

CITY OF BATAVIA

DATE: December 2, 2016
TO: Plan Commission
FROM: Joel Strassman, Planning and Zoning Officer
SUBJECT: One Washington Place, 111-133 East Wilson Street and 20 North River Street
1 N. Washington, L.L.C., applicant

- **Public Hearing:** Amendments to the Zoning Map for the Downtown Building Height Overlay District and Planned Development
- Design Review

Introduction

1 N. Washington, L.L.C., represented by Dave Patzelt of Shodeen Construction, is proposing redevelopment of most of the block bounded by Wilson, State, and River streets and Washington Avenue with a mixed use building having the project name *One Washington Place*. The City of Batavia owns all but one of the several individual properties, and is under contract to purchase that one property at 113 East Wilson Street. The site is zoned DMU Downtown Mixed Use, with the portion west of the Washington Avenue frontage being in the DBH Downtown Building Height Overlay District. The site covers approximately 2.2 acres. The property is classified Downtown Mixed Use and Public Facilities, Institutional on the Comprehensive Plan Land Use Map.

The public hearing for the amendments to the zoning map and the Commission's consideration of the design review will begin on December 7th. The applicant has informed City staff that revised drawings are being prepared to address some design issues identified by staff. Due to the scale and importance of this proposal, and likelihood of many persons wishing to be heard on the proposal, the hearing and consideration of the design review may be continued to a date certain to allow all speakers a chance to be heard. Additionally, when continued, a plat of subdivision to consolidate the property will be presented.

In July, the Plan Commission conducted a study session with Mr. Patzelt to discuss Shodeen Construction's proposed redevelopment of the site. This study session focused on land use, building bulk and height, and downtown parking supply issues. Building elevation drawings had not been developed. The Commission was generally favorable towards the concept. The Commission received confirmation that the residential units would be offered for rent, and all parking would be public. The Commission noted the proposed building height as being taller than allowed, and that height and building bulk would be reviewed more closely with the formal zoning process.

Since the July study session, the City Council has begun the process to establish a new Tax Increment Financing (TIF) District to cover this site, and beyond. The City Council approved a redevelopment agreement with 1 N. Washington, L.L.C. (the project developer) that requires the developer to construct the subject project, and for the City to reimburse the developer for certain TIF-eligible expenses. The eligible expenses include the public parking garage and public streetscape enhancements. The project proposed at the time of agreement approval essentially mirrors the now proposed One Washington Place, except for minor changes in the amount of commercial square footage and parking spaces, and the residential unit mix. The agreement specifies that all zoning and subdivision approvals must be completed prior to acquisition of the property.

Information Provided by the Applicant

One Washington Place would contain 13,850 square feet of commercial space accessed by store fronts on Wilson and River streets. Four (4) levels of residential units are proposed; 92 units would have 1 bedroom and 93 units would have 2 bedrooms. The attached *Project Narrative* was based on a previous iteration of the building. Residential unit, commercial square footage, and parking space counts have changed slightly.

A two-level, primarily below grade public parking garage would be built with the proposed commercial and residential uses. As now proposed, the garage would contain approximately 348 public parking spaces. This garage

would be built for the City, financed per the redevelopment agreement using the proceeds from the sale of general obligation bonds, to be reimbursed from TIF increment tax revenues. Additional, special service area tax revenues, if necessary for reimbursement, may be collected. The garage would be available to serve the proposed development while providing public parking for other downtown Batavia commercial and residential uses. The proposed project includes replacing parallel parking on State Street with angle parking resulting in an increase of six (6) parking spaces.

Pedestrian entrances to the residences would be in courtyards facing Washington Avenue. A small vehicle turnout is proposed along Washington that would be used for emergency response, passenger pick-up/drop-off, or for short-term parking for deliveries to residents. The building's design uses the Wilson and River frontages for commercial store fronts and the changing grade along State Street for separate vehicle access to each garage level. Pedestrian accesses to the garage levels would be from State and Wilson Streets, and to the upper garage level from Washington Avenue. Additional pedestrian access to the lower garage level will be provided from the alley at the northwest corner of the Wilson commercial space. This alley also provides access to the refuse area.

Consistent with Shodeen's presentation to the Commission in July and through City Council approval of the redevelopment agreement, the proposed building would need to be granted relief from a number of Zoning Code regulations regarding building design and parking. While the building's height would be within the DBH Overlay limit of 75 feet for portions of the State, Washington, and Wilson frontages, part of the building would exceed that limit, reaching a maximum height of approximately 81 feet at the State-River corner. The DBH Overlay limits heights above the DMU District maximum of 50 feet for portions of the building no wider than 50 feet, and having a north-south separation of 50 feet.

The proposed amount of commercial space and residential unit mix requires 402 parking spaces to be provided under strict application of the Zoning Regulations. While the proposed development would provide 348 spaces, all spaces would be public, and not assigned to any one use, property owner, or tenant. The City may issue up to 200 overnight parking permits for Batavia residents living within or proximate to the subject project.

In addition to Zoning Code relief for the building's height and parking, additional relief for DMU District building design requirements would be needed. The DMU District requires street-facing building walls to have minimum expanses of vision glass, and numbers of pedestrian entrances. The proposed building has deficiencies in some of these requirements. The vision glass deficiencies are partly due to the portions of the garage that are above grade.

Building elevations show use of brick, limestone, and fiber cement shingles and siding for the building's walls. All residential units would have an outdoor space. HVAC equipment would not be visible from the street. Per preliminary direction from the Historic Preservation Commission (HPC), the tower element at the Washington-Wilson corner is designed to resemble the First Baptist Church's bell tower. This part of the building may use materials recovered from the existing church structure if possible.

Bicycle parking would be provided at the lower State Street vehicle entrance. In addition to trees being proposed along Washington Avenue and River Street, decorative street lights are proposed along with benches, trash receptacles, and building foundation plantings. The building would have a pool and outdoor deck above and behind the south portion of the River Street commercial space.

Staff Analysis

The public hearing is to consider two (2) amendments to the Zoning Map, as follows:

- Removal of the DBH Overlay that covers all but approximately 75 feet of the property's depth along the Washington Avenue and Wilson Street frontages
- Establish a Planned Development Overlay for the property to accommodate the proposed development (the property's underlying DMU District designation would not change)

In addition to the Zoning Map amendments, the Commission is to conduct design review for the proposed site improvements. As mentioned before, a plat of subdivision to consolidate the property to single lot will be added to the Commission's review later.

Removal of the DBH Overlay. The DBH Overlay is intended to allow taller portions of buildings in the downtown's core, while preserving views to the Fox River and to other parts of downtown from across the river. The context of this site now provides for only very limited views of the Fox River and virtually no view of the river from points directly east. From a vantage point due west of the river, the added building height may affect one's ability to see Shannon Hall (former Holy Cross Church) and the old Louise White School.

The Comprehensive Plan's Land Use (LU), Economic Development & Redevelopment (ED), Housing, Neighborhood Conservation, and Historic Preservation Element (HN), and Urban Design (UD) elements contain goals and policies applicable to the proposed development. LU Element identifies continuing redevelopment of the downtown with residences as an issue. This Element contains policies to encourage mixed uses of land where compatible, focus high density in the downtown, and to locate significant public facilities in downtown. The ED Element identifies the downtown as having limited public parking and the role of City government to facilitate downtown redevelopment, and notes sites of obsolete buildings as potential for redevelopment. ED goals include forming partnerships with the private sector to stimulate redevelopment and to increase housing opportunities to a variety of life situations and income levels. The HN Element includes a policy to expand rental housing. The UD Element seeks to encourage downtown development that is economically viable and pedestrian-friendly, and to emphasize taller building locations in the downtown.

One Washington Place, as proposed and exceeding the height allowed in the DMU and DBH districts, would address the issues above and be consistent with those goals and policies. Staff notes that there are goals and policies in the Comprehensive Plan that encourage preservation of historic buildings. Despite the old Baptist Church's deteriorating condition and it being largely obsolete, it is a significant historic structure that would be lost with the proposed redevelopment. The HPC, recognizing the significant economic cost to restore the building to a usable state, did not object to demolition of the building.

As noted in the Introduction, staff anticipates many speakers and it is likely the hearing will need to be continued. Removal of the DBH Overlay will require the Commission to arrive at findings of fact/review of conditions at the conclusion of the hearing. The findings/conditions are listed below for reference. As is customary, staff will provide a draft of responses to the findings/conditions after conclusion of the hearing.

1. All required public notice has been conducted in accordance with applicable state and local laws;
2. All required public meetings and hearings have been held in accordance with applicable state and local laws.
3. The extent to which the proposed amendment to the Official Zoning Map conforms generally to the goals and policies of the Comprehensive Plan and Comprehensive Plan Land Use Map.
4. Is the proposed zoning district and the development it allows compatible with the existing uses and zoning of nearby property?
5. Is there evidence to suggest that property values will be diminished by the particular zoning restriction changes?
6. If any property values are diminished, does the diminishment promote the health, safety, morals, or general welfare of the public?
7. Does the proposed zoning change provide a greater relative gain to the public as compared to the hardship imposed on the individual property owner?
8. Is the subject property suitable for the zoned purpose?
9. Has the length of time the property has been vacant as zoned been excessive, considering the context of land development in the area in the vicinity of the subject property?
10. Is there a community need for the proposed zoning or use?

Staff notes that removal of the DBH Overlay for the subject property would allow for the proposed development to be considered. Removal of the Overlay would be consistent with several goals and policies of the Comprehensive Plan that encourage downtown redevelopment with taller buildings containing residences including rentals, and to add public facilities. The Comprehensive Plan also identifies sites of obsolete buildings for redevelopment, and for public-private partnerships in redevelopment. This block has obsolete buildings and can provide an opportunity for denser housing, and such housing can add to the City's mix of housing types. To provide the denser housing, along with public parking and commercial space, the building needs height to fit

those components. Removing the DBH Overlay simplifies the zoning relief approval process for both the property owner and developer of the property, and allows a single height limit for the site.

Planned Development. A purpose of the Planned Development Overlay District (PD) is to provide opportunities for unique or mixed use development. A PD may be used to modify the Zoning Code requirements to implement policies of the Comprehensive Plan and to permit unique or mixed use developments.

One Washington Place would be unique in Batavia. There is no other property that combines a mix of uses with either indoor or outdoor public parking. This uniqueness, coupled with the number of Comprehensive Plan goals and policies this project would address, qualify this proposed development for consideration of Zoning Code modifications through a PD.

As proposed, staff has identified the following conditions that would require modifications to the Zoning Code with this PD:

1. Zoning Code Section 2.405.A for providing less than the required vision glass on street facing elevations. (Staff notes that much of the Wilson and River store fronts meet the requirements and residential frontages are only slightly less than required amounts.)
2. Zoning Code Section 2.405.B for not providing the required pedestrian building entrances every 75 feet along State Street and Washington Avenue.
3. Zoning Code Table Section 4.205 for providing parking space and aisle dimensions having minimums of approximately 8 feet by 17.5 feet and 22 feet, respectively, less than the required 9 feet by 18 feet and 24 feet, respectively.
4. Zoning Code Table 4.204 for providing 0 parking spaces where 402 is required. (Staff notes that because all 348 parking spaces are public and not exclusive to this development, the development is not providing the Code required parking.)
5. Zoning Code Table 2.404 to allow a maximum building height of approximately 81 feet where 50 is allowed. (This assumes removal of the DBH Overlay.)

Staff is supportive of granting relief for these modifications. The reductions in windows and entrances are partly due to portions of the garage being above grade. There is a safety need to control pedestrian access locations to the garage, and the Code requirement for vision glass for non-residential uses is to provide views into commercial spaces.

The City commissioned Rich & Associates to prepare the attached *Downtown Parking Demand vs. Supply Analysis* to determine if the proposed public parking can adequately address supply issues with adding the proposed residences and commercial space. The study examined a 19-block area of downtown (includes all commercial properties and rights-of-way within 600 feet of the project) and found a current deficiency of approximately 650 spaces from what the Zoning Code requires. The study applied the Institute of Transportation Engineers (ITE) Shared Use Model in analyzing the parking demand versus parking supply for the study area. This model recognizes that different types of land uses peak at different times during the day and spaces can be “shared” by the various uses. When employing this model, Rich found that the current actual demand versus supply deficit is effectively reduced to approximately 187 spaces. After the project is completed and fully occupied (using certain assumptions with respect to likely tenant mix), and again, using the shared use model, the area-wide deficit would be reduced to approximately 157 spaces. The completed and occupied One Washington Place would effectively reduce the existing parking deficit in a significant part of downtown. Staff concurs with the study’s findings. The study recommends the efficient use of all parking, and having businesses work together to free up any of their parking surplus to other users.

Assuming removal of the DBH Overlay, the building would exceed the maximum allowed height of 50 feet in the DMU District. Adding to the factors that support removal of the DBH Overlay, staff notes that the requested height of 81 feet accommodates the portion of the building at the State-River corner and use of pitched roofs that add to height to give the building a residential appearance. The site has varying grades that affect the measured building height. The majority of the Wilson frontage has approximate measured building heights (grade to the mid-point of pitched roofs) ranging from 67 feet at the west end to 58 feet at the east tower element. Along Washington, the maximum height would be approximately 60 feet. The portion of the building behind the existing buildings fronting

on River Street would extend approximately 28-38 feet above the buildings that front on River Street. While the maximum height of 81 feet would be quite tall, the building, for the most part would be significantly lower. Building elevation designs include much articulation to break up the mass of the walls. Relatively small roof gables and horizontal elements help deemphasize the building's height. Staff believes that the requested relief for building height is reasonable given its residential character, the site's varying topography, and inclusion of the Wilson-Washington corner tower element.

The City commissioned the Center for Governmental Studies at Northern Illinois University to prepare the attached economic impact study. The study concludes that there will be significant, positive short-term and long-term impacts. Short-term impacts center on construction activity while long-term impacts include retail sales tax revenue from commercial tenants and from adding residents proximate to all Batavia businesses who may shop locally.

The City also commissioned a traffic impact analysis. As of the writing of this memo, the City has not received the final analysis. A draft of the analysis concludes that One Washington Place would have a low impact on current traffic operations along the Wilson corridor. Intersections adjacent to the site would be minimally impacted. City staff and/or the consultant may present the findings and conclusions from the final analysis at the public hearing.

Design Review. Notwithstanding the requested Zoning Code modifications, staff feels that the site and building design fits the proposed mix of uses. The applicant and staff are continuing to hone details of the building's materials, landscaping, lighting, and garage vehicle entries. Along with overall design of the building, materials will require HPC approval; this review may take place on December 12.

Staff has communicated to the applicant its preference to omit vehicle doors to the garage; being public parking, it should remain open. The Washington Avenue drop-off area design needs to be finalized and will require IDOT approval. Plans will need to detail space for 14 publicly accessible bicycle parking spaces. If an identification sign for the building/property is desired, that will need to be added to the Design Review. Staff notes that some of the Wilson commercial spaces will have compromised sign area and visibility due to the balconies above.

The applicant has informed staff that it will submit plans that have been revised from those attached to this memo. For that reason, staff feels the Design Review is not ready for final action by the Commission at this time.

Plat of Subdivision. As explained before, this plat is to consolidate the site into a single lot. The plat would also grant easements where needed. The plat will be brought to the Commission for review/recommendation at an upcoming meeting.

Staff Recommendations

Amendments to the Zoning Map. Staff recommends the Commission open the public hearing for the amendments to the Zoning Map (DBH Overlay removal and Planned Development). Due to the applicant informing staff that revised drawings are forthcoming, the hearing should be continued to a date certain. Continuing the hearing also will allow additional opportunity for all speakers to be heard on any project revisions.

Design Review. Staff recommends the Commission begin Design Review, and provide direction to the applicant for any desired changes to the site and/or building design. Due to the amount of information still needed and that revised plans are forthcoming, staff recommends the Commission continue the Design Review to a date certain.

Attachments

1. 1 Washington Place application material
2. Downtown Parking Demand vs. Supply Analysis
3. Economic Impact Study

c Mayor and City Council
Department Heads
Chris Aiston, C. C. Aiston, Consulting
Media

1 North Washington Avenue Redevelopment

Project Narrative

10/20/16

The properties located at 113 E. Wilson St. Batavia, IL legally described in the documents attached hereto and incorporated herein by reference and 121 E. Wilson St. Batavia, IL legally described in the document attached hereto and incorporated herein by reference (aka "Frydendall Property") the driveway easement described in the document attached hereto and incorporated herein (the "8 N. River and 109 E. Wilson Easement") running in favor of the property at 8 N. River St. and 109 E. Wilson St. and incorporated herein are presently owned by the City of Batavia and, together with the aforementioned Church Property, the former ServiceMaster property and current City parking lots comprise all of the property described in the documents attached hereto and incorporated herein are considered the "Redevelopment Site" or "Site".

Developer desires to redevelop the Site with a Multi-Story, Mixed Use building on top of a public parking garage with other associated site improvements consisting of the following (the "Project" or "Project Improvements"). Multi-Story, Mixed Use building shall consist of the following:

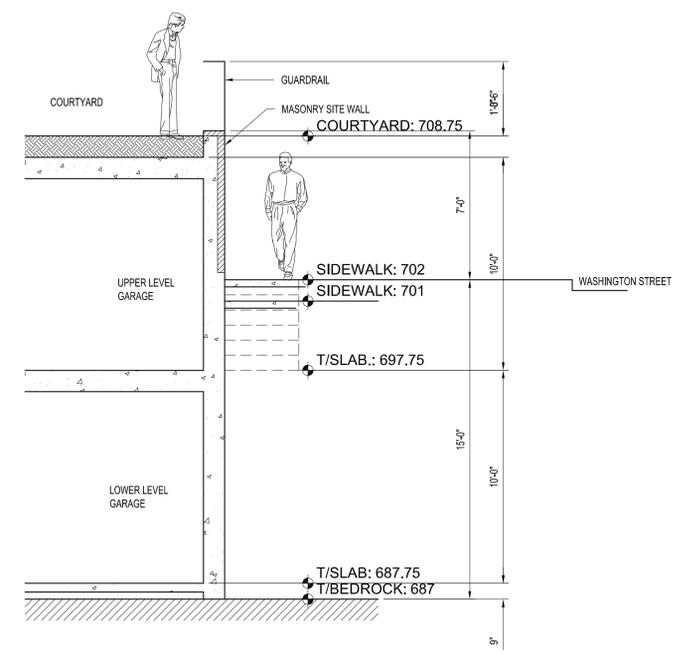
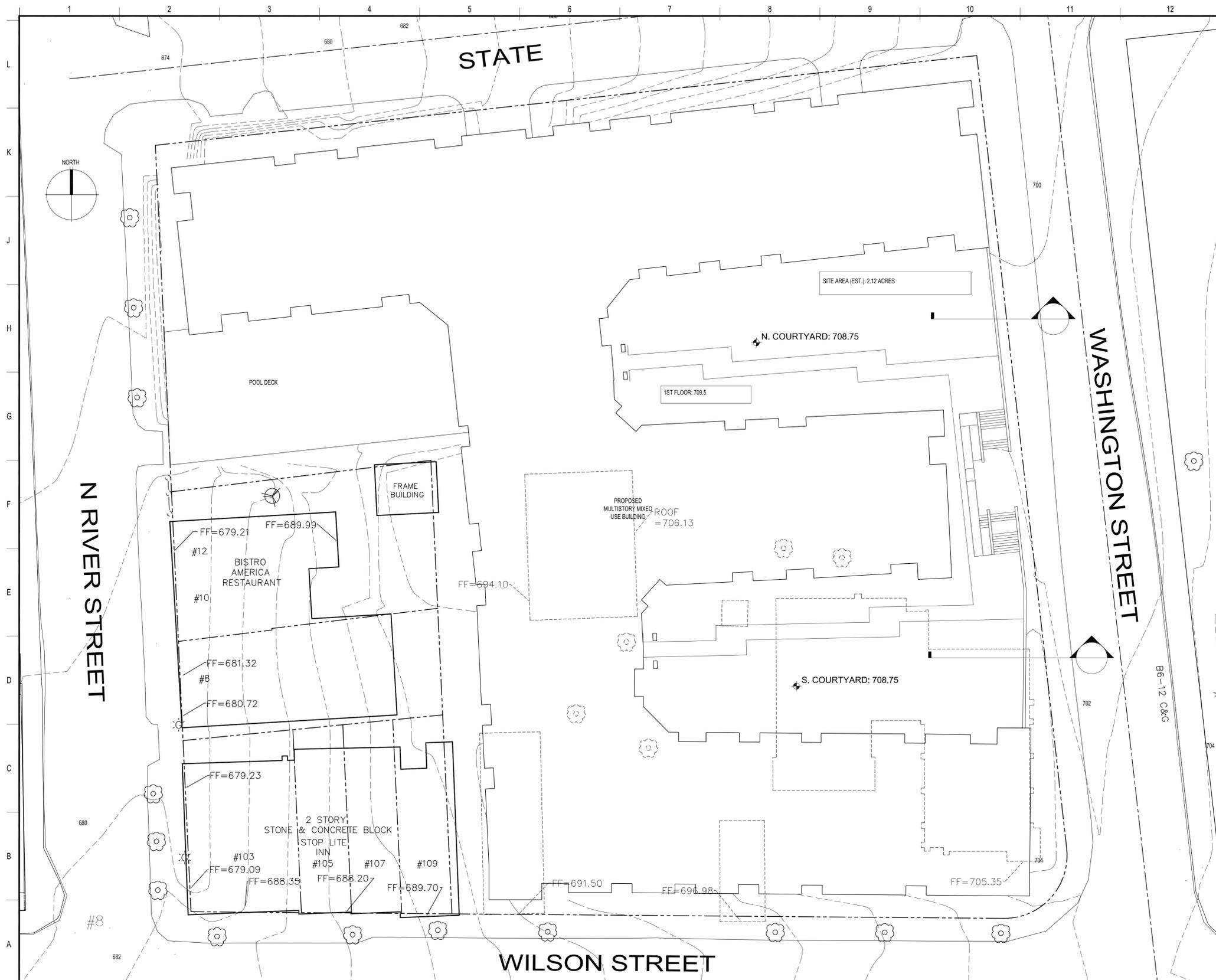
(1) A Two Story Public Parking Facility/Commercial Space. The lower two stories of the improvement shall include a two-story, approximately 350 space parking facility with a portion of the first story and second stories set aside for commercial space with the following characteristics:

(a) Public Parking Facility. The Public Parking Facility shall accommodate approximately 350 daytime and overnight public parking spaces, as more specifically provided in Section 4.04 (a) and (b).

(b) Commercial Space. The commercial space shall be approximately 6,300 square feet built on top of the partially underground parking facility along River Street and approximately 8,345 square feet of built at the second floor level along E. Wilson Street, for a total of 14,645 square feet.

(2) Residential Space. The residential space (Residential Space) shall consist of four (4) stories (stories 3, 4, 5 and 6) and consist of approximately 186 residential units located on top of the Public Parking Facility and commercial space.

(3) Public Improvements. The Public Improvements shall include, but not be limited to, the Public Parking Facility and all required site preparation, off site electrical improvements, and public street (including the proposed IL Rt. 25 turn off lanes), sidewalk, right-of-way and offsite streetscape improvements identified more specifically in the document attached hereto and incorporated herein ("Public Improvements") to be owned and operated by the City, all other improvements necessary to construct the Residential Space and Commercial Space, which improvements are hereinafter referred to as Private Improvements.



PROJECT DATA	
185 RESIDENTIAL UNITS: (92) 1-BEDROOM + (93) 2-BEDROOM	
ABOUT 348 GARAGE PARKING SPACES	
ABOUT 13,850 SF OF RETAIL SPACE: 9,000 SF ON WILSON + 4,850 SF ON RIVER STREET	

Nov. 9th, 2016	ISSUED FOR ZONING APPROVAL
Project no.:	Drawn by: DM Checked by:



ONE NORTH WASHINGTON
Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer

SITE PLAN
Scale: 1" = 20'

A1



SOUTH ELEVATION (WILSON STREET)



EAST ELEVATION (WASHINGTON STREET)

NOTES:

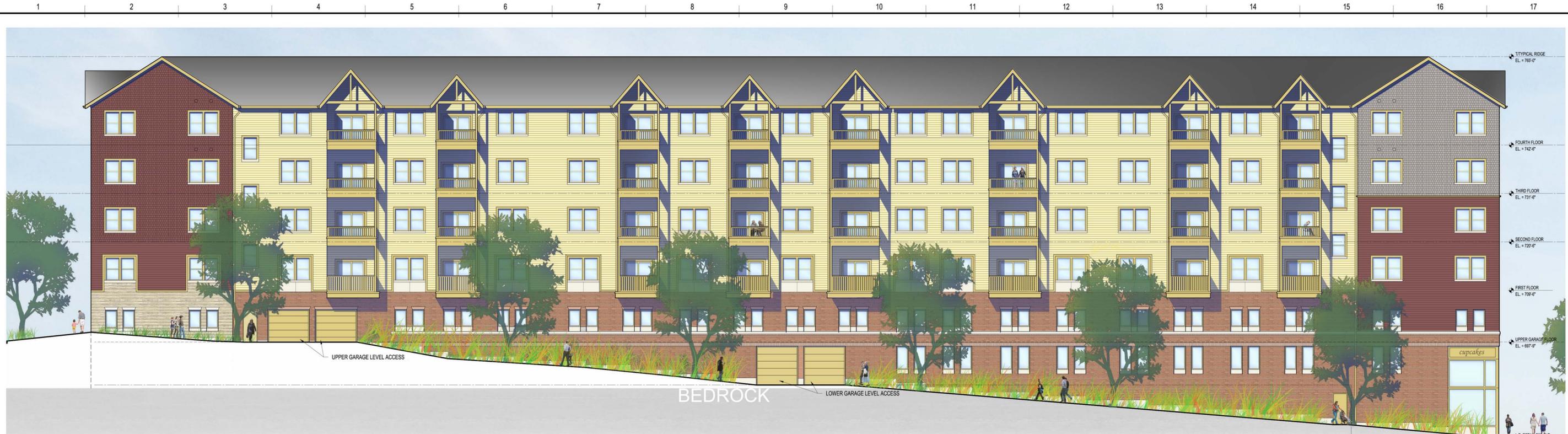
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ONE NORTH WASHINGTON
Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer

EAST & SOUTH ELEVATIONS
Scale: 3/32" = 1'

A2



NORTH ELEVATION (STATE STREET)



WEST ELEVATION (RIVER STREET)

NOTES:

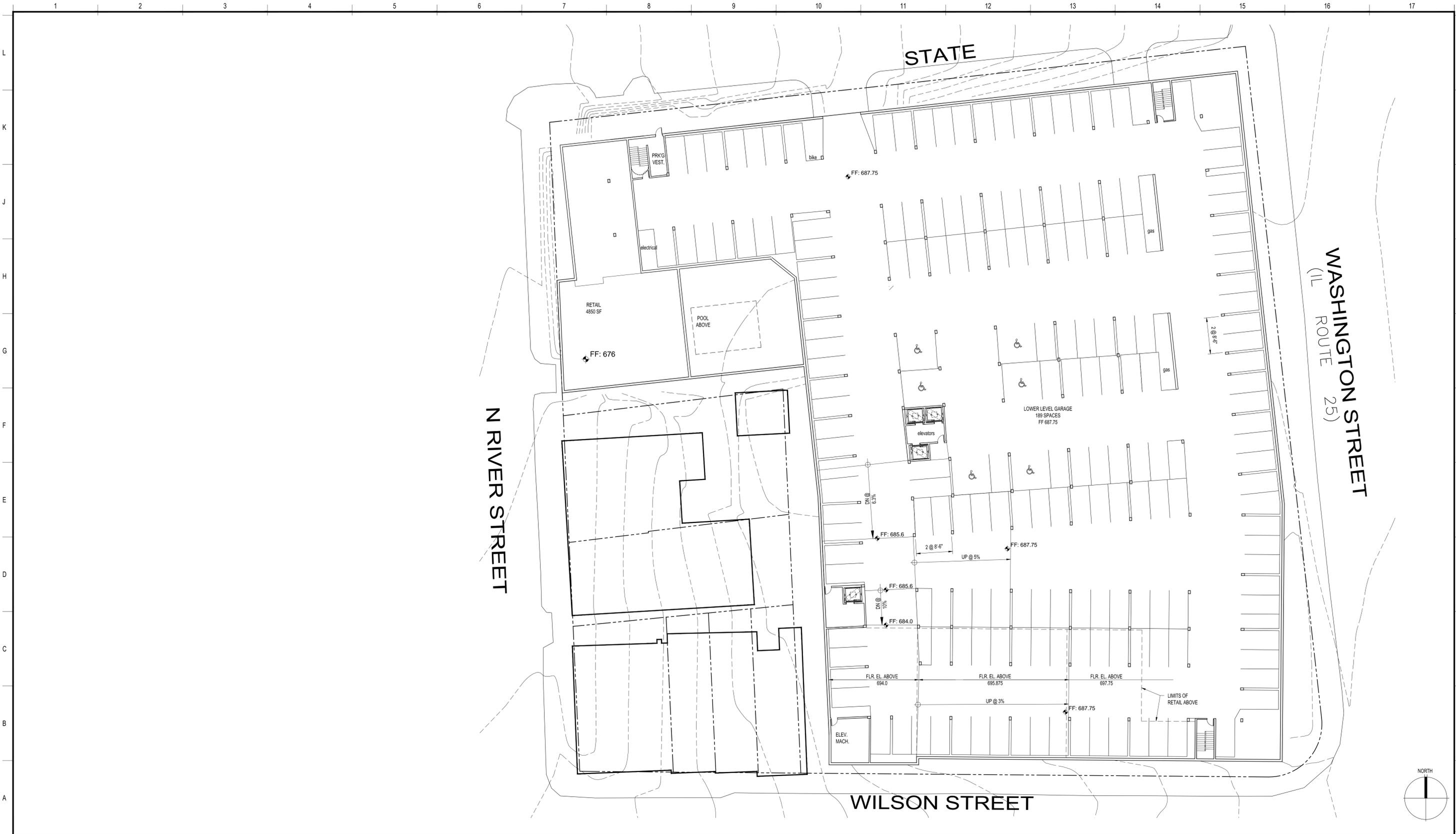
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Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer

NORTH & WEST ELEVATIONS
Scale: 3/32" = 1'

A3



GARAGE PARKING & RETAIL AREA SUMMARY	
PARKING	
LOWER GARAGE	189
UPPER GARAGE	159
TOTAL GARAGE PARKING	348
RETAIL AREA	
WILSON STREET	9,000
RIVER STREET	4,850
TOTAL RETAIL AREA	13,850

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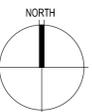


ONE NORTH WASHINGTON
 Batavia, Illinois
 ONE NORTH WASHINGTON, LLC, Developer

LOWER GARAGE FLOOR PLAN
 Scale: 1" = 20'

(for reference only)

A4



Nov. 9, 2016			ISSUED FOR ZONING APPROVAL		
Project no.:	Drawn by: DM	Checked by:			

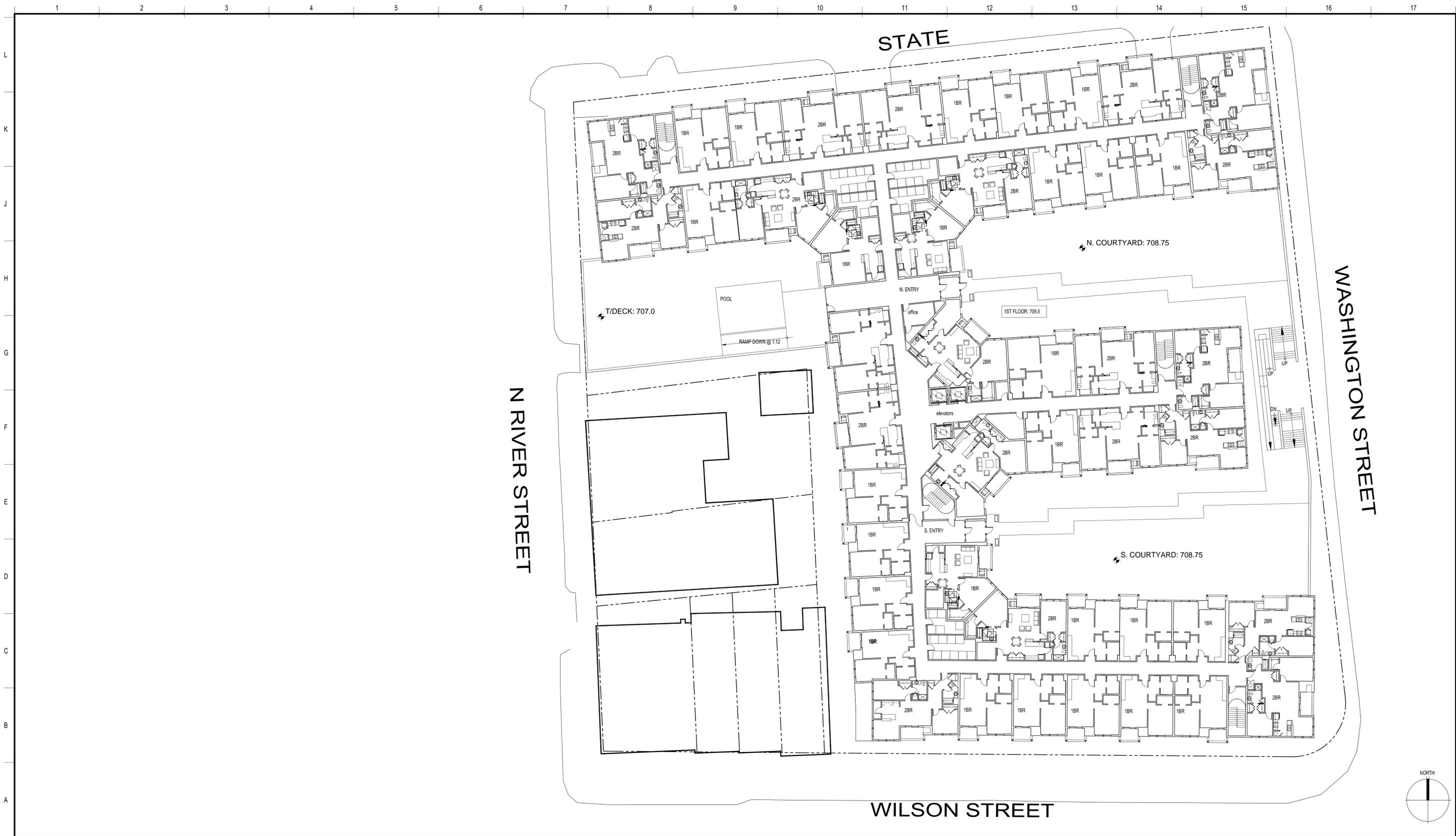


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 Batavia, Illinois
 ONE NORTH WASHINGTON, LLC, Developer

