City of Kingston
Uptown Stockade Area Transportation Plan

Final Report

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Prepared for:

ULSTER COUNTY TRANSPORTATION COUNCIL

CITY OF KINGSTON, N.Y.

Prepared by:

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EXECUTIVE SUMMARY

The Uptown Stockade Area Transportation Plan was initiated by the Ulster County Transportation Council (UCTC) at the request of the City of Kingston. The Uptown Stockade Area is a historic area in Ulster County, New York that has developed as the center of the City of Kingston and is now the Kingston business district.[1] It houses important County buildings, including the Ulster County Office Building and Ulster County Courthouse. Within the Uptown Stockade Area are many examples of pre-revolutionary Dutch-style stone houses and nineteenth-century Italian, Greek, Gothic Revival, and Victorian architecture – many of which are still in use as homes, offices, museums, etc. Also within the Uptown Stockade Area is the Pike Plan, which is a concentrated area of small shops, restaurants, offices, etc. that is distinguished by the covered sidewalks that unite its store and business fronts. It is in this area along Wall and North Front Streets that the seasonal Farmers' Market is held.[2]

The Uptown Stockade Area is generally surrounded by four major roadways – Washington Avenue to the west, Clinton Avenue/Albany Avenue to the east, Schwenk Drive to the north and New York State Route 32 (NY 32) to the south (see Figure 1). These roadways, at their entrances to the Uptown Stockade Area, are congested. Existing traffic and pedestrian signals in the area are unconventionally timed, not functioning properly, or outdated. The combination of two-way and an inconsistent pattern of one-way streets, as well as the non-standard designs of some intersections, are confusing and, in some cases, hazardous. On-street parking and indistinct signage to the Uptown Stockade Area attractions and off-street parking lots also causes confusion. Despite its historic appeal, poor access to and circulation within the area deter travelers from shopping, dining, or visiting the Uptown Stockade District.

The purpose of this project is to achieve consensus among stakeholders and the public on an Uptown Stockade Area Transportation Plan that recommends changes that could be made to improve access to, circulation within, and economic vitality in this historic area within the City of Kingston. Proposed improvements include vehicular mobility and parking, bicycle, pedestrian, and safety modifications. Included is also a Transportation System Enhancements Plan (TSEP) that identifies streetscape improvements that can be made in the Pike Plan area to enhance the physical environment. Proposed improvements were developed based on field observations and data collection, traffic and parking analyses, meetings with the Advisory Council, and feedback from the community, which was obtained through public meetings, a website, and on-line survey. Specific recommendations are discussed below.

Vehicular Access/Circulation Improvements

1. ***Reverse the street directions along Wall Street and Fair Street to southbound and northbound, respectively, between North Front Street and the Boulevard/***

[1] Kingston Stockade District, http://www.livingplaces.com/NY/Ulster_County/Kingston_City/Kingston_Stockade_District.html, October 2, 2008.
[2] Kingston's Uptown Stockade District!, http://www.kubaonline.org, August 21, 2008.

Greenkill Avenue (NY 32). This would correct the unconventional directions of the one-way pair at NY 32, improve safety, and provide drivers direct access to Kingston Plaza through the Uptown Stockade Area, which could promote stopping in the Uptown Stockade Area. It should be noted that New York State Bicycle Route 28 operates along these roadways. Reversing the street directions would improve bicycle, as well as vehicular, safety and is not anticipated to significantly alter bicycle operations in the area.

2. ***Reverse the direction of North Front Street to eastbound between Fair Street and Clinton Avenue.*** This would improve safety by allowing school buses to load and unload passengers on the Senate House side of North Front Street.

3. ***Reverse the street directions on John, Main, and Crown Streets.*** This would improve circulation in the Uptown Stockade Area with the reversal of the Wall and Fair Streets one-way pair, as well as congestion along Clinton Avenue by eliminating the high-volume northbound left turns from Clinton Avenue to the Uptown Stockade Area and operational problems along Clinton Avenue resulting from the close proximity of the Westbrook Lane and John Street intersections.

4. ***Add second eastbound left-turn lane to Washington Avenue at Schwenk Drive/ Hurley Avenue.*** This would require the removal of the median and the shifting of lanes on Hurley Avenue.

5. ***Provide two continuous eastbound through lanes on Albany Avenue between Clinton Avenue and I-587.*** This would require that on-street parking be eliminated on both the north and south sides of Albany Avenue and that lanes be shifted and/or narrowed or that Albany Avenue be slightly widened.

6. ***At Clinton Avenue and Albany Avenue/Pearl Street, re-stripe the eastbound curbside lane as a through/right-turn lane, relocate the Governor Clinton driveway on the northeast corner to Clinton Avenue approximately 120 feet north of the intersection, relocate the north end of the east crosswalk farther east to where pedestrians naturally cross and to reduce the crossing distance, and re-time the signal to provide sufficient pedestrian crossing times assuming no greater than a 3 foot per second crossing speed.*** This would improve vehicular and pedestrian operations at the intersection.

7. ***Eliminate on-street parking on the west side of Washington Avenue between at least Lucas and Linderman Avenues, and re-stripe the roadway to provide northbound and southbound left-turn bays between Lucas and Linderman Avenues.*** This would improve vehicular operations along Washington Avenue. It should be noted that New York State Bicycle Route 32 operates along Washington Avenue in this area. Eliminating on-street parking along Washington Avenue would improve bicycle, as well as vehicular, safety and operations along the roadway.

8. ***Develop a clear and comprehensive signing system to guide motorists to the Uptown Stockade Area and local attractions.*** This would require conducting a detailed study to eliminate sign clutter, develop a distinct signing program for the Uptown Stockade Area,

and appropriately locate signs from the I-87 roundabout, the Albany Avenue at I-587 intersections, and NY 32 to the Uptown Stockade Area.

Traffic Signal/Coordination Improvements

1. ***Install/reactivate actuated traffic signal with pedestrian signals and push buttons at Fair Street and North Front Street, and operate on same controller as Wall Street at North Front Street signal.*** This would ensure traffic progression and improve pedestrian accommodations, which is needed with the reversal of the Wall and Fair Streets one-way pair.

2. ***Install actuated traffic signals with pedestrian signals and push buttons at Clinton Avenue and John Street and at Clinton Avenue and Westbrook Lane; operate the two intersections on one controller.*** This would enable the existing two intersections to operate as one offset intersection.

3. ***Construct roundabout or install semi-actuated traffic signal at Wall Street/Fair Street and NY 32 intersection.*** This would improve traffic operations and safety at the intersection. It is agreed, as discussed in Creighton Manning's *Route 32 at Fair Street Intersection Study – Final Planning Study*, that a roundabout would better serve traffic volumes at the location; however, either would improve conditions – especially in conjunction with the reversal of the Wall and Fair Streets one-way pair.

4. ***Install pedestrian signals and push buttons at Washington Avenue and North Front Street, Washington Avenue and Pearl Street, and Fair Street and Pearl Street; repair pedestrian signals and push buttons at Washington Avenue and Schwenk Drive/ Hurley Avenue, Fair Street Extension/Kingston Plaza and Schwenk Drive.*** This would improve pedestrian accommodations at the intersections.

5. ***Implement an actuated coordinated traffic signal system along Washington Avenue between Schwenk Drive/Hurley Avenue south to at least Linderman Avenue, and optimize traffic signal timings and offsets.*** This would require that traffic equipment signal be upgraded and that signal modifications be coordinated with additional signals on Washington Avenue north of the project study area.

6. ***Implement an actuated coordinated traffic signal system in the heart of the Uptown Stockade Area (i.e., east of Washington Avenue between Schwenk Drive/ Clinton Avenue/Albany Avenue and Pearl Street inclusive), and optimize traffic signal timings and offsets.*** This would require that traffic signal equipment be upgraded.

7. ***Implement a pre-timed coordinated traffic signal system east of Washington Avenue between St. James Street and Henry Street inclusive, and optimize traffic signal timings and offsets.*** This might require that traffic signal equipment be upgraded.

It should be noted that there are some locations where it appears that existing traffic signals may not be warranted – at least based on traffic volumes alone. In the future, even with the

increase in traffic volumes, this may also be the case. However, insufficient data is available from this study to assess traffic signal warrants in appropriate detail. Therefore, it is not recommended at this time that any existing traffic signals be removed.

Parking Improvements

1. ***Develop a comprehensive parking management strategy for the project study area.*** This would require conducting a detailed study to establish a market-rate, fee-based on- and off-street parking system that would encourage appropriate use of available parking in the area. Higher fees and/or shorter time limits could be implemented in the Pike Plan area to reserve on-street parking and loading/unloading areas for short-term visitors. Lower fees and/or longer time limits could be implemented off-street and/or away from the Pike Plan area to encourage use by long-term visitors and employees. Residential and employee parking permit systems and employer transit incentives could also be established. Revenue from the parking could be used to upgrade infrastructure and buildings, beautify the area, and, in turn, draw more businesses and visitors to the area.

2. ***Develop a comprehensive signing/streetscape program for the project study area.*** Improving signage to the off-street lots would likely increase off-street lot usage and allow additional on-street spaces for short-term visitors to the area. Developing banners and a distinct streetscape for the area would likely encourage drivers to park once they enter the area, rather than immediately adjacent to the Pike Plan.

3. ***Change alternate side of the street parking regulations in the project study area.*** Change the regulation from 10 a.m. to earlier or later in the day so that employees, patrons, and visitors to the area would not be inconvenienced by having to move their cars in the middle of work, an appointment, or their visit.

4. ***Re-stripe existing 9-foot-wide parking lanes as typical 8-foot-wide parking lanes.*** This would help ensure that parked vehicles do not unnecessarily encroach upon adjacent travel lanes.

5. ***Make the vacant property on the east side of Crown Street between North Front and John Streets a municipal lot.*** This would provide around 100 additional off-street parking spaces.

6. ***Enforce parking regulations.*** Regardless of the improvements that are made, a strict ticketing policy would need to be implemented for a significant period of time to re-train drivers in the area to park legally.

It should be noted that it was discussed as part of the Transportation System Enhancement Plan (see Section IV) that it might be possible to implement angle parking in the Pike Plan area to gain some spaces. Based on a more detailed review, the roadway widths are typically insufficient to safely accommodate angle parking.

Walkability/Bikeability Improvements

1. ***Install/repair pedestrian signals and/or push buttons.***
2. ***Install pedestrian-scale lighting.***
3. ***Install/re-stripe/relocate crosswalks.***
4. ***Install/replace pedestrian ramps.***
5. ***Install/replace sidewalks.***
6. ***Relocate utility poles, street furniture, etc.***
7. ***Modify/relocate drainage grates.***
8. ***Improve access management.***

These, as well as additional improvements detailed in Appendix N, would improve pedestrian and bicycle access, safety, and compliance with Americans with Disabilities Act (ADA) regulations. Although it is not proposed that bicycle lanes be striped in the area, the traffic circulation and signal improvements that were discussed previously would better accommodate bicyclists, as well as pedestrians.

Transportation System Enhancement Plan Improvements

1. ***Reconstruct tree planters/benches.***
2. ***Construct curb extensions.***
3. ***Install high-visibility crosswalks.***
4. ***Install decorative pavement.***
5. ***Install visitor kiosks.***
6. ***Add street furniture.***

Many of the modifications for the Pike Plan area would improve safety for and driver awareness of pedestrians. Others would improve existing amenities for bicyclists, pedestrians, and visitors to the area. All of these streetscape-type improvements would create a cohesive and attractive look that would reflect and distinguish the historic character of the Uptown Stockade Area. This look could be expanded outside of the immediate Pike Plan area to distinguish the greater Uptown Stockade Area from its surrounding neighborhoods.

As detailed above, there are a range of relatively simple changes in the Uptown Stockade study area that can be made to accommodate and improve future vehicular, bicycle, and pedestrian operations in the area. Traffic signal upgrades can be made to allow coordination between the signals, which can be timed to significantly improve traffic flow while also providing sufficient crossing times for pedestrians. Street direction changes can be made to improve access to and circulation with the Uptown Stockade Area and would also improve safety conditions at existing problematic locations within the study area. Parking enforcement, improved wayfinding to municipal lots, and the implementation of a complete signage and streetscape for the Uptown Stockade Area would encourage parking throughout the study area, rather than immediately adjacent to the Pike Plan. A parking management strategy could be implemented to ensure that available parking is used appropriately (e.g., available to retail customers and visitors where needed). Streetscape, walkability, and

bikeability improvements would also encourage more visitation to the area, hopefully, increasing the economic vitality of the community.

It should be noted that recommendations from this study should be reviewed by future capital programs, since there are numerous projects in various stages of development in the area that having overlapping areas of influence. NYSDOT is currently finalizing improvements for Washington Avenue between North Front Street and Sawkill Road, which could include signal upgrades, coordination, and timing changes for Schwenk Drive and North Front Street. Recommendations from the Uptown Stockade Area Transportation Plan should be reviewed by NYSDOT, since it is recommended from this study that traffic signals be coordinated along the length of Washington Avenue, in addition to at its northern end. NYSDOT is also conducting an intersection study of I-587 at Albany Avenue/Broadway. It is important that NYSDOT be aware of recommended improvements from the Uptown Stockade Area Transportation Plan that are immediately adjacent to that intersection. In addition, the City of Kingston is examining potential sites for an intermodal facility – all of which are in the Uptown Stockade study area. The new facility could significantly alter the forecast number and distribution of trips to the Uptown Stockade Area, necessitating that recommended signal timing changes for this study be modified.

I. INTRODUCTION

The Uptown Stockade Area is a historic area in Ulster County, New York that has developed as the center of the City of Kingston and is now the Kingston business district. It houses important County buildings, including the Ulster County Office Building and Ulster County Courthouse.[3] Within the Uptown Stockade Area are many examples of pre-revolutionary Dutch-style stone houses and nineteenth-century Italian, Greek, Gothic Revival, and Victorian architecture – many of which are still in use as homes, offices, museums, etc. Also within the Uptown Stockade Area is the Pike Plan, a nineteenth-century precursor to today's malls that is identified by the covered sidewalks that unite its store and business fronts. It is in this area along Wall and North Front Streets that the seasonal Farmers' Market is held.[4]

A. PROJECT LIMITS

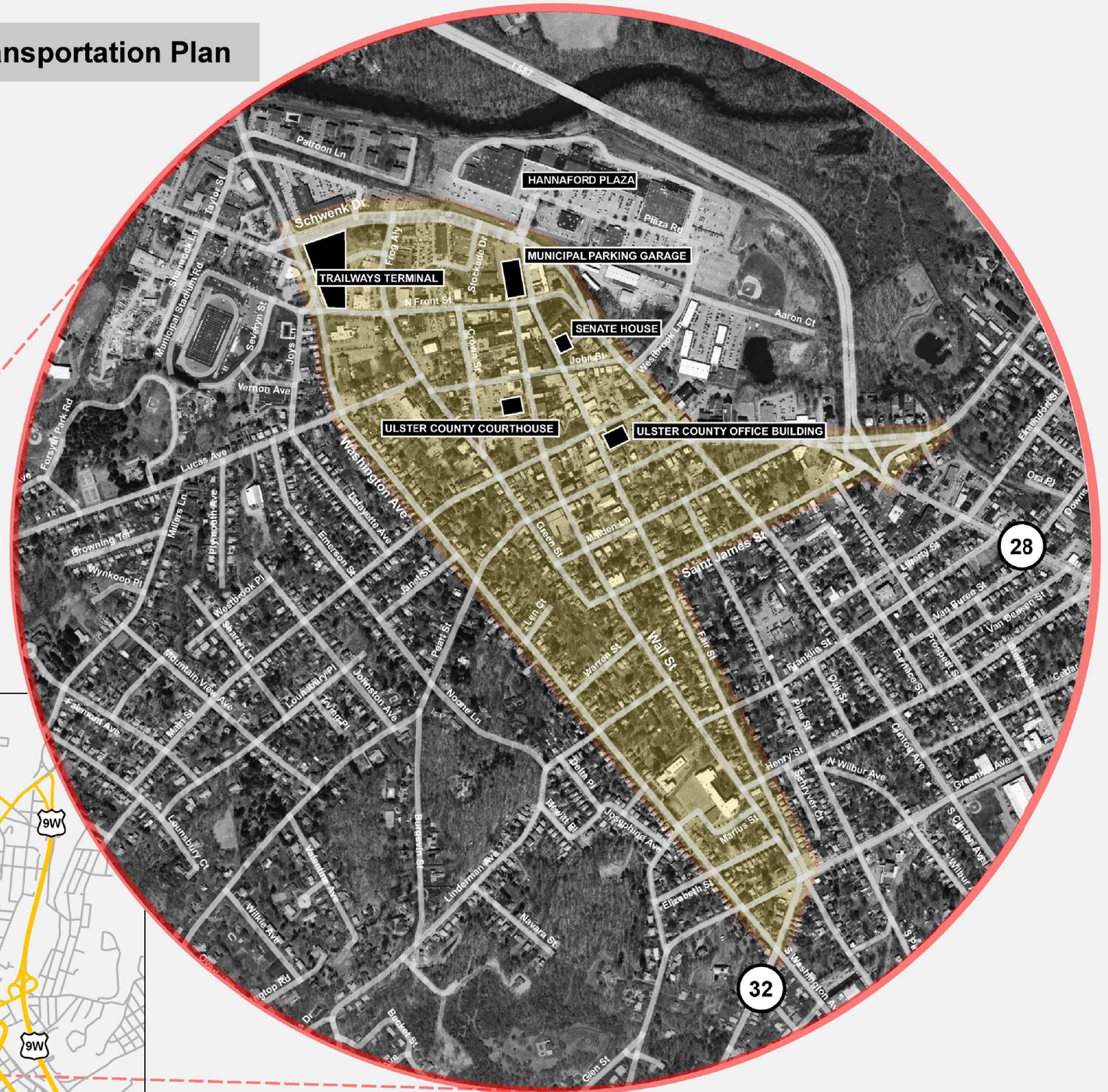
The Uptown Stockade Area is generally surrounded by four major roadways – Washington Avenue to the west, Clinton Avenue/Albany Avenue to the east, Schwenk Drive to the north and New York State Route 32 (NY 32) to the south (see Figure 1). These roadways, at their entrances to the Uptown Stockade Area, are congested. Existing traffic and pedestrian signals in the area are unconventionally timed, not functioning properly, or outdated. The combination of two-way and an inconsistent pattern of one-way streets, as well as the non-standard designs of some intersections, are confusing. On-street parking and indistinct signage to the Uptown Stockade Area attractions and off-street parking lots also causes confusion. Despite its historic appeal, poor access to and circulation within the area deter travelers from shopping, dining, or visiting the Uptown Stockade District.

B. PROJECT APPROACH

The purpose of the Uptown Stockade Area Transportation Plan is to recommend changes that could be made to improve access to, circulation within, and economic vitality in this historic area within the City of Kingston. The project study area includes Washington Avenue to Clinton Avenue/Albany Avenue between Schwenk Drive and NY 32, as discussed above. A multi-disciplined approach was used to simultaneously study traffic congestion, bicycle and pedestrian conditions, and streetscape opportunities. Tasks included a detailed traffic study and walkability/bikeability assessment, as well the evaluation of ways to improve both the aesthetics and functionality of the Pike Plan area. Recommendations were developed to improve access to the Uptown Stockade District while also improving the multi-modal experience within the area. Proposed improvements include vehicular mobility and parking, bicycle, pedestrian, and safety modifications. A Transportation System Enhancements Plan (TSEP) that identifies streetscape improvements for the Pike Plan area was also developed as part of this project.

[3] Kingston Stockade District, http://www.livingplaces.com/NY/Ulster_County/Kingston_City/Kingston_Stockade_District.html, October 2, 2008.
[4] Kingston's Uptown Stockade District!, http://www.kubaonline.org, August 21, 2008.

FIGURE 1: LOCATION AND STUDY AREA MAPS



Proposed improvements were developed based on analyses, meetings with the Advisory Council, and feedback from the community, which was obtained through public meetings and an on-line survey. Five advisory committee meetings have been held to-date over the course of the Uptown Stockade Area Transportation Plan project. The advisory committee members included New York State, Ulster County, and City of Kingston personnel, as well as historical society members and local business owners. Their input regarding traffic, parking, safety, and streetscape issues has been invaluable.

Following are details regarding the observations that were made and existing and future condition analyses that were conducted to develop the Uptown Stockade Area Transportation Plan.

II. TRAFFIC, PARKING, AND SAFETY

To develop vehicular improvements for the Uptown Stockade Area Transportation Plan, it was necessary to assess existing and future condition traffic, parking, and safety operations. Project area characteristics, data collection, traffic model development, and analysis results, as well as traffic, parking, and safety recommendations, are discussed below.

A. 2008 EXISTING CONDITIONS

1. Street Network

The major roadways surrounding the Uptown Stockade study area are Washington Avenue, Albany Avenue, Schwenk Drive, and NY 32. The primary roadways within the Uptown Stockade Area are Wall Street, Fair Street, and North Front Street.

Washington Avenue is a north-south roadway that extends within the City of Kingston from the roundabout at the I-87 Exit 19 northbound ramp terminus to the north to Boulevard (NY 32) to the south. It is a designated truck route that allows access from I-87 to the Uptown Stockade Area, including the existing Trailways bus terminal at North Front Street. In the project study area, Washington Avenue is primarily one travel lane in each direction with additional turn lanes provided at the most major intersections. On-street parking is typically allowed on the roadway's west side. New York State Bicycle Routes 28 and 32 run along Washington Avenue north of North Front Street and NY 32, respectively.

Albany Avenue is an east-west roadway that basically extends within the City of Kingston from U.S. Route 9W to the east to its terminus at Clinton Avenue/ Pearl Street in the project study area to the west. It allows access from I-587 to the Uptown Stockade Area. East of I-587, the roadway is designated NY 32. In the

project study area, Albany Avenue is primarily two travel lanes in the westbound direction and one travel lane with on-street parking in the eastbound direction.

