amorello, you state in your testimony that the Authority has opened nearly every component of the project to the public, who are enjoying the benefits of the investment. At this point, the press has not been that good on this issue. A lot of this predates your being there, in terms of the cost overruns and everything else.

What are we doing at this point to keep this process open, to keep the public informed, to try to restore that confidence, you know, in the project in the future? And, you know, I am not up here. I just catch this occasionally, but that one picture is worth 1,000 words. And that hole in the I–93 tunnel literally blew a hole in the reputation of the integrity of the tunnel.

And I think we have had explanations today for what happened, but what are we doing to make sure that doesn't happen again, and to make sure that when this tunnel opens it—when it is completely opened to the public, they are going to be satisfied that it is safe?

Mr. AMORELLO. Mr. Chairman, I am as upset as every resident of Massachusetts that event occurred on September 15. And it is repeated almost nightly on the evening news, as I mentioned in my testimony. The event was unique, as was mentioned in the Federal

Highway report. It was an isolated incident. It should not have occurred.

The tunnel system that the public is driving on today is safe for them to use. I wouldn't have authorized it, the chief engineer or the Turnpike Authority wouldn't have signed off on it, nor would Federal highway officials have signed off on opening these roadways for the public to use.

We have taken every step to be transparent in the process that we have started. Every last Thursday of the month we give a project monthly update on the costs of the project, our safety record, our employment record, the status of uses of contingency, to keep the public fully informed in terms of some of the discussions that were held by the earlier panel.

Lessons learned—I think clearly that was one of the most important lessons that this project implemented after the 2000 price escalation was in the financial report submitted to Washington every year to reassure our partners that this price—this budget was real and the budget was holding. And for the 3-years I have been chairman, that has been the case.

And at every—as I said, every last Thursday of the month, we have a public meeting, open to the public, where project officials come out and discuss the issue of the inspections. Every Thursday of the week we provide an update on the status of the inspections that we are carrying on.

Chairman TOM DAVIS. Let me ask you this. I mean, I hear everybody saying, you know, mistakes were made. OK? When did the Authority become aware of the construction problems that led to that breach?

Mr. AMORELLO. The Authority, in a 1999 memo to project officials, was circulated with a cc to the public employee in charge of that particular construction contract. It is my understanding the field records indicated that these steps were going back and forth between Bechtel/Parsons and the contractor to repair the E–045 breach, and the understanding was that wall was repaired.

The breach that occurred on the 15th, there was no awareness on I think anyone's part immediately that breach would—or should have occurred given that there was repair work done at that site I believe in the year 2000. I could be—stand to be corrected on the particular—that particular aspect, but there was repair work that was conducted, obviously inadequate repair work.

The breach blew out on the 15th, and turnpike officials, Bechtel, and our contractors immediately stepped in to repair it. And we are now in the process of evaluating the correct method for repair. I brought on board John Christian, an MIT engineer, geotechnical engineer, and a member of the National Academy of Engineering, a Massachusetts resident, to advise and consult me on the repair method.

We have also recently retained STS out of Chicago, Clyde Baker who is also here today, to evaluate the repair method that we put in place. Inspector General Mead was very clear when he and I have had several meetings in the last many months talking about the repair method that we put in place, and to make sure the public is assured that we have done everything possible to make this wall safe and secure for the longevity of the tunnel system.

These engineering experts that we have brought on, along with turnpike staff—Mike Lewis, Mike Swanson, and Helmet Ernst from the public side—to review the final proposal for the repair method.

Chairman TOM DAVIS. Right. And it is going to be a whole series of inspections, obviously, before it is finally opened to the public at that point.

Mr. AMORELLO. Correct.

Chairman TOM DAVIS. You never know what you will find, but at this point there is—things seem to be on track.

Mr. AMORELLO. Correct.

Chairman TOM DAVIS. Mr. MacDonald, what do you think—can we talk more specifically about what happened on that major leak in September?

Mr. MACDONALD. Yes, sir, we can.

Chairman TOM DAVIS. What happened?

Mr. MACDONALD. What happened? You go back to the construction reports at the time that panel was poured. There were several things identified on those construction reports that should have signaled—well, they shouldn't have happened. They should have stopped the work. That is No. 1. No. 2——

Chairman TOM DAVIS. Who was asleep at the switch? Was it both—was it the State? Was it you all? Was it a subcontractor? Was it a little bit everybody? Federal Highways?

Mr. MACDONALD. It was the contractor and Bechtel/Parsons Brinckerhoff. So that was mistake one, allowing the panel to be poured with the deviations that were identified during the construction process.

The report, then having identified those things, went up the chain through the resident engineering process, and that was the second opportunity to catch those things, that something here was amiss. And a flag should have gone up, and that should have resulted in a very focused, very specific inspection of that panel as the Artery was excavated. That didn't happen.

The contractor, then, self-reported the issue when it discovered a leak, as when the wall was uncovered and water intrusion came in, and brought it to our attention.

Chairman TOM DAVIS. Now, was this the evening of the big leak?

Mr. MACDONALD. Oh, no.

Chairman TOM DAVIS. This was before this.

Mr. MACDONALD. This was 3 years perhaps in advance of that.

Chairman TOM DAVIS. Oh, OK.

Mr. MACDONALD. Construction was still underway. The engineer responded, per procedure, to produce some non-destructive examination of the defect, to get the full scope of the defect, and then to submit a repair procedure based on those findings. That never happened.

What appears to have happened is the contractor went away and repaired it in an ad hoc manner. That should not have happened. That whole series of things that led to that breach should not have happened.

Chairman TOM DAVIS. Now, is that contractor still with the project?

Mr. MACDONALD. Yes. Yes, he is. He is still working on the project.

Chairman TOM DAVIS. OK. Has he been appropriately reprimanded?

Mr. MACDONALD. He has been that. He has also stepped up to his responsibility for making the fix.

Chairman TOM DAVIS. OK. All right. Those are my—I think those are my questions.

I am going to turn the meeting over to Mr. Lynch—I have to catch a plane back to Washington—to chair the meeting.

I want to thank all of you for being with us. I just want to say this. You obviously have a serious responsibility, and the media are all over this issue, and the public, and everything else. You know, all of us I think have a joint responsibility to make this thing work from here on out.

We will sort out the money downstream. The attorney general is going to be looking into that, the IG, and who owes what. But the safety of this project has to be a priority over the next few months, and the—we can't compromise with that at all. I think if you have any other episodes like you had on September 15th, I think it is going to seriously jeopardize the contractors in terms of future government contracts and the like. So everybody understands what is at stake.

Parsons Brinckerhoff has—and Bechtel have great reputations with the government traditionally. We have had a couple of things go wrong here, but I just want to tell you how serious this is. That this has reverberated not just throughout Boston and Massachusetts, but throughout the Federal Government as well.

So let us all work together and just make it work. And I appreciate your attentiveness to this.

Thank you.

Mr. Lynch.

Mr. LYNCH. Mr. Chairman, I just want to thank you for your leadership on this, and I do want to say just one thing before you leave—is that what I am looking for here among the responsible parties, not necessarily to lay the blame at one person's door, but to admit that there was a shared responsibility here.

And how to make this right is to make sure that the people who are obviously blameless here, the taxpayer and the people who pay the tolls, are held harmless. That is the goal that I have, and that is going to require the cooperation of you all and all of the contractors and insurers and designers and everybody else to step up and do the right thing here.

So that is—I just didn't want you to think that was something I said after the chairman left. But that is my stated objection—my stated objective here, and that is what I am going to pursue. That is what I am going to pursue, and I know the chairman is of like mind. So I just wanted to get that out there.

Thank you, Mr. Chairman.

Chairman TOM DAVIS. Thank you very much. Thank you.

Mr. LYNCH [presiding]. OK. Why don't I pick up right where the Chairman left off. Mr. MacDonald, on most job sites that I was on over 20 years—and I know it was different on this one—concrete inspection was usually handled by—a firm would come in inde-

pendently and check the contractor's work, check the quality of the concrete, and, you know, the performance according to the specs.

In this case, from reading the documents, apparently you had your own field engineers. Is that right? Bechtel had field engineers go down and do their own inspection?

Mr. MACDONALD. Yes, we had field engineers do our own inspection. I also think, on the concrete testing, we would have had a subcontractor perform the inspection.

Mr. LYNCH. Maybe you could explain that division of labor.

Mr. SIBLEY. Certainly. As John said, we have a field engineer that is assigned to do the quality monitoring of that work. First and foremost, the contractor has a quality control program. Their engineer would identify the mixed designs that they are using, would all be approved submittals before they start. They would do a checklist that everything is ready, and they would submit that to us for verification as part of the assurance step.

Our field engineer would perform those assurances, also sign off on the checklist during the concrete placement. The project has a certified laboratory. The laboratory has been certified in accordance with ACI and the governing standards. We would have a person come onsite, do in-place testing such as air content slump, that sort of thing, do some monitoring of the actual placement, and then we would break the cylinders, and so forth, to verify strength later.

So it was a double effort of assurance, with our field engineer at the point of placement and with the laboratory checking the materials. The contractor is quality controlled, and they are actually performing the placement and verifying they are doing it correctly.

Mr. LYNCH. OK. At some point—so that is—the concrete coming out of the truck, if you are pouring it out of a truck, is inspected by the contractor. You have somebody there that is going to the lab and all of that.

But after the pour, maybe we could go to—just to kind of make sure everybody is following along here—I think it is A1 or—I think it is the first slide. This is the excavating machine for the slurry wall, is that correct?

Mr. MACDONALD. Yes, sir, it is.

Mr. LYNCH. OK. And that clamshell bucket is digging that trench in between the soldier piles, is that correct? Is that——

Mr. MACDONALD. The soldier piles are not installed at this—well, I can't tell if they are installed at this——

Mr. LYNCH. Yes, I can't either, to tell you the truth.

Mr. MACDONALD. Yes.

