New York State Bridge Task Force
Final Report to the Governor
November 30, 2007

Completion of Bridge Review

I. INTRODUCTION

This report is a follow-up to the Task Force report issued on August 31, 2007. Its purpose is to provide additional information on findings from detailed inspections performed on the 49 deck truss highway bridges in New York State and details on capital requirements and funding needs for highway bridges in the State.

II. SUMMARY

The detailed inspections of all 49 deck truss bridges in New York State have been completed. The results of these inspections have verified that the deck truss bridges in New York State are safe for travel by the public and the bridge inspection protocols used in New York are effective. The results also confirm that these bridges are meeting or exceeding the length of service for which they were designed.

The New York State Department of Transportation (NYSDOT), in cooperation with the State Office of Homeland Security (OHS), has developed protocols and guidelines for disclosing records on security sensitive bridges in response to public requests for bridge inspection reports and other data. NYSDOT is providing these directions to all bridge owners in New York State.

Our transportation system is under stress from age, heavy use, and lack of adequate investment. The system is safe, but the condition of many parts of our infrastructure is worsening. Unfortunately, we cannot reverse these trends in a year or two; it will take a dedicated, sustained, long-term effort.

NYSDOT is undertaking a comprehensive review of its highway and bridge capital requirements and funding needs pursuant to recent state congestion pricing legislation, Chapter 384 of the Laws of 2007. This assessment, in conjunction with Executive Budget development, will guide future funding decisions.

Looking forward, NYSDOT plans to pursue a three-part strategy to improve the condition of the more than 17,000 state and local highway bridges in the State. This strategy includes: (1) placing greater emphasis on investments in preventive and corrective maintenance; (2) pursuing a strong Federal partnership under which the Federal government shoulders an appropriate share of the solution for bridges; and (3) incorporating a comprehensive bridge improvement program into the next State transportation capital plan.

The proposed bridge improvement strategy employs the Department's new approach that emphasizes maintenance to keep bridges from falling into the deficient category and seeks to assure the State receives the full life out of the materials used to build its bridges and reduces the overall life-cycle cost of these assets.

III. STATUS OF DECK TRUSS HIGHWAY BRIDGE INSPECTIONS

All 49 deck truss highway bridges in New York State were inspected following the Governor's August 1, 2007 directive. Inspection findings confirm that all of these bridges are safe for use by the traveling public. Please note that the Newburgh-Beacon twin-span bridge is considered a single bridge for the purposes of this review.

Inspections were performed in two stages:

1. Visual inspections of all deck truss spans were performed, including the deck elements, primary and secondary steel members, bearings, joints and supporting substructures. The superstructure and substructure members also were observed for condition and alignment; plumbness (where applicable); deterioration and/or loss of section; and joint and bearing positioning. All visual inspections were completed by August 30, 2007 with findings reported in the August 31, 2007 Task Force report.

2. Detailed inspections of all highway deck truss bridges that had not already received their regularly scheduled inspection in 2007 were performed, including hands-on inspections of the non-redundant deck truss structural components to detect cracks or loss of section induced by fatigue, distortion or corrosion. All detailed inspections were completed by October 17, 2007.

Detailed Inspection Findings

Detailed inspections of the deck truss bridges did not reveal any major problems. Several minor issues were found that are common for these inspections and will be addressed appropriately by the bridge owners. Some deficiencies were identified and documented through our "flagging" procedure, which will require a timely response in order to address the defects encountered. Approximately 5 percent of all bridge inspections result in a flag condition being discovered. Deck trusses are older and more complicated structures and their inspections typically result in more flags than other bridge types. Approximately 39 percent of the deck truss bridges had structural flag conditions. Additionally, some of the bridges received multiple flags of different types. Table 1 includes details on the number and type of flags identified as a result of these inspections.