UPPER GARAGE FLOOR PLAN
 Scale: 1" = 20'

(for reference only)

A5



Nov. 9, 2016 ISSUED FOR ZONING APPROVAL		
Project no.:	Drawn by: DM	Checked by:

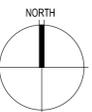


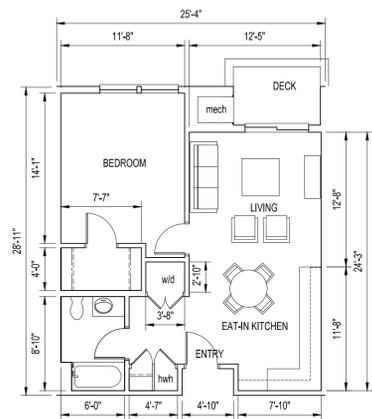
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 Batavia, Illinois
 ONE NORTH WASHINGTON, LLC, Developer

RESIDENTIAL FLOOR 1
 Scale: 1" = 20'

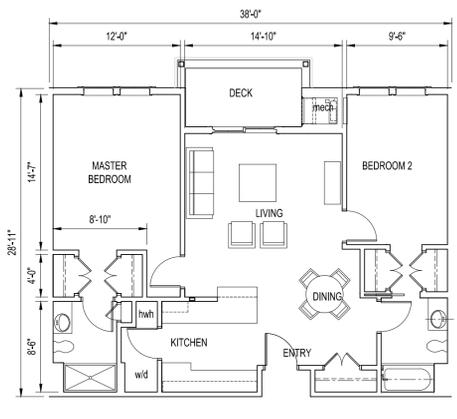
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A6

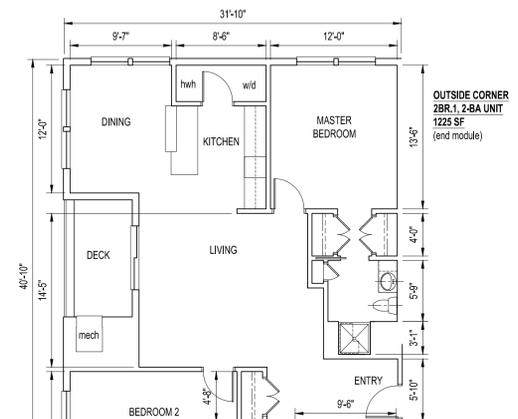




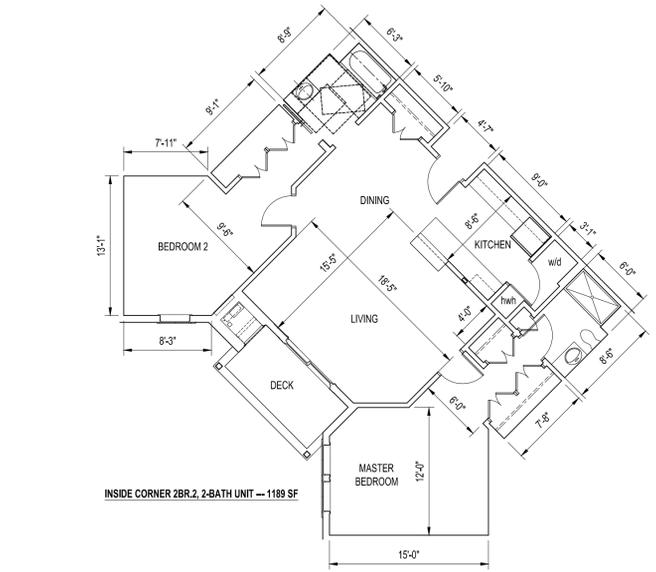
INTERIOR 1-BEDROOM, 1-BATH UNIT — 689 SF
(3 per 76 feet)



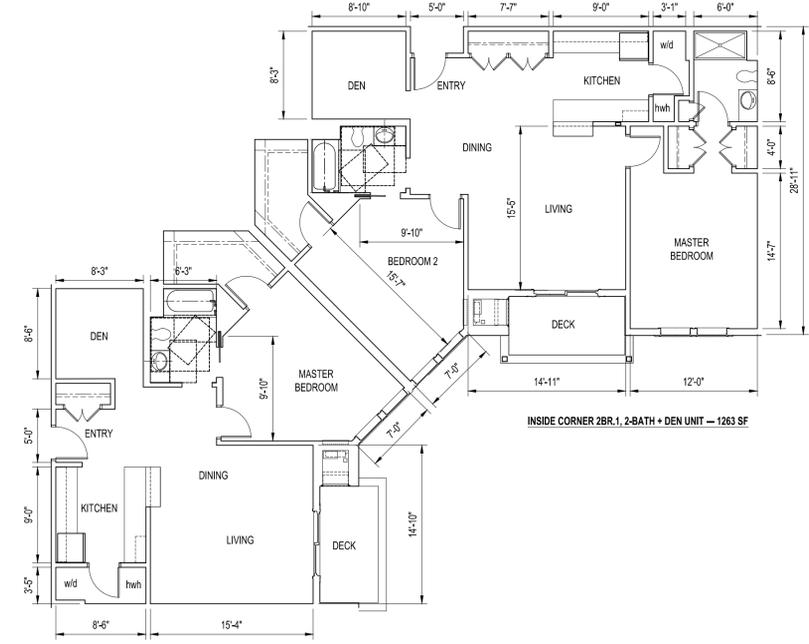
INTERIOR 2-BEDROOM, 2-BATH UNIT — 1047 SF
(2 per 76 feet)



OUTSIDE CORNER
2BR.1, 2-BA UNIT
1225 SF
(end module)

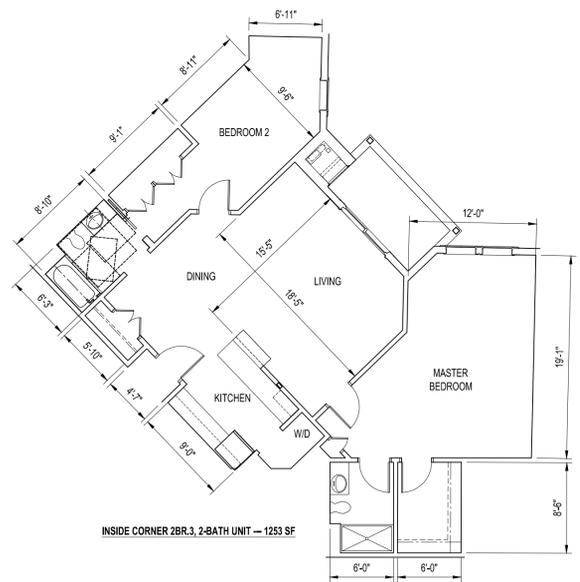
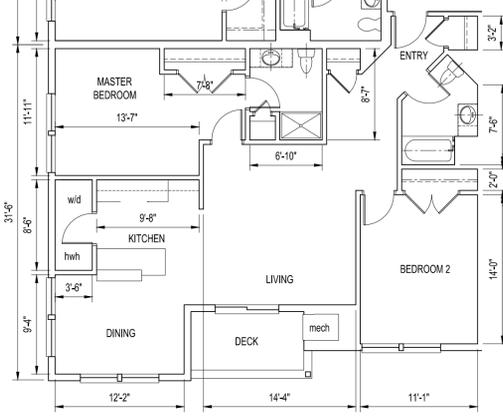


INSIDE CORNER 2BR.2, 2-BATH UNIT — 1189 SF



INSIDE CORNER 2BR.1, 2-BATH + DEN UNIT — 1263 SF

OUTSIDE CORNER
2BR.2, 2-BA UNIT
1195 SF
(end module)



INSIDE CORNER 2BR.3, 2-BATH UNIT — 1253 SF

INSIDE CORNER 1-BEDROOM, 1-BATH + DEN UNIT — 914 SF

RESIDENTIAL AREA SUMMARY CHART			
UNIT TYPE	UNIT AREA	QUANTITY	TOTAL RENTABLE AREA
1BR INTERIOR	689	83	63,388
1BR INSIDE CORNER	914	9	8,226
2BR INTERIOR	1047	34	35,598
2BR.1 INSIDE CORNER	1263	15	18,945
2BR.2 INSIDE CORNER	1189	4	4,756
2BR.3 INSIDE CORNER	1253	4	5,052
2BR.1 OUTSIDE CORNER	1225	16	19,600
2BR.2 OUTSIDE CORNER	1195	20	23,900
TOTAL		185	179,465
GROSS BUILDING AREA (4 RESIDENTIAL FLOORS)			210,452
RENTABLE/GROSS RATIO			85%

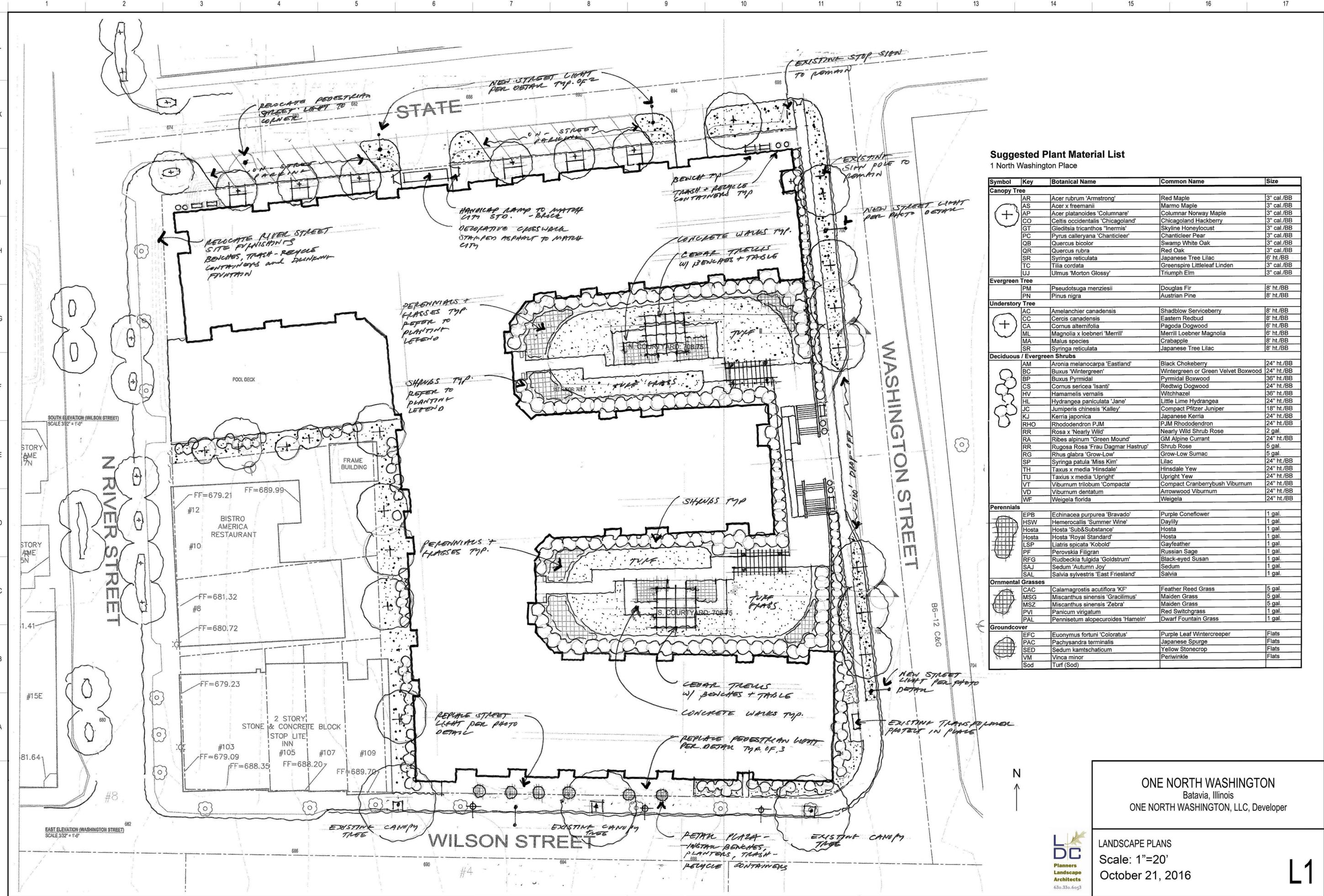
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Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer

UNIT PLANS
Scale: 1/8" = 1'-0"

(for reference only)



Suggested Plant Material List
1 North Washington Place

Symbol	Key	Botanical Name	Common Name	Size
Canopy Tree				
+	AR	Acer rubrum 'Armstrong'	Red Maple	3' cal./BB
	AS	Acer x freemanii	Marmo Maple	3' cal./BB
	AP	Acer platanoides 'Columnare'	Columnar Norway Maple	3' cal./BB
	CO	Celtis occidentalis 'Chicagoland'	Chicagoland Hackberry	3' cal./BB
	GT	Gleditsia tricanthos 'Inermis'	Skyline Honeylocust	3' cal./BB
	PC	Pyrus calleryana 'Chanticleer'	Chanticleer Pear	3' cal./BB
	QB	Quercus bicolor	Swamp White Oak	3' cal./BB
	QR	Quercus rubra	Red Oak	3' cal./BB
	SJ	Syringa reticulata	Japanese Tree Lilac	6' ht./BB
	TJ	Tilia cordata	Greenspire Littleleaf Linden	3' cal./BB
	UJ	Ulmus 'Morton Glossy'	Triumph Elm	3' cal./BB
Evergreen Tree				
	PM	Pseudotsuga menziesii	Douglas Fir	8' ht./BB
	PN	Pinus nigra	Austrian Pine	8' ht./BB
Understory Tree				
+	AC	Amelanchier canadensis	Shadblow Serviceberry	8' ht./BB
	CC	Cercis canadensis	Eastern Redbud	8' ht./BB
	CA	Cornus alternifolia	Pagoda Dogwood	6' ht./BB
	ML	Magnolia x loebneri 'Merrill'	Merrill Loebner Magnolia	6' ht./BB
	MA	Malus species	Crabapple	8' ht./BB
	SR	Syringa reticulata	Japanese Tree Lilac	8' ht./BB
Deciduous / Evergreen Shrubs				
	AM	Aronia melanocarpa 'Eastland'	Black Chokeberry	24" ht./BB
	BC	Buxus 'Wintergreen'	Wintergreen or Green Velvet Boxwood	24" ht./BB
	BP	Buxus Pyramidal	Pyramidal Boxwood	36" ht./BB
	CS	Cornus sericea 'Isanti'	Redtwig Dogwood	24" ht./BB
	HV	Hamamelis vernalis	Witchhazel	36" ht./BB
	HL	Hydrangea paniculata 'Jane'	Little Lime Hydrangea	24" ht./BB
	JC	Juniperus chinensis 'Kalee'	Compact Pfitzer Juniper	18" ht./BB
	KJ	Kerria japonica	Japanese Kerria	24" ht./BB
	RHO	Rhododendron PJM	PJM Rhododendron	24" ht./BB
	RR	Rosa x 'Nearly Wild'	Nearly Wild Shrub Rose	24" ht./BB
	RA	Ribes alpinum 'Green Mound'	GM Alpine Currant	24" ht./BB
	RR	Rugosa Rosa 'Frau Dagmar Hastrup'	Shrub Rose	5 gal.
	RG	Rhus glabra 'Grow-Low'	Grow-Low Sumac	5 gal.
	SP	Syringa patula 'Miss Kim'	Lilac	24" ht./BB
	TH	Taxus x media 'Hinsdale'	Hinsdale Yew	24" ht./BB
	TU	Taxius x media 'Upright'	Upright Yew	24" ht./BB
	VT	Viburnum trilobum 'Compacta'	Compact Cranberrybush Viburnum	24" ht./BB
	VD	Viburnum dentatum	Arrowwood Viburnum	24" ht./BB
	WF	Weigela florida	Weigela	24" ht./BB
Perennials				
	EPB	Echinacea purpurea 'Bravado'	Purple Coneflower	1 gal.
	HSW	Hemerocallis 'Summer Wine'	Daylily	1 gal.
	Hosta	Hosta 'Sub&Substance'	Hosta	1 gal.
	Hosta	Hosta 'Royal Standard'	Hosta	1 gal.
	LSP	Liatris spicata 'Kobold'	Gayfeather	1 gal.
	PF	Perovskia Filigran	Russian Sage	1 gal.
	RFG	Rudbeckia fulgida 'Goldstrum'	Black-eyed Susan	1 gal.
	SAJ	Sedum 'Autumn Joy'	Sedum	1 gal.
	SAL	Salvia sylvestris 'East Friesland'	Salvia	1 gal.
Ornamental Grasses				
	CAC	Calamagrostis acutiflora 'KF'	Feather Reed Grass	5 gal.
	MSG	Miscanthus sinensis 'Gracillimus'	Maiden Grass	5 gal.
	MSZ	Miscanthus sinensis 'Zebra'	Maiden Grass	5 gal.
	PVI	Panicum virgatum	Red Switchgrass	1 gal.
	PAL	Pennisetum alopecuroides 'Hamel'	Dwarf Fountain Grass	1 gal.
Groundcover				
	EFC	Euonymus fortunei 'Coloratus'	Purple Leaf Wintercreeper	Flats
	PAC	Pachysandra terminalis	Japanese Spurge	Flats
	SED	Sedum kamtschaticum	Yellow Stonewort	Flats
	VM	Vinca minor	Periwinkle	Flats
	Sod	Turf (Sod)		

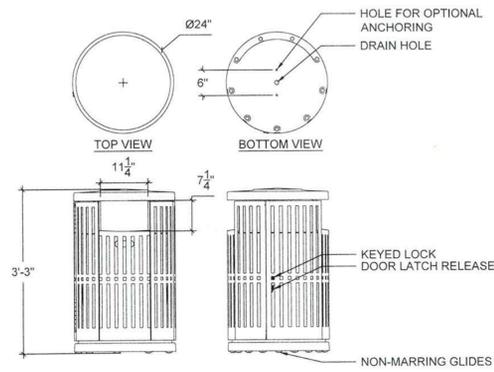
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Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer



LANDSCAPE PLANS
Scale: 1"=20'
October 21, 2016

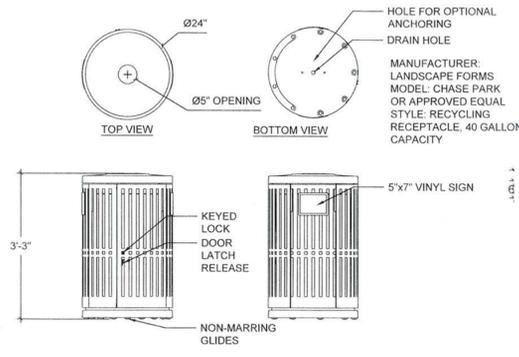
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MANUFACTURER: LANDSCAPE FORMS
 MODEL: CHASE PARK
 OR APPROVED EQUAL
 STYLE: SIDE OPENING, 36 GALLON
 CAPACITY

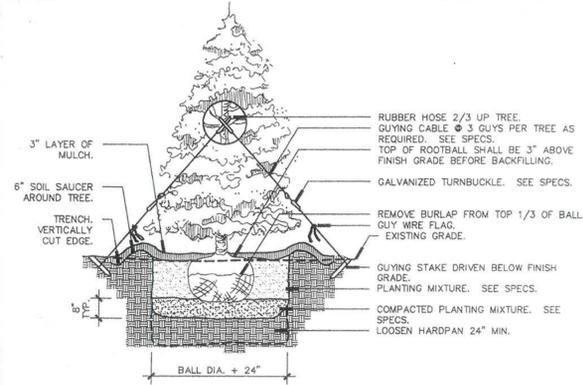


Trash Receptacle Detail

MANUFACTURER: LANDSCAPE FORMS
 MODEL: CHASE PARK
 OR APPROVED EQUAL
 STYLE: RECYCLING
 RECEPTACLE, 40 GALLON
 CAPACITY



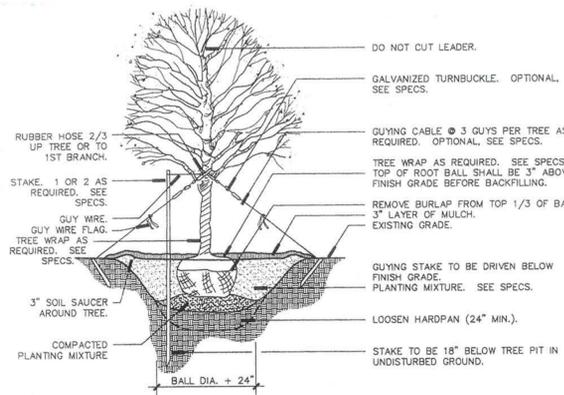
Recycling Receptacle Detail



Evergreen Tree Detail



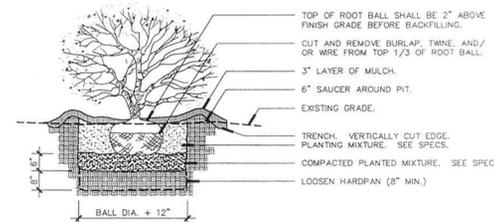
Trash & Recycling Receptacles



Deciduous Tree Detail

Planting Notes

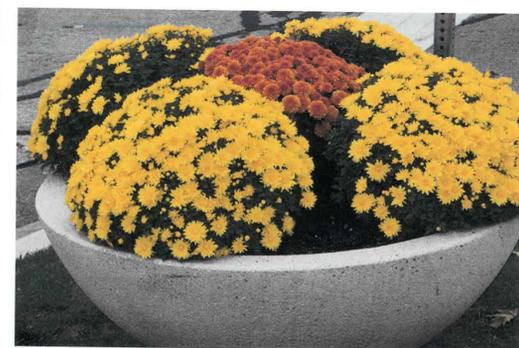
- The Contractor shall verify all existing conditions and dimensions in the field prior to bidding and report any discrepancies to the architect/owner.
- All planting techniques and methods shall be consistent with the latest edition of "Horticulture Standards of Nurseries, Inc.," and as detailed on this drawing. Discrepancies shall be reported immediately to the Landscape Architect.
- All plant material shall be subject to inspection and approval. The Landscape Architect reserves the right to reject any plants, which fail to meet the inspection. All rejected material shall be removed and replaced by the contractor.
- Substitution from the specified list will be accepted only when satisfactory evidence in writing is submitted to the Landscape Architect, showing that the plant specified is not available. Requests for approval of substitute plant material. Only those substitutions of at least equivalent size and having essential characteristics similar to the originally specified material will be approved. Acceptance or rejection of substituted plant materials will be issued in writing by the Landscape Architect.
- Guy and stake deciduous/evergreen trees if conditions warrant, or as requested by the Landscape Architect. (Refer to planting details specifications)
- All shrub, perennial, and groundcover beds shall be mulched with a minimum of 3" of shredded hardwood bark.
- All plant material shall be guaranteed for one year.
- The contractor shall be entirely responsible for all damages to water pipes, drains, sewers, streets, pavements, sidewalks, or other structures of any kind encountered during the progress of work, and shall be liable for damages to public or private property resulting there from.
- The contractor shall be responsible for notifying all public and private utility companies 48 hours prior to any excavation, 1-800-892-1234. Cost of replacement and repair of existing utilities damaged as a result of contractor's operations shall be the contractor's responsibility.
- All Shade/Evergreen Trees shall be planted a minimum of 6' from all stormwater manholes, stormwater lines, tiles, and underdrains.
- All detention basins are dry basin ponds and are designed to drain down within 72 hours after storm event. All wet mesic prairie plantings, as shown on engineering plans, are designed to be inundated with water during a storm event.



Shrub Detail



Precast Planter Detail



Planter w/ Annual Plantings

Suggested Plant Material List
 1 North Washington Place

Symbol	Key	Botanical Name	Common Name	Size
Canopy Tree				
+	AR	Acer rubrum 'Armstrong'	Red Maple	3" cal./BB
	AS	Acer x freemanii	Marmo Maple	3" cal./BB
	AP	Acer platanoides 'Columnare'	Columnar Norway Maple	3" cal./BB
	CO	Celtis occidentalis 'Chicagoland'	Chicagoland Hackberry	3" cal./BB
	GT	Gleditsia tricanthos 'Inermis'	Skyline Honeylocust	3" cal./BB
	PC	Pyrus calleryana 'Chanticleer'	Chanticleer Pear	3" cal./BB
	QB	Quercus bicolor	Swamp White Oak	3" cal./BB
	QR	Quercus rubra	Red Oak	3" cal./BB
	SR	Syringa reticulata	Japanese Tree Lilac	6' ht./BB
	TC	Tilia cordata	Greenspire Littleleaf Linden	3" cal./BB
UJ	Ulmus 'Morton Glossy'	Triumph Elm	3" cal./BB	
Evergreen Tree				
	PM	Pseudotsuga menziesii	Douglas Fir	8' ht./BB
	PN	Pinus nigra	Austrian Pine	8' ht./BB
Understory Tree				
+	AC	Amelanchier canadensis	Shadblow Serviceberry	8' ht./BB
	CC	Cercis canadensis	Eastern Redbud	8' ht./BB
	CA	Cornus alternifolia	Pagoda Dogwood	6' ht./BB
	ML	Magnolia x loebneri 'Merrill'	Merrill Loebner Magnolia	6' ht./BB
	MA	Malus species	Crabapple	8' ht./BB
SR	Syringa reticulata	Japanese Tree Lilac	8' ht./BB	
Deciduous / Evergreen Shrubs				
+	AM	Aronia melanocarpa 'Eastland'	Black Chokeberry	24" ht./BB
	BC	Buxus 'Wintergreen'	Wintergreen or Green Velvet Boxwood	24" ht./BB
	BP	Buxus Pyramidal	Pyramidal Boxwood	36" ht./BB
	CS	Cornus sericea 'Isanti'	Redtwig Dogwood	24" ht./BB
	HV	Hamamelis vernalis	Witchhazel	36" ht./BB
	HL	Hydrangea paniculata 'Jane'	Little Lime Hydrangea	24" ht./BB
	JC	Juniperus chinensis 'Kailey'	Compact Pfitzer Juniper	18" ht./BB
	KJ	Kerria japonica	Japanese Kerria	24" ht./BB
	RHO	Rhododendron PJM	PJM Rhododendron	24" ht./BB
	RR	Rosa x 'Nearly Wild'	Nearly Wild Shrub Rose	24" ht./BB
	RA	Ribes alpinum 'Green Mound'	GM Alpine Currant	24" ht./BB
	RR	Rugosa Rosa 'Frau Dagmar Hastrup'	Shrub Rose	24" ht./BB
	RG	Rhus glabra 'Grow-Low'	Grow-Low Sumac	5 gal.
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+	EPB	Echinacea purpurea 'Bravado'	Purple Coneflower	1 gal.
	HSW	Hemerocallis 'Summer Wine'	Daylily	1 gal.
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	PF	Perovskia Filigran	Russian Sage	1 gal.
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	SAJ	Sedum 'Autumn Joy'	Sedum	1 gal.
	SAL	Salvia sylvestris 'East Friesland'	Salvia	1 gal.
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+	CAC	Calamagrostis acutiflora 'KF'	Feather Reed Grass	5 gal.
	MSG	Miscanthus sinensis 'Gracillimus'	Maiden Grass	5 gal.
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Groundcover				
+	EFC	Euonymus fortunei 'Coloratus'	Purple Leaf Wintercreeper	Flats
	PAC	Pachysandra terminalis	Japanese Spurge	Flats
	SED	Sedum kamschaticum	Yellow Stonecrop	Flats
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Sod	Turf (Sod)			

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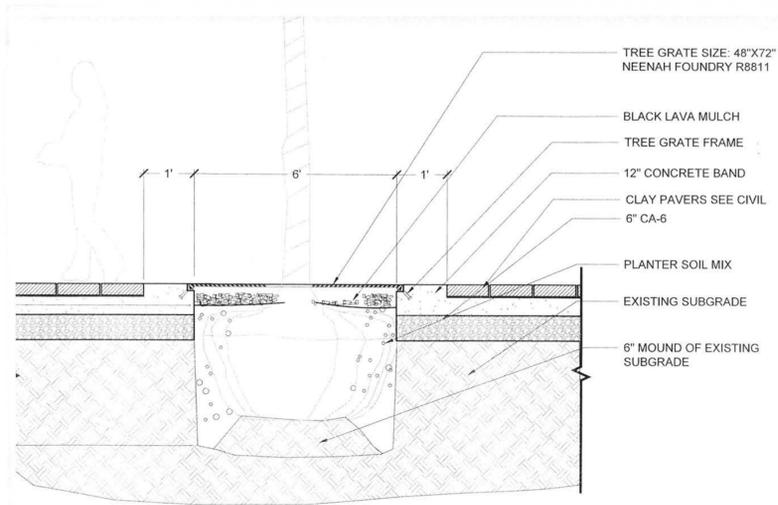


LANDSCAPE DETAILS
 October 20, 2016

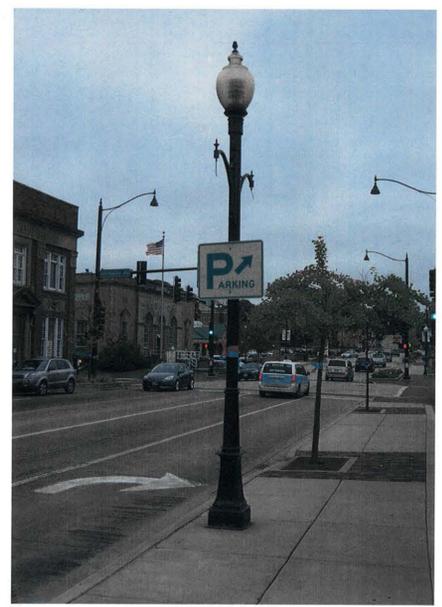
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Street Tree w/ Iron Grate & Brick Treatment



Tree Grate Detail



Pedestrian Street Light



Street Light Brick Treatment



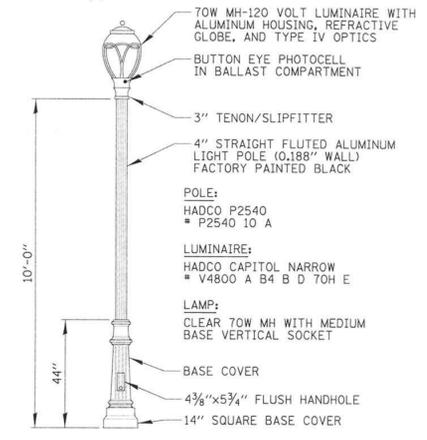
Street Tree w/ Iron Grate & Brick Treatment



Bench Detail

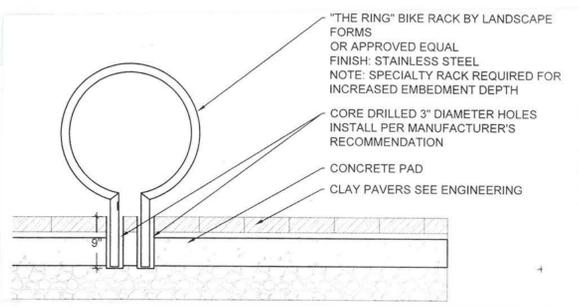


Street Light

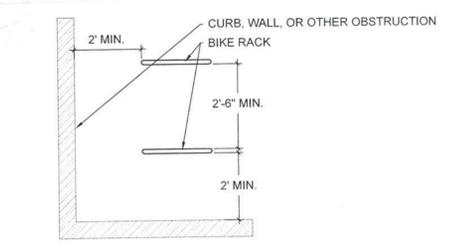


NOTES:
1. ALL ITEMS DESCRIBED ABOVE SHALL BE INCLUDED IN THE PAY ITEM "PARK LIGHT POLE".

