



New York City Department of Transportation

Janette Sadik-Khan, Commissioner

**JANETTE SADIK-KHAN
COMMISSIONER
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**HEARING BEFORE THE CITY COUNCIL
COMMITTEE ON TRANSPORTATION
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Good morning Chairman Liu and Members of the Transportation Committee. I am Janette Sadik-Khan, Commissioner of the New York City Department of Transportation (DOT) and with me here today is Henry Perahia, DOT's Chief Bridge Officer. Thank you for inviting us here today to this oversight hearing on bridge safety. In the wake of the tragic bridge failure that occurred in Minnesota last month, attention has focused on the condition of our bridges, and in New York, where bridges represent such an important component of our infrastructure, such scrutiny is appropriate and welcome.

My main point to you today is to assure you and the people of New York that the City's bridges are safe and in their best condition in generations. Our bridges are extremely well managed, they are being rebuilt and upgraded by experts and are subject to one of the strongest inspection systems in the United States. We have a very strong bridge capital investment program, which has turned overall City bridge conditions around and will continue to bring more bridges into good repair. City DOT has been an early adopter of high-tech bridge monitoring equipment and techniques, and DOT's Division of Bridges is now further enhancing its inspection capabilities with additional technology and expertise. Bridge conditions and bridge management in New York are a good news story, and I am pleased to be here to share it with you.

There are over 2,000 bridges here in the City of New York that serve a vital transportation role in linking all five boroughs together. DOT's Bridges Division, which is supervised by Deputy Commissioner Perahia, includes 809 DOT employees, who manage the City's capital bridge program and conduct bridge inspections, monitoring and



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maintenance. Our bridges include, among many others, the notable East River and Harlem River Bridges, the Belt Parkway Bridges, and pedestrian bridges and elevated roadways located City-wide. The rest of the 1,213 bridges found in the City fall under the responsibility of either State DOT, the MTA or the Port Authority.

As a densely populated City surrounded by water at all corners, we have an enormous reliance on these bridges. Many of these structures were built decades and even over a century ago, and so maintaining them has been a real challenge. Despite this, however, the City has done a tremendous job in making sure that they are properly maintained and safe. In fact, the condition of our bridges has consistently been improving through the years. To illustrate this let me point out the number of bridges rated “poor” has fallen by 92.5% from 40 in 1997 to 3 in 2006; and the number of bridges rated “fair” has fallen 14% from 530 in 1997 to 456 in 2006.

Clearly, while bridges rated “poor” and “fair” have fallen over this time period, bridges rated “good” and “very good” have increased. In 1997, 145 City bridges were rated “good” and by 2006 this number increased 45% to 210 bridges with this rating. The percentage increase in bridges rated “very good” is even more dramatic. In 1997, 55 City bridges were rated “very good” and by 2006 this number increased to 118 bridges – a 115% increase.

As I noted earlier, today our bridges are in the best condition they have been in generations and these impressive percentages can be attributed to the City's realization years ago that substantial investment in our bridges was needed. Many of us recall the troubles the City experienced with its bridges in the 70's and '80's with the collapse of the West Side highway and the closing of the Williamsburg Bridge. Since this time, we have made tremendous strides in maintaining and investing in our bridge infrastructure. Since 2000, the City has invested about \$3 billion in bridge capital reconstruction projects which has included a number of projects to rehabilitate the East River Bridges, namely the



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Brooklyn, Manhattan, Williamsburg and Queensboro Bridges. Over the last few years DOT has also completely replaced other major bridges, including the Third Avenue, Macombs Dam and 145th Street spans over the Harlem River.

Looking forward over the next two years we will be investing more than \$2 billion in additional capital reconstruction projects on our bridges, including the Willis Avenue Bridge, the Brooklyn Bridge ramps and painting, the Manhattan Bridge, the Belt Parkway bridges, the ramps at the St. George Ferry Terminal and the 153rd Street Bridge in the Bronx, a new vehicular cable-stayed bridge and the first of its kind in New York State. Over the next ten years, DOT has \$5.8 billion in the Ten Year Capital Strategy plan to spend on bridge reconstruction projects, including \$309 million provided as part of PlaNYC 2030 for bridge infrastructure state of good repair.

