

NEW YORK STATE BRIDGE AUTHORITY
TRAFFIC CONSULTANT TRAFFIC AND REVENUE FORECAST

2011-2016

Stantec has prepared a Traffic and Revenue Forecast for New York State Bridge Authority Bridges, dated August 16, 2011, which provides a forecast of revenue and expenses for the period 2011-2016. The report includes:

1. Information on future authority operations, debt service and capital construction, together with estimated receipts and expenditures for the next five fiscal years without reference to the proposed toll increase.
2. Projections and estimates as to the effect which the proposed toll increase will have on the future use of the facilities, and an estimate of the revenues which will accrue to the Authority during the next five fiscal years as a result of the proposed toll increase.

Although the report projects the need for another toll increase in 2018, the Authority has no present plans to implement any toll increase beyond the one proposed for 2012. Projections in the Stantec report beyond five years are for the Authority's planning purposes only.



Stantec

**Traffic and Revenue Forecast for
New York State Bridge Authority
Bridges**

**Prepared for
New York State Bridge Authority**

**By
Stantec Consulting Services Inc.**

August 16, 2011



Stantec Consulting Services Inc.
50 West 23rd Street 8th floor
New York NY 10010
Tel: (212) 366-5600
Fax: (212) 366-5629

Stantec

Traffic and Revenue Forecast for New York State Bridge Authority Bridges

TABLE OF CONTENTS

I.	HUDSON VALLEY TRANSPORTATION INFRASTRUCTURE.....	1
	A. New York State Bridge Authority Facilities.....	1
	B. Other Transportation and Related Developments	4
II.	MID-HUDSON VALLEY GROWTH	6
	A. Population	7
	B. Employment	7
III.	BRIDGE TRAFFIC, REVENUE AND EXPENSES	9
	A. Historical Traffic and Revenue 2000-2011.....	9
	B. 2010 Traffic and Revenue by Bridge and Vehicle Group	11
	C. 2010 Monthly Traffic	13
	D. Estimated 2011 – 2016 Traffic and Revenue – Existing Toll Schedule.....	14
	E. Operating Expenses	15
	F. Capital Needs Program and Cost	17
	G. Proposed Toll Schedule and Effects on Traffic and Revenue	18
	H. Estimated 2011 – 2016 Traffic and Revenue – Proposed Toll Schedule	21
	I. Summary of Assumptions.....	24
IV.	LIMITATIONS AND DISCLAIMERS	26



Stantec Consulting Services Inc.
50 West 23rd Street 8th floor
New York NY 10010
Tel: (212) 366-5600
Fax: (212) 366-5629

Stantec

August 16, 2011

New York State Bridge Authority
Administration Building
Mid-Hudson Bridge Plaza
Highland, NY 12528

Dear Members of the Authority:

The purpose of this report is to present forecasts of the New York State Bridge Authority (the "Authority") traffic and toll revenues, annually for the year period 2011 through 2016, under the existing toll schedule and under a proposed revised toll schedule in accordance with Stantec Consulting Services Inc.'s (Stantec) agreement with the Authority.

The report addresses the need for the toll increase by reason of the Authority's plan to replace the south span deck and paint the north span of the Newburgh-Beacon Bridge and other projects included in the Authority's Capital Improvement Program for the period 2011-2016. This report will be included in the Authority's filing with the State of New York regarding the proposed revised toll schedule presented herein and also in the documents regarding the Authority's proposed refinancing of its outstanding bonds.

The following sections of this report present a discussion of Hudson Valley transportation infrastructure, including the Authority's five bridges; population and employment growth in the Mid-Hudson Valley; historical and projected traffic, revenue and expenses for the bridges; the proposed revised toll schedule and its impacts on bridge traffic and revenues, and the Authority's Capital Program.

I. HUDSON VALLEY TRANSPORTATION INFRASTRUCTURE

The five bridges of the Authority are among thirteen vehicular crossings of the Hudson River and its estuaries between Albany and the Atlantic Ocean, including three bridges between Staten Island and New Jersey. Two of these crossings are operated by the New York State Thruway Authority (the "Thruway Authority"), and six are operated by the Port Authority of New York and New Jersey (the "Port Authority"). Between the Thruway bridge at Castleton-on-Hudson and the Outerbridge Crossing of the Arthur Kill between Staten Island and New Jersey, the thirteen crossings all charge tolls. There is no toll-free vehicular crossing of the Hudson River south of Albany.

A. New York State Bridge Authority Facilities

The law creating the Authority is found in the Bridge Authority Act, currently Sections 525 to 542 of the New York Public Authorities Law, and defines the Authority's mission as ***"to maintain and operate the safe vehicle crossings over the Hudson River entrusted to its jurisdiction for the economic and social benefit of the people of the State of New York."*** To fulfill this mission, the Authority's Capital Improvement Program has and will continue to provide for maintenance of the five bridges in good structural and functional condition.

The Authority operates five vehicular bridges across the Hudson River serving local, recreational and long distance trips. The bridges are:

- **Newburgh-Beacon Bridge** is designated as Route I-84 and has two spans connecting Newburgh in Orange County and Beacon in Dutchess County. The bridge carries the highest volume of traffic of the five vehicular bridges and it serves both long-distance and local trips;
- **Mid-Hudson Bridge** connects Poughkeepsie in Dutchess County and Highland in Ulster County. It carries the second highest volume of traffic and the greatest number of commuters;
- **Rip Van Winkle Bridge** connects Columbia and Greene counties and the communities of Hudson and Catskill;
- **Kingston-Rhinecliff Bridge** connects Dutchess and Ulster counties and the communities of Kingston and Rhinebeck/Red Hook; and
- **Bear Mountain Bridge** connects Orange and Putnam counties (and touches the far northern corners of Westchester and Rockland counties) connecting the communities of Highland Falls/Fort Montgomery and Cold Spring/Garrison.

In 2010, the Governor and state legislature charged the Authority with the responsibility of maintaining the structure of the Walkway Over the Hudson Bridge. The Authority acquired ownership of the bridge structure for maintenance purposes on December 21, 2010. The bridge carries a 1.3 mile pedestrian walkway via a former railroad bridge between the City of Poughkeepsie in Dutchess County and Highland in Ulster County. It has been designated as the Walkway Over the Hudson State Historic Park.

Tolls are collected on the five vehicular bridges in the eastbound direction only, as are all non-Authority bridges to the south of the Authority's jurisdiction. The existing toll schedule is presented in Table I.1.

**Table I.1
New York State Bridge Authority
Toll Schedule**

	Vehicle Class	Toll
1	2-axle, up to 4 tires	\$ 1.00
2	2-axle, more than 4 tires	\$ 2.50
Commercial Vehicles		
3	3-axle vehicles	\$ 4.50
4	4-axle vehicles	\$ 6.00
5	5-axle vehicles	\$ 7.50
6	6-axle vehicles	\$ 9.00
Other		
	Extra axle (with Class 1)	\$ 0.50
	Extra axle (with Classes 2 – 6)	\$ 1.50
	Commuter Discount (E-ZPass)	Note (A)
	Car Pool Discount	Note (B)
	Car Pool Book Price	\$ 9.00

Notes:

- (A) The Authority Commuter Discount Plan: Customers must be an E-ZPass account holder in good standing and be enrolled in the Authority Discount Plan to receive discount. A minimum of \$8.50 (17 trips) will be charged each month at \$0.50 for each Class 1 tag assigned to the Authority Discount Plan. Each additional trip will be charged at the \$0.50 discount rate. The Discount Plan can be suspended for up to four times per year for periods of one week or longer.
- (B) Car pool books of 30 tickets, each good for one eastbound passage of a privately registered Class 1 passenger vehicle, carrying three or more persons are sold for \$9.00. Good only Monday through Friday within 90 days of purchase. Car pool tickets can not be used in place of, or in combination with, any other classification of vehicle or extra axles.