Mr. LYNCH. In any event, after the pour, after the pour is complete, and you wait a certain amount of time for the concrete to set up, and then you begin excavation. Whose responsibility—was it the contractor or was it Bechtel's engineer—to go down and just inspect the face of the wall for any voids or inclusions or any defects that were visible to the naked eye?

Obviously, somebody had to have the responsibility for going down and checking the work after the excavation.

Mr. MACDONALD. First of all, the excavation takes place some time later.

Mr. LYNCH. Right. Much later.

Mr. MACDONALD. So it is much later when that opportunity is available to it. It is the contractor's responsibility to check his own work under the quality control process that is set up for the project. It was our responsibility to assure that work by a layer of auditing of the contractor's process to make sure that he had accomplished that.

Mr. LYNCH. OK. So it was theirs initially, and then, if I am understanding correctly, you followup.

Mr. MACDONALD. Yes.

Mr. LYNCH. You assure that they have done that. OK. And my concern is that, 5 years after they poured the section that we had the breach in, for 5 years that wasn't the—I mean, what is the date on which that section of wall was excavated? That had to be 1999 or——

Mr. MACDONALD. If I may, I would like to turn that over to Keith to answer. He is more fluent with the facts on the panel.

Mr. LYNCH. Sure.

Mr. SIBLEY. You are right with the date of the placement. The excavation would have been in mid-2000. I don't have those precise dates. I would be happy to get a specific answer and provide that for the record at a later time, but I don't have the exact date when that was excavated.

Mr. LYNCH. Yes, OK.

Mr. SIBLEY. It would have been done in stages. This is among the very deepest part of the job. The particular excavation that Modern conducted here was working north to south, and they worked toward a bulkhead from the adjacent contractor to the south. This would have been toward the end of their excavation.

Mr. LYNCH. OK.

Mr. SIBLEY. But I can get you that date.

Mr. LYNCH. I do have some notes here about—that the engineer's report indicated on April 2 that the slurry was deficient. Now, that is not the concrete, but that the slurry was deficient and did not meet standards, did not meet specs. But I assume that it was some time after that you actually did excavation, so it was after April 2, 1999. Would that be——

Mr. MACDONALD. Yes, that is correct. The slurry report refers to the—I believe it is the——

Mr. LYNCH. The pour date?

Mr. MACDONALD. It is before the pour date actually.

Mr. LYNCH. OK.

Mr. MACDONALD. Shortly before?

Mr. SIBLEY. Yes.

Mr. MACDONALD. Yes.

Mr. LYNCH. OK. That is fair enough. I just want to—you know, what mystifies me is that it was somebody's job to go down there and inspect the face of that slurry wall, not just to walk by it but to actually go down and inspect that, the entire length of that wall.

And, you know, we have a list now of 102 spots, 102 problem areas on the slurry walls, and there are still 400 panels that have yet to be inspected. And a considerable amount of time here—5 years went by—and if this hadn't burst, this would all be buried, if this panel hadn't been burst. It just—it troubles me greatly, the

lack of quality assurance and quality control on this project with respect to these panels, I have to tell you.

And I am hearing that there are wet patches and there are inclusions, and, you know, why don't we—Leah, if you have a second, I just want to run through—maybe we can dim the lights again. These are some—well, actually, why don't we go to—why don't we run through all of them.

There aren't a whole lot of them, but I am just going to note some of—now, the reason I included this is I understand this process—this is—they are removing the panel so they can get at the wall behind it, right? And this is—this is part of the repair project. It looks like September 15, so this would have been the major breach.

The cost must be prohibitive to keep removing those panels and going back behind there. I don't know if something can be done to reduce the cost of these continual repairs that we are doing in these areas, but it is something you ought to think about.

All right. Next slide. Again, that is the waterfall. That is—we have seen that already.

Go ahead. Next, please. This is another shot of the same breach that occurred on September 15.

We can go to the next one, please. I was a little surprised at this. This is apparently the method, the temporary patch that was used. I understand it is just temporary, so I guess I am not as concerned. But driving oak wedges in there to try to stop this.

Go to the next—there is another shot of the oak wedges they are using to stop the flow of water. You know, it just appears to be a Mickey Mouse situation. I don't know, guys.

But go ahead. Go with the next one. This is, again, I guess there is some grouting going along in the area as well as the oak patch, the oak plug, rather.

Please, again, Leah. And I understand that this is, again, a temporary patch. That shows the metal plate going on over the wooden form there, which I guess is bolted to the soldier pile. But, again, I guess I am not as concerned now that I know it is just a temporary patch, and something more permanent is going to be put in place.

The next one, please, Leah. And this just shows that—let us see, this is September 21, so this is a week later. This is the patch that they just put on, and there is a stream of water, and it looks like maybe some of the—some of the grouting is actually coming back out.

Next one, please. This is a void at the base of a soldier pile. It, you know, could create tremendous problems.

Next one, please. These are all different areas here. As I am told, that is actually a hammer that—in the middle of the picture there, there is a hammer that fell down into the pour. And there is a huge void at the bottom, and they explained to me that the void is filled with paste and soil that was still soft when probed to 16 inches. So these are—these are deep and significant inclusions and voids within the slurry wall.

Next one, please, Leah. This is a—there is not—that is actually just to demonstrate. That is a trowel that was placed in the wall just to show how soft the material was. This is a clay inclusion in

the—clay and soil inclusion of unsound material, and it states that a 6-inch tool can be inserted to its full depth. So that concerns me greatly.

Next one, please. This is all exposed rebar along the slurry wall. No coverage there. This must be the area around the Federal Reserve Bank. As I understand, that is the only area that has rebar in it. But, again, there is no coverage. It is exposed to water, and it concerns me as well.

Next one, please, Leah. Now, this is the roof joint. This is one of the roof joints. Mike Capuano and I actually last February did the walkthrough there, and we saw the work going on. But I have to tell you, and I know you are going to say that, you know, we haven't buttoned it all up yet, but in the meantime, you know, we already have the oxidization of a lot of these structure members, and I am just very concerned about it.

Next one, please, Leah. That is the last one.

I just want to read to you. This is contract language for the I–93 mainline tunnel. And it states that—this is a technical spec relating to water tightness of slurry walls. It states that, "Slurry walls shall be watertight, defined as free of all seeping water leaks. Moist patches shall be considered acceptable for slurry wall construction."

"B) Repair of leaks shall be in accordance with Section 727.915, which says that simple surface patching, or shallow injection, shall not be allowed." And the contractor—this is what gets me. It says, "The contractor shall inspect for water tightness of all slurry walls on a monthly basis, starting within 2 weeks after the first exposure of the wall panels during excavation."

This is what brings me back to April 2 or some time in 1999, some time thereafter. And starting within 2 weeks—so it will be on a monthly basis, starting within 2 weeks and continuing until final acceptance. The inspection reports shall be submitted to the engineer—I assume that is Bechtel—within 1 week following inspection.

So it is not that we missed a couple of opportunities to pick this up. It is—you know, if you—if it should be monthly for 5 years, we missed 60 opportunities—60 opportunities to pick this up under quality control and quality assurance. And that troubles me greatly. Somebody just mailed it in on this. No one was out there protecting the taxpayers' interest.

Mr. Tamaro.

Mr. TAMARO. Yes, sir.

Mr. LYNCH. Could you tell me, now, I was an iron worker for about 20 years, did some heavy highway work and bridges, and all of that. But you are a lot smarter than I am; I promise you.

The level of water tightness—now, first of all, this tunnel, what did we buy here in terms of the U.S. taxpayer and the Massachusetts taxpayer? How long is this tunnel supposed to be in service? What is a reasonable expectation?

Mr. TAMARO. It should last 70 to 100 years. It shouldn't be a problem.

Mr. LYNCH. OK.

Mr. TAMARO. With regard to the water tightness, I would like to just kind of bifurcate the question.

Mr. LYNCH. Sure.

Mr. TAMARO. There are two elements in the water tightness. One is the wall itself, and it has been my experience that you can get these slurry walls very watertight except for occasional flaws. And then, during construction, once they are exposed, you go back and you fix the flaws. Once they are fixed, they should not have running water down the face of the wall. That has been my experience on most of the walls I have worked on.

Mr. LYNCH. And if I could ask you, the fact that these are 42 inches thick, that is a fairly thick slurry wall in my estimation. I don't know, maybe that is—maybe you are used to that, but 42 inches of concrete would seem to be fairly impervious to water seepage.

Mr. TAMARO. It is more a matter of the installation procedure rather than the thickness. A very thin, properly executed wall can be more watertight than a thicker wall that has not been done with the same level of care. So the thickness is kind of irrelevant. The concrete is usually, if it is put in correctly, it is water tight. And it is only the jointing and the construction aspects of it that can really create the leak.

Mr. LYNCH. Well, based on the spec I just read, do you believe that these specs have been met on this project based on what you have seen down there?

Mr. TAMARO. The panel E–045 is a clear example that it did not meet that specification.

Mr. LYNCH. And what about all of the others where there is water coming through and voids and——

Mr. TAMARO. Panels that contain inclusions of material, soil-like material or defective concrete, are just not acceptable. They do not meet the specification.

Mr. LYNCH. OK. Let me ask you about—now, if you say the reasonable expectations of a life span for this tunnel is 75 to 100 years. What effect does continual play of water on the structural members, whether it be seeping through the slurry walls and, acting on soldier piles or inducing some type of breach because of the inclusion in the wall, or the roof joint that you mentioned could be a lifelong problem in this tunnel, what does that have—what effect does that water play on these structural members have on the overall life of the tunnel that we bought?

Mr. TAMARO. That was kind of why I bifurcated the question. The slurry wall concrete itself should not be significantly affected by seepage. The loss of soil from behind the wall can be a problem, but the concrete itself should not be deteriorated if it is there and it is sound.

The steel beams should not be affected by corrosion. The slurry wall soldier beam should not be affected by corrosion as long as—the majority of them is buried in the concrete or outside, so, therefore, it is not exposed to oxygen. The inside face could corrode, and I have seen most of these eventually stabilize themselves with a little bit of build up of rust, and you don't have a major corrosion problem with the soldier beams.