Schwenk Drive is an east-west roadway north of the Uptown Stockade Area that extends the short distance between Washington Avenue to the west and Clinton Avenue to the east. The roadway allows indirect access from I-87 and I-587 to the Kingston Plaza shopping center. In the project study area, Schwenk Drive is primarily two lanes in each direction with additional turn lanes provided at major intersections. On-street parking is not allowed on either side of the roadway.

NY 32 is a north-south roadway that extends throughout New York State and that zigzags its way along local streets in the project study area. It allows direct access to Washington Avenue and indirect access to the Uptown Stockade Area from points south. NY 32 (Boulevard/Greenkill Avenue) at Wall Street and Fair Street is an unconventional and hazardous six-legged intersection. New York State Bicycle Route 32 runs along Boulevard west of the intersection.

Wall and *Fair Streets* comprise a one-way pair of roadways that extends from NY 32 to the south into the Uptown Stockade Area to the north. At their intersection with NY 32, the roadways operate in the opposite directions as would be expected – Fair Street to the east in the southbound direction and Wall Street to the west in the northbound direction. This results in confusing operations at one of the primary accesses to the area from points south. In the project study area, Wall and Fair Streets are primarily one travel lane in each direction with additional turn lanes provided at major intersections and with on-street parking typically allowed on one or both sides. In the Uptown Stockade District, Wall Street traverses the Pike Plan shopping area. On Saturdays from May to November, this segment of Wall Street between North Front and John Streets is closed to vehicular traffic to allow for the Kingston Farmers' Market. New York State Bicycle Route 28 runs along Wall and Fair Streets between NY 32 and North Front Street.

North Front Street is an east-west roadway that extends through the Uptown Stockade Area from Washington Avenue to the west to Clinton Avenue to the east. Between Fair Street and Clinton Avenue, the roadway is one-way westbound. North Front Street provides access to multiple public parking lots, including the large surface lot on the north side of the roadway opposite Fair Street that has recently been constructed to replace the demolished municipal parking garage. It also traverses the Pike Plan shopping area. In the project study area, North Front Street is primarily one travel lane with on-street parking in each direction. New York State Bicycle Route 28 runs along North Front Street between Washington Avenue and Fair Street.

2. Data Collection

Traffic and parking data were collected in spring and summer 2008 to supplement available data provided by Ulster County (i.e., turning movement counts that were conducted throughout the first half of 2007 by the New York State Department of Transportation (NYSDOT) and the February 24, 2006 *Draft Technical Memorandum: Washington Avenue Corridor Access Management Plan* and April 4, 2006 *Route 32 at Fair Street Intersection Study – Final Planning Study* that were prepared by Creighton Manning Engineering, LLP). Accident information from NYSDOT and from local police reports was also obtained from Ulster County.

a) Automatic Traffic Recorder Counts

Twenty-four hour automatic traffic recorder (ATR) counts were collected for a one-week period in spring 2008 from Wednesday, April 16 through Wednesday, April 23 at the locations shown in Figure 2. The ATR counts were used to balance traffic volume networks and to adjust previously collected ATR counts for existing conditions. Detailed ATR count information is provided in Appendix A.

b) Manual Turning Movement Counts

Manual turning movement counts by vehicle classification (i.e., passenger car, truck, transit bus, and school bus) and pedestrian crossing volumes were collected in spring and summer 2008 at the locations indicated in Figure 2. Spring counts were conducted at locations primarily in the outskirts of the Uptown Stockade Area where it was anticipated that traffic volumes would not change significantly with the season. These counts were performed on Tuesday, April 15, 2008, during the weekday AM (7:30 to 9:30) and weekday PM (4 to 6) peak periods. Summer counts were conducted in the Uptown Stockade Area during the peak season of visitors to the area. The summer counts were conducted on Saturday, July 19, 2008 internal to the Uptown Stockade Area during the Farmers' Market peak period (11 a.m. to 2 p.m.) and on the outskirts of the area after the Farmers' Market peak period (3 to 5 p.m.). In addition, sample turning movement counts were collected in late July between determined traffic analysis locations to establish through versus turning volumes, better defining traffic patterns in the project study area. The detailed spring and summer turning movement count summaries, as well as some of the previous traffic volume data that were available, are provided in Appendix B.

c) Parking Counts

On-street parking counts were collected in spring and summer 2008 at the locations indicated in Figure 3. Spring counts were conducted on Tuesday, April 15, 2008, to examine on-street parking utilization throughout the day (8 a.m. to 2 p.m.). Summer counts were conducted on Saturday, July 19, in the afternoon immediately after the Farmers' Market closed for the day (2 to 2:30 p.m.). Off-street parking utilization information was obtained from public

Figure 2. Traffic Count Locations

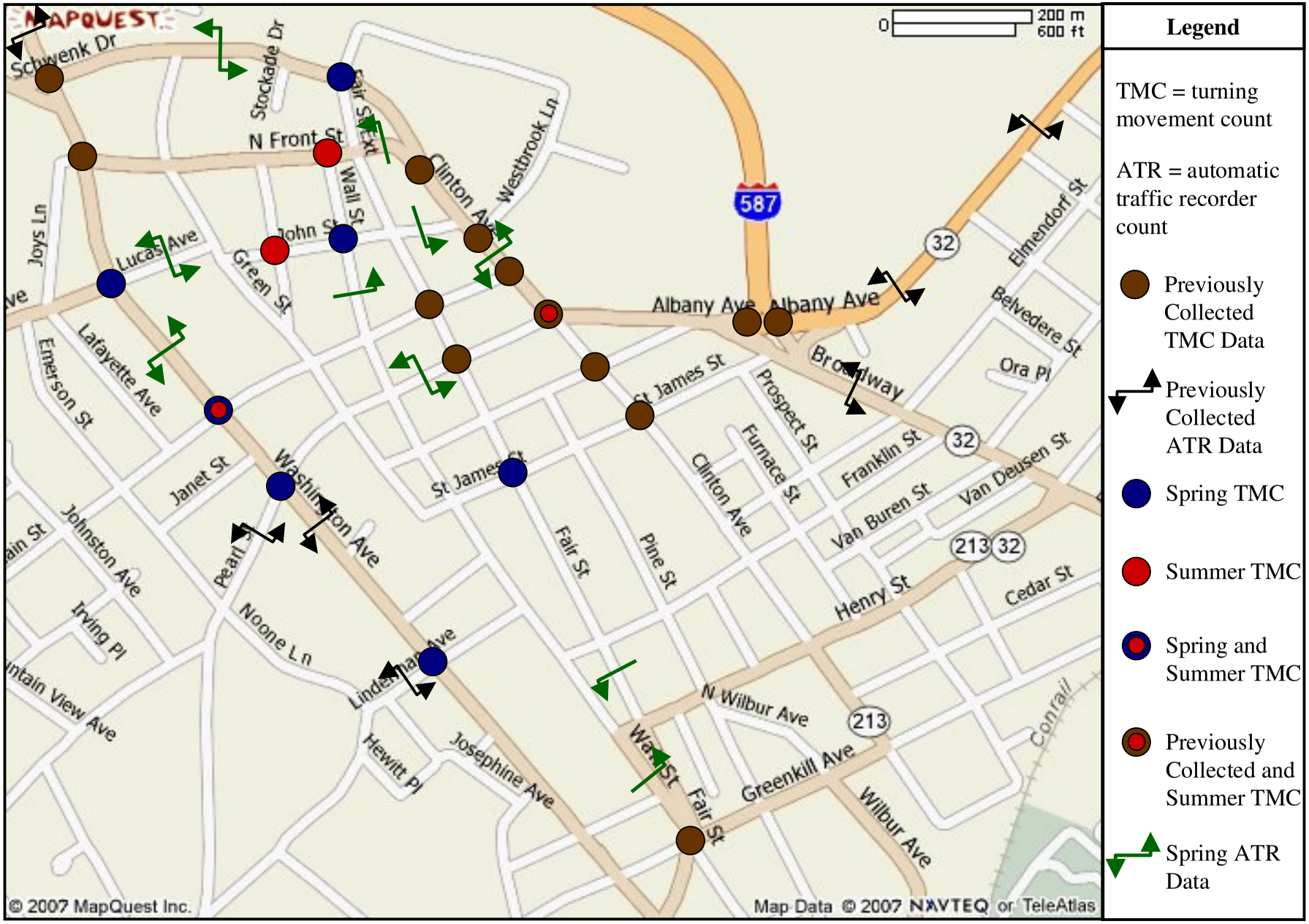
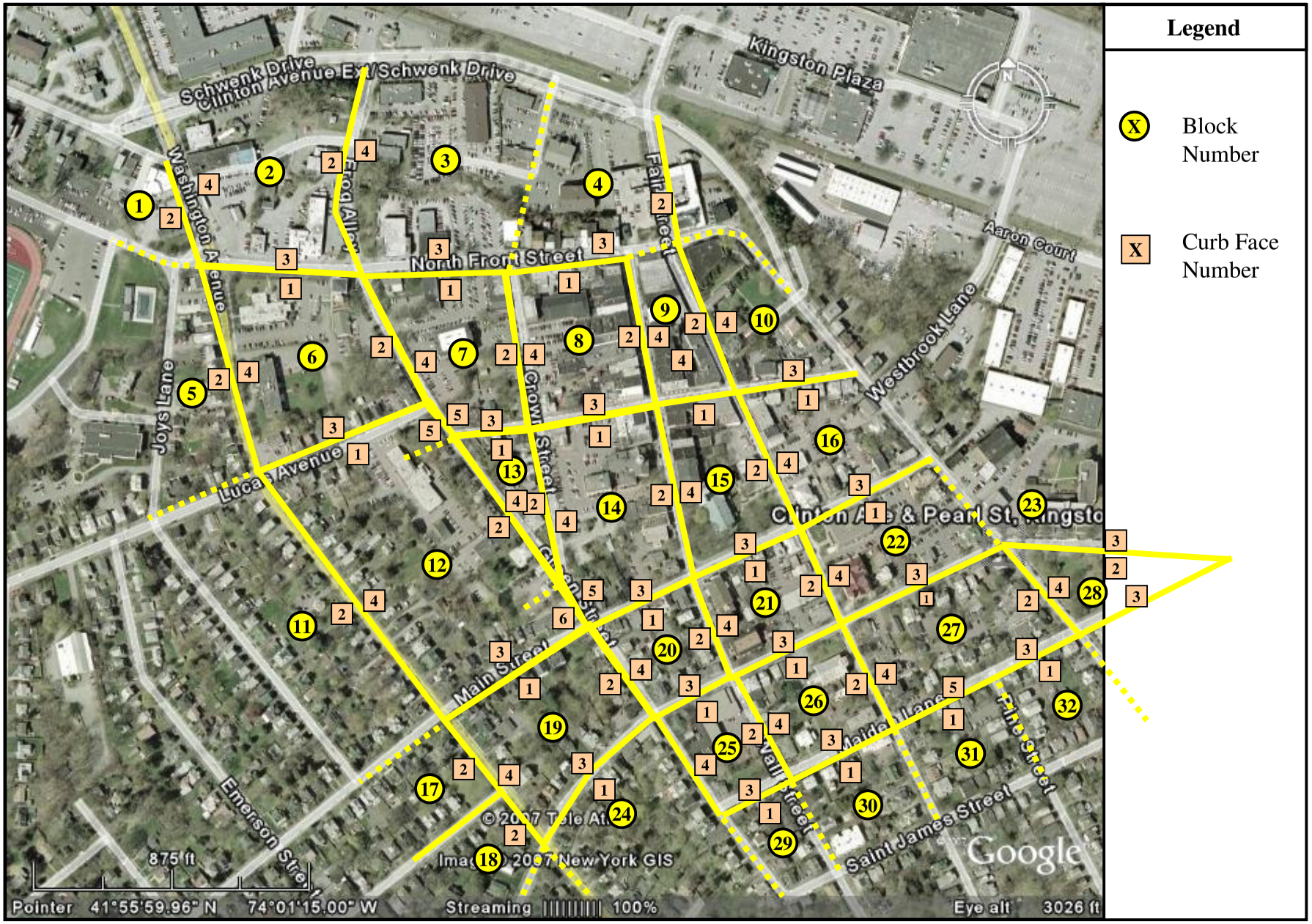


Figure 3. On-Street Parking Count Locations



meetings and the on-line survey. The on-street parking counts are reflected in the existing condition parking utilization summaries provided in Appendix C.

d) Intersection/Roadway Inventories

Physical inventories of critical intersections and roadways in the project study area were conducted on the same day as spring turning movement counts. The inventories noted lane widths, lane movements, turn restrictions, parking allowances, bus stop locations, signing, etc. Since official traffic signal timing information was not available, traffic signal timings were also collected in the field. This information was used as input into traffic models of the Uptown Stockade Area. The detailed intersection inventories are provided in Appendix D. Detailed traffic signal timing information is provided in Appendix E.

e) Accident Records

Accident data for the project study area was provided by Ulster County from a variety of sources. NYSDOT CLAS summaries were obtained for March 31, 2004 through March 31, 2007. NYSDOT GIS information was provided for January 1, 2004 through December 31, 2006. Summaries of police accident reports for 2003 through 2005 were reviewed at, and detailed summaries of recent police accident reports from January 1, 2008 to mid-April 2008 were obtained from, the Ulster County Traffic Safety Department. In addition, a field visit with the Ulster County Traffic Safety Department was conducted on May 5, 2008 to examine safety issues in the project study area. Information was obtained to determine the highest accident locations in the project study area and the primary causes of the accidents at these locations. Some accident information is provided in Appendix F.

f) Transit Data

Information regarding transit operations in the Uptown Stockade Area was obtained from the Trailways, Ulster County Area Transit (UCAT), and Citibus lines that operate in the area. The Trailways buses operate throughout the day within New York State or between New York State and Ontario, Canada. The Trailways bus terminal in Kingston is at the northeast corner of Washington Avenue and North Front Street; therefore, Trailways buses in the area typically only travel along Washington Avenue between I-87 and North Front Street. UCAT buses operate within Ulster County. In the Uptown Stockade study area, the UCAT buses generally travel at half-hour headways along Schwenk Drive, Clinton Avenue, and/or Broadway between 5 a.m. and 11 p.m. One of the main stops for the UCAT bus is Kingston Plaza. Citibus buses operate within the City of Kingston at different hours depending on day and time of year. In the Uptown Stockade study area, buses travel in the heart of the area along Wall and Fair Streets, as well as along the major outlying roadways. Although the Citibuses only pick up passengers at a limited number of stops within the study area, they allow passengers to disembark anywhere along the routes.

g) Wayfinding Observations

Observations were made in the spring to assess wayfinding (guide signing) to the Uptown Stockade Area and specific locations of interest within the Uptown Stockade Area. A summary of these observations is provided in Appendix G.

3. Public Participation

Public participation included an on-line survey and two public meetings. The on-line survey, which was designed to solicit community feedback regarding specific traffic, parking, bicycle, streetscape, and land use issues in the Uptown Stockade Area, was completed by 240 people. Summaries of the survey results are provided in Appendix H.

Public meetings were also held to obtain community feedback.

Public Meeting 1

The first public meeting was held on Thursday, January 21, 2008 at 6 p.m. in the Ulster County Legislature Chambers in the Ulster County Office Building in Kingston. The purposes of the meeting were to introduce the project and discuss potential streetscape improvements and general traffic and parking concerns with the community. The public meeting began with a PowerPoint presentation introducing the project and team members, discussing completed and planned analyses, and then detailing observations and potential solutions regarding walkability, bikeability, and streetscape improvements – particularly in the Pike Plan area. After the presentation, the on-line survey questions that were prepared were discussed with the community to solicit their feedback in person on the walkability/bikeability and streetscape ideas, as well as traffic and parking issues.

Based on the discussion, it was found that the community (which consisted primarily of local residents) would like to preserve the historic nature of the area – make it a pedestrian- and bicycle-friendly area with a defined streetscape, historical plaques, new restaurants, cafes, festivals, etc. However, a need to improve traffic congestion, traffic control, street directions, and parking was also expressed. It was indicated that improved vehicular and pedestrian access between the Uptown Stockade Area and Schwenk Drive would be desirable. In addition, there is a need to improve wayfinding to parking lots and to establish loading/unloading zones and snow removal storage areas in the area. Notes from the first public meeting are provided in Appendix I.

Public Meeting 2

The second public meeting was held on Monday, November 17, 2008 at 5:30 p.m. in the Ulster County Legislature Chambers. The purpose of the meeting was to discuss traffic, parking, and walkability/bikeability recommendations from the October 2008 *Draft Uptown Stockade Area Transportation Plan*. The public meeting began with a PowerPoint presentation reiterating the goals of the project; discussing the traffic, parking, and walkability/bikeability analysis; and then

detailing recommended vehicular, bicycle, and pedestrian mobility and safety improvements. After the presentation, questions were fielded from the public.

Based on discussions during the question-and-answer session, it was determined that most attendees supported recommended improvements, including the reversal of street directions, upgrading and retiming of traffic signals, increasing of physical roadway capacity, and improvement of pedestrian amenities throughout the Uptown Stockade area. It was also decided, since there is an on-street parking problem in the immediate vicinity of the Pike Plan but not in outlying areas, that parking management should be a study recommendation. It was suggested that on-street parking meter costs and time limits differ throughout the area to encourage customer/visitor parking in the Pike Plan area and employee parking elsewhere.

Public feedback was also received via six advisory committee meetings. The advisory committee members included New York State, Ulster County, and City of Kingston personnel, as well as historical society members and local business owners. Their input regarding traffic, parking, safety, and streetscape issues has been invaluable. Minutes from various advisory committee meetings are provided in Appendix J.

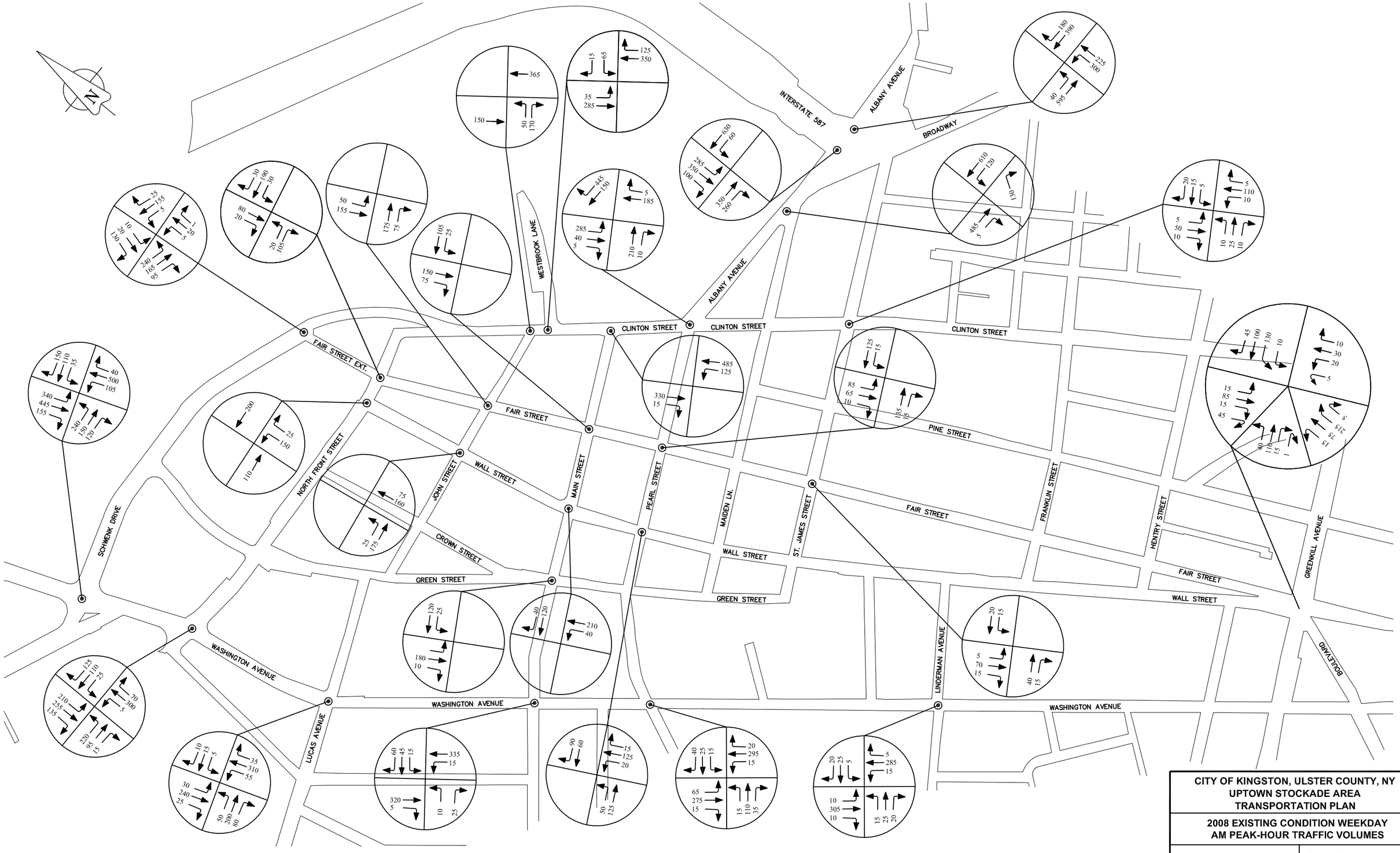
4. Traffic Analysis

Existing condition traffic operations in the Uptown Stockade Area were modeled using Synchro 7 traffic signal coordination software and were simulated using Synchro's built-in traffic simulation program, SimTraffic. The existing condition analyses were conducted to identify current traffic deficiencies in the area and to calibrate the Synchro models.

a) Volumes

Existing condition traffic volumes were developed based on a combination of the ATR and manual turning movement count data that were collected for this study, the traffic volumes that were developed for the area from previously-conducted studies, and the traffic counts that were recently conducted in the area by NYSDOT. Based on the data, the spring weekday AM and PM peak hours in the project study area occurred from 7:45 to 8:45 a.m. and from 5 to 6 p.m.; the summer Saturday peak hour occurred from 11 a.m. to 12 p.m.