Existing tolls on the Authority's bridges are the lowest when compared to tolls on other Hudson River crossings. Current toll rates for passenger cars at full fare and at commuter rates and for 5-axle trucks for the Authority bridges, the George Washington Bridge, the Tappan Zee Bridge and the Castleton-on-Hudson Bridge are shown in Table I.2.

**Table I.2
Present Tolls on Hudson River Bridges**

Authority / Facility	Round-Trip Tolls			Ratio: Passenger Car Commuter to Full Fare
	Passenger Car Full Fare	Passenger Car Commuter	5-Axle Trucks	
Authority Bridges	\$ 1.00	\$ 0.50	\$ 7.50	50 %
PANYNJ / George Washington	8.00	^(A) 8.00	^(B) 40.00	100
NYSTA / Tappan Zee	5.00	3.00	^(B) 32.75	60
NYSTA / Castleton-on-Hudson	^(C) 2.10	^(D) 1.59	9.20	76

- (A) No commuter discount - 3+ carpool discount and off-peak discounts available
 (B) Maximum toll - may be reduced during certain hours
 (C) Ticket system - US 9 exit (B1) to/from Selkirk exit (22)
 (D) Annual permit - assume 500 ticket system trips/year <30mi - \$88 plus \$0.62/trip bridge surcharge

Tolls on the Authority bridges, the George Washington Bridge and the Tappan Zee Bridge are collected one-way in the eastbound direction only; whereas the tolls on the Castleton-on-Hudson Bridge are collected, within the Thruway's ticket system, in both directions. Table I.2 shows the respective tolls in round-trip terms to place them on an equivalent basis. The Authority's tolls generally are, by far, considerably lower than the other Hudson River bridge tolls. The Authority's commuter toll to full-fare toll ratio (at 50 percent) is the lowest in its peer group; and, in terms of sheer magnitude, the Authority's commuter toll (at \$0.50) is at only 31 percent of the next lowest rate, Castleton-on-Hudson at \$1.59.

B. Other Transportation and Related Developments

From the New York State Department of Transportation Projects List, projects in development or slated for future development having an impact on the Authority bridges include:

- **Route 9/44/55 Interchange:** This project involves reconstructing a highway interchange. The Metropolitan Planning Organization (MPO) associated with this project is the Poughkeepsie-Dutchess County Transportation Council. The project is located at the eastern terminus of the Mid-Hudson Bridge and will provide for improved access to and egress from the Bridge. The current status of the project is "Future Development," with construction expected to begin in Summer 2018 and to be completed in Summer 2019.
- **I-84/Route 9D Interchange:** This project involves reconstructing a highway interchange to improve operations and safety and enhance access to the Dutchess County Intermodal Facility on Route 9D south of this interchange. This project will improve local access to the Newburgh-Beacon Bridge. The current status of the project is "In Development," with construction expected to begin in Summer 2018 and to be completed in Summer 2019.

- **Route 9W: I-84 - Carter Avenue Interim Work:** This project involves reconstruction of intersections. This project will improve access by local vehicles to the Newburgh-Beacon Bridge. The MPO associated with this project is the Orange County Transportation Council. The current status of the project is "Future Development," with construction expected to begin in Summer 2020 and to be completed in Winter 2021/2022.

In addition, studies are currently underway for the replacement of the Tappan Zee Bridge operated by the Thruway Authority. The three-mile long Tappan Zee Bridge, located 13 miles north of New York City, carries the Thruway (I-87 and I-287) over the Hudson River between Nyack in Rockland County and Tarrytown in Westchester County. This bridge is the nearest southern competitor to the five vehicular bridges operated by the Authority. The bridge is currently undergoing the final phase of a bridge deck replacement project, which is scheduled for completion in 2012. When completed, 96 percent of the bridge deck will have been replaced. In the longer term, three New York State agencies (New York State Department of Transportation, Thruway Authority and Metropolitan Transportation Authority/Metro-North Railroad) are conducting the Tappan Zee Bridge/I-287 Corridor Project. A draft Environmental Impact Statement (EIS) is expected to be released in the fall of 2011.

This draft EIS will present impacts of replacing the 55-year old bridge with a new 8-lane crossing that will also have separate lanes for bus rapid transit, capacity to add a commuter rail line and lanes for pedestrians and bicyclists. In addition, the EIS will outline plans for an east-west bus rapid transit infrastructure to be constructed along or near I-287 between Port Chester in Westchester County and Hillburn in Rockland County, as well as a commuter rail line linking Metro-North's Port Jervis Line at Hillburn and the Hudson Line south of Tarrytown.

Since all of the projects noted above are beyond the time period included in this study, the impacts on the Authority's bridges during and after construction will be beyond the horizon year of 2016 included in the forecasts.

II. MID-HUDSON VALLEY GROWTH

In addition to considering historical performance of traffic and revenue, Stantec took into consideration growth forecasts for population and employment in the six counties directly served by the five Hudson River bridges operated by the Authority. These counties are Columbia, Dutchess and Putnam counties on the east side of the Hudson River and Greene, Ulster and Orange counties on the west side of the river.

Westchester and Rockland counties, which are located on the east and west sides of the Hudson River, respectively, would be expected to contribute to recreational trips to the Bear Mountain Bridge that is operated by the Authority. These two counties, however, are primarily served by the Tappan Zee Bridge, which is operated by the Thruway Authority.

To estimate population and employment growth within the Mid-Hudson Valley, Stantec used forecasts from one of the national research and forecasting firms – IHS Global Insight. The IHS Global Insight forecasts were selected for the following reasons:

- The econometric approach is not the traditional model, which is constructed as proportions of the United States. In the IHS Global Insight system, each region is modeled individually and then linked into a national system. This approach enables a focus on internal growth dynamics and differential business cycle responses of each region.
- The metropolitan area forecasting by IHS Global Insight is based on behavioral econometric models.
- The IHS Global Insight forecasts provide detailed specifications and generate forecasts of demographic and macroeconomic concepts, including detailed forecasts of employment, population, households, and labor force measures.
- The base year employment forecasts come from the U.S. Department of Labor's Bureau of Labor Statistics, whose forecasts are found to better correlate with the journey to work employment data from the decennial census.
- The base year population forecasts come from the U.S. Census Bureau's periodic updates.
- If needed, the IHS Global Insight forecasts extend thirty years from 2010 to 2040.
- The regularly updated IHS Global Insight forecasts are available at the county level, which can be grouped for different regional geographic definitions, including the six counties comprising the Mid-Hudson Valley.

IHS Global Insight is a highly respected research and forecasting firm whose socio-econometric forecasts are widely used by government agencies, corporations and consulting firms nationwide. Stantec has successfully used their socio-economic forecasts for several toll facility assignments.