Table 1. Number and Type of Flag Conditions Found

Type of Flag	Number of Flags	Number of Bridges
No Flag	0	29
Red[1]	1	1
Yellow[2]	53	18
Safety	29	11

[1]The red flag condition has been addressed and removed for this bridge.
[2]Three yellow flag conditions have been addressed and removed for two of these bridges.

"Red" flags are issued for deficiencies involving critical structural components that require prompt evaluation and corrective measures to resolve the flag condition. As indicated in the August 31, 2007 Task Force report, one red flag was issued for the Route 9W Bridge over the Popolopen Creek in Orange County due to a crack in one of the tiedown eyebars at the abutment. A structural analysis confirmed there was sufficient remaining load capacity to allow the bridge to remain open to traffic until a repair could be made. A repair design was developed and implemented by NYSDOT forces, resulting in the red flag condition being removed.

"Yellow" flags identify less critical conditions that are likely to affect the long-term durability of a bridge and may progress to a more serious condition if left unattended for extended periods. If a yellow flag condition is not resolved, the bridge will at a minimum be put on an annual (interim) inspection cycle. All bridges in New York State are inspected at least every two years. Typical yellow flag conditions identified during the detailed inspections were:

- Minor cracking of load carrying members.
- Section-loss of load carrying members due to corrosion and rusting.
- Cracking and/or spalling of concrete deck and substructure elements.
- Corroded and/or frozen bearings.
- Corroded, broken and/or missing individual bolts at structural connections that include a system of multiple bolts.

The yellow flag conditions identified from these detailed inspections have been evaluated and plans of action have been developed to address the problems. Some of these conditions will require further analysis to determine their impact on the load-carrying capacity of the bridge. If capacity is determined to be inadequate, the bridge will either be repaired or be posted with an appropriate load restriction until repairs can be made. Three of the yellow flag conditions have been addressed, resulting in the flags being removed. Additionally, two of these bridges are scheduled for replacement with lettings in 2008 and 2009. A rehabilitation project also has been awarded that will address the yellow flag conditions for another bridge. The remaining yellow flag conditions on 13

bridges will be closely monitored through the use of interim inspections until repairs can be made.

"Safety" flags address non-structural safety related issues noticed by inspectors during the inspections. The most common reasons for these include conditions such as loose concrete, guide rail damage, and exposed utility wires. These conditions were reported to the bridge owners for appropriate action.

IV. SENSITIVITY TO SECURITY CONCERNS

After the Minneapolis bridge collapse, the Department and many local agencies received numerous inquiries on bridge conditions and FOIL requests for bridge inspection reports.

In August, the Department created a Web site providing condition and related information on all 17,378 highway bridges in New York State. The address of this Web site is: www.nysdot.gov/bridgedata. To date, the main page has received more than 14,000 hits.

Recognizing that some bridges in New York State may be security sensitive, and that it may not be appropriate to disclose records containing structural vulnerability information about such bridges, NYSDOT, in cooperation with OHS, has developed protocols for responding to FOIL and informal requests for inspection reports and bridge plans.