To get important construction projects completed more quickly, we have used innovative procurement techniques such as contracts with incentive and disincentive payments. To encourage efficient work, the contractor receives a monetary incentive for each day the project is completed ahead of schedule. Conversely, if delays are attributable to the contractor, the contractor makes a payment to the City for every day of delay. This has been an effective tool to ensure the timely -- and at times early -- completion of challenging projects on bridges with high traffic volumes. Incentives/disincentives are particularly useful where we have multiple crossings, like the East and Harlem Rivers, where the early completion of one bridge permits an early start on an adjacent bridge. 90 percent of the projects utilizing this strategy have been completed ahead of schedule and none to date have been late as a result of conditions within the contractors' control.

Reconstructing and replacing bridges are one part of our efforts to protect this critical infrastructure. Equally important is ensuring inspections, monitoring and maintenance. Bridge inspections determine the condition rating of every bridge and its components and provide us with important information on where we should be focusing our



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monitoring. Our in-house Bridge Inspection and Bridge Management Unit inspects all pedestrian bridges and manages our bridge data. The City's vehicular bridges are inspected by State DOT who also inspects all of the State's vehicular bridges every two years as required by Federal law. Our in-house team conducts follow-up inspections and monitoring and we use the same rating criteria as the State.

It is noteworthy to point out that New York State's criteria are more rigorous than Federal requirements and inspections done in other States in that they are more thorough and the inspectors more qualified. State DOT conducts span-by-span inspection, evaluation and rating for many different bridge elements, while the Federal inspection system, which is followed by most states, only requires the reporting of ratings for the entire bridge and only for a few generalized elements such as superstructure, substructure and deck. Additionally, the State requires bridge inspection Team Leaders to be licensed professional engineers with at least three years of bridge experience, while the Federal government and most states, do not have this requirement. Lastly, all City bridge inspectors complete a special course given by State DOT.

As I noted earlier, the City has three bridges that were rated "poor" after their last inspections. A poor rating means that there are components of the bridge that must be rehabilitated; it does not mean that the bridge is unsafe. If a bridge was deemed unsafe, let me say in no uncertain terms -- it would be closed. I think it is also worth mentioning that the term "structural deficiency" that has been widely used in relation to the Minnesota collapse is an engineering term-of-art used by the Federal government to indicate a defect requiring corrective action. According to the FHWA, "'structurally deficient' means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is 'deficient' does not imply that it is likely to collapse or that it is unsafe. It means they must be monitored, inspected, and maintained." Because we use the New York State rating system, we do not use that term and instead use the terms "very good", "good", "fair" and "poor". As



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with the Federal term, the terms “fair” and “poor” describe the condition of bridge elements and whether they are functioning as designed. Although these elements are not considered hazardous, the ratings are used to determine whether the elements require repair or rehabilitation. Again, any bridge deemed unsafe would be shut to the public.

The three City bridges that are rated “poor” include the Willow Lake Bridge in Flushing Corona Park, which is in a remote location, was damaged by fire and is closed. The second is a pedestrian bridge at 78th Street over the FDR Drive. The columns on this bridge have been shored and there is shielding under the concrete to protect against spalling. As a result, the bridge remains safe until its reconstruction which is expected to begin in about a year.

The third bridge is the Brooklyn Bridge. It was given a “poor” rating during its last inspection because there are certain elements of the bridge that need to be rehabilitated. While the main spans are in good condition, the decks on both the Manhattan and Brooklyn ramps to the bridge are aging and will be replaced during a rehabilitation project beginning in 2010. It should be noted that of the 75 spans of the bridge, only 6 spans contribute to the low condition rating. None of them are among the three suspended spans (i.e. between the anchorages).