Pedestrian Street Light Detail



Bike Rack Section



Bike Rack Plan View



Bike Rack



Stamped Asphalt Cross-Walk & Brick Handicapped Ramp

ONE NORTH WASHINGTON
Batavia, Illinois
ONE NORTH WASHINGTON, LLC, Developer



LANDSCAPE DETAILS
October 20, 2016

L3



Downtown Parking Demand vs. Supply Analysis Washington / Wilson Redevelopment Site

Final Report

December 1, 2016

Rich & Associates, Inc.

Parking Consultants • Architects • Planners



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www.richassoc.com

Parking Consultants Architects Engineers Planners

December 1, 2016

Mr. Scott Buening
Community Development Director
City of Batavia
100 N. Island Avenue
Batavia, IL. 60510-1930

Dear Scott:

We respectfully submit our Final Report for the analysis of the parking needs and supply in the vicinity of the planned redevelopment site in downtown Batavia. This analysis reflects the most up-to-date changes consistent with information submitted by the developer regarding the number of one and two- bedroom apartment units, commercial square footage and parking garage size recently provided to us. This analysis contains our assessment of the calculated existing and future parking needs for the affected block and surrounding blocks based on City provided data for existing and projected future parking supply as well as existing and future square footage allocated to the various land uses. As requested, we have assumed that approximately 90 percent of the available land use on each block would be occupied both now and when projecting future conditions.

We have calculated and demonstrated the parking demand versus supply for each block and for the study area in total first by application of the City's existing zoning code requirements to the adjusted square footage values on each block. Because of the limitations inherent in Batavia's zoning ordinance and many other ordinances which tend to overstate the number of parking spaces required, we have also calculated the supply versus demand by applying our shared-use model to reflect what we believe are conditions more likely experienced by parking patrons. The shared use model applies either ITE anticipated percentages of use by time of day or estimated values (such as for residents) based on expectations for anticipated conditions. Although none of the calculations have been validated by any observations of conditions in downtown Batavia, we believe that the estimations demonstrated by the Shared Use analysis reasonably demonstrate existing and likely future conditions based on the provided data.

We appreciate this opportunity to have assisted the City of Batavia in this analysis. Should you have any questions regarding this assessment, please feel free to contact us at your convenience.

Sincerely,
Rich & Associates, Inc.

A handwritten signature in cursive script that reads "David W Burr".

David W. Burr
Senior Project Manager, Planning

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INTRODUCTION

Rich & Associates have been asked to assess the parking demand and supply surrounding a planned development site in Batavia, Illinois. In order to conduct this analysis, Rich requested data on existing land uses and on and off-street parking supply within a radius of approximate two blocks (600 feet) of the planned development site. Using the provided information, Rich has quantified the parking supply by block and compared this against the parking demand calculated using the City of Batavia existing zoning ordinance and adjusting the zoning code requirements by applying the firm's shared-use model to reflect more likely conditions.

RESULTS

The data provided by the City showed that there are 19 blocks within the defined radius of the development site including the development block. These blocks are shown by the map on **page 5**. The 19 blocks have a total current parking supply of 1,056± spaces. This is split nearly 50/50 between 550± publicly available spaces and 506± privately controlled spaces. The public parking supply is further divided into 252± on-street parking spaces and 298± off-street spaces. The land-use data provided by the City shows approximately 337,000± square feet of building space within the affected blocks including some square footage associated with the planned redevelopment site that will be removed and replaced once the redevelopment project begins. Provided data also demonstrated that there are approximately 26 individual residential apartment units within the defined area. Some are upstairs of commercial buildings with several others being part of defined multi-family residential buildings.

The parking demand was calculated for the 19 blocks in two alternative ways for both the current and projected future conditions. One method was to simply apply the City's requirements per the zoning ordinance to the applicable square footage by land use. The alternative method used a shared-use analysis as described below.

In analyzing the parking surplus or deficit there are also two methods to consider. The first method is to demonstrate the surplus or deficit on a "gross" basis. In this method, the total parking demand is simply subtracted from the total parking supply on each block resulting in a surplus or deficit calculation for the block. One drawback with this method is that it assumes that all parking on the block is available to anyone whether it is publicly or privately controlled.

In a more "real-world" assessment likely consistent with conditions patrons experience, Rich calculates the net surplus or deficit on each block and for the study area in total. This is accomplished by applying the demand on each block first to the private supply on each block. If there are surplus private spaces, then these are "thrown out" of the surplus / deficit calculation following the assumption that private business owners restrict access to their parking lots to their staff and customers and therefore these "extra" spaces are not available to the public (such as visitors to a business on an adjacent block). Given this condition, the surplus would just be the public supply on each block. If the parking demand exceeds the private supply on each block, then the public spaces are included to determine a surplus or deficit for the block. This is the "net surplus or deficit".

Existing Conditions Summary

- 1) Using the various land uses as provided by the City (retail, office, restaurant, etc.) the requirements per the City's zoning ordinance was applied. Using zoning requirements, the calculated parking demand for the 19 blocks was 1,701± spaces or a gross deficit of 645± spaces when compared against the 1,056-space supply. On the "net" basis (excluding surplus private spaces), the net deficit increases to 672± spaces.
- 2) Alternatively, Rich & Associates calculated the parking demand using the firm's *Shared Use Model*. This tool is based on *ITE'S¹ Shared-Use Manual* and adjust the demand following the assumption that different types of land uses peak at different times during the day, which the City's zoning code does not consider. Using the zoning code requirements but which are adjusted by percentage of use during the day as applied by the shared use application, the calculated demand at the peak hour is 1,243± spaces for a deficit of 187± spaces compared to the 1,056-space parking supply on the gross basis, increasing to as many as 276± spaces when calculated assuming the net basis of parking surplus or deficit.

Future Conditions Summary

Rich & Associate have also calculated the parking demand and compared it against the parking supply for the 19 blocks after factoring the changes resulting from the planned redevelopment of several parcels associated with block 276 (as shown on **Map 1**). The redevelopment removes a small insurance office and dental office as well as a former Church and associated buildings. The development removes 129± existing public spaces and replaces them with a 348± space two-level public parking structure in addition to developing 13,850 square feet of street level commercial space and 92 one-bedroom and 93 two-bedroom apartments.

- 1) The calculated demand for the defined study area (using the requirements as specified in the City's zoning code) as a result of the new development increases to 1,979± spaces from 1,701± spaces (+278) in total for the 19 affected blocks. The supply also increases from 1,056 spaces to 1,269 spaces (+213) as a result of developing the new parking garage reduced by the existing spaces lost. On the "gross surplus / deficit" basis, the deficit would be 710± spaces. This is an increase in the deficit of 65± spaces compared to the "gross" deficit calculated using the zoning ordinance for the existing conditions. Using the more appropriate "net surplus / deficit" methodology (excluding surplus private spaces), the deficit for all 19 blocks increases to 737± spaces.
- 2) As was done for the existing condition, Rich calculated the needs for the future applying the shared-use percentages and the parking generation rates for shared use. In the future, the supply increases to 1,269± spaces (+213 spaces compared to existing conditions) while the calculated demand increased to 1,426± spaces (+183 spaces compared to existing conditions). On the gross surplus / deficit basis, the deficit for the 19 blocks **decreased** to 157± spaces compared to the existing conditions (from 187± spaces). Excluding surplus private spaces (Net basis), the deficit is calculated as 245± spaces (compared to 276± for the existing condition).

¹ ITE – Institute of Transportation Engineers

Introduction

Using information provided by the City of Batavia regarding existing land uses and public and private parking supply, Rich & Associates have quantified the parking needs and compared them against the existing and projected parking supply for the existing and future conditions upon the completion of the planned development project on block 276. This analysis has been completed to demonstrate for the City the impact on the nearby blocks and the potential that the added public parking garage can satisfy nearby parking deficits.

The Project

The analysis that Rich & Associates is being asked to conduct for the City of Batavia is to assess the potential impact on the downtown as the result of the redevelopment occurring on one block (Block 276) within the downtown. The planned redevelopment project, when it proceeds, is anticipated to replace a vacated church and its associated buildings plus a small dental office and insurance office. The planned development will also replace 129± existing publicly available spaces with a planned 348± space public parking garage. New demand created on this site will be from 92 planned one-bedroom and 93 two-bedroom apartments plus nearly 14,000+ square feet of new street level commercial space. For this analysis, Rich asked for the public and private supply, both on-street and off-street, to be quantified by block and provided as well as the various existing and proposed land-uses on surrounding blocks. The defined study area extends approximately two blocks (600 feet) from the boundaries of the new development.

Methodology

The various types of land use (retail, office, restaurant, etc.) were allocated to each block as was the public and private on and off-street parking supply. With the amount of square footage attributable to each type of land use quantified, Rich applied alternative parking generation rates (spaces required per 1,000 sf of land use) to derive the “calculated” parking demand. In both the current and future cases, the square footage values provided by the City were factored by 90% to reflect the likely building occupancy and understanding that rarely in downtowns would all available commercial or residential space be occupied. Initially, the parking generation rates are determined by the City’s existing zoning ordinance. This parking demand was then compared against the available parking supply on each block to derive both a “gross surplus” and a “net surplus or deficit” for each block and for the 19 blocks in total.

Zoning Code Analysis

The gross surplus or deficit for each block simply subtracts the total calculated demand from the total supply on each block and for the combined study area. The “net surplus or deficit” reflects more likely real world conditions whereby extra spaces owned by a private business are not made available to the general public. The calculation therefore subtracts the demand from the private supply on each block first. If there are “extra” private spaces, they are excluded from the calculation since they are typically not available to others. The surplus spaces on that block would then only be the publicly designated spaces. The gross and net surplus or deficit is shown for both the existing and future conditions and

reflecting the parking demand calculated strictly through application of the City’s zoning ordinance as well as assuming a “shared-use” approach

Shared-Use Analysis

Rather than just use the zoning ordinance, the second method considered a “shared-use” approach (which the zoning code currently does not consider). The shared-use approach provides for the fact that different uses (such as office and restaurants) have peak needs which occur at different times of the day and therefore, can “share” existing parking spaces. This is due to the fact that at the time an alternative use “peaks”, the demand for another use is likely to be on the decline. This condition is demonstrated by **Figure 1** below. As the office parking needs decline from their late morning/early afternoon peak time, restaurant use (Fine / Casual Dining) doesn’t reach their peak until the evening hours and therefore many of the same parking spaces previously occupied by office workers *could* be used by restaurant patrons. It should be noted that the limited resident parking (26 apartments in the existing conditions) does not show well at the scale for the graph. However, the “daytime demand” for resident parking is less than half of the expected night-time (late evening) resident peak for the existing conditions.

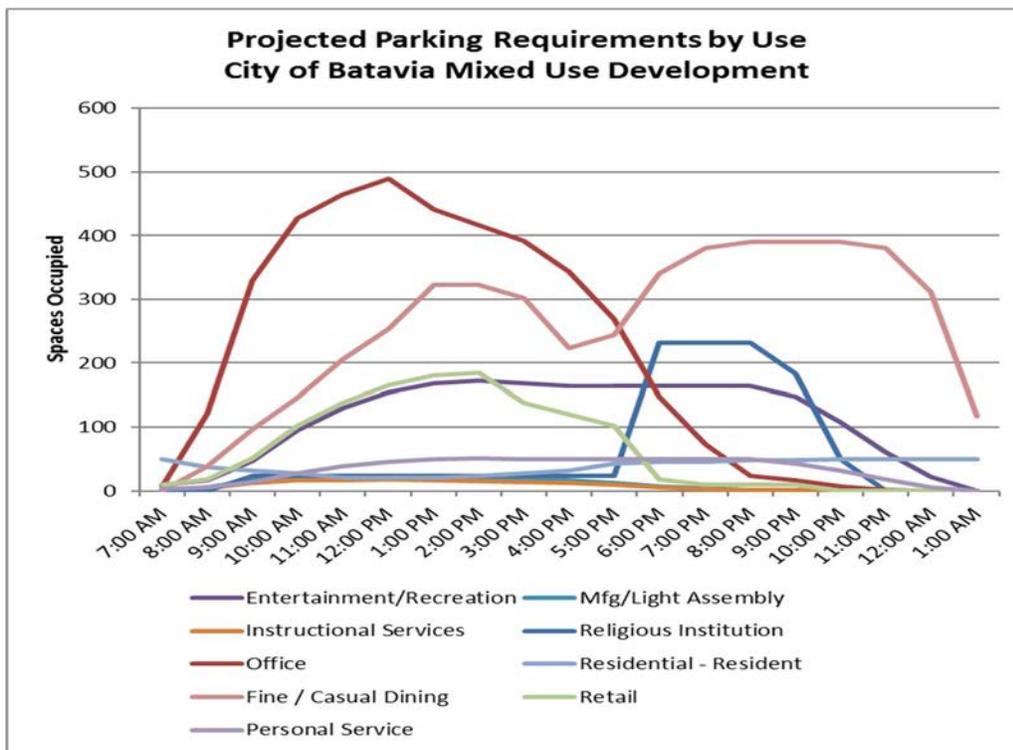
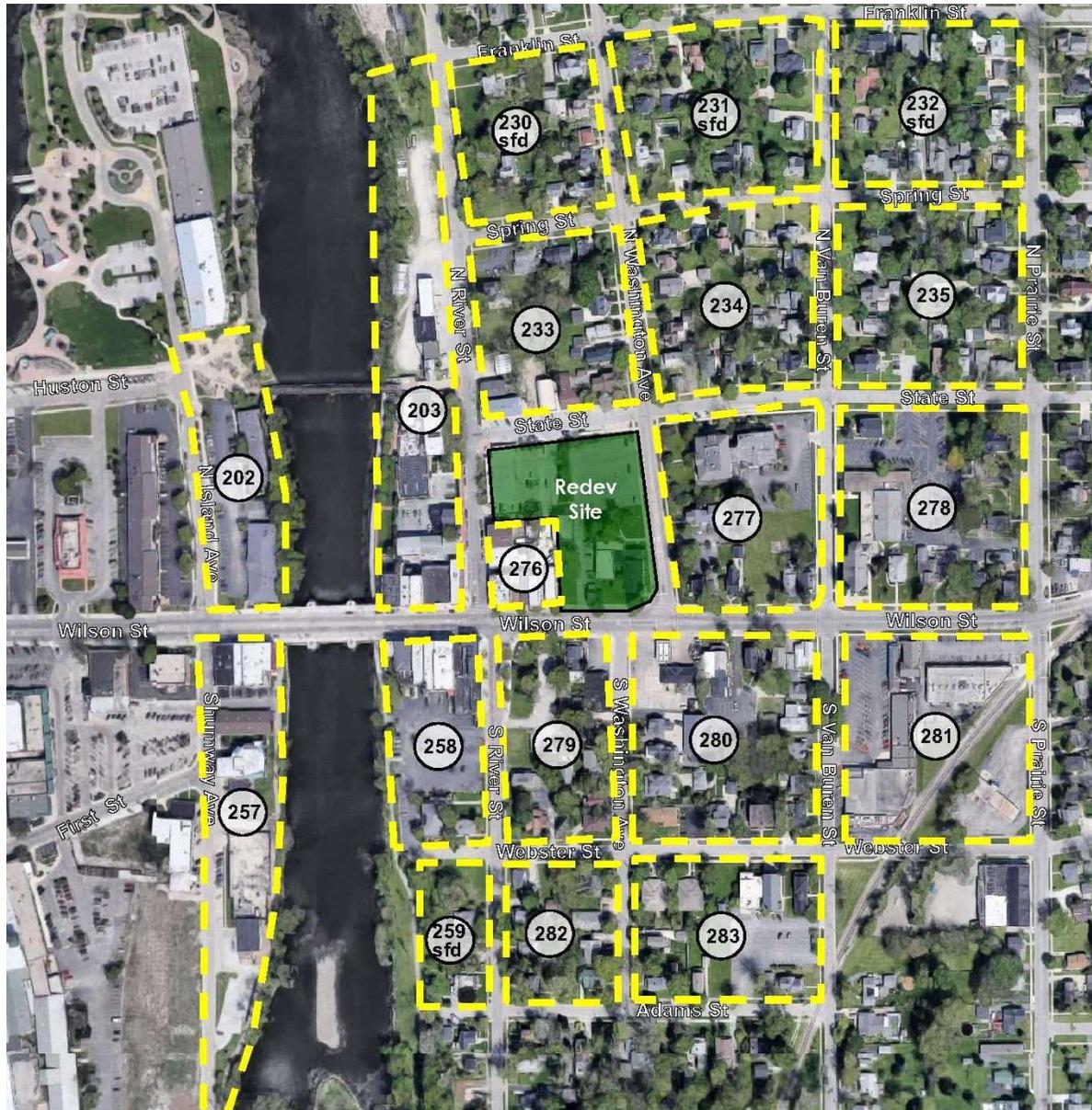


Figure 1 – Individual Land Uses Parking Needs throughout the day (existing conditions)

Study Area

As noted above, the defined study encompasses 19 blocks including and surrounding the planned redevelopment block. The 19 blocks encompass those within approximately 600 feet of the project boundaries. The included blocks and block numbering are shown by **Map 1** on the following page.



CITY OF BATAVIA
ILLINOIS

PARKING ANALYSIS
REDEVELOPMENT SITE

Parking Consultants • Planners
 Architects • Engineers
 26877 NW Hwy Suite 208
 Southfield, MI 48033
 Tel: 248-353-5080
 www.richassoc.com

LEGEND:

- # Block Numbers
- Study Area
- Redevelopment Site

Sheet Title:

STUDY AREA

File No.	1709	
Scale		
Date	08/19/16	
Checked by	DWB	
MAP Number:	1	Page: Number

Existing Conditions

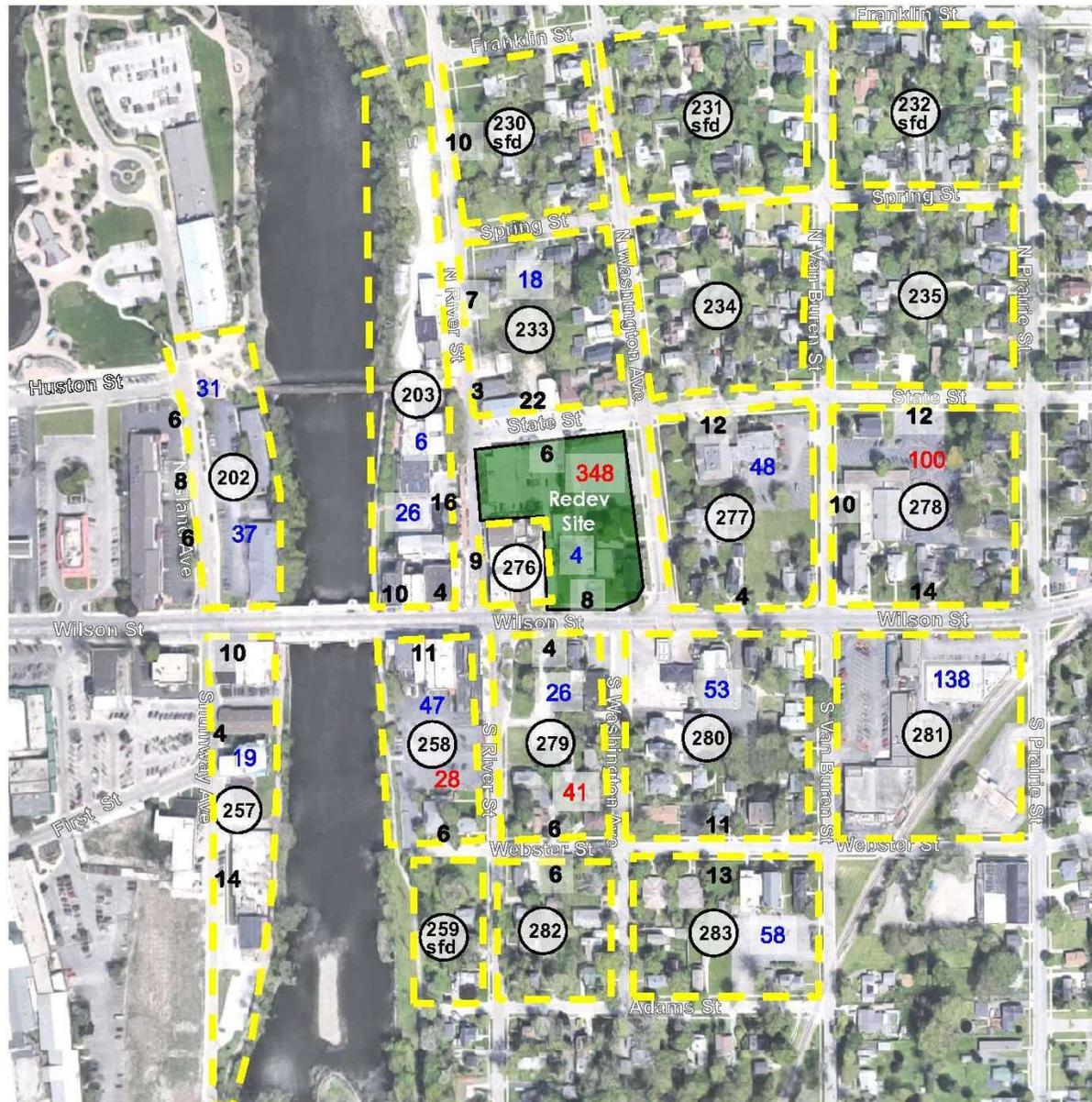
Parking Supply

The existing parking supply for the 19 blocks included in the analysis is demonstrated by **Table 1** below and by **Map 2** on the following page. This shows that there 1,056 total spaces delineated as 550 publicly available on-street and off-street spaces and 506 privately controlled off-street spaces on the specified blocks. On this basis, the City currently provides 52 percent of the parking supply within the defined study area. This equals Rich & Associates recommended best practice that a municipality provide or control at least 50 percent of the parking supply in order to foster a more walkable community and better manage parking rates.

Table 1 – Existing Parking Supply

Block #	Public Parking			Private Parking	Total		
	On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street	Combined
202	20	0	20	68	20	68	88
203	30	0	30	21	30	21	51
230	10	0	10	0	10	0	10
231	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0
233	32	0	32	18	32	18	50
234	0	0	0	0	0	0	0
235	0	0	0	0	0	0	0
257	28	0	28	19	28	19	47
258	17	28	45	47	17	75	92
259	0	0	0	0	0	0	0
276	23	129	152	10	23	139	162
277	16	0	16	48	16	48	64
278	36	100	136	0	36	100	136
279	10	41	51	26	10	67	77
280	11	0	11	53	11	53	64
281	0	0	0	138	0	138	138
282	6	0	6	0	6	0	6
283	13	0	13	58	13	58	71
Total	252	298	550	506	252	804	1,056

Source: City of Batavia



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LEGEND:

- # Block Numbers
- Study Area
- Redevelopment Site
- # On-Street Supply
- # Off-Street Public
- # Off-Street Private

Sheet Title:

PARKING SUPPLY

File No.	1709	
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Parking Demand

In order to quantify the parking demand for the various affected blocks, Rich asked for and was provided with the amount of square footage (or apartment units) attributable to each type of land use by block for both the current and projected future conditions. The information reflecting existing conditions is demonstrated by **Table 2** and shows that within the 19 blocks there is just under 340,000 square feet of building area within the defined study boundaries. The largest component is the nearly 136,000 square feet of existing office space followed by 64,000 square feet of retail space and 43,000 square feet of restaurant space.

Table 2 – Existing Land Use Allocation

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Vacant	Instructional Service (Specialized)	Government Office	Religious Institution	Total
202	5,400	2,700	9,100									17,200
203	6,464	16,845	12,362	12,352	5	7,430						55,453
230												0
231												0
232												0
233		4,381	4,540	1,156	2		2,220	1,741				14,038
234												0
235												0
257	4,360	1,700	32,872									38,932
258	11,700	1,700	23,890		4							37,290
259												0
276		6,297	6,919		9	3,924	1,323		3,956		12,059	34,478
277			30,901		2							30,901
278		5,194	2,500				25,226			7,328		40,248
279	3,991		1,800		4							5,791
280			7,247									7,247
281	32,176	4,500										36,676
282												0
283			3,671								15,000	18,671
Total	64,091	43,317	135,802	13,508	26	11,354	28,769	1,741	3,956	7,328	27,059	336,925

Source: City of Batavia

Adjusted Square Footage (Occupied)

In an attempt to try to demonstrate conditions as accurately as possible and reflect the fact that not all the available building space in Batavia is currently (or likely) to be occupied, it has been agreed with the City that 90 percent of the square footage specified above is likely a reasonable occupancy. Therefore, **Table 3** on the following page reflects this adjustment and is the square footage values used in the current demand calculations.

Table 3 – Adjusted Occupancy Land Use (90%)

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Instructional Service (Specialized)	Government Office	Religious Institution	Total	Vacant	Total (90% Occupancy)
202	4,860	2,430	8,190	0	0	0	0	0	0	0	17,200	1,720	15,480
203	5,818	15,161	11,126	11,117	5	6,687	0	0	0	0	55,453	5,545	49,908
230	0	0	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0	0	0	0	0	0	0
233	0	3,943	4,086	1,040	2	0	1,998	0	0	0	14,038	2,971	11,067
234	0	0	0	0	0	0	0	0	0	0	0	0	0
235	0	0	0	0	0	0	0	0	0	0	0	0	0
257	3,924	1,530	29,585	0	0	0	0	0	0	0	38,932	3,893	35,039
258	10,530	1,530	21,501	0	4	0	0	0	0	0	37,290	3,729	33,561
259	0	0	0	0	0	0	0	0	0	0	0	0	0
276	0	5,667	6,227	0	9	3,532	1,191	3,560	0	10,853	34,478	3,448	31,030
277	0	0	27,811	0	2	0	0	0	0	0	30,901	3,090	27,811
278	0	4,675	2,250	0	0	0	22,703	0	6,595	0	40,248	4,025	36,223
279	3,592	0	1,620	0	4	0	0	0	0	0	5,791	579	5,212
280	0	0	6,522	0	0	0	0	0	0	0	7,247	725	6,522
281	28,958	4,050	0	0	0	0	0	0	0	0	36,676	3,668	33,008
282	0	0	0	0	0	0	0	0	0	0	0	0	0
283	0	0	3,304	0	0	0	0	0	0	13,500	18,671	1,867	16,804
Total	57,682	38,985	122,222	12,157	26	10,219	25,892	3,560	6,595	24,353	336,925	35,259	301,666

Table 3 shows, for example, that of the 64,091 square feet allocated among retail uses (as shown in Table 2) that 57,682 sf are “occupied” assuming the 90 percent occupancy factor. The total assumed vacant sf within the defined study area is just over 35,000 sf.

Zoning Code Requirements

The initial assessment of the parking needs for the blocks surrounding the proposed development site is based on the application of the requirements per the City of Batavia zoning ordinance which defines the parking spaces required per land use type. The provided land uses and requirements by land use type as provided in the City’s zoning ordinance is shown by **Table 4** on the following page.

Table 4 – Land Use and Zoning Code Requirements* (City of Batavia)

Land Use Classification	Code Requirement <i>Gross Floor Area</i>	Equivalent Use
Retail Sales, General	1/250 sf	= 4 spaces / 1,000 sf
Restaurants (Full-Service)	1 / 100 sf	= 10 spaces /1,000 sf
Offices, General	1/250 sf	= 4 space / 1,000 sf
Manufacturing and Assembly	1 /500 sf	= 2 spaces / 1,000 sf
Residential – Multi-Family	1.5 / 1 BR Unit 2.25 / 2+ BR Unit	1.5 spaces / Bedroom (Apt) 2.25 spaces 2 or more Bedrooms Average = 1.88 / Apt
Personal Service	1 /200 sf	= 5 spaces / 1,000 sf
Indoor Recreation	1 / 150 sf	= 6.67 spaces / 1,000 sf
Vacant	0	= 0.00 / 1,000
Instructional Services, Specialized	1 /200 sf	= 5 spaces / 1,000 sf
Government Offices and Facilities	1 /200 sf	= 5 spaces / 1,000 sf
Religious Assembly	1 / 100 sf	= 10 spaces /1,000 sf

* Taken from Table 4.204: Off-Street Parking Requirements

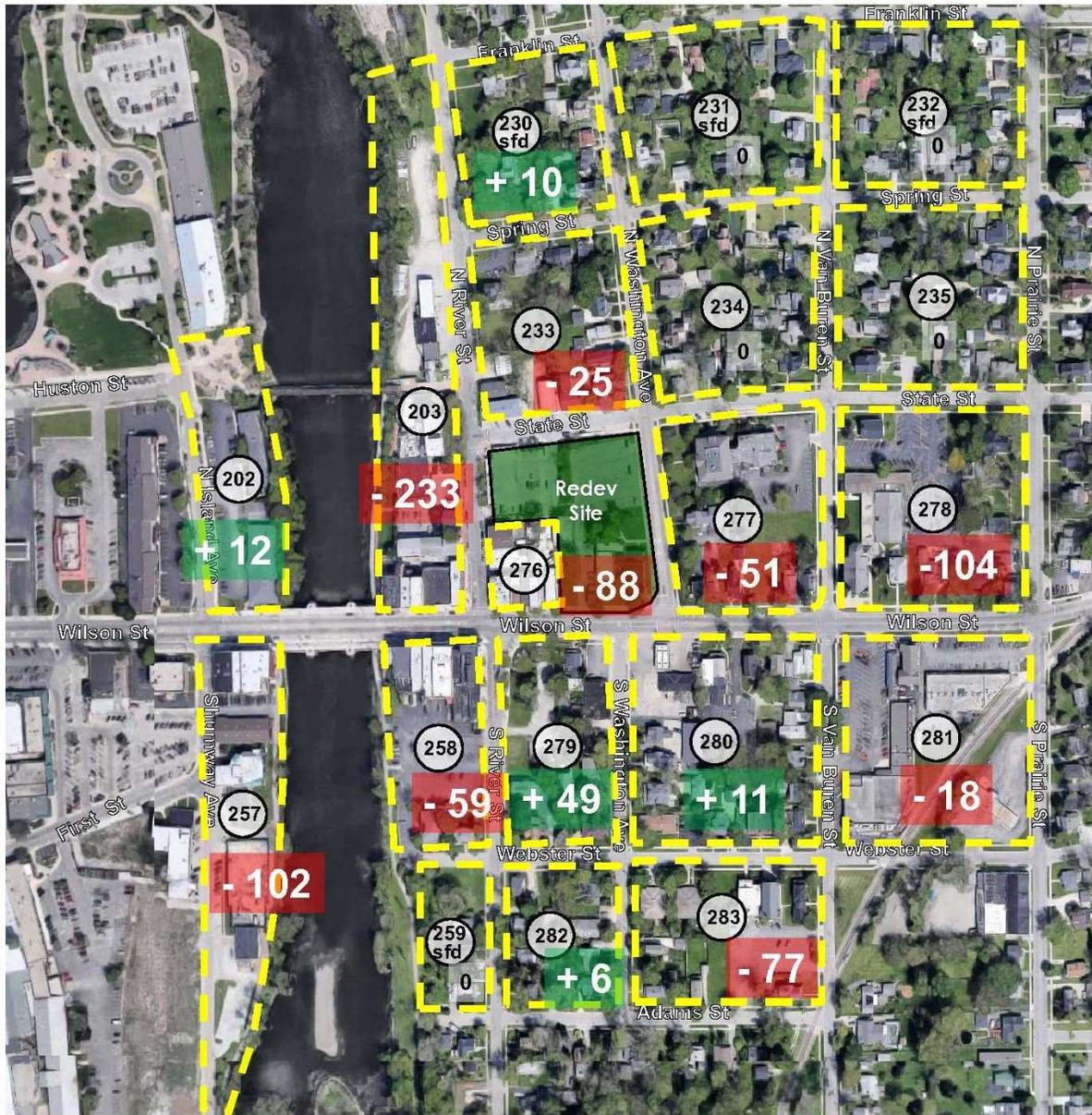
Existing Parking Demand – Zoning Code

The amount of parking required by block for the 19 included blocks is demonstrated by **Table 5** below. This table shows the calculated demand by land-use by block for the existing condition compared against the available parking supply on each block. The number of parking spaces is based on the zoning code requirements which generally specify the number of parking spaces required per 1,000 sf. On this basis, the total number of parking spaces needed is 1,701±. When compared against the 1,056 spaces available, there is a 645± space shortage on the “gross basis” which increases slightly to a 672± space deficit when calculated assuming the “net surplus / deficit” basis. The table also demonstrates that 9 of the 19 blocks have individual deficits (meaning the parking supply on that block is insufficient

to support the parking demand on that block). This information is also shown by **Map 3** on page 12. *It should be noted that the maps all show the “net surplus / deficit” basis.*

Table 5 – Parking Demand vs. Supply using Zoning Code Requirements (City of Batavia)

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Instructional Service (Specialized)	Government Office	Religious Institution	TOTAL Demand	Public Parking			Private Parking		Total			Gross Surplus / (Deficit)	Net Surplus / (Deficit)										
	4.00	10.00	4.00	2.00	1.88	5.00	6.67	5.00	5.00	10.00		On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street	Combined													
Parking Generation Rates (Zoning Ordinance)																															
Number of Parking Spaces Required at Parking Generation Rate																															
202	19	24	33	0	0	0	0	0	0	0	77	20	0	20	68	20	68	88	12	11.5											
203	23	152	45	22	9	33	0	0	0	0	284	30	0	30	21	30	21	51	(233)	(233)											
230	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10	10	10											
231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
233	0	39	16	2	4	0	13	0	0	0	75	32	0	32	18	32	18	50	(25)	(25)											
234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
257	16	15	118	0	0	0	0	0	0	0	149	28	0	28	19	28	19	47	(102)	(102)											
258	42	15	86	0	8	0	0	0	0	0	151	17	28	45	47	17	75	92	(59)	(59)											
259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
276	0	57	25	0	17	18	8	18	0	109	250	23	129	152	10	23	139	162	(88)	(88)											
277	0	0	111	0	4	0	0	0	0	0	115	16	0	16	48	16	48	64	(51)	(51)											
278	0	47	9	0	0	0	151	0	33	0	240	36	100	136	0	36	100	136	(104)	(104)											
279	14	0	6	0	8	0	0	0	0	0	28	10	41	51	26	10	67	77	49	49											
280	0	0	26	0	0	0	0	0	0	0	26	11	0	11	53	11	53	64	38	11											
281	116	41	0	0	0	0	0	0	0	0	156	0	0	0	138	0	138	138	(18)	(18)											
282	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	6	0	6	6	6											
283	0	0	13	0	0	0	0	0	0	135	148	13	0	13	58	13	58	71	(77)	(77)											
Total	231	390	489	24	49	51	173	18	33	244	1,701	252	298	550	506	252	804	1,056	(645)	(672)											



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LEGEND:

- # Block Numbers
- Study Area
- Redevelopment Site
- + Surplus
- Deficit

Sheet Title:

**NET SURPLUS/DEFICIT
CITY'S ZONING CODE**

File No.	1709	
Scale		
Date	08/19/16	
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MAP Number:	3	Page Number

Existing Parking Demand – Shared Use

One of the known deficiencies regarding parking requirements in the City of Batavia zoning ordinance (and many other cities) is the lack of recognition of shared use in the determination of required spaces. Therefore, in order to assess the *potential* reduced requirement, Rich applied their shared-use model which considers the time of day that various uses experience their peak needs and applied this information to the defined land uses as noted above. The shared-use needs are demonstrated by **Figure 2** which shows the accumulated needs for the existing condition (without the new development) using the shared use percentages. The 1,243± spaces calculated as required on this basis is 27 percent less than the needs based on the zoning requirements alone (1,701±).