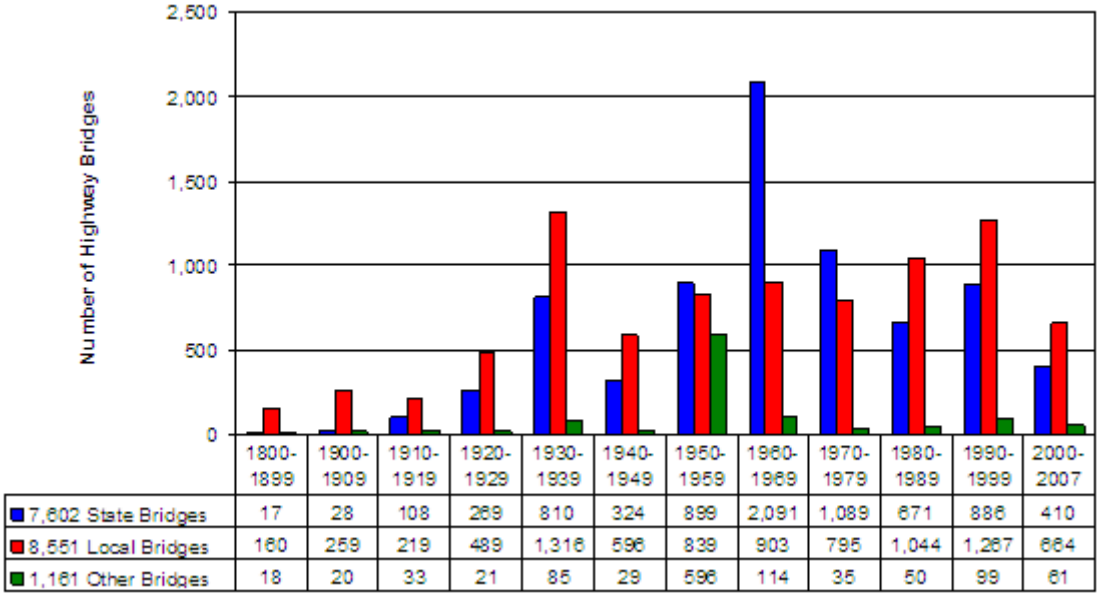
NYSDOT, in consultation with OHS, has also developed guidelines for the disclosure of records for security sensitive bridges. NYSDOT is communicating these protocols and guidelines to all bridge owners in New York State. Essentially, other than records containing structural vulnerability information for bridges identified as security sensitive, all factual information in records on New York State's bridges may be released to the public.

V. NYSDOT BRIDGE IMPROVEMENT STRATEGIES

State legislation passed earlier this year creating the New York City Traffic Congestion Mitigation Commission requires NYSDOT to submit a new capital program to the Governor and Legislature by March 31, 2008 for the five-year period from April 1, 2009 to March 31, 2014. In preparation, NYSDOT undertook a comprehensive assessment of capital requirements and funding needs for the transportation system across the State, including highways and bridges.

In 2006, the Interstate Highway System reached the 50-year milestone; many bridges are nearing the end of their useful life and will soon require either major rehabilitation or replacement. New York State has more than 17,000 highway bridges; more than 6,400 of them are 50 years old or older (see Figure 1). Additionally, there is a large population of bridges that will turn 50 years old within the next 10 years.

Figure 1. Number of NYS Highway Bridges by Year Built

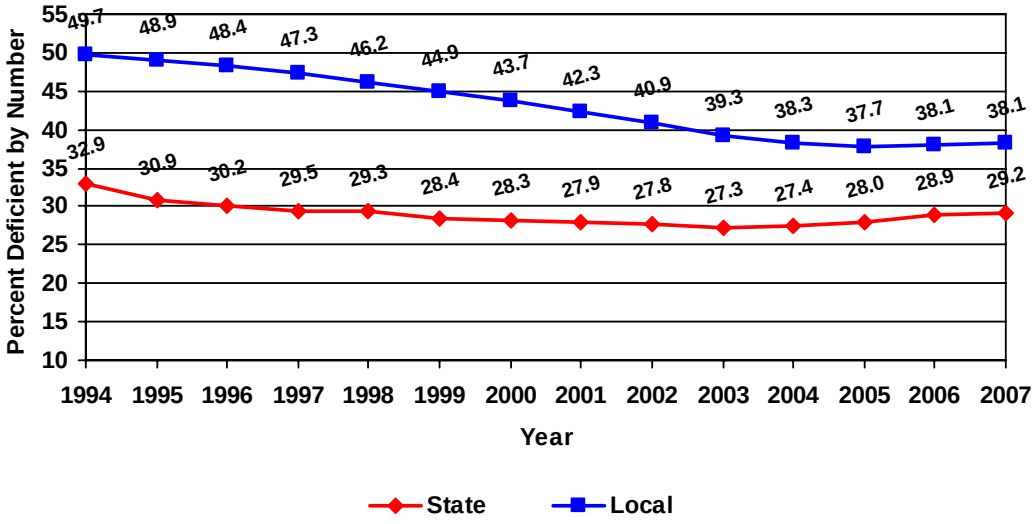


	1800-1899	1900-1909	1910-1919	1920-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2007
7,602 State Bridges	17	28	108	269	810	324	899	2,091	1,089	671	886	410
8,551 Local Bridges	160	259	219	489	1,316	596	839	903	795	1,044	1,267	664
1,161 Other Bridges	18	20	33	21	85	29	596	114	35	50	99	61