The real concern is the roof connection where your whole street structure is resting on that connection, and that connection is exposed to water that is seeping in through the roof wall joint. And

that is the critical element. It is not an immediate problem; it requires resolution.

Mr. LYNCH. OK. All right. Thank you. I want to turn it over to Congressman Capuano for a while.

Mr. CAPUANO. Thanks, Mr. Lynch.

Mr. MacDonald, you had both written and oral testimony. In the written testimony—if I remember correctly, it was on page 11—there was something along the lines of—you are talking about the wall panel repairs, and there is a written statement here that they will all be repaired at no cost to the public or to the project. Do you stand by that written comment?

Mr. MACDONALD. I stand by that statement. Yes, I do.

Mr. CAPUANO. OK. And during your oral testimony, if I heard you right, and I would like to clarify it, I believe I heard you say, in talking about the—because, again, we have two different types of leaks. In your written testimony, I don't recall that you addressed the roof and wall joints, but I believe I—and, again, correct me if I am wrong—I thought I heard you in your oral testimony say that when it came to the grouting program there will be no cost to the taxpayers. Did I hear you correctly?

Mr. MACDONALD. Yes. Yes. I think the grouting—the grouting of the roof is—we are still in construction. We are not done. And when we are done, we firmly believe that we are going to meet the specifications for this—for the roof wall joint. We believe it is the responsibility of the contractors to achieve that under the specifications that are in there.

And if I may just comment on the picture that you showed of that joint—and I fully agree with Mr. Tamaro that it is critical that we don't get corrosion in there, and we are not seeing signs of any significant corrosion in these girder beams that you see in the roof base. What you saw in that photo was algae. It wasn't rust. So I just want to be clear about that.

Mr. CAPUANO. Mr. MacDonald, your company—both the companies have been involved with the construction, I am sure, of many tunnels of different types and different locations and different depths, and all around the world is my estimation. Have you ever been involved with a tunnnel that didn't have leaks?

Mr. MACDONALD. No, sir. All tunnels leak.

Mr. CAPUANO. Mr. Tamaro, have you ever been involved with a tunnel or any other similar aspect that doesn't have leaks?

Mr. TAMARO. I have been involved with tunnels that do have leaks, and they are processed for collecting water.

Mr. CAPUANO. But have you ever had any one that doesn't have a leak?

Mr. TAMARO. Yes. Yes.

Mr. CAPUANO. One that is below the water table?

Mr. TAMARO. Yes.

Mr. CAPUANO. Where was that?

Mr. TAMARO. Puerto Rico, the Minnia Tunnel.

Mr. CAPUANO. And there is no leaks in that tunnel today?

Mr. TAMARO. There are no leaks in the tunnel.

Mr. CAPUANO. Good.

Mr. TAMARO. To my knowledge.

Mr. CAPUANO. To my knowledge?

Mr. TAMARO. To the last of my knowledge.

Mr. CAPUANO. All right. Fair answer, because I was under the impression that there were no tunnels anywhere that don't have leaks. But that is a very interesting comment, because I will go check that now, just because you have piqued my interest. That is good to me. I mean, that changes some of my opinions of tunnel construction.

I guess I am going to ask all of you the same question I have asked before, and I think most of you have addressed it, but I am going to ask it again, nonetheless, to be clear. To the best of your knowledge as of today, is the tunnel, all of the tunnels, are they safe? And to the best of your knowledge today, is there any reason not to believe that they will not continue to be safe in the future on the presumption that they get ordinary and adequate maintenance programs. Mr. Amorello.

Mr. AMORELLO. Yes, and no to the second question.

Mr. CAPUANO. Mr. MacDonald.

Mr. MACDONALD. Yes, the tunnels are safe. The tunnels will continue to be safe long into the next century.

Mr. CAPUANO. OK. Mr. Tamaro, I know that you have said earlier that you haven't been involved with the tunnel directly for the last several months. But as of the last time you knew it, was there any reason to think that the tunnel wasn't safe then?

Mr. TAMARO. I found nothing that would make me say that it was unsafe.

Mr. CAPUANO. Fine. Thank you.

Mr. Amorello, Mr. Mead, who was up earlier—I know that you are working with Mr. Gee and others relative to putting the tunnels under a new comparable program to the bridge inspection program.

Mr. Gee was very clear, which I knew before, but he said it—publicly stated it here that your agency has been very cooperative in trying to come up—since you will be the first tunnel in the history of the country, if I understand it correctly, to subject itself to this kind of inspection process, you are breaking new ground, and he suggests that you are being very cooperative in that. And I congratulate you for that, and I hope you have great success and lead the way for the rest of the country to follow.

But Mr. Mead here also suggested, with some of the questions that are involved relative to the inspections of these panels, he clearly suggested that each and every one of these panels be subjected to a full inspection. I think Mr. Lynch asked earlier—and I am no—I have no clue what is involved with inspecting these, but Mr. Lynch suggested—and I am sure he is right—that there is visual inspection, there is hand inspection, there is sonar inspection, there is—I am sure there is all kinds of methods that I have no clue what they are all about.

But Mr. Mead was very clear in stating that he believes that each and every one of these sections should be inspected to the best of our technical ability. First of all, do you agree with him? And, second of all, if you do, is that our plan to get this done?

Mr. AMORELLO. I think the inspection process that had been put in place after the September 15 breach is addressing each and every panel and identifying it to date. To correct the record, there

were seven found yesterday, so it is 109 panels that are defective in some fashion. Again, only two with a major defect is similar to the September 15, including the September 15 breach.

If I may, I would like to defer that both to Mr. Sibley from Bechtel and to Mr. Lewis from the project, in terms of how these inspections take place. And then, if I might, Mike Swanson who is here is the chief engineer for the department—for the Authority working on the protocol for the future inspections. I think it goes to——

Mr. CAPUANO. Fair enough. But I want to make it clear—I am not an engineer, I don't want to be an engineer, so speak English.

Mr. AMORELLO. Let me—if it is—Mr. Sibley and then Mr. Lewis, but the inspections that are ongoing now and how it—how that is occurring, and then Mr. Swanson, who is looking at the protocol—and I think Congressman Lynch, anticipating his questions on warranties and how we go out into the future—some of the costs that we have budgeted, one of the questions by—that was asked of the earlier panel, the budget for the operation of a metropolitan highway system—that is everything inside of 128, the I–93 tunnel system, the Logan connection, some—the Viaduct south of the city, the Zacamb Bridge, the Kana tunnels, is $76 million; $25 million of that is O&M costs associated with just the Interstate 93 tunnels.

And at some point, when the questions get to that stage, if Mr. Swanson could talk about how we anticipate the inspections, the cost of the inspections that we built into our budget anyway, the logic in the 1997 legislation turning the project from the State Highway Department—I wish Chairman Davis was here. Taking the project from the State Highway Department, transferring it to the Turnpike Authority, was because of our expertise in tunnel management and the fact that we have resources to maintain these tunnels. Having that, that is why we are the authority charged with——

Mr. CAPUANO. Fair enough. But I want to make it clear, I just asked basically what time it is. I really am not interested, because I am not qualified to know how the watch is made. You know, I mean, so I just really want to make it as simple as you can. All the technical stuff, talk to Mr. Mead. But the simple stuff, I am happy to listen to, but I want to make that clear.

Mr. SIBLEY. Simply, the investigations we are conducting since the September breach are twofold. One is we have been going through the documentation. When we went back and looked at the history of the panel in question, as John identified earlier, there are irregularities in the documentation of that panel.

So we did a search through all of our field records for all of the panels to see if there were other strings of documentation that would indicate troubles, and we put those on a specific list of panels to take a close look at.

Second, then, we have identified—or we have been initiated a 100 percent inspection of all panels. There is a section where the wall is readily accessible above the tile panels that were in some of the photographs. The stainless steel grills are up there. We can look through those grills and remove some of those grills, and do a 100 percent inspection of all panels.

We are looking for any indications that may need further follow-up. The team identifies those indications, and then we take a sen-

ior engineer out, we remove more of the steel in the area, make a thorough investigation. If it appears to be something worthy of followup, we actually take the tile panel off and do a complete review of that panel.

The photographs that Congressman Lynch went through come right out of our reports. Those are panels that the investigation has located. Most of these more serious issues are in areas that are fairly deep in the project. Both of those areas, incidentally, are in areas where there was dewatering surrounding it during construction. We are now getting full water tables back, so now we have a better chance to see some of these issues where water is coming through.

So it is a two step—documentation, check those specifically, visual everything, followup indications, go progressively forward. It is a conservative review.

Mr. CAPUANO. Since Mr. Mead is still here—Mr. Mead, I wouldn't want to call you back, because I know you have had a long day already. At some point, I would hope that we could get some answers, so maybe at a later point, to tell me whether what you just heard and what you may find out in the future satisfies the suggestion you made, because, for me, though I love you guys dearly, the only guy I really care about is Mr. Mead, because he has no vested interest whatsoever in the answer, and he is the guy, as far as I am concerned, that has to be satisfied.

And, again, what you just said sounds fine to me. But I haven't got a clue. And so I appreciate the answer, and I appreciate the brevity, the clarity, the simplicity, but I would still hope that at some point you have a lengthy discussion with Mr. Mead and his office, so that he can be satisfied. Or, if not, to notify us that you are not satisfied.

I guess for me—you know, I have heard a lot about slurry walls. I am not a contractor. I am not a construction guy. I haven't had the experience of Mr. Lynch. They get a little complicated to me. And, you know, I mean, I think I understand it. I am not sure. It sounds—you guys have made it relatively simple, I think, but I always try to bring things back to what I understand.

One of the things I understand is basic construction, not a lot, but a little bit. And, you know, we have two kinds of leaks. You know, you have a hole in the wall, that is a problem, you have accepted it, you are fixing it. Whether it is temporary—I will be honest, I was a little concerned myself when I saw that the way to fix a temporary leak is exactly what I would have done, is basically you stuck a cork in it. [Laughter.]

But I guess I will trust you, because I drive through the tunnel and I go by that cork, so I hope it holds. And I also understand that there is some discussion now as to how to make that permanent, and I respect that and I will leave that alone.