From the counts, it was determined that peak-hour traffic volumes during the summer Saturday were 5 to 40 percent lower than those on spring weekdays and that traffic patterns during the summer were similar to those during one or both of the spring peak hours. Since this was the case, and summer traffic volumes for all individual lane movements were lower than those in the spring, it was decided that only spring weekday AM and PM peak-hour conditions would be analyzed. Balanced traffic volume diagrams for the weekday AM and PM peak hours are provided in Figures 4 and 5, respectively.



CITY OF KINGSTON, ULSTER COUNTY, NY
UPTOWN STOCKADE AREA
TRANSPORTATION PLAN

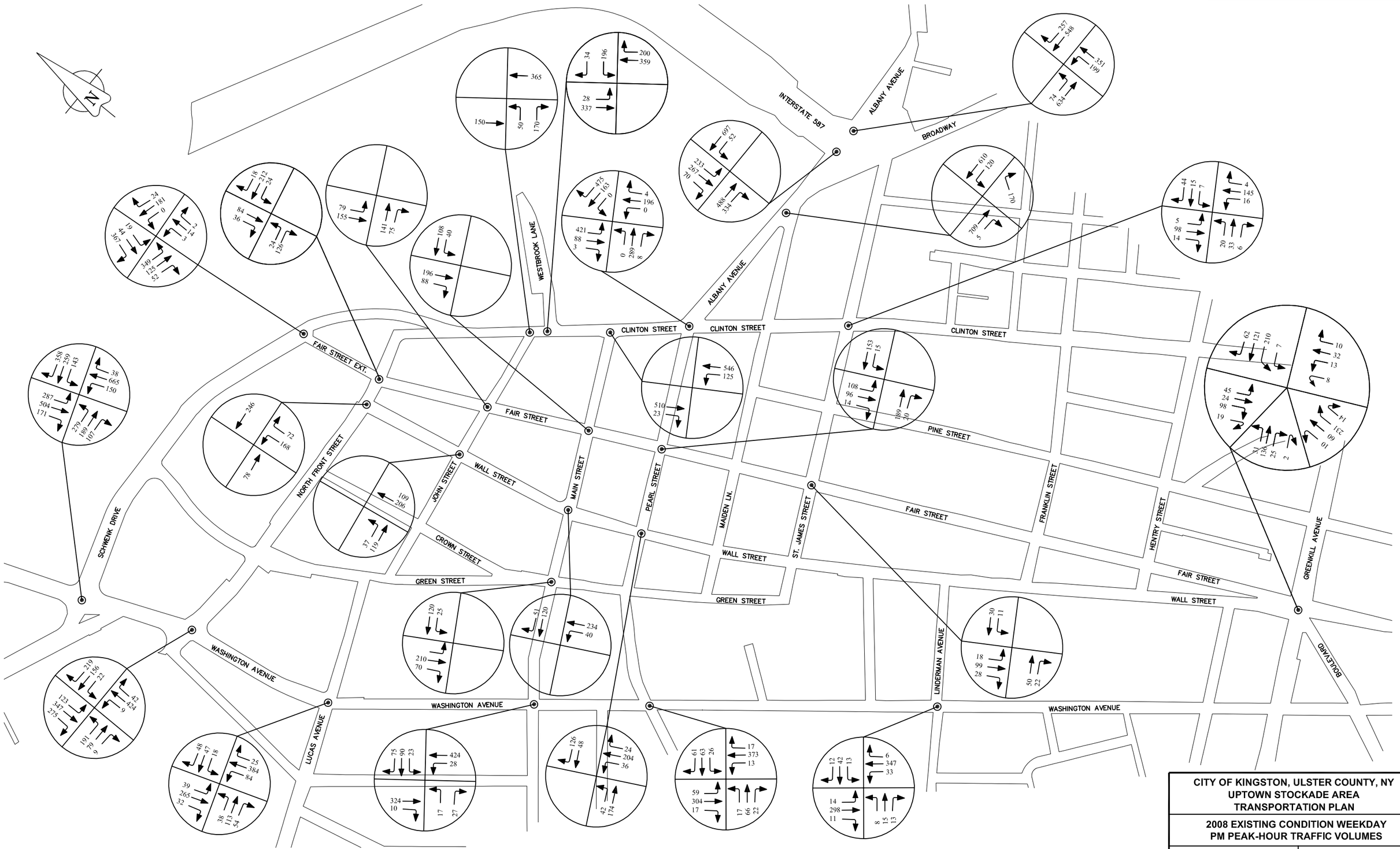
2008 EXISTING CONDITION WEEKDAY
AM PEAK-HOUR TRAFFIC VOLUMES

The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS

FIGURE NO. 4

SCALE: N.T.S.

DATE: SEPTEMBER 2008



CITY OF KINGSTON, ULSTER COUNTY, NY
UPTOWN STOCKADE AREA
TRANSPORTATION PLAN

2008 EXISTING CONDITION WEEKDAY
PM PEAK-HOUR TRAFFIC VOLUMES

The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS

FIGURE NO. 5
SCALE: N.T.S.
DATE: SEPTEMBER 2008

As shown in the figures, the highest traffic volumes in the project study area are on Washington Avenue and Albany Avenue, the major approach routes to the Uptown Stockade Area. Traffic volumes along these roadways are considerably higher than within the Uptown Stockade District itself and are 20 to 25 percent higher during the evening than the morning peak hours. The highest bi-directional traffic volumes along Washington Avenue are north of Schwenk Drive to the extreme north of the project study area – approximately 2,300 vehicles (1,000 southbound and 1,300 northbound departing from the Uptown Stockade Area) during the weekday PM peak hour. South of North Front Street, the bi-directional traffic volumes along Washington Avenue drop significantly to around 800 vehicles. The highest bi-directional traffic volumes along Albany Avenue are east of Maiden Lane to the extreme east of the project study area – approximately 1,600 vehicles (750 westbound and 850 eastbound also departing from the Uptown Stockade Area) during the weekday PM peak hour.

In the heart of the project study area, traffic volumes are fairly consistent between the weekday AM and PM peak hours, ranging from 100 to 400 vehicles in one direction of the local area roadways. In general, though, traffic volumes are slightly higher during the weekday PM peak hour when local attractions in the area are open. The highest volumes on the two-way streets occur along North Front Street immediately east of Washington Avenue and along Pearl Street immediately west of Albany Avenue – approximately 650 (400 eastbound, 250 westbound) and 450 vehicles (300 eastbound, 150 westbound), respectively, during the weekday PM peak hour. The highest volumes on the one-way streets occur along Wall Street and Fair Street between John and Main Streets – approximately 300 vehicles on both roadways during the weekday PM peak hour.

b) Methodologies and Measures of Effectiveness

Capacity analyses were conducted at the following critical signalized and unsignalized intersections in the project study area (see Figure 6).

1. Washington Avenue at Schwenk Drive/Hurley Avenue
2. Washington Avenue at North Front Street
3. Washington Avenue at Lucas Avenue
4. Washington Avenue at Main Street
5. Washington Avenue at Pearl Street
6. Washington Avenue at Linderman Avenue
7. Green Street at Main Street
8. Wall Street at North Front Street
9. Wall Street at John Street
10. Wall Street at Main Street
11. Wall Street at Pearl Street
12. Fair Street Extension/Kingston Plaza at Schwenk Drive

FIGURE 6:

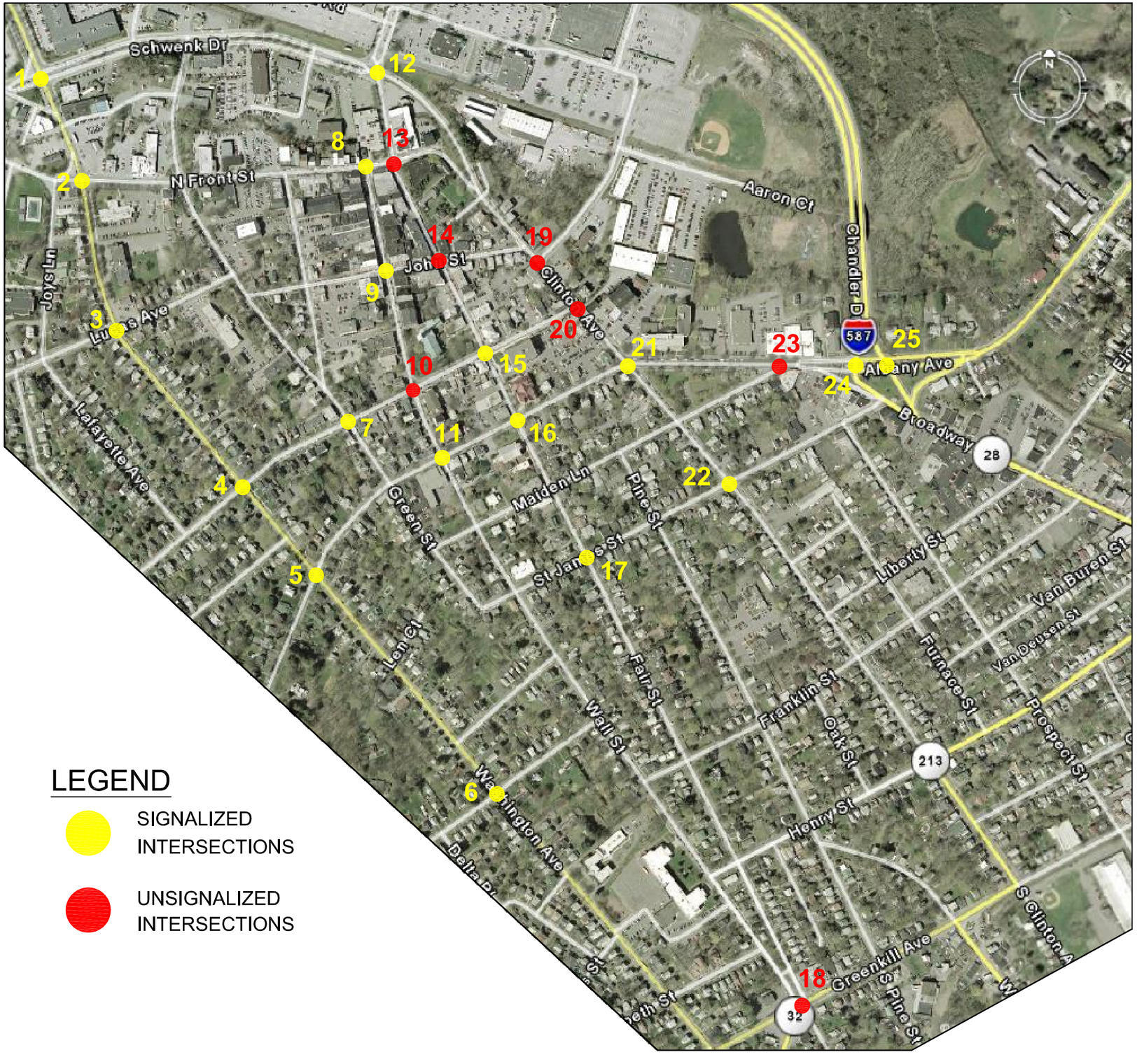
TRAFFIC ANALYSIS LOCATIONS

SIGNALIZED INTERSECTIONS

1. Washington Avenue and Schwenk Drive/Hurley Avenue
2. Washington Avenue and North Front Street
3. Washington Avenue and Lucas Avenue
4. Washington Avenue and Main Street
5. Washington Avenue and Pearl Street
6. Washington Avenue and Linderman Avenue
7. Green Street and Main Street
8. Wall Street and North Front Street
9. Wall Street and John Street
11. Wall Street and Pearl Street
12. Fair Street Extension/Kingston Plaza and Schwenk Drive
15. Fair Street and Main Street
16. Fair Street and Pearl Street
17. Fair Street and St. James Street
21. Clinton Avenue and Albany Avenue/Pearl Street
22. Clinton Avenue and St. James Street
24. Albany Avenue and I-587 South
25. Albany Avenue and I-587 North

UNSIGNALIZED INTERSECTIONS

10. Wall Street and Main Street
13. Fair Street and North Front Street
14. Fair Street and John Street
18. Wall Street/Fair Street and Boulevard/Greenkill Avenue (Route 32)
19. Clinton Avenue and Westbrook Lane
20. Clinton Avenue and Main Street
23. Albany Avenue and Maiden Lane



LEGEND

SIGNALIZED INTERSECTIONS

UNSIGNALIZED INTERSECTIONS

13. Fair Street and North Front Street
14. Fair Street and John Street
15. Fair Street and Main Street
16. Fair Street and Pearl Street
17. Fair Street and St. James Street
18. Wall Street/Fair Street and Boulevard/Greenkill Avenue (NY 32)
19. Clinton Avenue and Westbrook Lane
20. Clinton Avenue and Main Street
21. Clinton Avenue and Albany Avenue/Pearl Street
22. Clinton Avenue and St. James Street
23. Albany Avenue and Maiden Lane
24. Albany Avenue and I-587 South
25. Albany Avenue and I-587 North

The typical measures of effectiveness for both signalized and unsignalized intersection analyses are volume-to-capacity ratio (v/c), delay, and level-of-service (LOS). V/c is an indicator of the amount of congestion that occurs at a particular location. A v/c equal to or greater than 1 indicates traffic operations at or above capacity (high levels of congestion); a v/c less than 1 indicates traffic operations below capacity (lower levels of congestion). Total delay, typically provided in seconds per vehicle (sec/veh), is an indicator of how much travel time, in addition to that which would be incurred for base conditions, is experienced at a particular location. Total delay accounts for additional time incurred due to both traffic control and queuing conditions. LOS is an indicator of how well traffic operates at an intersection. Designations range from excellent LOS A to failing LOS F. The LOS thresholds for signalized and unsignalized intersection analyses are provided in Tables 1 and 2, respectively.

Table 1. Signalized Intersection LOS Designations

LOS	Delay (sec/veh)[1]
A	≤ 10
B	> 10 to 20
C	> 20 to 35
D	> 35 to 55
E	> 55 to 80
F	> 80

Note: [1]sec/veh ≡ seconds per vehicles

Arterial operations were also evaluated, as necessary. Typical measures of effectiveness for arterial analyses are travel time, travel speed, and level-of-service (LOS). Travel time, typically provided in seconds, is the total time (i.e., running time plus stopped time) that it takes to traverse a roadway segment. Travel speed, calculated as travel length divided by travel time, is the total rate at which a roadway segment is traversed, which may be significantly lower than

Table 2. Unsignalized Intersection LOS Designations

LOS	Delay (sec/veh)[1]
A	≤ 10
B	> 10 to 15
C	> 15 to 25
D	> 25 to 35
E	> 35 to 50
F	> 50

Note: [1]sec/veh ≡ seconds per vehicles

the posted speed limit, since it incorporates stopped delay. LOS is an indicator of how well traffic moves along a particular stretch of roadway and is dependent on arterial class and travel speed. As for intersection analyses, the designations for each arterial class range from excellent LOS A to failing LOS F.

c) Results

Existing condition signalized and unsignalized intersection analysis results are provided in Tables 3 and 4, respectively. As shown in the tables, most of the intersections in the project study area currently operate at overall acceptable levels of service (LOS C or better) during both peak hours. However, some intersections en route to the Uptown Stockade District are congested.

Washington Avenue at Schwenk Drive/Hurley Avenue

This signalized intersection operates at overall unacceptable LOS D during the weekday AM peak hour and at overall poor LOS E during the weekday PM peak hour. During both peak hours, the Washington Avenue through movements and the southbound Washington Avenue to Schwenk Drive left-turn movement operate poorly. During the weekday AM peak hour, the southbound Washington Avenue through movement fails, incurring over 95 sec/veh and one 90-second cycle length of delay such that drivers must wait through more than one traffic signal cycle to pass through the intersection. During the weekday PM peak hour, both the southbound through and left-turn movements fail, incurring delays of between 85 and 140 sec/veh. The westbound right-turn movement from Schwenk Drive away from the project area also operates poorly – at LOS E with over 55 sec/veh of delay.

Albany Avenue at I-587 North and South

Although these two signalized intersections operate at overall acceptable levels at all but I-587 South during the weekday AM peak hour, individual lane movements operate poorly. During both peak periods, the I-587 approaches operate at unacceptable levels – the northbound approach at LOS D or E with delays as high as 65 sec/veh and the southbound approach at LOS E or F with delays as high as 155 sec/veh and greater than the existing 110-second cycle length. The eastbound left turn from Albany Avenue to I-587 also operates poorly during both time periods – at LOS E with around 65 sec/veh of delay and

Table 3. 2008 Existing Condition Signalized Intersection Analysis Results

Intersection Approach and Movement[1,2]			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
1 - Washington Avenue and Schwenk Drive/Hurley Avenue								
Hurley Avenue	EB	L	0.44	24.6	C	0.67	31.3	C
		TR	0.27	19.6	B	0.31	26.0	C
Schwenk Drive	WB	L	0.07	19.3	B	0.30	21.9	C
		T	0.22	35.4	D	0.51	41.6	D
		R	0.34	37.9	D	0.80	55.9	E
Washington Avenue	NB	L	0.40	26.0	C	0.57	33.9	C
		TR	0.68	47.4	D	0.89	59.3	E
	SB	L	0.99	72.6	E	1.00	85.7	F
		T	1.03	95.7	F	1.16	137.3	F
		R	0.33	10.6	B	0.36	13.3	B
Overall Intersection			**1.03**	**49.7**	**D**	**1.16**	**61.3**	**E**
2 - Washington Avenue and North Front Street								
North Front Street	EB	L	0.46	19.4	B	0.44	18.9	B
		TR	0.16	15.8	B	0.13	15.7	B
	WB	LT	0.28	23.5	C	0.36	24.7	C
		R	0.25	5.3	A	0.39	5.1	A
Washington Avenue	NB	LTR	0.33	13.5	B	0.42	21.4	C
	SB	L	0.51	17.4	B	0.34	14.5	B
		T	0.34	16.7	B	0.46	18.7	B
		R	0.19	3.1	A	0.35	3.0	A
Overall Intersection			**0.51**	**14.8**	**B**	**0.46**	**15.7**	**B**
3 - Washington Avenue and Lucas Avenue								
Lucas Avenue	EB	LTR	0.61	26.7	C	0.42	21.3	C
	WB	LTR	0.07	14.0	B	0.29	15.1	B
Washington Avenue	NB	LTR	0.58	22.1	C	0.84	34.5	C
	SB	LTR	0.48	9.8	B	0.62	10.9	B
Overall Intersection			**0.61**	**19.8**	**B**	**0.84**	**23.6**	**C**
4 - Washington Avenue and Main Street								
Main Street	EB	LR	0.09	8.9	A	0.16	9.4	A
	WB	LTR	0.32	11.4	B	0.47	16.1	B
Washington Avenue	NB	LT	0.45	13.8	B	0.56	15.7	B
	SB	TR	0.53	15.7	B	0.49	14.9	B
Overall Intersection			**0.53**	**13.9**	**B**	**0.56**	**15.2**	**B**
5 - Washington Avenue and Pearl Street								
Pearl Street	EB	LTR	0.35	24.7	C	0.31	24.2	C
	WB	LTR	0.21	23.1	C	0.45	27.2	C
Washington Avenue	NB	LTR	0.41	11.7	B	0.46	12.4	B
	SB	LTR	0.43	12.4	B	0.48	13.0	B
Overall Intersection			**0.43**	**14.9**	**B**	**0.48**	**16.2**	**B**

Table 3. 2008 Existing Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement[1,2]			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
6 - Washington Avenue and Linderman Avenue								
Linderman Avenue	EB	LTR	0.14	10.6	B	0.11	10.0	B
	WB	LTR	0.13	9.9	A	0.20	12.6	B
Washington Avenue	NB	LTR	0.51	14.6	B	0.63	17.3	B
	SB	LTR	0.58	16.4	B	0.59	16.7	B
Overall Intersection			**0.58**	**14.7**	**B**	**0.63**	**16.1**	**B**
7 - Green Street and Main Street								
Main Street	WB	LT	0.22	13.9	B	0.22	13.9	B
Green Street	SB	TR	0.29	14.9	B	0.43	15.6	B
Overall Intersection			**0.29**	**14.5**	**B**	**0.43**	**15.0**	**B**
8 - Wall Street and North Front Street								
North Front Street	EB	T	0.17	11.3	B	0.12	10.9	B
	WB	T	0.24	11.6	B	0.29	12.1	B
Wall Street	NB	L	0.36	18.1	B	0.41	18.8	B
		R	0.07	14.3	B	0.19	15.9	B
Overall Intersection			**0.36**	**13.7**	**B**	**0.41**	**14.4**	**B**
9 - Wall Street and John Street								
John Street	EB	LT	0.33	20.1	C	0.33	20.1	C
Wall Street	NB	T	0.36	22.7	C	0.48	25.2	C
		R	0.20	20.7	C	0.31	22.4	C
Overall Intersection			**0.36**	**21.2**	**C**	**0.48**	**22.6**	**C**
11 - Wall Street and Pearl Street								
Pearl Street	EB	LT	0.24	15.7	B	0.28	16.2	B
	WB	TR	0.22	15.6	B	0.26	16.1	B
Wall Street	NB	LTR	0.42	29.2	C	0.69	38.0	D
Overall Intersection			**0.42**	**20.1**	**C**	**0.69**	**25.0**	**C**
12 - Fair Street Extension/Kingston Plaza and Schwenk Drive								
Schwenk Drive	EB	L	0.34	16.5	B	0.53	19.5	B
		T	0.17	17.1	B	0.15	16.9	B
		R	0.12	16.5	B	0.07	15.9	B
	WB	LTR	0.50	53.9	D	0.61	57.6	E
Fair Street Extension	NB	LTR	0.32	72.3	E	0.22	69.5	E
Kingston Plaza	SB	L	0.09	67.6	E	0.32	74.2	E
		T	0.17	69.4	E	0.49	80.7	F
		R	0.57	20.5	C	0.83	21.4	C
Overall Intersection			**0.57**	**30.2**	**C**	**0.83**	**32.6**	**C**
15 - Fair Street and Main Street								
Main Street	WB	L	0.05	15.7	B	0.06	15.9	B
		T	0.19	17.0	B	0.17	16.8	B
Fair Street	SB	T	0.32	16.2	B	0.33	16.3	B
		R	0.20	15.0	B	0.21	15.1	B
Overall Intersection			**0.32**	**16.2**	**B**	**0.33**	**16.1**	**B**
16 - Fair Street and Pearl Street								
Pearl Street	EB	TR	0.41	16.1	B	0.44	16.2	B
	WB	LT	0.35	17.4	B	0.33	18.8	B
Fair Street	SB	LTR	0.24	10.1	B	0.30	10.6	B
Overall Intersection			**0.41**	**14.6**	**B**	**0.44**	**14.8**	**B**