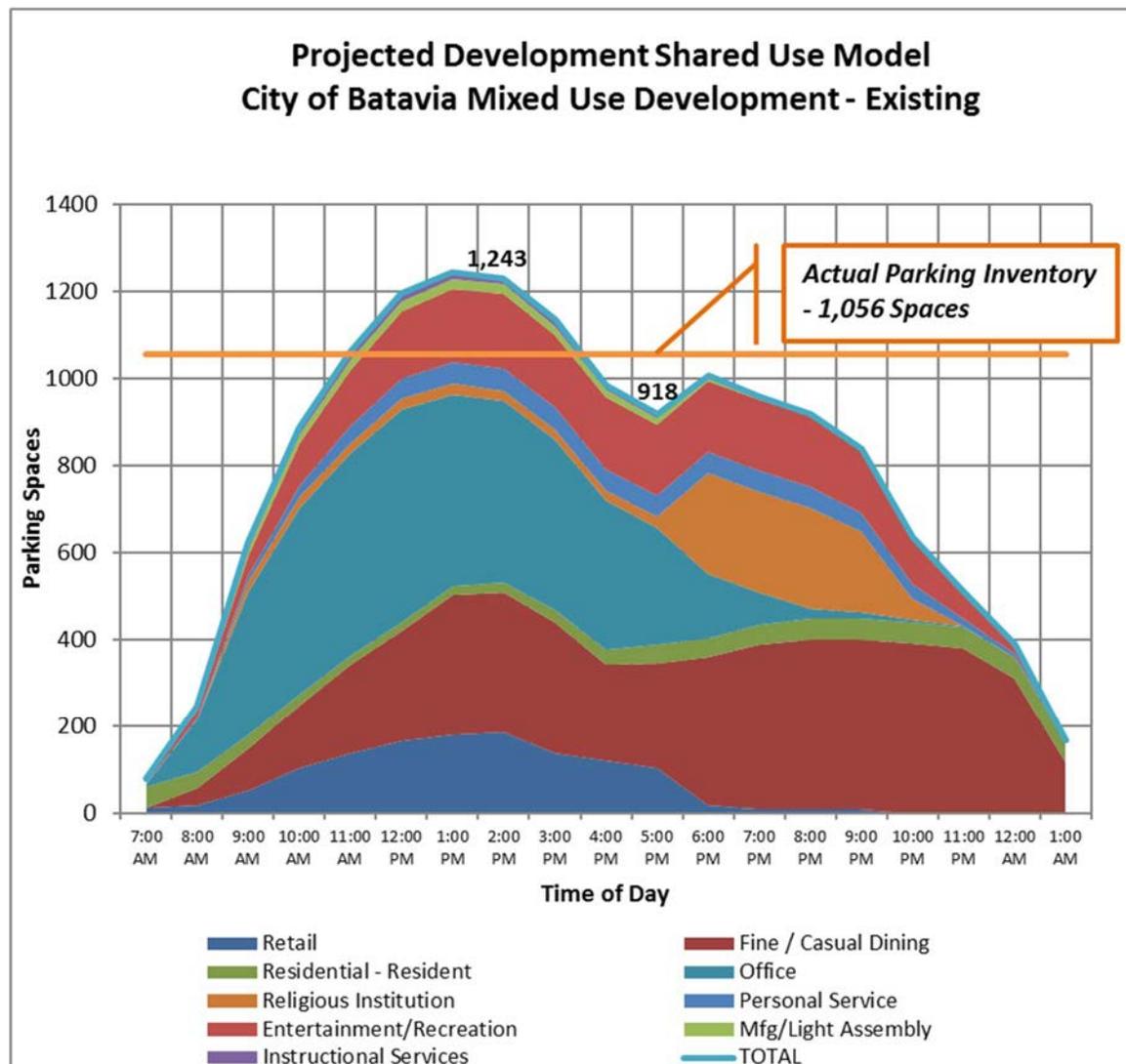


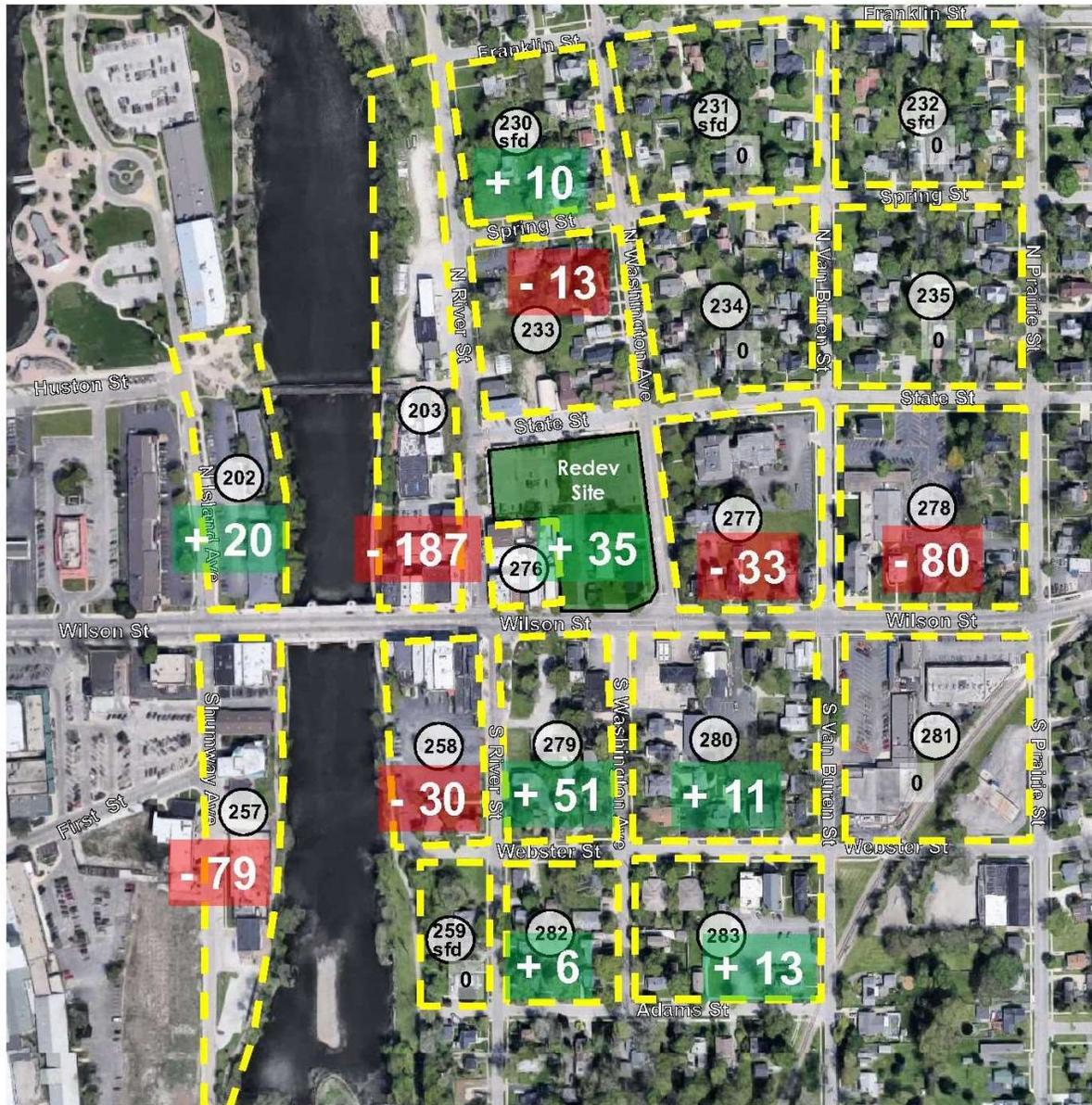
Figure 2 - Shared Use Parking Needs by Use

This information is detailed by **Table 6** below and shown on **Map 4** on page 15.

Table 6 – Parking Demand vs. Supply using Shared-Use Analysis

	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Instructional Service (Specialized)	Government Office	Religious Institution	TOTAL Demand	Public Parking			Private Parking			Gross Surplus / (Deficit)	Net Surplus / (Deficit)									
												On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street			Combined								
Parking Generation Rates (Shared Use)																												
	3.12	8.26	3.42	1.81	0.77	4.89	6.49	4.49	3.42	0.99																		
Block #	Parking Spaces Required at Parking Generation Rate																											
202	15	20	28	0	0	0	0	0	0	0	63	20	0	20	68	20	68	88	25	20								
203	18	125	38	20	4	33	0	0	0	0	238	30	0	30	21	30	21	51	(187)	(187)								
230	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10	10	10								
231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
233	0	33	14	2	2	0	13	0	0	0	63	32	0	32	18	32	18	50	(13)	(13)								
234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
257	12	13	101	0	0	0	0	0	0	0	126	28	0	28	19	28	19	47	(79)	(79)								
258	33	13	74	0	3	0	0	0	0	0	122	17	28	45	47	17	75	92	(30)	(30)								
259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
276	0	47	21	0	7	17	8	16	0	11	127	23	129	152	10	23	139	162	35	35								
277	0	0	95	0	2	0	0	0	0	0	97	16	0	16	48	16	48	64	(33)	(33)								
278	0	39	8	0	0	0	147	0	23	0	216	36	100	136	0	36	100	136	(80)	(80)								
279	11	0	6	0	3	0	0	0	0	0	20	10	41	51	26	10	67	77	57	51								
280	0	0	22	0	0	0	0	0	0	0	22	11	0	11	53	11	53	64	42	11								
281	90	33	0	0	0	0	0	0	0	0	124	0	0	0	138	0	138	138	14	0								
282	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	6	0	6	6	6								
283	0	0	11	0	0	0	0	0	0	13	25	13	0	13	58	13	58	71	46	13								
Total	180	322	418	22	20	50	168	16	23	24	1,243	252	298	550	506	252	804	1,056	(187)	(276)								

Table 6 demonstrates that the “gross” surplus would be reduced from the 645± spaces shown using the strict zoning code requirements (as shown in Table 5) to just 187± spaces assuming the more appropriate method of “shared-use”. The net surplus / deficit figure would be reduced from 672± spaces using strictly zoning requirements to the more realistic value of 276± spaces on the shared use basis. Again, the net deficit values reflect more likely real world conditions experienced by patrons who cannot park in surplus spaces in “privately owned” parking lots unless their destination is that business or entity.



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LEGEND:

- # Block Numbers
- Study Area
- Redevelopment Site
- +
 Surplus
-
 Deficit

Sheet Title:
**NET SURPLUS/DEFICIT
SHARED USE EXISTING**

File No.	1709
Scale	
Date	08/19/16
Checked by	DWB
MAP Number:	4

Page Number

Future Conditions

The primary focus of this analysis is to assess the potential impact on downtown parking as a result of the new development project planned on block 276. This project is expected to replace 129± existing publicly available surface spaces with a planned 348± space public parking garage that additionally is expected to support demand created by the development of 92 one-bedroom and 93 two-bedroom apartments and 13,850 sf of new street level commercial space. The development site is a former church building (and associated structures) as well as a small insurance office and dental office.

Future Parking Supply

The only changes evaluated are shown on block 276 which changes the public and private parking supply (increasing the public supply from 298± off-street spaces to 517± off-street spaces and reduces the private supply from 506± spaces to 500± spaces as a result of the new development. This information is detailed by **Table 7**. The total downtown parking supply (within the defined study area) increases from 1,056 spaces to 1,269 spaces.

Table 7 – Future Parking Supply

Block #	Public Parking			Private Parking	Total		
	On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street	Combined
202	20	0	20	68	20	68	88
203	30	0	30	21	30	21	51
230	10	0	10	0	10	0	10
231	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0
233	32	0	32	18	32	18	50
234	0	0	0	0	0	0	0
235	0	0	0	0	0	0	0
257	28	0	28	19	28	19	47
258	17	28	45	47	17	75	92
259	0	0	0	0	0	0	0
276	23	348	371	4	23	352	375
277	16	0	16	48	16	48	64
278	36	100	136	0	36	100	136
279	10	41	51	26	10	67	77
280	11	0	11	53	11	53	64
281	0	0	0	138	0	138	138
282	6	0	6	0	6	0	6
283	13	0	13	58	13	58	71
Total	252	517	769	500	252	1,017	1,269

Source: City of Batavia

Future Land Use

The land use projections for the future condition that are being evaluated are demonstrated by **Table 8** and **Table 9** below. Table 8 shows the square footage allocated to each use as provided by the City while Table 9 demonstrates the anticipated “occupied square footage” assuming an average of 90 percent of the defined study area square footage is occupied. As with the existing conditions, it is this adjusted square footage that is used in the parking demand calculations for both the zoning and shared-use analysis determinations. The demand therefore is based on the 300,818 “occupied” square feet within the defined blocks *plus* the 211 residential apartment units². ***The calculated parking demand on the development block uses all 13,850 gsf of commercial space proposed to be constructed as part of the new development and does not discount by the 90 percent occupancy factor.***

Table 8 – Future Land Use Allocation

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Vacant	Instructional Service (Specialized)	Government Office	Religious Institution	Total
202	5,400	2,700	9,100									17,200
203	6,464	16,845	12,362	12,352	5	7,430						55,453
230												0
231												0
232												0
233		4,381	4,540	1,156	2		2,220	1,741				14,038
234												0
235												0
257	4,360	1,700	32,872									38,932
258	11,700	1,700	23,890		4							37,290
259												0
276	13,850	6,297	4,003		194	3,924	1,323	2,494	2,600			34,491
277			30,901		2							30,901
278		5,194	2,500				25,226			7,328		40,248
279	3,991		1,800		4							5,791
280			7,247									7,247
281	32,176	4,500										36,676
282												0
283			3,671								15,000	18,671
Total	77,941	43,317	132,886	13,508	211	11,354	28,769	4,235	2,600	7,328	15,000	336,938

² The 185 apartment units proposed as part of the new development are a combination of 92 one-bedroom units and 93 two-bedroom units. At 1.5 spaces per 1-bedroom unit and 2.25 spaces per 2-bedroom unit the apartments require 348 spaces. This is an average of 1.88 spaces per apartment unit. This same factor was applied to the 17 existing apartments in the study area when calculating the requirements per the zoning ordinance.

Table 9 – Adjusted Occupancy Land Use (90% occupancy)

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Instructional Service (Specialized)	Government Office	Religious Institution	Total	Vacant	Total (90% Occupancy)
202	4,860	2,430	8,190	0		0	0	0	0	0	17,200	1,720	15,480
203	5,818	15,161	11,126	11,117	5	6,687	0	0	0	0	55,453	5,545	49,908
230	0	0	0	0		0	0	0	0	0	0	0	0
231	0	0	0	0		0	0	0	0	0	0	0	0
232	0	0	0	0		0	0	0	0	0	0	0	0
233	0	3,943	4,086	1,040	2	0	1,998	0	0	0	14,038	2,971	11,067
234	0	0	0	0		0	0	0	0	0	0	0	0
235	0	0	0	0		0	0	0	0	0	0	0	0
257	3,924	1,530	29,585	0		0	0	0	0	0	38,932	3,893	35,039
258	10,530	1,530	21,501	0	4	0	0	0	0	0	37,290	3,729	33,561
259	0	0	0	0		0	0	0	0	0	0	0	0
276	13,850	5,667	3,603	0	194	3,532	1,191	2,340	0	0	34,491	4,309	30,182
277	0	0	27,811	0	2	0	0	0	0	0	30,901	3,090	27,811
278	0	4,675	2,250	0		0	22,703	0	6,595	0	40,248	4,025	36,223
279	3,592	0	1,620	0	4	0	0	0	0	0	5,791	579	5,212
280	0	0	6,522	0		0	0	0	0	0	7,247	725	6,522
281	28,958	4,050	0	0		0	0	0	0	0	36,676	3,668	33,008
282	0	0	0	0		0	0	0	0	0	0	0	0
283	0	0	3,304	0		0	0	0	0	13,500	18,671	1,867	16,804
Total	71,532	38,985	119,597	12,157	211	10,219	25,892	2,340	6,595	13,500	336,938	36,120	300,818

Future Parking Demand

The planned development as noted above are the only changes anticipated and factored for the future conditions.

As was done to evaluate the existing conditions (in order to provide a baseline comparison), Rich & Associates have calculated the parking needs for the future conditions using the two alternative methods:

- Zoning Requirements (*per existing zoning ordinance*)
- Shared-Use Analysis (using Rich & Associates Shared-Use Model)

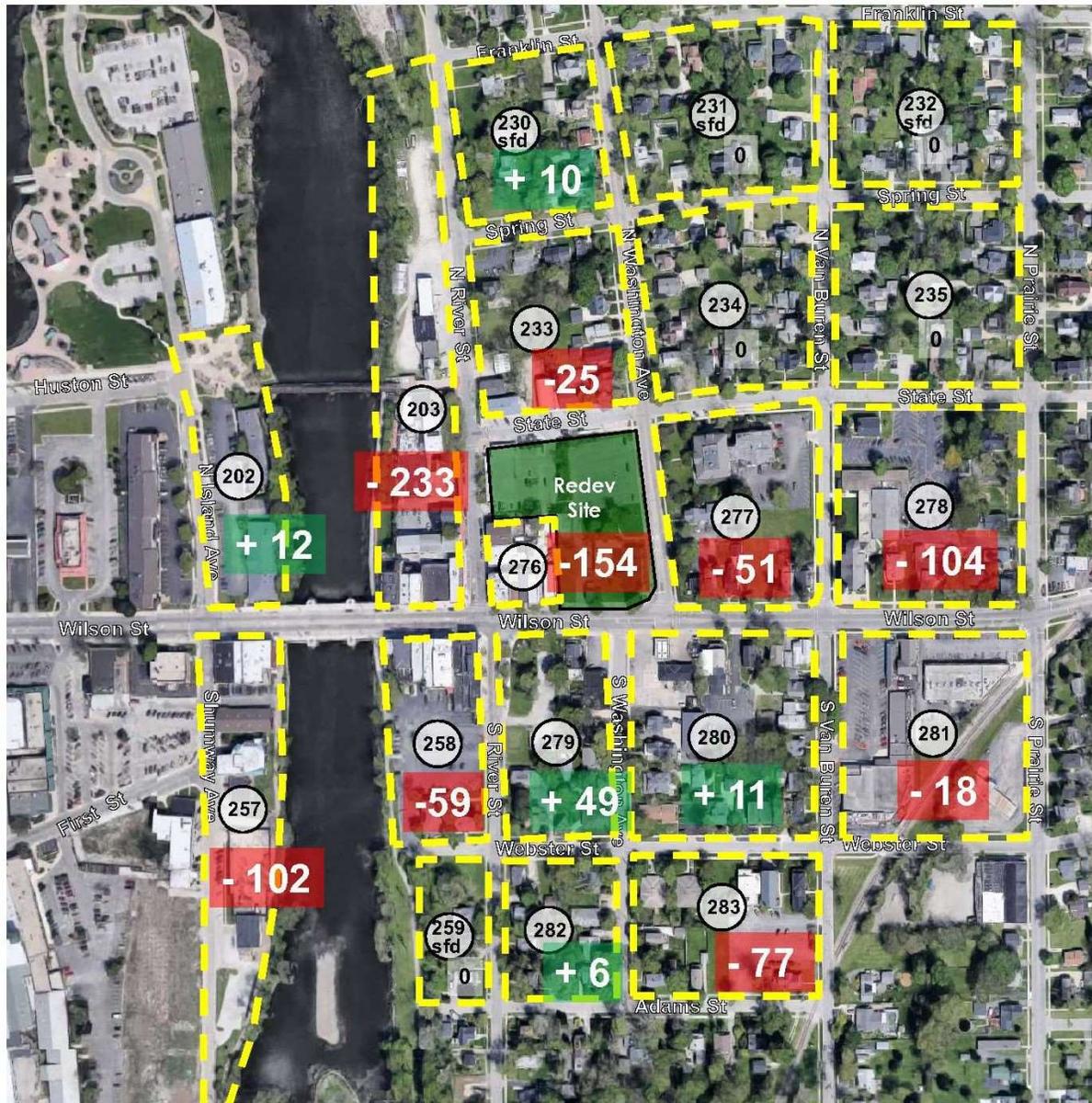
Future Parking Surplus / Deficit Using Zoning Requirements

Application of the City’s zoning requirements to the future projected square footage and apartment units on each block shows that the future parking demand increases from 1,701 spaces to 1,979 spaces required (+278 spaces). Because of the net increase in the parking supply (+213 spaces) as a result of the new public garage added on block 276, the gross deficit only increases by 65± spaces from 645± spaces (based on existing conditions as calculated using the zoning requirements) to 710± spaces. This information is shown by **Table 10** below and **Map 5** on the following page.

Table 10 – Future Parking Demand vs. Supply Analysis Using Zoning Code Requirement

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Vacant	Instructional Service (Specialized)	Government Office	Religious Institution	TOTAL Demand	Public Parking			Private Parking		Total			Gross Surplus / (Deficit)	Net Surplus / (Deficit)						
													On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street	Combined									
Parking Generation Rates (Zoning Ordinance)																												
Block #	4.00	10.00	4.00	2.00	1.88	5.00	6.67	0.00	5.00	5.00	10.00																	
Parking Spaces Required at Parking Generation Rate																												
202	19	24	33	0	0	0	0	0	0	0	0	77	20	0	20	68	20	68	88	12	12							
203	23	152	45	22	9	33	0	0	0	0	0	284	30	0	30	21	30	21	51	(233)	(233)							
230	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10	10	10							
231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
233	0	39	16	2	4	0	13	0	0	0	0	75	32	0	32	18	32	18	50	(25)	(25)							
234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
257	16	15	118	0	0	0	0	0	0	0	0	149	28	0	28	19	28	19	47	(102)	(102)							
258	42	15	86	0	8	0	0	0	0	0	0	151	17	28	45	47	17	75	92	(59)	(59)							
259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
276	55	57	14	0	365	18	8	0	12	0	0	529	23	348	371	4	23	352	375	(154)	(154)							
277	0	0	111	0	4	0	0	0	0	0	0	115	16	0	16	48	16	48	64	(51)	(51)							
278	0	47	9	0	0	0	151	0	33	0	0	240	36	100	136	0	36	100	136	(104)	(104)							
279	14	0	6	0	8	0	0	0	0	0	0	28	10	41	51	26	10	67	77	49	49							
280	0	0	26	0	0	0	0	0	0	0	0	26	11	0	11	53	11	53	64	38	11							
281	116	41	0	0	0	0	0	0	0	0	0	156	0	0	0	138	0	138	138	(18)	(18)							
282	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	6	0	6	6	6							
283	0	0	13	0	0	0	0	0	0	135	0	148	13	0	13	58	13	58	71	(77)	(77)							
Total	286	390	478	24	397	51	173	0	12	33	135	1,979	252	517	769	500	252	1,017	1,269	(710)	(737)							

The calculated shortage on the “gross” basis is 710± spaces while on the net basis, the deficit would be slightly greater at 737± spaces after excluding the surplus private parking from several blocks.



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Architects • Engineers**
26877 NW Hwy Suite 208
Southfield, MI 48033
Tel: 248-353-5080
www.richassoc.com

LEGEND:

-  Block Numbers
-  Study Area
-  Redevelopment Site
- +** Surplus
- Deficit

Sheet Title:
**FUTURE NET SURPLUS/DEFICIT
ZONING REQUIREMENTS**

File No.	1709	
Scale		
Date	08/19/16	
Checked by	DWB	
MAP Number:	5	Page Number

Future Parking Surplus / Deficit Using Shared-Use Analysis

As was done to demonstrate the existing conditions within the defined study area, Rich & Associates have calculated the parking using the shared use analysis. This generally applies percentages of the total parking demand that is expected to need parking at various times during the day. For example, office demand would have their highest needs during the late morning and early afternoon whereas by evening, the number of spaces required by office workers is significantly less. Other uses however may be increasing just as office needs are decreasing. Most zoning ordinances (as does Batavia) specify a requirement such as 1 space required for every 250 sf of gross floor area (4 per 1,000) without regard to time of day. While the 4 per 1,000 sf may be needed, it isn't necessarily needed all day which is what the shared-use concept recognizes. This concept is demonstrated by **Figure 3** and **Figure 4** below.

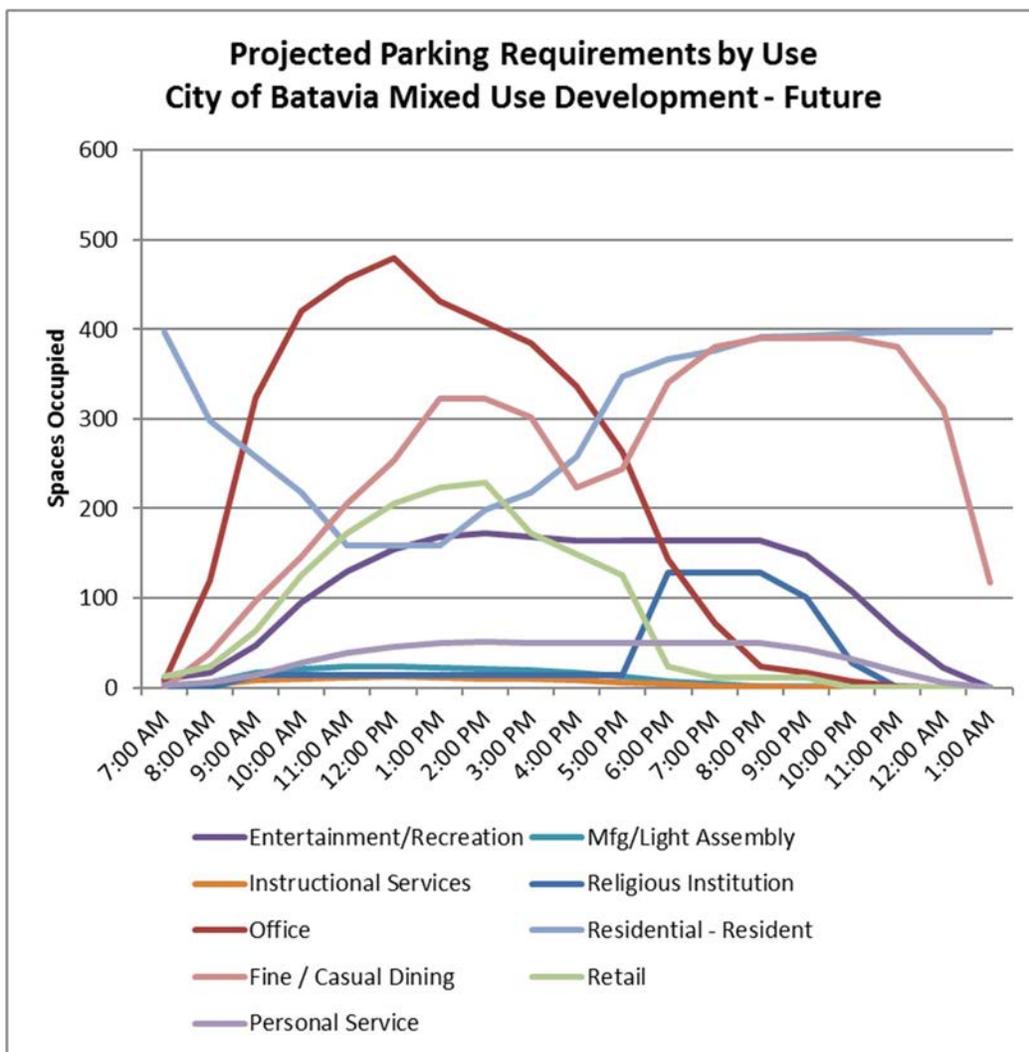


Figure 3 - Individual land use periodic parking requirements

Figure 3 also demonstrates how resident demand is shown as relatively high during the early morning (7:00 am), dropping off and being reduced through much of the day before rising again in late afternoon/early evening (4:00 pm). Rich made this adjustment after discussion with the City regarding the expected residential characteristics where many of the new residents choosing to live within the planned development will more than likely have to drive their car to adjoining communities for work, reducing the use of these spaces by residents during the day that thus could be used by office workers, retail workers or some other group with opposing peaks.

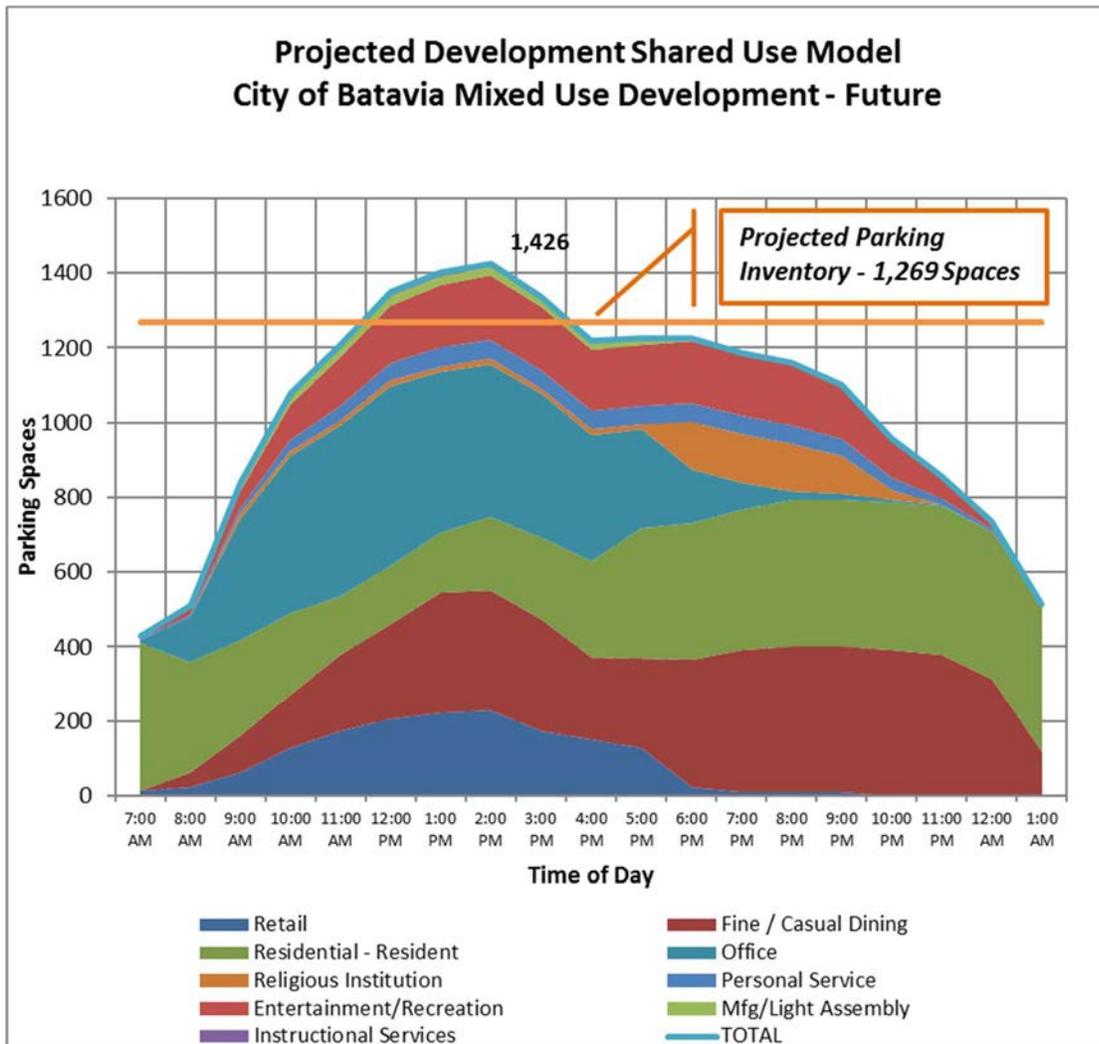


Figure 4 - Composite Parking Needs Shared Use (Future)

The aggregate of the individual needs is demonstrated by Figure 4 and shows that at peak time (1:00 – 2:00 pm for the future condition) that 1,426± spaces are projected to be needed assuming the 90 percent building occupancy and the shared use concept of parking.