But there is also leaks at the top, and I have been educated as to how all of this has happened and how you couldn't do it—a different kind of roof because of the width limitations on the buildings, and the like, and that you had to do a roof basically that, in my mind, is almost inevitable to have leaks.

My house has an overhang. Every house in New England that is wisely built has an angled, steeped roof. Nobody in their right mind

in New England has a flat roof. There are some, but those are the people that I think less of than others. [Laughter.]

There is a reason for that. We want rain, we want snow to get off and go away, and I understand that. I also understand that you couldn't do some of these things, and so within the limits you had to come up with a system.

But I have asked, and the Authority has granted me—I have it here, and I have the prop, and all of that—but basically asked, well, what is on the top of this roof? Where is this water coming from? Not so much the slurry walls. I am talking about the so-called low-level leaks, because those are the ones that strike me as a bigger concern.

I mean, you are going to have holes in the walls, you are going to fix them, and that is not—everybody—I have heard everybody say that is not acceptable, and it is going to get fixed. But there is going to be a question on the roof. And the reason I say this is because, when I was mayor, we built several schools. Every one we built we had to fight with the contractors about what was on the roof—how thick the rubber was, whether the rocks were this, whether this was this, how the drain—every single roof there was an argument.

So I asked about roofs, and I got a nice little thin piece of basic rubber here that is this thick that I am told is sitting on top of the cement roof. OK. That sounds neat, except, I have to tell you, this thing is pretty flimsy. It doesn't strike me that this is even comparable to the roof that is sitting on my house.

So I have to ask: is this sufficient? Is this normal? Is this what you have used in other tunnels? And if not, why do we get this?

Mr. Amorello, I guess I will start with you.

Mr. AMORELLO. Let me—again, these were decisions made in the waterproofing, if I can defer to Bechtel, we will respond to that question.

Mr. MACDONALD. Thank you, Mr. Chairman. Before I ask Keith to comment on the detail of it, the roof system was the subject of a thorough review back in 1990. The systems were evaluated with a lot of input from ourselves, section design consultants, the suppliers of materials that went into the specifications.

There was a thorough review of these processes initiated in 1997 when there were some challenges in getting the construction satisfactory during the installation of the roof membranes.

So with that said, Keith, maybe you could fill us in on more details.

Mr. SIBLEY. I am very tempted to talk about the thing you had in your hand or the polyuria sprays or the preapproved 300's, but I recognize your watch analogy, so we will start with——

Mr. CAPUANO. Thank you.

Mr. SIBLEY [continuing]. With waterproofing functions essentially as a liner. The concrete roof is placed on the steel roof girders that have been talked about. The roof, before we backfill with the material, then it goes up to the surface, sometimes 4 feet thick, sometimes 40 feet thick. We put down this liner. It is loosely called waterproofing.

We did have a wide variety of waterproofing materials in our early specification. It is a performance specification. The supplier

is chosen by the contractor. They are to make sure the supplier reviews the geometry of the tunnel, how deep it is, what kind of water is in the area, the water chemistry, the details of the construction, and come up with a material that they will certify will perform in a waterproofing function at that location at that depth.

In the 1997 task force, we were recognizing that some of these materials apparently weren't robust enough, or had sufficient installation problems that we were having to review a lot of leaks and waterproofing issues. We were concerned about the continued use of those materials.

Initially, to restrict the marketplace, was not well received, but this combined task force involving State authorities, Federal Highway, some experts, and ourselves, we wound up eliminating a few materials.

Mr. CAPUANO. Is this the Waterproofing Task Force or the Leak Task Force?

Mr. SIBLEY. This is Waterproofing. We are selecting waterproofing——

Mr. CAPUANO. So before leaks.

Mr. SIBLEY [continuing]. Materials. Correct. And we limited the number, then, of materials that were allowed to be considered under this performance specification. The details and requirements of the spec remain the same. The contractor chooses the material.

The manufacturer is required to have a rep onsite while it started to train the people, test certified installers, and basically to assure that the materials such as the one you had in your hand will function at the depth and locations called for in the tunnel.

Mr. CAPUANO. OK. Am I right to understand that this has a 5-year warranty? Do you know?

Mr. SIBLEY. I don't know, but——

Mr. CAPUANO. OK. Let us——

Mr. SIBLEY [continuing]. I can check that for you.

Mr. CAPUANO. I am pretty sure I am right. It is a 5-year warranty. My roof has a 20-year warranty. Why does this only have a 5-year warranty? And let us assume everything is done perfectly. I have to replace my roof every 20 years, because it leaks. Material gets old.

Let us presume everything is done well. Six years from now the warranty is gone. I won't even ask the question what happens within the warranty; I don't know how you replace it. Six years from now, this is done, the warranty is done, and you have another 71 to 94 years left. How do you fix it?

Mr. SIBLEY. Morris, do you want to take a stab at that one?

Mr. LEVY. Well, I think there is a slight difference between the house and the underground tunnel.

Mr. CAPUANO. I hope so.

Mr. LEVY. Yes. I mean, the material in a house is subject to a lot of the variations in the temperatures, the variations in rainfall, ice, and so forth. The material that you have underground, it would not be subject to this. It is just staying there, and there is no change to it.

Mr. CAPUANO. So, then, theoretically they should be able to warrant it for 100 years.

Mr. LEVY. Well, as we said, it should stay for that long, but I am not sure about the warranty——

Mr. CAPUANO. Do you mean even the material?

Mr. LEVY. I am not sure about the warranty of this particular material, and Keith would be——

Mr. CAPUANO. Well, I am pretty sure it is 5 years. I mean, that is fair enough. Again, I guess I will leave it to people who understand construction better than I. I have kind of gone to the limits of my understanding.

But I will tell you that it raises concerns for me, not because—I understand the engineering problems about you couldn't get wider things, you couldn't extend the roof in a different way. I know—I understand that, it makes sense, that is life. But I have to tell you, forgetting everything else, whoever picked this—and, again, not being a contractor it raises questions to me.

I guess relative to the—who is going to be responsible for what—and, again, I am just continuing on the roofing analogy. Let us presume everything seems to be done well. To get to this—just this, and get it on the roof, somebody has to design the tunnel. Somebody has to draft the specs for the material that goes in the tunnel.

Somebody has to select the contractors, choose the process, choose the material, choose the supplier, prepare the surface because, as I understand it you, can't just throw this on a piece of cement, you have to prep it and all that kind of stuff, select the adhesive, and then apply the material.

If I have those right, and if I haven't missed anything, you have an architect who designs it, a general contractor, at least one subcontractor, maybe several subcontractors, the material supplier himself, the manufacturer of the material, the manufacturer of the adhesive. Then, you have quality control, quality assurance, and then you have the Turnpike Authority themselves.

Maybe I am counting it wrong. Maybe I am missing something. But just to get this on, you have eight potential parties who have responsibility to get that done. Sometimes I am sure some of those would be the same people, so maybe it is a little bit less than eight, how are we going to determine who is responsible? And the reason I ask this is because, very carefully worded, wisely carefully worded, that Bechtel/Parsons Brinckerhoff will accept your fair share of responsibility, and because—and, again, correct me if I am wrong—all I am aware of is a $50 million performance bond, or whatever the term might be—insurance.

Are we going to have to hold everybody liable, all down the line? Or is that your job?

Mr. MACDONALD. The liability flows primarily two places. It flows to the contractor, and many of those parties that you described are subcontractors to that contractor. And some of it would potentially flow to us. Correct me if I am wrong on this, Morris, but I don't think the section design consultants, for the most part, are involved in this.

Mr. LEVY. Not in the choice of the roofing material. But, Congressman, I think until today—I am not sure that the water is coming from the roof. In other words, there is water at the joints, and it could well be that the roofing—that the waterproofing is still

intact, and that the water is coming through the concrete, because the concrete goes up the sides.

Mr. CAPUANO. But as I understood the way this was supposed to be applied, it is supposed to be applied, what, up a foot——

Mr. LEVY. That is correct.

Mr. CAPUANO [continuing]. On the soldiers. And, therefore, there shouldn't be any water.

Mr. LEVY. The outside wall of concrete is exposed to the water. The top of the wall is exposed to the water. And the water is coming through the concrete from the top or from the side, instead of—that is why we are grouting. We are not grouting the waterproofing. We are grouting the——

Mr. CAPUANO. Well, one of the reasons I picked this, because, again, it is simple for me—and, you know, you get into slurry walls, but the same issue applies to slurry walls. I mean, you don't just have one guy come in and drop a slurry wall in. Somebody has to design it, somebody has go to do this, somebody has to pick the slurry.

I mean, I understand there are different kinds of slurries. You have to pick which one you have to do, you have to have it inspected, you have 8, 10, 9, 12 people or entities that are responsible for any aspect, not just this. Same thing with the intelligent transportation system, same thing with the concrete selection, same thing with every aspect of it. This was just a simple one to me, because it makes sense, something I understand.

And I guess for me, I go through all of this to make sure that I am not on the wrong track, that the liability for all of these issues, regardless of how they are repaired in the future, the liability is going to be a long-term discussion, unless what you have said, Mr. MacDonald, is—turns out to be accurate, that you will stand up and accept your responsibility, whatever that may be.

And I take you at your word, but I also understand that when the time comes this is still going to happen. And when it happens, my hope is that each and every one of these people who is on this list is going to be held responsible for their aspect of it, and that includes you.

Mr. MACDONALD. Congressman, let me respond by again saying, yes, we will step up to our obligations under our contract. Absolutely. The situation that you described is normal. A contractor, section design consultants, a management consultant, those are the three principal parties involved in this conversation, so it is sort of a normal circumstance.

The disputes are, unfortunately, a normal circumstance in this environment. I, frankly, believe that the issues that you are concerned about will show themselves in the near future. I don't think it is going to take years to discover potential issues that are subject to cost recovery or subject to back charges against contractors. For the most part, we are going to know that in the near future.