Bridge Condition Trends

Bridge performance is measured based upon the percentage of bridges in good and excellent condition. During the 1990s, the number of state and local highway bridges in good and excellent condition was improving. The recent trend is a decline in overall bridge conditions (see Figure 2). In addition, nearly 3,000 state and local highway bridges are in the marginally good category and are predicted to move to the deficient category (i.e., fair or poor condition) within 10 years, absent additional investment.

Figure 2. State and Local Highway Bridge Condition Trends



Bridge Improvement Strategies

Looking forward, NYSDOT plans to pursue a three-part strategy to improve the condition of the more than 17,000 state and local bridges.

- First, NYSDOT will place greater emphasis on investments in preventive and corrective maintenance to keep good and marginal bridges from slipping into the deficient category. Numerous studies have established that it is far less costly to manage infrastructure assets with regular preventive and corrective maintenance, rather than to allow them to deteriorate over time and require major rehabilitation or replacement as a result.

- Secondly, NYSDOT will pursue a strong Federal partnership under which the Federal government shoulders an appropriate financial share of the solution for bridges. The dilemma facing our transportation infrastructure is not limited to New York State. It is being replicated across the country. This is a national issue and requires a strong Federal role in the solution. In particular, the Federal government created the Interstate Highway System and should be responsible for its reconstruction as it reaches the end of its useful life. A strong Federal role in funding the nation's bridge needs should continue as states across the country struggle with bridge deficiencies.

  NYSDOT will pursue additional Federal capital funds to address the backlog of bridges classified as deficient. Congress is debating a 2008 appropriations bill that includes a significant boost for bridge capital funding which could yield as much as $1 billion nationally and $100 million for New York State. If this program is enacted, it would fund capital projects that would play a pivotal role in improving bridge conditions in New York State.

- Finally, NYSDOT will incorporate a comprehensive bridge improvement program in the next State transportation capital plan. A new and comprehensive plan for the State's transportation infrastructure will be developed by NYSDOT and submitted to the Governor and Legislature by March 31, 2008. This plan will address transportation capital needs for the five-year period beginning April 1, 2009. Within the context of the plan, NYSDOT will outline a set of long-term goals for our bridge conditions and will quantify investments necessary to achieve them, regardless of who owns the structures.

The proposed bridge improvement strategy will employ the Department's new approach of emphasizing maintenance in order to keep bridges from falling into the deficient category. An early focus will be to build an organizational capacity to perform the necessary maintenance and provide resources for it, such as necessary equipment. This strategy will help overcome the deterioration of bridges as they age and assure that the State gets the full life out of the materials used in building these structures.

The bridge strategy will also include the major reconstruction or replacement of critically deficient bridges. It will continue to focus on bridges that need corrective work, but are not so deteriorated that they need major reconstruction. Addressing bridge preventive maintenance before these facilities need more extensive rehabilitation will reduce the

overall life-cycle cost of the structures. An example of this strategy is the repair recently made to the Patroon Island Bridge carrying I-90 across the Hudson River and connecting Albany and Rensselaer counties. An innovative repair technique was used to address cracking in the floor beams, which should extend the service life of these elements by more than 20 years. This will give NYSDOT significantly more time to evaluate the needs of the entire I-90/I-787 interchange complex and make cost-effective decisions based upon this comprehensive need, rather than the Patroon Island Bridge alone.