The parking needs as determined using the shared-use analysis for the projected future condition shows that the calculated need for the 19 blocks would be 1,426± spaces. This demand value reflects a reduction of 553± spaces (-28%) compared to the parking needs calculated as required strictly using the City’s zoning ordinance (1,979 spaces)³. Using the shared values for all 19 blocks and assuming 90 percent building occupancy compared against the overall parking supply shows that the gross deficit would be reduced to 157± spaces from the 710± space deficit as calculated strictly apply the requirements per the City’s zoning code to the adjusted square footage. On the “net deficit” basis, the overall deficit for the defined study area would be 245± spaces compared to 276± space deficit as determined for the existing condition under the same basis. Considering the redevelopment block (276) alone, the results show that the net surplus on this block would increase from 35± spaces as determined using the shared use analysis for the current condition to 54± spaces assuming the redevelopment values for added apartments, commercial space and increased parking supply.

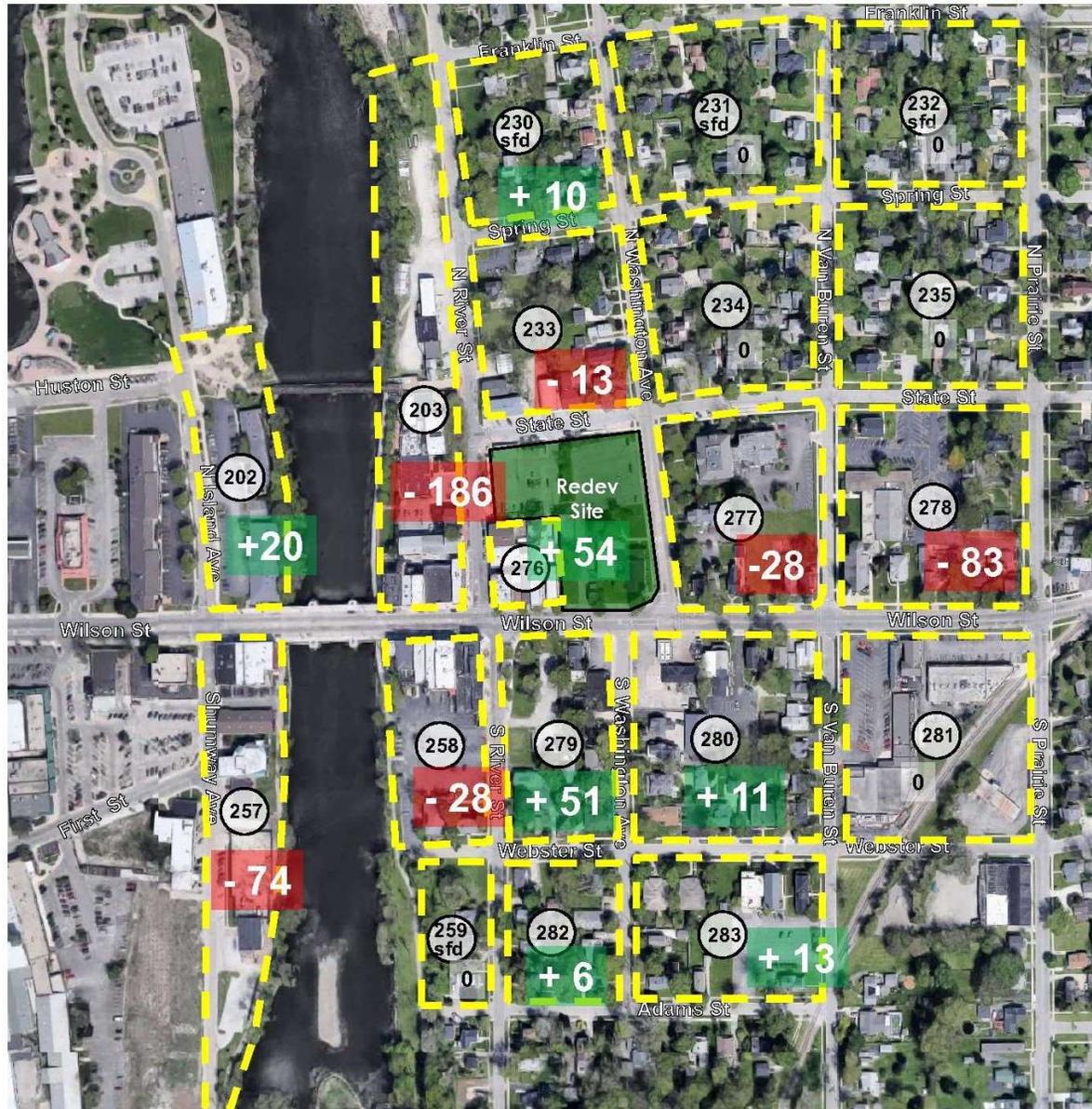
The parking generation rates as calculated for the peak hour as demonstrated by **Table 11** below were derived from the shared-use model. These values generally reflect the number of parking spaces required during this period per 1,000 sf of building floor area. For example, the peak hour calculated value for retail was 3.20 (compared to the zoning code requirement which is 4.00). The peak hour (1:00 – 2:00 pm) calculated need for apartment residents (residential) is 0.94 paces per dwelling unit at this time (198 spaces needed by 211 residential units for the study area or 182 spaces needed by 194⁴residential units on block 276. Table 11 shows the peak hour calculated demand versus supply by block developing to the gross and net surplus and deficit. The net deficit by block is also shown by **Map 6** on the following page.

Table 11 – Future Parking Demand vs. Supply Analysis Using Shared-Use Analysis

Block #	Retail	Restaurant (Food / Beverage Service)	Offices	Mfg (Light Assembly)	Apt	Personal Service	Entertainment & Recreation	Vacant	Instructional Service (Specialized)	Government Office	Religious Institution	TOTAL Demand	Public Parking			Private Parking			Total			Gross Surplus / (Deficit)	Net Surplus / (Deficit)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	On-Street	Off-Street	Total	On-Street	Off-Street	Total	On-Street	Off-Street	Combined	On-Street	Off-Street	Combined	On-Street	Off-Street	Combined	On-Street	Off-Street	Combined																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Parking Generation Rates (Shared Use)																									3.20	8.26	3.23	1.73	0.94	4.99	6.68	0.00	4.27	3.23	1.04												Parking Spaces Required at Parking Generation Rate																								202	16	20	26	0	0	0	0	0	0	0	0	62	20	0	20	68	20	68	88	26	20	203	19	125	36	19	5	33	0	0	0	0	0	237	30	0	30	21	30	21	51	(186)	(186)	230	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10	10	10	231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233	0	33	13	2	2	0	13	0	0	0	0	63	32	0	32	18	32	18	50	(13)	(13)	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257	13	13	96	0	0	0	0	0	0	0	0	121	28	0	28	19	28	19	47	(74)	(74)	258	34	13	69	0	4	0	0	0	0	0	0	120	17	28	45	47	17	75	92	(28)	(28)	259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276	44	47	12	0	182	18	8	0	10	0	0	321	23	348	371	4	23	352	375	54	54	277	0	0	90	0	2	0	0	0	0	0	0	92	16	0	16	48	16	48	64	(28)	(28)	278	0	39	7	0	0	0	152	0	0	21	0	219	36	100	136	0	36	100	136	(83)	(83)	279	11	0	5	0	4	0	0	0	0	0	0	20	10	41	51	26	10	67	77	57	51	280	0	0	21	0	0	0	0	0	0	0	0	21	11	0	11	53	11	53	64	43	11	281	93	33	0	0	0	0	0	0	0	0	0	126	0	0	0	138	0	138	138	12	0	282	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	6	0	6	6	6	283	0	0	11	0	0	0	0	0	0	0	14	25	13	0	13	58	13	58	71	46	13	Total	229	322	386	21	198	51	173	0	10	21	14	1,426	252	517	769	500	252	1,017	1,269	(157)	(245)
	3.20	8.26	3.23	1.73	0.94	4.99	6.68	0.00	4.27	3.23	1.04												Parking Spaces Required at Parking Generation Rate																								202	16	20	26	0	0	0	0	0	0	0	0	62	20	0	20	68	20	68	88	26	20	203	19	125	36	19	5	33	0	0	0	0	0	237	30	0	30	21	30	21	51	(186)	(186)	230	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	0	10	10	10	231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233	0	33	13	2	2	0	13	0	0	0	0	63	32	0	32	18	32	18	50	(13)	(13)	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257	13	13	96	0	0	0	0	0	0	0	0	121	28	0	28	19	28	19	47	(74)	(74)	258	34	13	69	0	4	0	0	0	0	0	0	120	17	28	45	47	17	75	92	(28)	(28)	259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276	44	47	12	0	182	18	8	0	10	0	0	321	23	348	371	4	23	352	375	54	54	277	0	0	90	0	2	0	0	0	0	0	0	92	16	0	16	48	16	48	64	(28)	(28)	278	0	39	7	0	0	0	152	0	0	21	0	219	36	100	136	0	36	100	136	(83)	(83)	279	11	0	5	0	4	0	0	0	0	0	0	20	10	41	51	26	10	67	77	57	51	280	0	0	21	0	0	0	0	0	0	0	0	21	11	0	11	53	11	53	64	43	11	281	93	33	0	0	0	0	0	0	0	0	0	126	0	0	0	138	0	138	138	12	0	282	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	6	0	6	6	6	283	0	0	11	0	0	0	0	0	0	0	14	25	13	0	13	58	13	58	71	46	13	Total	229	322	386	21	198	51	173	0	10	21	14	1,426	252	517	769	500	252	1,017	1,269	(157)	(245)																								
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³ The reduction for the existing condition between the zoning code (1,701) and shared use analysis (1,243) was 458 spaces or 27% reduction.

⁴ 185 new residential units plus 9 existing



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LEGEND:

-  Block Numbers
-  Study Area
-  Redevelopment Site
- +** Surplus
- Deficit

Sheet Title:
FUTURE NET SURPLUS/DEFICIT
SHARED USE ANALYSIS

File No.	1709	
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Conclusions

The analysis demonstrates that under conditions likely to be experienced with restricted access to surplus private spaces and reflecting differing times of the day that various uses will peak, the proposed redevelopment project will result in an increase in parking availability. If it is assumed that the church and other buildings on the redevelopment site were in operation, the existing “net” deficit would be 276± spaces. After redevelopment of the site, the existing “net” deficit for the study area would be reduced to 245± spaces or an increase in parking availability of 31± spaces.

As the analysis has demonstrated there are several blocks that have surplus privately controlled parking and excluding these spaces increases the deficit. One recommendation typically encouraged by Rich & Associates is to try to make efficient use of all downtown parking. While many business owners will not want to open their lots up to the general public during the day due to the potential negative impact it may have on parking accessibility for their staff and customers, Rich encourages business owners to work together. One possibility is to make surplus parking available to staff of an adjoining business who may be forced to use public parking. By directing a defined number of staff into the designated private lot, the private supply can be controlled and additional public supply for customers made available.

NIU CENTER FOR GOVERNMENTAL STUDIES

**Economic Impacts of the
Construction of a Mixed Use
Development in Downtown
Batavia**

**With Estimates of Economic Activity
Associated with Potential Tenants**

October 2016

Prepared by

Brian Richard



NORTHERN ILLINOIS UNIVERSITY

**Center for
Governmental Studies**

Outreach, Engagement, and Regional Development

Introduction

A mixed-use redevelopment project has been proposed in downtown Batavia. As planned, the project will include 186 residential units (79 one-bedroom and 107 two-bedroom), over 14,000 square feet of commercial space, and two levels of parking. Construction costs are estimated to be \$43 million. It will be located on the block north of East Wilson Street between North River Street and Washington Street. The space currently contains a city parking lot, a former church, and two office buildings.



The residential units are expected to be occupied by households with annual incomes between \$75,000 and \$135,000. These new households will generate additional spending in the downtown Batavia neighborhood. To the extent that the new development attracts residents to live in Batavia (as opposed to other cities in the region), that spending will generate new economic activity and tax revenues in the city. However, the extent of this new activity cannot presently be predicted.

The commercial space will be divided between a variety of different uses. Office/personal services will occupy about 5,600 square feet. A variety of retail outlets will be housed in about 5,000 s.f. Finally, a 3,500 s.f. restaurant is expected to locate in the new building. Similar to the spending associated with the residents of the building, economic activity in the commercial space will be new to the neighborhood/city to the extent that it can attract shoppers/diners that would have spent their money in other areas.

This report will include two main sections. First the *economic impacts* of the construction phase of the project will be estimated for Kane County. Construction represents economic activity that clearly would not exist without the project. Thus, jobs, payroll, and associated economic activity that result from construction are new to the region, generated because of the development.

The second section will estimate *economic activity* associated with the development. It will include two parts. Expected spending patterns based on a projected profile of residential tenants will be presented. The second part will examine economic activity associated with potential commercial tenants of the building.

Economic Impacts of Construction

Construction of the mixed-use building is expected to cost \$43 million, inclusive of the residential, commercial and parking portions. The project will occur over a three year period. This construction activity will generate additional jobs and activity in the surrounding region (the multiplier effect). These impacts occur as construction employees spend their earnings in the local economy and construction companies purchase inputs.

The economic impacts presented in this report are countywide (Kane) estimates. It can be assumed that the majority of the impacts will be felt in the region surrounding the facility. However, some impacts will be felt in other parts of the state near the locations of specialized suppliers.

The Economic Multiplier Effect

Jobs are created through the multiplier effect in two ways. First, the construction firm buys inputs from local businesses such as office supplies, accounting services, and raw materials. Second, construction employees spend their earnings on local goods and services. Each of these generates new jobs at businesses in the region.

Table 1 displays total economic impacts from construction spending. About 40 percent of the construction spending will occur in each of the first two years. The remaining 20 percent will be completed in the third year.

Table 1. Economic Impacts of Construction Expenditures in Kane County

Employment	Year 1	Year 2	Year 3	Total
Direct Effect	82	82	41	205
Indirect Effect	78	78	39	196
Total Effect	161	161	80	402
Payroll				
	Year 1	Year 2	Year 3	Total
Direct Effect	\$ 5,910,689	\$ 5,910,689	\$ 2,955,345	\$ 14,776,723
Indirect Effect	\$ 3,435,166	\$ 3,435,166	\$ 1,717,583	\$ 8,587,915
Total Effect	\$ 9,345,855	\$ 9,345,855	\$ 4,672,928	\$ 23,364,639
Output				
	Year 1	Year 2	Year 3	Total
Direct Effect	\$ 17,200,000	\$ 17,200,000	\$ 8,600,000	\$ 43,000,000
Indirect Effect	\$ 9,702,597	\$ 9,702,597	\$ 4,851,299	\$ 24,256,494
Total Effect	\$ 26,902,597	\$ 26,902,597	\$ 13,451,299	\$ 67,256,493

Source: CGS summary of IMPLAN model output

Direct employment at the construction site will be just over 82. These will be full year jobs during the first two years of the construction phase and the project will be wrapped up in the middle of the third year. Total employment resulting from the project will be more than 400 person-years. One person holding a construction job for three years is counted as three person-years. These jobs will have a total payroll, including benefits, of about \$23.4 million. Total economic activity (including the multiplier effect) generated by the project will be over \$67 million.

These impacts are temporary, one time effects due to the nature of construction projects. As the building reaches completion, these impacts will diminish.

Potential Expenditures of Residential Tenants

The approach to estimating expenditures of residential tenants is based on a potential ‘typical household’ that might be likely to move in to the different units in the building. There will be 79 one-bedroom units and 107 two-bedroom units. Based on rents projected to be received for the units, the residents are expected to have higher than average incomes.

The U.S. Bureau of Labor Statistics publishes consumer expenditure data for a variety of household types. Three types of households were used as a basis for estimating expenditures of potential residents of the new development. For one-bedroom units, it is estimated that about half will be occupied by single residents and half by households consisting of a couple with no children. These household types are used to estimate spending patterns. Average spending for families with annual earnings between \$120,000 and \$150,000 was used for two bedroom units.

Table 2 displays U.S. Bureau of Labor Statistics (BLS) consumer expenditure data for the three hypothetical households. Household A (single resident) earns just under \$75,000 annually, Household B (couple, no children) about \$84,000 and Household C (family) more than \$133,000. The largest expenditure categories for all are housing and transportation. Categories that are most likely to contain expenditures in the local neighborhood include food (at home – groceries, and away – restaurants), apparel and services, entertainment, personal care, and reading.

Table 2. Potential Expenditures Patterns of Residential Tenants

	Household A (39 units)	Household B (40 units)	Household C (107 units)
Income before taxes	\$74,742	\$82,947	\$133,145
Average annual expenditures	\$57,977	\$63,462	\$92,162
Food	\$7,679	\$7,491	\$10,722
Food at home	\$4,474	\$4,168	\$6,054
Food away from home	\$3,205	\$3,323	\$4,668
Housing	\$19,178	\$19,358	\$27,921
Apparel and services	\$1,984	\$1,880	\$3,222
Transportation	\$9,804	\$11,128	\$15,950
Healthcare	\$4,130	\$6,549	\$7,155
Entertainment	\$3,110	\$3,381	\$4,884
Personal care products and services	\$829	\$808	\$1,176
Reading	\$123	\$159	\$181
Education	\$756	\$1,076	\$2,272

Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics, September, 2015

Table 3 displays total potential annual expenditures of residential building inhabitants. These figures are obtained by multiplying the average expenditures in Table 2 by the number of each type of unit in the proposed building. Residents will have the potential to spend over \$750,000 each on eating at restaurants and entertainment. Apparel expenditures may approach \$500,000. Total expenditures in all categories could be nearly \$15 million.

Table 3. Potential Aggregate Expenditures of Residential Tenants

	Household A (39 units)	Household B (40 units)	Household C (107 units)	TOTAL
Average annual expenditures	\$2,261,103	\$2,538,480	\$9,861,334	\$14,660,917
Food				
Food at home	\$174,486	\$166,720	\$647,778	\$988,984
Food away from home	\$124,995	\$132,920	\$499,476	\$757,391
Housing	\$747,942	\$774,320	\$2,987,547	\$4,509,809
Apparel and services	\$77,376	\$75,200	\$344,754	\$497,330
Transportation	\$382,356	\$445,120	\$1,706,650	\$2,534,126
Healthcare	\$161,070	\$261,960	\$765,585	\$1,188,615
Entertainment	\$121,290	\$135,240	\$522,588	\$779,118
Personal care products and svcs	\$32,331	\$32,320	\$125,832	\$190,483
Reading	\$4,797	\$6,360	\$19,367	\$30,524
Education	\$29,484	\$43,040	\$243,104	\$315,628

Source: CGS calculations based on Bureau of Labor Statistics data and developer plans.

There is no geography attached to the BLS data. The location of spending cannot be determined, especially for potential future spending estimates. Some of this spending will occur in the local neighborhood while other purchases will be made elsewhere.

To a certain extent, the construction of these new housing units will attract households to Kane County that wouldn't otherwise locate there. A 2014 report¹ examining housing stock in the Fox River valley suggested that this type of housing will be in short supply in Batavia. According to the report, "Because of population growth expected across the income spectrum, there may be unmet demand for [housing appropriate for] renters earning more than \$75,000" (p. 13). Specific to Batavia, the report states "If Batavia's rental housing stock does not keep up with the projected increases in demand, there could be a shortage of units affordable to households earning more than \$100,000 annually" (p. 36).

¹ Chicago Metropolitan Agency for Planning (2014). *Homes for a Changing Region. Implementing Balanced Housing Plans at the Local Level: Batavia, Geneva, North Aurora, and St. Charles.*

While it is impossible to predict future location decisions of individual residents, these findings indicate that the development in downtown Batavia will attract some to move to Batavia, rather than other parts of the region. These households will represent new income in the area and thus, contribute to growing the economy. If this is the case for about two-thirds of the residents, the result will be about \$10 million in additional household income in Batavia. Table 4 displays the Kane County economic impacts resulting from an influx of \$10 million annually.

Table 4. Potential Economic Impact of Additional Household Income

Employment	55
Payroll	\$ 2,362,679
Output	\$ 7,169,490

Source: CGS summary of IMPLAN model output

Potential Sales of Commercial Tenants

Projecting economic activity associated with commercial tenants is more difficult than residential. Various types of retail outlets can generate vastly different total sales figures from the same sized space. This analysis presents potential activity associated with the types of retail outlets that typically locate in downtowns.

It is expected that the 5,000 square feet (s.f.) of retail space will be divided into three stores, and 3,500 s.f. will be occupied by a full-service restaurant. Table 5 includes information for three potential commercial tenants and a restaurant. Stores in the personal care and health sector sell products that may include drugs, health supplements, beauty supplies, or eyeglasses. Women’s clothing stores tend to be slightly larger than the other types of retailers considered.

According to BizStats.com, personal care and health stores average about \$400 in annual sales per square foot. A typical retailer in this sector with 1,500 s.f. of space would generate about \$600,000 in annual sales. Total payroll for all employees in a store of this size would be about \$145,000.

A women’s clothing store might be expected to generate annual sales of about \$300 per s.f. Thus, annual sales at a 2,000 s.f. outlet could be \$600,000. Total payroll for a store of this size would be about \$136,000.

The third potential retailer examined is a bookstore. Bookstores average about \$200 per s.f. in annual sales. A 1,500 s.f. bookstore operating at the industry average would have sales of about \$300,000. Employees of the bookstore would earn a total of \$57,000.

Full service restaurants bring in about \$350 per s.f. each year. Based on this average, a 3,500 s.f. eatery would expect about \$1.225 million in total receipts. Restaurants are more labor intensive than retail stores. The hypothetical restaurant would likely pay employees a total of \$531,000.

Table 5. Potential Sales of Commercial Tenants

	Size (s.f.)	Sales/s.f.	Gross Sales	Payroll
Personal Care & Health	1,500	\$400	\$600,000	\$145,080
Clothing - Women’s	2,000	\$300	\$600,000	\$136,260
Books	1,500	\$200	\$300,000	\$57,390
Total Retail	5,000		\$1,500,000	\$338,730
Restaurant	3,500	\$ 350	\$1,225,000	\$ 531,038

Source: CGS calculations based on BizStats.com data

Total potential sales at three hypothetical retailers and a restaurant could be in excess of \$2.7 million annually. Employees of the businesses might be expected to earn nearly \$870,000. Naturally these figures will vary based on the industry and performance of the actual tenants.

Finally, as with the household expenditure estimates above, these are economic *activity* estimates, not economic *impacts*. The generation of economic impact (meaning new activity in the region) requires that these businesses attract new shoppers from out of the region or cause local residents to shop here rather than shopping outside of the region. If these businesses simply move from another local storefront or attract customers currently shopping at local businesses, there is likely no new economic activity within Batavia or Kane County.

Summary

The proposed mixed-use development in downtown Batavia will impact the economy of the neighborhood and Kane County. Some impacts, mainly related to the construction of the building, are obvious and relatively easy to quantify. Other impacts related to the economic activity of residents and commercial tenants is difficult to predict because those predictions rely on future factors that cannot be foreseen.

The temporary economic impacts of the construction phase will be significant. About 400 jobs will result from the project. Persons filling those jobs will earn nearly \$23.4 million. Economic activity will increase by more than \$67 million in Kane County.

Once complete, residential tenants will potentially have annual expenditures of nearly \$15 million. While the majority of this spending will go towards housing, transportation, and healthcare, significant expenditures will occur in retail and service sectors that are present in Batavia. For example building residents will likely spend over \$750,000 eating at restaurants. A similar amount could be spent in entertainment venues.

Sales at potential commercial tenants of the building could be in the neighborhood of \$2.7 million. This includes retail store sales of about \$1.5 million and restaurant receipts of \$1.2 million. Employees of these business may earn a total of nearly \$870,000.

While the jobs and economic activity generated during the construction phase will clearly be new to Batavia, the activity related to building tenants is less clear. To the extent that the building houses residential and commercial tenants that simply move from another part of the city, it will not generate new economic impacts. However, because this project is somewhat unique to the city, there will likely be some incremental increase in economic activity in Batavia as the result of the development.

About CGS

The Center for Governmental Studies (CGS) at Northern Illinois University began in 1969. CGS provides expertise that helps decision-makers create and implement innovative solutions to public issues faced by communities, regions, states and the nation. The staff of more than 30 academic researchers and practitioners has specialties in economics, public administration, education, planning, and organizational management practices. CGS is funded by State appropriations, but most of its support is earned through grants and contracts from federal, state and local government agencies, as well as private non-profit and for profit entities. CGS is part of NIU's Division of Outreach, Engagement, and Regional Development.

The CGS staff is especially knowledgeable about the people, economy and institutions of Illinois and the unique challenges they face. The Center has worked on projects with many public and private entities and staff members are active participants in many community and professional organizations. Our services offer communities an unbiased, outside perspective that is useful in economic and community development.

**TRAFFIC STUDY FOR
ONE NORTH WASHINGTON PLACE
BATAVIA, ILLINOIS**

December 2, 2016

Prepared for:

The City of Batavia

Prepared by:



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APPENDIX

A. INTRODUCTION

Shodeen Construction is proposing to redevelop about three quarters of the block bounded by Wilson Street, State Street, N. River Street and N. Washington Avenue (IL Route 25) in the Batavia central business district. Four existing buildings will be razed and existing parking lots along the south side of State Street will be removed to make way for the new land uses. The location of the redevelopment site is illustrated below.



According to the One North Washington Place Site Context Plan, prepared by Nagle Hartray Architecture and dated June 30, 2015, the proposed development will consist of a four floor mixed use building containing 171 apartment units, 14,650 square feet of retail space, and a two level parking garage with about 304 parking spaces. One curb cut will be removed on each of Wilson Street, N. River Street and N. Washington Avenue. Two curb cuts will be provided on State Street, one servicing each level of the parking garage. It is understood that parking supply has been analyzed separately, and is therefore not discussed in this study.

The planned development uses are intended to be complementary with existing downtown uses, with the goals of enhancing the vibrancy of the downtown, encouraging the use of alternate modes of transportation including walking, bicycling and transit, and reducing personal automobile trips by residents of the development.

This report contains existing traffic volume and operation information, expected trip generation from the site and an analysis of future traffic conditions after construction of the proposed redevelopment. The focus of this study is on traffic operations at the intersections along Wilson Street from North River Street to North Washington Avenue, which experiences high traffic volumes during peak hour traffic periods.

B. EXISTING CONDITIONS

A field reconnaissance was conducted of the site vicinity to collect information on the existing road network, including traffic control devices, lane configurations, and existing traffic volumes. Existing land uses surrounding the site were also noted.

Surrounding Land Uses

The proposed redevelopment site is located in the City of Batavia's central business district. Land uses adjacent to or across the perimeter streets are primarily commercial uses including several restaurants, a vacant gas station, dance studio, salon/spa, a bank, and service oriented uses. Commercial uses extend farther east and west along Wilson Street including the Batavia Plaza shopping center west of the Fox River. Land uses transition to residential uses north, east and south of the site.

Public Transit and Pedestrian/Bicycle Facilities

Downtown Batavia is served by Pace Bus Route 802, providing access to the UP West and the BNSF Metra commuter stations in Geneva and Aurora respectively. This route also serves Waubensee Community College, Presence Mercy Medical Center, Delnor Community Hospital and the Kane County Judicial Center.

The nearest Pace stop is located at the intersection of West Wilson Street and Batavia Avenue, about 1/3rd of a mile from the redevelopment site. The site is located within the Pace 596 Call-n-Ride service area.

The Fox River Trail is located half of a block west of the site along the both sides of the Fox River. A pedestrian/bicycle bridge crosses the river just north of State Street providing pedestrian and cyclist access to the Batavia Riverwalk and the west bank portion of the Fox River Trail.

Surrounding Roadways

The following is a brief description of roadways in the immediate site vicinity. Figure 1 (Existing Traffic Control Devices and Travel Lanes) in the Appendix provides a diagram of existing roadway conditions.

Wilson Street

Wilson Street is a two-way, two lane east-west roadway, with a posted 25 mph speed limit in the vicinity of the site. Auxiliary turn lanes are provided at various intersections as described below. Parking lanes are provided on both sides of Wilson Street in the site vicinity.

Wilson Street is an arterial street under the jurisdiction of the City with the exception of the section from South River Street to North Washington Avenue which is designated IL Route 25, and is under the jurisdiction of the Illinois Department of Transportation (IDOT).

The Wilson Street intersection with South River Street is under traffic signal control. The eastbound and westbound approaches to the intersection each have a lane shared by through and right turn traffic movements and a separate left turn lane.

At its intersection with South Washington Avenue, Wilson Street has a wide single lane shared by through and right turn traffic movements on the eastbound approach and a wide single lane shared by through and left turn movements.

On the westbound approach, the pavement is wide enough for through traffic movements to bypass any vehicles waiting to turn left to South Washington, which allows the westbound approach to function as if a separate left turn lane was provided.

The Wilson Street intersection with N. Washington Avenue is under traffic signal control, and has separate lanes for through and left turn movements on the eastbound approach, and separate through and right turn lanes on the westbound approach.

North River Street

North River Street is a two-way, two lane north-south local street under City jurisdiction. The block adjacent to the redevelopment site is designed as a pedestrian friendly environment without delineation of boundaries between pedestrian and vehicular travel space. On street parking is prohibited along this block with the exception that four parking spaces are available just south of State Street. The posted speed limit is 20 mph.

On its southbound approach to Wilson Street, N. River Street is under stop sign control. Only right turns are permitted onto Wilson. Through traffic movements to S. River and left turns to Wilson Street are prohibited.

South River Street (IL Route 25)

South River Street is a two-way, two lane north-south arterial street under IDOT jurisdiction. On street parking is prohibited on S. River Street. The posted speed limit is 30 mph.

On its northbound approach to the traffic signal controlled intersection with Wilson Street, S. River Street has two travel lanes. The left lane is marked as a left turn lane, but is used by vehicles making left turns onto westbound Wilson Street and by vehicles making the small jog west to proceed north on N. River Street. The east lane serves as an exclusive right turn lane.

South Washington Avenue

South Washington Avenue is a two-way, two lane north-south local street under City jurisdiction. On street parking is prohibited on the block of S. Washington south of Wilson Street. The regulatory speed limit is 30 mph.

On its approach to Wilson Street, S. Washington is under stop sign control. Its single northbound lane is shared by left and right turn traffic movements.

North Washington Avenue (IL Route 25)

North Washington Avenue is a two-way, two lane north-south arterial street under IDOT jurisdiction. On street parking is prohibited adjacent to the redevelopment site. The posted speed limit is 30 mph.

On its southbound approach to the traffic signal controlled intersection with Wilson Street, N. Washington Avenue has separate left and right turn lanes.

Existing Traffic Volumes

Manual weekday morning and evening peak hour traffic counts were conducted at the intersections of South and North Washington Streets with Wilson Street, and River Street with Wilson Street.

The traffic counts were performed on Tuesday October 25 and Thursday October 27, 2016. Turning movements were recorded in 15 minute increments from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. The counts included recording vehicle type and pedestrian volumes.

Existing peak hour traffic volumes are shown on Figure 2 in the Appendix. Summaries of traffic counts are also provided in the Appendix.

Counted traffic volumes departing one intersection do not exactly match the volumes arriving at the other intersection because the traffic counts at River Street and at Washington Avenue were performed on different days. There is always some day to day variation in traffic volumes. Multi-day traffic counts are not uncommon. It is accepted practice to adjust the lower of arriving or departing traffic volumes upward to balance the traffic flow between the intersections. The study analyses are thus based on the higher of the two days of counted traffic.

There is some variation in the times of the individual intersection peak hours. The fifteen minute increment traffic count data for all of the intersections were reviewed, and the peak hours for the Wilson Street corridor were determined to occur from 7:15 to 8:15 am and from 4:45 to 5:45 pm. The corridor peak hour traffic volumes, adjusted as previously discussed, were used in the analyses.

Batavia High School, located 1.25 miles west of the proposed development, generates traffic on Wilson Street. First bell at the school is at 7:35 am. The vast majority of morning high school traffic occurs 15 to 20 minutes before the first bell, therefore the morning school peak traffic period is accounted for in the traffic analyses. The end of school day is 2:30 pm, considerably offset from the commuter peak traffic period. After school activities spread out the traffic leaving school, and lower the end of school the peak traffic volume. Consequently, the evening peak traffic hour along Wilson Street, which includes commuters and some after school trips, is higher than at the end of classes.



C. SITE TRAFFIC GENERATION

Peak hour traffic volumes generated by the proposed land uses were estimated using trip generation rates contained in Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers (ITE).

