

THE PORT AUTHORITY OF NY & NJ

**PROCUREMENT DEPARTMENT
4 WORLD TRADE CENTER
150 GREENWICH STREET, 21ST FL.
NEW YORK, NY 10007**

12/30/2016

ADDENDUM # 1

To prospective Bidder(s) on Bid # 48327: Aerial Photography for Port Authority and Non-Port Authority Tunnels, Bridges, Roads, Highways, Bus Parking Facilities and Photograph and Access Traffic Conditions

Due back on 1/9/2017, no later than 11:00AM

BIDDER'S QUESTIONS AND ANSWERS

The following information is available in response to questions submitted by prospective Bidders. The responses should not be deemed to answer all questions which have been submitted by Bidders to the Port Authority. It addresses only those questions which the Port Authority has deemed to require additional information and/or clarification. The fact that information has not been supplied with respect to particular questions asked by Bidders does not mean or imply, nor should it be deemed to mean or imply, any meaning, construction, or implication with respect to the terms.

The Port Authority makes no representations, warranties or guarantees that the information contained herein is accurate, complete or timely or that such information accurately represents the conditions that would be encountered during the performance of the Contract. The furnishing of such information by the Port Authority shall not create or be deemed to create any obligation or liability upon it for any reason whatsoever and each Bidder, by submitting its Bid, expressly agrees that it has not relied upon the foregoing information, and that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever. Accordingly, nothing contained herein and no representation, statement or promise, of the Port Authority, its Commissioners, officers, agents, representatives, or employees, whether made orally or in writing, shall impair or limit the effect of the warranties of the Bidder required by this Bid or Contract and the Bidder agrees that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever.

The Questions and Answers numbering sequence will be continued sequentially in any forthcoming Addenda that may be issued.

Question #1	Can you provide the current Contract information for Bid 31807?
Answer #1	See attached pricing from the current Contract.

Question #2	Could you provide the 2015 Summer Weekend Traffic Congestion Survey?
Answer #2	See attached.

This communication should be initialed by you and annexed to your Bid upon submission.

In case any Bidder fails to conform to these instructions, its Bid will nevertheless be construed as though this communication had been so physically annexed and initialed.

THE PORT AUTHORITY OF NY & NJ
SELENE ORTEGA, MANAGER
COMMODITIES & SERVICES DIVISION

BIDDER'S FIRM NAME: _____

INITIALED: _____

DATE: _____

QUESTIONS CONCERNING THIS ADDENDUM MAY BE ADDRESSED TO
NANCY UBILLA AT (212) 435-4605 OR nubilla@panynj.gov.

Contractor: Skycomp, Inc.

Pricing Sheet

Aerial Surveys

\$(USD)

2013 JAN 22 11:29
 PROUREMENT
 (MAIL CENTER)

	Description	A 2013 Unit Price	B 2014 Unit Price	C 2015 Unit Price	D 2016 Unit Price	Total Four (4)- Estimated Contract Price
1	Spring Aerial Survey	23,130.	23,590.	24,060.	24,540.	
2	Summer Aerial Survey	32,900.	33,560.	34,230.	34,910.	
3	Fall Aerial Survey	23,130.	23,590.	24,060.	24,540.	
4	Annual Presentation*	0.	0.	0.	0.	
Annual Total (Add lines 1-4)		79,160. <u>Year 1 Total</u>	80,740. <u>Year 2 Total</u>	82,350. <u>Year 3 Total</u>	83,990. <u>Year 4 Total</u>	
Special Surveys*						
5	Estimate: Total for 5 Hours - (multiply Hourly Rate x 5 hours for a typical survey duration)	1530/hr x 5= <u>7650.</u>	1530/hr x 5= <u>7650.</u>	1530/hr x 5= <u>7650.</u>	1530/hr x 5= <u>7650.</u>	
6	Total Estimated Annual Contract Price (Add Annual Total and Special Survey Estimate for that Year)	86,810. <u>Year 1 Grand Total</u>	88,390. <u>Year 2 Grand Total</u>	90,000. <u>Year 3 Grand Total</u>	91,640. <u>Year 4 Grand Total</u>	
						Total Estimated Four (4)-Year Contract Price ** 356,840. E = (A)+(B)+(C)+(D)

All Price quotes include the cost of report preparation.

*If required by the Port Authority.

** For bid comparisons only. Compensation shall be based on services ordered by the Port Authority and satisfactorily performed by the Contractor.

TOTAL ESTIMATED FOUR (4)-YEAR CONTRACT PRICE \$356,840.⁰⁰

PART IV - 5

PART IV - SIGNATURE SHEET, NAME AND RESIDENCE OF PRINCIPALS SHEET AND PRICING SHEET(S)

**2015 SUMMER WEEKEND
TRAFFIC CONGESTION SURVEY**

Trans-Hudson and Staten Island Crossings

Saturday, July 11, 2015

Sunday, July 12, 2015



Lincoln Tunnel Toll Plaza

Sunday, July 12, 2015 @ 3:24 p.m.

Prepared for
The Port Authority of New York & New Jersey
by Skycomp Inc., Columbia, Maryland



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INTRODUCTION

In 2015, Skycomp, Inc. continued the aerial survey program of fair-weather summer Sunday recreational traffic quality that was initiated in 1989. Like previous surveys, coverage included the limited-access highways that service the six Port Authority river crossings and the Tappan Zee Bridge. The period of Sunday coverage was from 2:00 p.m. to 12:30 a.m.

Coverage of summer Saturday recreational traffic was initiated in 1991, and has been repeated each year through 2015 (with the exception of 2009). The survey zone was the same as outlined above. The period of coverage on Saturday was 11:00 a.m. to 7:00 p.m.

METHODOLOGY

A specially trained observer in a Cessna airplane patrolled the region while visually assessing traffic conditions and recording the location of all congested locations; congested conditions were photographed digitally. Each repetition of the flight pattern took approximately one hour to complete; therefore all roadways were observed at a minimum frequency of one sample per hour; two samples per hour were recorded at some locations in between the north and south ends of the zone.

Flight Summary: Saturday Coverage (11:00 a.m. to 7:00 p.m.)

Saturday coverage was conducted on July 11th with the airplane refueling between 3:00 and 4:00 p.m. The weather was sunny with temperatures in the mid 80's.

Flight Summary: Sunday Coverage (2:00 p.m. to 12:30 a.m.)

Sunday coverage was conducted on July 12th, with the airplane refueling between 6:00 and 7:00 p.m. The weather was sunny with temperatures in the high 80's.

REPORT

Data reduction on the ground proceeded as follows: Populations of vehicle queues at toll facilities were obtained from high-resolution digital photography. These queue populations were charted and used with corresponding toll volume data to compute average toll queue travel time (in units of minutes per vehicle). Time-lapse overview arrowhead maps were also prepared that show changes in the locations experiencing congestion. The degree to which congestion was caused by incidents was discussed on the arrowhead maps, and noted on the queue charts. Also, the photographs were studied together with the toll volume reports to identify any effects that toll lane closings may have had on the level of toll queues.

PHOTOGRAPHY

The complete archive of digital color photography is included on a hard drive; an index of the photographs in MediaPro catalog format (.mpcatalog) is included with the imagery. After installing the free catalog reader software provided, the catalog can be used to quickly locate photos by time or location. This printed report is also provided in Adobe Acrobat format (pdf).

QUESTIONS

If there are any questions about the survey methodology or the findings contained in this report, please contact Skycomp, Inc. at 410-884-6900.

PART ONE SATURDAY FINDINGS

Comparison of Relative Travel Demand:

This survey program involves the assessment of traffic quality over only one Saturday and Sunday each summer. In order to estimate the degree to which the survey dates were representative of the other summer weekend dates, 24-hour toll volumes at the Port Authority facilities were compiled for comparison. Examination of this table provides an understanding of how traffic demand on the 2015 survey dates compared to demand throughout the summer.

The Saturday survey coverage was conducted on July 11. The table below indicates that travel demand on Saturday July 11th was within 1% of the summer average at four of the five facilities; the Lincoln Tunnel experienced slightly higher demand (+5%).

Relative Saturday travel demand, summer of 2015:

	<i>Date:</i>	<i>11 Jul</i>	<i>18 Jul</i>	<i>25 Jul</i>	<i>1 Aug</i>	<i>8 Aug</i>	<i>15 Aug</i>	<i>22 Aug</i>	<i>AVERAGE</i>
	<i>(precipitation)</i>	<i>sunny</i>	<i>m cloudy</i>	<i>sunny</i>	<i>p cloudy</i>	<i>sunny</i>	<i>sunny</i>	<i>sunny</i>	
	<i>(temp)</i>	<i>mid 80's</i>	<i>low 70's</i>	<i>low 80's</i>	<i>high 80's</i>	<i>low 80's</i>	<i>high 80's</i>	<i>low 80's</i>	
GWB	<i>(volume)</i>	154,319	156,213	154,631	154,809	157,101	154,568	155,293	155,276
	<i>(% of avg)</i>	99%	101%	100%	100%	101%	100%	100%	
LIN	<i>(volume)</i>	56,332	47,981	53,729	53,830	52,991	54,461	55,614	53,563
	<i>(% of avg)</i>	105%	90%	100%	100%	99%	102%	104%	
HOL	<i>(volume)</i>	45,473	44,591	46,090	45,585	44,846	44,650	45,128	45,195
	<i>(% of avg)</i>	101%	99%	102%	101%	99%	99%	100%	
GB	<i>(volume)</i>	46,870	46,395	46,599	46,774	46,543	46,862	47,838	46,840
	<i>(% of avg)</i>	100%	99%	99%	100%	99%	100%	102%	
OBC	<i>(volume)</i>	45,409	44,146	45,881	45,901	45,710	45,258	46,247	45,507
	<i>(% of avg)</i>	100%	97%	101%	101%	100%	99%	102%	

SOURCE: The Port Authority of New York & New Jersey; Saturday toll volumes for 24 hour period for eastbound traffic. Weather abbreviations: p - partly; m - mostly, l - light

SATURDAY OVERVIEW

Period of Coverage: July 11, 2015 (11:00 a.m. - 7:00 p.m.)

George Washington Bridge and Tappan Zee Bridge Corridors:

Conditions at the George Washington Bridge (GWB) toll plazas appeared fairly normal until after 5:00 p.m. when an earlier eastbound incident on the Cross Bronx Expressway caused atypical congestion. Up until 5:00 p.m., toll queue travel times at the upper and lower level toll plazas ranged from 3 to 5 minutes while users of the Palisades Interstate Parkway toll plaza experienced no delays.

During a flyover of the Cross Bronx Expressway (CBE) at 4:07 p.m. an eastbound incident was blocking the left lane at the Castle Hill Ave overpass (vicinity of the Bruckner Interchange). When next observed at 5:09 p.m., the two left lanes were blocked by emergency vehicles. At 6:00 p.m., the left lane remained blocked, and when last observed at 7:03 p.m. all incident-related vehicles were gone. Congestion approaching the incident ultimately extended back across the GWB bridge span and through the toll plaza barriers. After 5:00 p.m., atypical toll queues were found at each of the toll plazas with toll queue travel times peaking at approximately 8-10 minutes.

On the I-95 / Bruckner Expressway corridor, minor northbound and southbound congestion was found approaching the Pelham Parkway and Hutchinson River Parkway Interchanges.

In the eastbound direction (prior to 4:00 p.m.), congestion was typically found crossing the GWB span and in the vicinity of the Alexander Hamilton Bridge. In the westbound direction on the Cross Bronx Expressway (CBE), congestion was typically found approaching the Sheridan Expressway Interchange; occasional westbound delays were also intermittently encountered in the vicinity of the Hamilton Bridge.

At the Bronx Whitestone Bridge and Throgs Neck Bridge toll plazas, congestion was typically limited to the cash lanes. Early in the survey period, congestion was typically found in the Long Island-bound direction; later in the survey period, congestion was typically found Bronx-bound.

No delays were found at the Tappan Zee Bridge during the Saturday survey period; westbound congestion typically found on I-87 between I-287 and the bridge span did not develop. There was an eastbound lane closure on I-87 on the west side of bridge that caused a 1-2 mile zone of congestion (found between 12:00 noon and 5:00 p.m.).

Lincoln and Holland Tunnels:

Prior to 6:00 p.m., the only inbound toll delay found at the Lincoln Tunnel was at 1:15 p.m. when approximately 80 vehicles were queued on the helix; corresponding toll queue travel time was estimated at 2 minutes per vehicle. The maximum observed toll queue was found at 6:30 p.m. when approximately 330 vehicles were queued on the SR 495 approach; corresponding toll queue travel time was estimated at 7-8 minutes.

During the first observation at 11:05 p.m. outbound congestion was found in Manhattan approaching the Lincoln Tunnel. The outbound queue population of 215 vehicles corresponded to an estimated queue travel time of 4 minutes. Later in the survey period (3:00-7:00 p.m.), minor delays were found at the tunnel entrances (queue travel times of 1 to 2 minutes).

Inbound delays were found at the Holland Tunnel toll plaza throughout the Saturday survey period; toll queue travel times ranged from approximately 2 to 9 minutes. Only minor delays were found on the NJ Turnpike Extension approach to the signal at Jersey Ave. On the US Route 1&9 approach, the signal queue intermittently extended back under the covered roadway where one lane was available for eastbound traffic coming from Tonnelle Circle.

Note: Since the 2014 summer survey, the Pulaski Skyway (US Route 1&9) has been closed for construction. Due to the closure, the lane configuration at the signal at 12th Street and Jersey Ave was changed. At the signal, the NJ Turnpike Extension approach has 3 vs. 2 lanes available while the US Route 1&9 approach has 2 vs. 3 lanes available.

From 11:00 a.m. to 2:00 p.m. minor outbound delays were found in Manhattan approaching the Holland Tunnel portal; queue populations at the tunnel entrance ranged from approximately 75 to 100 vehicles, corresponding to average queue travel times of 2-3 minutes per vehicle.

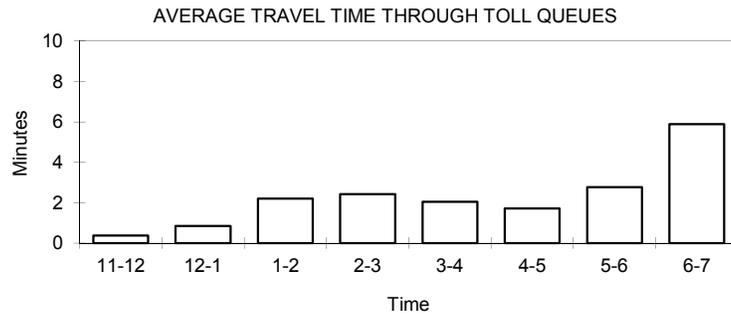
Staten Island Crossings:

No significant toll delays were found at the Goethals Bridge toll plaza during the Saturday survey period. Cash users typically waited less than one minute to pay the toll. At the NJ Turnpike Interchange 13 toll plaza, only small cash queues (eastbound) were found up until 6:00 p.m.; however, between 6:00 and 7:00 p.m., congestion on the TE ramp in New Jersey extended back through the toll plaza. The bottleneck appeared to be at the lane drop (3 lanes to 2) where vehicles from the US 9 connector merged onto the two lane viaduct. Between 5:00 and 6:00 p.m., a westbound incident was found on the Goethals Bridge span on the New York side; the left lane was blocked during flyovers at 5:29 and 5:40 p.m. All lanes were open when next observed at 6:37 p.m.

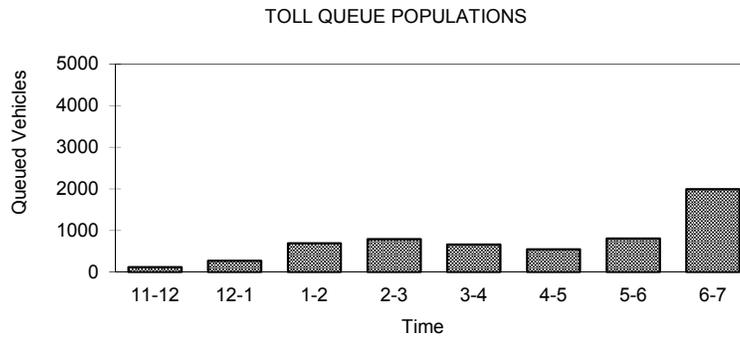
No significant delay was found at the Outerbridge Crossing (OBC) toll plaza during the Saturday survey period; the maximum observed cash toll queue contained 6 vehicles. Southbound/westbound congestion approaching the OBC on NJ 440 (Pearl Harbor Memorial Expressway) and Korean War Veterans Parkway was found between 11:00 a.m. and 4:00 p.m.; queue populations ranged from approximately 250 to 500 vehicles.

SUMMER SATURDAY - COMBINED OVERVIEW

Average Travel Time Through Toll Queues (New Jersey approaches to New York)
 Five Facilities Combined, Summer Saturday 2015



Toll Queue Populations, Five Port Authority Facilities Combined, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

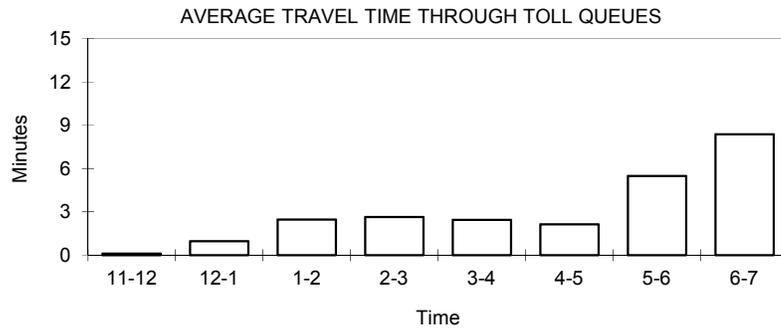
FIVE FACILITIES COMBINED TOLL QUEUE:	120	270	690	790	660	550	810	1990
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HOURLY TOLL VOLUMES

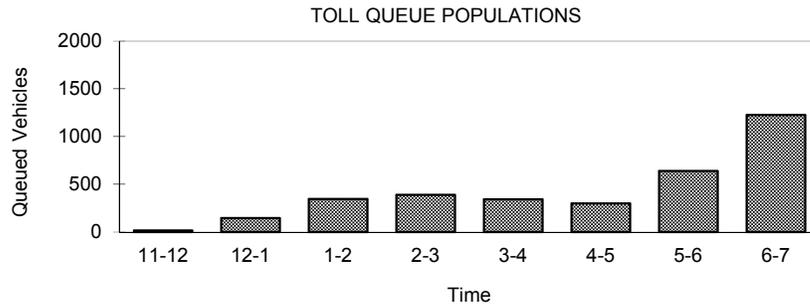
FIVE FACILITIES COMBINED TOLL VOLUME:	18,940	19,240	18,810	19,530	19,340	19,260	17,570	20,280
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Note: These toll counts include delayed vehicles on NJ approaches to New York to include: George Washington Bridge; Lincoln Tunnel; Holland Tunnel, Goethals Bridge; and Outerbridge Crossing. The Bayonne Bridge, which did not experience any significant delay, is not included in these charts.

GEORGE WASHINGTON BRIDGE APPROACHES COMBINED
Average Travel Time Through Toll Queues, Three Toll Plazas Combined
(Main - Lower Level - PIP)
Summer Saturday, 2015



Combined Toll Queue Populations, George Washington Bridge, Summer Saturday 2015



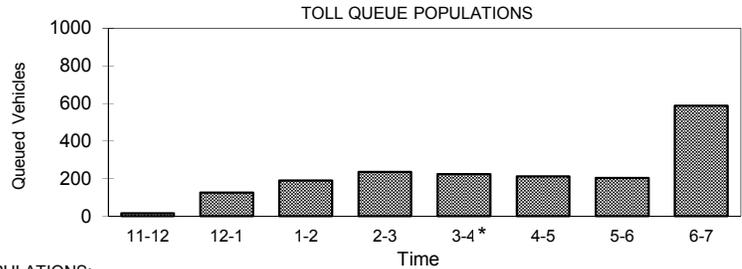
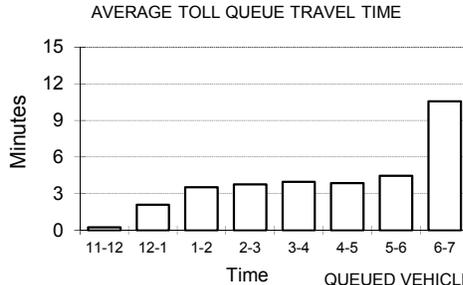
QUEUED VEHICLE POPULATIONS:

COMBINED GWB TOLL QUEUE (NJ):	16	146	348	390	346	301	642	1227
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HOURLY TOLL VOLUMES

COMBINED GWB TOLL VOLUME (NJ):	8838	8900	8428	8864	8472	8457	7003	8785
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Upper Level Toll Congestion, George Washington Bridge, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

GWB TOLL QUEUE (MAIN / NJ):	16	125	189	235	223	211	204	588
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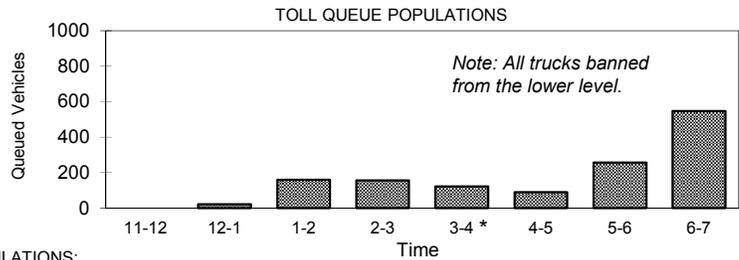
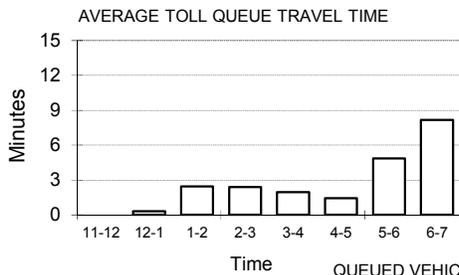
HOURLY TOLL VOLUMES

GWB TOLL VOLUME (MAIN / NJ):	3880	3578	3222	3746	3370	3275	2738	3343
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* Data projected (airplane refueling) **Note 1**

Note 1 : At 4:07 p.m., an EB incident was found on the Cross Bronx Expwy at Castle Hill Ave (vicinity of the Bruckner Interchange); at this time, the left lane was blocked by incident-related vehicles. At 5:09 p.m. the 2 left lanes were blocked; at 6:00 p.m. the left lane was still blocked. During the final flyover at 7:03 p.m. all lanes were open. Congestion approaching the incident ultimately extended back across the GWB bridge span and through the 3 GWB toll plazas (atypical conditions).