A. Population

As shown in Table II.1, the six counties in the Central Hudson Valley had a total population of 1.063 million persons in 2010.

Historical population by county for the period 2000 through 2010 are from the U.S. Census Bureau, and the projections for 2015 are from IHS Global Insight.

Between 2000 and 2010, population in the six counties grew at an average annual rate of 0.6 percent, adding about 64,000 persons to the region. IHS Global Insight forecasts indicate that this rate of growth would continue for the next five years, resulting in a 2015 population of 1.108 million.

At the county level, the highest average annual growth rate between 2000 and 2015 is expected to be in Orange County (+1.2%), while Columbia County is expected to lose population (-0.2%).

**Table II.1
Hudson Valley Population
Six Counties Directly Served by NYBA Hudson River Bridges
2000-2015**

Year	Greene	Ulster	Orange	Columbia	Dutchess	Putnam	Grand Total	Average Annual Growth Rate (AAGR)
Population (000)								
2000	48	178	344	63	282	96	1,011	
2005	49	181	370	63	292	99	1,054	0.9%
2010	49	182	373	63	297	100	1,063	0.2%
2015	49	183	410	61	303	101	1,108	0.8%
AAGR	0.2%	0.2%	1.2%	-0.2%	0.5%	0.3%	0.6%	

Sources: US Census 2000 to 2010. IHS Global Insight 2015 forecast

B. Employment

Historical employment for the period 2000 through 2010 and projections for 2010 through 2015 are shown in Table II.2. These estimates and projections are also from IHS Global Insight.

The number of jobs in the six counties increased between 2000 and 2005 at an average annual of rate of 0.9%, reaching 381,000 jobs in that year. Beginning in 2007, employment in the Mid-Hudson Valley began to decrease – due to downturn in the economy. As a result, the number of jobs in the valley fell to 371,000 in 2010, which is about 10,000 fewer jobs than in 2005 and only 7,000 more jobs than in 2000. The IHS Global Insight forecast indicates that employment between 2010 and 2015 is expected to grow at an average annual rate of 1.6 percent – reaching 402,000 jobs in 2015. This would represent 21,000 more jobs than in 2005 and 31,000 more jobs than in 2010.

At the county level, the rate of employment growth between 2000 and 2015 is expected to be greatest in the counties of Orange (+1.1%) and Putnam (+1.3%), while Columbia County is expected to have a reduction in jobs (-0.2%).

**Table II.2
Hudson Valley Employment
Six Counties Directly Served by NYSBA Hudson River Bridges
2000 to 2015**

Year	Greene	Ulster	Orange	Columbia	Dutchess	Putnam	Grand Total	Average Annual Growth Rate (AAGR)
Employment (000)								
2000	14	65	126	23	115	22	364	
2005	15	63	134	22	121	25	381	0.9%
2010	15	61	134	21	115	25	371	-0.5%
2015	15	65	148	22	124	27	402	1.6%
AAGR	0.5%	0.1%	1.1%	-0.2%	0.5%	1.3%	0.7%	

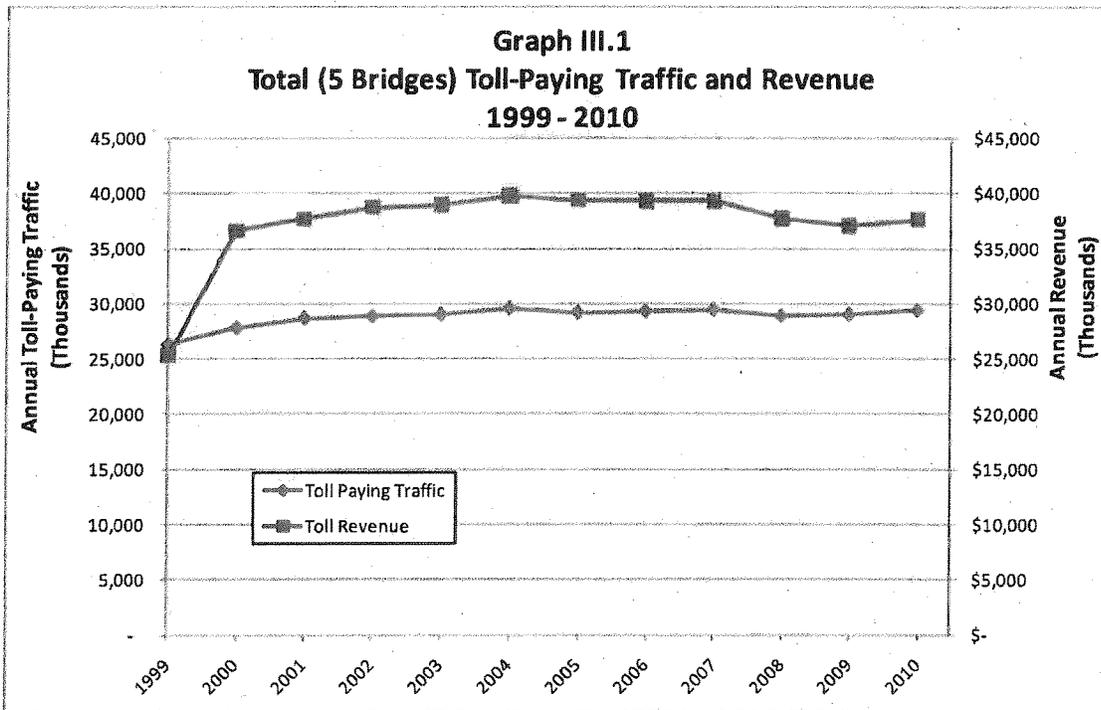
Source: IHS Global Insight

III. BRIDGE TRAFFIC, REVENUE AND EXPENSES

Historical traffic and revenue for the five vehicular bridges, the impacts of the last toll increase in 2000 and the historical and projected population and employment growth in the counties served by the bridges were taken into consideration in the preparation of traffic and revenue forecasts for the period 2011-2016.

A. Historical Traffic and Revenue 2000-2011

In forecasting traffic and toll revenue for the five Authority vehicular bridges, Stantec analyzed the historical growth on the facilities as shown in Graph III.1.



After a growth spurt in the 1990s due to the increased popularity of the Mid-Hudson Valley, the average annual rate of growth for the last 10 years, 2000 through 2010, slowed down to 1.0 percent. During the first seven years of the decade, growth was consistent with traffic patterns in a mature area, such as the Hudson Valley served by the Authority's bridges, with an average annual rate of increase of 1.4 percent. The trend for this period indicates that there was little effect on traffic and revenue of the February 2000 toll increase or the events of 9/11. The increase in toll rates in 2000 was approximately 33 percent and traffic increased by 1.8 percent, resulting in a revenue increase of 40.8 percent in 2000. Following 9/11, truck traffic in the New York metropolitan area was affected by closures of the Port Authority tunnels and bridges. The result was a shift of traffic to more northerly crossings of the Hudson River and truck traffic on the Newburgh-Beacon Bridge increased 2.6 percent in 2002.

Since 2007, traffic and revenue have decreased by reason of the nationwide economic recession and increases in fuel prices. In 2008, traffic decreased by 2.0 percent and 2009 it increased 0.4 percent. In 2010, there was a slight recovery, with traffic increasing 1.3 percent. Passenger car volume is now what it was before the recession; however, truck volume is still below the level of 2007.