Table 3. 2008 Existing Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement[1,2]			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
17 - Fair Street and St. James Street								
St. James Street	EB	TR	0.12	9.0	A	0.14	8.3	A
	WB	LT	0.09	11.2	B	0.11	11.4	B
Fair Street	SB	LTR	0.17	10.3	B	0.29	10.4	B
Overall Intersection			**0.17**	**10.1**	**B**	**0.29**	**10.0**	**B**
21 - Clinton Avenue and Albany Avenue/Pearl Street								
Pearl Street	EB	TR	0.47	31.9	C	0.82	49.6	D
Albany Avenue	WB	T	0.35	32.4	C	0.38	33.0	C
		R	0.59	3.7	A	0.61	4.0	A
Clinton Avenue	NB	LTR	0.57	45.5	D	0.60	46.5	D
	SB	L	0.85	49.1	D	1.13	117.0	F
		TR	0.08	22.3	C	0.17	25.0	C
Overall Intersection			**0.85**	**28.1**	**C**	**1.13**	**48.3**	**D**
22 - Clinton Avenue and St. James Street								
St. James Street	EB	LTR	0.07	6.3	A	0.11	6.9	A
	WB	LTR	0.08	4.7	A	0.11	4.3	A
Clinton Avenue	NB	LTR	0.47	25.5	C	0.59	29.1	C
	SB	LTR	0.21	18.8	B	0.43	22.7	C
Overall Intersection			**0.47**	**17.9**	**B**	**0.59**	**20.0**	**B**
24 - Albany Avenue and I-587 South								
Albany Avenue	EB	TR	0.46	17.0	B	0.62	23.5	C
	WB	L	0.16	36.0	D	0.15	38.9	D
		T	0.32	3.0	A	0.30	1.2	A
I-587 South	SB	L	1.03	102.6	F	0.82	67.1	E
		T	1.20	155.0	F	0.91	75.0	E
		R	0.31	12.2	B	0.22	10.4	B
Overall Intersection			**1.20**	**47.3**	**D**	**0.91**	**27.9**	**C**
25 - Albany Avenue and I-587 North								
Albany Avenue	EB	L	0.20	64.7	E	0.43	135.1	F
		T	0.31	3.2	A	0.31	2.5	A
	WB	TR	0.39	17.7	B	0.59	22.2	C
I-587 North	NB	L	0.78	54.4	D	0.57	44.2	D
		T	0.55	43.3	D	0.89	65.7	E
Overall Intersection			**0.69**	**22.8**	**C**	**0.89**	**30.1**	**C**

Notes: [1]Intersection approaches are NB = northbound, SB = southbound, EB = eastbound, WB = westbound, etc.
[2]Intersection movements are L = left, T = through, R = right, LT = left-turn/through, etc.

Table 4. 2008 Existing Condition Unsignalized Intersection Analysis Results

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
10 - Wall Street and Main Street								
Main Street	WB	TR	0.10	0.0	A	0.11	0.0	A
Wall Street	NB	L	0.05	9.6	A	0.05	9.7	A
		T	0.32	12.3	B	0.36	12.9	B
13 - Fair Street and North Front Street								
North Front Street	EB	L	0.02	0.1	A	0.02	0.2	A
		R	0.02	1.4	A	0.02	1.4	A
	WB	L	0.02	7.5	A	0.02	7.5	A
		TR	0.14	0.0	A	0.15	0.0	A
Fair Street	SB	TR	0.20	13.4	B	0.24	13.8	B
14 - Fair Street and John Street								
John Street	EB	TR	0.32	9.3	A	0.28	9.0	A
Fair Street	SB	LT	0.28	9.4	A	0.32	9.6	A
18 - Wall Street/Fair Street and Boulevard/Greenkill Avenue (Route 32)								
Greenkill Avenue	EB	LTR	0.42	12.5	B	0.42	14.9	C
	WB	LTR	0.38	12.1	B	0.45	16.4	C
Fair Street	SB	LTR	0.26	13.0	B	0.27	19.1	C
Boulevard	NB	LTR	0.57	15.5	C	0.60	12.1	B
19 - Clinton Avenue and Westbrook Lane								
Westbrook Lane	WB	LR	0.19	10.4	B	0.59	19.3	C
Clinton Avenue	NB	TR	0.65	15.7	C	1.00	60.3	F
	SB	LT	0.49	12.5	B	0.75	25.0	D
20 - Clinton Avenue and Main Street								
Clinton Avenue	NB	LT	-	-	A	-	-	A
Main Street	SB	TR	0.54	12.8	B	0.84	26.6	D
23 - Albany Avenue and Maiden Lane								
Albany Avenue	EB	TR	0.31	0.0	A	0.46	0.0	A
	WB	LT	0.13	1.3	A	0.17	2.1	A
			0.26	1.4	A	0.26	1.8	A
Maiden Lane	NB	LTR	0.25	13.4	B	0.43	19.8	C

poorly during both time periods – at LOS E with around 65 sec/veh of delay and at LOS F with over 135 sec/veh of delay during the weekday AM and PM peak hours, respectively.

Clinton Avenue at Albany Avenue/Pearl Street
This signalized intersection operates at overall unacceptable LOS D during the weekday PM peak hour. However, the northbound approach and the conflicting southbound left-turn movement operate at unacceptable levels during both peak hours. The southbound left turn operates especially poorly during the weekday PM peak hour – at failing LOS F with over 115 sec/veh of delay but which is less than the 120-second cycle length. During the weekday PM peak hour, the eastbound Pearl Street approach also operates at unacceptable LOS D.

Fair Street Extension/Kingston Plaza and Schwenk Drive
Although this signalized intersection operates at overall acceptable levels, individual lane movements operate poorly during both peak hours. During both time periods, all but the eastbound Schwenk Drive approach and the southbound right turn out of Kingston Plaza typically operate at LOS E with around 70 sec/veh of delay.

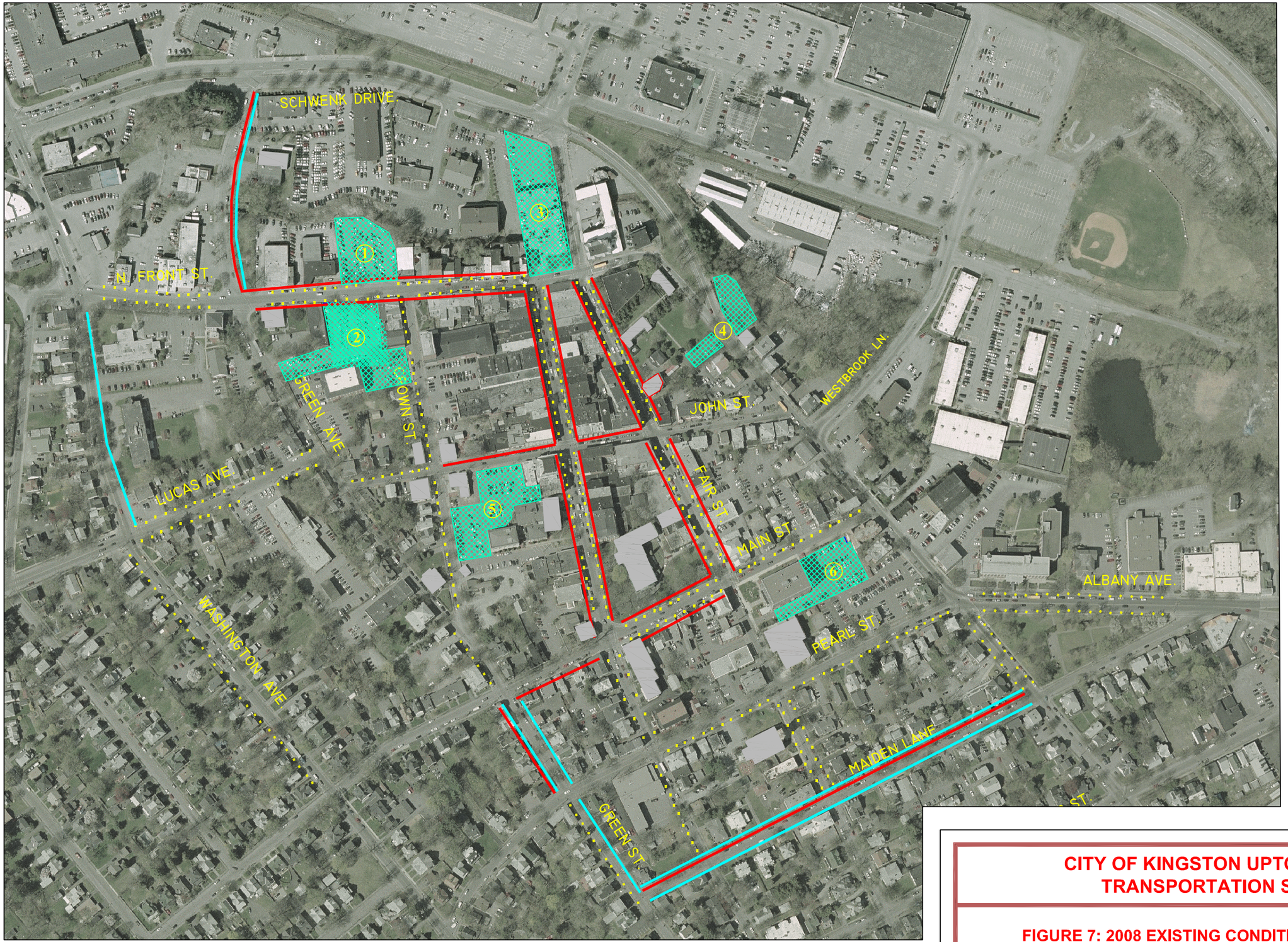
Clinton Avenue at Westbrook Lane
This unsignalized all-way stop control intersection typically operates at acceptable levels. However, during the weekday PM peak hour, the Clinton Avenue northbound through/right-turn movement fails, incurring over 60 sec/veh of delay.

Detailed existing condition analysis reports are provided in Appendix K.

5. Parking Analysis

Existing parking conditions were developed based on the on-line survey and the on-street parking counts that were conduced in spring and summer 2008. From the on-line survey, it was determined that there are two general types of drivers within the Uptown Stockade Area – those who prefer to park on-street and those who prefer to park off-street. Over 95 percent of the people who park on-street sometimes have difficulty finding parking, while about 75 percent on those who park off-street have difficulty. Survey responses indicate that the critical on- and off-street parking periods are weekday mornings and middays.

The on-street parking survey corroborates the on-line survey responses to some extent. There are approximately 640 on-street parking spaces in the parking study area. As shown in Figure 7, on-street parking is at capacity along North Front, Wall, and Fair Streets in the immediate vicinity of the Pike Plan throughout most of the weekday survey period (i.e., from 8 a.m. to 2:30 p.m.). Since stores and attractions in the study area do not open until later than 8 a.m., the survey results suggest that employees utilize many of the on-street parking spaces. In some areas, this would require that employees feed the meters throughout the day, which is a



LEGEND:

- PARKING METERS
- PARKING AT CAPACITY
- TIME REGULATED PARKING
- OFF-STREET PARKING
- ① MUNICIPAL PARKING LOT
- ② MUNICIPAL PARKING LOT (SITE OF DEMOLISHED PARKING GARAGE)
- ③ MUNICIPAL PARKING LOT
- ④ URBAN CULTURAL PARK VISITOR CENTER LOTS
- ⑤ COURT HOUSE LOT
- ⑥ ULSTER COUNTY OFFICE BUILDING LOT

CITY OF KINGSTON UPTOWN STOCKADE TRANSPORTATION STUDY AREA

FIGURE 7: 2008 EXISTING CONDITION PARKING SUMMARY

problem that was expressed at meetings and in the on-line survey. This results in fewer available spaces for the shoppers and visitors that are needed in the area to boost the local economy. The difficulty in finding shopper and visitor parking also explains why multiple survey responders stated that they no longer visit the Uptown Stockade Area.

Although parking utilization in the Pike Plan area may be as high as 160 percent at any given time (indicating that people parking illegally in the vicinity of the shops and restaurants), the on-street parking utilization throughout the parking survey area is only 70 percent during the spring weekday 12 to 12:30 p.m. peak period. This is based on the spring data that was collected when the municipal parking garage on the north side of North Front Street opposite Fair Street was closed. Since then, the garage has been torn down and replaced with a temporary 142-space surface lot; therefore, some of the people who parked on-street may have relocated to the garage, which would further reduce weekday on-street parking utilization. The summer on-street parking survey was conducted immediately after the Farmers' Market after the new lot was constructed. The parking utilization during the Saturday 2 to 2:30 p.m. peak period was approximately 70 percent less than during the weekday 12 to 12:30 p.m. peak period. This indicates that there are typically at least 190 available on-street parking spaces in the Uptown Stockade Area – all within a comfortable ¼-mile walking distance of the Pike Plan area.

Although detailed off-street parking analyses were not conducted, on-line survey results indicate that people sometimes have difficulty parking at the Ulster County Office Building, the Ulster County Courthouse, and the municipal lots on both sides of North Front Street. Drivers rarely have difficulty parking at the municipal parking garage; however, the 317-space parking garage has recently been replaced with a temporary 142-space surface lot. Field reconnaissance indicates that signing to the off-street parking lots is almost non-existent, and survey comments mention that most of the parking signage that does exist indicates that it is for private use only. Visitors to the area would likely have difficulty even finding an off-street public lot.

Additional parking issues were raised by the public. One is that some businesses in the area do not have their own designated parking. Since employees do not want to pay to park for work, they would like permits to park in on- or off-street parking spaces either for free, at reduced rates, or at least without having to plug traffic meters. Another is that on-street parking regulations may also need to be altered. Some people would like the parking time limits to be reduced to promote turnover; others would like to increase the parking limits because the current ones are insufficient to both dine and shop in the area. Alternate side parking times are also problematic. In some locations, the regulation starts at 10 a.m., which would require employees and patrons of adjacent businesses to move their cars in the middle of work or their appointments. In addition, people double-park throughout the study area or park adjacent to the sidewalk extensions in the Pike Plan area, sometimes to load and unload goods. Designated loading and unloading zones and

times could be implemented. To effectively address any of the above issues, though, there will be a need for the City of Kingston to enforce parking regulations. At present, there is no enforcement, and drivers know this, so they intentionally and habitually park in areas where no parking is allowed, sometimes even on the sidewalk.

Detailed on-street parking summaries and on-line survey results are provided in Appendices C and H, respectively.

6. Accident Analysis

Based on accident data from the Ulster County Traffic Safety Department for January 2003 through mid-April 2008, there are roughly 450 to 650 total reportable and non-reportable accidents per three-year period in the Uptown Stockade study area. Based on information provided by NYSDOT, which is incomplete beyond 2002, there are around 250 reportable accidents only per three-year period in the study area. In either case, the number of accidents for the average AADTs on the typical types and mileage of roadway within the project study area are significantly higher than the New York State average. (It was assumed that the average AADT along 9.5 miles of typically two-lane undivided urban roadway was 5,500 vehicles.)

Most accidents in the project study area occur where traffic volumes are highest – along Albany Avenue between I-587 and Clinton Avenue/Pearl Street and along Washington Avenue between Schwenk Drive/Hurley Avenue and Lucas Avenue. According to NYSDOT data, a number of these accidents are pedestrian accidents; however, additional pedestrian accidents (and a greater percentage of the total accidents) also occur in the heart of the Uptown Stockade Area primarily along John and Main Streets. Most accidents in the study area are due to a failure to yield to right-of-way or following too closely. Based on field observations, the high percentages of rear-end accidents may be attributed to congestion along the major streets, a lack of left-turn bays along the major streets, and following too closely. The high percentages of right-angle accidents may be attributed to the failure to yield to through and turning traffic along the major roadways and unintentionally disregarding traffic control along the local roadways due to the inconsistent pattern of signals, all-way, and two-way stop control in the Uptown Stockade Area.

Summaries of some of the accident information that was obtained are provided in Appendix F.

B. 2035 NO BUILD CONDITIONS

1. Traffic Analysis

No Build condition traffic operations in the Uptown Stockade Area were modeled using the same methodologies as for existing conditions. The No Build conditions are the 2035 future conditions without project-related improvements to which the 2035 future conditions with project-related recommendations will be compared.

a) Planned Improvements

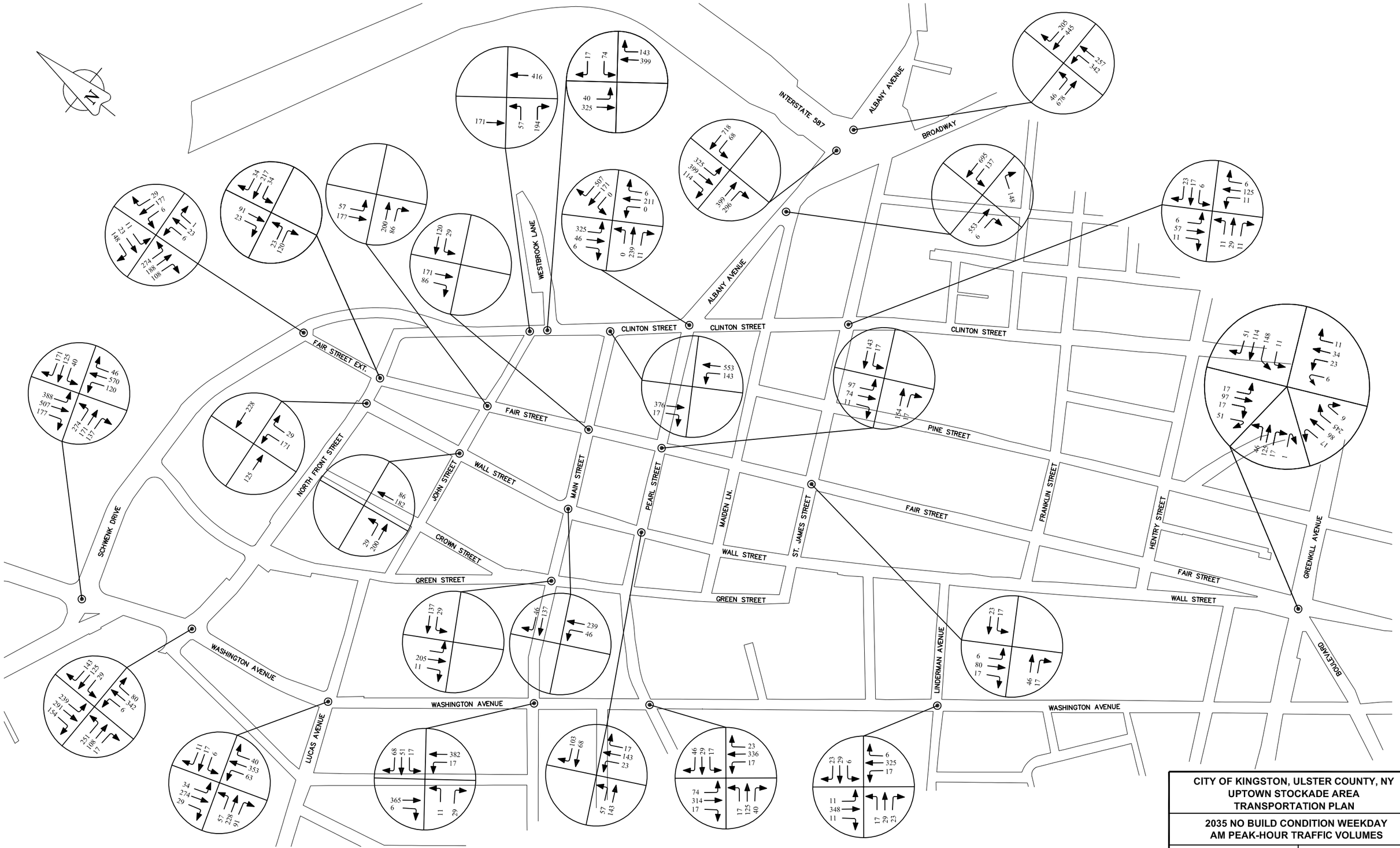
The only planned improvements in the project study area are those associated with the Washington Avenue access improvement study. As documented in Creighton Manning Engineering's *Draft Technical Memorandum: Washington Avenue Corridor Access Management Plan*, driveway access, traffic control, and signal equipment changes will primarily be made along Washington Avenue between Esopus Creek to the north and North Front Street to the south. Improvements at specific Uptown Stockade Area Transportation Plan intersections include the upgrading of traffic signal equipment at Schwenk Drive/Hurley Avenue and at North Front Street so that planned signal coordination along Washington Avenue can be achieved. These improvements will result in altered signal timings and traffic operations at the Washington Avenue at Schwenk Drive/Hurley Avenue and at North Front Street intersections for No Build conditions.

It should be noted that the Ulster County Transportation Council is finalizing a site location and conceptual design study for an intermodal facility in the City of Kingston and that NYSDOT is conducting an intersection improvement study for I-587 at Albany Avenue. Recommendations from both projects, if progressed to design and implemented, could significantly alter traffic operations in the Uptown Stockade project study area. However, definite plans have not been developed for either project, so neither has been included in the No Build conditions for this study.

b) Volumes

Since the modifications from the Washington Avenue access improvement study are operational in nature, they are not anticipated to generate any additional traffic volumes in the area. The only increases in traffic volumes for No Build conditions then will be due to typical increases in background traffic volumes.