Lower Level Toll Congestion, George Washington Bridge, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

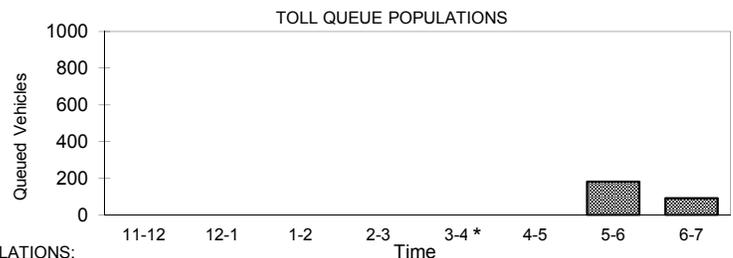
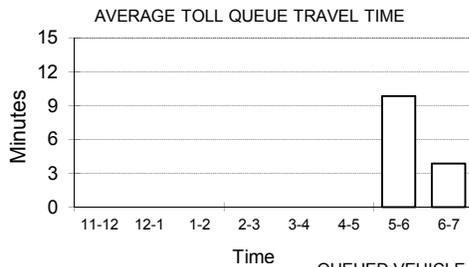
GWB TOLL QUEUE (LOWER / NJ):	0	21	159	155	123	90	256	548
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HOURLY TOLL VOLUMES

GWB TOLL VOLUME (LOWER / NJ):	3807	4015	3912	3869	3780	3788	3154	4020
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* Data projected (airplane refueling) **Note 1**

Palisades Parkway Toll Congestion, George Washington Bridge, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

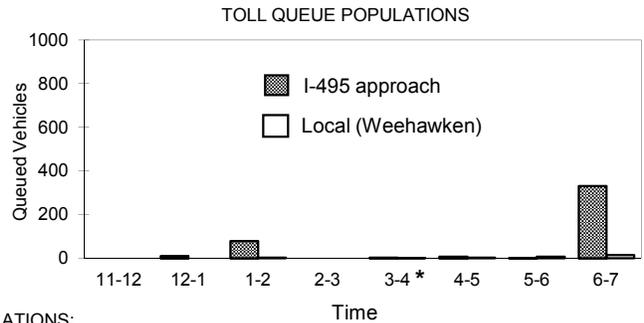
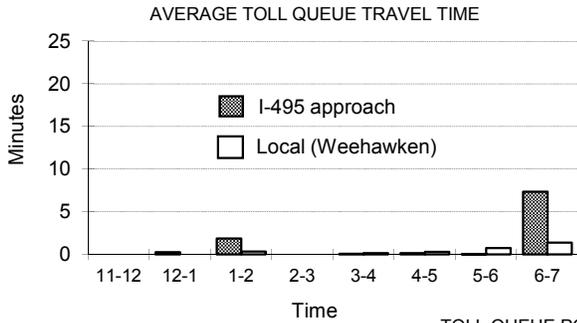
GWB TOLL QUEUE (PIP/NJ):	0	0	0	0	0	0	182	91
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HOURLY TOLL VOLUMES

GWB TOLL VOLUME (PIP / NJ):	1151	1307	1294	1249	1322	1394	1111	1422
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* Data projected (airplane refueling) **Note 1**

Toll Congestion, Inbound Lincoln Tunnel, Summer Saturday 2015



TOLL QUEUE POPULATIONS:

I-495 APPROACH:	0	11	80	0	4	8	2	331
LOCAL APPROACH (WEEHAWKEN):	0	0	3	0	2	3	8	15

* Data projected (airplane refueling)

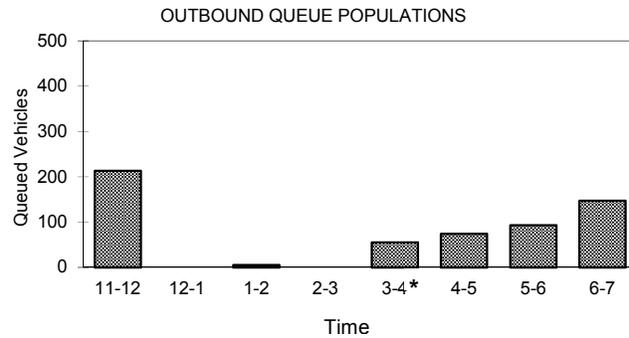
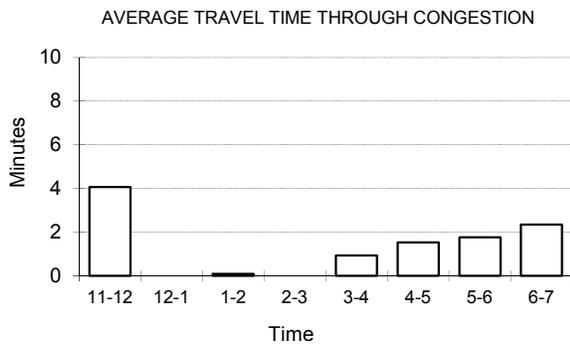
HOURLY TOLL VOLUMES

I-495 TOLL LANES:	2643	2514	2531	2546	2620	2675	2616	2698
LOCAL TOLL LANES (WEEHAWKEN):	578	611	569	634	622	619	646	654

Note: For the purpose of obtaining average estimated toll queue travel times for all vehicles on the I-495 approach and the local approach in Weehawken, processing rates for each were calculated as follows:

Processing rates in lanes 4-10 were assigned to the I-495 approach; processing rates in lanes 12 and 23 were assigned to the local approach. Fifty percent of the processing rate of lane 11 was assigned to each the I-495 and local approaches (vehicles from both approaches can access lane #11).

Congestion in Manhattan, Outbound Lincoln Tunnel, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

LINCOLN TUNNEL APPROACH IN MANHATTAN (NY):	213	0	5	0	55	74	93	147
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"Outbound Queue Populations" is an estimate of the number of vehicles waiting to enter the tunnel in Manhattan to include: Tunnel portal, Rte 495 (including the 30th St approach), 40th St., 41st St, 9th Ave & 11th Ave.

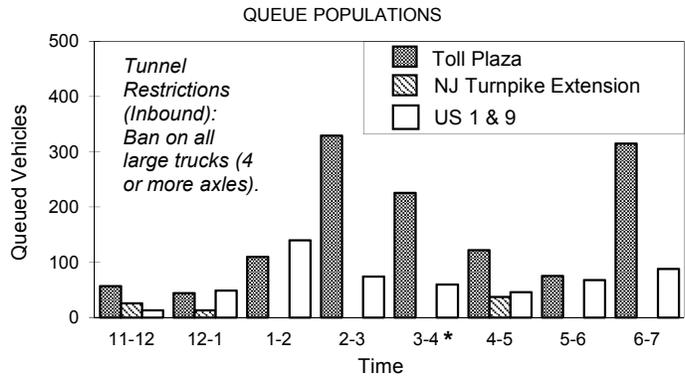
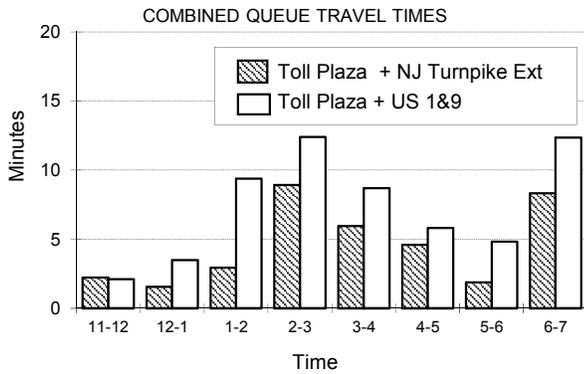
* Data projected (airplane refueling)

HOURLY TOLL VOLUMES

LINCOLN TUNNEL WB VOLUME (NY)**:	3220	3350	3180	3420	3570	3250	3245	3580
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**Historical westbound volumes depicted (average from survey dates in 2007 and 2008).

Toll Congestion, Inbound Holland Tunnel, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:
 TOTAL HOLLAND TUNNEL TOLL QUEUE (NJ):

96	106	250	403	286	205	143	403
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* Data projected from 3:00 to 4:00 p.m. (airplane refueling)

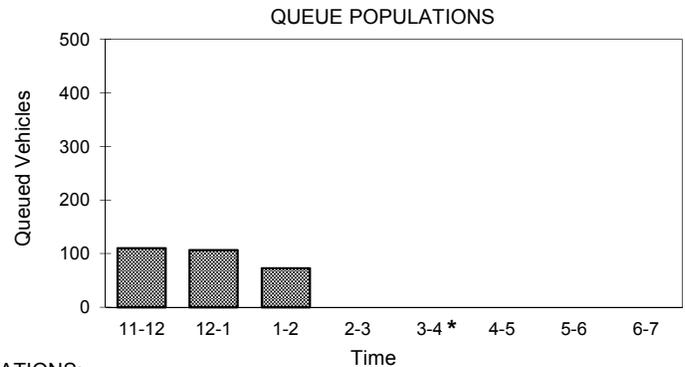
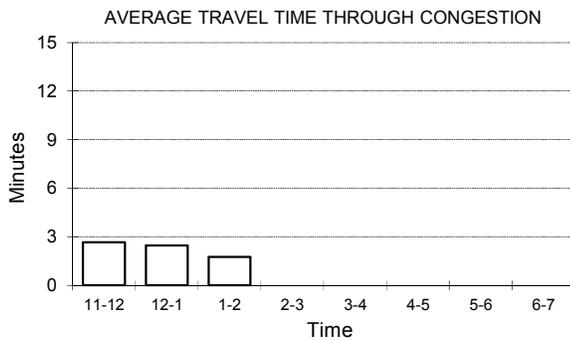
HOURLY TOLL VOLUMES
 HOLLAND TUNNEL TOLL VOLUME (NJ):

2499	2465	2503	2456	2526	2312	2663	2520
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Note: Volumes for US 1&9 and the NJ Turnpike Extension at the signal at Jersey Ave were calculated as a percentage of the HT toll plaza volume. These percentages were obtained during a special survey conducted for the purpose of being able to calculate travel times on the two approaches.

Congestion in Manhattan, Outbound Holland Tunnel, Summer Saturday 2015

*Tunnel Restrictions (Outbound):
 Ban on all large trucks (4 or more axles).*



QUEUED VEHICLE POPULATIONS:
 HOLLAND TUNNEL APPROACH QUEUE (NY)**:

110	107	73	0	0	0	0	0
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* Data projected from 3:00 to 4:00 p.m. (airplane refueling)

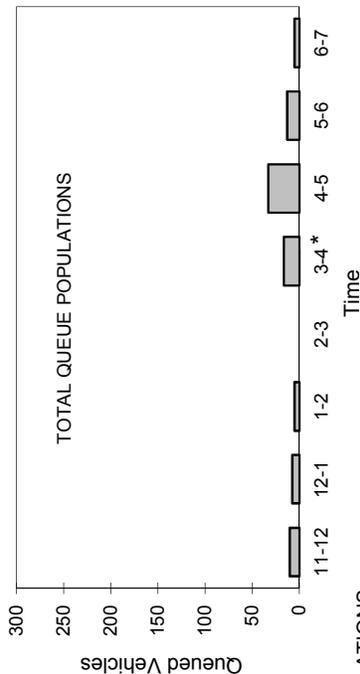
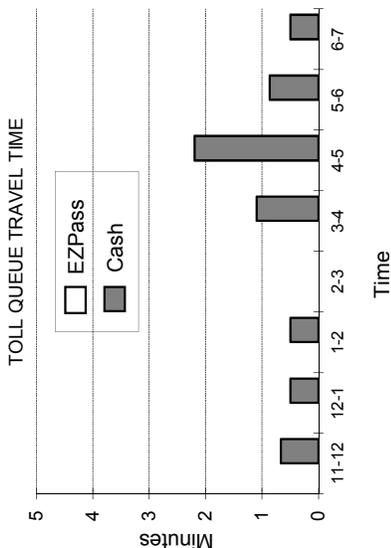
HOURLY TOLL VOLUMES
 HOLLAND TUNNEL WESTBOUND VOLUME (NY)**:

2490	2620	2590	2580	2610	2590	2600	2580
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** These are the total number of vehicles queued on the local streets in Manhattan approaching the outbound Holland Tunnel portal.

*** Historical volumes.

Toll Congestion, Goethals Bridge, Summer Saturday 2015



TOLL QUEUE POPULATIONS:

Bridge Span (EZPass & Cash Users):	0	0	0	0	0	0	0	0
Toll Plaza Apron (Cash Users Only):	10	8	5	0	17	33	13	5
Total (EZPass and Cash Users):	10	8	5	0	17	33	13	5

* Data projected from 3:00 to 4:00 p.m. (airplane refueling)

HOURLY TOLL VOLUMES:

EZPass & Cash Lanes:	2485	2619	2615	2808	2815	2787	2082	2785
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Note 1

Available Cash Lanes*:	3	3	2	3	3	3	3	2
------------------------	---	---	---	---	---	---	---	---

*Estimated when the absence of significant queues did not allow for determination of the number of available cash lanes.

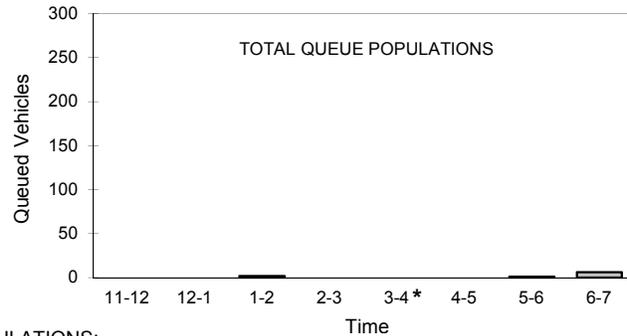
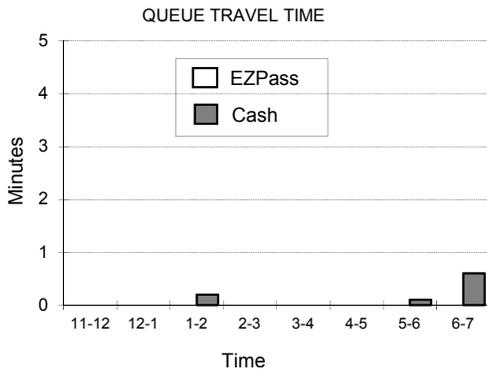
Note 1: An unusually low hourly toll volume was recorded between 5:00 and 6:00 p.m. A westbound incident on the bridge span (observed at 5:29 and 5:40 p.m.) caused rubbernecking and eastbound congestion; this bottleneck may have contributed to the low processing rate.

Estimated toll queue travel times for Cash users were calculated as follows:

Mostly minor cash queues were found on the plaza apron during the Saturday survey period. Toll queue travel time for cash users on the plaza apron was calculated using the cash queue population and an estimated processing rate of 300 vehicles per lane.

No delays were found for EZPass users during the Saturday survey period.

Toll Congestion, Outerbridge Crossing, Summer Saturday 2015



TOLL QUEUE POPULATIONS:

Bridge Span (EZPass & Cash Users):	0	0	0	0	0	0	0	0
Toll Plaza Apron (Cash Users Only):	0	0	2	0	0	0	1	6
Total (EZPass and Cash Users):	0	0	2	0	0	0	1	6

* Data projected from 3:00 to 4:00 p.m. (airplane refueling)

HOURLY TOLL VOLUMES:

EZPass & Cash Lanes:	2215	2435	2427	2522	2631	2698	2892	3132
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Available Cash Lanes*:	2	2	2	2	2	2	2	2
------------------------	---	---	---	---	---	---	---	---

*Estimated when the absence of significant queues did not allow for determination of the number of available cash lanes.

Estimated toll queue travel times for EZPass and Cash users are calculated as follows:

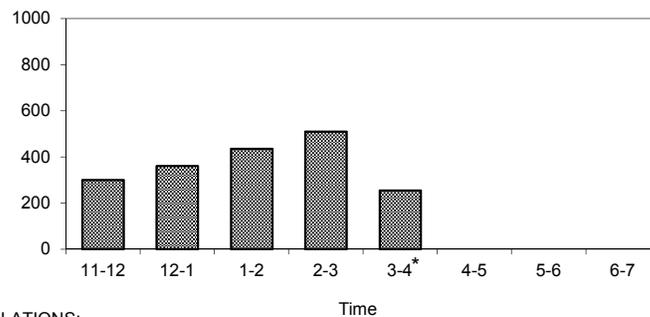
Cash queues on the plaza apron are clearly defined during some observations; when queuing is present, two to three cash lanes are typically available. Toll queue travel time for cash users on the plaza apron is calculated using the cash queue population and an estimated processing rate of 300 vehicles per lane.

During some observations, cash queues extend across the plaza apron and into the two-lane section of the bridge, effectively choking off EZPass access to the toll plaza. Queue travel time on the bridge is calculated using the queue population on the bridge and the total processing rate at the toll plaza (EZPass and cash lanes combined - see volumes above).

Toll queue travel time for cash users depicted in the graph above is comprised of travel time on the plaza apron, plus if applicable, queue travel time on the bridge.

Travel time for EZPass users depicted above is the queue travel time on the bridge only (when applicable); travel time on the plaza apron is assumed to be zero.

Congestion on Staten Island Approaches to Outerbridge Crossing, Summer Saturday 2015



QUEUED VEHICLE POPULATIONS:

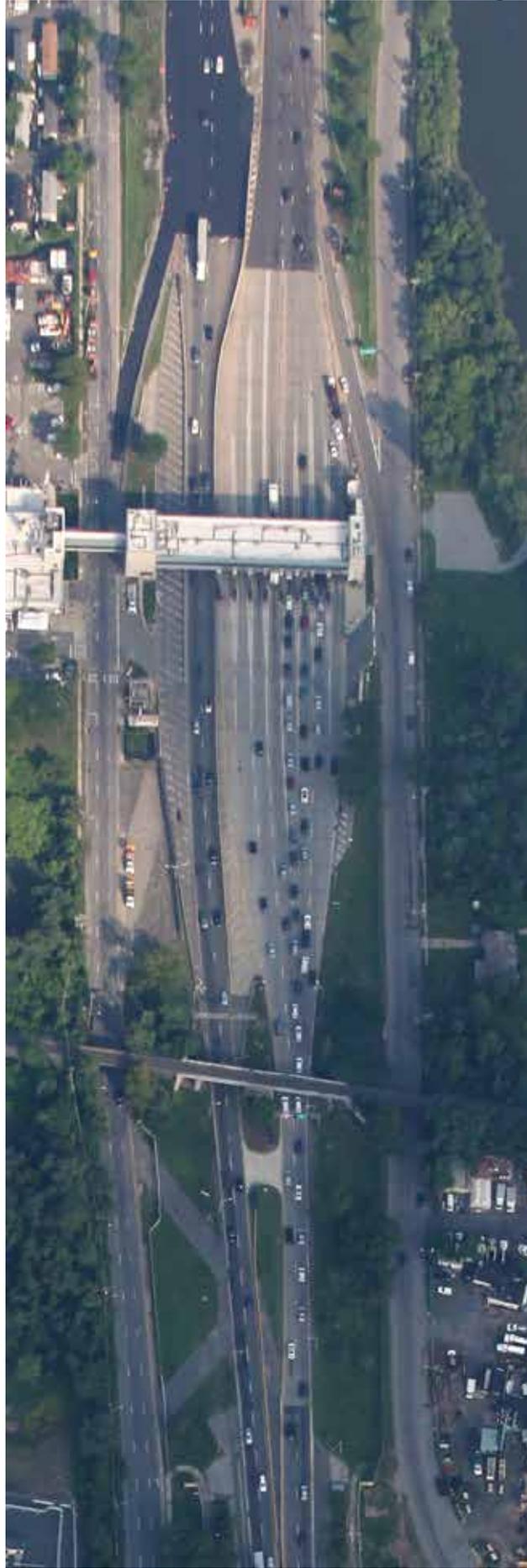
OBC APPROACH QUEUE:	300	360	435	510	255	0	0	0
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* Data projected from 3:00 to 4:00 p.m. (airplane refueling)

Note: Queue populations depicted above include vehicles queued on NJ 440 (Pearl Harbor Memorial Expressway) and Korean War Veterans Parkway.

(Blank)

Goethals Bridge Saturday, July 11, 2015



Saturday, July 11, at 5:29 p.m.

This photo shows the maximum observed toll queue found at the Goethals Bridge during the Saturday survey period. Note vehicles queued in the three available cash lanes. EZPass users appeared to bypass the cash queues without delay.

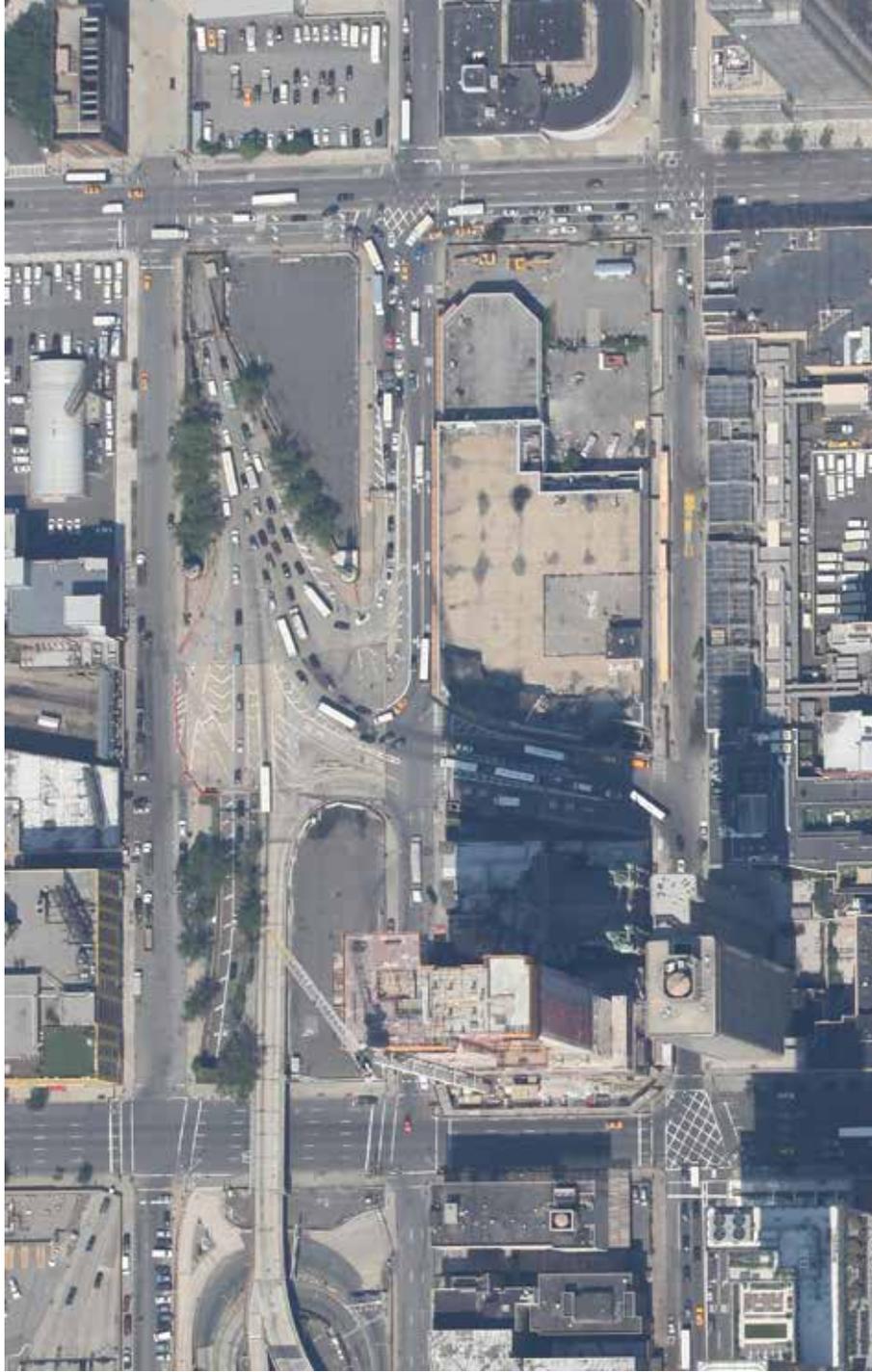
Holland Tunnel (New Jersey) Saturday, July 11, 2015



Saturday, July 11, at 2:02 p.m.