Recognizing that there are trip reduction benefits for closely spaced complimentary land uses, the ITE Trip Generation Handbook provides procedures for estimating trip reductions for Mixed-Use developments and also for Urban Infill/Redevelopment. Use of straight ITE trip generation rates for individual land uses in a setting like downtown Batavia does not account for the synergy between the different land uses. Without detailed information on surrounding land use types and sizes, there is insufficient data to use the Mixed-Use methodology to account for trip reductions that can result due to walking or biking trips between the redevelopment site and nearby land uses.

The Urban Infill/Redevelopment methodology was used instead. The ITE Handbook provides data for mode of transportation share (personal vehicle, transit, walk and bike) based on studies performed nationwide for use when employing the Urban Infill/Redevelopment method. The site trips estimated using the ITE method yielded a 27% trip reduction in the evening peak hour based on the national surveys. Upon review of the analysis, it is our opinion that the available national study data likely overstates vehicle occupancy, transit and walk/bike trips for the Batavia redevelopment site. Instead, we elected to independently estimate site trip reduction for the *apartments only* based on the most recent available US Census data for the City of Batavia.

US Census commuting data for the city as whole indicates that 7% of residents work at home, 3% travel to/from work using public transit and 2% walk or bike. It is our opinion that the downtown business district location of the redevelopment encourages walking and transit trips, and likely will result in fewer personal vehicle commuter trips for downtown Batavia residents in comparison to the average for the entire City population. Nonetheless, we conservatively used the citywide averages.

The ITE land use type "Mid-Rise Apartments" (ITE Code 223) most closely matches the proposed apartment use. It was noted that ITE trip generation data for this use was collected in the late 1980's, before on-line shopping, banking, video rentals, etc. became as prevalent as it is today. With the boom in ecommerce along with greatly improved electronic connectivity, and greater emphasis on non-personal motor vehicle modes of travel over the past decade, it is our opinion that some reduction in the Mid Rise apartment trip generation is also warranted to account for reductions in *non-commute trips*. Additionally, the ITE trip generation rates do not account for vehicular trip reductions due to walking trips between complementary land uses in the redevelopment area. Accordingly a total reduction to the ITE trip generate rate based apartment trips of 15% (12% City of Batavia non-personal vehicle commuter trips plus 3% walkability and/or shared trips between downtown land uses) was used for this study.

It is our opinion that the 15% adjustment used to estimate apartment site trips is reasonable and appropriate for this study. We also note that conservatively, no trip reductions were applied to the retail use trip generation.



The proposed retail space consists of two small spaces of 6,300 and 8,350 square feet each. The ITE Specialty Retail land use (Code 826) best matches and is appropriate for the proposed retail than the Shopping Center land use (Code 820). Specialty retail uses typically do not open until after the morning street peak hour, ITE does not provide morning street peak hour period trip generation rates for this land use category. Morning retail site trips were estimated using the ITE trip generation rates for a Shopping Center (Code 820), *conservatively* assuming that some stores could open during the morning peak hour.

Projected site peak hour trips are summarized below and shown on Figure 3 in the Appendix.

PROJECTED SITE TRIPS						
	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
171 Mid-Rise Apartments						
ITE Land Use Code 223	18	39	57	41	30	71
15% Trip Reduction	-3	-6	-9	-6	-5	-11
Total Apartment Trips	15	33	48	35	25	60
14,645 s.f. Retail						
ITE Land Use Code 820 (Shopping Ctr.)	30	18	48	-	-	-
ITE Land Use Code 826 (Specialty Retail)	-	-	-	25	32	57
Total Retail Trips	30	18	48	25	32	57
Apartment + Retail						
Total Site Trips	45	51	96	60	57	117

D. SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT

Several factors influence the directions to and from which development traffic will travel on adjacent streets. The estimated trips entering and exiting the site were distributed to the surrounding road network based upon a review of the existing road network, the site access driveways, existing traffic patterns in the site vicinity and the relative ease or difficulty of travel routes to and from the site. The distribution of site traffic is shown in the following table.

Directional Distribution of Site Trips	
Direction of Travel to/from	Percent of Site Trips
West on Wilson Street	35%
South on S. River St. (IL-25)	20%
East on Wilson Street	30%
North/East on N. Washington/State	15%
TOTAL	100%

E. NON-SITE TRAFFIC GROWTH

Buildout of the redevelopment is projected to be completed in 2019. A future conditions analysis year of 2024 (time of completion plus 5 years) was selected to account for the period between opening and full occupancy of the development.

Future non-site traffic volumes were increased to account for normal growth of non-site (background) traffic due to ongoing regional and local development. The Chicago Metropolitan Agency for Planning (CMAP) provides population, households and employment projections to Year 2040 for the Chicago metropolitan area. The CMAP projections for the City of Batavia and adjacent surrounding communities were used as the basis to estimate the background traffic growth of existing non-site traffic. A growth rate of 1% per year was used to estimate non-site background traffic at year 2024. See Figure 4 in the Appendix.

F. TRAFFIC OPERATIONS ANALYSES

Intersection Capacity Analyses

Traffic operations at the development area intersections were analyzed under Existing conditions and year 2024 full occupancy (Total Traffic).

The analysis of existing conditions reflects traffic volumes, intersection traffic control devices and numbers of traffic lanes that currently exist on the area streets.

Total traffic conditions represent the anticipated design year traffic conditions including existing traffic, normal growth of existing traffic, plus additional traffic generated by the site redevelopment. See Figure 5 in the Appendix.

Traffic operations were evaluated using the procedures contained in the Highway Capacity Manual (HCM) published by the Transportation Research Board. Analyses were performed using the HCS 2010 software for analysis of unsignalized intersections.

The signalized intersections at River Street and at N. Washington Avenue are part of an interconnected traffic signal system along Wilson Street that also includes the intersection at Island Avenue. Due to the close proximity to the stop sign controlled N. River Street and South Washington Avenue approaches to Wilson Street, Synchro Version 9 analysis software was used to model the signal system.

The accepted way traffic engineers evaluate intersection performance is with the average length of time an approaching vehicle is delayed before crossing an intersection measured in seconds per vehicle. This is considered a more accurate metric of operation than determining the projected length of queues approaching an intersection, even if it is less visible to those waiting in line. The length of queues is important in evaluating the space provided for motorists to wait. Delay and queuing will be discussed in this report

Intersection Level of Service (LOS) is represented by the letter grades A (best) through F (worst). Design guidelines contained in the IDOT design manuals specify a minimum LOS "C" for minor arterials but a LOS "D" "may be used in heavily developed sections of metropolitan

areas". A LOS "D" is acceptable for collector and local streets. Wilson Street, North Washington Avenue and South River Street are designated minor arterials.

For all-way stop controlled intersections and signalized intersections, an overall intersection LOS is computed. For two-way stop controlled intersections, delay and LOS are computed only for traffic movements that are under stop control and those movements that must yield to opposing traffic.

The LOS at an intersection as defined in the Highway Capacity Manual is summarized in the following table.

HCM Level of Service Criteria		
	Signalized Intersections	Unsignalized Intersections
Level of Service	Average Control Delay (seconds/vehicle)	Average Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

The average control delay is the delay is experienced by a vehicle passing through the intersection, including stopped delay as well as time lost decelerating when approaching the intersection and accelerating when leaving the intersection. It is the *average* delay for the specified traffic movement, street approach or intersection as a whole. For intersection approach and overall intersection, the delay is the weighted average for all traffic movements. Because these are *average delays*, the actual delay experienced by any individual driver will vary.

Stop Sign Controlled Intersections

North River Street/Wilson Street Intersection

The stop sign controlled North River Street approach to Wilson Street currently operates at an acceptable Level of Service (LOS) "C" during both the morning and evening weekday peak hour periods. Under year 2024 projected Total Traffic conditions with full occupancy of the proposed mixed use development, the intersection will continue to operate at an acceptable LOS "C".

Under existing and future traffic conditions, the 95th percentile queuing on the southbound North River Street approach is one vehicle. The 95th percentile queue is the length of queued vehicles that would *not* be exceeded during 95% (57 minutes) of the peak hour period. In other words, the total duration of queues in excess of one vehicle is projected to occur for only 3 minutes during the peak hour.

A summary of the stop sign controlled intersection analyses is provided below.

STOP SIGN CONTROLLED INTERSECTIONS CAPACITY ANALYSIS RESULTS ^①						
Intersection	Scenario	Peak Hour	Intersection Approach/Lane Configuration			
			Eastbound	Westbound	Northbound	Southbound
North River/Wilson			Signalized	^②	N/A	R
	Existing	AM	--	--	--	C - 1
		PM	--	--	--	C - 1
	2024 Total Traffic	AM	--	--	--	C - 1
		PM	--	--	--	C - 2
S. Washington/Wilson			^②	L	shared L/R	N/A
	Existing	AM	--	B - 0	D - 1	--
		PM	--	A - 0	C - 1	--
	2024 Build Total Traffic	AM	--	B - 0	D - 1	--
		PM	--	A - 0	D - 1	--

^① L or R = exclusive left or right turn lane. T = exclusive through lane. Shared L/T/R indicates the designated traffic movements share a lane. "B - 1" indicates the letter grade for the operations of the approach and the number of vehicles in the 95th percentile queue on the intersection approach. A value of 0 indicates the computed 95th percentile queue of stopped vehicles is less than 0.3 vehicles.

^② Traffic movements on this approach do not stop or yield to conflicting traffic, therefore no LOS grade is provided.

South Washington Avenue/Wilson Street Intersection

The stop sign controlled northbound approach to Wilson Street currently operates at LOS "D" during the morning peak hour, and at LOS "C", less than one second delay short of "D" during the evening peak hour. Upon full occupancy of the proposed development, the evening peak hour LOS drops to level "D", and the morning peak hour will remain at LOS "D". The left turn movement from Wilson Street currently operates at, and will continue to operate at acceptable LOS "B" during the morning and LOS "A" during the evening peak hours upon full occupancy of the proposed development. The 95th percentile queues on the S. Washington approach and for the west to southbound left turn movement were one vehicle length or less with the exception that the northbound queue increases to two vehicles during the evening peak hour under year 20204 Total traffic conditions.

This intersection is located 100 feet west of the signalized N. Washington/Wilson intersection. The left turn lane on the eastbound approach to North Washington Avenue extends through the S. Washington intersection. Vehicles entering and exiting S. Washington must cross the eastbound left turn lane for N. Washington. Left turn movements at this intersection were very low during peak periods.

It was observed that vehicle queues on the eastbound approach to N. Washington frequently extended west past S. Washington. Eastbound drivers sometimes left a gap to allow vehicles to turn left to and from S. Washington. When no gap was provided, vehicles turning left from S. Washington waited in the westbound Wilson through lane.

Westbound Wilson Street does not have a separate left turn lane at S. Washington Avenue. The westbound lane however, is 16 feet wide at the intersection. During the peak traffic hours, it was observed that in most cases, queued vehicles waiting to turn left to S. Washington did not block westbound traffic flow because the wide lane allowed through traffic to bypass the stopped vehicles.

Traffic Signal Controlled Intersections

South River Street/Wilson Street Intersection

The signalized S. River Street intersection with Wilson Street currently operates, and will continue to operate at an acceptable LOS “C” during the weekday morning peak hour, with or without the redevelopment. The existing eastbound through/right turn lane 95th percentile queue approaches the intersection at Island Avenue. This queue is projected to increase by two vehicles under the projected Total Traffic conditions. Changes in 95th percentile queueing on all other approaches have minimal impact. All year 2024 Total Traffic individual traffic movements LOS remain unchanged from the existing conditions LOS during the morning peak hour.

During the existing evening peak hour, the S. River Street/Wilson Street intersection operates at an overall LOS “D”. However, the eastbound approach operates at less than acceptable LOS “E”, with the 95th percentile queue extending west from River Street through the intersection at Island Avenue. The remaining traffic movements operate at an acceptable LOS “D” or better. It is noted that queuing on the westbound approach was observed to frequently extend to N. Washington Avenue.

Under the 2024 Total Traffic scenario, the eastbound approach LOS is projected to drop to LOS “F”, with an increase in queuing of about 7 vehicles during the evening peak hour. The westbound approach left turn movement is projected to decline from LOS “D” to “E” with an increase in queuing of about 5 vehicles. Overall, the intersection will still remain at LOS “D”.

A 2024 No-Build scenario analysis was performed for the evening peak hour to evaluate the intersection with normal background traffic growth and without redevelopment generated traffic growth. Background growth alone causes 98% of the projected additional eastbound delay in the 2024 Build scenario. The increase in eastbound delay and queueing due to the mixed use redevelopment is minimal. Since there is no change in LOS during the morning peak hour from Existing to 2024 Total Traffic conditions, the morning peak hour was not evaluated for the No Build scenario.

Only 29% of the increase in westbound left turn delay and drop in LOS from “D” to “E” results from the mixed use redevelopment. The major contributing factor to the increase in westbound left turn movement delay is also background traffic growth.



North Washington Street/Wilson Street Intersection

Overall, the signalized N. Washington Avenue intersection with Wilson Street currently operates, and will continue to operate at an acceptable LOS “B” during the weekday morning and evening peak hours, with or without the redevelopment. The maximum projected increase in 95th percentile queuing from Existing to year 2024 Total Traffic conditions for any traffic movement is one vehicle on the eastbound approach during the morning peak hour, and one vehicle on the westbound approach during the evening peak hour.

All individual traffic movements at this intersection operate at an acceptable LOS “D” or better, with the exception of the southbound Washington to eastbound Wilson left turn movement which operates at LOS “E” under Existing and year 2024 Total traffic conditions. The long delays on the southbound approach result from the majority of green signal time being assigned to the Wilson Street approaches. During the morning peak hour 81% of the signal cycle was allocated to the Wilson Street approaches and 74% was allocated during the evening peak hour. The total increase in delay experienced by drivers from existing to Total Traffic conditions is 2 additional seconds.

The proposed mixed use development is projected to have minimal impact on traffic operations at the N. Washington Avenue intersection with Wilson Street.

SIGNALIZED INTERSECTIONS CAPACITY ANALYSIS RESULTS ^①							
Intersection	Scenario	Peak Hour	Overall Intersection LOS	Intersection Approach, Lane Configuration & LOS ^②			
				East bound	West bound	North bound	South bound
South River St. & Wilson St.				L & T/ R	L & T/R	L/T & R	Stop Sign
	Existing	AM	C	C	B	C	
		PM	D	E	C	C	
	2024 No Build	AM	--	--	--	--	--
PM		D	D	F	C	C	
2024 Total Traffic	AM	C	C	C	B	C	
	PM	D	D	F	C ⁽⁴⁾	C	
N. Washington Ave. & Wilson St.				L & T/R	L & T & R	No South Leg	L & T & T/R
	Existing	AM	B	A	A		B
		PM	B	B	A	A	
	2024 Total Traffic	AM	B	B	A	A	
PM		B	B	A	B		C ⁽³⁾

- ① L or R = exclusive left or right turn lane. T = exclusive through lane. L/T/R indicates the designated traffic movements share a lane.
- ② LOS letter grade provided is the overall approach LOS.
- ③ Southbound approach left turn lane operates at LOS E.
- ④ Westbound approach left turn lane operates at less than 1 second of delay from LOS E under No Build, and is projected to operate at LOS E under Build scenario.

G. SUMMARY OF FINDINGS AND RECOMMENDATIONS

The proposed One North Washington Place is a mixed use redevelopment of about $\frac{3}{4}$ of the block bounded by North River Street, North Washington Street, State Street and Wilson Street in the City of Batavia's central business district. Access to the development will be provided via two driveways to State Street.

Wilson Street and IL Route 25 (N. Washington, S. River and Wilson between the two) are both minor arterial streets. Wilson Street in particular experiences high peak hour traffic volumes and queuing of vehicles during the weekday morning and evening peak hour periods. About 85% of the vehicular traffic generated by the development is projected to travel on Wilson Street. Accordingly an evaluation of the traffic impacts of the proposed development was performed for the section of Wilson Street from North River Street to North Washington Street.

Traffic analyses were performed for the following scenarios:

- Year 2016 Existing Conditions
- Year 2024 Total Traffic Conditions (under full occupancy of the redevelopment site)

Additional traffic analyses were performed during the evening peak for the South River Street/Wilson Street intersection under a Year 2024 No Build scenario to evaluate the intersection with normal background traffic growth and without redevelopment generated traffic growth.

The following is a summary of the findings and recommendations of this traffic study:

1. The stop sign controlled **North River Street** approach to Wilson Street will be minimally impacted by the proposed redevelopment. The current acceptable intersection Level of Service (LOS) will not change and there will be minimal change in vehicular queuing on the N. River Street approach to Wilson Street.
2. The overall operation of the traffic signal controlled approaches to the **South River Street/Wilson Street** intersection are at an acceptable LOS "D" or better during the weekday morning and evening peak hour periods. However the eastbound approach, specifically the eastbound through traffic movement, currently operates at a less than acceptable LOS "E" during the evening peak hour, and is projected to decline to LOS "F" under the 2024 Total Traffic scenario which includes development traffic. The eastbound approach currently experiences long queues during the peak hours, which can extend west of the Island Avenue/Wilson Street intersection. Eastbound queuing is projected to increase under Year 2024 Total Traffic conditions. The westbound approach left turn traffic movement is projected to experience a drop in LOS from "D" to "E" with increased queuing during the evening peak hour period.

A Year 2024 No-Build scenario was performed to evaluate the intersection during the evening peak hour with normal background traffic growth and without the proposed redevelopment. The evaluation of the No-Build scenario demonstrated that the increase in delay and queuing due to the mixed used redevelopment is minimal. The increases in delay and queuing, and decline in LOS is due primarily to the normal background growth of traffic on area streets.

3. The stop sign controlled **South Washington Avenue** approach to Wilson Street will be minimally impacted by the proposed redevelopment. Few vehicles turn to and from S. Washington Avenue during the peak hour periods.
4. The overall operation of the traffic signal controlled approaches to the **North Washington Avenue/Wilson Street** intersection are at an acceptable LOS "B" or better during the weekday morning and evening peak hour periods. During the evening peak hour under existing and Total Traffic conditions, the southbound approach left turn movement operates at LOS "E" due to the long green signal time assigned to serve the much larger east-west traffic volumes. New traffic generated by the proposed redevelopment will have minimal impact in operations and queuing at this intersection.
5. The traffic analyses indicate that ***the proposed redevelopment will have a low impact on traffic operations on the Wilson Street corridor.*** The primary cause of declines in LOS and increases in queuing at the intersections is the normal background growth of non-site traffic. Recognizing that long vehicular queues and less than acceptable Levels of Service currently exist for certain traffic movements we recommend consideration of the following actions.
 - a. As should be done with any coordinated traffic signal system, a periodic review of traffic signal timings along the Wilson Street corridor should be performed. Traffic patterns change over time, and it is good practice to periodically review and adjust system timings to optimize operations under ever changing conditions.
 - b. The proximity of a variety of land uses in district the can contribute to reductions in personal vehicle trips and increases in walking, bicycle and transit trips. To further the potential for personal vehicle trip reductions, we suggest the following:
 - i. Encourage downtown development or redevelopment with land uses complementary to the proposed residential component, such as local grocery stores, that can create a synergy between the uses and reduce vehicular trips.
 - ii. Investigate the possibility of adding or changing the Pace bus routes to provide regular and more convenient service to the portion of downtown east of the Fox River.

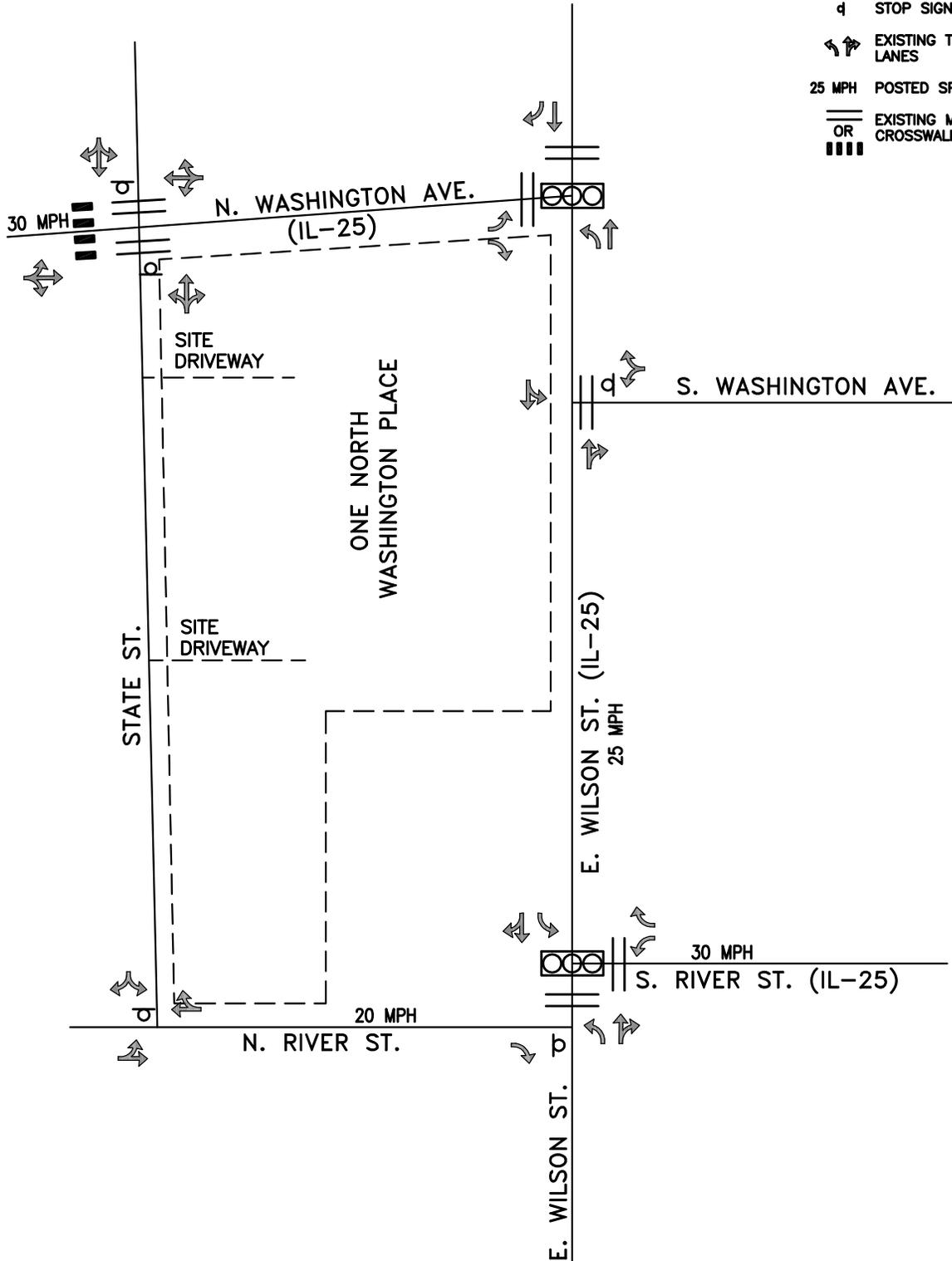
--End--

APPENDIX



SCALE: Not To Scale

- LEGEND**
-  TRAFFIC SIGNAL
 -  STOP SIGN
 -  EXISTING TRAVEL LANES
 - 25 MPH POSTED SPEED LIMIT
 -  EXISTING MARKED CROSSWALK
 - OR
 -  CROSSWALK



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EXISTING TRAFFIC CONTROL DEVICES AND TRAVEL LANES

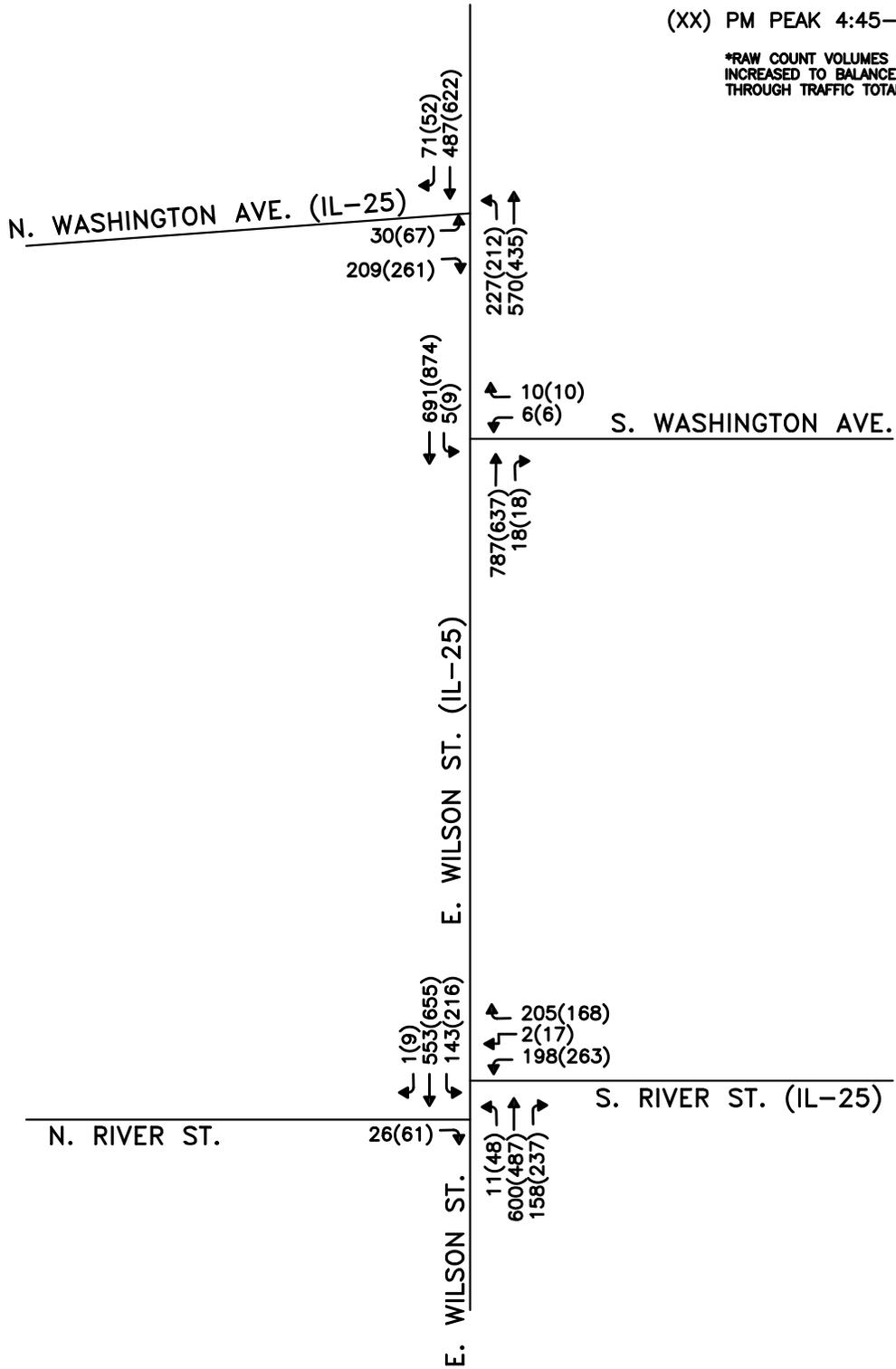
FIGURE 1

SCALE: Not To Scale

LEGEND

XX AM PEAK 7:15-8:15 AM
 (XX) PM PEAK 4:45-5:45 PM

*RAW COUNT VOLUMES WERE
 INCREASED TO BALANCE
 THROUGH TRAFFIC TOTALS



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**EXISTING
 E. WILSON CORRIDOR
 PEAK HOUR TRAFFIC VOLUMES***

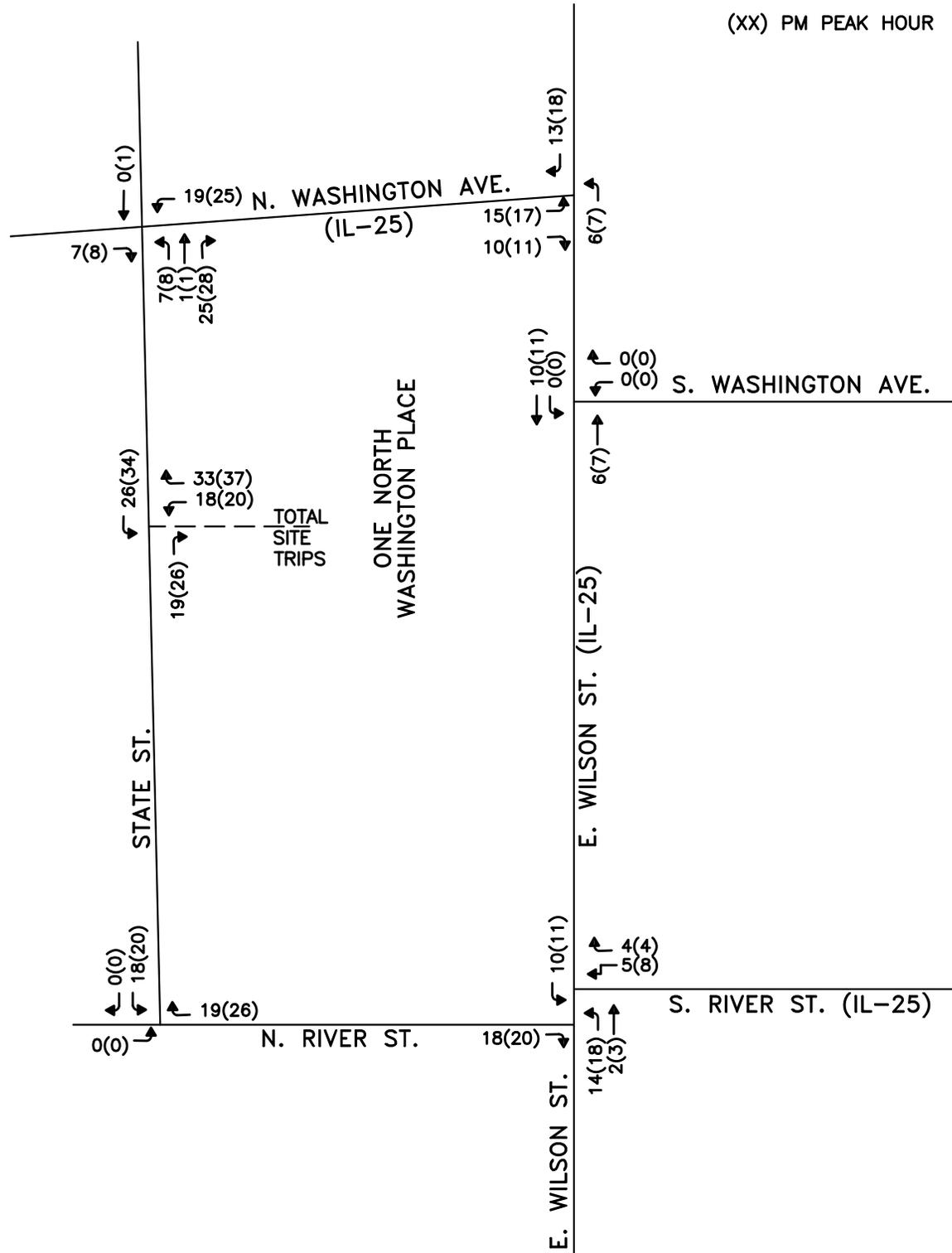
FIGURE 2

SCALE: Not To Scale

LEGEND

XX AM PEAK HOUR

(XX) PM PEAK HOUR



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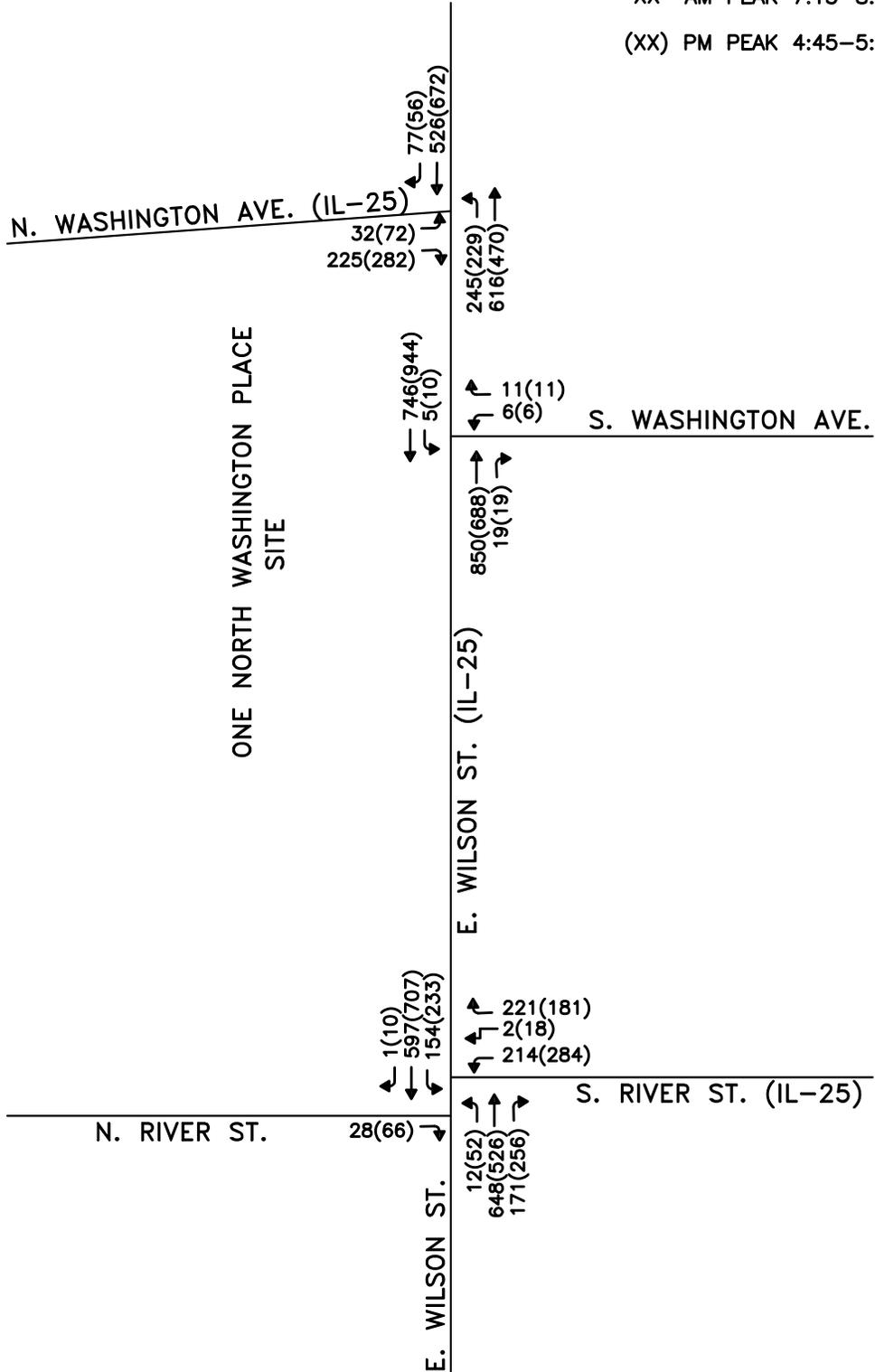
SITE TRAFFIC