Weekday AM and PM peak-hour No Build condition traffic volumes were developed by applying a 0.5 percent annual compounded background growth rate to existing condition volumes. This is the growth rate that was used in the Washington Avenue study and is consistent with information for the Uptown Stockade study area that was derived from 2000 and 2020 traffic analysis zone information provided by Ulster County. In fact, based on the projected dwelling unit and retail and non-retail employment information from Ulster County, the actual background growth rate may be lower – in the range of 0.1 to 0.3 percent per year compounded in the project study area. Assuming the 0.5 percent growth rate, however, traffic volumes in the project study area would increase by over 14 percent between now and 2035. Weekday AM and PM 2035 No Build condition peak-hour traffic volume diagrams are provided in Figures 8 and 9, respectively.



CITY OF KINGSTON, ULSTER COUNTY, NY
UPTOWN STOCKADE AREA
TRANSPORTATION PLAN

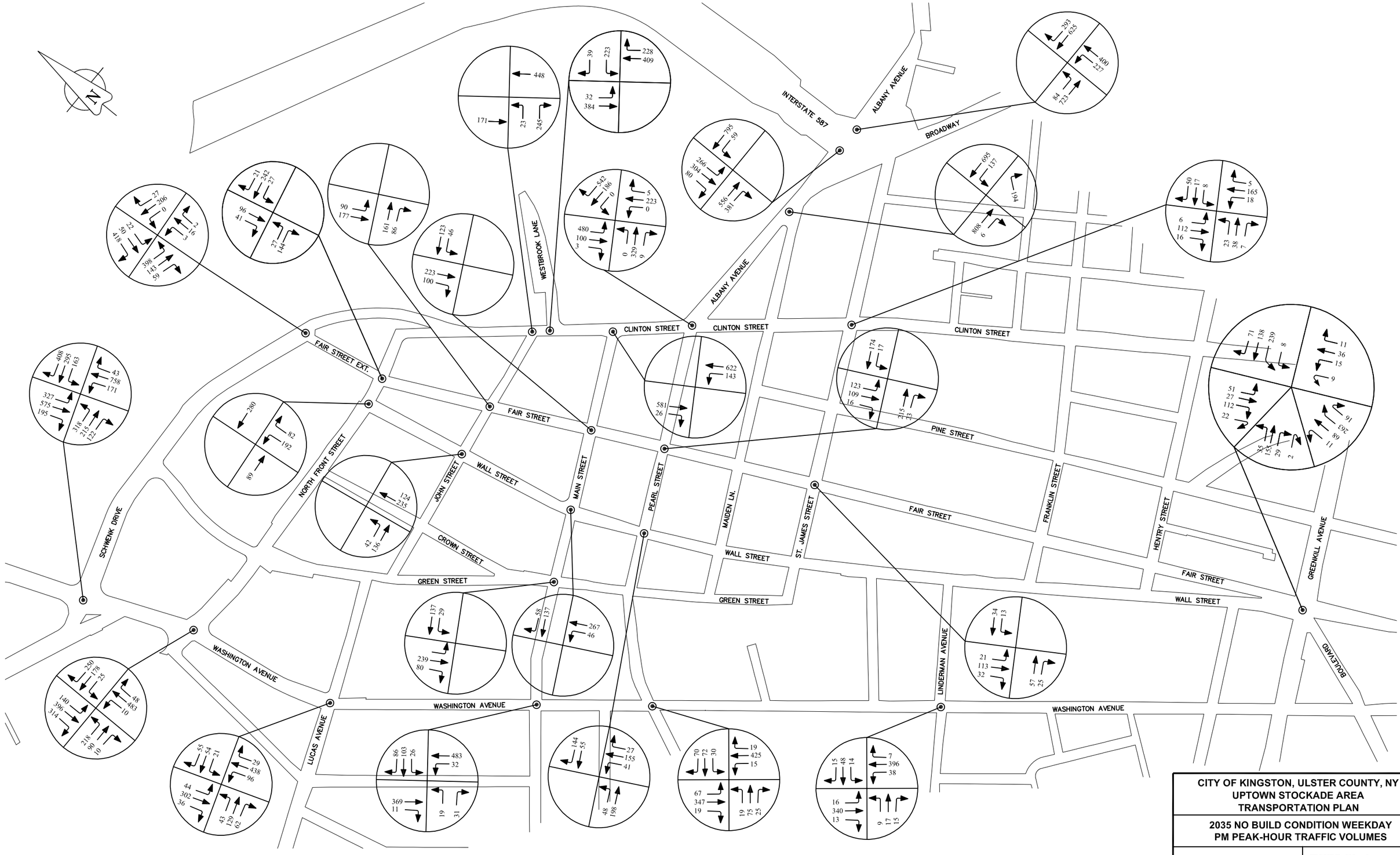
2035 NO BUILD CONDITION WEEKDAY
AM PEAK-HOUR TRAFFIC VOLUMES

The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS

FIGURE NO. 8

SCALE: N.T.S.

DATE: SEPTEMBER 2008



CITY OF KINGSTON, ULSTER COUNTY, NY
UPTOWN STOCKADE AREA
TRANSPORTATION PLAN

2035 NO BUILD CONDITION WEEKDAY
PM PEAK-HOUR TRAFFIC VOLUMES

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FIGURE NO. 9

SCALE: N.T.S.

DATE: SEPTEMBER 2008

c) Results

No Build condition signalized and unsignalized intersection analysis results are provided in Tables 5 and 6, respectively. As shown in the tables, intersections in the heart of the Uptown Stockade study area would continue to operate well; however, traffic operations along the major roadways approaching the Uptown Stockade Area would deteriorate significantly between now and 2035.

Poor traffic operations would spread along Washington Avenue.

Washington Avenue at Schwenk Drive/Hurley Avenue and at North Front Street
These signalized intersections would basically fail for 2035 No Build conditions. Although overall traffic operations would be LOS E or F, individual lane movements would be significantly over capacity. All left turns at the Schwenk Drive/Hurley Avenue intersection and the eastbound and westbound left turns on North Front Street would typically fail, incurring hundreds of seconds and multiple cycle lengths of delay. This would result in significant queues and basically a standstill throughout the project study area. The worst operations would be for the westbound left-turn/through movement along North Front Street away from the Uptown Stockade District. With the Washington Avenue timings that were developed to accommodate 2007 traffic volumes, this movement would theoretically operate at LOS F during both peak hours, incurring between 6 and 12 minutes per vehicle (min/veh) of delay.

Washington Avenue at Lucas Avenue
This signalized intersection would operate at overall acceptable levels. However, during the weekday PM peak hour, the northbound Washington Avenue approach would operate at poor LOS E with nearly 60 sec/veh of delay.

Poor traffic operations would also spread along Clinton Avenue.

Clinton Avenue at Albany Avenue/Pearl Street
This signalized intersection would deteriorate to overall LOS E during the weekday PM peak hour. The southbound Clinton Avenue left-turn movement would fail during both peak hours, incurring over 220 sec/veh and more than the 120-second cycle length of delay.

Clinton Avenue at Westbrook Lane
Traffic conditions at this unsignalized intersection would worsen during the weekday PM peak hour. The northbound Clinton Avenue through/right-turn movement would continue to fail and the delay would more than double to over 130 sec/veh. The southbound Clinton Avenue left-turn/through movement would also begin to operate poorly – at LOS E with over 35 sec/veh of delay.

Table 5. 2035 No Build Condition Signalized Intersection Analysis Results

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
1 - Washington Avenue at Schwenk Drive/Hurley Avenue								
Hurley Avenue	EB	L	1.46	263.5	F	1.77	392.0	F
		TR	0.55	22.7	C	0.43	21.7	C
Schwenk Drive	WB	L	0.25	33.4	C	0.79	58.8	E
		T	0.50	41.5	D	0.87	60.6	E
		R	0.77	58.8	E	1.37	218.2	F
Washington Avenue	NB	L	0.46	23.5	C	1.40	236.3	F
		TR	0.47	21.4	C	0.74	28.3	C
	SB	L	1.16	118.4	F	1.72	364.5	F
		T	0.65	22.8	C	0.89	42.9	D
		R	0.23	2.9	A	0.30	5.8	A
Overall Intersection			1.46	**62.2**	**E**	**1.77**	**127.2**	**F**
2 - Washington Avenue and North Front Street								
North Front Street	EB	L	1.08	114.3	F	0.89	64.0	E
		TR	0.32	29.4	C	0.22	25.1	C
	WB	LT	2.39	687.3	F	1.75	394.8	F
		R	0.74	29.8	C	0.89	42.7	D
Washington Avenue	NB	LTR	0.40	14.5	B	0.45	32.9	C
	SB	L	0.49	15.0	B	0.43	17.7	B
		T	0.31	12.7	B	0.45	18.2	B
		R	0.17	5.1	A	0.35	5.2	A
Overall Intersection			**2.39**	**87.7**	**F**	**1.75**	**63.0**	**E**
3 - Washington Avenue and Lucas Avenue								
Lucas Avenue	EB	LTR	0.70	30.2	C	0.49	22.8	C
	WB	LTR	0.08	13.9	B	0.34	16.6	B
Washington Avenue	NB	LTR	0.67	24.8	C	0.99	58.9	E
	SB	LTR	0.56	20.4	C	0.75	22.1	C
Overall Intersection			**0.70**	**24.9**	**C**	**0.99**	**38.0**	**D**
4 - Washington Avenue and Main Street								
Main Street	EB	LR	0.11	8.8	A	0.18	9.4	A
	WB	LTR	0.36	11.7	B	0.54	17.2	B
Washington Avenue	NB	LT	0.51	14.8	B	0.65	17.5	B
	SB	TR	0.60	17.3	B	0.56	16.2	B
Overall Intersection			**0.60**	**15.0**	**B**	**0.65**	**16.6**	**B**
5 - Washington Avenue and Pearl Street								
Pearl Street	EB	LTR	0.39	25.5	C	0.35	24.9	C
	WB	LTR	0.24	23.6	C	0.52	28.8	C
Washington Avenue	NB	LTR	0.46	12.5	B	0.52	13.5	B
	SB	LTR	0.50	13.4	B	0.56	14.4	B
Overall Intersection			**0.50**	**15.8**	**B**	**0.56**	**17.4**	**B**

Table 5. 2035 No Build Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
6 - Washington Avenue and Linderman Avenue								
Linderman Avenue	EB	LTR	0.16	10.6	B	0.13	10.1	B
	WB	LTR	0.15	10.0	B	0.22	12.7	B
Washington Avenue	NB	LTR	0.58	16.0	B	0.73	20.7	C
	SB	LTR	0.67	18.6	B	0.68	19.4	B
Overall Intersection			**0.67**	**16.3**	**B**	**0.73**	**18.7**	**B**
7 - Green Street and Main Street								
Main Street	WB	LT	0.25	14.2	B	0.25	14.2	B
Green Street	SB	TR	0.33	15.4	B	0.49	16.7	B
Overall Intersection			**0.33**	**14.9**	**B**	**0.49**	**15.9**	**B**
8 - Wall Street and North Front Street								
North Front Street	EB	T	0.19	11.5	B	0.14	11.0	B
	WB	T	0.27	11.9	B	0.33	12.6	B
Wall Street	NB	L	0.41	18.9	B	0.46	19.9	B
		R	0.08	14.4	B	0.22	16.3	B
Overall Intersection			**0.41**	**14.1**	**B**	**0.46**	**15.0**	**B**
9 - Wall Street and John Street								
John Street	EB	LT	0.38	20.8	C	0.38	20.7	C
Wall Street	NB	T	0.41	23.6	C	0.55	26.8	C
		R	0.23	21.1	C	0.35	23.2	C
Overall Intersection			**0.41**	**21.8**	**C**	**0.55**	**23.7**	**C**
11 - Wall Street and Pearl Street								
Pearl Street	EB	LT	0.27	16.2	B	0.32	16.7	B
	WB	TR	0.25	16.0	B	0.30	16.5	B
Wall Street	NB	LTR	0.48	30.7	C	0.59	33.5	C
Overall Intersection			**0.48**	**20.9**	**C**	**0.59**	**22.3**	**C**
12 - Fair Street Extension/Kingston Plaza and Schwenk Drive								
Schwenk Drive	EB	L	0.40	17.3	B	0.64	22.5	C
		T	0.20	17.5	B	0.18	17.1	B
		R	0.13	16.7	B	0.08	16.0	B
	WB	LTR	0.57	56.2	E	0.70	61.5	E
Fair Street Extension	NB	LTR	0.36	73.5	E	0.26	70.6	E
Kingston Plaza	SB	L	0.10	67.9	E	0.36	75.7	E
		T	0.19	69.9	E	0.56	84.5	F
		R	0.60	20.5	C	0.85	21.5	C
Overall Intersection			**0.60**	**31.1**	**C**	**0.85**	**34.5**	**C**
15 - Fair Street and Main Street								
Main Street	WB	L	0.05	15.8	B	0.07	16.0	B
		T	0.21	17.3	B	0.19	17.1	B
Fair Street	SB	T	0.37	16.9	B	0.38	17.0	B
		R	0.23	15.3	B	0.24	15.5	B
Overall Intersection			**0.37**	**16.6**	**B**	**0.38**	**16.6**	**B**
16 - Fair Street and Pearl Street								
Pearl Street	EB	TR	0.46	17.0	B	0.50	17.4	B
	WB	LT	0.40	19.8	B	0.38	21.1	C
Fair Street	SB	LTR	0.27	10.4	B	0.34	11.0	B
Overall Intersection			**0.46**	**15.8**	**B**	**0.5**	**16.1**	**B**

Table 5. 2035 No Build Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
17 - Fair Street and St. James Street								
St. James Street	EB	TR	0.13	9.1	A	0.16	8.4	A
	WB	LT	0.11	11.4	B	0.12	11.5	B
Fair Street	SB	LTR	0.19	10.4	B	0.33	11.2	B
Overall Intersection			**0.19**	**10.2**	**B**	**0.33**	**10.5**	**B**
21 - Clinton Avenue and Albany Avenue/Pearl Street								
Pearl Street	EB	TR	0.54	33.9	C	0.94	64.2	E
Albany Avenue	WB	T	0.40	33.4	C	0.44	34.2	C
		R	0.72	7.9	A	0.68	5.4	A
Clinton Avenue	NB	LTR	0.65	48.8	D	0.69	50.2	D
	SB	L	1.04	88.8	F	1.40	221.8	F
		TR	0.09	22.4	C	0.19	25.7	C
Overall Intersection			**1.04**	**39.0**	**C**	**1.40**	**75.9**	**E**
22 - Clinton Avenue and St. James Street								
St. James Street	EB	LTR	0.08	6.3	A	0.12	7.0	A
	WB	LTR	0.09	4.7	A	0.12	4.2	A
Clinton Avenue	NB	LTR	0.53	27.1	C	0.67	33.4	C
	SB	LTR	0.24	19.2	B	0.48	24.2	C
Overall Intersection			**0.53**	**18.7**	**B**	**0.67**	**22.1**	**C**
24 - Albany Avenue and I-587 South								
Albany Avenue	EB	TR	0.52	18.8	B	0.71	28.2	C
	WB	L	0.19	41.8	D	0.17	43.7	D
		T	0.37	3.1	A	0.34	1.6	A
I-587 South	SB	L	1.17	146.6	F	0.94	83.8	F
		T	1.37	219.6	F	1.03	102.4	F
		R	0.36	15.0	B	0.24	10.0	B
Overall Intersection			**1.37**	**64.9**	**E**	**1.03**	**35.2**	**D**
25 - Albany Avenue and I-587 North								
Albany Avenue	EB	L	0.23	68.1	E	0.49	196.3	F
		T	0.35	3.3	A	0.36	3.4	A
	WB	TR	0.45	18.8	B	0.68	24.5	C
I-587 North	NB	L	0.89	65.8	E	0.65	47.1	D
		T	0.63	46.0	D	1.02	90.9	F
Overall Intersection			**0.89**	**25.5**	**C**	**1.02**	**38.2**	**D**

Table 6. 2035 No Build Condition Unsignalized Intersection Analysis Results

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
10 - Wall Street and Main Street								
Main Street	EB	TR	0.12	0.0	A	0.12	0.0	A
Wall Street	WB	L	0.06	9.8	A	0.06	9.9	A
		T	0.37	13.2	B	0.42	14.0	B
13 - Fair Street and North Front Street								
North Front Street	EB	L	0.02	0.2	A	0.02	0.2	A
		R	0.02	1.4	A	0.02	1.4	A
	WB	L	0.03	7.5	A	0.02	7.6	A
		TR	0.16	0.0	A	0.17	0.0	A
Fair Street	SB	TR	0.25	14.6	B	0.30	15.4	C
14 - Fair Street and John Street								
John Street	EB	TR	0.38	9.9	A	0.33	9.5	A
Fair Street	SB	LT	0.33	10.0	A	0.37	10.3	B
18 - Wall Street/Fair Street and Boulevard/Greenkill Avenue (Route 32)								
Greenkill Avenue	EB	LTR	0.42	14.4	B	0.53	19.3	C
	WB	LTR	0.38	13.9	B	0.53	23.5	C
Fair Street	SB	LTR	0.26	11.3	B	0.29	13.6	B
Boulevard	NB	LTR	0.64	20.6	C	0.77	36.0	E
19 - Clinton Avenue and Westbrook Lane								
Westbrook Lane	WB	LR	0.23	11.1	B	0.68	23.1	C
Clinton Avenue	NB	TR	0.77	21.6	C	1.21	132.0	F
	SB	LT	0.58	14.8	B	0.87	37.0	E
20 - Clinton Avenue and Main Street								
Clinton Avenue	NB	LT	-	-	A	-	-	A
Main Street	SB	TR	0.62	14.8	B	0.95	43.1	E
23 - Albany Avenue and Maiden Lane								
Albany Avenue	EB	TR	0.36	0.0	A	0.52	0.0	A
	WB	LT	0.16	1.8	A	0.23	3.2	A
			0.30	1.5	A	0.30	2.2	A
Maiden Lane	NB	LTR	0.31	14.9	B	0.57	27.3	D

Clinton Avenue at Main Street
This unsignalized one-way stop control intersection would typically operate at acceptable levels. However, during the weekday PM peak hour, the southbound stop-controlled Clinton Avenue approach would operate at poor LOS E, incurring nearly 45 sec/veh of delay.

Poor traffic operations would continue along Albany Avenue and at the Fair Street Extension/Kingston Plaza at Schwenk Drive intersection.

Albany Avenue at I-587 North and South
Overall traffic operations at these signalized intersections would deteriorate by one level of service – to as poor at LOS E at I-587 South during the weekday AM peak hour. The northbound and southbound I-587 approaches would operate poorly, typically with one or more movement failing, during both peak hours. The greatest delays would theoretically be over 3.5 minutes to the southbound through movement and over 1.5 minutes to the northbound through movement during the weekday AM and PM peak hours, respectively. Poor operations would also continue for the eastbound left-turn movement from Albany Avenue to I-587 North.

Fair Street Extension/Kingston Plaza and Schwenk Drive
Traffic conditions at this signalized intersection would deteriorate only slightly. The northbound, westbound, and southbound left-turn and through movements would still typically operate at LOS E. The delays for these movements would increase by less than 4 sec/veh.

Traffic operations at the six-legged Wall Street/Fair Street at NY 32 intersection would begin to deteriorate.

Wall Street/Fair Street and Boulevard/Greenkill Avenue (NY 32)
This unconventional six-legged all-way stop control intersection would typically operate at acceptable levels. However, during the weekday PM peak hour, the northeastbound Boulevard movement would operate at LOS E with around 35 sec/veh of delay.

Detailed No Build condition analysis reports are provided in Appendix L.

2. Parking Analysis

Although it is anticipated that the site of the temporary municipal parking lot will eventually be developed and provide public parking, there are no definite plans for the development of this site or any new on- or off-street parking locations between now and 2035. For the No Build conditions then, it is assumed that parking demand will increase at the same rate as background traffic volumes and that the parking supply will remain as existing. As discussed in the existing conditions, there are currently 640 on-street parking spaces of which around 190 spaces are available during the weekday peak period of parking demand. The on-street parking demand

before the temporary surface lot was opened was, therefore, 450 spaces. Assuming that the parking demand increases at the same 0.5 percent per year compounded rate as the background traffic, there would still be over 120 available on-street parking spaces with ¼-mile walking distance of the Pike Plan area. If no improvements are made to parking enforcement, though, it is anticipated that double-parking and other illegal parking along North Front, Wall, and Fair Streets would still exist such that parking utilization in the heart of the Uptown Stockade Area would remain significantly over capacity.

3. Accident Analysis

Since the planned improvements in the Uptown Study Area are very localized, and existing accidents tend to be caused by congestion, insufficient roadway capacity, and inadequate or inconsistent traffic control, it is anticipated that an increase in background traffic would generally result in an increase in accidents between now and 2035.

C. 2035 BUILD CONDITIONS

1. Traffic Analysis

Build condition traffic operations in the Uptown Stockade Area were also modeled in Synchro. The Build conditions are the 2035 future conditions with project-related improvements in effect. Build condition analyses were compared to No Build condition analyses to determine the impacts of proposed improvements.

a) Proposed Improvements

Improvements for the Uptown Stockade Area Transportation Plan were developed based on field investigations, traffic and safety analysis, and feedback from the Advisory Committee and public. Following are proposed traffic improvements for the project study area, many of which are indicated in Figure 10.

- Reverse the street directions along Wall Street and Fair Street to southbound and northbound, respectively, between North Front Street and the Boulevard/Greenkill Avenue (NY 32). This would correct the unconventional directions of the one-way pair at NY 32, which would eliminate some of the confusion and likely improve safety at the Wall Street/Fair Street at NY 32 intersection. The reversal would provide drivers direct access to Kingston Plaza through the Uptown Stockade Area, which could promote stopping in the Uptown Stockade Area. The reversal would also allow school buses to load and unload passengers on the George Washington and St. Joseph Schools sides of Wall Street.