This photo depicts inbound congestion approaching the Holland Tunnel toll plaza in New Jersey. The toll queue contained approximately 330 vehicles, corresponding to an estimated toll queue travel time of 9 minutes per vehicle.

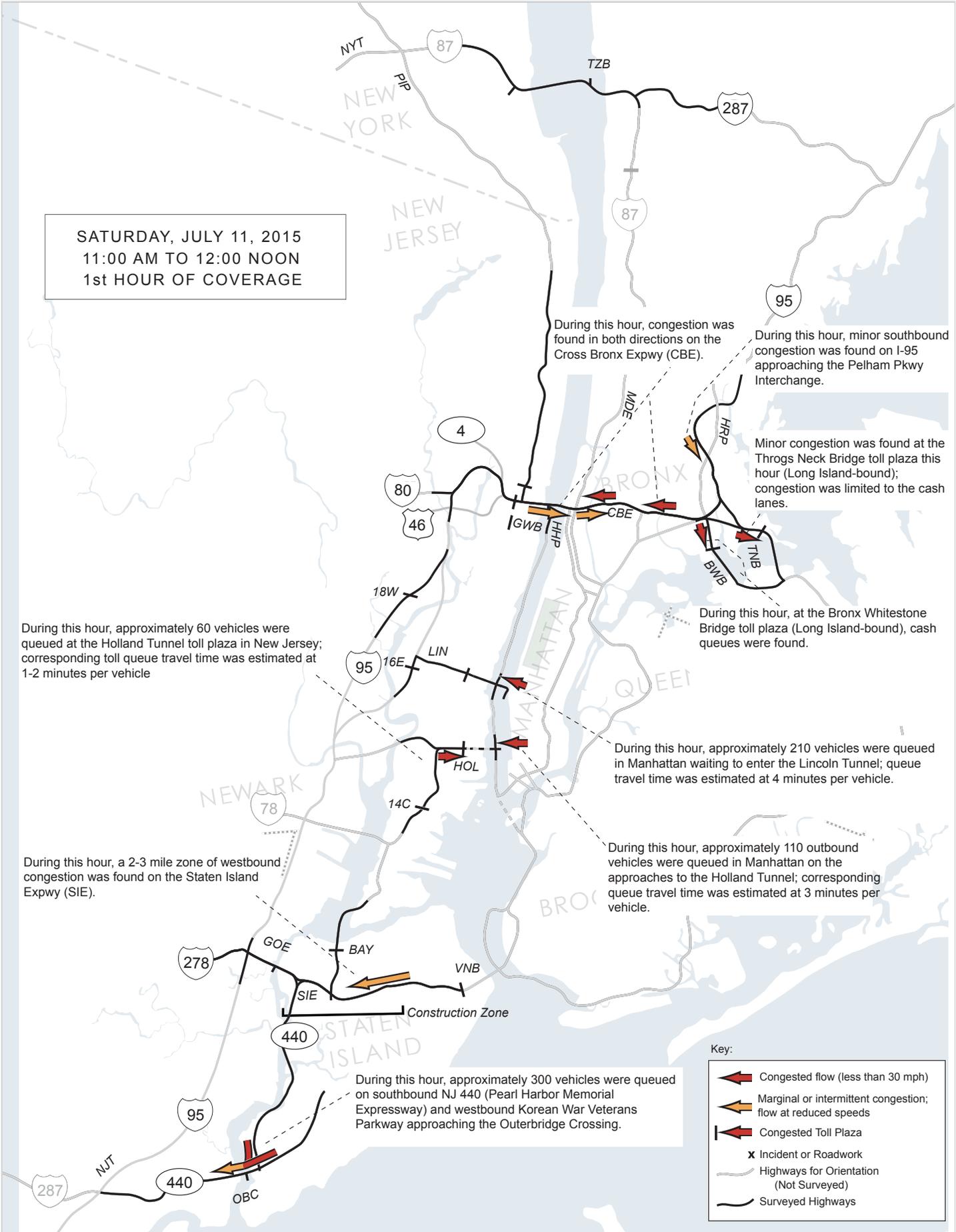
Lincoln Tunnel (New York) Saturday, July 11, 2015



Saturday, July 11, at 11:05 a.m.

This photo shows outbound congestion in Manhattan approaching the Lincoln Tunnel entrance at the north tube. By the next observation at 12:07 p.m., congestion had dissipated.

SATURDAY, JULY 11, 2015
 11:00 AM TO 12:00 NOON
 1st HOUR OF COVERAGE



During this hour, approximately 60 vehicles were queued at the Holland Tunnel toll plaza in New Jersey; corresponding toll queue travel time was estimated at 1-2 minutes per vehicle

During this hour, congestion was found in both directions on the Cross Bronx Expwy (CBE).

During this hour, minor southbound congestion was found on I-95 approaching the Pelham Pkwy Interchange.

Minor congestion was found at the Throgs Neck Bridge toll plaza this hour (Long Island-bound); congestion was limited to the cash lanes.

During this hour, at the Bronx Whitestone Bridge toll plaza (Long Island-bound), cash queues were found.

During this hour, approximately 210 vehicles were queued in Manhattan waiting to enter the Lincoln Tunnel; queue travel time was estimated at 4 minutes per vehicle.

During this hour, a 2-3 mile zone of westbound congestion was found on the Staten Island Expwy (SIE).

During this hour, approximately 110 outbound vehicles were queued in Manhattan on the approaches to the Holland Tunnel; corresponding queue travel time was estimated at 3 minutes per vehicle.

During this hour, approximately 300 vehicles were queued on southbound NJ 440 (Pearl Harbor Memorial Expressway) and westbound Korean War Veterans Parkway approaching the Outerbridge Crossing.

Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

SATURDAY, JULY 11, 2015
 12:00 NOON TO 1:00 PM
 2nd HOUR OF COVERAGE

During this hour, approximately 125 vehicles were queued at the GWB upper level toll plaza; corresponding toll queue travel time was estimated at 2 minutes.

During a flyover at 12:29 p.m., an eastbound incident was found on I-87 approaching a lane closure (left lane coned off) in the vicinity of US 9W.

Congestion persisted this hour in both directions on the CBE.

Minor southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

Long Island-bound congestion persisted this hour at the Throgs Neck Bridge (Long Island-bound).

Cash queues persisted this hour at the Bronx Whitestone Bridge toll plaza (Long Island-bound).

HT Outbound Queue Population: 110 vehicles
 HT Queue Travel Time: 3 minutes

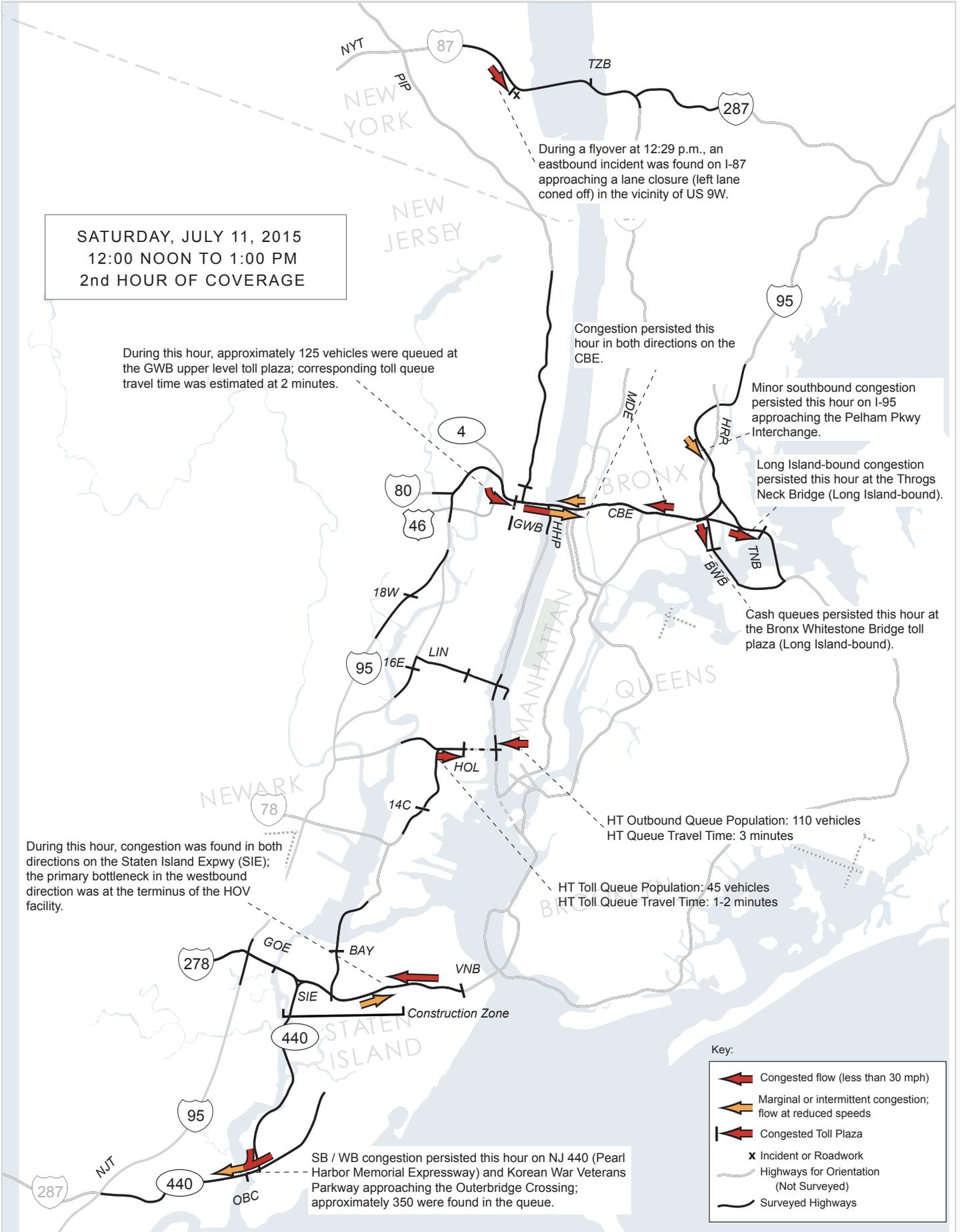
HT Toll Queue Population: 45 vehicles
 HT Toll Queue Travel Time: 1-2 minutes

During this hour, congestion was found in both directions on the Staten Island Expwy (SIE); the primary bottleneck in the westbound direction was at the terminus of the HOV facility.

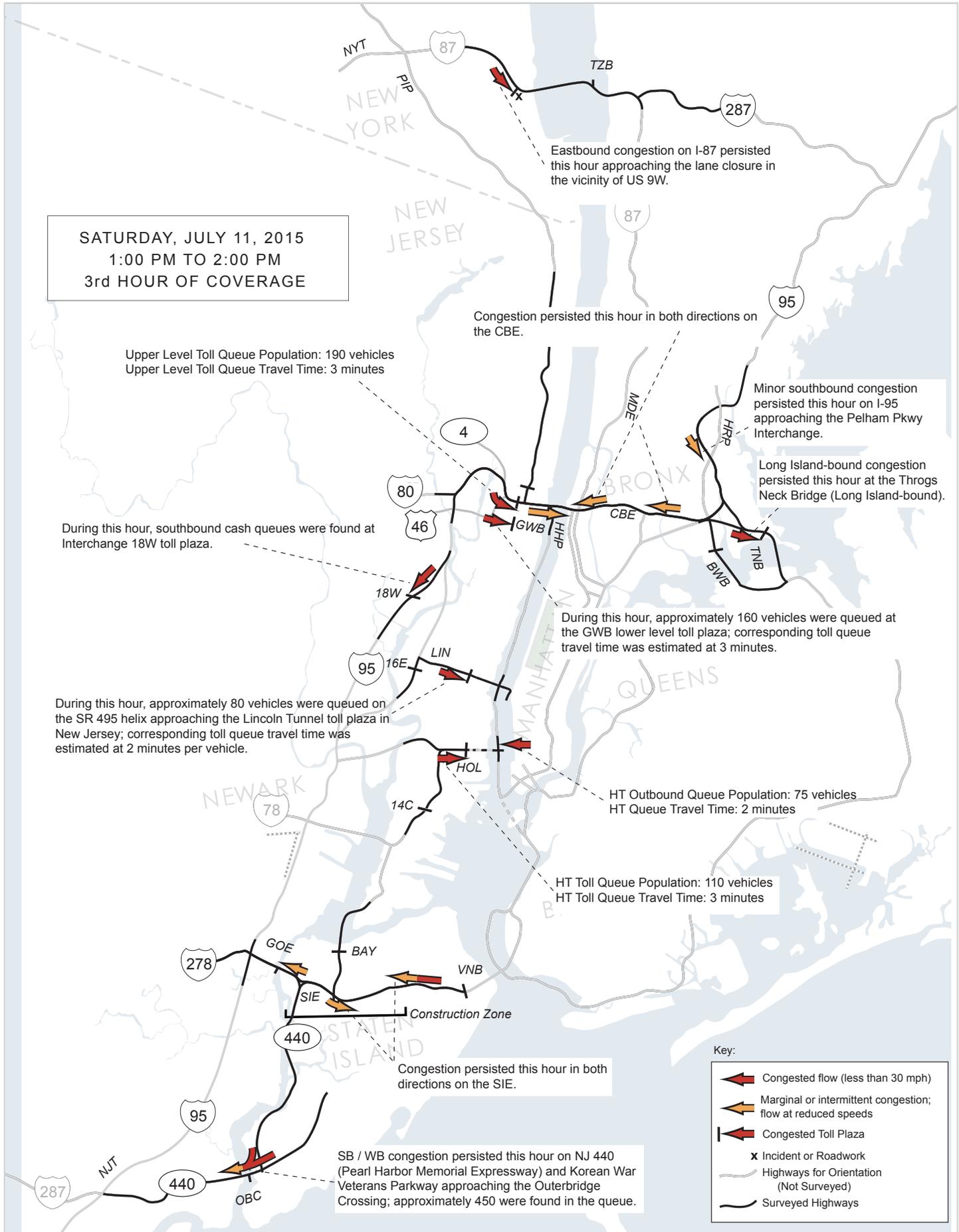
SB / WB congestion persisted this hour on NJ 440 (Pearl Harbor Memorial Expressway) and Korean War Veterans Parkway approaching the Outerbridge Crossing; approximately 350 were found in the queue.

Key:

-  Congested flow (less than 30 mph)
-  Marginal or intermittent congestion; flow at reduced speeds
-  Congested Toll Plaza
-  Incident or Roadwork
-  Highways for Orientation (Not Surveyed)
-  Surveyed Highways

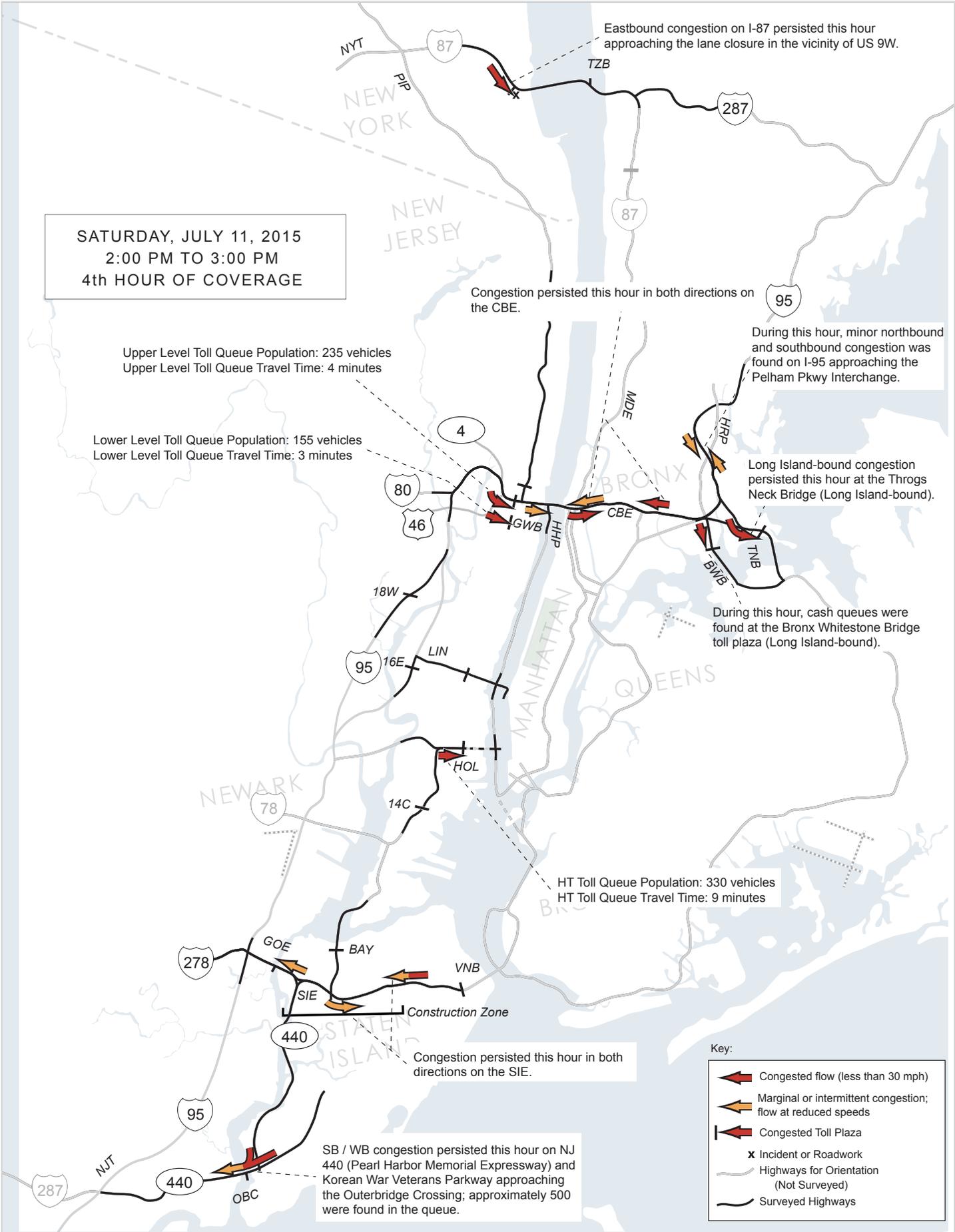


SATURDAY, JULY 11, 2015
 1:00 PM TO 2:00 PM
 3rd HOUR OF COVERAGE



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways



SATURDAY, JULY 11, 2015
 3:00 PM TO 4:00 PM
 5th HOUR OF COVERAGE
 (INTERPOLATED/Airplane Refueling)

Upper Level Toll Queue Population: 225 vehicles
 Upper Level Toll Queue Travel Time: 4 minutes

Lower Level Toll Queue Population: 125 vehicles
 Lower Level Toll Queue Travel Time: 2 minutes

Eastbound congestion on I-87 persisted this hour approaching the lane closure in the vicinity of US 9W.

Congestion persisted this hour in both directions on the CBE.

Minor northbound and southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

LT Outbound Queue Population: 55 vehicles
 LT Queue Travel Time: 1 minute

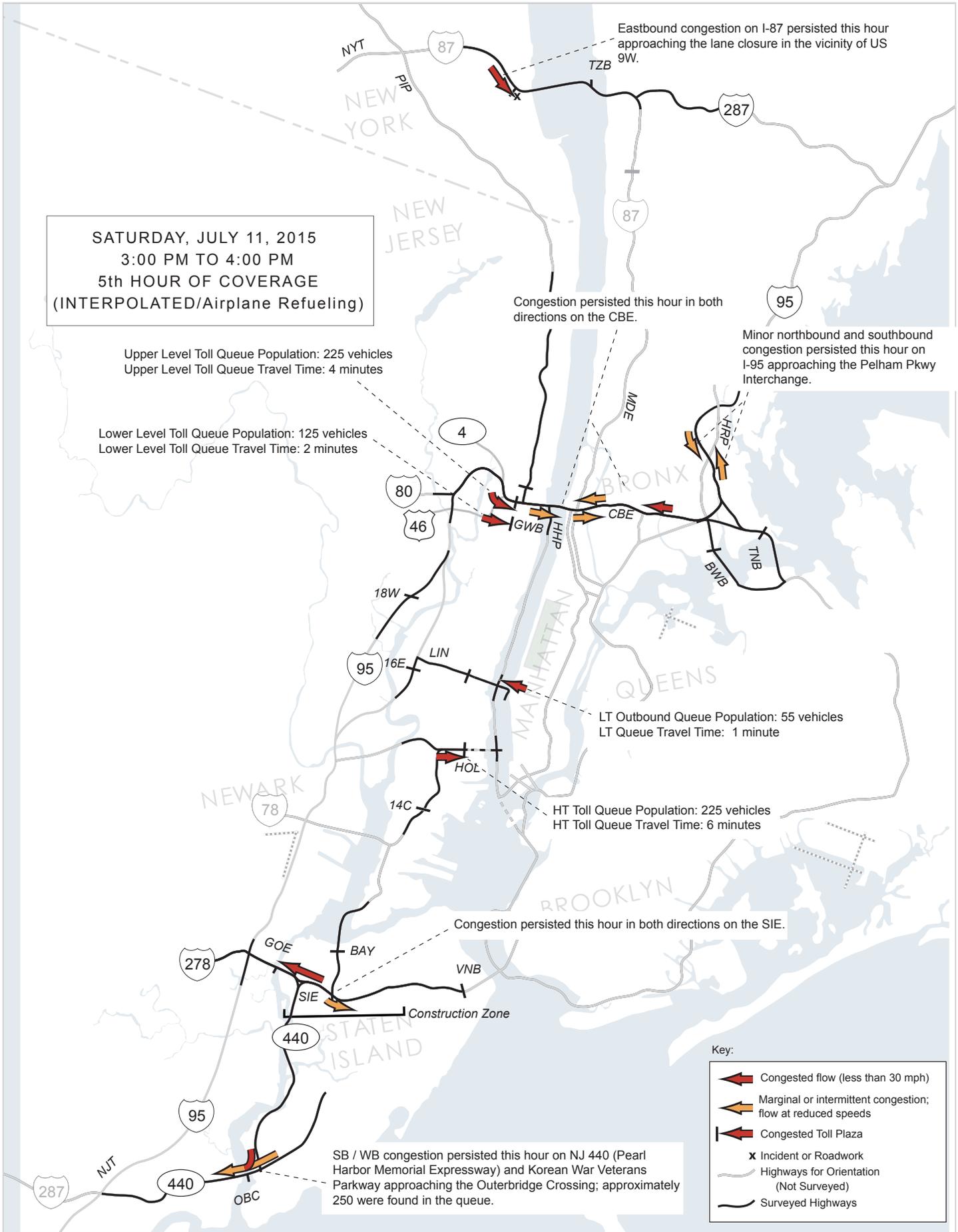
HT Toll Queue Population: 225 vehicles
 HT Toll Queue Travel Time: 6 minutes

Congestion persisted this hour in both directions on the SIE.