For the first seven months of 2011, toll paying traffic was 16,511,000 compared to 16,787,000 in the same period of 2010. Toll revenue through June 2011 was \$21,004,000 or 1.9 percent less than the level in 2010. Month-by-month data shown in Table III.1 indicate that traffic was down in January due to weather conditions and then improved in February. For the five months March through July, traffic and revenue were down due to economic conditions and the increase in the price of gasoline.

Table III.1
Total Toll Paying Traffic and Toll Revenue
First 7 Months 2011

Month	Toll Paying Traffic (000)			Toll Revenue (000)		
	2010	2011	Percent Change	2010	2011	Percent Change
January	2,146	2,037	-5.1%	\$ 2,635	\$ 2,541	-3.6%
February	1,871	1,953	4.4%	\$ 2,331	\$ 2,424	4.0%
March	2,416	2,377	-1.6%	\$ 3,039	\$ 2,960	-2.6%
April	2,489	2,393	-3.9%	\$ 3,328	\$ 3,201	-3.8%
May	2,618	2,573	-1.7%	\$ 3,280	\$ 3,214	-2.0%
June	2,595	2,564	-1.2%	\$ 3,303	\$ 3,240	-1.9%
July(1)	2,651	2,614	-1.4%	\$ 3,484	\$ 3,424	-1.7%
Total - 7 Months	16,787	16,511	-1.6%	\$ 21,400	\$ 21,004	-1.9%

Note: (1) For comparability, includes adjustment of \$175,000 in July, 2011 revenue for unearned commuter fees included in July, 2010 revenue, and scheduled for payment in August, 2011.

As shown in Table III.2, there were decreases in all vehicle groups. The commuter traffic was down 1.3 percent while full-fare passenger cars were down 1.7 percent and trucks and buses were down 2.0 percent.

Table III.2
Toll Paying Traffic by Vehicle Type
First 7 Months 2011

Vehicle Group	2010	2011	Percent Change
Passenger Cars			
Cash	12,941	12,724	-1.7%
Commuters	2,742	2,705	-1.3%
Total	15,683	15,429	-1.6%
Trucks, Buses	1,104	1,082	-2.0%
Grand Total	16,787	16,511	-1.6%

B. 2010 Traffic and Revenue by Bridge and Vehicle Group

In 2010, the last full year for which data are available, there were 29.4 million toll transactions (eastbound traffic only) on the bridges as shown in Table III.3. Total two-direction traffic on the Authority's five bridges was 58.8 million vehicles.

Table III.3
2010 Traffic by Bridge and Vehicle Group

Bridge	2010 Annual Toll Paying Traffic (000)				
	Passenger Cars			Trucks, Buses	Grand Total
	Cash ^(A)	Commuter ^(B)	Total		
Rip Van Winkle	2,156	366	2,522	118	2,640
Kingston-Rhinecliff	3,169	650	3,819	112	3,931
Mid-Hudson	5,056	1,723	6,779	207	6,986
Newburgh-Beacon	9,564	1,567	11,131	1,425	12,556
Bear Mountain	2,826	401	3,227	62	3,289
Total	22,771	4,707	27,478	1,924	29,402

(A) Includes two-axle/four-tire vehicles pulling trailers.

(B) Includes Car Pools.

Source: New York State Bridge Authority

As can be seen in the table:

- The highest volume was carried on the Newburgh-Beacon Bridge, with 12.6 million vehicles, or 42.7 percent of total traffic. The Newburgh-Beacon Bridge also carried the highest number of trucks, 1.4 million, or 74 percent of all trucks using the five bridges. As a result of the high percent of trucks, paying relatively higher tolls, the Newburgh-Beacon Bridge accounted for 54 percent of total revenues.
- Toll-paying traffic on the Mid-Hudson Bridge was 7.0 million vehicles, the second highest volume of the bridges. The Mid-Hudson Bridge is a commuter facility and commuters accounted for 1.7 million (25 percent) of total toll-paying passenger car traffic on this bridge. Revenue was 18 percent of total Authority toll revenue, due to the lower commuter tolls.
- The Rip Van Winkle, Kingston-Rhinecliff and Bear Mountain bridges carried 9.0 percent, 13.4 percent and 11.2 percent, respectively, of total traffic and accounted for approximately 28 percent of toll revenues.

Of the 29.4 million toll-paying vehicles using the five bridges, 22.8 million, or 77 percent, were passenger cars paying the full toll, either by cash or by E-ZPass. The second largest class of vehicles was commuters, accounting for 4.7 million trips or 16 percent of total traffic. There were 1.9 million trucks, representing 7 percent of total traffic. Table III.4 shows the 2010 annual toll-paying traffic and revenue on each bridge.

**Table III.4
2010 Traffic and Revenue by Bridge**

Bridge	2010 Annual Toll-Paying Traffic		Average Toll	2010 Annual Toll Revenue	
	Volume (000)	Percent		Amount (000)	Percent
Rip Van Winkle	2,640	9.0%	\$1.125	\$2,970	7.9%
Kingston-Rhinecliff	3,931	13.4%	\$1.032	\$4,058	10.8%
Mid-Hudson	6,986	23.8%	\$0.994	\$6,945	18.4%
Newburgh-Beacon	12,556	42.7%	\$1.617	\$20,302	53.9%
Bear Mountain	3,289	11.2%	\$1.032	\$3,394	9.0%
Total	29,402	100.0%	\$1.281	\$37,669	100.0%

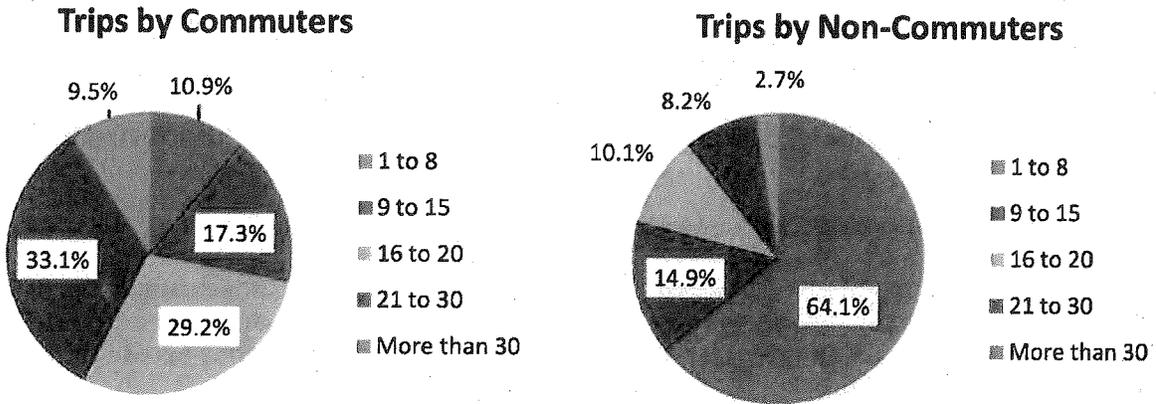
Source: New York State Bridge Authority

In 2010, 64 percent of the total transactions on the five bridges were payments by E-ZPass. All of the commuter transactions and 58 percent of the full-fare passenger car transactions were by E-ZPass. Of the truck transactions, two-thirds were E-ZPass payments.