I think there is a robust process in place now under the attorney general's purview. We are committed to work through that process. It is a process that has the attributes that we have long sought. It is one voice on behalf of the Commonwealth, the legislature, the administration, MHD, MTA, a fact-based process. So we will fully engage in that process.

Mr. CAPUANO. Well, I am going to end with one last thing. As I understand it—and correct me if I am wrong—there is currently a lawsuit pending relative to notification from 1994 on some issues relative to the tunnel that—it is kind of interesting.

Even in your written testimony, you suggest that, in 1994, Bechtel/Parsons Brinckerhoff was under a contractual constraint basically to lie relative to the cost of the tunnel. That is what your written testimony says, that you couldn't have public commentary—well, I can read it to you.

Mr. MACDONALD. Well, our testimony said that we had an obligation to tell our customer what we knew.

Mr. CAPUANO. Right.

Mr. MACDONALD. And we did that.

Mr. CAPUANO. Maybe you shouldn't lie. You are right. I should correct myself that you were constrained to not correct a lie publicly given, repeatedly given, by your employer—namely, the Turnpike Authority, not Mr. Amorello, but one of his predecessors.

The contract prohibited Bechtel/Parsons Brinckerhoff from making any unauthorized statements, and that is relating to an earlier statement—in 1994, you provided the Governor and State officials with total cost estimates of almost $14 billion. I have to tell you, if I were a prosecutor, I would not let you off the hook because you had a contract that basically said you had to let a lie happen. Different issue; others will decide that.

But as I understand it—am I wrong to think that there is a lawsuit pending relative to whether you did or did not inform State officials on these issues?

Mr. MACDONALD. There is a lawsuit pending on that matter. Again, I don't think your characterization of this thing is accurate. I don't think that is what the contract says or that is what we did. We went through that process in 1994. We continued to give our best advice to the Turnpike Authority throughout that period of time.

Mr. AMORELLO. Could I just interject that in 1994 the State Highway Department, then the Department of Public Works, was in charge of the project, not the Turnpike Authority.

Mr. CAPUANO. Either way, it wasn't you. [Laughter.]

Mr. AMORELLO. No. Just in terms of clarification.

Mr. CAPUANO. Well, I respect that, Mr. MacDonald, but I would suggest—I will tell you that as—well, as a non-practicing attorney now, that if I were advising you, and I—you had a client who was telling you, "Look, we know we are 40 percent—minimum 40 percent over budget," and you know it, and your client—in this case the State Highway Department—is telling you to shut up, my advice to you would have been to walk, because you can see—you can feel the anchor coming around your neck.

Guess what? Here it is. Your client, based on your—again, I am not going to—I don't know what the truth is, but based on your written testimony, you knew then that your client, the Highway Department, was perpetrating a public lie and, one, they violated FCC regulations, never mind anything else, that you knew was wrong.

And I think by doing that, even presuming that what you say is true, you told the Governor and you told the State officials, I still

think you have some liability issues on that, because you should have walked. You should have walked, knowing that your client then was engaged in something immoral at the very least, unethical, clearly, and probably illegal.

Thank you, Mr. MacDonald.

Mr. LYNCH. OK. Thank you.

Mr. Tamaro, I want to go back to you for a second. How do I determine what—the normal amount of water that we should expect in this tunnel upon completion?

Mr. TAMARO. As far as the slurry walls themselves are concerned, you should have no water. You should not have running water. There will be an occasional seep that requires repair.

Mr. LYNCH. All right.

Mr. TAMARO. The roof joint appears to me beyond what you would normally expect. I am going to go a little beyond perhaps where I should with a comment with regard to the membrane. From what I have seen of the roof, up between the girders, I think the membrane is performing on the flat, and the problem is exclusive to the turn of the wall and the wall contact.

I would suspect that the membrane will last the life of the structure because of its being protected. I assume, and I don't know if you have the proper protection boards and the like, as long as it didn't get punctured by whomever was walking around on top, the membrane on the horizontal should be satisfactory. It is that joint detail and turning up the wall that is really the culprit in this problem. And the question is: how does that get resolved at this point?

Mr. LYNCH. OK. Let us see. Why don't we talk for a moment about what you described, Mr. MacDonald, as being fairly normal. In Attorney General Reilly's testimony, he indicated there were 134 issues outstanding for claims against the project and a total of $400 million in claims.

Now, I understand that there is always that back and forth, and there are claims. But at this late stage of the process and the project, is that something that is normal, where a lot of contractors have completed their responsibilities and are no longer on the project and have been paid and now are going—we are trying to resolve these things and doing cost recovery on top of that?

Mr. MACDONALD. I would like to separate it a little bit. If I understood the attorney general correctly, he indicated there was 134 items for cost recovery. To me, that would translate into issues that are potentially at our doorstep or at the doorstep of the section design consultants.

With respect to the $400 million in claims from construction contractors, this is the pending amount of claims from the contractors for their construction work, some that have finished and some that are still ongoing, that is going through a claims resolution process, a process which is directly managed by the MTA.

I am not aware that—of anyone who has been paid in advance of getting an agreement. So I think there is a little miscommunication there about paying contractors for claims.

So this is a significant amount of money. The fact that we have some disputes and this project has had a long—a fairly long history of disputes with the construction contractors, I think is—you know,

is kind of within the normal expectation, maybe a little more than we would like to see. We would like to get it—we would like to get it resolved as quickly as possible, so it is not around for a long time to come.

Mr. LYNCH. OK. Mr. Tamaro, now I remember what the question was I wanted to ask you. The idea that we have this slurry wall that is 42 inches thick, and normally—well, let me put it this way. Along the stretch of the—of the Artery Tunnel in front of the Federal Reserve Bank, apparently the engineer that was—or the engineer representative for the Federal Reserve Bank required that reinforcing steel be put—maintained in the slurry wall along that stretch in front of the Federal Reserve Bank. Am I correct on that?

Keith Sibley, how about you?

Mr. SIBLEY. Originally, several of the slurry walls were preliminary designed with reinforcing steel in them. As the final dimensions—a real driving dimensional item here is the soldier pile. It is 3 feet. When you add the cover, you get a 3½ foot wall. That wall thickness is not really required for the soil and water to be held back, but that is what is required to swallow the pile that is inserted in the trench as we build these walls and then carry the roof loads.

Once we had that much design in place, we realized that we did not need to reinforce the walls in many locations. Two locations we do have the walls reinforced. It is along the side of one financial, and it is along the side of the Federal Reserve Bank.

Those are adjacent to critical buildings. We did review this information with their consultants, and they preferred we remain with a conservative design to keep that reinforcing steel. We had it there. They preferred we not take it out when we realized we didn't need it in many other areas. They didn't require that we put it there, but they preferred we not take it out.

Mr. LYNCH. How much of the rest of the—apart from those two spots—one financial and the Federal Reserve Bank—how much of the remainder of the Artery Project had preliminary rebar design?

Mr. SIBLEY. Actually, I do not know the answer to that——

Mr. LYNCH. Take a stab.

Mr. SIBLEY [continuing]. From the study——

Mr. LANCELLOTTI. We pretty much wanted the original standard to have the walls reinforced as——

Mr. LYNCH. OK. So it was the norm.

Mr. LANCELLOTTI. The norm.

Mr. LYNCH. The norm in the preliminary design was to have rebar in the slurry walls.

Mr. LANCELLOTTI. I can't say whether it was the preliminary design or the conceptual design. But in the early stages of the project, that is the standard we were discussing. As Keith pointed out, later on we backed off of that, and only required that——

Mr. LYNCH. Can you move up to that mic, sir. All right. Let us take that from the top again, please.

Mr. LANCELLOTTI. During the early stages of the project, we did have, as our concept, reinforced slurry walls. Later on, as Keith pointed out, as we went into more of the analysis and the design, we determined that it was not needed in all locations. We kept it in certain locations.

I think there are a couple of isolated cases beyond Federal Reserve Bank where either we had an air rights issue or a heavy load issue where we kept the reinforcing in. But generally, we took it out because the analysis and design showed it was not necessary.

Mr. LYNCH. Now, let me see if I understand you correctly. Because the walls were so thick, you didn't think you needed reinforcing steel?

Mr. LANCELLOTTI. Correct. Based on the loads that they would absorb or would be imposed on the wall, it was not necessary. That is correct.

Mr. LYNCH. OK. Now, as I understand it, concrete is great under a compressive load, but the steel is added because of, you know, a moment or a lateral load. In this case, it would be from the soil and the water on the side of the panel. Is that correct?

Mr. LANCELLOTTI. That is very—you are a good engineer. That is absolutely correct. It is usually from tension, either from moment—primarily from moment. It is primarily from moment or bending.

Mr. LYNCH. So it wouldn't be the case where if we had left the steel in, if we had left the steel in—in the slurry walls—and I am not sure if there was a whole lot of steel in here in terms of, you know, the size of these panels. But if you had left the reinforcing rods in the thing as originally designed, we might not be—we might not have had that blowout problem for one.

Mr. LANCELLOTTI. Actually, that panel has reinforcing steel in it.

Mr. LYNCH. Well, it was placed properly, is what I am saying.

Mr. LANCELLOTTI. And it still blew out, so I would not say it is related to the reinforcing steel.

Mr. LYNCH. Yes. Now, was this a cost-saving measure, to pull the steel out?

Mr. LANCELLOTTI. That is correct. It was part of a cost containment initiative; that is correct.

Mr. LYNCH. OK. But you left it in for the Federal Reserve and——

Mr. LANCELLOTTI. And some other isolated areas where the stresses warranted.

Mr. LYNCH. OK. Let us just go—I want to compare these two pieces, because I think it is important. Mr. Tamaro, given the dynamic here with this 3½ foot wall, what is the impact on a lateral load like we were just talking about, with no rebar in there and—but say there is a substantial inclusion of soil or clay or a hammer or brick or just a complete void within that panel, what does that do to the structural integrity of that panel?

Mr. TAMARO. It diminishes the integrity. What happens is that the reinforcing goes in sort of as a grid.

Mr. LYNCH. Right.