SB / WB congestion persisted this hour on NJ 440 (Pearl Harbor Memorial Expressway) and Korean War Veterans Parkway approaching the Outerbridge Crossing; approximately 250 were found in the queue.

Key:

-  Congested flow (less than 30 mph)
-  Marginal or intermittent congestion; flow at reduced speeds
-  Congested Toll Plaza
-  Incident or Roadwork
-  Highways for Orientation (Not Surveyed)
-  Surveyed Highways



SATURDAY, JULY 11, 2015
4:00 PM TO 5:00 PM
6th HOUR OF COVERAGE

Upper Level Toll Queue Population: 210 vehicles
Upper Level Toll Queue Travel Time: 4 minutes

Lower Level Toll Queue Population: 90 vehicles
Lower Level Toll Queue Travel Time: 1-2 minutes

During this hour, a short zone of westbound congestion was found on the CBE approaching the Sheridan Expwy Interchange.

During this hour, southbound congestion was found on I-95 approaching the Pelham Pkwy Interchange.

At 4:07 p.m., an eastbound incident was found on the Cross Bronx Expwy at Castle Hill Ave (vicinity of the Bruckner Interchange); at this time, the left lane was blocked by incident-related vehicles. At 5:09 p.m. the 2 left lanes of 3 were blocked; at 6:00 p.m. the left lane was still blocked. During the final flyover at 7:03 p.m. all lanes were open.

LT Outbound Queue Population: 75 vehicles
LT Queue Travel Time: 2 minutes

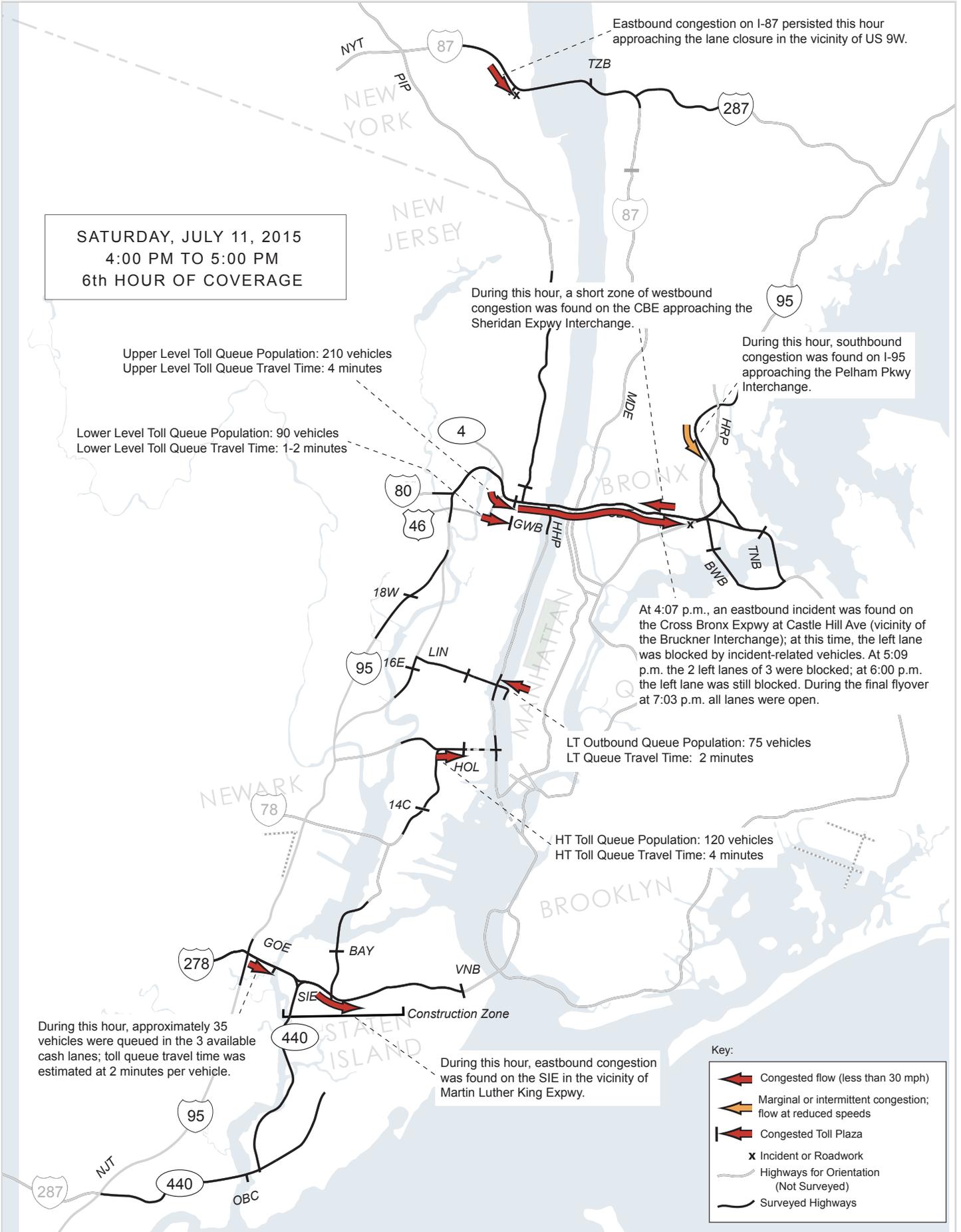
HT Toll Queue Population: 120 vehicles
HT Toll Queue Travel Time: 4 minutes

During this hour, approximately 35 vehicles were queued in the 3 available cash lanes; toll queue travel time was estimated at 2 minutes per vehicle.

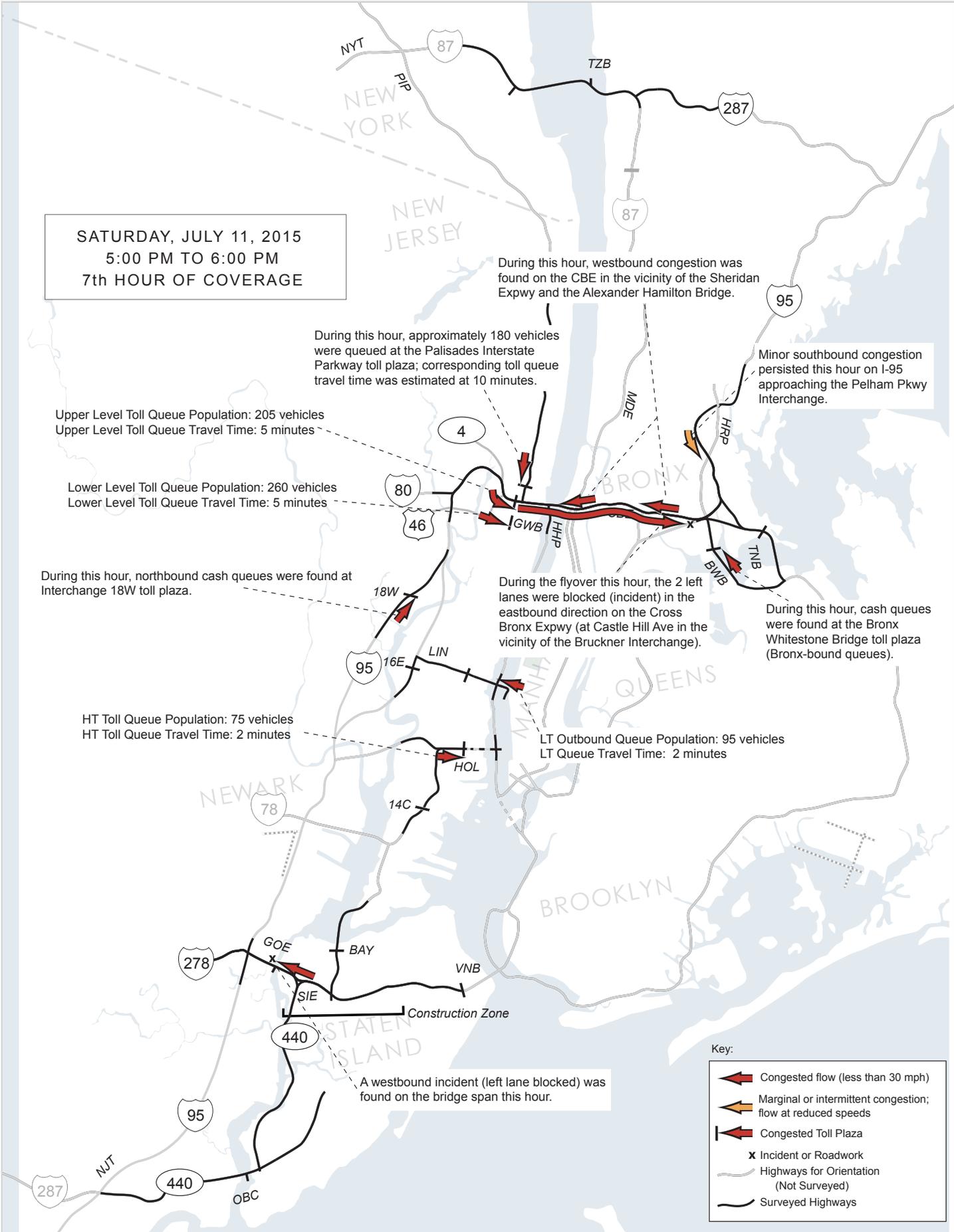
During this hour, eastbound congestion was found on the SIE in the vicinity of Martin Luther King Expwy.

Key:

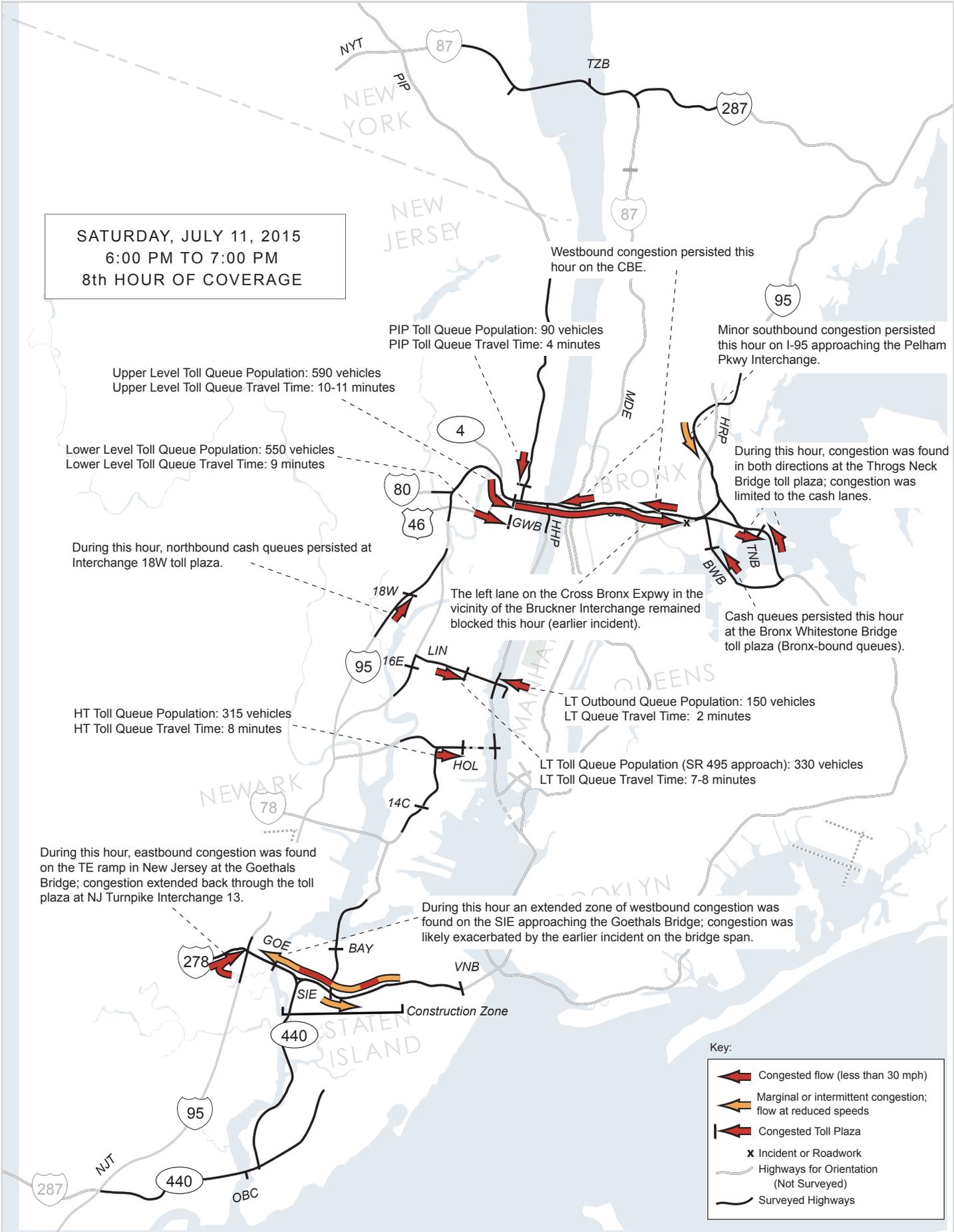
-  Congested flow (less than 30 mph)
-  Marginal or intermittent congestion; flow at reduced speeds
-  Congested Toll Plaza
-  Incident or Roadwork
-  Highways for Orientation (Not Surveyed)
-  Surveyed Highways



SATURDAY, JULY 11, 2015
5:00 PM TO 6:00 PM
7th HOUR OF COVERAGE



SATURDAY, JULY 11, 2015
6:00 PM TO 7:00 PM
8th HOUR OF COVERAGE



Upper Level Toll Queue Population: 590 vehicles
 Upper Level Toll Queue Travel Time: 10-11 minutes

Lower Level Toll Queue Population: 550 vehicles
 Lower Level Toll Queue Travel Time: 9 minutes

During this hour, northbound cash queues persisted at Interchange 18W toll plaza.

HT Toll Queue Population: 315 vehicles
 HT Toll Queue Travel Time: 8 minutes

During this hour, eastbound congestion was found on the TE ramp in New Jersey at the Goethals Bridge; congestion extended back through the toll plaza at NJ Turnpike Interchange 13.

Westbound congestion persisted this hour on the CBE.

PIP Toll Queue Population: 90 vehicles
 PIP Toll Queue Travel Time: 4 minutes

Minor southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

During this hour, congestion was found in both directions at the Throgs Neck Bridge toll plaza; congestion was limited to the cash lanes.

The left lane on the Cross Bronx Expwy in the vicinity of the Bruckner Interchange remained blocked this hour (earlier incident).

Cash queues persisted this hour at the Bronx Whitestone Bridge toll plaza (Bronx-bound queues).

LT Outbound Queue Population: 150 vehicles
 LT Queue Travel Time: 2 minutes

LT Toll Queue Population (SR 495 approach): 330 vehicles
 LT Toll Queue Travel Time: 7-8 minutes

During this hour an extended zone of westbound congestion was found on the SIE approaching the Goethals Bridge; congestion was likely exacerbated by the earlier incident on the bridge span.

Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

(Blank)

PART TWO SUNDAY FINDINGS

Comparison of Relative Travel Demand:

This survey program involves the assessment of traffic quality over only one Saturday and Sunday each summer. In order to estimate the degree to which the survey dates were representative of the other summer weekend dates, 24-hour toll volumes at the Port Authority facilities were compiled for comparison. Examination of this table provides an understanding of how traffic demand on the 2015 survey date compared to demand throughout the summer.

The table below indicates that travel demand on Sunday, July 12th was within 2% of the summer average at each of the five facilities.

Relative Sunday travel demand, summer of 2015:

	<i>Date:</i>	<i>12 Jul</i>	<i>19 Jul</i>	<i>26 Jul</i>	<i>2 Aug</i>	<i>9 Aug</i>	<i>16 Aug</i>	<i>23 Aug</i>	<i>AVERAGE</i>
	<i>(precipitation)</i>	<i>sunny</i>	<i>sunny</i>	<i>p cloudy</i>	<i>sunny</i>	<i>p cloudy</i>	<i>p cloudy</i>	<i>p cloudy</i>	
	<i>(temp)</i>	<i>high 80's</i>	<i>low 90's</i>	<i>mid 80's</i>	<i>high 80's</i>	<i>low 80's</i>	<i>high 80's</i>	<i>low 80's</i>	
GWB	<i>(volume)</i>	157,849	154,772	150,698	152,223	157,681	156,641	155,021	154,984
	<i>(% of avg)</i>	102%	100%	97%	98%	102%	101%	100%	
LIN	<i>(volume)</i>	57,778	57,354	54,405	58,225	55,077	57,379	56,358	56,654
	<i>(% of avg)</i>	102%	101%	96%	103%	97%	101%	99%	
HOL	<i>(volume)</i>	44,115	45,179	44,104	45,212	44,288	43,327	43,743	44,281
	<i>(% of avg)</i>	100%	102%	100%	102%	100%	98%	99%	
GB	<i>(volume)</i>	44,688	46,454	44,823	45,540	45,617	46,201	46,263	45,655
	<i>(% of avg)</i>	98%	102%	98%	100%	100%	101%	101%	
OBC	<i>(volume)</i>	46,804	47,386	46,809	47,471	47,577	47,676	46,559	47,183
	<i>(% of avg)</i>	99%	100%	99%	101%	101%	101%	99%	

SOURCE: The Port Authority of New York & New Jersey; Saturday toll volumes for 24 hour period for eastbound traffic. Weather abbreviations: p - partly; m - mostly, l - light

SUNDAY OVERVIEW

Period of Coverage: July 12, 2015 (2:00 p.m. to 12:30 a.m.)

George Washington Bridge and Tappan Zee Bridge Corridors:

Throughout the Sunday survey period, eastbound congestion was found in the express lanes on I-95 approaching the George Washington Bridge upper level toll plaza; prior to midnight, toll queue populations ranged from approximately 400 to 800 vehicles, corresponding to toll queue travel times of 7 to 16 minutes. Cash queues at the toll plaza typically extended back across the plaza apron and into the express lanes on I-95; EZPass users were unable to bypass the cash queues until the final approach to the plaza apron.

All users of the lower level toll plaza experienced delays between 3:00 p.m. and midnight where toll queue populations ranged from 150 to 500 vehicles. Corresponding to toll queue travel times were estimated at 3 to 9 minutes. Before 3:00 p.m. and after midnight, toll queues (40 to 50 vehicles) were limited to the cash lanes.

Delays were found at the Palisades Interstate Parkway (PIP) toll plaza between 6:00 and 8:00 p.m.; approximately 90 to 125 queued vehicles corresponded to an estimated toll queue travel time of 3 to 5 minutes for all vehicles. Toll queues were also found between 8:00 and 10:00 p.m.; however, these queues were limited to the available cash lanes.

On the I-95 / Bruckner Expressway corridor, northbound and southbound congestion was found early in the survey period approaching the Pelham Parkway and Hutchinson River Parkway Interchanges.

On the Cross Bronx Expressway, congestion was found in both directions during most observations. Eastbound congestion was typically found on the GWB span and in the vicinity of the Alexander Hamilton Bridge. After 11:00 p.m., it appeared that an eastbound incident (not confirmed) occurred under the apartment buildings between the GWB and the Hamilton Bridge; severe congestion extended back across the GWB to the toll plazas. In the westbound direction, mostly minor delays were found, typically in the vicinity of the Sheridan Expressway and the Hamilton Bridge.

At the Bronx Whitestone Bridge and Throgs Neck Bridge toll plazas, congestion was intermittently found in each direction; queuing was typically limited to the cash lanes.

At the Tappan Zee Bridge, westbound congestion was found on I-87 between the I-287 Interchange and the bridge (2:00-5:00 p.m.); the head of the queue was found at the lane drop (4 lanes to 3) at the bridge span.

Lincoln and Holland Tunnels:

Between 3:00 and 9:00 p.m., inbound congestion was found on SR 495 approaching the Lincoln Tunnel in New Jersey; toll queue populations ranged from approximately 150 to 350 vehicles, corresponding to toll queue travel times of 3 to 7 minutes. After 10:00 p.m., the center tube was closed to inbound traffic; this meant all inbound traffic was funneled into the 2 lanes in the south tube. Toll queues between 10:00 p.m. and midnight ranged from approximately 100 to 150 vehicles, corresponding to toll queue travel times of 4 to 5 minutes. Only minor delays were found on the local approach (JFK Blvd and Willow Lane) to the toll plaza; toll queue travel times here typically ranged from 2 to 4 minutes.

No significant outbound delays were found in Manhattan at the Lincoln Tunnel. The only congestion found approaching the tunnel entrance (center tube) was at 11:30 p.m. when 40 vehicles were queued, corresponding to a queue travel time of 1 minute.

Prior to 9:00 p.m., inbound congestion was found approaching the Holland Tunnel toll plaza in New Jersey; during each of the observations, 12th Street was either filled or mostly filled with vehicles queued at the toll plaza. The longest delays were found between 4:00 and 8:00 p.m. when the queue on 12th St extended back into the US 1&9 and New Jersey Turnpike Extension approaches. During this time, total queue populations ranged from 400 to 800 vehicles, corresponding to toll queue travel times of approximately 10 to 20 minutes. When observed several times after 9:00 p.m., congestion at the toll plaza and on 12th Street had dissipated with the exception of small cash queues; however, during the last three flyovers between 11:52 p.m. and 12:28 a.m., approximately 150 to 200 vehicles were queued at the toll plaza. These toll queues were caused by the closure of the right lane at the tunnel entrance (congestion entering the tunnel extended back through the toll lanes).