As analysis of 2009 monthly bridge data for commuter usage indicates that 43 percent of the commuter trips are made by motorists who are true commuters, i.e., they use the bridge more than 20 times per month (5 trips per week for 4 weeks). An additional 29 percent make the trip between 16 and 20 times per month. Since the monthly minimum rate for a commuter is \$8.50, motorists with commuter accounts who make the trip nine times or more per month pay less than the \$1.00 per trip full-fare rate. Almost 30 percent of the motorists with commuter accounts make the trip less than 15 times per month and, of these, one third make the trip less than nine times per month.

In contrast, bridge patrons who use E-ZPass but do not have commuter accounts are not frequent users of the bridges. Approximately 80 percent of E-ZPass non-commuter account holders make the trip less than 16 times per month. The trip frequency for commuter account holders and E-ZPass non-commuter account holders is summarized in Graph III.2.

Graph III.2
Trip Frequency
E-ZPass Commuter and Non-Commuter Accounts



C. 2010 Monthly Traffic

As noted above, and indicated by the traffic volumes presented in the previous tables, traffic on the five Authority bridges is a mix of commuter and full-fare passenger cars and trucks and buses. The seasonal variation, shown in Table III.5, is indicative of a mix of commuter, commercial and recreational traffic.

Table III.5
2010 Monthly Traffic

Month	2010 Toll-Paying Traffic (000)					Total	Seasonality
	Rip Van Winkle	Kingston-Rhinecliff	Mid-Hudson	Newburgh-Beacon	Bear Mountain		
January	194	289	529	895	239	2,146	0.88
February	176	255	475	772	193	1,871	0.76
March	219	320	599	1,012	265	2,416	0.99
April	222	329	602	1,060	276	2,489	1.02
May	232	349	611	1,129	297	2,618	1.07
June	226	348	599	1,129	294	2,595	1.06
July	238	351	588	1,173	301	2,652	1.08
August	241	362	605	1,178	306	2,692	1.10
September	235	336	602	1,076	290	2,539	1.04
October	238	353	631	1,111	303	2,636	1.08
November	217	314	575	1,038	277	2,421	0.99
December	203	325	568	983	249	2,327	0.95
Total	2,640	3,932	6,985	12,556	3,289	29,402	

* May not add precisely due to rounding.
Source: New York State Bridge Authority

The highest traffic volumes on all bridges, except the Mid-Hudson Bridge, are in August, the peak season for tourism in the Hudson Valley. The seasonality factor of 1.10 for August indicates that toll-paying traffic is 10 percent greater in that month than in the average month. For the Mid-Hudson Bridge, due to tourism, it is in the month of October. The lowest traffic volumes are in February with a seasonal factor of 76 percent. This is due to the weather, but also reflects the fact that there are fewer days in February than in the other months.

With the exception of February, the seasonality factor ranges from a low of 0.88 in January to a high of 1.10 in August.

D. Estimated 2011 – 2016 Traffic and Revenue – Existing Toll Schedule

Starting with the actual results for full year 2010 and the results for the first seven months of 2011, traffic for the period 2011 – 2016 was estimated based on the historical performance for the five bridges and the population and employment growth trends for the six counties served by the bridges, as discussed above.

For the last five months of 2011, it is estimated that full-fare passenger cars will decrease 1.7 percent and commercial vehicles will decrease 2.0 percent. These are the same rates of change that occurred in the first seven months of the year, as shown in Table III.2. For commuters, it is also estimated that traffic for the August – December period will decrease by 1.3 percent, the same percent as the first seven months. For the full year, all vehicles are estimated to be 1.6 percent less than 2010.

Trips made by passenger cars paying full fare are for many different purposes: shopping, school, business, recreation and other reasons. Accordingly, the growth in full-fare passenger car traffic is related to growth in population. Since population is forecasted to grow at the low rate of 0.6 percent per year between 2010 and 2015, it is estimated that full-fare passenger car traffic will remain at the estimated 2011 level for the full five-year period included in the forecast.

Since the major portion of trips made by commuters is journey-to-work, trends in commuter traffic growth follow trends in employment growth. Due to the economic recession, commuter traffic in 2010 was at approximately the same level as in 2000. Growth in employment in the six-county area is estimated to increase at 1.0 percent per year through 2016, the period included in this forecast. However, due to uncertainties in economic conditions, it is estimated that commuter traffic will remain at approximately the estimated 2011 level through 2016.

Truck toll-paying traffic in 2010 was 2.0 million vehicles, down from the level of 2.3 million vehicles in 2007 before the recession. For this forecast, it is estimated that truck toll-paying traffic will remain at the forecasted 2011 level in response to little improvement in economic conditions.

Toll revenue was estimated based on the forecast of traffic, by vehicle class, and the existing toll rates. Estimated toll-paying traffic and toll revenue under the existing toll schedule for the period 2011 through 2016 are shown in Table III.6.

Table III.6
Estimated Toll Transactions and Revenue
2011 - 2016 Existing Toll Schedule

Year	Annual Toll Transactions (000)	Annual Toll Revenue (000)	Average Toll
2010 - Actual	29,402	\$ 37,669	\$ 1.28
2011 - 2016	29,053	\$ 36,974	\$ 1.27

E. Operating Expenses

Historical operating expenses are presented in Table III.7 covering the period from 2000 through 2010. Operating expense items consist of salaries, employee benefits, commercial insurance and electronic toll costs. Over the 10-year period, Operating Expenses have increased at an average annual rate of 4.2 percent.

Table III.7
Historical Operating Expenses
2000-2010
(000)

Year	Operating Expenses(1)
2000	\$ 15,368
2001	\$ 16,290
2002	\$ 17,995
2003	\$ 19,657
2004	\$ 21,093
2005	\$ 21,714
2006	\$ 22,519
2007	\$ 23,277
2008	\$ 23,901
2009	\$ 21,327
2010	\$ 23,177

Source: New York State Bridge Authority, Continuing Disclosure Statement for the year ending December 31, 2010.

Note: (1) Restated, does not include "Other Post-Employment Benefits" following 2005 determination that accrual for future cost of retiree health benefits should not be included in Operating Expenses.

Net Revenues available for the Authority's Capital Program are presented in Table III.8, based on the existing toll rates. Total revenues include the forecasted toll revenues presented above and estimated revenues from other sources. The major component of "other revenues" is interest income which has been assumed by the Authority based on current interest rates and existing reserve balances. In 2011, "other revenues" reflect a federal grant of \$3.1 million that the Authority expects to receive.

The Authority has initiated a project that is expected to be fully implemented in 2012 that will centralize select toll collection activities remotely. The resulting savings are expected to be realized in 2013 and beyond. For the period 2011-2016, the Authority anticipates escalating the remaining operating expenses at a rate of three percent. Operating expenses for 2011 and following years include the Authority's estimate of operating expenses for the Walkway Over the Hudson. Due to the Authority's operating contract with New York State Office of Parks, Recreation and Historic Preservation, operating expenses, other than insurance and depreciation, are limited.

Estimated net revenues are forecast to decrease from \$15.0 million in 2010 to \$11.9 million in 2016 by reason of the slow growth rate in traffic on the Authority's bridges.