- Reverse the direction of North Front Street to eastbound between Fair Street and Clinton Avenue. This would allow school buses to load and unload passengers on the Senate House side of North Front Street.

-ACTIVATE TRAFFIC SIGNAL AT FAIR ST.
-BOTH SIGNALS TO BE CONTROLLED BY ONE CONTROLLER

ACTUATED COORDINATED SIGNAL SYSTEM

INSTALL NEW TRAFFIC SIGNAL WITH PEDESTRIAN PUSH BUTTONS

ACTUATED COORDINATED SIGNAL SYSTEM

PRETIMED COORDINATED SIGNAL SYSTEM

ALT. 1: ROUNDABOUT
ALT. 2: TRAFFIC SIGNAL WITH GEOMETRIC IMPROVEMENTS

LEGEND:

- PROPOSED TRAFFIC DIRECTION
- EXISTING TRAFFIC DIRECTION
- REPAIR PEDESTRIAN SIGNALS & PUSH BUTTONS
- TRAFFIC CONTROL IMPROVEMENTS
- ADDITION OF LEFT TURN LANE
- INSTALL PEDESTRIAN SIGNALS & PUSH BUTTONS

CITY OF KINGSTON UPTOWN STOCKADE AREA TRANSPORTATION PLAN

FIGURE 10: PROPOSED TRAFFIC IMPROVEMENTS

- Reverse the street directions on John, Main, and Crown Streets. This would improve circulation in the Uptown Stockade Area with the reversal of the Wall and Fair Streets one-way pair. Reversing Crown Street to northbound between John and North Front Streets would provide another northbound roadway in the area on which drivers could circulate to find parking spaces. Changing Main Street to one-way eastbound would eliminate the problem of backup along Clinton Avenue due to high-volume northbound left turns from Clinton Avenue to the Uptown Stockade Area. Changing John Street to one-way westbound would improve the problem of the close proximity of the Clinton Avenue Westbrook Lane and John Street intersections by eliminating basically one approach of the offset intersection.

- Install/reactivate actuated traffic signal with pedestrian signals and push buttons at Fair Street and North Front Street. Operate on same controller as Wall Street at North Front Street signal.

- Install actuated traffic signals with pedestrian signals and push buttons at Clinton Avenue and John Street and at Clinton Avenue and Westbrook Lane. Move southbound Clinton Avenue stop bar north of John Street so that the signals can operate on one controller. (See Figure 11.)

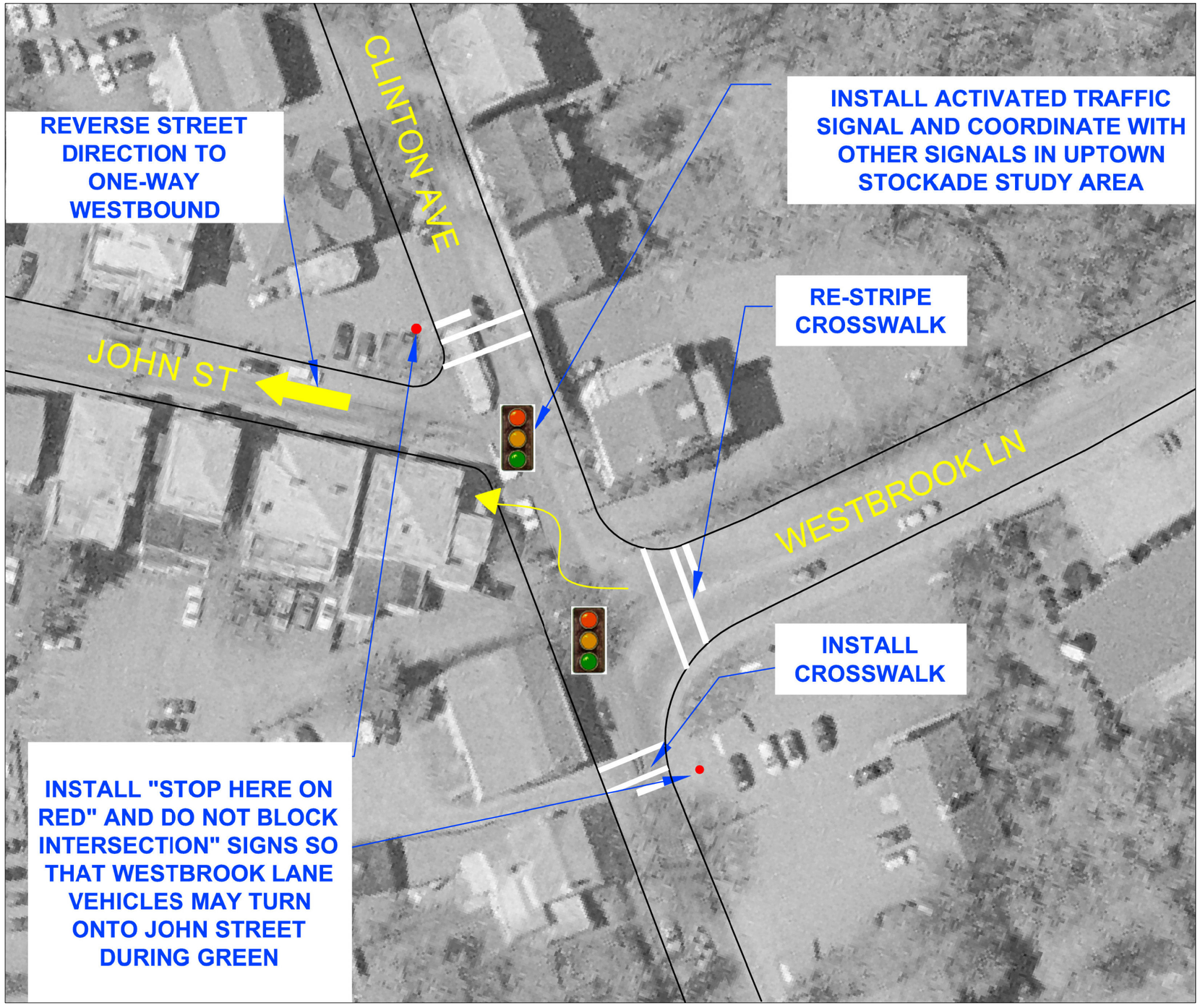
- Construct roundabout or install semi-actuated traffic signal at Wall Street/ Fair Street and NY 32 intersection. It is agreed, as discussed in Creighton Manning's *Route 32 at Fair Street Intersection Study – Final Planning Study*, that a roundabout would better serve traffic volumes at the location. However, both modifications would improve traffic operations and safety at the intersection. Preliminary drawings from the Creighton Manning study are provided for reference in Figure 12.

- Install pedestrian signals and push buttons at Washington Avenue and North Front Street, Washington Avenue and Pearl Street, and Fair Street and Pearl Street.

- Repair pedestrian signals and push buttons at Washington Avenue and Schwenk Drive/Hurley Avenue, Fair Street Extension/Kingston Plaza and Schwenk Drive, and Albany Avenue and Maiden Lane.

- Add second eastbound left-turn lane to Washington Avenue at Schwenk Drive/Hurley Avenue. This would require the removal of the median and the shifting of lanes on Hurley Avenue. (See Figure 13.)

- Eliminate on-street parking on the north and south sides of Albany Avenue, and shift and/or narrow or widen Albany Avenue slightly so that there will be two continuous eastbound through lanes on Albany Avenue between Clinton Avenue and I-587.



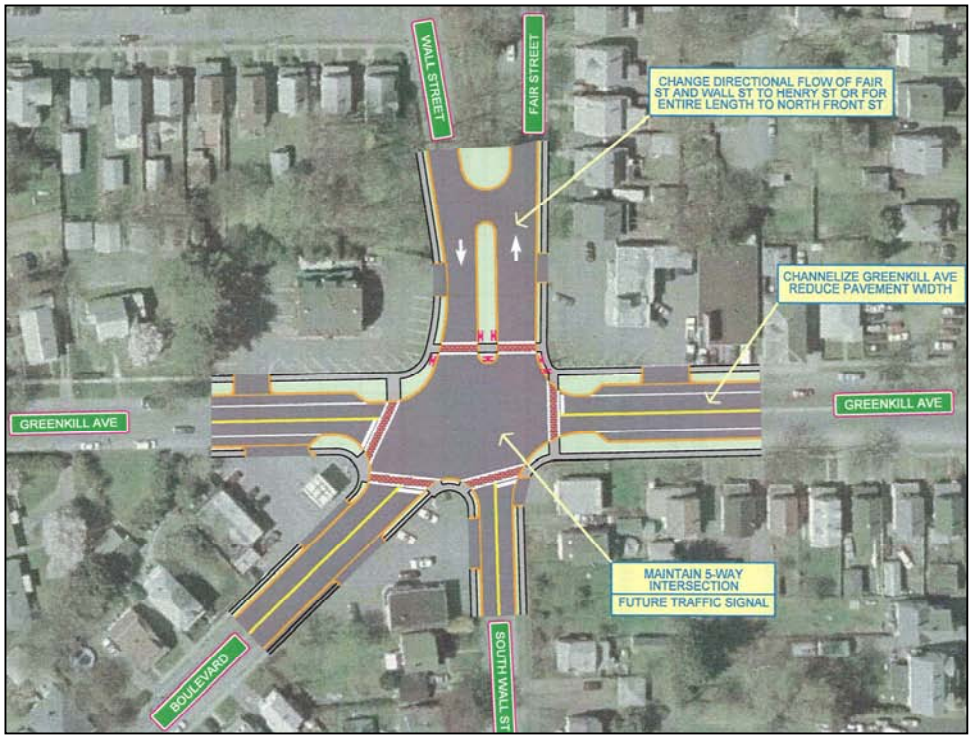
CITY OF KINGSTON UPTOWN STOCKADE TRANSPORTATION STUDY AREA

FIGURE 11: PROPOSED IMPROVEMENTS AT CLINTON AVENUE AND JOHN STREET / WESTBROOK LANE

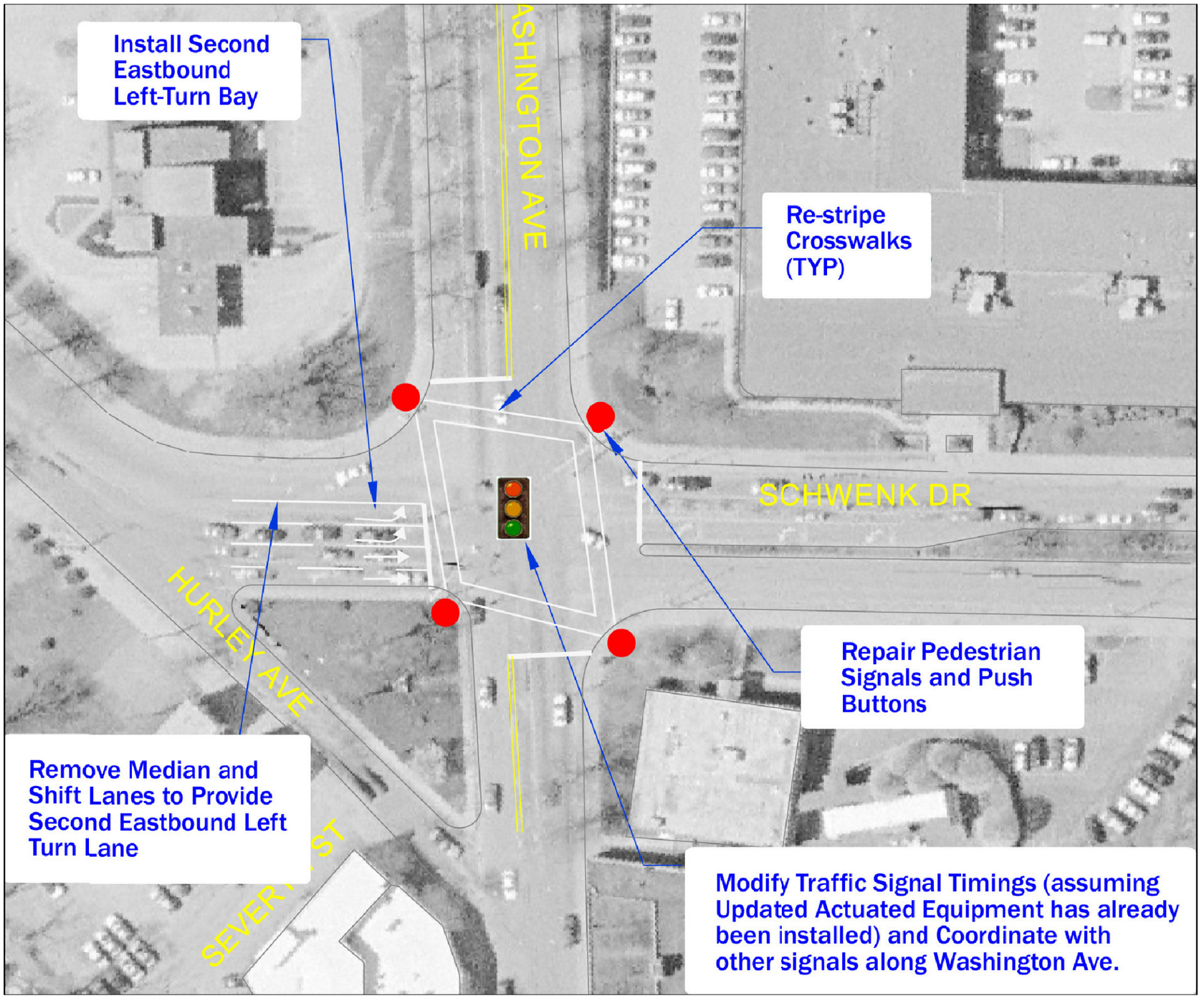
Figure 12. Potential Improvements at Wall Street/Fair Street at Boulevard/Greenkill Avenue (NY 32)

Alternate 1: Roundabout

Alternate 2: Signalized Intersection[5]



[5] Creighton Manning Engineering, LLP, "City of Kingston Route 32 at Fair Street Intersection Study: Final Planning Study", April 4, 2006.



CITY OF KINGSTON UPTOWN STOCKADE TRANSPORTATION STUDY AREA

FIGURE 13: PROPOSED IMPROVEMENTS AT WASHINGTON AVENUE AND SCHWENK DRIVE / HURLEY AVENUE

- At Clinton Avenue and Albany Avenue/Pearl Street, re-stripe the eastbound curbside lane as a through/right-turn lane, relocate the Governor Clinton driveway on the northeast corner to Clinton Avenue approximately 120 feet north of the intersection, and relocate the north end of the east crosswalk farther east to where pedestrians naturally cross and to reduce the crossing distance. (See Figure 14.) Retime the signal to provide sufficient pedestrian crossing times assuming no greater than a 3 foot per second crossing speed.

- Eliminate on-street parking on the west side of Washington Avenue between at least Lucas and Linderman Avenues. Re-stripe the roadway to provide northbound and southbound left-turn bays between Lucas and Linderman Avenues.

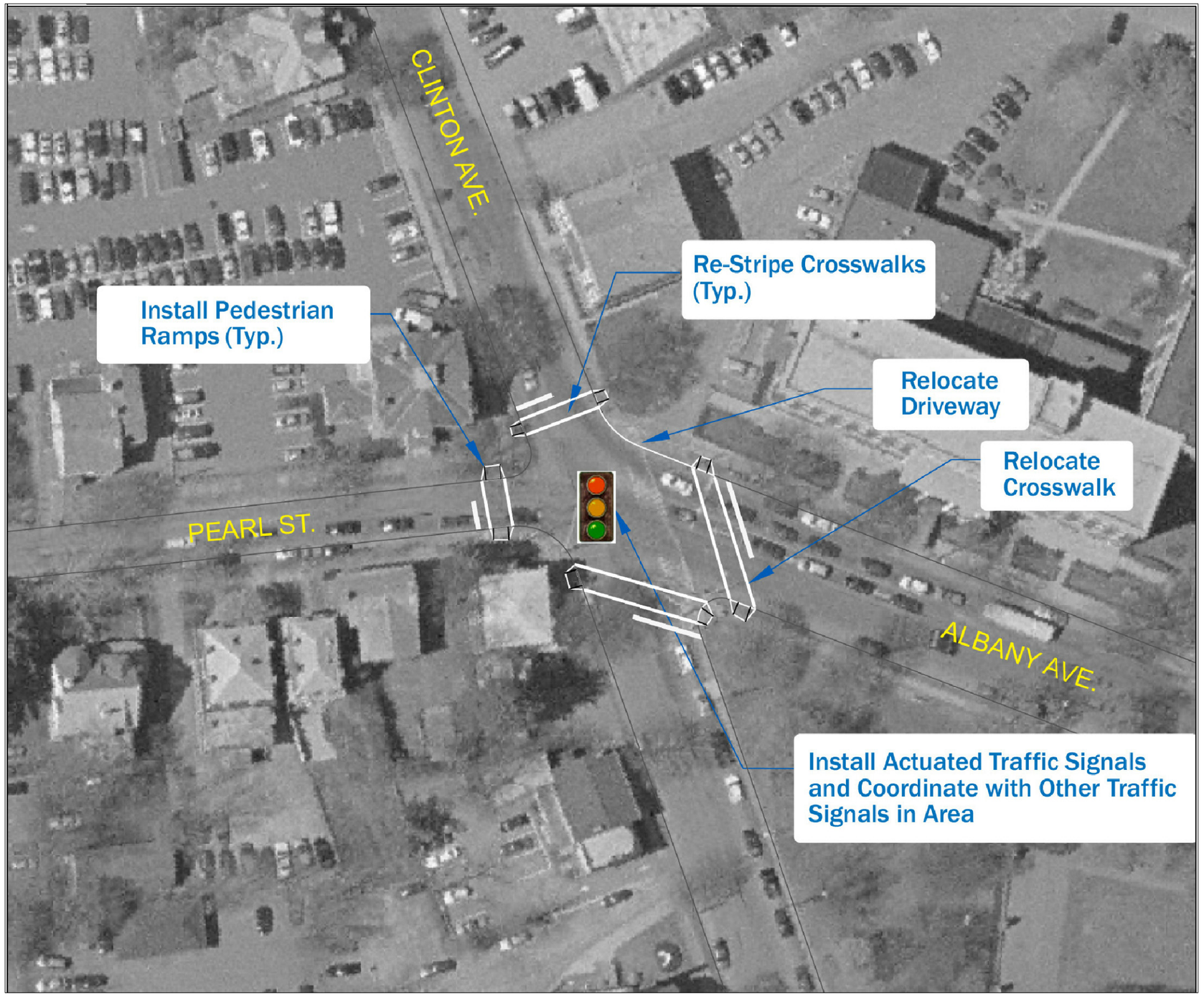
- Implement an actuated coordinated traffic signal system along Washington Avenue between Schwenk Drive/Hurley Avenue south to at least Linderman Avenue. Optimize traffic signal timings and offsets. Update signal equipment as necessary. Since it is planned as part of the Washington Avenue access management study that Washington Avenue at Schwenk Drive/Hurley Avenue and at North Front Street will be coordinated with signals farther north, traffic signal timing and offset modifications will also be required at intersections to the north.

- Implement an actuated coordinated traffic signal system along Schwenk Drive/Clinton Avenue/Albany Avenue and within the heart of the Uptown Stockade study area (i.e., basically, coordinate all signals in the study area east of Washington Avenue between Schwenk Drive and Pearl Street inclusive). Optimize traffic signal timings and offsets. Update signal equipment as necessary.

- Implement a pre-timed coordinated traffic signal system east of Washington Avenue between St. James Street and Henry Street inclusive. Optimize traffic signal timings and offsets. Update signal equipment as necessary.

- Develop a clear and comprehensive signing system to guide motorists to the Uptown Stockade Area and local attractions. There is so much sign clutter in the area that existing signs are often unnoticed. A detailed study should be conducted to develop a distinct signing program for the Uptown Stockade Area and to appropriately locate signs from the I-87 roundabout, the Albany Avenue at I-587 intersections, and NY 32 to the south of the project study area.