Note: Since the 2014 summer survey, the Pulaski Skyway (US Route 1&9) has been closed for construction. Due to the closure, the lane configuration at the signal at 12th Street and Jersey Ave was changed. At the signal, the NJ Turnpike Extension approach has 3 vs. 2 lanes available while the US Route 1&9 approach has 2 vs. 3 lanes available.

From 2:00 to 8:00 p.m., outbound congestion was found approaching the Holland Tunnel in Manhattan; queue populations ranged from approximately 50 to 250 vehicles, corresponding to average queue travel times of 1-6 minutes per vehicle. After 8:00 p.m., vehicles entered the tunnel without delay.

Staten Island Crossings:

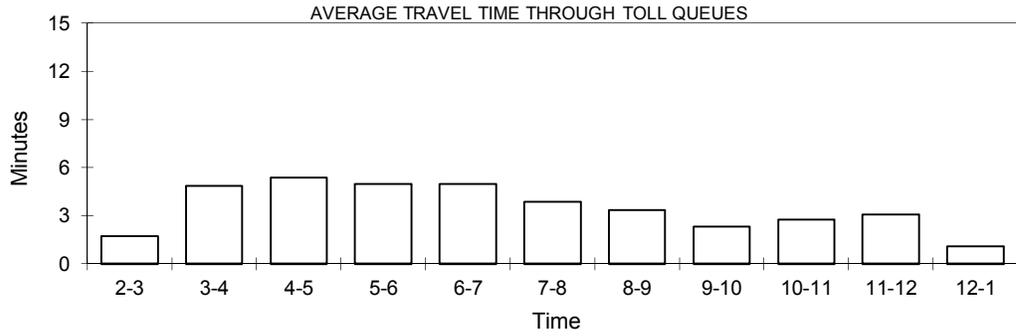
No significant delays were found at the Goethals Bridge toll plaza during the Sunday survey period. Up until midnight, eastbound travelers using the Goethals Bridge did not experience any delay traveling from New Jersey into New York. However, during flyovers at 12:10 and 12:33 a.m., severe congestion was found approaching the Int. 13 toll plaza; queuing in the two available cash lanes extended back onto the Turnpike's northbound ramp.

On the Staten Island Expressway (SIE), it appeared construction between the Goethals Bridge and Slosson Ave contributed to congestion found throughout most of the Saturday survey period. After clearing the toll plaza at the Goethals Bridge, eastbound travelers normally encountered congestion in the vicinity of the Pearl Harbor Memorial Expressway interchange; congestion typically extended downstream approximately 4 miles east to the vicinity of Todt-Hill Rd.

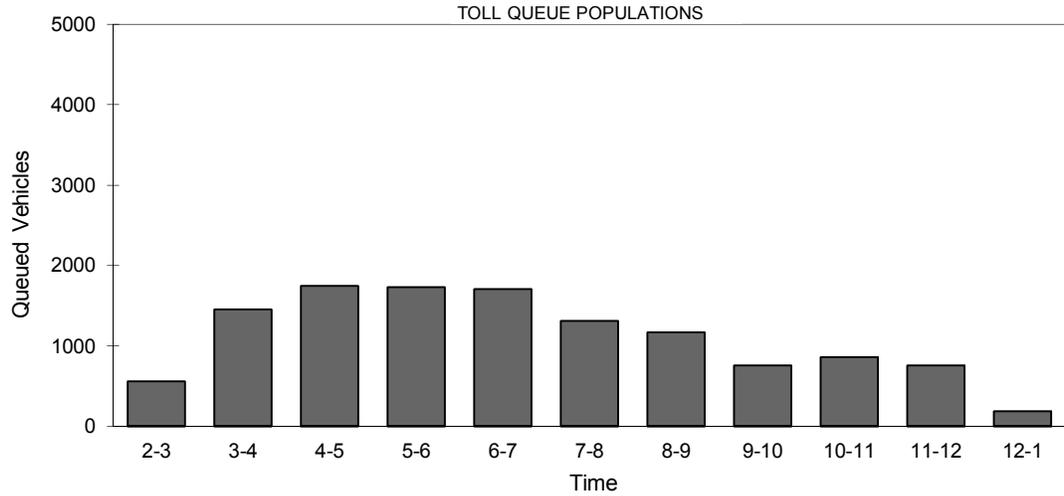
No significant delays were found at the Outerbridge Crossing (OBC) toll plaza during the Sunday survey period. On New Jersey Route 440, typical eastbound congestion was found in the vicinity of Amboy Ave; however, after midnight it appeared that the left lane was closed at the beginning of the OBC viaduct in New Jersey. A one-mile zone of congestion was found on NJ 440 approaching the lane closure.

SUMMER SUNDAY - COMBINED OVERVIEW

Average Travel Time Through Toll Queues (New Jersey approaches to New York)
 Five Facilities Combined, Summer Sunday 2015



Toll Queue Populations (New Jersey approaches to New York)
 Five Facilities Combined, Summer Sunday 2015



QUEUED VEHICLE POPULATIONS:

FIVE FACILITIES COMBINED TOLL QUEUE:	560	1,450	1,750	1,730	1,710	1,310	1,170	760	860	760	190
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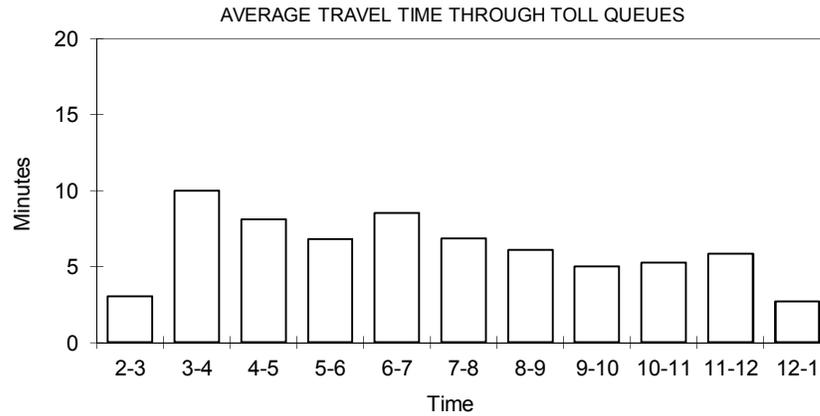
HOURLY TOLL VOLUMES

FIVE FACILITIES COMBINED TOLL VOLUME:	19,550	17,960	19,610	20,850	20,570	20,280	20,870	19,620	18,630	14,930	10,570
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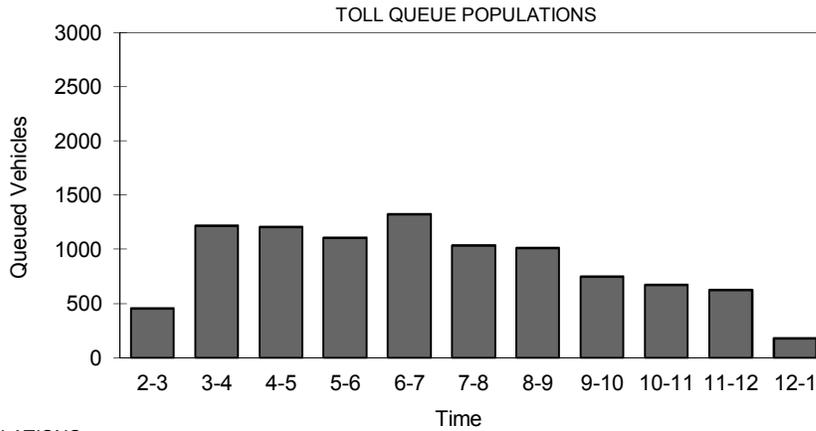
Note: These toll counts include delayed vehicles on NJ approaches to New York to include: George Washington Bridge; Lincoln Tunnel; Holland Tunnel, Goethals Bridge; and Outerbridge Crossing. The Bayonne Bridge, which did not experience any significant delay, is not included in these charts.

GEORGE WASHINGTON BRIDGE APPROACHES COMBINED

**Average Travel Time Through Toll Queues, Three Toll Plazas Combined
(Main - Lower Level - PIP)
Summer Sunday, 2015**



Combined Toll Queue Populations, George Washington Bridge, Summer Sunday 2015



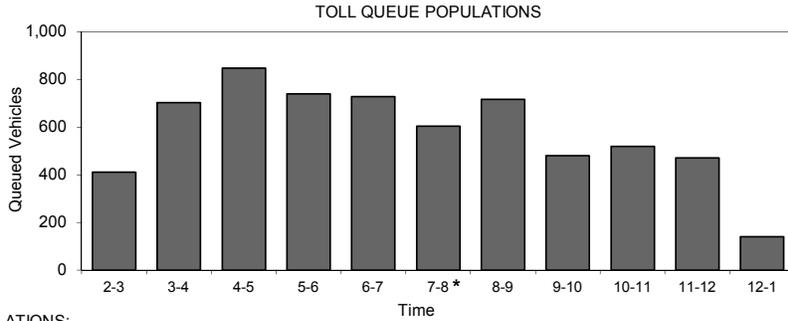
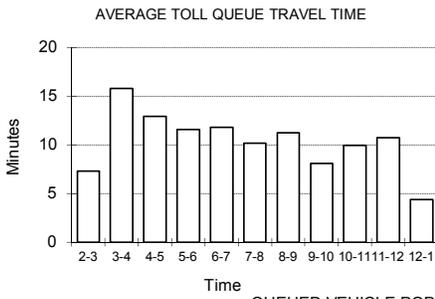
QUEUED VEHICLE POPULATIONS:

COMBINED GWB TOLL QUEUE (NJ):	457	1218	1206	1110	1325	1038	1017	751	673	626	183
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HOURLY TOLL VOLUMES

COMBINED GWB TOLL VOLUME (NJ):	8985	7326	8926	9794	9310	9099	10025	8979	7695	6432	4037
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Upper Level Toll Congestion, George Washington Bridge, Summer Sunday 2015



Note 1: An unusually low hourly toll volume was recorded between 3:00 and 4:00 p.m. No evidence of the cause was found in the aerial imagery.

QUEUED VEHICLE POPULATIONS:

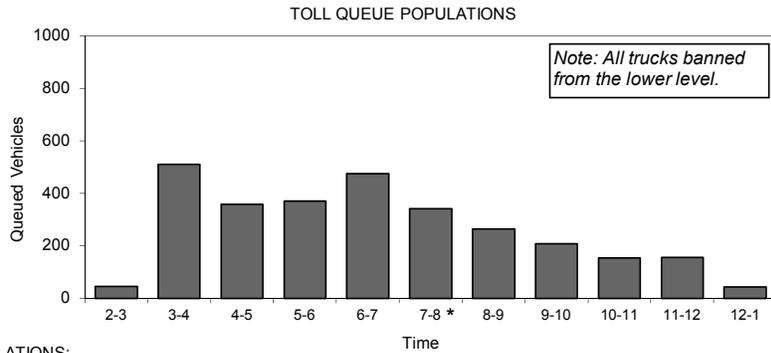
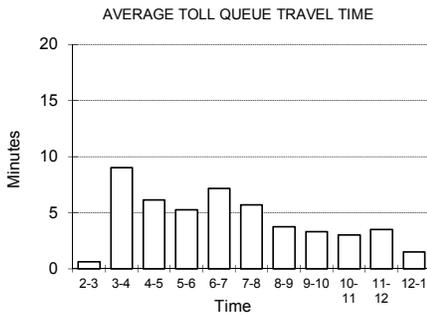
GWB TOLL QUEUE (MAIN / NJ):	412	702	848	740	728	604	716	480	520	470	139
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HOURLY TOLL VOLUMES

GWB TOLL VOLUME (MAIN / NJ):	3384	2675	3936	3841	3697	3558	3828	3555	3140	2625	1901
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Note 1
* Data projected (airplane refueling)

Lower Level Toll Congestion, George Washington Bridge, Summer Sunday 2015



QUEUED VEHICLE POPULATIONS:

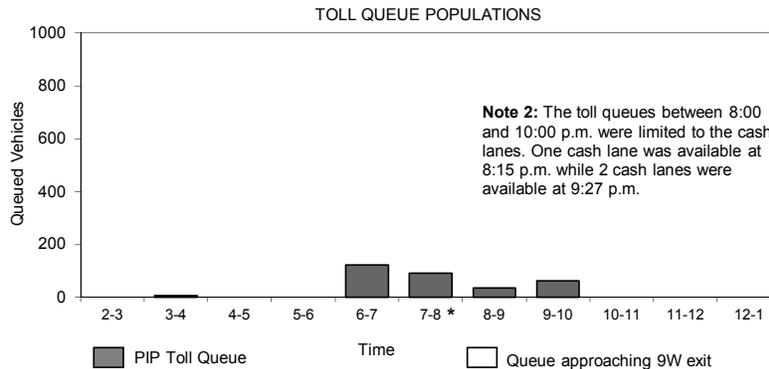
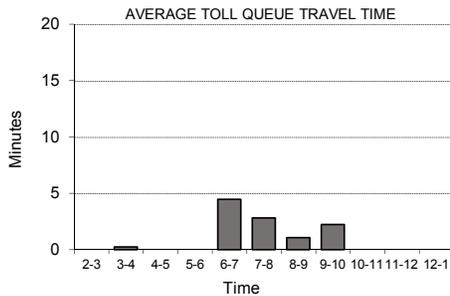
GWB TOLL QUEUE (LOWER / NJ):	45	510	358	370	475	342	265	209	153	156	44
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HOURLY TOLL VOLUMES

GWB TOLL VOLUME (LOWER / NJ):	4196	3387	3496	4217	3990	3586	4234	3774	3066	2670	1,764
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* Data projected (airplane refueling)

Palisades Parkway Toll Congestion, George Washington Bridge, Summer Sunday 2015



QUEUED VEHICLE POPULATIONS:

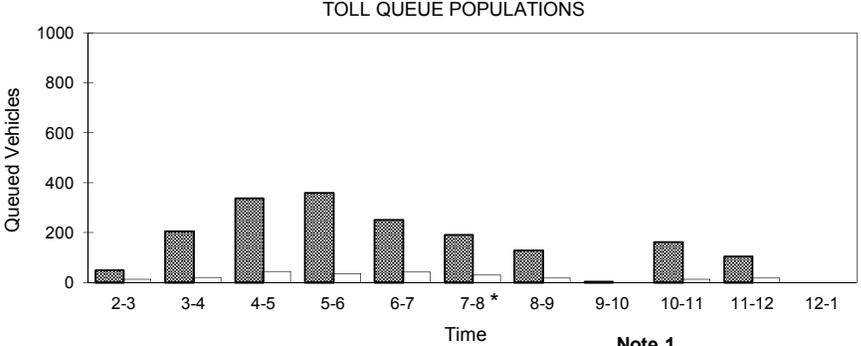
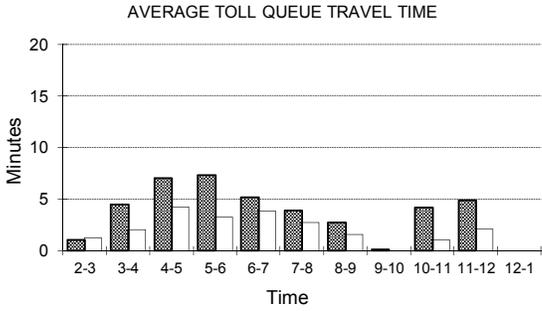
GWB TOLL QUEUE (PIP / NJ):	0	6	0	0	122	92	36	62	0	0	0
VEHICLES ON PIP APPROACHING 9W EXIT:	0	0	0	0	0	0	0	0	0	0	0

HOURLY TOLL VOLUMES

GWB TOLL VOLUME (PIP / NJ):	1405	1264	1494	1736	1623	1955	1963	1650	1489	1137	372
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Note 2
* Data projected (airplane refueling)

Toll Congestion, Inbound Lincoln Tunnel, Summer Sunday 2015



I-495 approach
 Local (Weehawken)

QUEUED VEHICLE POPULATIONS:

I-495 APPROACH:	50	205	338	359	252	190	128	3	161	105	0
LOCAL APPROACH (WEEHAWKEN):	14	20	44	36	43	31	18	0	13	19	0

Note 1

HOURLY TOLL VOLUMES

I-495 TOLL LANES:	2893	2744	2883	2939	2914	2925	2827	2288	2309	1301	810
LOCAL TOLL LANES (WEEHAWKEN):	687	588	622	665	676	669	695	618	750	543	221

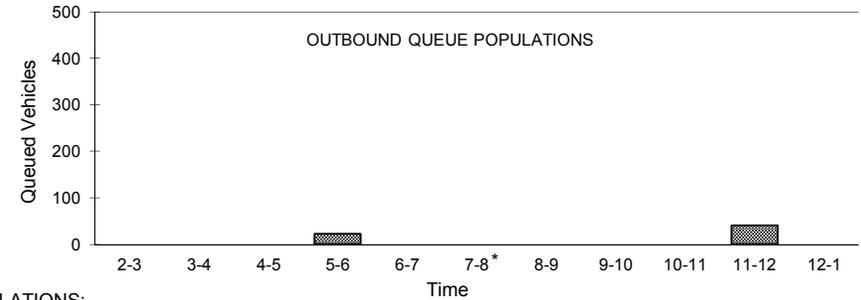
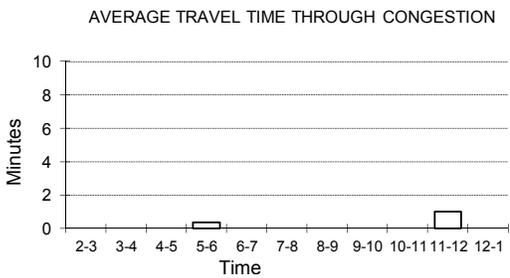
Note 1: During the flyover at 10:54 p.m., and until the end of the survey period, the center tube was closed to inbound traffic; after clearing the toll plaza, all inbound traffic was funneled into the two lanes in the south tube.

* Data projected (airplane refueling)

Note: For the purpose of obtaining average estimated toll queue travel times for all vehicles on the I-495 approach and the local approach in Weehawken, processing rates for each were calculated as follows:

Processing rates in lanes 4-10 were assigned to the I-495 approach; processing rates in lanes 12 and 23 were assigned to the local approach. Fifty percent of the processing rate of lane 11 was assigned to each the I-495 and local approach; vehicles from both approaches access lane #11.

Congestion in Manhattan, Outbound Lincoln Tunnel, Summer Sunday 2015



QUEUED VEHICLE POPULATIONS:

LINCOLN TUNNEL APPROACH QUEUE (NY):	0	0	0	23	0	0	0	0	0	41	0
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"Outbound Queue Populations" is an estimate of the number of vehicles waiting to enter the tunnel in Manhattan to include: Tunnel portal, I-495 (including the 30th St approach), 40th St., 41st St, 9th Ave & 11th Ave.

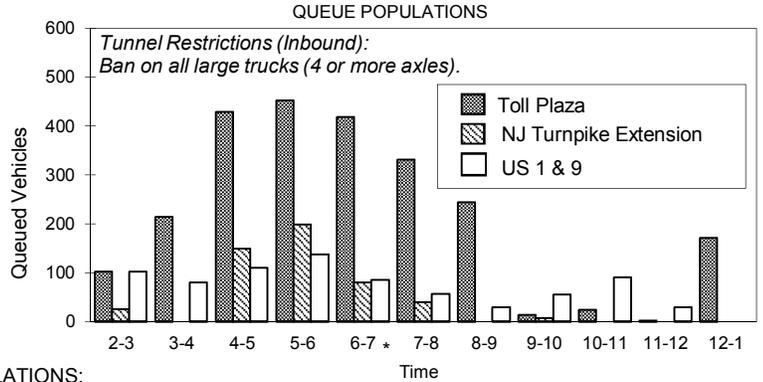
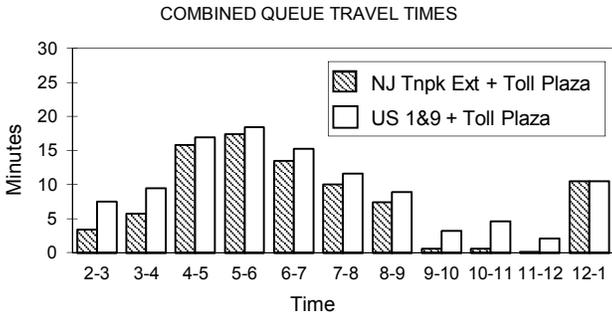
* Data projected (airplane refueling)

HOURLY VOLUMES

LINCOLN TUNNEL WESTBOUND VOLUME (NY)**:	3120	3400	3640	3620	3710	3350	3660	3500	3030	2390	2100
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**Historical westbound volumes depicted (average from survey dates in 2007 and 2008).

Toll Congestion, Inbound Holland Tunnel, Summer Sunday 2015



Note: Volumes for US 1&9 and the NJ Turnpike Extension at the signal at Jersey Ave were calculated as a percentage of the HT toll plaza volume. These percentages were obtained during a special survey conducted for the purpose of being able to calculate travel times on the two approaches.

QUEUED VEHICLE POPULATIONS:

TOTAL HOLLAND TUNNEL TOLL QUEUE (NJ):	229	294	688	790	583	428	273	77	114	31	171
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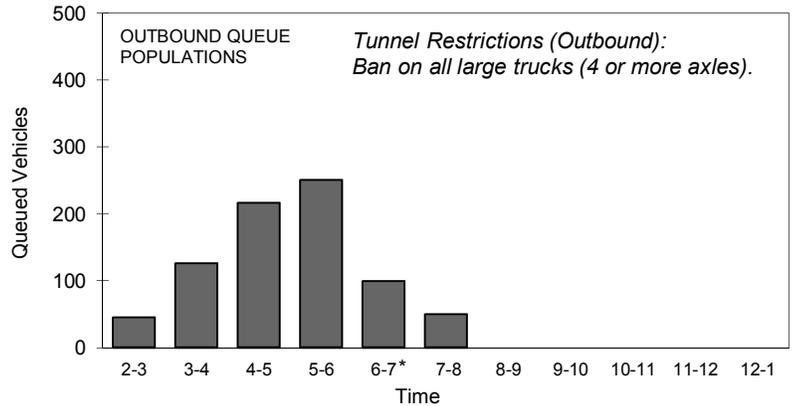
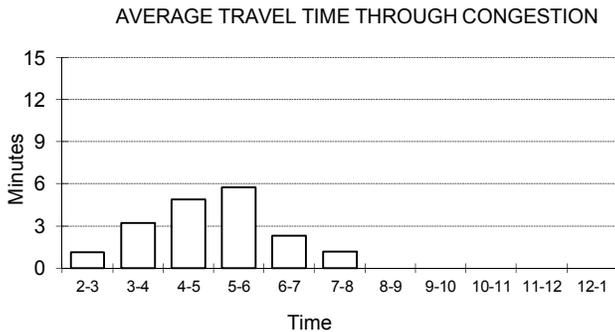
HOURLY TOLL VOLUMES

HOLLAND TUNNEL TOLL VOLUME (NJ):	2476	2481	2443	2505	2463	2471	2204	2331	2581	1633	1085
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* Data projected from 7:00 to 8:00 p.m. (airplane refueling)

Note: During the last two flyovers at 11:52 p.m. and 12:32 a.m., the left lane at the tunnel entrance was blocked.