Table III.8
Estimated Revenues and Expenses
Existing Toll Schedule
2011 - 2016
(000)

Year	Toll Revenue Existing Tolls	Operating Expenses (1)	Net Operating Revenues	Other Revenues (2)	Net Revenues
2010 (3)	\$ 37,669	\$ 23,177	\$ 14,492	\$ 511	\$ 15,003
2011	\$ 36,974	23,400	\$ 13,574	\$ 3,425 (4)	\$ 16,999
2012	\$ 36,974	23,860	\$ 13,114	\$ 400	\$ 13,514
2013	\$ 36,974	22,797	\$ 14,177	\$ 400	\$ 14,577
2014	\$ 36,974	23,666	\$ 13,308	\$ 400	\$ 13,708
2015	\$ 36,974	24,566	\$ 12,408	\$ 400	\$ 12,808
2016	\$ 36,974	25,501	\$ 11,473	\$ 400	\$ 11,873

Notes: (1) Does not include "Other Post-Employment Benefits", depreciation on equipment and net loss on sale of equipment.

(2) Primarily interest income; estimated by Authority based on current interest rates and existing reserve balances.

(3) Actual

(4) Includes anticipated \$3.1 million federal grant.

F. Capital Needs Program and Cost

The Authority has maintained the five bridges in good structural and functional condition by its ongoing Capital Improvement Program. As shown in Table III.9, the oldest of the Authority's bridges, the Bear Mountain Bridge, has been in operation for 87 years. The most recently built facility, the south span of the Newburgh-Beacon Bridge, is more than 30 years old. As the bridges age, the Authority schedules repairs and rehabilitation necessary to maintain them in good condition through its Capital Improvement Program.

**Table III.9
NYSBA Bridge Opening Dates**

Bridge	Opening Year
Bear Mountain	1924
Mid-Hudson	1930
Rip Van Winkle	1935
Kingston-Rhinecliff	1957
Newburgh-Beacon North Span	1963
Newburgh-Beacon South Span	1980

The Authority's Capital Improvement Program for the period 2011 through 2016 is shown in Table III.10. This information was provided by the Authority. The programmed amounts include major expenditures for the Newburgh-Beacon Bridge during this period including the South Span Deck Replacement project and painting the North Span. These projects are scheduled for the period 2011 through 2016.

**Table III.10
New York State Bridge Authority
Capital Improvement Program
2011 - 2016
(000)**

Year	Estimated Required Funds
2011	\$ 17,734
2012	\$ 8,401
2013	\$ 37,220
2014	\$ 34,741
2015	\$ 52,677
2016	\$ 26,730
6-year Total	\$ 177,503

Source: New York State Bridge Authority

A comparison of net revenues available for capital expenditures presented in Table III.8 with the required funds in Table III.10 is shown in Table III.11.

Table III.11
Comparison of Revenue Available and Funds Required for Capital Program
Existing Toll Schedule
(000)

Year	Net Revenue Existing Toll Rates (1)	Debt Service (2)	Revenue Available for Capital Projects	Capital Improvement Program	Surplus or (Deficit)	
					Annual	Cumulative
2011	\$ 16,999	\$ 8,191	\$ 8,808	\$ 17,734	\$ (8,926)	\$ 4,777 (3)
2012	\$ 13,514	\$ 8,188	\$ 5,326	\$ 8,401	\$ (3,075)	\$ 1,702
2013	\$ 14,577	\$ 8,191	\$ 6,386	\$ 37,220	\$ (30,834)	\$ (29,132)
2014	\$ 13,708	\$ 8,190	\$ 5,518	\$ 34,741	\$ (29,223)	\$ (58,355)
2015	\$ 12,808	\$ 8,192	\$ 4,616	\$ 52,677	\$ (48,061)	\$ (106,416)
2016	\$ 11,873	\$ 8,188	\$ 3,685	\$ 26,730	\$ (23,045)	\$ (129,461)

- Note: (1) Does not include provision for debt service requirements.
 (2) Debt Service includes outstanding 1997 and 2002 debt only;
 does not include future planned issue for new money in 2012
 or potential refunding(s).
 (3) Provided by the Authority.

G. Proposed Toll Schedule and Effects on Traffic and Revenue

In consultation with the Authority, it was determined that future revenue derived from existing tolls would not be sufficient to meet the Authority's prime directive of maintaining the bridges in a state of good repair. After considering a number of revenue enhancement measures that balance the revenue requirements with the capital needs, the Authority intends to propose an increase in toll rates to provide the revenues necessary to fund the Authority's capital program.

Table III.12 lists the Authority historical record of system wide toll increases (going back to 1982) along with seven other toll authorities throughout the state.

Table III.12
Toll Increase Frequencies
1982-Present

Agency	Frequency
New York State Bridge Authority	1989, 2000
Port Authority of New York / New Jersey	1987, 1991, 2001, 2008
New York State Thruway Authority	1988, 2005, 2008, 2010
MTA Bridges and Tunnels	1989, 1993, 1996, 2003, 2005, 2008, 2009, 2011
Niagara Falls Bridge Commission	1982, 1991, 1995, 1998
Buffalo-Fort Erie Bridge Authority	1984, 1993, 1996, 1997, 2000, 2002 2007
Thousand Islands Bridge Authority	1984, 2007
Ogdensburg Bridge and Port Authority	1985, 2006

The Authority has increased its tolls only twice since it started operations in the 1930s. The Authority is one of only two authorities that have not increased tolls since 2000. In conjunction with the Thruway Authority and the Port Authority, tolls on all the Hudson River crossings from the Rip Van Winkle Bridge southward were converted to one-way toll collection in the 1970s by doubling the eastbound toll, with no change in round-trip toll.

The existing and proposed tolls for the Authority's bridges are shown in Table III.13. Also shown are the changes in tolls in terms of percent and dollar amounts.

**Table III.13
Existing and Proposed Toll Schedules**

Vehicle Class		Payment Method	Toll Rate			
			Existing	Proposed	Change	
					Percent	Amount
Passenger Cars - Commuter						
Class 9	Commuter	E-Z Pass	\$ 0.50	\$ 1.00	50%	\$ 0.50
-	Car Pool Book	Cash	\$ 9.00	(1)		
Passenger Cars - Non-Commuter						
Class 1	Passenger	Cash	\$ 1.00	\$ 1.50	50%	\$ 0.50
Class 1	Passenger	E-Z Pass	\$ 1.00	\$ 1.25	25%	\$ 0.25
Class 7	Psgr Extra Axle	Cash	\$ 0.50	\$ 1.00	100%	\$ 0.50
Class 7	Psgr Extra Axle	E-Z Pass	\$ 0.50	\$ 0.90	80%	\$ 0.40
Commercial Vehicles						
Class 2	Truck 2 Axle	Cash	\$ 2.50	\$ 5.00	100%	\$ 2.50
Class 2	Truck 2 Axle	E-Z Pass	\$ 2.50	\$ 4.50	80%	\$ 2.00
Classes 3 - 6	Trucks per Axle	Cash	\$ 1.50	\$ 2.50	67%	\$ 1.00
Classes 3 - 6	Trucks per Axle	E-Z Pass	\$ 1.50	\$ 2.25	50%	\$ 0.75
Class 8	Trucks Extra Axle	Cash	\$ 1.50	\$ 2.50	67%	\$ 1.00
Class 8	Trucks Extra Axle	E-Z Pass	\$ 1.50	\$ 2.25	50%	\$ 0.75
Class 15	Permits	Cash	(2)	(2)	50%	

Notes: (1) Discontinued due to lack of demand.