Mr. TAMARO. And if there is a void, a hole, a defect, there are alternative paths around the defect. And in the case of this particular panel, there is concrete missing for a significant height of the element. So that you have a piece of reinforced concrete to the north of the defect, you have a piece of overpour concrete to the south, and you have a defect between the two.

Had there been reinforcing and concrete, you would have an element expand from beam to beam. What you have in the case of E–

045 is you have an element sitting out in space with no support at the Perini end of the panel.

Mr. LYNCH. I see. OK.

Mr. TAMARO. So having reinforcing or not having reinforcing would be immaterial. If the panel had been constructed to the flanges, behind the flanges of both of the soldier beams, and there had been reinforcing and there was a hole, there would be an alternative path around it, and we wouldn't have the same structural concerns that we have for E–045.

Mr. LYNCH. OK.

Mr. TAMARO. It would have just been a sealing of the leak, and that would have made life a little easier.

Mr. LYNCH. Right. Now, let us go to the general situation. Mr. Amorello tells me that we have 109 panels now that have inclusions, defects, of—you know what? Can we get a definition on—I know the No. 1s classified in the report are the severe situations like the breach, and there are only two of those.

What constitutes a moderate or a No. 2 type defect that we have in these walls? I guess there are 33 of them? Or actually maybe more now.

Mr. AMORELLO. They changed with—34 panels with modest repair and 73 require patching or a type of repair. I could have Mike Lewis, project director, speak to that, or Keith Sibley, if it is easier on the mic.

Mr. LYNCH. Yes, either one. Either Mike or Keith, go ahead and tell me what a No. 2 involves, and then I have some questions for Mr. Tamaro.

Mr. SIBLEY. The No. 1 defect, we had two of those, those are the breaches. The No. 2 type of defect is something that there are indications in some cases of a piece of an end stop left, which would indicate that there is not full engagement of a pile for a short section.

There is an inclusion of material between a primary and secondary placement; that is, a vein of material. I think Mr. Tamaro described just recently how that is important to the performance of the panel.

Mr. LYNCH. Could that be clay or sediment or something that?

Mr. SIBLEY. That is correct.

Mr. LYNCH. OK.

Mr. SIBLEY. Some foreign material. Clay is the most frequent, where a joint was not fully cleaned off before the next one. Sometimes it goes well into the panel; sometimes it is toward the surface. Basically, it requires thorough investigation. We have been doing this.

The contractors are starting to hydroblast the material out to confirm precisely the dimensions of what we have, and then recommend methods of doing proper repairs. In some cases, this will be primarily filling with concrete materials. In other cases, it may involve structural consideration for the reasons that Mr. Tamaro outlined a moment ago.

The other 73 minor ones are—we think of as patching. These go no less—no more than, say, half the depth of the wall and involve some reinforcing steel and concrete repair patching, typical of concrete structures.

Mr. LYNCH. Didn't that spec say that simple surface patching or shallow injection shall not be allowed? Does that fly in the face of what you are telling me now, that you are going to do minimal patching here?

Mr. SIBLEY. Simple surface patching would be like a cosmetic repair. What I just described is a structural repair. I mentioned similar that you would do in reinforced concrete structures—for example, if you were repairing bridge abutment, if you were repairing a retaining wall, something of that nature, you clean out the surface, you prepare it to receive new concrete, bonding agents, etc., or saturation, you dowel in appropriate reinforcing steel, and then you cast additional concrete on it.

If it is relatively shallow, it can be done by——

Mr. LYNCH. Is this shot crete? Is that what you are talking about now?

Mr. SIBLEY. That would be only in relatively shallow situations. In deeper situations, the contractor puts up a form—there are some of these in progress right now—and casts the appropriate material. If it is large, it can use a large aggregate. If it is small, you might use, say, a peastone concrete, that type of thing.

Mr. LYNCH. Yes. Who is paying for this?

Mr. SIBLEY. I think, as John said earlier, the contractors are doing these repairs.

Mr. LYNCH. And they are paying for it on their own dime. They are not going to come back to the taxpayer to be paid for this, right?

Mr. MACDONALD. That is my understanding, sir, and we are paying for our inspection services.

Mr. LYNCH. OK. Mr. Tamaro, based on what you have heard, that there are voids next to the soldier pile, and there are examples that were shown earlier where it looks like sidewalk bricks actually. Let me ask you about that.

They are doing slurry wall construction. They are pumping slurry into this open trench that is the form basically for the eventual slurry wall. And it appears that in many, many places along this slurry wall, for the length of the Artery, that there are things dropping in—you know, a hammer, some sidewalk bricks, clumps of soil. It appears that there is clay sediment, and it is creating these voids or inclusions that have been described here.

Within that panel—within that panel, what does that do to the—again, I know you said it diminishes it, but is this a serious concern?

Mr. TAMARO. Can I just go back and tell you how it happens?

Mr. LYNCH. Sure.

Mr. TAMARO. So that we can develop it from there?

Mr. LYNCH. Sure.

Mr. TAMARO. These foreign debris come from either an inadequate cleaning of a panel initially—at the conclusion, when you are all done excavating, you should clean out the panel, make certain there is no debris sitting on the bottom, or due to the collapse of some material in the fills after the concrete process has begun.

In the event it is a non-cleaning of the bottom, when you put the tremmie pipe down to the bottom of the panel, the debris is usually lighter than the concrete, and it is expected to rise through the

panel and be expelled. When you begin to see pockets of material, it is indicative that there is a potential sidewall collapse during the placement of concrete. The material has fallen down.

When you see the condition of E–045, that is specifically attributable to the fact that they had two elements that they were trying to concrete, separated by a steel beam, and they tried to do it with one tremmie pipe, and what it did was it pushed all the trash into that slot.

Mr. LYNCH. Right.

Mr. TAMARO. And it collected as a vertical defect.

Mr. LYNCH. Right.

Mr. TAMARO. That is very serious.

Mr. LYNCH. Right.

Mr. TAMARO. A pocket of material the size of a bag of potatoes is not a problem, if you don't have running water coming in. You go back, you dig it out, and you fix it.

Mr. LYNCH. Well, we do have water.

Mr. TAMARO. But E–045 is an extraordinary——

Mr. LYNCH. No, no, no. But, I mean, I have a list here, and they haven't done non-destructive testing on this stuff. This is just the stuff that is coming up visually. We have inclusions, and we know we have water behind the wall here. We have wet spots. You know, in my mind, we have all of the ingredients for a failure further down the line.

Mr. TAMARO. If there is sufficient waterflow to erode the contaminated material, you have a potential E–045 problem.

Mr. LYNCH. Right.

Mr. TAMARO. If the leak is observed early on, and it is addressed quickly, you can stop the leak from becoming a major problem.

Mr. LYNCH. OK. Mr. Mead was in here earlier. Actually, he might be still here. He recommended that we do a scan of every single panel, in light of the pervasiveness of this problem, these inclusions, stuff dropping into the slurry wall. Is that something that you would agree with?

Mr. TAMARO. I don't think it would hurt. It is one more piece of information. I think the visual check is the most important thing that one can do. The visual check and sounding of the surface, banging on it, and the like——

Mr. LYNCH. Really? Even though none of that picked up the problem in E–045?

Mr. TAMARO. I think the problem in E–045 was picked up somewhere along the way. There was shot crete applied. There was grouting of the leak.

Mr. LYNCH. OK.

Mr. TAMARO. I think it was picked up.

Mr. LYNCH. OK. All right. Chairman Amorello, I just want to ask you—at the beginning of this hearing, we started talking about this IPO situation, this integrated project organization that so many people have now criticized, but at one point apparently it was a popular idea because we—we adopted it. You came in 2002, is that right?

Mr. AMORELLO. That is correct.

Mr. LYNCH. Now, I know the Leak Task Force or the Waterproofing Task Force was 1997.

Mr. AMORELLO. Waterproofing.

Mr. LYNCH. OK. And then the Leak Task Force was 1999.

Mr. AMORELLO. 2000.

Mr. LYNCH. 2000? And you came in in 2002?

Mr. AMORELLO. Correct.

Mr. LYNCH. OK. So you have had a chance, based on the date that you brought in in 2002, it is still pretty much—well, there are some safeguards, I understand. Why don't I let you answer the question.

What was your experience with this IPO situation? What did you do? If you did anything differently, or if you are still using the same system, I would like to hear about your opinion.

Mr. AMORELLO. When I first came in, being new to it, I hired the National Academy of Engineers to come in and make recommendations. And a panel came up and had several meetings in Massachusetts and in Washington.

And John Christian, a Massachusetts resident who is now an advisor to the Authority chaired that panel of national experts from the Academy how to finish the project—their recommendation came back. The management team and structure you have in place is sufficient to carry you to the end of this project, to 2005 being the substantial completion date.

But I wasn't a fan of the IPO, and I think lessons learned from this—the IPO was not the manner to oversee this project. The instances that the attorney general will speak of in cost recovery, trying to recoup costs back where there is so much agreement, the Inspector General has made it clear in many of his—in his testimony today and in remarks in the past that we somewhat dismantled that organizational structure. The public employees report to me and to the chain of command here at the Authority, and the Bechtel personnel answer to those overseeing them from the public sector.

I would point out that at any given time in the past on this project, Bechtel/Parsons Brinckerhoff I believe had at times approximately 1,000 employees of their firms working or subcontractors for them.

Mr. LYNCH. Not counting attorneys, right?

Mr. AMORELLO. I don't want to characterize—it is the number of FTEs at any given time under their work program and the subcontractors they had within their work programs. And on the State side, I believe at some given point we had approximately 50 employees.

But the IPO, a decision made back in the late 1990's, I am not a fan of it, wasn't when I came in, took the National Academy's recommendation to finish the project with the timeline we had left, manage that, opened roadways, kept the schedule, kept to budget, at the same time moving public responsibilities on the public side and treating it more like a standard relationship between a consultant and the public side.

Mr. LYNCH. OK. Let me ask you, who signs off on—do you need to sign off on any payments to Bechtel and other contractors?