Congestion in Manhattan, Outbound Holland Tunnel, Summer Sunday 2015



QUEUED VEHICLE POPULATIONS:

HOLLAND TUNNEL APPROACH QUEUE (NY):		126	216	251	99	50	0	0	0	0	0
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"Outbound Queue Populations" is an estimate the total number of vehicles queued on the local streets in Manhattan approaching the outbound Holland Tunnel portal.

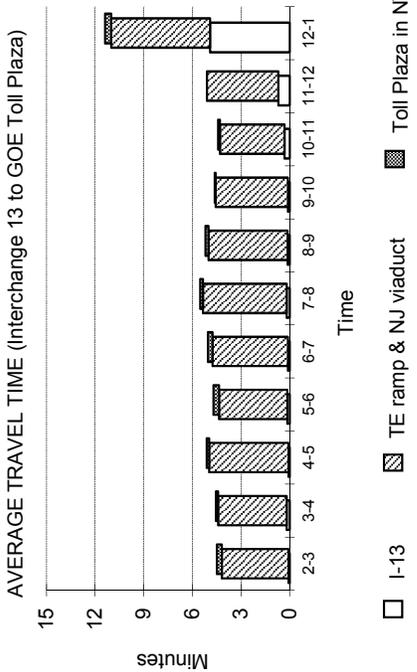
HOURLY VOLUMES

HOLLAND TUNNEL WESTBOUND VOLUME (NY)**:	2650	2350	2650	2630	2590	2590	2560	2610	2620	2430	1320
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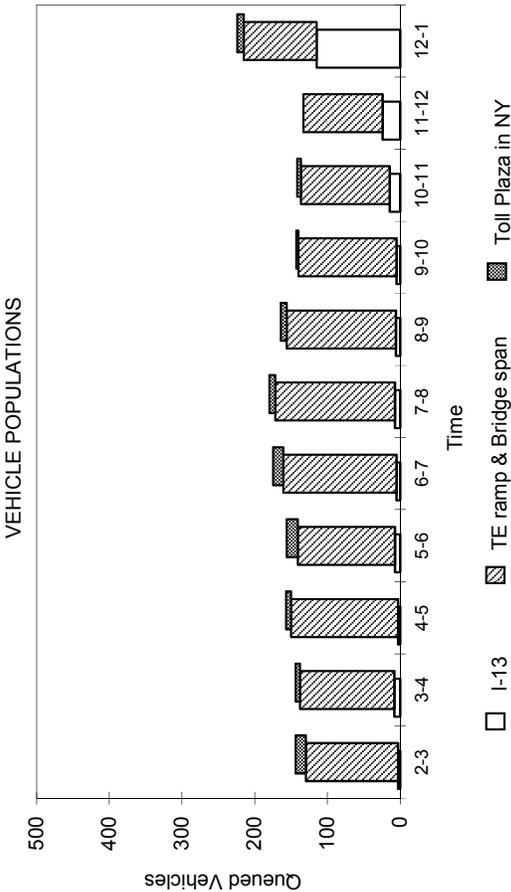
* Data projected from 7:00 to 8:00 p.m. (airplane refueling)

**Historical westbound volumes depicted (average from survey dates in 2007 and 2008).

Toll Congestion / Travel Time, Goethals Bridge & NJ Turnpike Int. 13, Summer Sunday 2015



(Note: For the purpose of calculating travel time on the TE ramp, the ramp volume is estimated at 70% of the GB volume, based on historical data.)



QUEUED VEHICLE POPULATIONS:

GOETHALS BRIDGE TOLL QUEUE (NY):	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1
VEHICLE POPULATION ON "TE" RAMP PLUS BRIDGE SPAN:	14	6	7	15	14	8	8	3	5	0	9
"EXIT" TOLL QUEUE AT INT. 13:	127	130	147	134	156	165	150	135	122	109	100
	3	8	3	7	5	7	6	5	15	24	115

Note 1: After midnight, vehicles at the NJ Turnpike Interchange 13 toll plaza were queued in two available cash lanes.

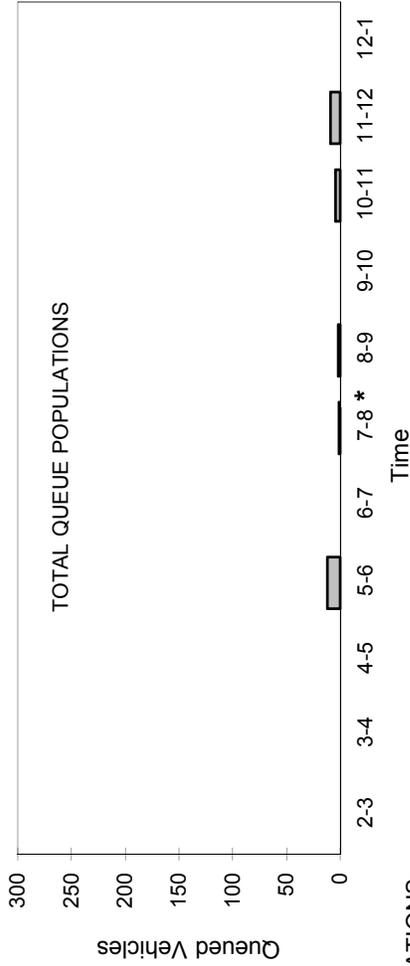
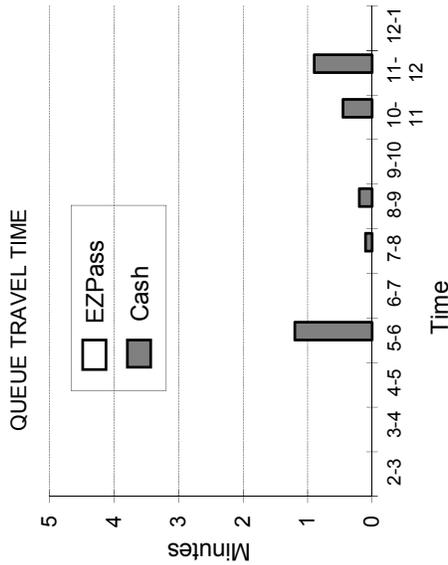
HOURLY TOLL VOLUMES

GOETHALS BRIDGE TOLL PLAZA:	2648	2639	2573	2721	2879	2735	2633	2598	2620	2128	1409
I-13 TOLL PLAZA*:	2483	2489	2695	2826	2597	2232	2707	2586	2739	2017	1401

* Historical volumes Interchange 13 toll plaza

Note 1

Toll Congestion, Outerbridge Crossing, Summer Sunday 2015



TOLL QUEUE POPULATIONS:

Bridge Span (EZPass & Cash Users):
 Toll Plaza Apron (Cash Users Only):
Total (EZPass and Cash Users):

Time	Bridge Span (EZPass & Cash Users)	Toll Plaza Apron (Cash Users Only)	Total (EZPass and Cash Users)
2-3	0	0	0
3-4	0	0	0
4-5	0	0	0
5-6	0	12	12
6-7	0	0	0
7-8*	0	1	1
8-9	0	2	2
9-10	0	0	0
10-11	0	5	5
11-12	0	9	9
12-1	0	0	0

* Data projected from 7:00 to 8:00 p.m. (airplane refueling)

HOURLY TOLL VOLUMES:

Time	EZPass	Cash	Total
2-3	2215	2435	2427
3-4	2522	2631	2698
4-5	3132	3132	3132
5-6	3132	3132	3132
6-7	2892	3132	3132
7-8	3132	3132	3132
8-9	3132	3132	3132
9-10	3132	3132	3132
10-11	3132	3132	3132
11-12	3132	3132	3132
12-1	3132	3132	3132

Time	Available Cash Lanes**
2-3	2
3-4	2
4-5	2
5-6	2
6-7	2
7-8	2
8-9	2
9-10	2
10-11	2
11-12	2
12-1	2

**Estimated when the absence of significant queues did not allow for determination of the number of available cash lanes.

Estimated toll queue travel times for EZPass and Cash users are calculated as follows:

Cash queues on the plaza apron are clearly defined during some observations; when queuing is present, two to three cash lanes are typically available. Toll queue travel time for cash users on the plaza apron is calculated using the cash queue population and an estimated processing rate of 300 vehicles per lane.

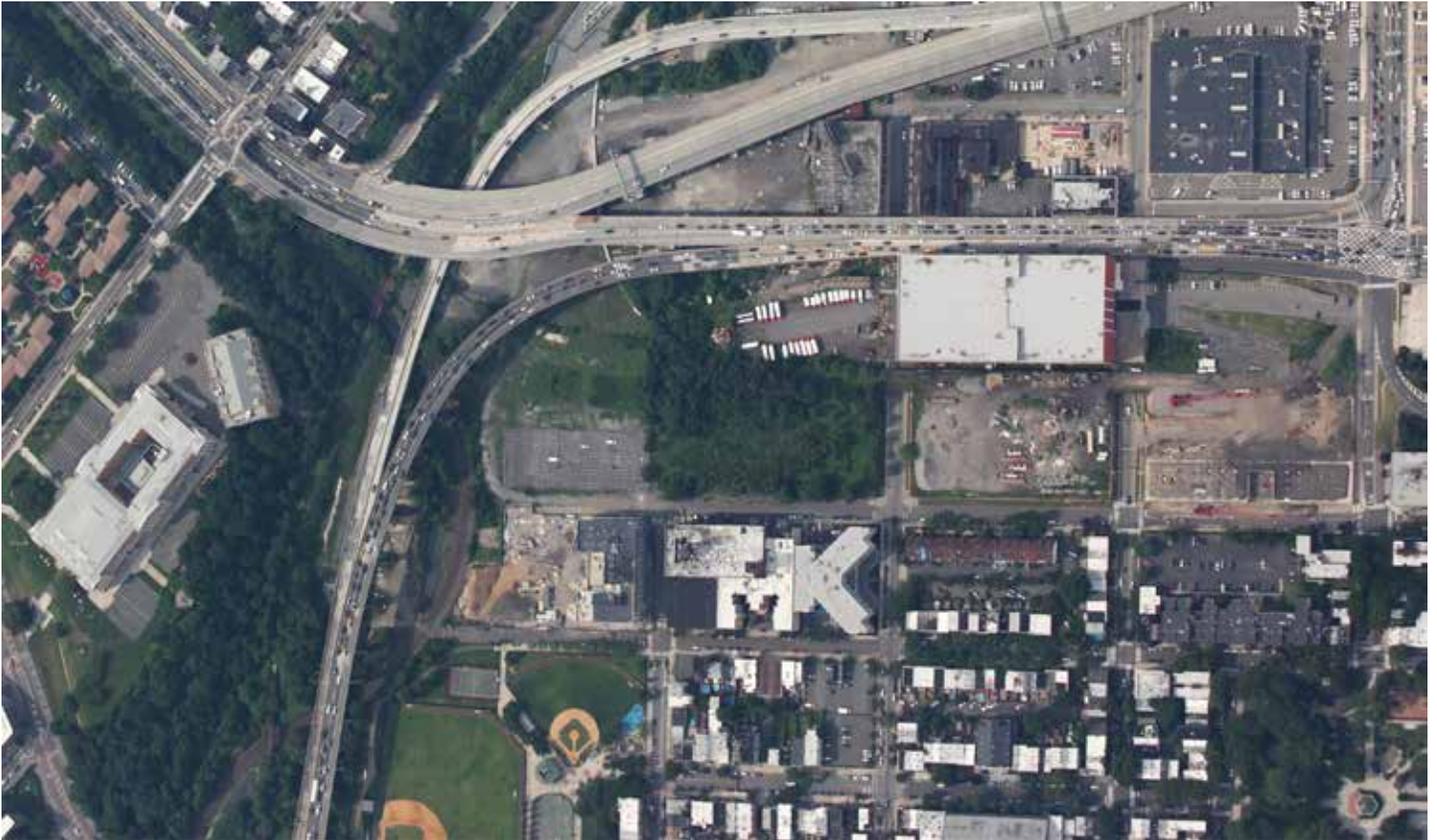
During some observations, cash queues extend across the plaza apron and into the two-lane section of the bridge, effectively choking off EZPass access to the toll plaza. Queue travel time on the bridge is calculated using the queue population on the bridge and the total processing rate at the toll plaza (EZPass and cash lanes combined - see volumes above).

Toll queue travel time for cash users depicted in the graph above is comprised of travel time on the plaza apron, plus if applicable, queue travel time on the bridge.

Travel time for EZPass users depicted above is the queue travel time on the bridge only (when applicable); travel time on the plaza apron is assumed to be zero.

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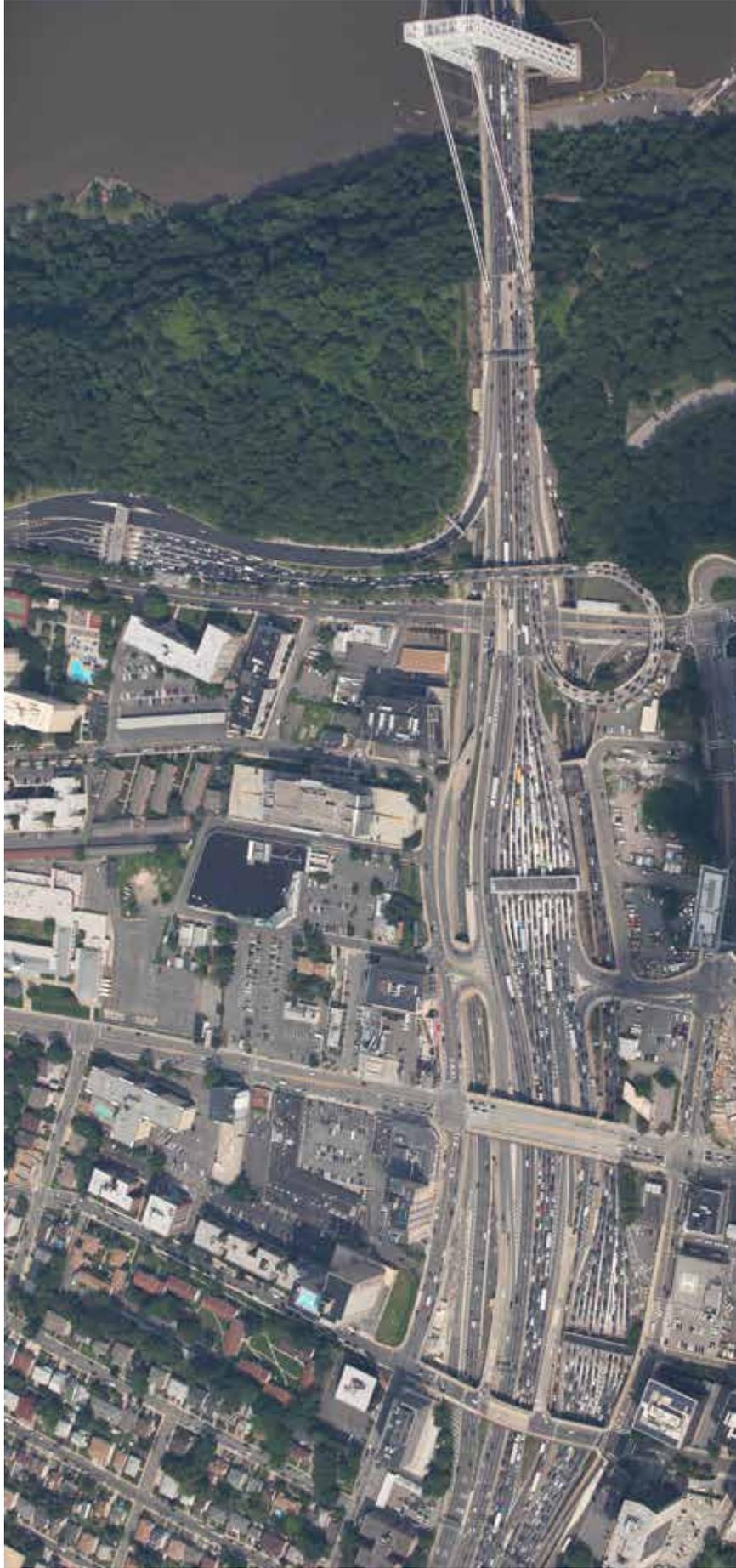
Holland Tunnel (New Jersey) Sunday, July 12, 2015



Sunday July 12, at 4:10 p.m

This photo set depicts typical inbound congestion found approaching the Holland Tunnel in Jersey. During the peak period (3:00-7:00 p.m.), congestion on 12th St extended back through the signal at Jersey Ave onto the NJ Turnpike Extension and US 1&9 approaches.

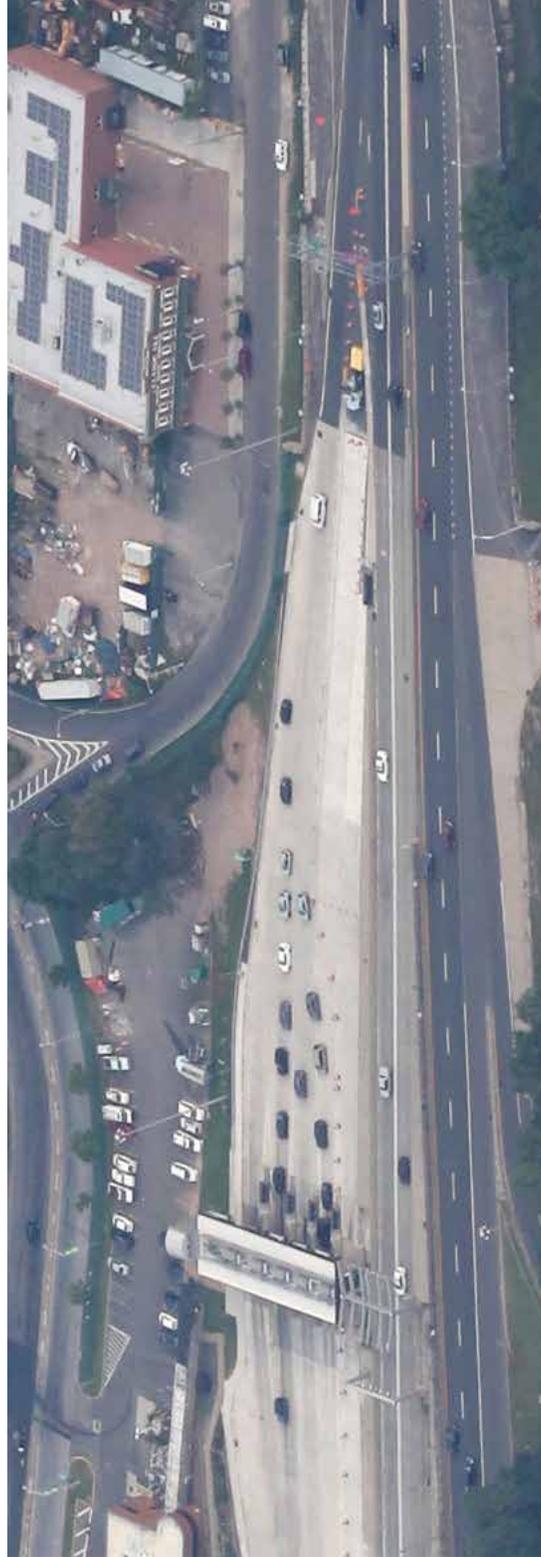
George Washington Bridge Sunday, July 12, 2015



Sunday July 12, at 3:29 p.m.

This photo shows eastbound congestion at the upper and lower level toll plazas at the George Washington Bridge. The toll queues extended back into the I-95 express and local lanes where average toll queue travel times were estimated at 10-15 minutes. Note congestion downstream of the Palisades Parkway toll plaza and the merge onto the bridge span.

Outerbridge Crossing Sunday, July 12, 2015



Sunday July 12, at 5:53 p.m.

Despite construction on the toll plaza apron (construction was there throughout the Saturday and Sunday surveys), no significant delays were found at the OBC during either the Saturday or Sunday surveys. The maximum observed toll queue is shown below (cash lanes only).

SUNDAY, July 12, 2015
 2:00 PM TO 3:00 PM
 1st HOUR OF COVERAGE

During this hour, approximately 410 vehicles were queued at the GWB upper level toll plaza; corresponding toll queue travel time was estimated at 7 minutes.

During this hour, minor inbound delays were found at the Lincoln Tunnel toll plaza in New Jersey; toll queue travel times on the SR 495 and local approaches were estimated at 1 minute per vehicle.

During this hour, approximately 100 vehicles were queued at the Holland Tunnel toll plaza in New Jersey; corresponding toll queue travel time was estimated at 3 minutes per vehicle.

During this hour, a 4-mile zone of eastbound congestion was found on the Staten Island Expwy (SIE) between Pearl Harbor Memorial Expwy and Clove Rd; the primary bottleneck was found where the inner and outer roadways (construction-related) merged at Clove Rd.