FIGURE 3

SCALE: Not To Scale

LEGEND

XX AM PEAK 7:15-8:15 AM
 (XX) PM PEAK 4:45-5:45 PM



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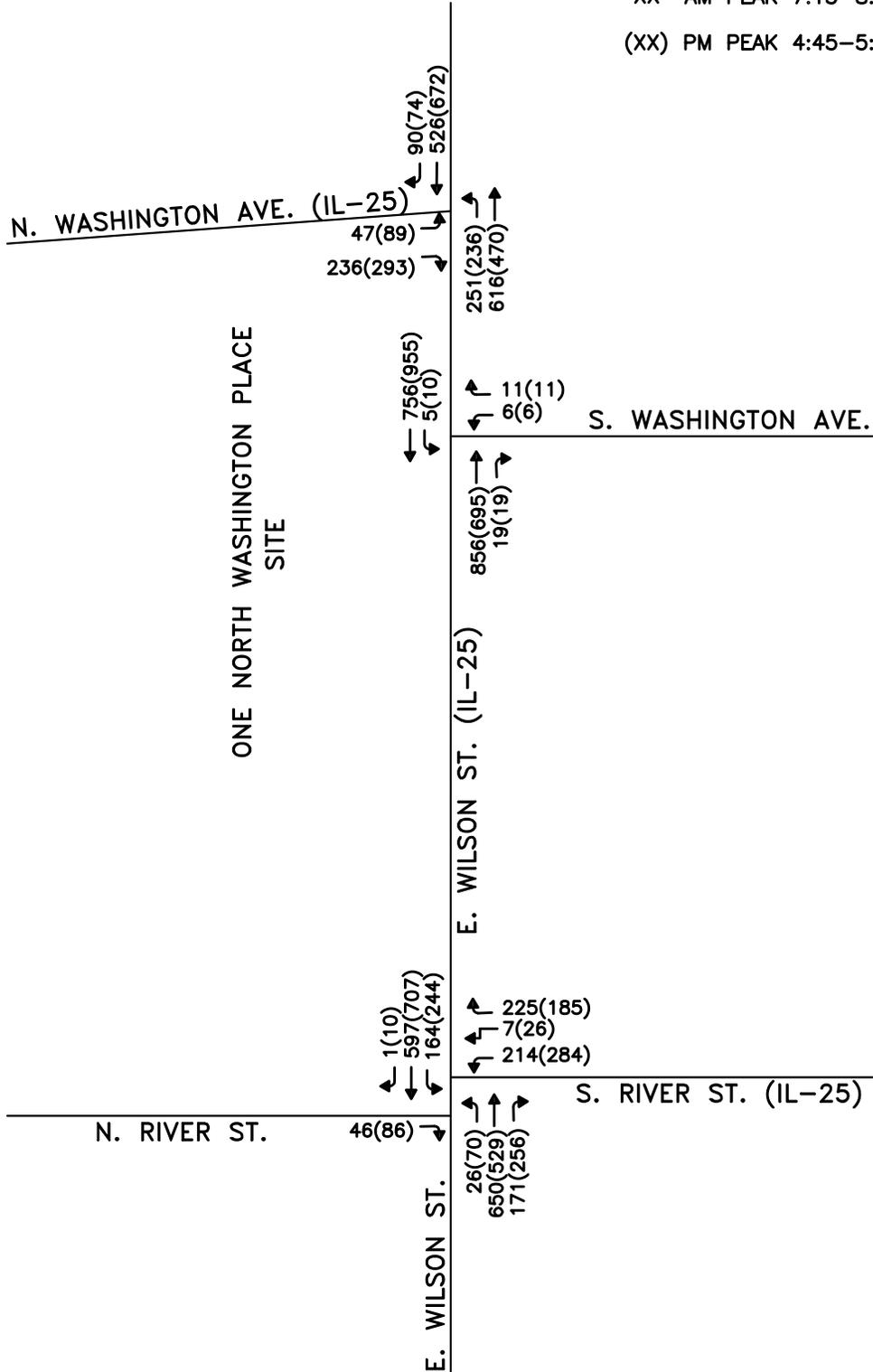
YEAR 2024
 NON SITE TRAFFIC

FIGURE 4

SCALE: Not To Scale

LEGEND

XX AM PEAK 7:15-8:15 AM
 (XX) PM PEAK 4:45-5:45 PM



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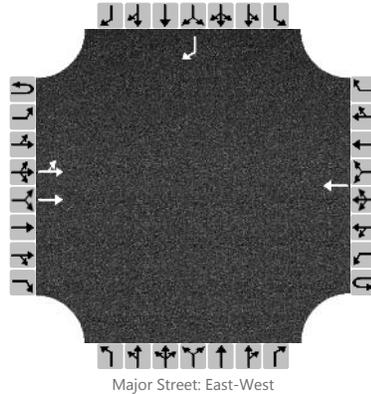
YEAR 2024
 TOTAL TRAFFIC

FIGURE 5

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	N. River/E. Wilson
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	N. River
Time Analyzed	Existing AM Peak	Peak Hour Factor	0.85
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	0	1	0		0	0	0		0	0	1
Configuration		LT	T				T									R
Volume, V (veh/h)		0	769				751									26
Percent Heavy Vehicles (%)		5														4
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.20														6.28
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.25														3.34

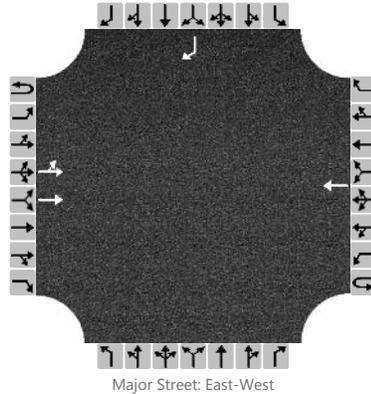
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0														31
Capacity, c (veh/h)		740														336
v/c Ratio		0.00														0.09
95% Queue Length, Q ₉₅ (veh)		0.0														0.3
Control Delay (s/veh)		9.9														16.8
Level of Service, LOS		A														C
Approach Delay (s/veh)	0.0												16.8			
Approach LOS													C			

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	N. River/E. Wilson
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	N. River
Time Analyzed	Existing PM Peak	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	0	1	0		0	0	0		0	0	1
Configuration		LT	T				T									R
Volume, V (veh/h)		0	772				918									61
Percent Heavy Vehicles (%)		1														0
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

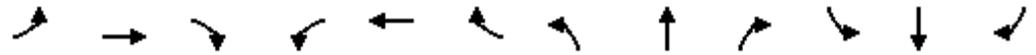
Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.12														6.20
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.21														3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0														66
Capacity, c (veh/h)		699														301
v/c Ratio		0.00														0.22
95% Queue Length, Q ₉₅ (veh)		0.0														0.8
Control Delay (s/veh)		10.2														20.3
Level of Service, LOS		B														C
Approach Delay (s/veh)	0.0												20.3			
Approach LOS													C			

Lanes, Volumes, Timings
S. River & E. Wilson

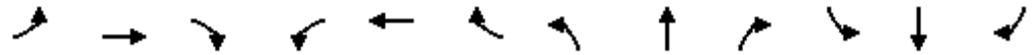
11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	600	158	143	553	1	198	2	205	0	0	0
Future Volume (vph)	11	600	158	143	553	1	198	2	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	100		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	0			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.969							0.850			
Flt Protected	0.950			0.950				0.953				
Satd. Flow (prot)	1678	1703	0	1646	1733	0	0	1678	1495	0	0	0
Flt Permitted	0.418			0.143				0.953				
Satd. Flow (perm)	738	1703	0	248	1733	0	0	1678	1495	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		25							225			
Link Speed (mph)		25			25			25				20
Link Distance (ft)		72			213			305				397
Travel Time (s)		2.0			5.8			8.3				13.5
Confl. Peds. (#/hr)			1	1		2						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	6%	6%	0%	8%	0%	8%	0%	0%	0%
Adj. Flow (vph)	12	659	174	157	608	1	218	2	225	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	833	0	157	609	0	0	220	225	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Prot	NA	pt+ov			
Protected Phases		2		1	6		3	8	8	1		
Permitted Phases	2			6								
Detector Phase	2	2		1	6		3	8	8	1		
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5				
Total Split (s)	66.0	66.0		10.0	76.0		24.0	24.0				
Total Split (%)	66.0%	66.0%		10.0%	76.0%		24.0%	24.0%				
Maximum Green (s)	61.5	61.5		5.5	71.5		19.5	19.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0				
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		None	C-Min		Min	Min				
Walk Time (s)	7.0	7.0			7.0			7.0				
Flash Dont Walk (s)	11.0	11.0			11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0			0				
Act Effect Green (s)	57.4	57.4		67.4	67.4			23.6	33.6			
Actuated g/C Ratio	0.57	0.57		0.67	0.67			0.24	0.34			

Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.03	0.84		0.64	0.52			0.56	0.35			
Control Delay	7.9	25.7		23.0	11.6			41.8	5.3			
Queue Delay	0.0	2.2		0.0	0.6			0.0	0.0			
Total Delay	7.9	27.9		23.0	12.2			41.8	5.3			
LOS	A	C		C	B			D	A			
Approach Delay		27.6			14.4			23.3				
Approach LOS		C			B			C				
Queue Length 50th (ft)	3	364		47	254			130	0			
Queue Length 95th (ft)	10	539		69	86			#213	54			
Internal Link Dist (ft)		1			133			225			317	
Turn Bay Length (ft)				100					115			
Base Capacity (vph)	453	1056		244	1239			395	651			
Starvation Cap Reductn	0	114		0	298			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.03	0.88		0.64	0.65			0.56	0.35			

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 21.8 Intersection LOS: C
 Intersection Capacity Utilization 71.5% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: S River/IL-25/N River Departure



Lanes, Volumes, Timings
S. River & E. Wilson

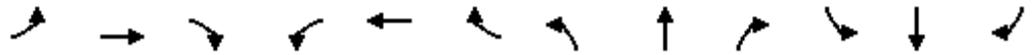
11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	487	237	216	655	9	263	17	168	0	0	0
Future Volume (vph)	48	487	237	216	655	9	263	17	168	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	100		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	0			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00							
Frt		0.951			0.998				0.850			
Flt Protected	0.950			0.950				0.955				
Satd. Flow (prot)	1745	1711	0	1728	1814	0	0	1814	1615	0	0	0
Flt Permitted	0.347			0.120				0.955				
Satd. Flow (perm)	637	1711	0	218	1814	0	0	1814	1615	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		26			1				150			
Link Speed (mph)		25			25			25			20	
Link Distance (ft)		72			213			305			397	
Travel Time (s)		2.0			5.8			8.3			13.5	
Confl. Peds. (#/hr)			11	11		3						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	497	242	220	668	9	268	17	171	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	739	0	220	677	0	0	285	171	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Prot	NA	pt+ov			
Protected Phases		2		1	6		3	8	8	1		
Permitted Phases	2			6								
Detector Phase	2	2		1	6		3	8	8	1		
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5				
Total Split (s)	76.0	76.0		22.0	98.0		42.0	42.0				
Total Split (%)	54.3%	54.3%		15.7%	70.0%		30.0%	30.0%				
Maximum Green (s)	71.5	71.5		17.5	93.5		37.5	37.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0				
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		None	C-Min		Min	Min				
Walk Time (s)	7.0	7.0			7.0			7.0				
Flash Dont Walk (s)	11.0	11.0			11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0			0				
Act Effect Green (s)	68.2	68.2		86.1	86.1			44.9	62.8			
Actuated g/C Ratio	0.49	0.49		0.62	0.62			0.32	0.45			

Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.87		0.79	0.61			0.49	0.21			
Control Delay	20.0	42.8		38.2	21.3			43.9	6.0			
Queue Delay	0.0	15.7		0.3	0.8			0.0	0.0			
Total Delay	20.0	58.5		38.6	22.1			43.9	6.0			
LOS	B	E		D	C			D	A			
Approach Delay		56.1			26.1			29.7				
Approach LOS		E			C			C				
Queue Length 50th (ft)	24	557		107	459			213	11			
Queue Length 95th (ft)	49	742		145	341			325	56			
Internal Link Dist (ft)		1			133			225			317	
Turn Bay Length (ft)				100					115			
Base Capacity (vph)	329	895		323	1211			581	849			
Starvation Cap Reductn	0	157		7	253			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.15	1.00		0.70	0.71			0.49	0.20			

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 37.9
 Intersection Capacity Utilization 79.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

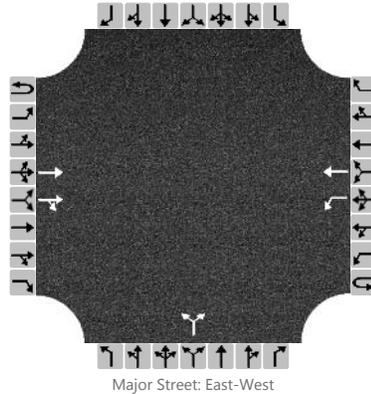
Splits and Phases: 6: S River/IL-25/N River Departure



HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	S. Washington/E. River
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	S. Washington
Time Analyzed	Existing AM Pk	Peak Hour Factor	0.83
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume, V (veh/h)			787	18		5	691			6		10				
Percent Heavy Vehicles (%)						7				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.24					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.27					3.50		3.30			

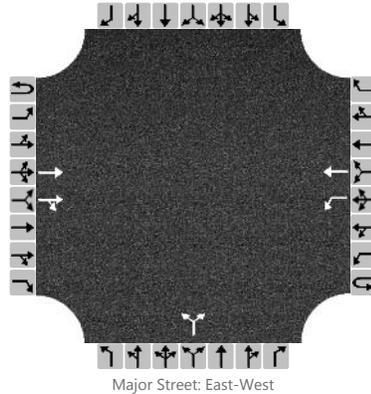
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						6					19					
Capacity, c (veh/h)						675					158					
v/c Ratio						0.01					0.12					
95% Queue Length, Q ₉₅ (veh)						0.0					0.4					
Control Delay (s/veh)						10.4					30.9					
Level of Service, LOS						B					D					
Approach Delay (s/veh)					0.1				30.9							
Approach LOS									D							

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	S. Washington/E. River
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	S. Washington
Time Analyzed	Existing PM Peak	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume, V (veh/h)			637	18		9	874			6		10				
Percent Heavy Vehicles (%)						1				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

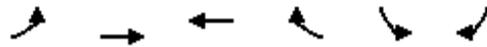
Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.12					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.21					3.50		3.30			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					17					
Capacity, c (veh/h)						895					202					
v/c Ratio						0.01					0.08					
95% Queue Length, Q ₉₅ (veh)						0.0					0.3					
Control Delay (s/veh)						9.1					24.4					
Level of Service, LOS						A					C					
Approach Delay (s/veh)					0.1				24.4							
Approach LOS									C							

Lanes, Volumes, Timings
N. Washington & E. Wilson

11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	227	570	487	71	30	209
Future Volume (vph)	227	570	487	71	30	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0			65	125	125
Storage Lanes	1			1	1	0
Taper Length (ft)	100				140	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			0.97	1.00	
Fr _t				0.850		0.850
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1616	1701	1701	1446	1662	1487
Fl _t Permitted	0.354				0.950	
Satd. Flow (perm)	601	1701	1701	1405	1657	1487
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				64		249
Link Speed (mph)		25	25		30	
Link Distance (ft)		112	341		418	
Travel Time (s)		3.1	9.3		9.5	
Confl. Peds. (#/hr)	3			3	1	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	8%	8%	8%	8%	5%	5%
Adj. Flow (vph)	270	679	580	85	36	249
Shared Lane Traffic (%)						
Lane Group Flow (vph)	270	679	580	85	36	249
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	1.5	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	6.0	22.5	22.5	22.5	14.0	14.0
Total Split (s)	6.0	81.0	75.0	75.0	19.0	19.0
Total Split (%)	6.0%	81.0%	75.0%	75.0%	19.0%	19.0%
Maximum Green (s)	1.5	76.5	70.5	70.5	14.5	14.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	82.2	82.2	68.4	68.4	8.8	8.8
Actuated g/C Ratio	0.82	0.82	0.68	0.68	0.09	0.09

Lanes, Volumes, Timings
 N. Washington & E. Wilson

11/16/2016

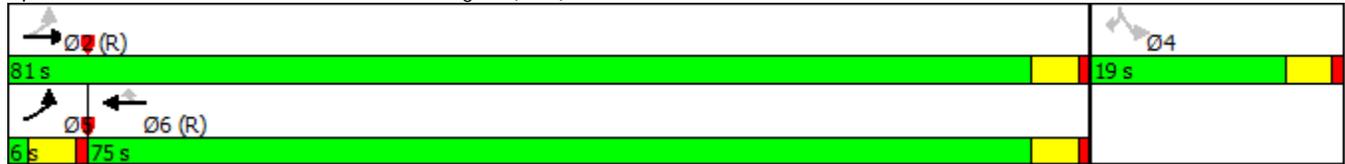


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
v/c Ratio	0.46	0.49	0.50	0.09	0.25	0.70
Control Delay	5.8	6.8	10.6	3.1	45.0	16.4
Queue Delay	0.8	1.1	0.0	0.0	0.0	0.0
Total Delay	6.7	7.9	10.6	3.1	45.0	16.4
LOS	A	A	B	A	D	B
Approach Delay		7.5	9.6		20.0	
Approach LOS		A	A		B	
Queue Length 50th (ft)	47	187	146	4	22	0
Queue Length 95th (ft)	m70	208	285	22	46	53
Internal Link Dist (ft)		32	261		338	
Turn Bay Length (ft)				65	125	125
Base Capacity (vph)	589	1400	1217	1023	241	429
Starvation Cap Reductn	125	452	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.72	0.48	0.08	0.15	0.58

Intersection Summary

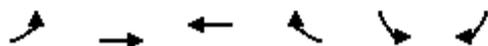
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 10.1
 Intersection LOS: B
 Intersection Capacity Utilization 53.6%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: E Wilson & N Washington (IL25)



Lanes, Volumes, Timings
N. Washington & E. Wilson

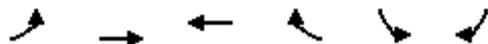
11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	212	435	622	52	67	261
Future Volume (vph)	212	435	622	52	67	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0			65	125	125
Storage Lanes	1			1	1	0
Taper Length (ft)	100				140	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.96	1.00	0.97
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1728	1818	1818	1546	1728	1546
Flt Permitted	0.324				0.950	
Satd. Flow (perm)	589	1818	1818	1485	1721	1503
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				18		290
Link Speed (mph)		25	25		30	
Link Distance (ft)		112	341		418	
Travel Time (s)		3.1	9.3		9.5	
Confl. Peds. (#/hr)	5			5	1	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	236	483	691	58	74	290
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	483	691	58	74	290
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	1.5	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	6.0	22.5	22.5	22.5	14.0	14.0
Total Split (s)	18.0	103.0	85.0	85.0	37.0	37.0
Total Split (%)	12.9%	73.6%	60.7%	60.7%	26.4%	26.4%
Maximum Green (s)	13.5	98.5	80.5	80.5	32.5	32.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	119.2	119.2	105.7	105.7	11.8	11.8
Actuated g/C Ratio	0.85	0.85	0.76	0.76	0.08	0.08

Lanes, Volumes, Timings
N. Washington & E. Wilson

11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
v/c Ratio	0.41	0.31	0.50	0.05	0.51	0.74
Control Delay	5.6	5.3	9.1	4.2	72.5	18.2
Queue Delay	0.9	1.2	0.4	0.0	0.0	0.3
Total Delay	6.6	6.5	9.5	4.2	72.5	18.5
LOS	A	A	A	A	E	B
Approach Delay		6.5	9.1		29.5	
Approach LOS		A	A		C	
Queue Length 50th (ft)	59	155	214	8	66	0
Queue Length 95th (ft)	m76	m174	389	26	114	91
Internal Link Dist (ft)		32	261		338	
Turn Bay Length (ft)				65	125	125
Base Capacity (vph)	611	1547	1372	1125	399	571
Starvation Cap Reductn	178	801	0	0	0	0
Spillback Cap Reductn	0	0	272	0	0	43
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.65	0.63	0.05	0.19	0.55

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 12.1
 Intersection LOS: B
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

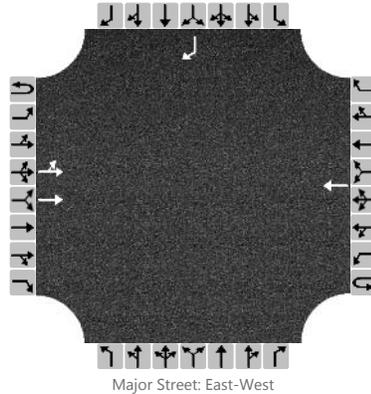
Splits and Phases: 10: E Wilson & N Washington (IL25)



HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	N. River/E. Wilson
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	N. River
Time Analyzed	2024 Total Traffic AM Pk	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	0	1	0		0	0	0		0	0	1
Configuration		LT	T				T									R
Volume, V (veh/h)		0	847				811									46
Percent Heavy Vehicles (%)		5														4
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.20														6.28
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.25														3.34

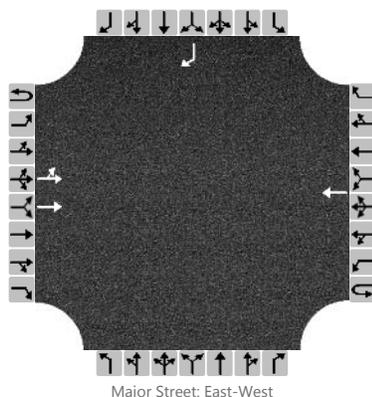
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0														48
Capacity, c (veh/h)		760														350
v/c Ratio		0.00														0.14
95% Queue Length, Q ₉₅ (veh)		0.0														0.5
Control Delay (s/veh)		9.7														16.9
Level of Service, LOS		A														C
Approach Delay (s/veh)	0.0												16.9			
Approach LOS													C			

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	N. River/E. Wilson
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	N. River
Time Analyzed	2024 TT PM Pk	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	0	1	0		0	0	0		0	0	1
Configuration		LT	T				T									R
Volume, V (veh/h)		0	855				991									86
Percent Heavy Vehicles (%)		1														0
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1														6.2
Critical Headway (sec)		4.12														6.20
Base Follow-Up Headway (sec)		2.2														3.3
Follow-Up Headway (sec)		2.21														3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0														91
Capacity, c (veh/h)		666														280
v/c Ratio		0.00														0.33
95% Queue Length, Q ₉₅ (veh)		0.0														1.4
Control Delay (s/veh)		10.4														24.0
Level of Service, LOS		B														C
Approach Delay (s/veh)	0.0												24.0			
Approach LOS													C			

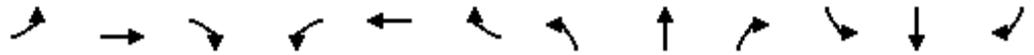
Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	650	171	164	597	1	214	7	225	0	0	0
Future Volume (vph)	26	650	171	164	597	1	214	7	225	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	100		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	0			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.969							0.850			
Flt Protected	0.950			0.950				0.954				
Satd. Flow (prot)	1678	1703	0	1646	1733	0	0	1682	1495	0	0	0
Flt Permitted	0.408			0.133				0.954				
Satd. Flow (perm)	721	1703	0	230	1733	0	0	1682	1495	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		25							237			
Link Speed (mph)		25			25			25				20
Link Distance (ft)		72			213			305				397
Travel Time (s)		2.0			5.8			8.3				13.5
Confl. Peds. (#/hr)			1	1		2						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	6%	6%	0%	8%	0%	8%	0%	0%	0%
Adj. Flow (vph)	27	684	180	173	628	1	225	7	237	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	864	0	173	629	0	0	232	237	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Prot	NA	pt+ov			
Protected Phases		2		1	6		3	8	8	1		
Permitted Phases	2			6								
Detector Phase	2	2		1	6		3	8	8	1		
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5				
Total Split (s)	66.0	66.0		10.0	76.0		24.0	24.0				
Total Split (%)	66.0%	66.0%		10.0%	76.0%		24.0%	24.0%				
Maximum Green (s)	61.5	61.5		5.5	71.5		19.5	19.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0				
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		None	C-Min		Min	Min				
Walk Time (s)	7.0	7.0			7.0			7.0				
Flash Dont Walk (s)	11.0	11.0			11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0			0				
Act Effct Green (s)	58.4	58.4		68.4	68.4			22.6	32.6			
Actuated g/C Ratio	0.58	0.58		0.68	0.68			0.23	0.33			

Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.86		0.74	0.53			0.61	0.37			
Control Delay	8.3	26.7		30.8	12.2			44.3	5.4			
Queue Delay	0.0	3.3		0.0	0.7			0.0	0.0			
Total Delay	8.3	30.0		30.8	12.9			44.3	5.4			
LOS	A	C		C	B			D	A			
Approach Delay		29.4			16.8			24.6				
Approach LOS		C			B			C				
Queue Length 50th (ft)	6	382		53	273			139	0			
Queue Length 95th (ft)	18	585		#109	91			#240	55			
Internal Link Dist (ft)		1			133			225			317	
Turn Bay Length (ft)				100					115			
Base Capacity (vph)	443	1056		235	1239			380	647			
Starvation Cap Reductn	0	114		0	302			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.06	0.92		0.74	0.67			0.61	0.37			

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 23.7 Intersection LOS: C
 Intersection Capacity Utilization 77.2% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: S River/IL-25/N River Departure



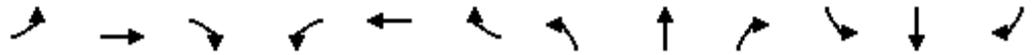
Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	529	256	244	707	10	284	26	185	0	0	0
Future Volume (vph)	70	529	256	244	707	10	284	26	185	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	100		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	0			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00							
Frt		0.951			0.998				0.850			
Flt Protected	0.950			0.950				0.956				
Satd. Flow (prot)	1745	1711	0	1728	1814	0	0	1816	1615	0	0	0
Flt Permitted	0.334			0.087				0.956				
Satd. Flow (perm)	613	1711	0	158	1814	0	0	1816	1615	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		25			1				149			
Link Speed (mph)		25			25			25				20
Link Distance (ft)		72			213			305				397
Travel Time (s)		2.0			5.8			8.3				13.5
Confl. Peds. (#/hr)			11	11		3						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	71	540	261	249	721	10	290	27	189	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	801	0	249	731	0	0	317	189	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Prot	NA	pt+ov			
Protected Phases		2		1	6		3	8	8	1		
Permitted Phases	2			6								
Detector Phase	2	2		1	6		3	8	8	1		
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5				
Total Split (s)	76.0	76.0		22.0	98.0		42.0	42.0				
Total Split (%)	54.3%	54.3%		15.7%	70.0%		30.0%	30.0%				
Maximum Green (s)	71.5	71.5		17.5	93.5		37.5	37.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0				
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		None	C-Min		Min	Min				
Walk Time (s)	7.0	7.0			7.0			7.0				
Flash Dont Walk (s)	11.0	11.0			11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0			0				
Act Effect Green (s)	69.7	69.7		89.9	89.9			41.1	61.3			
Actuated g/C Ratio	0.50	0.50		0.64	0.64			0.29	0.44			

Lanes, Volumes, Timings
S. River & E. Wilson

11/16/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.23	0.93		0.90	0.63			0.60	0.24			
Control Delay	21.8	49.3		59.9	20.1			49.1	7.2			
Queue Delay	0.0	44.0		0.7	1.0			0.0	0.0			
Total Delay	21.8	93.3		60.6	21.1			49.1	7.2			
LOS	C	F		E	C			D	A			
Approach Delay		87.5			31.2			33.5				
Approach LOS		F			C			C				
Queue Length 50th (ft)	35	631		138	488			257	21			
Queue Length 95th (ft)	70	#915		#272	269			365	71			
Internal Link Dist (ft)		1			133			225			317	
Turn Bay Length (ft)				100					115			
Base Capacity (vph)	313	886		297	1211			532	809			
Starvation Cap Reductn	0	153		4	245			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.23	1.09		0.85	0.76			0.60	0.23			

Intersection Summary

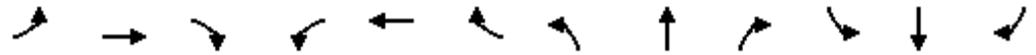
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 52.5 Intersection LOS: D
 Intersection Capacity Utilization 85.7% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: S River/IL-25/N River Departure



Lanes, Volumes, Timings
S. River & E. Wilson

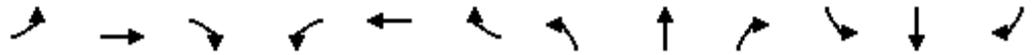
11/17/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	526	256	233	707	10	284	18	181	0	0	0
Future Volume (vph)	52	526	256	233	707	10	284	18	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	100		0	0		115	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	0			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			1.00							
Frt		0.951			0.998				0.850			
Flt Protected	0.950			0.950				0.955				
Satd. Flow (prot)	1745	1711	0	1728	1814	0	0	1814	1615	0	0	0
Flt Permitted	0.330			0.092				0.955				
Satd. Flow (perm)	606	1711	0	167	1814	0	0	1814	1615	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		26			1				150			
Link Speed (mph)		25			25			25			20	
Link Distance (ft)		72			213			305			397	
Travel Time (s)		2.0			5.8			8.3			13.5	
Confl. Peds. (#/hr)			11	11		3						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	537	261	238	721	10	290	18	185	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	798	0	238	731	0	0	308	185	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Prot	NA	pt+ov			
Protected Phases		2		1	6		3	8	8	1		
Permitted Phases	2			6								
Detector Phase	2	2		1	6		3	8	8	1		
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5				
Total Split (s)	76.0	76.0		22.0	98.0		42.0	42.0				
Total Split (%)	54.3%	54.3%		15.7%	70.0%		30.0%	30.0%				
Maximum Green (s)	71.5	71.5		17.5	93.5		37.5	37.5				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0				
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		None	C-Min		Min	Min				
Walk Time (s)	7.0	7.0			7.0			7.0				
Flash Dont Walk (s)	11.0	11.0			11.0			11.0				
Pedestrian Calls (#/hr)	0	0			0			0				
Act Effect Green (s)	70.0	70.0		89.6	89.6			41.4	61.0			
Actuated g/C Ratio	0.50	0.50		0.64	0.64			0.30	0.44			

Lanes, Volumes, Timings
S. River & E. Wilson

11/17/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.92		0.87	0.63			0.57	0.23			
Control Delay	20.4	48.0		53.6	21.3			48.2	6.9			
Queue Delay	0.0	44.5		0.7	1.2			0.0	0.0			
Total Delay	20.4	92.5		54.3	22.4			48.2	6.9			
LOS	C	F		D	C			D	A			
Approach Delay		88.0			30.3			32.7				
Approach LOS		F			C			C				
Queue Length 50th (ft)	25	612		123	501			249	19			
Queue Length 95th (ft)	54	#910		#241	343			354	66			
Internal Link Dist (ft)		1			133			225			317	
Turn Bay Length (ft)				100					115			
Base Capacity (vph)	310	889		301	1211			536	813			
Starvation Cap Reductn	0	159		6	260			0	0			
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.17	1.09		0.81	0.77			0.57	0.23			

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 52.0 Intersection LOS: D
 Intersection Capacity Utilization 84.5% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