It should be noted that there are some locations where it appears that existing traffic signals may not be warranted – at least based on traffic volumes alone. In the future, even with the increase in traffic volumes, this may also be the case. However, insufficient data is available from this study to assess traffic



CITY OF KINGSTON UPTOWN STOCKADE TRANSPORTATION STUDY AREA

FIGURE 14: PROPOSED IMPROVEMENTS AT CLINTON AVENUE AND ALBANY AVENUE / PEARL STREET

signal warrants in appropriate detail. Therefore, it is not recommended at this time that any existing traffic signals be removed.

b) Volumes

Although there are no proposed changes related to this study that are anticipated to generate traffic volumes, the proposed changes in street directions would alter travel patterns in the project study area. Weekday AM and PM peak-hour Build condition traffic volumes were, therefore, developed by adjusting No Build condition volumes to reflect changes in street directions. The 2035 weekday AM and PM Build condition peak-hour traffic volume diagrams are provided in Figures 15 and 16, respectively.

c) Results

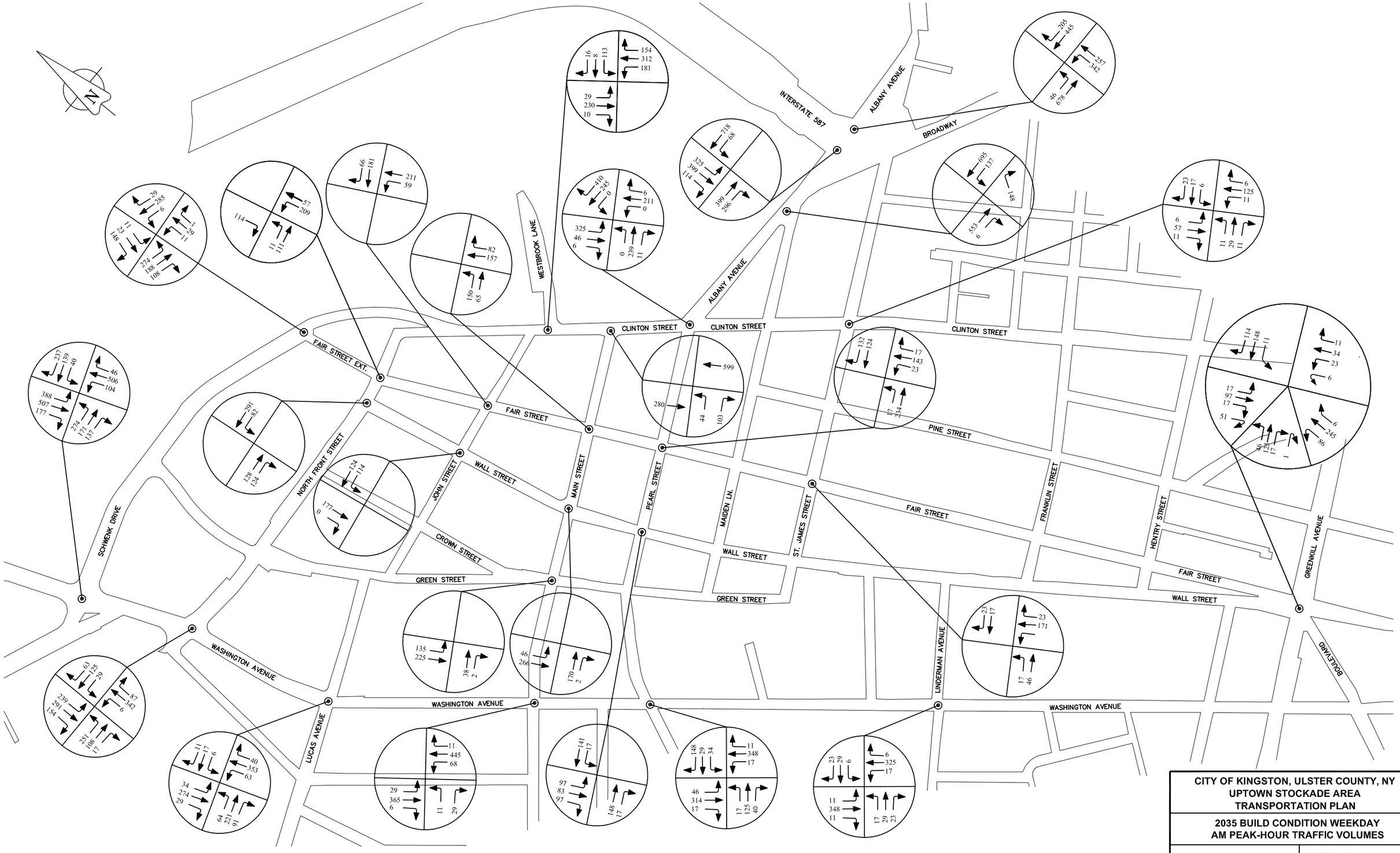
Build condition signalized and unsignalized intersection analysis results are provided in Tables 7 and 8, respectively. As shown in the tables, all intersections in the project study area are expected to operate at overall acceptable levels with the proposed improvements. At the most congested intersections, Washington Avenue and Schwenk Drive/Hurley Avenue, Fair Street Extension/Kingston Plaza and Schwenk Drive, and Clinton Avenue and Albany Avenue/Pearl Street, some approaches would still operate at LOS D primarily during the weekday PM peak hour; however, this would be a significant improvement over No Build conditions, and no movements would incur over 60 sec/veh delay or need to wait through more than one cycle length to pass through the intersection. At Albany Avenue and I-587 North and South the westbound and southbound left-turn movements would operate at LOS E with no more than 65 sec/veh of delay. This, too, would be a drastic improvement over No Build operations.

Arterial operations would also improve with proposed modifications. The travel time along Washington Avenue between Schwenk Drive/Hurley Avenue and Linderman Avenue would be reduced from an average of 4 to 3 minutes in either direction, as would Schwenk Drive/Clinton Avenue/Albany Avenue between Washington Avenue and I-587.

Detailed Build condition analysis reports are provided in Appendix M.

2. Parking Analysis

To achieve some of the recommended improvements in the study area, it would be necessary to eliminate on-street parking. As discussed in Section C.1.a, to add left-turn bays along Washington Avenue would require the removal of around 22 spaces on the west side of the roadway; to add a second through lane along Albany Avenue between Clinton Avenue/Pearl Street and I-587 would require the removal of around 11 and 20 spaces on the north and south sides, respectively, of Albany Avenue. The parking spaces along Washington Avenue are used by local residents who should have sufficient room on their properties not to have to park



CITY OF KINGSTON, ULSTER COUNTY, NY
UPTOWN STOCKADE AREA
TRANSPORTATION PLAN

2035 BUILD CONDITION WEEKDAY
AM PEAK-HOUR TRAFFIC VOLUMES

The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS

FIGURE NO. 15

SCALE: N.T.S.

DATE: SEPTEMBER 2008

N

INTERSTATE 587
ALBANY AVENUE
BROADWAY
WESTBROOK LANE
ALBANY AVENUE
CLINTON STREET
CLINTON STREET
CLINTON STREET
FAIR STREET EXT.
FAIR STREET
PINE STREET
NORTH FRONT STREET
JOHN STREET
WALL STREET
MAIN STREET
PEARL STREET
MAIDEN LN.
ST. JAMES STREET
FAIR STREET
FRANKLIN STREET
HENTRY STREET
GREENKILL AVENUE
SCHWENK DRIVE
CROWN STREET
GREEN STREET
WALL STREET
FAIR STREET
BOULEVARD
WASHINGTON AVENUE
LUCAS AVENUE
WASHINGTON AVENUE
LINDERMAN AVENUE
WASHINGTON AVENUE

CITY OF KINGSTON, ULSTER COUNTY, NY UPTOWN STOCKADE AREA TRANSPORTATION PLAN	
2035 BUILD CONDITION WEEKDAY PM PEAK-HOUR TRAFFIC VOLUMES	
The RBA Group Engineers • Architects • Planners	FIGURE NO. 16 SCALE: N.T.S. DATE: SEPTEMBER 2008

Table 7. 2035 Build Condition Signalized Intersection Analysis Results

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
1 - Washington Avenue and Schwenk Drive/Hurley Avenue								
Hurley Avenue	EB	L	0.46	17.7	B	0.71	26.4	C
		TR	0.47	14.1	B	0.52	19.2	B
Schwenk Drive	WB	L	0.14	13.7	B	0.45	18.9	B
		T	0.50	28.8	C	0.93	59.5	E
		R	0.38	9.1	A	0.69	19.2	B
Washington Avenue	NB	L	0.34	7.9	A	0.61	15.6	B
		TR	0.64	21.3	C	0.97	45.8	D
	SB	L	0.79	22.2	C	0.90	42.8	D
		TR	0.51	14.7	B	0.71	22.1	C
Overall Intersection			0.79	**17.3**	**B**	**0.97**	**31.9**	**C**
2 - Washington Avenue and North Front Street								
North Front Street	EB	L	0.67	23.4	C	0.64	23.9	C
		TR	0.24	12.9	B	0.19	13.8	B
	WB	LT	0.58	30.8	C	0.69	37.5	D
		R	0.13	3.7	A	0.21	3.5	A
Washington Avenue	NB	LTR	0.44	12.2	B	0.56	18.6	B
	SB	L	0.50	10.8	B	0.49	12.2	B
		T	0.35	10.1	B	0.49	13.2	B
		R	0.19	3.4	A	0.37	5.6	A
Overall Intersection			**0.67**	**13.9**	**B**	**0.69**	**16.3**	**B**
3 - Washington Avenue and Lucas Avenue								
Lucas Avenue	EB	LTR	0.83	32.8	C	0.77	35.8	D
	WB	LTR	0.10	10.5	B	0.54	21.9	C
Washington Avenue	NB	L	0.18	5.5	A	0.25	6.7	A
		TR	0.62	10.9	B	0.64	11.2	B
	SB	L	0.14	18.5	B	0.21	7.6	A
		TR	0.55	20.3	C	0.54	8.7	A
Overall Intersection			**0.83**	**19.8**	**B**	**0.77**	**15.3**	**B**
4 - Washington Avenue and Main Street								
Main Street	EB	LTR	0.24	15.9	B	0.39	20.9	C
Washington Avenue	NB	L	0.13	3.4	A	0.26	3.6	A
		TR	0.45	4.4	A	0.53	4.8	A
	SB	L	0.06	3.4	A	0.12	3.4	A
		TR	0.36	5.3	A	0.32	3.6	A
Overall Intersection			**0.45**	**5.1**	**A**	**0.53**	**5.1**	**A**
5 - Washington Avenue and Pearl Street								
Pearl Street	EB	LTR	0.47	23.6	C	0.25	15.2	B
	WB	LTR	0.68	31.5	C	0.90	40.2	D
Washington Avenue	NB	L	0.05	6.8	A	0.09	11.1	B
		TR	0.52	9.8	A	0.76	25.0	C
	SB	L	0.13	4.8	A	0.41	15.0	B
		TR	0.42	5.6	A	0.62	13.6	B
Overall Intersection			**0.68**	**14.2**	**B**	**0.90**	**25.3**	**C**

Table 7. 2035 Build Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
6 - Washington Avenue and Linderman Avenue								
Linderman Avenue	EB	LTR	0.38	21.7	C	0.32	22.3	C
	WB	LTR	0.35	20.1	C	0.43	30.8	C
Washington Avenue	NB	L	0.03	4.5	A	0.07	4.4	A
		TR	0.35	5.7	A	0.38	5.7	A
	SB	L	0.02	2.0	A	0.04	1.8	A
		TR	0.36	2.9	A	0.33	2.1	A
Overall Intersection			**0.38**	**6.8**	**A**	**0.43**	**7.0**	**A**
7 - Green Street and Main Street								
Main Street	EB	TR	0.18	23.7	C	0.36	10.0	B
Green Street	SB	LT	0.30	5.7	A	0.39	7.9	A
Overall Intersection			**0.30**	**7.5**	**A**	**0.39**	**8.4**	**A**
8 - Wall Street and North Front Street								
North Front Street	EB	TR	0.24	2.5	A	0.22	1.9	A
	WB	L	0.10	0.8	A	0.12	0.7	A
		T	0.17	0.2	A	0.18	0.3	A
Overall Intersection			**0.24**	**1.2**	**A**	**0.22**	**0.9**	**A**
9 - Wall Street and John Street								
John Street	WB	LT	0.60	27.0	C	0.75	43.2	D
Wall Street	SB	T	0.30	10.1	B	0.42	9.5	A
Overall Intersection			**0.60**	**19.8**	**B**	**0.75**	**25.9**	**C**
11 - Wall Street and Pearl Street								
Pearl Street	EB	TR	0.22	15.2	B	0.25	15.2	B
	WB	LT	0.25	6.3	A	0.22	13.9	B
Wall Street	SB	LTR	0.68	25.6	C	0.80	36.3	D
Overall Intersection			**0.68**	**17.6**	**B**	**0.80**	**25.1**	**C**
12 - Fair Street Extension/Kingston Plaza and Schwenk Drive								
Schwenk Drive	EB	L	0.64	22.0	C	0.70	16.2	B
		T	0.25	14.1	B	0.15	10.3	B
		R	0.17	14.0	B	0.07	10.3	B
	WB	LTR	0.73	28.5	C	0.66	24.5	C
Fair Street Extension	NB	LTR	0.60	35.5	D	0.29	39.4	D
Kingston Plaza	SB	L	0.10	28.2	C	0.29	53.7	D
		T	0.19	30.1	C	0.43	53.9	D
		R	0.38	5.1	A	0.51	4.7	A
Overall Intersection			**0.73**	**21.0**	**C**	**0.70**	**17.9**	**B**
13 - Fair Street and North Front Street								
North Front Street	EB	LT	0.14	7.5	A	0.15	18.6	B
Fair Street	NB	LTR	0.69	29.1	C	0.64	25.6	C
	SB	LTR	0.24	9.9	A	0.20	20.9	C
Overall Intersection			**0.69**	**19.5**	**B**	**0.64**	**23.1**	**C**
15 - Fair Street and Main Street								
Main Street	EB	LT	0.64	25.1	C	0.71	44.7	D
Fair Street	NB	TR	0.32	9.9	A	0.27	6.2	A
Overall Intersection			**0.64**	**17.1**	**B**	**0.71**	**22.5**	**C**

Table 7. 2035 Build Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement	Weekday					
	AM Peak Hour			PM Peak Hour		
	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
16 - Fair Street and Pearl Street						
Pearl Street EB TR	0.39	3.7	A	0.54	8.8	A
WB LT	0.35	6.4	A	0.41	3.3	A
Fair Street SB LTR	0.52	25.9	C	0.60	21.1	C
Overall Intersection	**0.52**	**9.1**	**A**	**0.60**	**9.6**	**A**
17 - Fair Street and St. James Street						
St. James Street EB TR	0.30	15.8	B	0.31	15.7	B
WB LT	0.20	8.7	A	0.22	7.3	A
Fair Street SB LTR	0.18	5.1	A	0.29	5.8	A
Overall Intersection	**0.30**	**8.2**	**A**	**0.31**	**7.6**	**A**
18 - Wall Street/Fair Street and Boulevard/Greenkill Avenue (Route 32)						
Greenkill Avenue SEB LTR	0.63	32.2	C	0.60	29.8	C
WB LT	0.27	18.4	B	0.48	23.1	C
R	0.25	19.0	B	0.35	22.0	C
Fair Street NB LTR	0.33	25.6	C	0.30	24.6	C
SB LTR	0.57	29.6	C	0.69	35.4	D
Boulevard EB LTR	0.57	22.7	C	0.72	31.0	C
Overall Intersection	**0.63**	**24.8**	**C**	**0.72**	**28.6**	**C**
19 - Clinton Avenue and John Street/Westbrook Lane						
Westbrook Lane WB L	0.47	28.5	C	0.72	45.2	D
TR	0.11	21.8	C	0.16	29.9	C
Clinton Avenue NB LTR	0.65	6.7	A	0.91	21.1	C
SB LTR	0.23	2.2	A	0.27	6.1	A
Overall Intersection	**0.69**	**8.2**	**A**	**0.91**	**22.8**	**C**
21 - Clinton Avenue and Albany Avenue/Pearl Street						
Pearl Street EB LTR	0.39	20.3	C	0.60	29.2	C
Albany Avenue WB T	0.85	46.7	D	0.81	53.5	D
R	0.56	10.5	B	0.57	7.8	A
Clinton Avenue NB TR	0.76	37.2	D	0.83	54.6	D
SB L	0.47	6.3	A	0.64	11.9	B
TR	0.06	4.5	A	0.25	3.3	A
Overall Intersection	**0.85**	**21.4**	**C**	**0.83**	**24.4**	**C**
22 - Clinton Avenue and St. James Street						
St. James Street EB LTR	0.25	7.2	A	0.36	13.1	B
WB LTR	0.25	11.0	B	0.33	10.8	B
Clinton Avenue NB LTR	0.19	3.7	A	0.25	5.1	A
SB LTR	0.09	6.0	A	0.18	6.3	A
Overall Intersection	**0.25**	**5.9**	**A**	**0.36**	**7.5**	**A**
24 - Albany Avenue and I-587 South						
Albany Avenue EB TR	0.56	8.9	A	0.56	13.3	B
WB L	0.52	39.8	D	0.45	64.6	E
T	0.52	11.0	B	0.37	3.6	A
I-587 South SB L	0.67	24.5	C	0.73	57.1	E
T	0.77	28.4	C	0.81	47.9	D
R	0.24	8.2	A	0.20	7.2	A
Overall Intersection	**0.79**	**16.0**	**B**	**0.81**	**20.8**	**C**

Table 7. 2035 Build Condition Signalized Intersection Analysis Results – Cont'd

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
25 - Albany Avenue and I-587 North								
Albany Avenue	EB	L	0.16	20.7	C	0.33	42.8	D
		T	0.40	15.2	B	0.37	25.5	C
	WB	TR	0.68	25.0	C	0.82	30.8	C
I-587 North	NB	L	0.72	27.9	C	0.53	32.0	C
		T	0.51	21.1	C	0.83	45.0	D
Overall Intersection			**0.72**	**21.3**	**C**	**0.83**	**32.1**	**C**

Table 8. 2035 Build Condition Unsignalized Intersection Analysis Results

Intersection Approach and Movement			Weekday					
			AM Peak Hour			PM Peak Hour		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
10 - Wall Street and Main Street								
Main Street	WB	TR	0.11	0.0	A	0.07	0.0	A
Wall Street	SB	TR	0.47	14.3	B	0.68	18.3	C
14 - Fair Street and John Street								
John Street	WB	TR	0.33	9.7	A	0.39	10.7	B
Fair Street	NB	LT	0.37	10.3	B	0.49	12.2	B
20 - Clinton Avenue and Main Street								
Main Street	EB	LR	0.35	17.2	C	0.39	16.7	C
Clinton Avenue	NB	T	0.42	0.0	A	0.51	0.0	A
	SB	T	0.20	0.0	A	0.31	0.0	A
23 - Albany Avenue and Maiden Lane								
Albany Avenue	EB	T	0.24	0.0	A	0.34	0.0	A
		R	0.12	0.0	A	0.18	0.0	A
	WB	L	0.15	1.7	A	0.18	2.3	A
		T	0.30	1.5	A	0.30	1.8	A
Maiden Lane	NB	R	0.23	11.7	B	0.32	13.0	B

on-street. The parking along Albany Avenue, though nearly vacant most of the time, is sometimes utilized during meetings at the Ulster County Office Building. With the elimination of these spaces, however, there would still be over 65 available parking spaces in the Uptown Stockade parking study area during the peak period. In addition, there is a vacant property on the east side of Crown Street between North Front Street and John Street that was once used for valet parking. It may be possible for the City of Kingston to acquire this property for use as a new off-street municipal lot.

As previously discussed, although adequate parking supply is available in the Uptown Stockade area, most vehicles parking illegally or inappropriately in the Pike Plan area rather than legally elsewhere. It is, therefore, recommended that a detailed study be conducted to establish an areawide parking management policy. Based on parking strategy research and the particular issues in this area, it is suggested that all on- and off-street parking be fee-based. The revenue from the parking could be used to upgrade infrastructure and buildings, beautify the area, and, in turn, draw more businesses and visitors to the area. The fees should vary throughout the Uptown Stockade area and be consistent with current market rates, rather than lower than current market rates as they are today. It is recommended that on-street parking in the vicinity of the Pike Plan be the most expensive to ensure that spaces are available for short-term customers and to free some space to establish loading/unloading zones for delivery vehicles. On-street parking outside of the Pike Plan area should be priced lower to encourage longer-term visitors to park away from the immediate business area. To address the underutilization of the recently-constructed lot north of Fair Street (the former site of the underutilized municipal parking garage), it is suggested that parking fees be relatively low and time limits longer, which would encourage long-term visitors and hopefully employees to park in the area. Finally, the well-utilized lots in the Pike Plan area should be priced possibly the same as the on-street spaces in the area but with longer time limits. To ensure proper utilization of parking, it may also be advisable to establish a resident parking permit system, an employee parking system, and/or employer transit incentives. To the south of the project area, where there is alternate side parking, the times of regulations should be changed so that employees in and visitors to the area do have to move their cars in the middle of the work day or during their appointments.

It should be noted that most on-street parking spaces that are striped are striped as nine-foot-wide stalls – one foot wider than typical. These spaces should be re-striped as eight-foot-wide stalls so that parked vehicles do not unnecessarily encroach upon adjacent travel lanes. This is especially important in the vicinity of the Pike Plan where on-street parking is allowed on both sides of the street and two travel lanes are supposed to be maintained. It was also discussed as part of the Transportation System Enhancement Plan (see Section IV) that it might be possible to implement angle parking in the Pike Plan area to gain some spaces. Based on a more detailed review, the roadway widths are typically insufficient to safely accommodate angle parking.