New York State Deck Truss Highway Bridge Inventory

Region	County	BIN	Bridge Name	Completion Date for Detailed Inspection Field Work	Flagging Status	Flag Description	NYSDOT Average Condition Rating	Owner
1	Albany	1092839	I-90 Patroon Island Bridge	6-Oct-07	3 Yellow, 3 Safety	Yellow: retrofitted cracks, cracked FB welds, cracked stringer clip angles	4.36	New York State DOT
1	Albany	5513549	Thruway over the Normanskill	13-Oct-07	None	N/A	5.04	New York State Thruway Authority
1	Essex	5521180	Crown Point Bridge	12-Sep-07	1 Yellow	Yellow: concrete deterioration at pier bearing	3.76	New York State DOT
1	Greene	5017820	Rt 23 over CSX	24-May-07	None	N/A	4.53	New York State Bridge Authority
1	Greene	5513199	Thruway over Cauterskill Road	18-Sep-07	None	N/A	5.37	New York State Thruway Authority
1	Greene	5513219	Thruway over Catskill Creek	5-Oct-07	None	N/A	5.38	New York State Thruway Authority
1	Rensselaer	1004310	Rt 7 over Hoosic River	9-Aug-07	None	N/A	4.48	New York State DOT
1	Rensselaer	1016990	Rt 22 over Hoosic River	21-Aug-07	None	N/A	5.05	New York State DOT
1	Rensselaer	1024720	Rt 40 over Hoosic River	22-Aug-07	None	N/A	4.29	New York State DOT
1	Saratoga	1006730	Rt 9N over Hudson River	16-Aug-07	1 Yellow, 1 Safety	Yellow: upper chord deterioration (pack rust and 2 broken bolts)	3.92	New York State DOT
1	Saratoga	3304190	Batchellerville Bridge	30-Aug-07	1 Safety	Safety: loose light pole	3.56	County
1	Warren	1053660	Rt 28N over Hudson River	15-Aug-07	None	N/A	4.40	New York State DOT
1	Warren	3305530	Bridge St. over Hudson River	14-Aug-07	None	N/A	4.61	County
3	Tompkins	2210620	Stewart Ave over Fall Creek	9-Aug-07	None	N/A	5.36	City
4	Monroe	1052239	Rt 104 over Irondequoit Bay	22-Aug-07	1 Yellow, 1 Safety	Yellow: crack in pier stem	4.94	New York State DOT
4	Monroe	2211300	Smith Street over Genesee River	13-Sep-07	6 Yellow, 5 Safety	Yellow: corroded bearing, stringers, vertical & brackets, missing bolts	3.64	City
5	Cattaraugus	1041590	Rt 219 over Cattaraugus Creek	15-Aug-07	1 Yellow	Yellow: frozen expansion bearing	4.00	New York State DOT
5	Erie	3362260	Ward Drive over Big Gulf Creek	23-Aug-07	None	N/A	4.38	County
5	Erie	5043981	I-190 over Niagara River	17-Oct-07	None	N/A	3.91	New York State Thruway Authority
5	Erie	5043982	I-190 over Niagara River	10-Oct-07	1 Yellow	Yellow: spalling in bottom of deck	3.84	New York State Thruway Authority
5	Erie	5045751	I-190 over Moses Parkway	17-Sep-07	1 Yellow, 1 Safety	Yellow: cracks in stringer web copes (3 locations)	3.78	New York State Thruway Authority
5	Erie	5045752	I-190 over Moses Parkway	12-Oct-07	None	N/A	3.98	New York State Thruway Authority
7	St. Lawrence	3341140	CR 49 over East Branch of the St Regis River	18-Jun-07	None	N/A	4.66	County
7	St. Lawrence	5523230	Ogdensburg International Bridge over the St Lawrence	28-Sep-07	None	N/A	4.29	Ogdensburg Bridge & Port Authority