Nevertheless, we have instituted a new program whereby poorly rated components of poor bridges are inspected every three months. For example, we recently re-inspected the poorly rated components on the Brooklyn Bridge to assure that the bridge remains safe. We are also proposing an enhancement of bridge inspections so that we can monitor critical components on all bridges with a condition rating of 3.5 or below more frequently. We also propose to contract for underwater inspection service and we will add remote monitoring equipment on bridges as required.

In addition, the City has been at the forefront of utilizing new technology to assist us in the monitoring of our bridges. For example, utilizing strain gauges to monitor the



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orthotropic deck of the Williamsburg Bridge and crack propagation on the Manhattan and Brooklyn Bridges and X-ray diffraction to test stresses in critical steel members on the East River bridges. We are also using fiber optic sensors to monitor the forces in suspenders on the Manhattan Bridge and stresses in girders on the Paerdegat Bridges. Ultrasonic testing is another technology that we are applying on the eyebars of the Queensboro Bridge to examine the condition of the critical details in the top chord of the truss. Lastly, a new package of technologies will be tested for effectiveness on monitoring the condition of the high-strength wires in the Manhattan Bridge cables.

DOT's Bridges Division is also responsible for bridge preventive maintenance which serves to increase and preserve the life of our investments -- and safeguards the integrity of our bridges now so that we don't run into any problems later. Maintenance work includes everything from lubricating bridge joints and bearings, to spot and salt splash painting, to washing the East River Bridges after the winter to remove salt, to cleaning drains and litter removal so that water does not collect and result in bridge rust.

In fiscal year 2006, DOT spent nearly \$67 million on bridge inspection and maintenance and since 1997, over \$630 million in annual bridge maintenance. This includes preventive maintenance funds obtained from the Federal government for the East River Bridges through its Highway Bridge Replacement and Rehabilitation Program (HBRR). The City was among the first to take advantage and receive funds under this program when it was established in 1997 to help cities and states maintain their investments in bridges. Previously, Federal funds were only available for capital work. Additionally, we have applied for and expect to receive funds under this program to assist in the preventative maintenance of the City's 25 movable bridges along the Harlem River and various other waterways throughout the City.

I cannot overstate the importance of the Federal funding for our bridge program. In fact, about two-thirds of the Federal transportation funding that the City receives from the



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Federal Highway Administration (FHWA) is directed towards our bridge program. We obtain approximately \$130 million annually through the Federal HBRR Program for both capital and maintenance expenses for the bridge program.

Of the over \$3 billion spent for capital work on the four East River Bridges, \$1.2 billion was provided by the Federal government. Furthermore, the Federal government contributed \$222 million of the \$620 million that the City needed to rehabilitate five Harlem River Bridges (Madison Avenue, Third Avenue Bridge, Macombs Dam Bridge, University Heights Bridge and 145th Street Bridge). In August 2007, DOT registered a \$612 million construction contract for the Willis Avenue Bridge of which \$282 million was provided by FHWA.

Over the next few years, DOT plans to rehabilitate seven Belt Parkway Projects for an estimated cost of over \$620 million of which \$400 million is Federally funded. Two additional construction contracts for the completion of work on the Brooklyn Bridge and Manhattan Bridge is expected to cost over \$435 million of which \$224 million is projected to be funded by the FHWA.

We will also be looking to Washington for not only additional funding but also policy changes as debate gets underway for the fourth reiteration of ISTEA in 2009. For example, we will be lobbying to make more funds available for bridge maintenance and for the elimination of the 10% cap, whereby currently no State can receive more than 10% of the total HBRR apportionment in any one Federal fiscal year. Additionally, with the expected implementation of congestion pricing, we anticipate receiving even more funding to ensure a good state of repair, including over \$300 million for infrastructure.

The City has done a great job investing in its bridges, using innovative procurement techniques, new state-of-the art technology to monitor our bridges and making use of available Federal funding and the numbers speak for themselves – our bridges are safe and are consistently improving. Can we do more – absolutely – with additional resources from



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Washington we can continue to improve upon our efforts to ensure a state of good repair of this critical infrastructure.

Again, thank you for the opportunity to be here today, at this time we would be happy to answer any questions you may have.