Mr. AMORELLO. Contract modifications come in before—at a certain level come into the Turnpike Board for approval. The State Highway Department also approves them, because these are State

highway construction contracts. So there are basically two layers of public approval on these contracts. The State Highway Department is more of a procedural matter, because the project is administered and controlled by the Authority given the 1997 legislation.

Mr. LYNCH. OK. Well, to the degree that you have any authority to sign off on this, you know, I assume you were here for my conversation with Attorney General Reilly.

Mr. AMORELLO. Absolutely. And the clarification, in terms of holding the contractors responsible for their contracts, and to provide a piece of information in regards to cost recovery and those efforts seeking recovery to section design consultants or Bechtel/Parsons as the joint venture.

And then, the claims and change progress, which, I think Congressman Capuano and yourself have talked about, and the chairman was talking about construction claims or changes that we have instituted as part of the construction process, those are settled with the Authority, and they are not settled as a matter of an easy decision that we have our own attorneys and our own outside consultant exponent to review the claims filed by the contractors, and negotiated settlements where possible.

If we identify in a claim that we are going to pay, because it is a legitimate, fair claim by the contractor to make it, but we find that claim was as a result of a design error or omission, then we submit that over to cost recovery. And those are the items that the attorney general's office will be looking at. Those were the items that the Ginsburg team was dealing with in their cost recovery program.

Mr. LYNCH. OK. While we are on that subject, on cost recovery, I have to ask you—you came into this situation in 2002, and you know you are stepping into a problem because the project is already, I don't know, it is out of sight. It is over $10.8 billion—or, no, it has to be close to $14 at that point, right?

Mr. AMORELLO. When I came in, it was $14.625. And today it is——

Mr. LYNCH. That is where it is, OK. So you know we have problems, and there are enormous concerns about cost recovery, getting some of that money back. And with all due respect to the gentlemen at this table, we, as a Commonwealth, and you on the Authority, we are in a pitch battle, a legal one, with Bechtel/Parsons Brinckerhoff, one of the biggest construction firms in the world.

And in casting about for someone to handle our case and recovering moneys for the taxpayer from this huge construction company, apparently someone—perhaps yourself included—they did a search to come up with someone to quarterback our team for cost recovery. And I understand you found a fine gentleman to do that.

However, from my research, it appears he was a probate judge, someone dealing with divorce and custody and wills and estates, to quarterback our team. And I have no—nothing but fine things to say about that gentleman and—but professionally, as someone who is responsible for watching out for the Commonwealth, for the taxpayer, I have to ask you: how did you, in a thorough search, come up with someone who, from my own review and research, I can find no clear reason why one would—if casting about the best person to represent us in that conflict? And it was a conflict, a legal con-

flict—I just cannot understand for the life of me why we made that selection. And I just want to—I have to ask you that, because it is vexing.

Mr. AMORELLO. I certainly appreciate and respect the question. Judge Ginsburg is a highly regarded Judge of the Commonwealth——

Mr. LYNCH. Absolutely.

Mr. AMORELLO [continuing]. Regardless of the——

Mr. LYNCH. An expert in probate law, I might add, and a respected one.

Mr. AMORELLO. And removing the subject matter of his jurisdiction in the courtroom, the credentials of him as an intelligent legal mind, an individual of the highest integrity——

Mr. LYNCH. Unquestioned.

Mr. AMORELLO [continuing]. That heading up a team of attorneys—and we are talking about a team of attorneys and outside engineering consultants, able to administer the program, and as Attorney General Reilly pointed out, you have two avenues in cost recovery. You either settle the matters or you go to court and litigate them.

I guess there would be a third one. You could just drop it and not pursue it at all. But looking at the reality of the two matters, the cost recovery team put into place by me was looking to move a process that had, as has been mentioned by Ken Mead and others, $35,000 and I believe $770, $35,770 for the cost recovery in the prior 10 years of this project.

Judge Ginsburg and his team secured back $3.8 million in settlement moneys, and filed 10 lawsuits, and an 11th lawsuit that Congressman Capuano referenced against Bechtel/Parsons Brinckerhoff on the grounds of fiduciary responsibilities and others.

The attorney general in his remarks said that those 10 suits were for—or 8 of those 10 suits, and if—were moving forward in the process, and that the 11th suit against Bechtel/Parsons was—he had stated but did not—dropped it. I think that speaks that the cost recovery team instituted by the Authority was doing its job, pursuing it.

When it became a matter of lawsuits only, it was appropriate that the chief legal enforcement officer for the Commonwealth of Massachusetts, the attorney general, take these matters over, and use all of the tools and abilities at his disposal that we currently didn't have—don't have as an authority, other than through the discovery process in the legal cases.

Mr. LYNCH. In fairness, though, the assessment of the previous cost recovery team—and I may be wrong, and you are completely free to correct me if I am wrong—if I count up what we have spent in cost recovery, I come up with approximately expenses of approximately $8 billion.

Mr. AMORELLO. $8 million.

Mr. LYNCH. I am sorry, $8 million, right. $8 million to recover $4 million. So we spent $8 to recover about $4. You know, if I am wrong, straighten me out.

Mr. AMORELLO. Well, just in terms of when you talk about the individual matter of the settlements that were reached with Jacobs Engineering and some other firms, the dollars invested for those

settlements were, I believe—and I stand to be corrected on the exact dollar amount, but I believe it was about $700,000 to secure back $3.8 million, $4 million in settlement.

The additional moneys expended by the cost recovery team is into the establishment of those 10 lawsuits, and I think all of us know that the foundation now that the attorney general is moving on are those 10 lawsuits and the amount of work put into putting a suit before the Supreme Court—the Superior Court of Massachusetts is where these dollars that were expended for lawyers, for outside engineering consultants, and for the staff attorneys that were working on cost recovery.

Mr. LYNCH. I understand. But we are looking at an October or November trial date here, and there is still an enormous amount of work that needs to be done on these cases based on the attorney general's assessment at this point.

Mr. AMORELLO. Well, if I may——

Mr. LYNCH. You may.

Mr. AMORELLO [continuing]. Congressman, just to point out that in the course of this project, in the 10 years of active construction, there had been no effort—no meaningful effort in terms of cost recovery. Ideally—and I say this with the Bechtel/Parsons Brinckerhoff folks, you would like to reach settlement and resolve matters in that fashion and not need to pursue them in court.

I respect the fact that the professional relationship between the Turnpike Authority and Bechtel/Parsons Brinckerhoff has not materially changed in their effort to continue to complete this project, while at the same time we filed a lawsuit against them and 10 of the section design consultants in this course.

The process was not there prior to that, to the cost recovery team that the Authority established. If you can reach a settlement—and, again, ideally you want to reach that as the attorney general, and hopefully the attorney general will be successful in reaching a settlement, but if not, you only have the course to go to litigation, and those are the steps that we took.

And at the stage where we were finishing up, the court cases had been filed, natural progression to turn it over to the attorney general, and his willingness to accept it.

Mr. LYNCH. It is a point well taken. But just two points. No. 1, it is usually the quality and the strength of the litigation that drives the settlement. It is not the settlement that is the driving force, and then it falls to litigation as a default measure.

So it leads me back to my original question, which was—I mean, forgive me, but we are in a construction litigation case against one of the largest construction companies in the world. And we hire a probate judge to handle our case. That is my point. I understand the intelligence of the gentleman, his intellect unquestioned, a fine human being. It is just I question the judgment of that——

Mr. AMORELLO. But take the fact—and, again, the two law firms that are representing us, and were representing us—Looney & Grossman is headed by a former——

Mr. LYNCH. Fine law firms, but who is our quarterback on this?

Mr. AMORELLO. The quarterback was Judge Ginsburg and the team, and these two outside law firms, the other one having one of the best legal counsels in terms of construction law—Bill

Zucker—in the country. So we had the right personnel in place, and now it is rightly turned over to the attorney general. We fully support him in his efforts in the cases that were given over to him to manage and administer and move to either successful conclusion with settlements or he moves to continuing the litigation.

Mr. LYNCH. Well, I wish I shared your faith. It is just a troubling development.

Mr. AMORELLO. I hear you.

Mr. LYNCH. OK. I will leave it at that. Maybe I should give this back to Congressman Capuano, but I have to ask—it sounds, you know, across the table here that there is a shared assessment that things are going not perfectly, but things are moving along in the right direction and that you are—you feel that you are on the right path, and that, as Mr. MacDonald says, this bridge—this tunnel will serve the citizens of the Commonwealth well into the next century.

If that is really the case—and I am going to ask each of you—Mr. Tamaro, you don't have a stake in this question. But are you willing to support efforts to hold the taxpayer harmless going forward here? That is my principal concern here—that long after all of us are gone, and we already see, you know, Modern Continental is gone, God bless them—bless Marino, but the company is going under, and Mr. Cashman is taking over his responsibilities.

Reliant Insurance, gone. Other entities that might be looked to for recourse are also on the ropes, as they say. There are some others that are in shaky condition.

My concern is that in the long term—and I am not saying 5 years or 10 years, I am saying this is a 75-year or a 100-year tunnel, we have a responsibility to the next generation that we give them something that it is not a continual drain on their resources.

So I am looking to set up a structure; some have called it a warranty. I am not sure that is the correct word for it, but close enough—a way of protecting the citizens of the Commonwealth going forward, collectively, meaning the Authority and whatever resources it can garner and retain for that purpose, Bechtel/Parsons Brinckerhoff in the same fashion, the subcontractors, the general contractors, the designers, the insurance companies, the reinsurance companies, the bond companies, everyone.

But to hold the citizens harmless from—they are blameless in this. They are blameless in this, and in fairness they paid for a first-rate tunnel, and based on what I see—and there are a lot of reasons for it—I don't see a first-rate tunnel. We hired a world-class team here, and I don't see a world-class product, quite frankly, not yet. We can get there; they are salvageable. But we need the commitment of everyone involved.

And I know there is a lot of personal pride out there as managers and as construction professionals. Right across the board, right through Bechtel and each of the firms involved here, and it goes right down to the workers on the site. Mike and I walked there. You know, there is a considerable amount of angst among the workers that they are being associated with a project that is being criticized roundly.