8	Columbia	1006460	Rt 9G over the Roeliff Jansen Kill	14-Aug-07	None	N/A	4.36	New York State DOT
8	Orange	1003130	Rt 6 over the Wallkill	30-May-07	None	N/A	5.00	New York State DOT
8	Orange	1007150	Rt 9W over Popolopen Creek	15-Aug-07	None	N/A	4.61	New York State DOT
8	Orange	1035340	Rt 97 over Mongaup River	8-Aug-07	None	N/A	5.25	New York State DOT
8	Orange	3344290	Creamery Rd over Woodbury Creek	14-Aug-07	None	N/A	3.69	County
8	Orange	5060381	Newburgh-Beacon Bridge (I-84 over Hudson)	24-May-07	None	N/A	5.01	New York State Bridge Authority
8	Orange	5060382	Newburgh-Beacon Bridge (I-84 over Hudson)	24-May-07	None	N/A	4.73	New York State Bridge Authority
8	Rockland	1007140	Rt 9W over Cedar Pond Brook	7-Aug-07	3 Yellow	Yellow: corrosion of floorbeam, lacing bars & gusset plate	4.13	New York State DOT
8	Rockland	1027660	Rt 59 over Pascack Creek	9-Aug-07	None	N/A	4.85	New York State DOT
8	Rockland	5503400	Bear Mountain Bridge	10-May-07	None	N/A	4.76	New York State Bridge Authority
8	Rockland	5516340	Tappan Zee Bridge (I-87)	3-Oct-07	1 Yellow	Yellow: concrete spall in pedestal	2.96	New York State Thruway Authority
8	Ulster	5025530	Mid Hudson Bridge	27-Apr-07	None	N/A	4.81	New York State Bridge Authority
8	Ulster	5040010	Kingston-Rhinecliff Bridge	1-Jun-07	None	N/A	5.49	New York State Bridge Authority
8	Westchester	2265110	South Tenth Ave over Metro-North RR NH Line	8-Aug-07	1 Safety	Safety: exposed wires	4.25	MTA Metro-North Railroad
8	Westchester	5502200	Taconic Parkway over Croton Dam Road	27-Aug-07	1 Yellow	Yellow: section loss at end of stringers	5.36	New York State DOT
8	Westchester	7712650	Beekman Ave over Metro-North RR HU Line	27-Jun-07	None	N/A	4.78	MTA Metro-North Railroad
9	Sullivan	1013799	Rt 17 over Edwards Island Road	16-Aug-07	5 Yellow, 4 Safety	Yellow: small crack at cope, cracked tack welds, cracked bracket welds	3.91	New York State DOT
9	Tioga	1060150	Rt 96 over the Susquehanna River	17-Aug-07	None	N/A	6.61	New York State DOT
11	Kings	1075699	Kosciuszko Bridge	28-Sep-07	20 Yellow, 8 Safety	Yellow: section loss, corrosion cracks, cracked welds	3.71	New York State DOT
11	New York	1240090	Macomb Dam Bridge	22-Aug-07	None	N/A	4.17	New York State DOT
11	New York	2240019	Brooklyn Bridge	27-Sep-07	2 Yellow, 3 Safety	Yellow: floorbeam & stringer section loss	2.92	City
11	New York	2240028	Manhattan Bridge	30-Sep-07	1 Yellow	Yellow: deterioration at panel point	4.36	City
11	New York	2240048	Queensboro Bridge	27-Aug-07	None	N/A	4.43	City
11	New York	2240089	145th St over Harlem River	22-Aug-07	None	N/A	3.08	City
11	New York	2240120	University Heights Bridge	21-Aug-07	None	N/A	5.53	City
11	Queens	5521240	Marine Parkway over Rockaway Inlet	5-Jul-07	2 Yellow, 1 Safety	Yellow: diagonal brace connection plate cracked, clip angle cracked	4.70	MTA Bridges & Tunnels

Bridge Owner
- NYSDOT
- Authority
- Local
- Other

11/27/2007