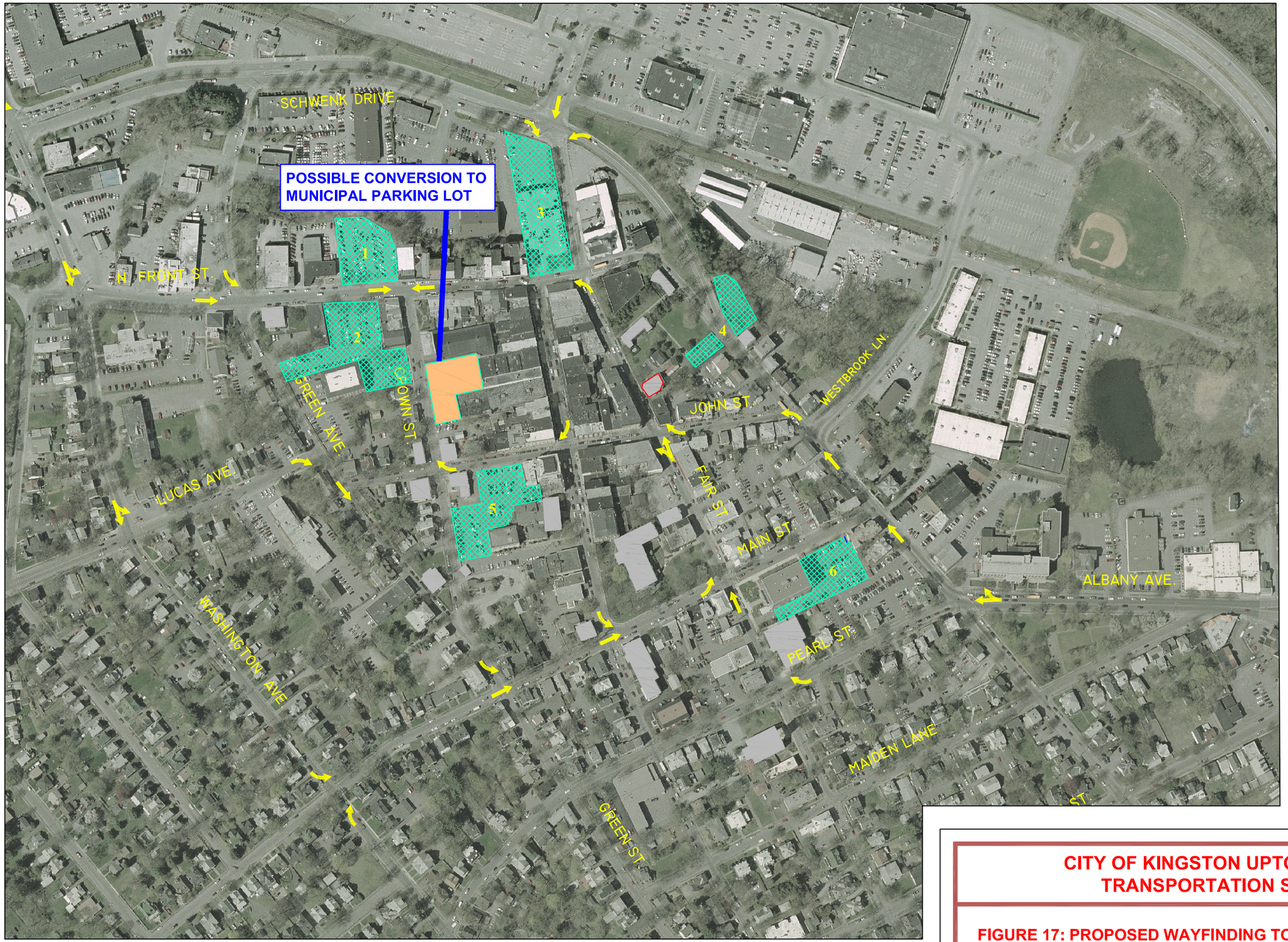
Regardless of the improvements that are made, it will be necessary to enforce parking regulations, time limits, loading and unloading zones, etc. to improve the parking situation in the Uptown Stockade project study area. A strict ticketing policy would need to be implemented for a significant period of time to re-train drivers in the area to park legally. To encourage drivers to utilize a greater portion of the available parking area, it is recommended that a signing and/or streetscape program be adopted to identify more of the study area as the Uptown Stockade Area. If banners and a distinct look are given to the greater Uptown Stockade Area, then drivers would be more willing to park once they enter the area, rather than insist on parking in the immediate vicinity of the Pike Plan. Better signage to off-street public parking lots would also improve the current parking situation. If guided to off-street lots as shown in Figure 17, drivers would be more likely to park once they find these lots, rather than double-park or circulate in the Pike Plan area until they find a place to park on-street.

3. Accident Analysis

With proposed improvements, it is anticipated that accident numbers would be lower for Build than for No Build conditions. Traffic signal coordination and timing and capacity improvements would better accommodate future traffic volumes, reducing congestion, delays, and the tendency of drivers to make unsafe maneuvers throughout the study area. Added left-turn bays and the reversal of street directions at key locations would improve backup and reduce the possibility of rear-end accidents at some locations. All traffic signals in the area would be provided with pedestrian-activation and/or sufficient time for pedestrians to cross the roadways, reducing the tendency for pedestrians to cross without the right-of-way and, therefore, reducing vehicle-pedestrian conflicts throughout the area. In some cases, crosswalks would be relocated to accommodate existing pedestrian crossing patterns and to shorten pedestrian crossing distances. These changes would improve pedestrian safety, as well as allow more time for vehicular movements, which would further reduce vehicle-pedestrian conflicts. As discussed in the following section, additional improvements would be made to improve drivers' awareness of pedestrians and bicyclists in the area. All of the above would likely improve the numbers, rates, and severity of accidents in the Uptown Stockade study area.

III. WALKABILITY/BIKEABILITY

A walkability/bikeability assessment of the project study area was performed for the entire study area. Based on field observations, there are numerous locations at which sidewalks should be repaired, replaced, or installed; pedestrian ramps should be constructed; crosswalks should be re-striped or added; and pedestrian signals and/or push buttons should be repaired on installed to improve walkability in the area. Relocating utility poles, street furniture, and drainage grates; installing pedestrian scale lighting; and implementing a access management plan within the area would also improve both pedestrian and bicycle operations. These, as well as additional



LEGEND:

- WAYFINDING TO PUBLIC LOTS
- OFF-STREET PARKING
- ① MUNICIPAL PARKING LOT
- ② MUNICIPAL PARKING LOT (SITE OF DEMOLISHED PARKING GARAGE)
- ③ MUNICIPAL PARKING LOT
- ④ URBAN CULTURAL PARK VISITOR CENTER LOTS
- ⑤ COURT HOUSE LOT
- ⑥ ULSTER COUNTY OFFICE BUILDING LOT

CITY OF KINGSTON UPTOWN STOCKADE TRANSPORTATION STUDY AREA

FIGURE 17: PROPOSED WAYFINDING TO OFF-STREET PARKING LOTS

improvements detailed in Appendix N, would improve pedestrian and bicycle access, safety, and compliance with Americans with Disabilities Act (ADA) regulations. Recommended traffic circulation and signal improvements for this study would also improve pedestrian and bicycle operations.

IV. TRANSPORTATION SYSTEM ENHANCEMENT PLAN

The RBA Group developed a Transportation System Enhancement Plan (TSEP) for the Uptown Stockade historic area. The purpose of the TSEP is to identify bicycle, pedestrian, transit, and safety improvements that can be made in the area. As part of preparing the TSEP, the adequacy of the following specific items was evaluated: sidewalks, pedestrian crosswalks, street furniture, street lighting, bus stop facilities, bicycle facilities, trees, landscaping and available open space. A conceptual plan was developed that identified proposed streetscape improvements. (See Figure 18.) At the request of the City of Kingston, this effort was focused on the area of the Pike Plan on Wall and North Front Streets. General recommendations for the Stockade District at large include curb extensions and high-visibility crosswalks to improve pedestrian safety, the provision of street furniture to enhance the pedestrian and bus passenger environment, the development of pedestrian streets and alleys to provide a connection between the street and adjacent land uses, and the planting of trees and flowers. It was also proposed that decorative sidewalks and a fountain be provided in the Uptown Stockade area to provide open space and enhance the area's historic character. The TSEP improvements proposed for Wall and North Front Streets were developed to ensure they would not adversely impact vehicular operations or safety in the area. Specific site observations and the detailed streetscape design recommendations that resulted from them are detailed below. Additional information regarding the TSEP is provided in Appendix O.

Lighting – There are at least two different street lamp styles in use in the core of the historic area. There is a taller mast arm pendant style streetlight and a shorter more closely spaced upright pedestrian-scale light. Both are 'historically' styled, though whether one is more relevant to Kingston's past than the other is unknown. The taller of the two, the one more resembling a roadway streetlight, appears to be in use on only two or three streets. The shorter pedestrian-scaled light is currently in use on both Wall and North Front Streets and throughout the surrounding area. These pedestrian-scaled streetlights appear to be the only source of nighttime illumination, with the exception of architectural lighting (up-lights) placed on the Pike Plan buildings on

Curb Extensions with High Visibility Cross Walk

Typical Decorative Pavement

Curb Extension with Furniture

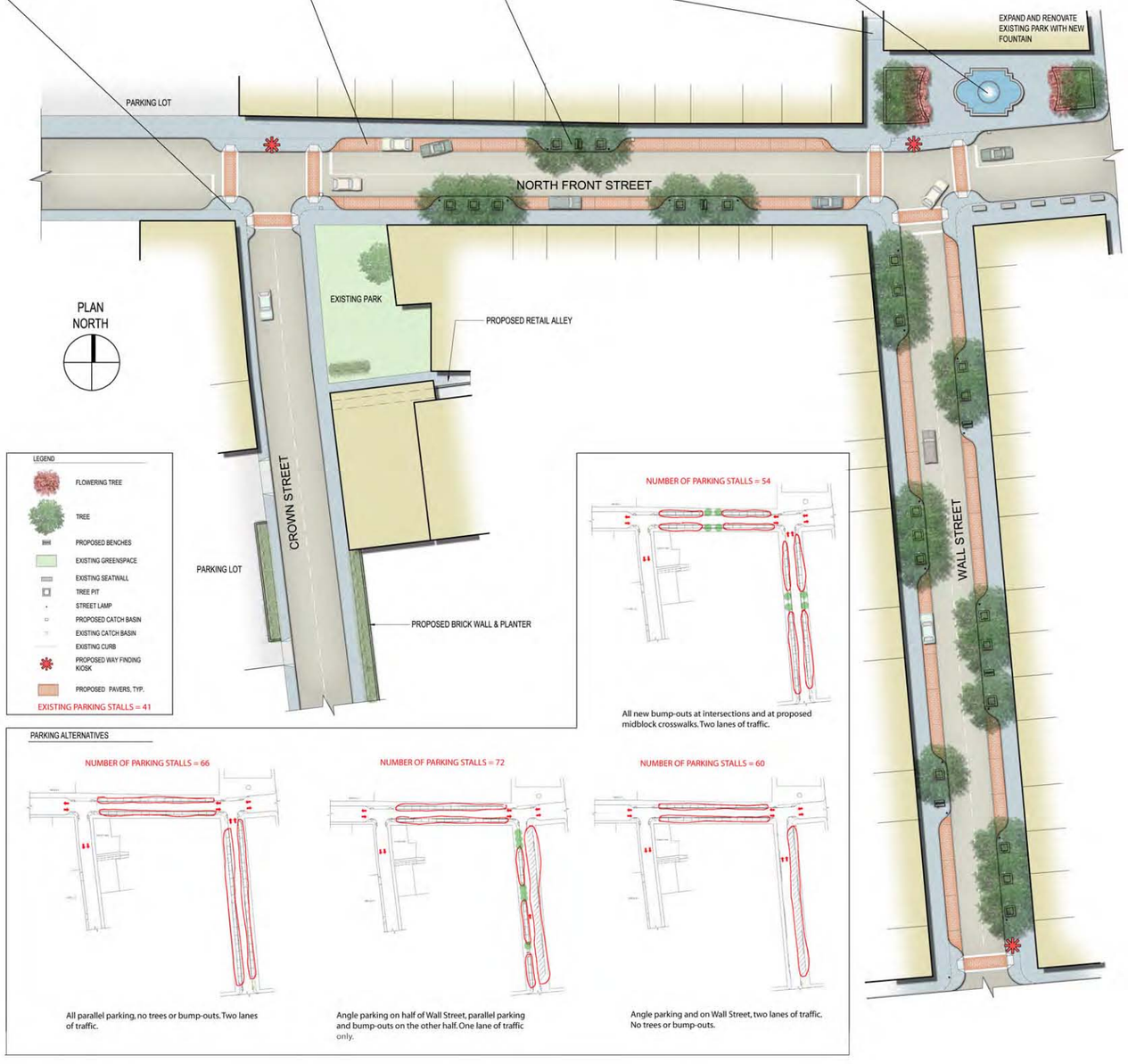
Pedestrian Street

Fountain

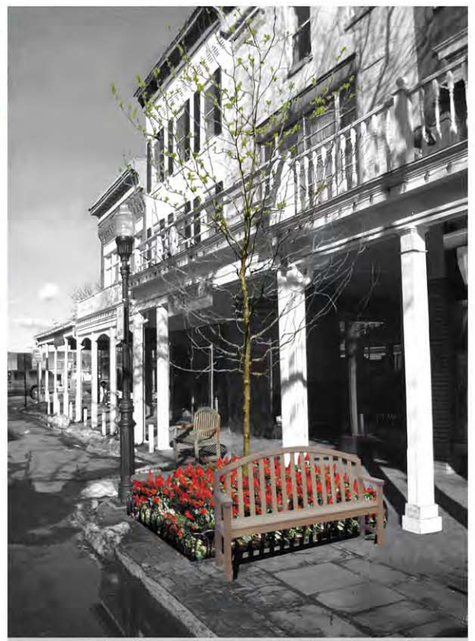
Existing Conditions

(Alt. A) Remove Underdeveloped Tree with Planter & Replace with Benches, Rebuild Existing Planters

(Alt. B) Replace Underdeveloped Tree & Add Circular Bench, New Tree and Rebuild Existing Planters



Existing Conditions



Remove Broken Planter & Replace with Flush Tree pit, flowers & New Bench

The RBA Group NEW YORK
ENGINEERS • ARCHITECTS • PLANNERS
One Huntington Quadrangle Suite 4C20
Melville, New York 11747
(631) 694-3131 Fax (631) 694-3864

Consultants:

ULSTER COUNTY TRANSPORTATION COUNCIL

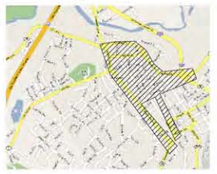
CITY OF KINGSTON

Project Title:

Kingston Stockade Transportation Plan

310 Flatbush Avenue, 3rd Floor
Kingston, NY 12401-2742
Ulster County, NY

Location Map



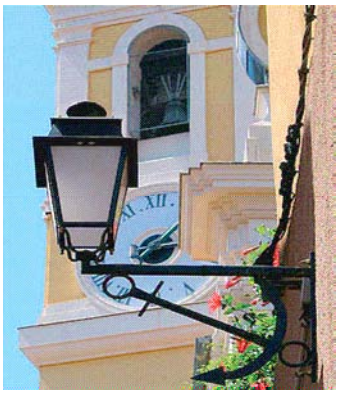
No. Date Revision

Drawing Title:

PROPOSED IMPROVEMENTS

Date:	03/26/08
Scale:	1" = 30' - 0"
Drawn:	CS
Checked:	JW
Job No:	Y4052.00

Drawing No: 2



Wall Street. The architectural lighting illuminates the upper floors above the wood arcades and throws a little ambient light back on the street as well. The pedestrian scaled streetlights have asymmetrical hook-arms for hanging flower baskets (removed in winter). It is recommended that the taller mast-arm streetlights be replaced with pedestrian-scaled lights for the sake of consistency within the stockade district, unless they are historically significant in their current locations.

The unique character of the stockade district is magnified at night when modern details and distractions are difficult to see in the darkness. This character could be exploited and the setting made even more dramatic than it already is by installing authentic gas lamps at appropriate locations near the districts oldest buildings. This would help to magnify the feeling, already present at night, of having stepped back in time.

Street Trees on Wall and North Front Streets – The Street Trees on Wall and North Front Streets are valuable. It is true that as architectural elements they compete with the wooden arcades for attention, but, as long as they are kept pruned and limbed, they are attractive, particularly where the canopy closes above the street. The trees are, however, outgrowing their planters. Many of the planter walls are cracked and/or have been pushed out of plumb. The tree roots are undoubtedly bound up inside the planters, and to remove the planter would mean removing the tree. The trees are typically placed in groups of three or four. In almost all cases, one of the trees in each group is significantly undersized compared to the others. As a short-term fix it is recommended that the smaller underperforming trees and their planters be removed and the remaining planters reconstructed as necessary. When reconstructing planters, they should be enlarged a foot on the three sides away from the buildings to provide room for root growth and expansion. As a long-term fix, all of the trees and their planters should be removed and replaced with trees in decorative at-grade tree pits. This will make a lot of room available for benches and other street furniture.

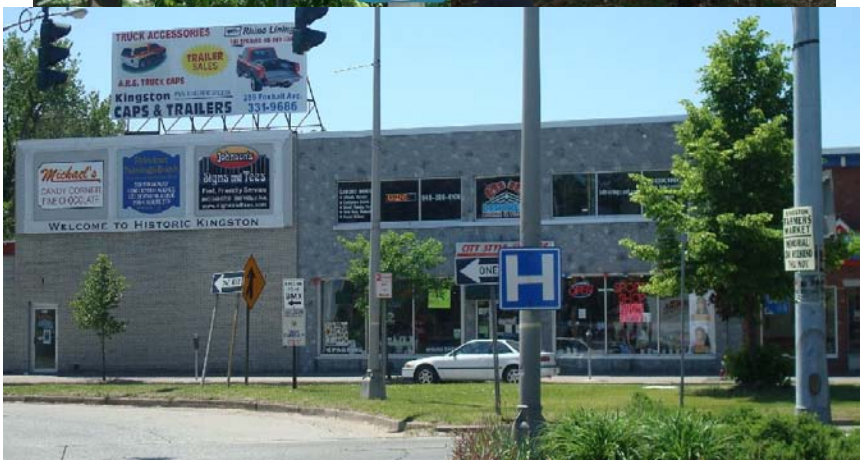
Seating and Street Furniture – A few hardwood benches are placed on Wall and North Front streets under the arcades. They are placed just behind the curb and face away from the buildings toward the street. The space into which the benches have been placed is too small for the benches, resulting in a seating environment that feels cramped

and uncomfortable. The planters are valuable because they provide backless sidewalk seating. They leave little room, however, for anything else in the way of street furniture on the sidewalk. Freestanding benches, trash receptacles, and bicycle racks have been put out on Wall and North Front Streets but they are squeezed uncomfortably into tight spaces. By removing one out of every four tree planters, room will be created on the sidewalk where some of these needed street furniture amenities can be placed. In addition, it is recommended that opportunities for placement of the benches at the back of the sidewalk against the facades of the buildings be sought.

Sidewalks Outside of the Pike Plan – Generally speaking, sidewalks throughout the Uptown Stockade District are narrow – too narrow to contemplate placement of street furniture and, in most cases, trees. Most of the sidewalks feature some combination of brick and bluestone pavement, which, in many areas, is in poor condition and in need of repair and/or replacement. Sidewalk extensions at corners and/or mid-block locations could provide valuable added space for trees and/or amenities, but would require elimination of some on-street parking spaces. The parking issue is explored in other sections of this report, but one of the conclusions reached is that there is excess parking capacity in nearby off-street locations that could offset the loss of a few curbside spaces.

Signage – The following are specific recommendations for improved signage in the Uptown Stockade District:

- Provide a neighborhood map in kiosk form at several locations that serves as a store directory and a way to locate points of interest for pedestrians.
- Redesign and clarify the intent of the Heritage Trail signage. The purpose of these signs is not clear, and they are not easy to follow.
- There are three types of signage directing people to historically significant sites in the Stockade District – signage erected by the City (the blue and white signs), the aforementioned Heritage Trail signs, and the brown signs put up by the State directing visitors to the historic Senate House and the two recognized historic districts: the Stockade, and the Waterfront. If possible, these three historic signage systems should be consolidated.
- The blue and white Uptown District wayfinding signs should be revised to include the many new venues and destinations that have opened in Kingston since the signs were put up (and which all now have their own individual signs placed in awkward locations throughout the Uptown District) and redesigned to increase the size and legibility of the text and arrows.
- Easy to read signs directing motorists to available free and/or low cost off street parking should be installed.
- More site-specific signs and plaques should be installed interpreting the City of Kingston's interesting history for visitors, like the ones at the Dutch Church.



Urban Design and the Big Picture – Creative opportunities exist for adaptive reuse of some of the Uptown District's more prominent older industrial buildings. Zoning laws and building codes should be examined and amended as necessary to permit mixed-use redevelopment of buildings in the Uptown District.

Creative opportunities exist to open up (or, apparently, in some cases reopen) alleyways that may or may not have once existed behind some of the buildings that face North Front Street and Wall Street. Recreating these alleyways and connecting them either through or alongside existing stores will result in the creation of unique and compelling pedestrian-only urban spaces and may open up opportunities for new and different types of businesses to locate in the area.

Creative opportunities exist to connect the Uptown Stockade District to Kingston Plaza. The most prominent and most promising opportunity is in the redevelopment of the former parking garage site at the foot of Wall Street. A pedestrian alley at this location could provide a valuable direct link and also serve as an interesting destination in its own right – as a location for alleyway shops on a sloped 'step-street', the sort of feature that makes old European towns and villages so compelling. This hill, the crest of which North Front Street runs, is a valuable urban design opportunity. It could be said that the greater opportunity for innovative redevelopment lies at the foot of the hill and not along North Front Street at the top of it.

V. COST ESTIMATE

An order-of-magnitude cost estimate was developed for the major improvements needed within the Uptown Stockade Area, including the switching of the Wall and Fair Streets one-way pair street directions, the upgrading of additional traffic signals, and the implementation of TSEP improvements. Based on the estimate provided in Appendix P, the approximate 2008 costs plus 30 percent contingency of these major ticket items would be the following.

Reversal of Wall and Fair Streets One-Way Pair Street Directions = $564,000
Installation/Upgrading of Traffic Signals = $461,000
Transportation System Enhancement Plan = $905,000-$3,000,000

It should be noted that the cost of the installation of a traffic signal at Fair and North Front Streets was included as part of the one-way pair reversal, since the signal would be needed to control operations between the Fair Street Extension and Wall Street with the reversal. Signing and striping changes (e.g., the installation of crosswalks) associated with the one-way pair reversal and at signal installation/upgrade locations were also included within the respective tasks. The cost for the TSEP is that required to implement the improvements shown in Figure 18. The cost varies significantly depending on the materials used and the extent to which the area's historic character is restored.

In addition to the above tasks, there are miscellaneous walkability/bikeability improvement measures (e.g., sidewalk and curb repairs, tree removal, utility relocations, etc.) throughout the project study area that could be implemented. This study has estimated approximately $1,385,000 for such repairs.

VI. CONCLUSION

As discussed in detail throughout this report, there are a range of improvements that can be made to accommodate and improve future vehicular, bicycle, and pedestrian operations in the Uptown Stockade Area. Traffic signal upgrades can be made to allow coordination between the signals, which can be timed to significantly improve traffic

flow while also providing sufficient crossing times for pedestrians. Street direction changes can be made to improve access to and circulation with the Uptown Stockade Area. The street direction changes would also improve safety conditions at several intersections within the study area. Parking enforcement, improved wayfinding to municipal lots, and the implementation of a complete signage and streetscape program for the Uptown Stockade Area would increase parking capacity within the study area. A parking management strategy should be implemented to ensure that available parking is used appropriately (e.g., available to retail customers and visitors where needed). Streetscape, walkability, and bikeability improvements would also encourage more visitation to the area, thereby increasing the economic vitality of the Uptown Stockade Area. Since there are several other projects in various stages of development currently being conducting in the area, recommendations from this study should be coordinated with the other projects and future capital programs.