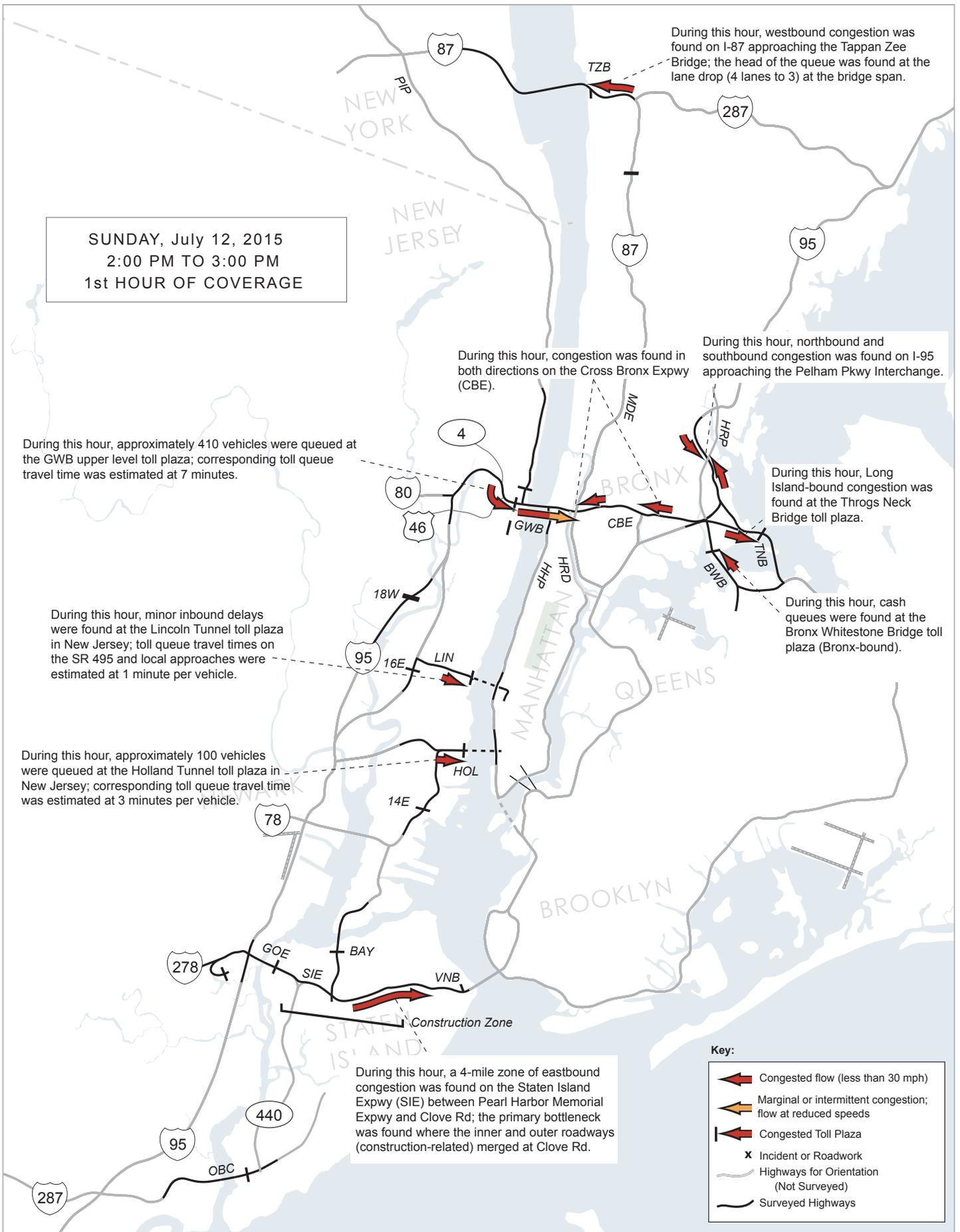
During this hour, westbound congestion was found on I-87 approaching the Tappan Zee Bridge; the head of the queue was found at the lane drop (4 lanes to 3) at the bridge span.

During this hour, congestion was found in both directions on the Cross Bronx Expwy (CBE).

During this hour, northbound and southbound congestion was found on I-95 approaching the Pelham Pkwy Interchange.

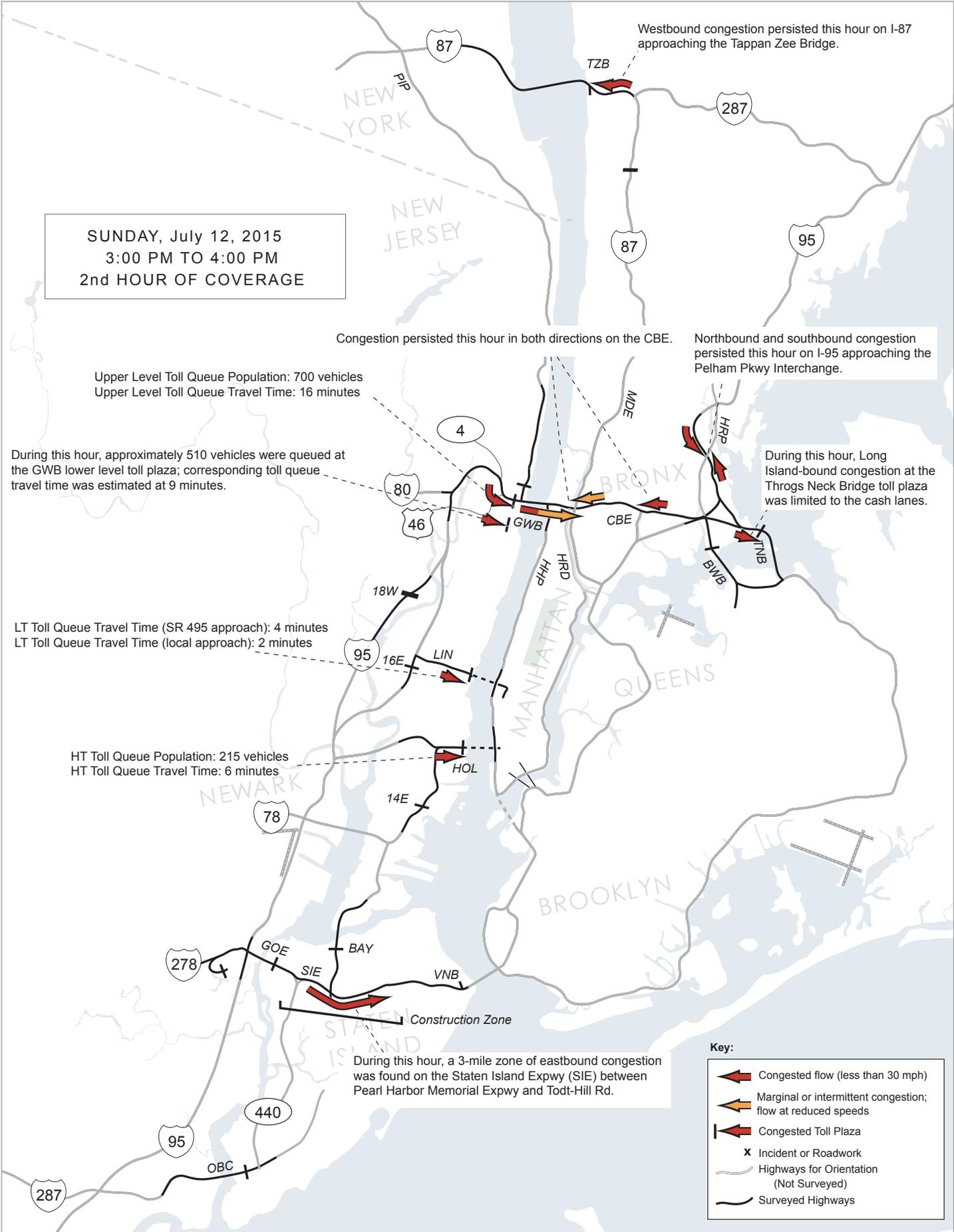
During this hour, Long Island-bound congestion was found at the Throgs Neck Bridge toll plaza.

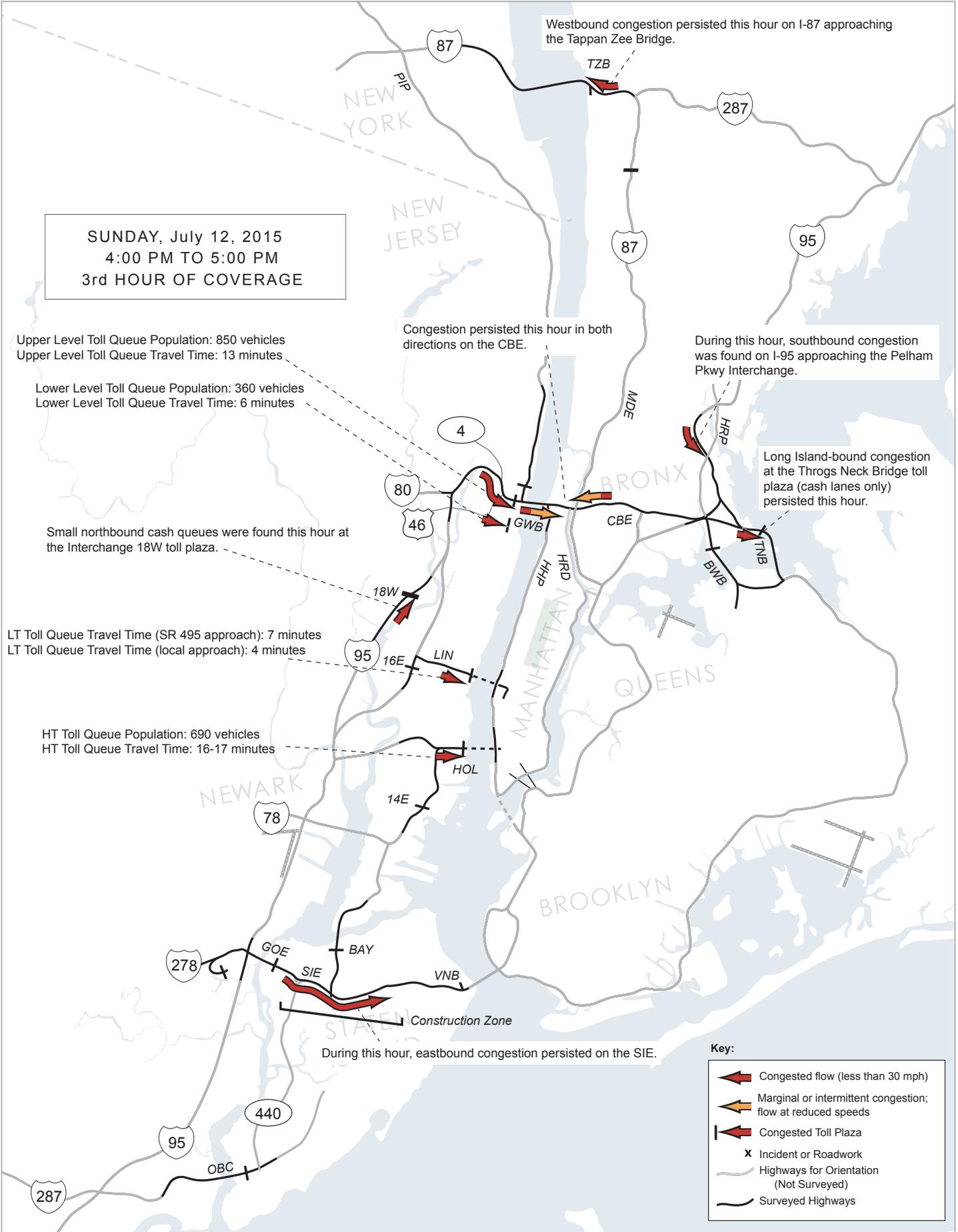
During this hour, cash queues were found at the Bronx Whitestone Bridge toll plaza (Bronx-bound).



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork (Not Surveyed)
- Highways for Orientation (Not Surveyed)
- Surveyed Highways





SUNDAY, July 12, 2015
5:00 PM TO 6:00 PM
4th HOUR OF COVERAGE

Upper Level Toll Queue Population: 740 vehicles
Upper Level Toll Queue Travel Time: 12 minutes

Lower Level Toll Queue Population: 370 vehicles
Lower Level Toll Queue Travel Time: 5 minutes

Congestion persisted this hour in both directions on the CBE.

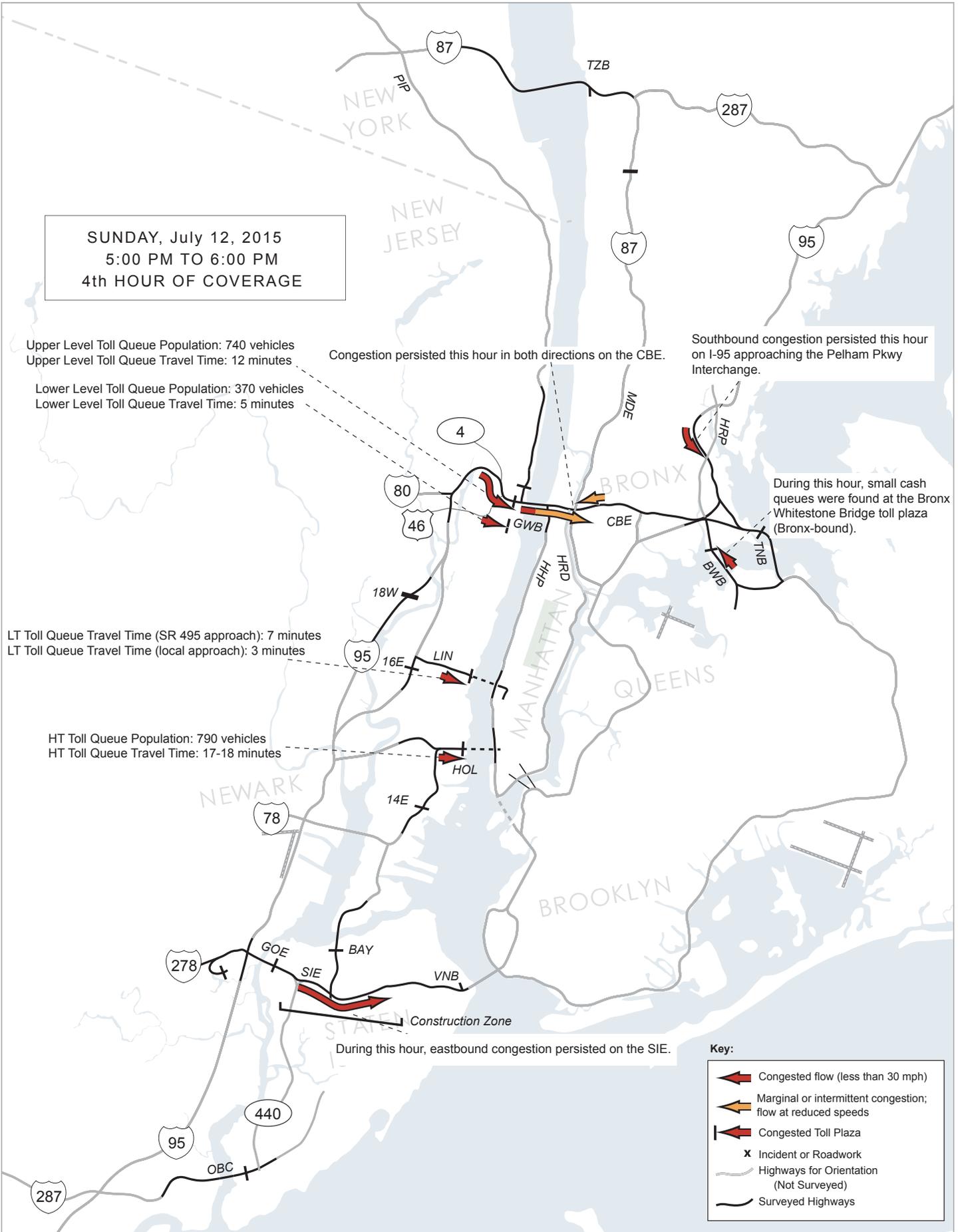
Southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

During this hour, small cash queues were found at the Bronx-Whitstone Bridge toll plaza (Bronx-bound).

LT Toll Queue Travel Time (SR 495 approach): 7 minutes
LT Toll Queue Travel Time (local approach): 3 minutes

HT Toll Queue Population: 790 vehicles
HT Toll Queue Travel Time: 17-18 minutes

During this hour, eastbound congestion persisted on the SIE.



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork (Not Surveyed)
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

SUNDAY, July 12, 2015
7:00 PM TO 8:00 PM
6th HOUR OF COVERAGE
 (INTERPOLATED/ Airpane Refueling)

Upper Level Toll Queue Population: 605 vehicles
 Upper Level Toll Queue Travel Time: 10 minutes

Lower Level Toll Queue Population: 340 vehicles
 Lower Level Toll Queue Travel Time: 6 minutes

Palisades Pkwy Toll Queue Population: 90 vehicles
 Palisades Pkwy Toll Queue Travel Time: 3 minutes

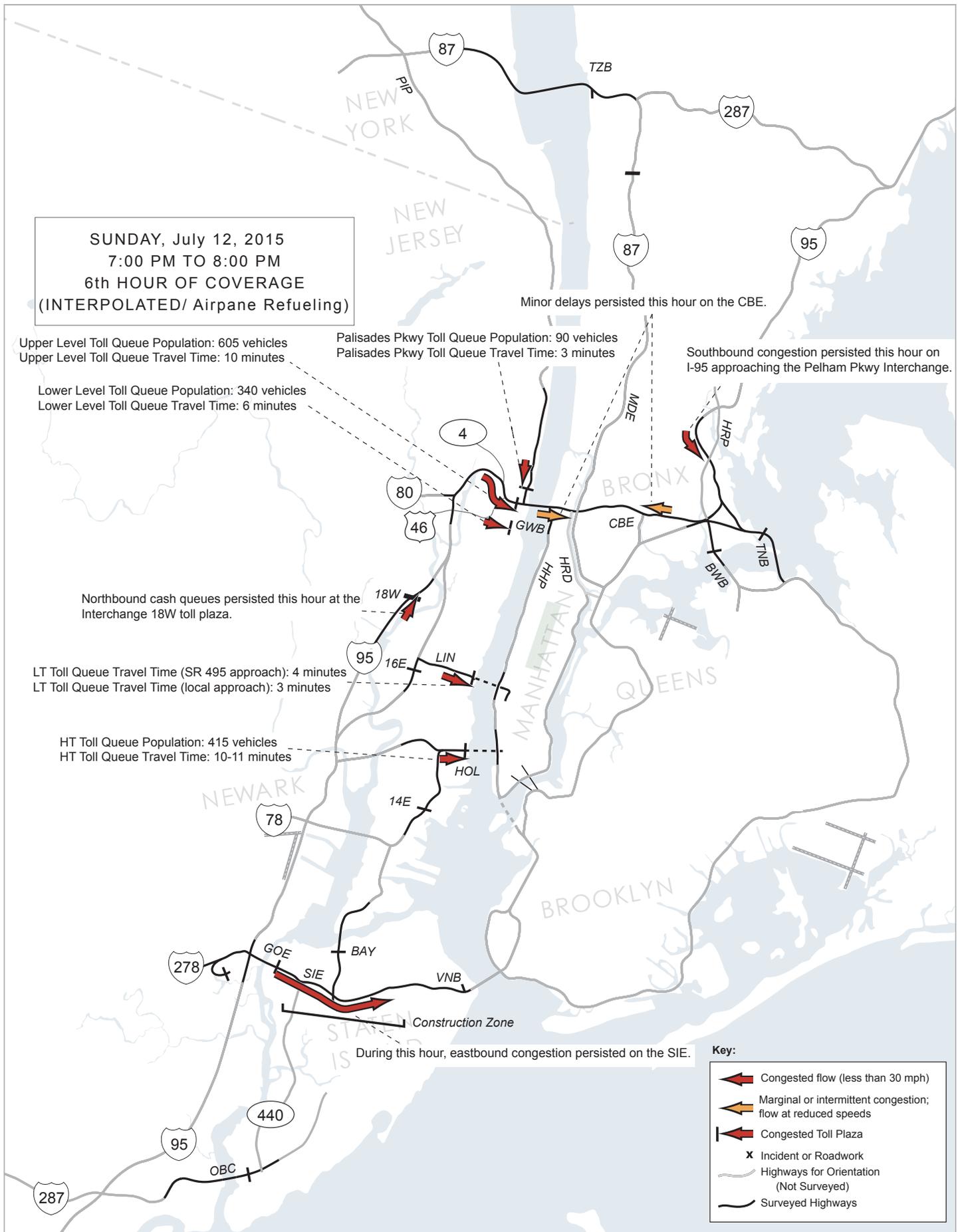
Southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

Northbound cash queues persisted this hour at the Interchange 18W toll plaza.

LT Toll Queue Travel Time (SR 495 approach): 4 minutes
 LT Toll Queue Travel Time (local approach): 3 minutes

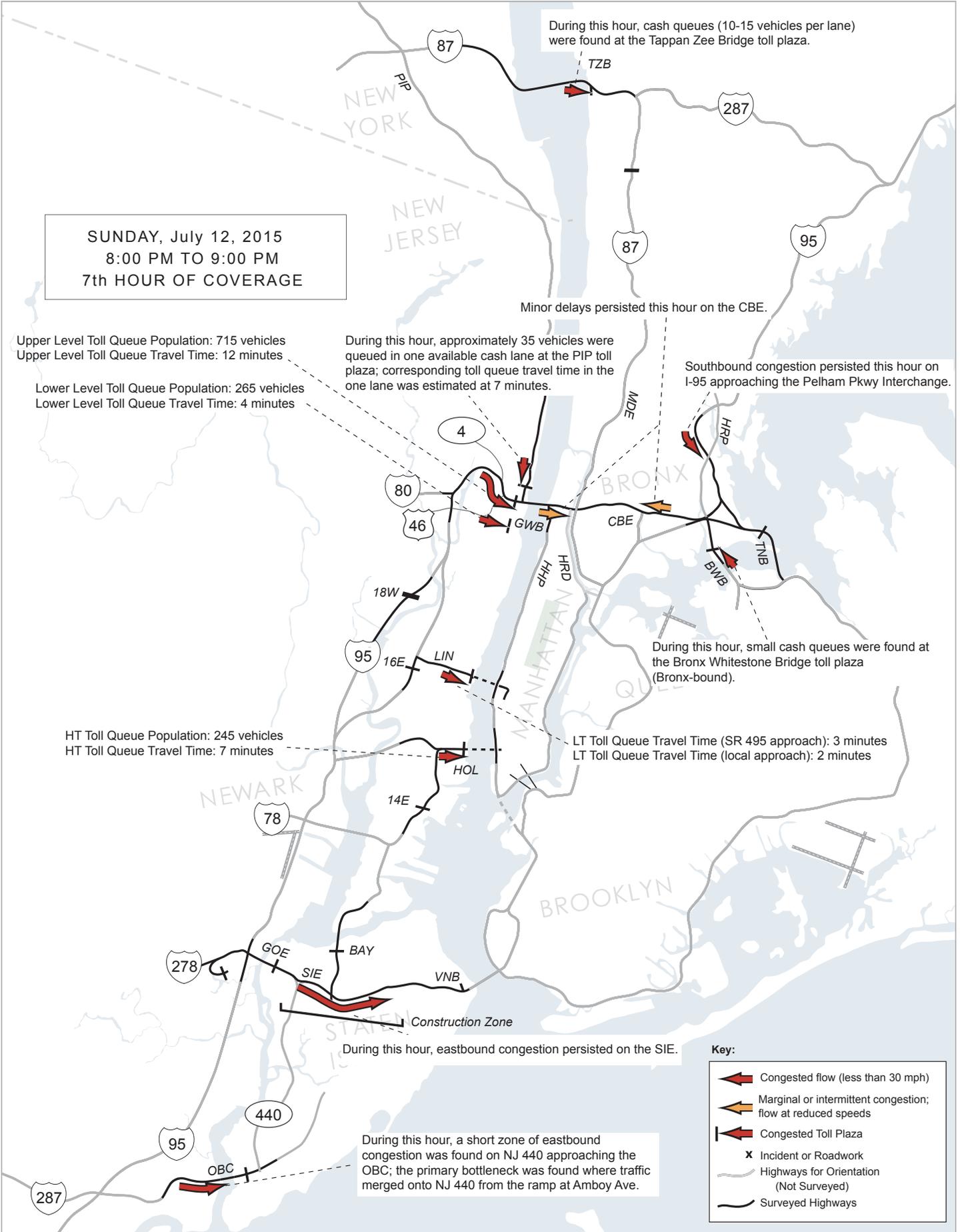
HT Toll Queue Population: 415 vehicles
 HT Toll Queue Travel Time: 10-11 minutes

During this hour, eastbound congestion persisted on the SIE.