(2) Based on axle and wheel weight limits.

Full-fare auto tolls with cash payment would be increased 50 cents to \$1.50 and tolls for trucks with 3 or more axles will be increased by \$1.00 per axle. Under the revised toll schedule, motorists paying by E-ZPass will be paying a lower rate than those paying by cash. If payment is by E-ZPass, the passenger car toll will be \$1.25 and the truck toll will be \$2.25 per axle. This advantage is reasonable given the increased efficiency of toll collection by E-ZPass when compared to cash payment.

The commuter toll rate, with payment by E-ZPass, will be \$1.00, which provides a \$0.50 discount from the full-fare passenger car rate, the same discount that is available under the existing toll schedule. When compared to the proposed E-ZPass rate, the discount for commuters is \$0.25.

Trucks paying by E-ZPass will also receive a reduced fare compared to the cash fare. For a 2-axle truck, the cash rate will be \$5.00 and the E-ZPass rate will be \$4.50, or 10 percent less. For trucks with 3 or more axles, the cash rate will be \$2.50 per axle and the E-ZPass rate will be \$2.25 per axle, or a savings of 10 percent.

With the above proposed toll increases, cash and commuter passenger car tolls will be lower on the Authority's five vehicular bridges than those on the George Washington, Tappan Zee and Castleton-on-Hudson bridges. Tolls for heavy trucks will also be lower than those on the George Washington and Tappan Zee bridges; however, truck tolls on the Authority's bridges will be higher than those on the Castleton-on-Hudson Bridge. This is not anticipated to have a significant impact on truck traffic patterns since most trucks on the Authority's bridges use the Newburgh-Beacon Bridge and the Castleton-on-Hudson serves New York State Thruway – Massachusetts Turnpike traffic with a more northerly orientation.

Another way to view the Authority's toll schedule is illustrated by "indexing" the present and proposed tolls to the value of the dollar in 2000. As indicated in Table III.12, the last Authority toll increase, to the \$1.00 toll level, was in 2000. Since 2000, inflation (based on Consumer Price Index) has increased the cost-of-living (through 2010) by 27 percent. Bridge tolls have not increased in 10 years. Therefore, the \$1.00 toll today is equivalent to \$0.79 in 2000 dollars, in terms of its effect on the motorist's budget. This is illustrated in Table III.14 for the full-fare autos, as well as for commuters and five-axle trucks.

**Table III.14
Tolls Indexed to 2000 Dollars***

Vehicle Class	Year	Payment Type	Representative Tolls	
			Current Year	Indexed to 2000
Autos - Full Fare	2000	Cash, E-ZPass	\$1.00	\$1.00
	2010	Cash	\$1.00	\$0.79
	2010	E-ZPass	\$1.00	\$0.79
	2012	Cash	\$1.50	\$1.12
	2012	E-ZPass	\$1.25	\$0.93
Autos - Commuter	2000	Cash, E-ZPass	\$0.50	\$0.50
	2010	Cash	N/A	N/A
	2010	E-ZPass	\$0.50	\$0.39
	2012	Cash	N/A	N/A
	2012	E-ZPass	\$1.00	\$0.74
5-Axle Trucks	2000	Cash, E-ZPass	\$7.50	\$7.50
	2010	Cash	\$7.50	\$5.92
	2010	E-ZPass	\$7.50	\$5.92
	2012	Cash	\$12.50	\$9.30
	2012	E-ZPass	\$11.25	\$8.37

* Actual CPI through 2010, with a 3.0 percent annual inflation rate assumed thereafter.

If the full-fare toll goes up to \$1.50 in 2012, the toll level in 2000 dollars will be equivalent to only \$1.12, 12 percent higher than the actual \$1.00 toll at the time of its implementation in 2000. Similarly, the proposed commuter toll with payment by E-ZPass is equivalent to \$0.74 in 2000 dollars.

With increases in tolls, it can be expected that there will be some loss in traffic, due to carpooling, consolidation of trips and minimal switches in travel modes. In the case of the Authority's service area, population and employment centers and other trip origins and destinations are generally widely scattered, and, therefore, not suited to effective trans-river public transportation. This leaves both commuters and infrequent users of the Authority's bridges little choice in changing travel modes, except for carpooling or not making the trip at all. The carpool rate on the Authority's bridges will be discontinued with the implementation of the proposed tolls in 2012 since use of the rate is minimal.

It is important to note that despite the proposed toll increase the Authority's crossing charges are substantially cheaper than the Thruway Authority's Tappan Zee Bridge and Port Authority's bridges and tunnels, especially for trucks. For this reason, we expect relatively low sensitivity to the proposed toll increases. Although rates for heavy trucks will be higher than those on the Castleton-on-Hudson Bridge, the impact on traffic is expected to be minimal, as noted above.

H. Estimated 2011 – 2016 Traffic and Revenue – Proposed Toll Schedule

On the basis of the toll sensitivities (elasticities), culled from the before-and-after traffic data on the Authority's five bridges at the time of its 2000 toll increase, Stantec applied elasticity factors in this current study, by vehicle class. In addition, due to the introduction of a reduced rate for non-commuter E-ZPass users, and the change in the relationship among the payment types, shifts of traffic were estimated among the vehicle classes. It is estimated that 20 percent of the existing cash passenger car vehicles will shift to E-ZPass to take advantage of the reduced rate available. In addition, it is estimated that 1 percent of the cash passenger car vehicles will shift to the commuter rate. (A lower rate is currently available to these motorists, but they are not taking advantage of it.) The result, after application of the proposed tolls, is estimated to produce the following higher revenue forecast for the five bridges.

**Table III.15
Estimated Toll Transactions and Revenue
2010 and 2011 - Existing Toll Schedule
2012 - 2016 Proposed Toll Schedule**

Year	Annual Toll Transactions (000)	Annual Revenue (000)	Average Toll
2010 - Actual	29,402	\$ 37,669	\$ 1.28
2011	29,053	\$ 36,974	\$ 1.27
2012 - 2016	28,260	\$ 52,407	\$ 1.85

As a result of the introduction of the revised rates on January 1, 2012, traffic is anticipated to decrease 2.7 percent and toll revenues are forecast to increase 41.7 percent. The average toll is estimated to increase from \$1.27 to \$1.85.

Net Revenues available for the Authority's Capital Program are presented in Table III.16, based on the proposed toll rates. Estimated Operating Expenses and revenues from other sources are the same as those presented in Table III.8 showing net revenues under existing toll rates. Estimated net revenues with the revised tolls are forecast to increase from \$15.0 million in 2010 to \$27.3 million in 2016 by reason of the implementation of higher toll rates effective January 1, 2012.

Table III.16
Estimated Revenues and Expenses
Revised Tolls (1)
2011 - 2016
(000)

Year	Toll Revenue Revised Tolls	Operating Expenses (2)	Net Operating Revenues	Other Revenues (3)	Net Revenues
2010 (4)	\$ 37,669	\$ 23,177	\$ 14,492	\$ 511	\$ 15,003
2011	\$ 36,974	23,400	\$ 13,574	\$ 3,425 (5)	\$ 16,999
2012	\$ 52,407	23,860	\$ 28,547	\$ 400	\$ 28,947
2013	\$ 52,407	22,797	\$ 29,610	\$ 400	\$ 30,010
2014	\$ 52,407	23,666	\$ 28,741	\$ 400	\$ 29,141
2015	\$ 52,407	24,566	\$ 27,841	\$ 400	\$ 28,241
2016	\$ 52,407	25,501	\$ 26,906	\$ 400	\$ 27,306

- Notes: (1) Based on implementation of revised tolls effective January 1, 2012.
(2) Does not include "Other Post-Employment Benefits", depreciation on equipment and net loss on sale of equipment.
(3) Primarily interest income; estimated by Authority based on current interest rates and existing reserve balances.
(4) Actual
(5) Includes anticipated \$3.1 million federal grant.