And they would like to do everything that they can to work themselves out of it. And I would just like to see the same commit-

ment from the firms involved here from the top to the bottom, because I think it is solvable. But it requires a firm and honest and genuine commitment to getting to that end.

And, you know, I haven't seen it yet. It looks like this thing is barreling toward litigation, and I don't think that is the best for anyone. And by God, if we get into that, then we will all be involved. We will all be involved, and there will be no easy way out. It will be take no prisoners from our standpoint in the Congress. And there will be ramifications, as Chairman Davis said, for those who seek to acquire other Federal contracts.

We are not playing Tiddly Winks here. This is serious business. Our obligation is to protect the people that we represent, and your obligation is to fulfill your part of the bargain. And we can get there if everyone is fully committed.

I will turn it over to Congressman Capuano.

Mr. CAPUANO. Thanks, Mr. Chairman. I guess I only have one or two more questions and then just a closing statement from me.

Mr. MacDonald, I apologize for not asking this before, but I want to make sure I get the question asked to you. In your written testimony, you say that the contract prohibited the agency from making any unauthorized statements to the public. Are you still under the same contract to not make any unauthorized statements to the public?

Mr. MACDONALD. We are, sir, yes.

Mr. CAPUANO. But I presume that since you are under oath today, the oath that you took at the beginning of this hearing supersedes any contractual agreement.

Mr. MACDONALD. Yes, it most certainly does.

Mr. CAPUANO. OK.

Mr. MACDONALD. I would also comment that the chairman has authorized——

Mr. CAPUANO. Fair enough.

Mr. MACDONALD [continuing]. Us to make statements.

Mr. CAPUANO. The reason I ask is because I want to make sure I ask the question. Though I am hoping—I think I know the answer, I want to hear it. Based on your knowledge today, is there anything that the general public or that myself or Mr. Lynch doesn't know relative to cost, safety, or security, of major impact—major import, that we should know?

Is Mr. Amorello telling us the truth, unlike some of his—not his predecessors but the predecessors of the other agency, predecessors who ran the Big Dig? Are we being told the truth today relative to cost, relative to safety and security of the tunnel? Again, subject to all of the litigation. I am not asking you to point fingers. That will be all worked out. But to the best of your knowledge, are we currently being told the truth about this project?

Mr. MACDONALD. To the best of my knowledge, I think your statements are absolutely right. I think you are being told everything there is to know about the project. Mr. Amorello is—Chairman Amorello is running one of the most transparent agencies in the country right now. You know, everything is on a real-time basis. From the time we find a defect in the tunnel to when it is disclosed to the public is within days. So I think it is an extraordinarily open administration.

Mr. CAPUANO. Thank you. That is the answer I was hoping to hear, and I am glad I got it.

I just want to close by thanking you all for coming. We have been here close to, give or take, 4 hours now. First of all, thank you for staying, and thank you for being open and honest. And, you know, thank you for sticking with it.

Mr. Amorello, I know you have had some good days and some bad days on this project. And my hope is that we have more good days coming than we have had in the past.

And, gentlemen, thank you all. Mr. Lynch, thank you for inviting me, and I appreciate the opportunity.

Mr. LYNCH. Thank you, Congressman. Just in closing, in a similar note, Mr. Amorello, I reviewed the chronology of this, and I know you came here in 2002 and that a lot of these problems were in full bloom before that point. So I suspect that they have laid more blame at your doorstep than you truly deserve, and I want to make that—as someone who has looked at this from day one to the present day, I just want to make that perfectly clear.

I just want to go back to my friends at Bechtel. Again, you understand the mission here and the desire here to find some solution, not to lay the blame and the costs at your doorstep, but to somehow get your involvement and your commitment to indemnifying the taxpayers, so that the costs are borne by the responsible parties. And I have no knowledge of the proportionate responsibility among the parties. I suspect it is widely spread.

Mr. MacDonald, are you committed to that process that would seek to make sure that the construction is completed according to the specifications and to the highest expectations of the people of the Commonwealth? And also, the Federal taxpayers that have contributed here. And are you willing to work with us on indemnifying the taxpayer from any unreasonable costs above what they should have expected?

Mr. MACDONALD. Congressman, we are committed to giving you the quality product that you deserve, and we will continue to strive toward that end. With respect to the commercial matters, at the closeout of this job, and some of the things that you have talked about are similar to some things that were asked by the Joint Transportation Committee of the legislature here back in December.

And we are committed on taking those ideas on board. We followed up with the co-chair, Chairman Wagner LeDoure. Their view at the time, having the AG—State attorney general in charge of the program, that was the appropriate process to sustain that dialog through. And so we are committed to sustaining that dialog through that process.

Mr. LYNCH. But I am looking to find something long term, some solution to put in place as this project winds down. You may be right, and the project may perform as advertised. However, there have been enough events during the course of this project, and enough problems that have come to light, that lead a prudent person to require some type of assurance.

Whether you call that a warranty or a—whether a policy can be put together, it is an insurable risk, in my estimation, given the timeframe for this project and what we know now and what we will

know especially after May 15 and DeLoitte & Touche comes in with their report, which may prompt another hearing, by the way.

But are you willing to look at that type of solution collectively with all of the other partes?

Mr. MACDONALD. Again, Mr. Congressman, the answer is we will look at that in the context of the overall resolution of these issues, and we think that the right place to do that is through the process with the State attorney general.

Mr. LYNCH. OK. All right. If that is your answer.

Do any of you have anything you would like to say in closing? I should probably offer you that opportunity.

Mr. AMORELLO. Congressman, the commitment on the Turnpike Authority to finish this project to the level that the public expects us to, it is delivering on the commitments that were made when it was initiated back in the mid-1980's in terms of improving traffic flow.

We have done the groundbreaking on the north end parks. We are seeing the greening of downtown Boston and improving transportation. So the project is living up to the expectations. These construction issues that we need to resolve, while we have the contractors in place, while Bechtel/Parsons are here, we will hold them accountable.

Your suggestion in terms of a warranty, I can assure you that the Turnpike Authority will work cooperatively with the attorney general, and items that perhaps we project out as additional costs that the Authority should not have expected to bear on itself as the owner and operator of this tunnel network perhaps could be added into discussions in terms of settlements, if it is possible with the responsible parties from the SDCs and from the joint venture.

This is an incredible achievement. This highway network, despite all of the negative press that has occurred here, it is an incredible achievement. The tunnel system under the city of Boston is a marvel that we will all take great pride in that we are a part of and helped to make it a reality.

These issues, these hurdles that we need to overcome, we will overcome them. I have the confidence in the gentleman to my left. I have the conference in the folks sitting behind me from the Turnpike Authority, particularly those of us in the public sector that want to do the right thing, assure the taxpayers and tollpayers that their money was wisely spent and that they weren't spent on any additional costs that—for leak repairs, or what have you.

But we will hold all our contractors accountable on our end in terms of claims and changes, and we will work cooperatively with the attorney general in its efforts at cost recovery, or continuing the efforts of cost recovery. But this is—it should never be forgotten by any of us in this Commonwealth—an incredible project that is going to make a world of difference for the future of Boston and New England.

It has had a great impact for the men and women in the building trades for 10 years while construction was going on, a rare opportunity of keeping a lot of people that were in a business, as you know, that was cyclical and depending on cycles. For much of the 1990's, this project kept the city of Boston and the region healthy economically, because of the spending that went into it.

And at the end of the day, we will have a first-rate tunnel network, a first-rate transportation system, first-rate parks on the top, all because of the investment that has been made by the national government, by the State government by the Turnpike Authority.

But we have an obligation to you, the Members of Congress, to Inspector Mead—I agreed with you earlier when Congressman Capuano said the one person he cares about is—if he is still behind me somewhere—the Inspector General for the Department of Transportation, but also our partners in Federal Highway.

Administrator Peters has been very supportive of this project and efforts, but she is also holding our feet to the fire to make sure that the panel replacement that comes in meets your expectation and their expectation for longevity, durability, constructability, and we will come up with a solution with, again, the folks behind me—John Christian, Clyde Baker from SDS—to assure the public that no cost was incurred.

And no cost is being—the cost of repair of this panel is not a factor for us. The Bechtel folks and the people from Modern Continental have stepped up to take responsibility, so we are not calculating in any dollar value to say, "This is the fix." It will be the best fix that works, with the least amount of risk, least amount of impact to our abutters, and something that is constructable and durable and will last as long as we expect these tunnels to last, and that is 75 years or greater.

Mr. LYNCH. Well, thank you. I appreciate that.

Gentleman.

Mr. MACDONALD. Yes, Mr. Congressman. This has been an extraordinarily long game for us, as your management consultant. We have been at this for 20 years. The controversies that we face today aren't the first controversies that we have responded to on this job. These aren't the first challenges that we have overcome on this job.

So we will continue to go forward. We will continue to do our best to complete this project as cost effectively and to a high standard to deliver the world-class project that you are entitled to. We will do that. The challenges today will be overcome.

We have also done that—and, again, as you get to the tail of these things, the cost recovery issues tend to take on a rather large dimension, and that is what has happened here, and it has happened over the past 3 years. It just didn't happen this year. It has been an ongoing stress for us, really, since the middle of 2001.

And I am so proud of our people that they have been able to stay focused on their job and working with the MTA and the Commonwealth of Massachusetts to get this job done. And we will continue to do that while we continue to constructively work through this dispute.

Thank you.

Mr. LYNCH. OK. Well, thank you. And I trust that you will work with Attorney General Reilly, then, maybe to pursue that indemnification of the taxpayers in some shape or form that is agreeable to you all?

Thank you, gentlemen. The hearing is adjourned.

[NOTE.—The slide presentation by Hon. Stephen Lynch entitled, "Digging up the Facts: Inspecting the Big Dig and the Performance

of Federal and State Government in Providing Oversight of Federal Funds," may be found in committee files.]

[Whereupon, at 5:55 p.m., the committee was adjourned.]