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways



SUNDAY, July 12, 2015
 9:00 PM TO 10:00 PM
 8th HOUR OF COVERAGE

Upper Level Toll Queue Population: 480 vehicles
 Upper Level Toll Queue Travel Time: 8 minutes

Lower Level Toll Queue Population: 210 vehicles
 Lower Level Toll Queue Travel Time: 3 minutes

Northbound cash queues persisted this hour at the Interchange 18W toll plaza.

During this hour, approximately 60 vehicles were queued in two available cash lanes at the PIP toll plaza; corresponding toll queue travel time was estimated at 6 minutes.

Eastbound congestion was found this hour on the GWB span and downstream of the bridge on the Cross Bronx Expwy to the vicinity of the Alexander Hamilton Bridge.

Southbound congestion persisted this hour on I-95 approaching the Pelham Pkwy Interchange.

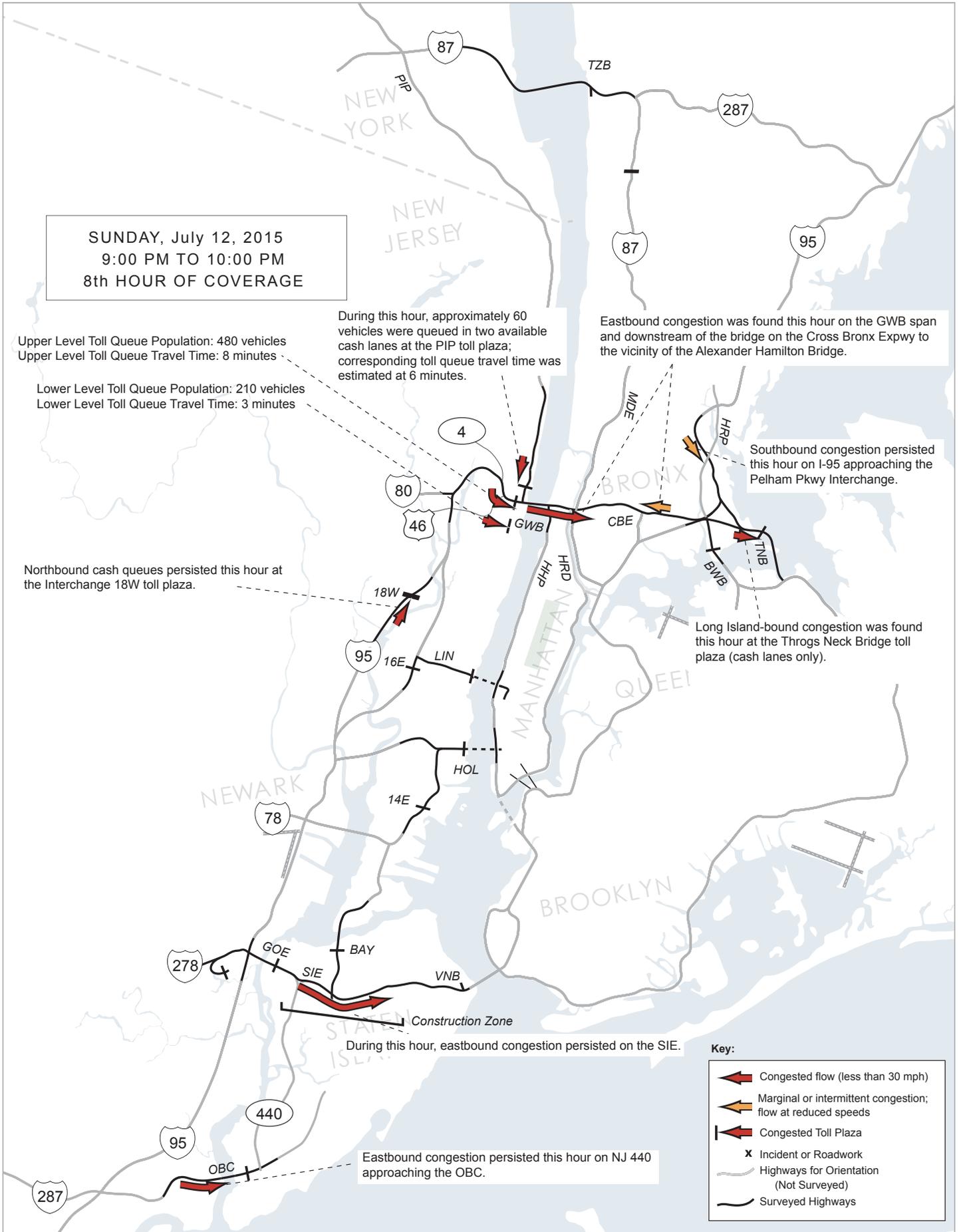
Long Island-bound congestion was found this hour at the Throgs Neck Bridge toll plaza (cash lanes only).

During this hour, eastbound congestion persisted on the SIE.

Eastbound congestion persisted this hour on NJ 440 approaching the OBC.

Key:

-  Congested flow (less than 30 mph)
-  Marginal or intermittent congestion; flow at reduced speeds
-  Congested Toll Plaza
-  Incident or Roadwork
-  Highways for Orientation (Not Surveyed)
-  Surveyed Highways



SUNDAY, July 12, 2015
 10:00 PM TO 11:00 PM
 9th HOUR OF COVERAGE

Upper Level Toll Queue Population: 520 vehicles
 Upper Level Toll Queue Travel Time: 10 minutes

Lower Level Toll Queue Population: 155 vehicles
 Lower Level Toll Queue Travel Time: 3 minutes

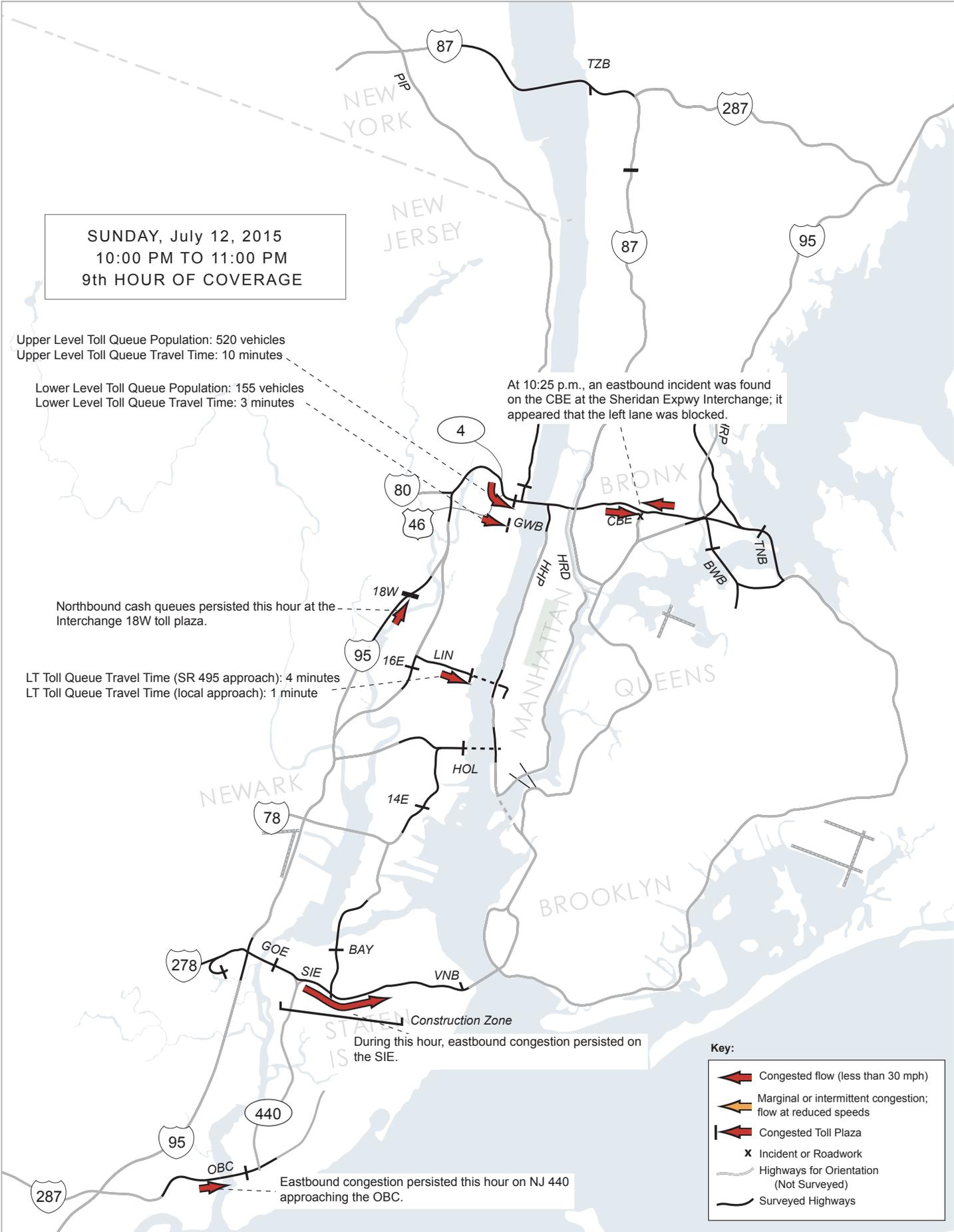
At 10:25 p.m., an eastbound incident was found on the CBE at the Sheridan Expwy Interchange; it appeared that the left lane was blocked.

Northbound cash queues persisted this hour at the Interchange 18W toll plaza.

LT Toll Queue Travel Time (SR 495 approach): 4 minutes
 LT Toll Queue Travel Time (local approach): 1 minute

Construction Zone
 During this hour, eastbound congestion persisted on the SIE.

Eastbound congestion persisted this hour on NJ 440 approaching the OBC.



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

SUNDAY, July 12, 2015
11:00 PM TO 12:00 MIDNIGHT
10th HOUR OF COVERAGE

Upper Level Toll Queue Population: 470 vehicles
 Upper Level Toll Queue Travel Time: 11 minutes

Lower Level Toll Queue Population: 155 vehicles
 Lower Level Toll Queue Travel Time: 4 minutes

Northbound cash queues persisted this hour at the Interchange 18W toll plaza.

LT Toll Queue Travel Time (SR 495 approach): 5 minutes
 LT Toll Plaza Travel Time (SR 495 approach): 2 minutes

During this hour, severe eastbound congestion was found on the GWB span; it appeared that there may have been an incident (not confirmed) under the apartment buildings between the GWB and Alexander Hamilton Bridge.

During this hour, congestion was found in both directions at the Bronx Whitestone Bridge toll plaza; congestion was limited to the cash lanes.

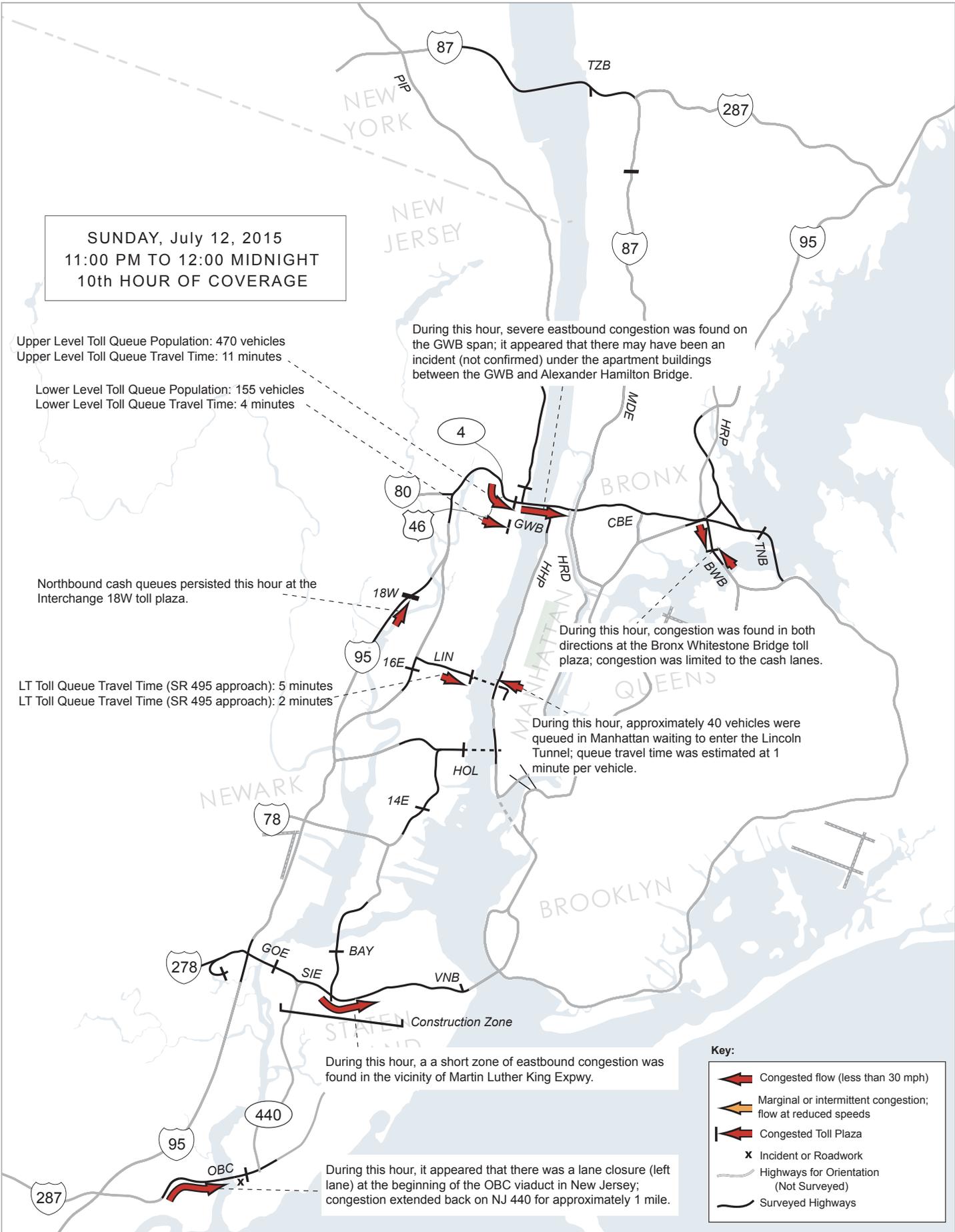
During this hour, approximately 40 vehicles were queued in Manhattan waiting to enter the Lincoln Tunnel; queue travel time was estimated at 1 minute per vehicle.

During this hour, a short zone of eastbound congestion was found in the vicinity of Martin Luther King Expwy.

During this hour, it appeared that there was a lane closure (left lane) at the beginning of the OBC viaduct in New Jersey; congestion extended back on NJ 440 for approximately 1 mile.

Key:

-  Congested flow (less than 30 mph)
-  Marginal or intermittent congestion; flow at reduced speeds
-  Congested Toll Plaza
-  Incident or Roadwork
-  Highways for Orientation (Not Surveyed)
-  Surveyed Highways



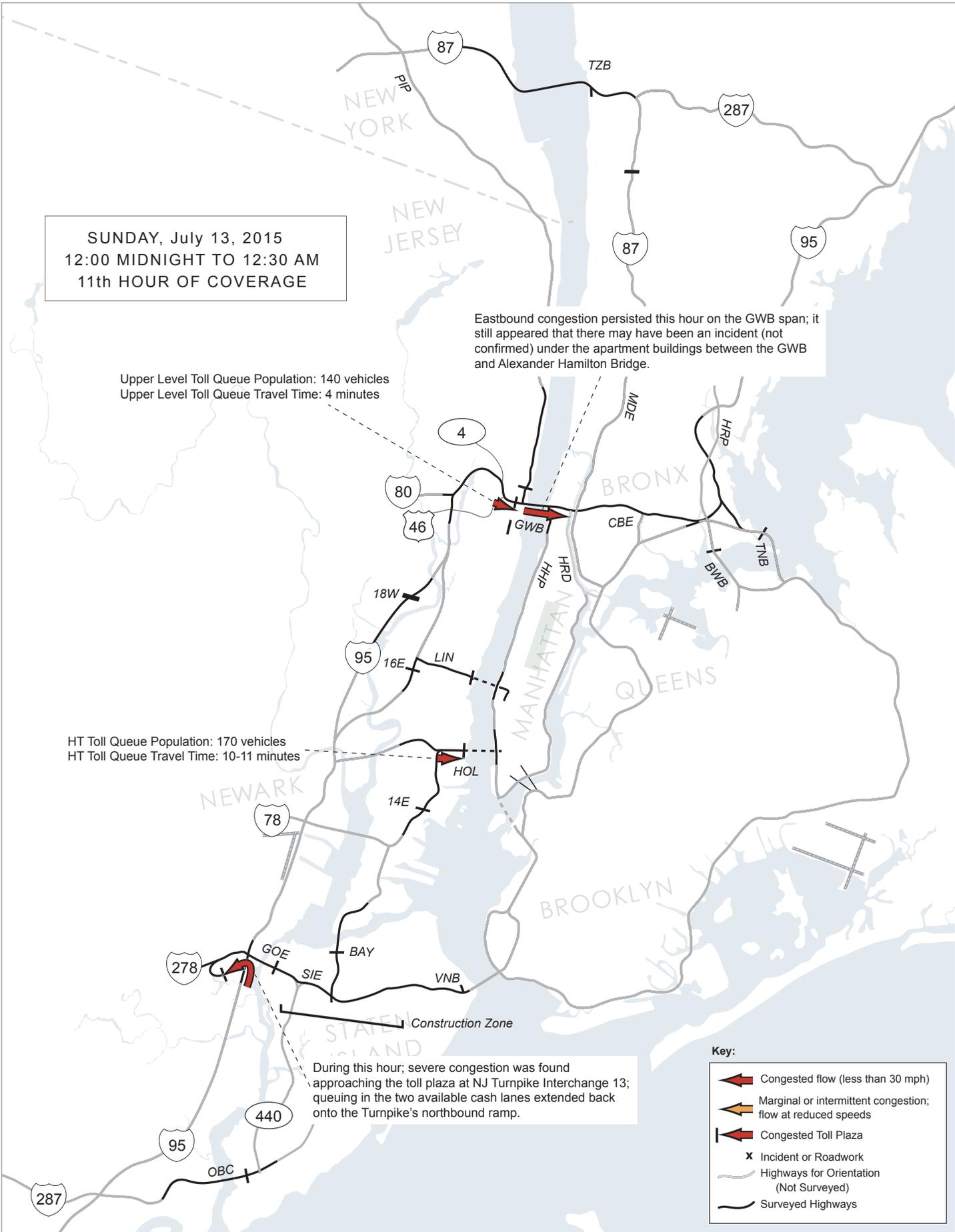
SUNDAY, July 13, 2015
 12:00 MIDNIGHT TO 12:30 AM
 11th HOUR OF COVERAGE

Eastbound congestion persisted this hour on the GWB span; it still appeared that there may have been an incident (not confirmed) under the apartment buildings between the GWB and Alexander Hamilton Bridge.

Upper Level Toll Queue Population: 140 vehicles
 Upper Level Toll Queue Travel Time: 4 minutes

HT Toll Queue Population: 170 vehicles
 HT Toll Queue Travel Time: 10-11 minutes

During this hour, severe congestion was found approaching the toll plaza at NJ Turnpike Interchange 13; queuing in the two available cash lanes extended back onto the Turnpike's northbound ramp.



Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

**SUMMER SUNDAY TRAVEL
 FORECAST FOR 2016
 BASED ON SUNDAY
 SURVEY DATES, 2013, 2014, 2015**

Delays are not normally encountered at the Tappan Zee Bridge during the Sunday travel period; however, intermittent westbound congestion on I-87 can occur approaching the bridge span.

The Cross Bronx Expressway can generate congestion at any time due to heavy usage and frequent incidents. Even in the absence of incidents, eastbound delays can be expected east of the Hamilton Bridge; westbound delays normally develop between the Bruckner Interchange and the Sheridan Expressway.

Eastbound delays can be expected at the George Washington Bridge any time before midnight; delays of 5-15 minutes are typically encountered at the upper and lower level toll plazas. Delays are not normally encountered at the Palisades Interstate Parkway toll plaza.

Northbound and southbound congestion can be expected on I-95 / Bruckner Expressway approaching the interchanges at Pelham and Hutchinson River Parkways.

Northbound congestion can be expected at the Int. 18W toll plaza on the New Jersey Turnpike; while congestion here is typically limited to the cash lanes, the toll queue sometimes extends back into the mainline approach.

Congestion in each direction at the Long Island bridges is normally limited to the "cash" toll lanes; however, congestion will intermittently extend back into the mainline approaches.

Intermittent inbound delays of 5 to 10 minutes can be expected at the Lincoln Tunnel toll plaza before 8:00 p.m. After 11:00 p.m., closure of the center tube can cause inbound delays. Intermittent outbound delays in Manhattan of 2 to 5 minutes can be expected.

Delays are not normally encountered at the Goethals Bridge toll plaza in New York. On the New Jersey side of the bridge, congestion on the TE ramp and the bridge span can cause moderate delays for eastbound travelers.

Inbound delays can be expected at the Holland Tunnel toll plaza during most of the Sunday travel period; typical delays on the two main approaches (NJ Turnpike Extension and US Route 1&9) range from 10-20 minutes. Outbound delays at the Holland Tunnel of 3-10 minutes are likely in Manhattan.

Later in the survey period (4:00-11:00 p.m.), delays can normally be expected on NJ 440 approaching the Outerbridge Crossing. Delays are not normally found in New York at the OBC toll plaza.

Throughout the Sunday travel period, eastbound travelers on the Staten Island Expressway typically encounter congestion somewhere between the Goethals Bridge toll plaza and NJ 440; congestion normally persists east to the vicinity of Bradley Blvd. Construction in 2014 and 2015 caused atypical EB/WB congestion.

Key:

- Congested flow (less than 30 mph)
- Marginal or intermittent congestion; flow at reduced speeds
- Congested Toll Plaza
- Incident or Roadwork
- Highways for Orientation (Not Surveyed)
- Surveyed Highways