Net revenues available for capital expenditures after provision for debt service are shown in Table III.17. The debt service amounts shown in Table III.17 include the amount carried forward from Table III.11 for the outstanding 1997 and 2002 bonds plus estimated debt service, as provided by the Authority, on new bonds proposed to be issued in 2012 in the principal amount of \$100 million at an estimated true interest cost of 4.5 percent amortized over a 15 year term. Table III.17 also shows the additional funds available for the Capital Improvement Program from the 2012 bond issue. Approximately 98 percent of the new bonds are estimated to provide funds for the costs of the capital improvement program, in order to provide a better matching of expenses to available funds.

Table III.17
Estimated Revenues Available for Capital Program
under Proposed Revised Toll Schedule
(thousands)

Year	Net Revenue Revised Toll Rates (1)	Debt Service (2) (3)	Revenue Available for Capital Projects		
			From Tolls and Other Revenues	Funds from 2012 Bond Issue (3)(4)	Total
2011	\$ 16,999	\$ 8,191	\$ 8,808		\$ 8,808
2012	\$ 28,947	\$ 8,188	\$ 20,759	\$ 98,000	\$ 118,759
2013	\$ 30,010	\$ 14,288	\$ 15,722		\$ 15,722
2014	\$ 29,141	\$ 14,033	\$ 15,108		\$ 15,108
2015	\$ 28,241	\$ 13,773	\$ 14,468		\$ 14,468
2016	\$ 27,306	\$ 13,500	\$ 13,806		\$ 13,806

- Note: (1) Based on implementation of revised tolls effective January 1, 2012. Does not include provision for debt service requirements.
 (2) Debt Service includes outstanding 1997 and 2002 debt plus estimated 2012 debt as noted above.
 (3) Provided by the Authority.
 (4) The Authority proposes to issue new bonds in 2012 with a principal amount of \$100 million. Of this, \$98 million is estimated to be available for Capital Projects.

Revenues available for capital projects from Table III.17, including the funds from the proposed 2012 bond sale, are compared to the funds required for the capital improvement program in Table III.18. The cumulative column shows that, for the period indicated, the capital deficiency associated with the continuation of the present tolls would be eliminated under the proposed revised toll schedule coupled with the proposed bond issue plan. The Authority anticipates that an additional toll increase would be necessary in 2018 in order to address future capital needs.

Table III.18
Comparison of Revenue Available and Funds Required for Capital Program
Proposed Revised Toll Schedule
(000)

Year	Revenue Available for Capital Projects (1)(2)	Capital Improvement Program (3)	Surplus or (Deficit)	
			Annual	Cumulative
2011	\$ 8,808	\$ 17,734	\$ (8,926)	\$ 4,777 (2)
2012	\$ 21,759	\$ 8,401	\$ 13,358	\$ 18,135
2013	\$ 38,722	\$ 37,220	\$ 1,502	\$ 19,637
2014	\$ 51,108	\$ 34,741	\$ 16,367	\$ 36,004
2015	\$ 52,468	\$ 52,677	\$ (209)	\$ 35,795
2016	\$ 13,806	\$ 26,730	\$ (12,924)	\$ 22,871

Notes: (1) Based on implementation of revised tolls effective January 1, 2012 and additional funds from the proposed 2012 bond sale.

(2) Bond proceeds spread over life of relevant projects in capital program.

(3) Provided by the Authority.

I. Summary of Assumptions

The traffic and revenue projections for the Authority's five bridges are based on the following assumptions:

1. The five bridges will continue to be well maintained and efficiently operated. It is assumed that adequate maintenance and protection of traffic will be provided to maintain the capacity on the Newburgh-Beacon Bridge during reconstruction.
2. The Authority's Capital Construction and Rehabilitation Program will proceed along the lines described herein and within the budget summarized on page 17.
3. The demographic trends prepared by IHS Global Insight and summarized in Tables II.1 and II.2 will occur substantially as forecasted.
4. The present Authority toll schedule will remain in effect through December 31, 2011 and the proposed toll schedule, starting January 1, 2012, will be in effect during the remainder of the forecast period through 2016.
5. The tolls on the crossings operated by the Port Authority and the Thruway Authority will remain at or near their present levels, or higher, during the forecast period through 2016.
6. The highway network in the Mid-Hudson Valley and surrounding areas will not change substantially.

Stantec

August 16, 2011
Page 25 of 26

7. Motor fuel will continue to be in plentiful supply at prices in line with the general rate of inflation. Regular gas prices are assumed to be no higher than the current range of prices for sustained periods during the forecast period.
8. Present economic conditions in the country, northeast United States and Mid-Hudson Valley area will prevail, generally, during the forecast period through 2016.
9. No material natural disaster or local, state or national emergency will occur that would alter travel patterns and divert traffic from the Authority's facilities.

As for the projections themselves, while they are stated year-by-year, they are intended to show the trends that may reasonably be anticipated during the forecast period. Stantec believes these assumptions are reasonable.

IV. LIMITATIONS AND DISCLAIMERS

It is Stantec's opinion that the revenue projections are reasonable and that they have been prepared in accordance with accepted practice for investment-grade studies. However, given the uncertainties within the current international and economic climate, Stantec considers it is necessary to state that the traffic and revenue projections are based on the following caveats:

- This report presents the results of Stantec's consideration of the information available to us as of the date hereof and the application of Stantec's experience and professional judgment to that information. It is not a guarantee of any future events or trends.
- The traffic and revenue forecasts will be subject to future economic and social conditions and demographic developments that cannot be predicted with certainty.
- The projections contained in this report, while presented with numerical specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to significant economic and competitive uncertainties and contingencies, many of which will be beyond Stantec's control and that of the Authority. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in projected outcomes.
- If, for any reason, any of these conditions should change due to changes in the economy or competitive environment, or other factors, Stantec's opinions or estimates may require amendment or further adjustments.
- Stantec's toll revenue projections only represent its best judgment and Stantec does not warrant or represent that actual toll revenues will not vary from its projections, estimates and forecasts.

Many statements contained in this report that are not historical facts are forward-looking statements, which are based on Stantec's beliefs, as well as assumptions made by, and information currently available to, the management and staff of Stantec. Because the statements are based on expectations about future events and economic performance and are not statements of fact, actual results may differ materially from those projected. The words "anticipate", "assume", "estimate", "expect", "objective", "projection", "plan", "forecast", "goal", "budget", or similar words are intended to identify forward-looking statements. The words or phrases "to date", "now", "currently", and the like are intended to mean as of the date of this report.

Sincerely,

STANTEC CONSULTING SERVICES INC.



Thomas R. Harknett, PE

Senior Principal

Tel: (212) 366-5600

Fax: (212) 366-5629

thomas.harknett@stantec.com