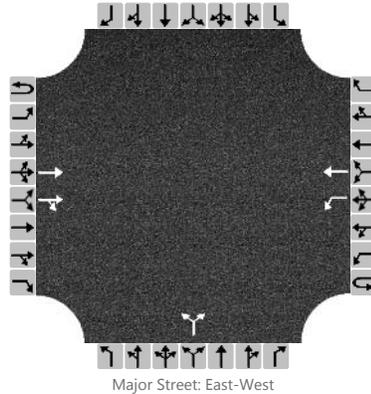
Splits and Phases: 6: S River/IL-25/N River Departure



HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	S. Washington/E. River
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	S. Washington
Time Analyzed	2024 Total Traffic AM Pk	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume, V (veh/h)			856	19		5	756			6		11				
Percent Heavy Vehicles (%)						7				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.24					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.27					3.50		3.30			

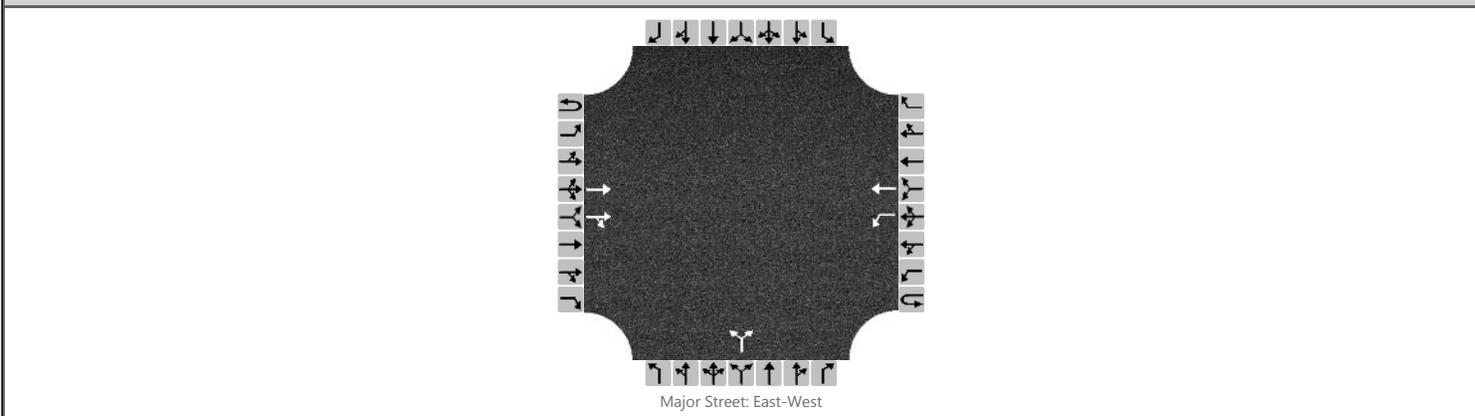
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5					18					
Capacity, c (veh/h)						705					189					
v/c Ratio						0.01					0.10					
95% Queue Length, Q ₉₅ (veh)						0.0					0.3					
Control Delay (s/veh)						10.1					26.0					
Level of Service, LOS						B					D					
Approach Delay (s/veh)					0.1				26.0							
Approach LOS									D							

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JJB & A	Intersection	S. Washington/E. River
Agency/Co.	JJB & A	Jurisdiction	Batavia
Date Performed	11/16/2016	East/West Street	E. Wilson
Analysis Year	2016	North/South Street	S. Washington
Time Analyzed	2024 Total Traffic PM Pk	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	One N Washington Place		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	2	0	0	1	1	0	0	0	0		0	0	0	
Configuration			T	TR		L	T				LR					
Volume, V (veh/h)			695	19		10	955			6		11				
Percent Heavy Vehicles (%)						1				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11				18						
Capacity, c (veh/h)						859				182						
v/c Ratio						0.01				0.10						
95% Queue Length, Q ₉₅ (veh)						0.0				0.3						
Control Delay (s/veh)						9.2				27.0						
Level of Service, LOS						A				D						
Approach Delay (s/veh)					0.1				27.0							
Approach LOS									D							

Lanes, Volumes, Timings

N. Washington & E. Wilson

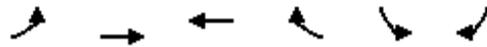
11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	251	616	526	90	47	236
Future Volume (vph)	251	616	526	90	47	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0			65	125	125
Storage Lanes	1			1	1	0
Taper Length (ft)	100				140	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			0.97	1.00	
Fr _t				0.850		0.850
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1616	1701	1701	1446	1662	1487
Fl _t Permitted	0.368				0.950	
Satd. Flow (perm)	624	1701	1701	1405	1657	1487
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				75		248
Link Speed (mph)		25	25		30	
Link Distance (ft)		112	341		418	
Travel Time (s)		3.1	9.3		9.5	
Confl. Peds. (#/hr)	3			3	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	8%	8%	8%	5%	5%
Adj. Flow (vph)	264	648	554	95	49	248
Shared Lane Traffic (%)						
Lane Group Flow (vph)	264	648	554	95	49	248
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	1.5	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	6.0	22.5	22.5	22.5	14.0	14.0
Total Split (s)	6.0	81.0	75.0	75.0	19.0	19.0
Total Split (%)	6.0%	81.0%	75.0%	75.0%	19.0%	19.0%
Maximum Green (s)	1.5	76.5	70.5	70.5	14.5	14.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	81.9	81.9	68.1	68.1	9.1	9.1
Actuated g/C Ratio	0.82	0.82	0.68	0.68	0.09	0.09

Lanes, Volumes, Timings
N. Washington & E. Wilson

11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
v/c Ratio	0.44	0.47	0.48	0.10	0.33	0.69
Control Delay	5.6	7.1	10.3	2.8	47.0	16.0
Queue Delay	0.0	1.0	0.0	0.0	0.0	0.0
Total Delay	5.6	8.1	10.3	2.8	47.0	16.0
LOS	A	A	B	A	D	B
Approach Delay		7.4	9.2		21.1	
Approach LOS		A	A		C	
Queue Length 50th (ft)	49	200	141	3	30	0
Queue Length 95th (ft)	m78	m234	298	26	62	70
Internal Link Dist (ft)		32	261		338	
Turn Bay Length (ft)				65	125	125
Base Capacity (vph)	603	1395	1215	1025	241	428
Starvation Cap Reductn	0	471	0	0	0	0
Spillback Cap Reductn	0	0	23	0	0	3
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.70	0.46	0.09	0.20	0.58

Intersection Summary

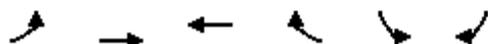
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 10.2
 Intersection LOS: B
 Intersection Capacity Utilization 57.0%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: E Wilson & N Washington (IL25)



Lanes, Volumes, Timings
N. Washington & E. Wilson

11/16/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	236	470	672	74	89	293
Future Volume (vph)	236	470	672	74	89	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0			65	125	125
Storage Lanes	1			1	1	0
Taper Length (ft)	100				140	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.96	1.00	0.97
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1728	1818	1818	1546	1728	1546
Flt Permitted	0.311				0.950	
Satd. Flow (perm)	566	1818	1818	1485	1721	1503
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				24		308
Link Speed (mph)		25	25		30	
Link Distance (ft)		112	341		418	
Travel Time (s)		3.1	9.3		9.5	
Confl. Peds. (#/hr)	5			5	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	248	495	707	78	94	308
Shared Lane Traffic (%)						
Lane Group Flow (vph)	248	495	707	78	94	308
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	1.5	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	6.0	22.5	22.5	22.5	14.0	14.0
Total Split (s)	18.0	103.0	85.0	85.0	37.0	37.0
Total Split (%)	12.9%	73.6%	60.7%	60.7%	26.4%	26.4%
Maximum Green (s)	13.5	98.5	80.5	80.5	32.5	32.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	117.9	117.9	104.0	104.0	13.1	13.1
Actuated g/C Ratio	0.84	0.84	0.74	0.74	0.09	0.09

Lanes, Volumes, Timings
N. Washington & E. Wilson

11/16/2016



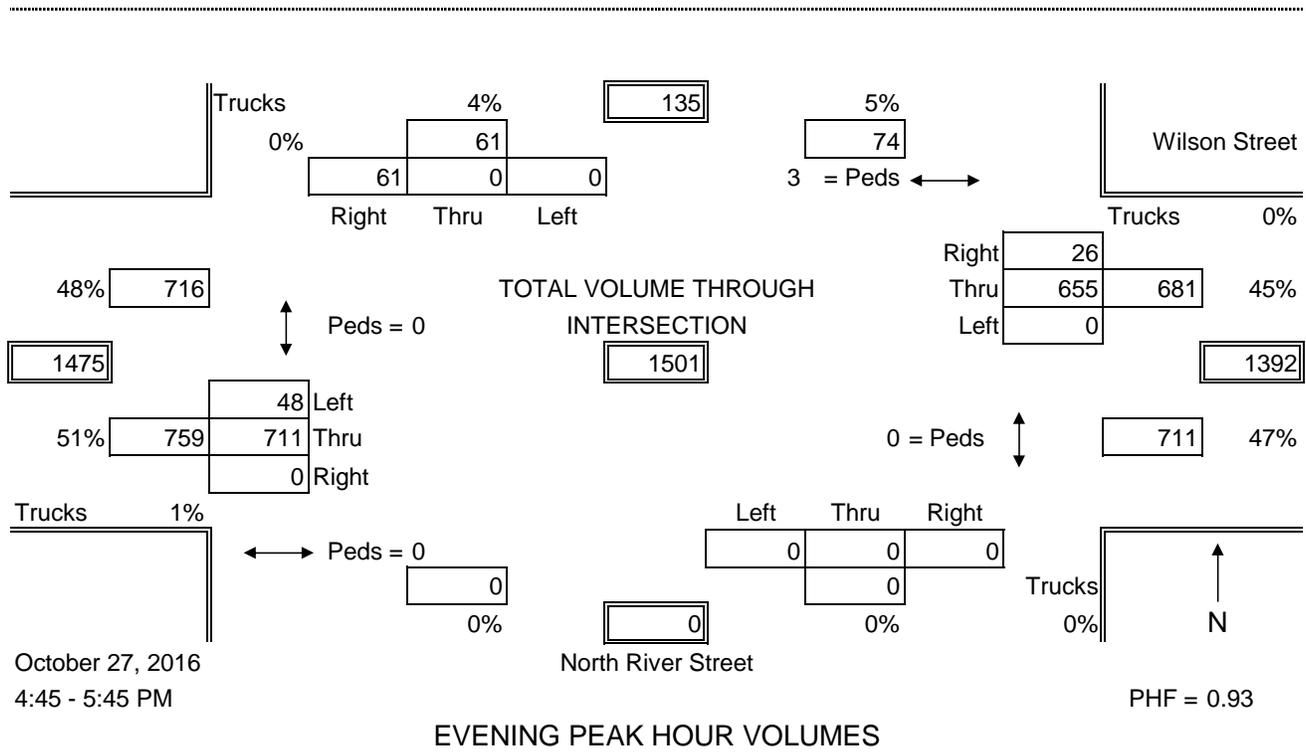
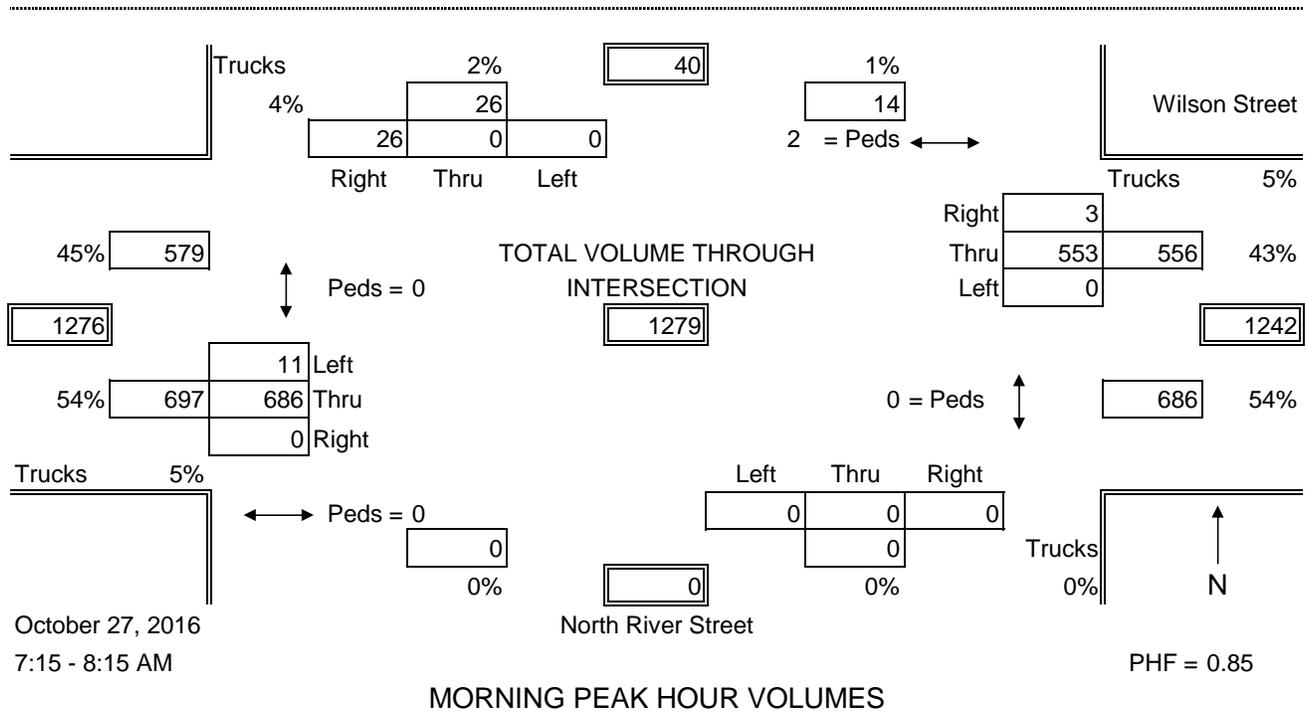
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
v/c Ratio	0.45	0.32	0.52	0.07	0.58	0.74
Control Delay	5.9	5.7	10.1	4.4	74.6	16.9
Queue Delay	1.0	1.3	0.5	0.0	0.0	0.3
Total Delay	6.9	6.9	10.6	4.4	74.6	17.2
LOS	A	A	B	A	E	B
Approach Delay		6.9	10.0		30.6	
Approach LOS		A	B		C	
Queue Length 50th (ft)	65	185	238	12	84	0
Queue Length 95th (ft)	m69	m139	416	33	139	93
Internal Link Dist (ft)		32	261		338	
Turn Bay Length (ft)				65	125	125
Base Capacity (vph)	588	1530	1350	1109	399	585
Starvation Cap Reductn	155	786	0	0	0	0
Spillback Cap Reductn	0	0	271	0	0	45
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.67	0.66	0.07	0.24	0.57

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 13.1
 Intersection LOS: B
 Intersection Capacity Utilization 65.3%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: E Wilson & N Washington (IL25)





EXISTING TRAFFIC VOLUMES

Wilson Street
North River Street
System Peak Hours

**SUMMARY OF VEHICLE COUNTS
MORNING PEAK PERIOD**

Observer: JAJ & PMT Date: October 27, 2016 Day: Thursday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: North River Street

Time Begins A.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total	
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total			
7:00	0	143		143		67	0	67	210						4	4	4	214		
7:15	1	155		156		106	0	106	262						5	5	5	267		
7:30	3	179		182		107	1	108	290						3	3	3	293		
7:45	6	202		208		127	2	129	337						5	5	5	342		
8:00	1	150		151		213	0	213	364						13	13	13	377		
8:15	6	205		211		130	2	132	343						7	7	7	350		
8:30	9	163		172		94	4	98	270						2	2	2	272		
8:45	10	124		134		135	1	136	270						2	2	2	272		
Total	36	1321	0	1357	0	979	10	989	2346	0	0	0	0	0	0	0	41	41	41	2387
Peak Hour	16	736	0	752	0	577	5	582	1334	0	0	0	0	0	0	0	28	28	28	1362
System Pk Hr	11	686	0	697	0	553	3	556	1253	0	0	0	0	0	0	0	26	26	26	1279

Peak Hour Factor 0.90
 7:15 - 8:15 System Peak Hour Factor 0.85

**SUMMARY OF VEHICLE COUNTS
EVENING PEAK PERIOD**

Observer: JAJ & PMT Date: October 27, 2016 Day: Thursday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: North River Street

Time Begins P.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total	
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total			
4:00	11	141		152		156	4	160	312						10	10	10	322		
4:15	4	132		136		156	4	160	296						4	4	4	300		
4:30	15	150		165		163	2	165	330						11	11	11	341		
4:45	15	163		178		163	5	168	346						14	14	14	360		
5:00	5	197		202		147	6	153	355						18	18	18	373		
5:15	18	176		194		189	3	192	386						16	16	16	402		
5:30	10	175		185		156	12	168	353						13	13	13	366		
5:45	20	158		178		149	4	153	331						18	18	18	349		
Total	98	1292	0	1390	0	1279	40	1319	2709	0	0	0	0	0	0	0	104	104	104	2813
Peak Hour	48	711	0	759	0	655	26	681	1440	0	0	0	0	0	0	0	61	61	61	1501
System Pk Hr	48	711	0	759	0	655	26	681	1440	0	0	0	0	0	0	0	61	61	61	1501

Peak Hour Factor 0.93
 4:45 - 5:45 System Peak Hour Factor 0.93

SUMMARY OF VEHICLE COUNTS
MORNING PEAK PERIOD

Observer: JAJ & PMT Date: October 27, 2016 Day: Thursday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: South River Street (IL Rte 25)

Time Begins A.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
7:00		97	46	143	33	67		100	243	26		45	71				0	71	314
7:15		112	43	155	30	106		136	291	29		52	81				0	81	372
7:30		133	46	179	42	107		149	328	55		55	110				0	110	438
7:45		170	32	202	41	128		169	371	54		46	100				0	100	471
8:00		113	37	150	30	213		243	393	62		27	89				0	89	482
8:15		168	37	205	26	131		157	362	60		52	112				0	112	474
8:30		126	37	163	30	95		125	288	60		46	106				0	106	394
8:45		100	24	124	18	135		153	277	47		33	80				0	80	357
Total	0	1019	302	1321	250	982	0	1232	2553	393	0	356	749	0	0	0	0	749	3302
Peak Hour	0	584	152	736	139	579	0	718	1454	231	0	180	411	0	0	0	0	411	1865
System Pk Hr	0	528	158	686	143	554	0	697	1383	200	0	180	380	0	0	0	0	380	0.91

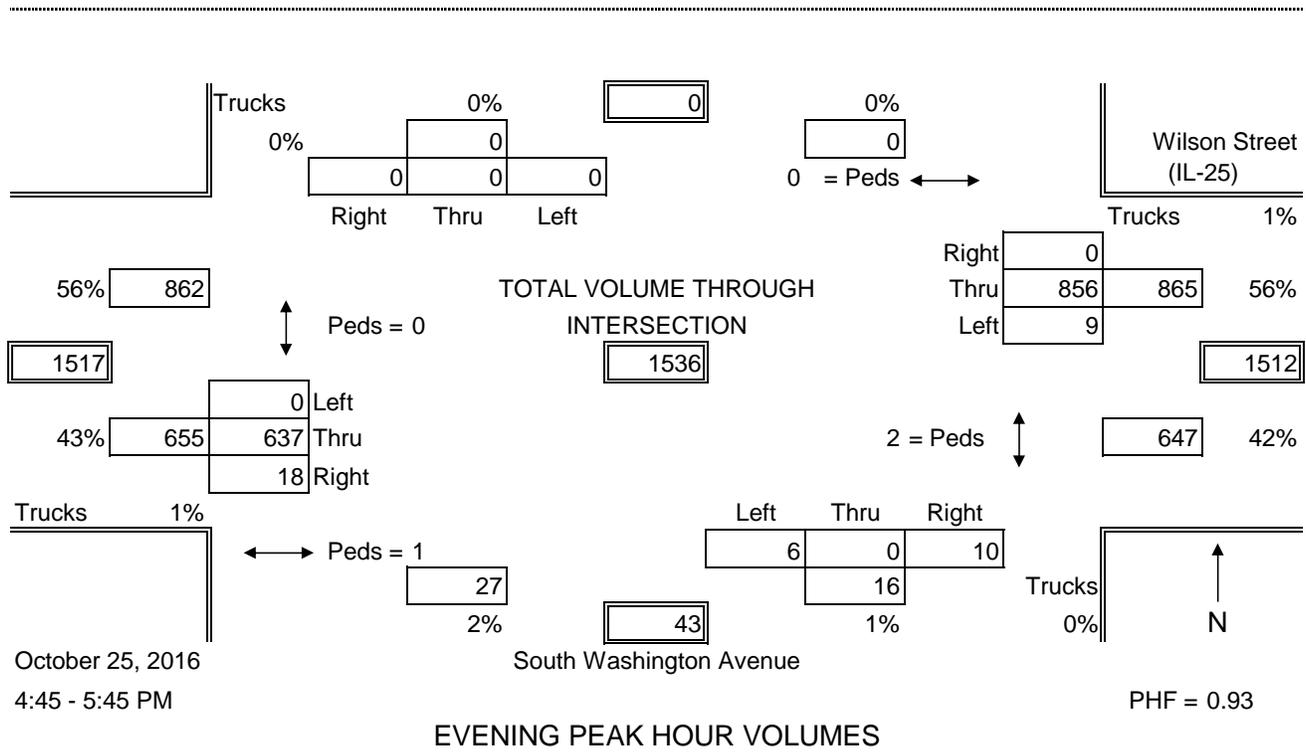
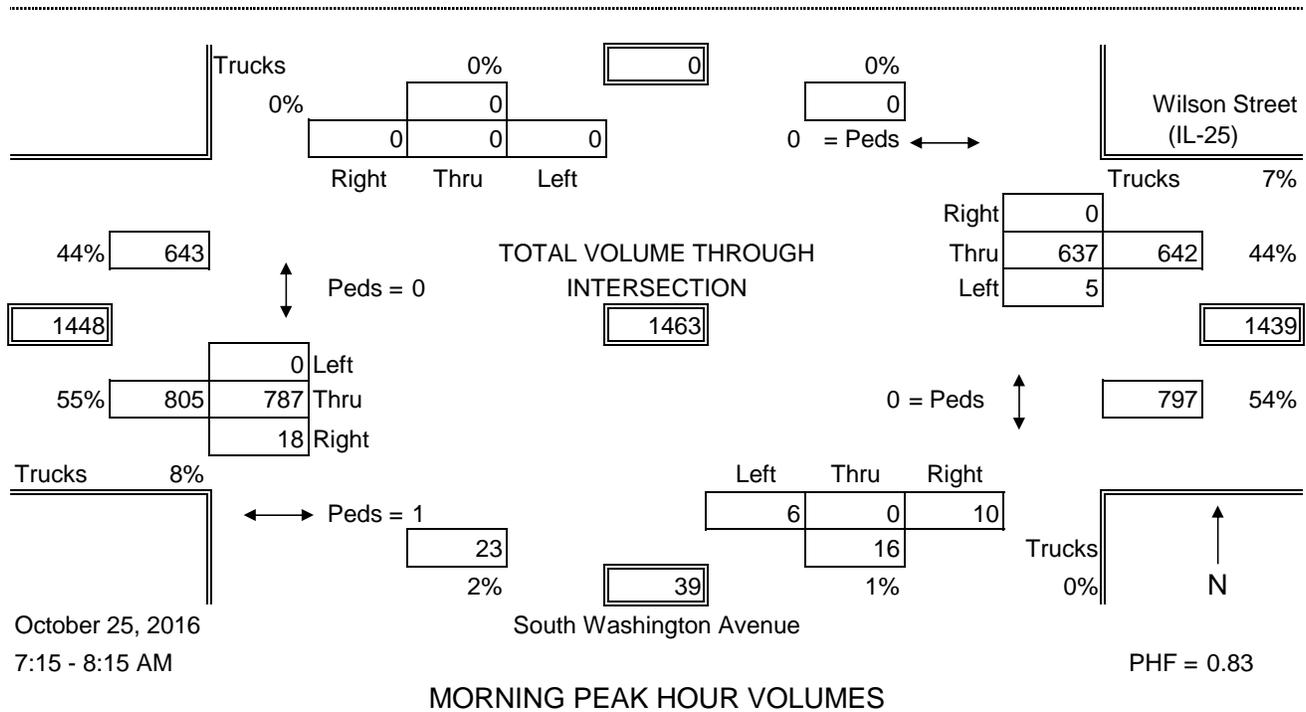
Peak Hour Factor 0.97
 7:15 - 8:15 System Peak Hour Factor 0.91

SUMMARY OF VEHICLE COUNTS
EVENING PEAK PERIOD

Observer: JAJ & PMT Date: October 27, 2016 Day: Thursday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: South River Street (IL Rte 25)

Time Begins P.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
4:00		90	51	141	52	160		212	353	79		38	117				0	117	470
4:15		81	51	132	54	158		212	344	64		35	99				0	99	443
4:30		106	44	150	47	163		210	360	79		44	123				0	123	483
4:45		112	51	163	57	163		220	383	70		40	110				0	110	493
5:00		138	59	197	51	148		199	396	77		47	124				0	124	520
5:15		110	66	176	47	191		238	414	57		34	91				0	91	505
5:30		114	61	175	61	162		223	398	76		42	118				0	118	516
5:45		108	50	158	41	153		194	352	47		29	76				0	76	428
Total	0	859	433	1292	410	1298	0	1708	3000	549	0	309	858	0	0	0	0	858	3858
Peak Hour	0	474	237	711	216	664	0	880	1591	280	0	163	443	0	0	0	0	443	2034
System Pk Hr	0	474	237	711	216	664	0	880	1591	280	0	163	443	0	0	0	0	443	2034

Peak Hour Factor 0.98
 7:15 - 8:15 System Peak Hour Factor 0.98



EXISTING TRAFFIC VOLUMES

Wilson Street
South Washington Avenue
System Peak Hour

SUMMARY OF VEHICLE COUNTS
MORNING PEAK PERIOD

Observer: JAJ, PMT, SMP Date: October 25, 2016 Day: Tuesday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: South Washington Avenue

Time Begins A.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
7:00		168	0	168	2	150		152	320	0		2	2				0	2	322
7:15		191	5	196	0	239		239	435	3		5	8				0	8	443
7:30		228	9	237	3	146		149	386	3		2	5				0	5	391
7:45		215	4	219	2	145		147	366	0		2	2				0	2	368
8:00		153	0	153	0	107		107	260	0		1	1				0	1	261
8:15		166	0	166	0	126		126	292	0		4	4				0	4	296
8:30		121	1	122	1	145		146	268	2		1	3				0	3	271
8:45		126	1	127	0	179		179	306	2		1	3				0	3	309
Total	0	1368	20	1388	8	1237	0	1245	2633	10	0	18	28	0	0	0	0	28	2661
Peak Hour	0	802	18	820	7	680	0	687	1507	6	0	11	17	0	0	0	0	17	1524
System Pk Hr	0	787	18	805	5	637	0	642	1447	6	0	10	16	0	0	0	0	16	1463

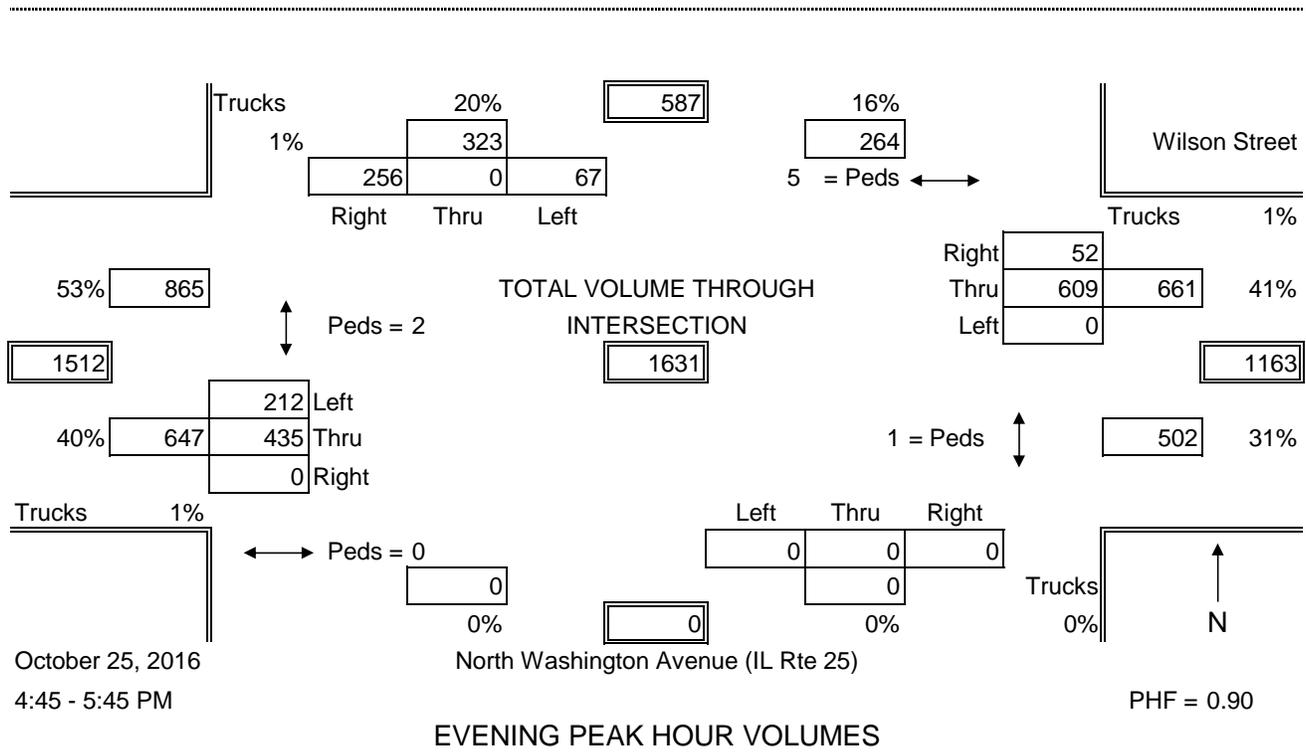
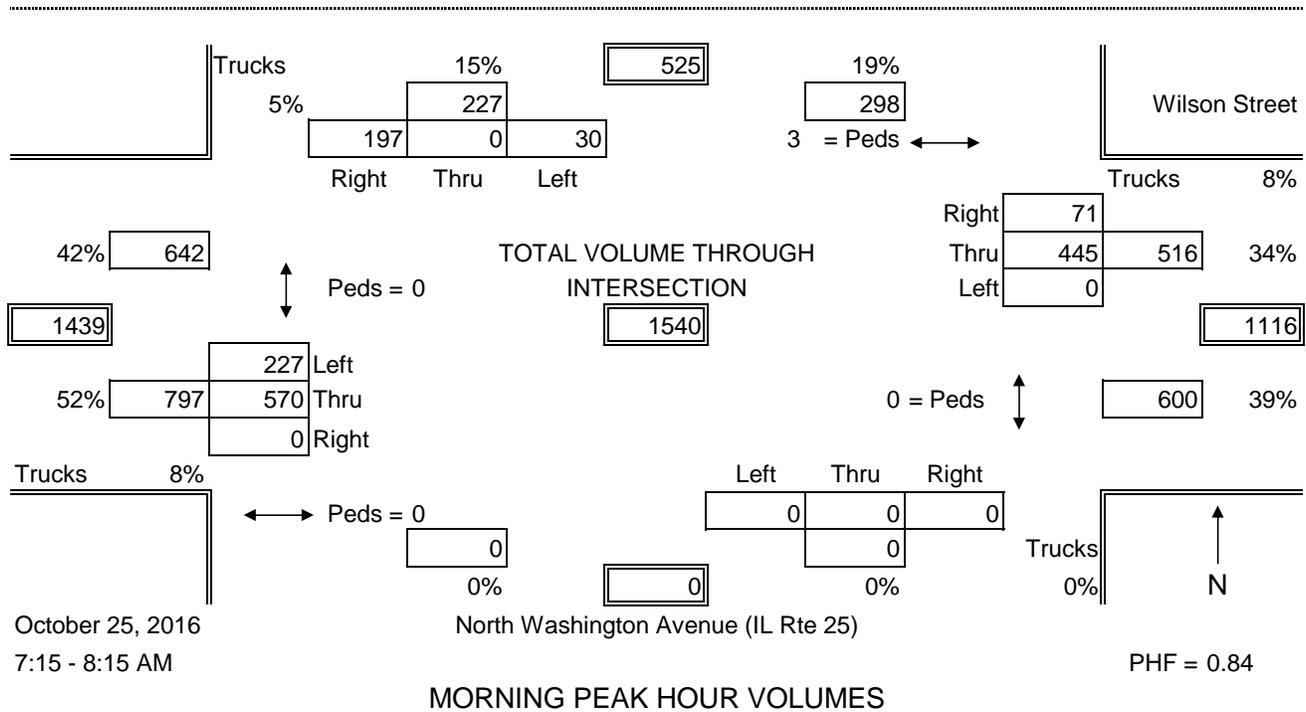
Peak Hour Factor 0.86
 7:15 - 8:15 System Peak Hour Factor 0.83

SUMMARY OF VEHICLE COUNTS
EVENING PEAK PERIOD

Observer: JAJ, PMT, SMP Date: October 25, 2016 Day: Tuesday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: South Washington Avenue

Time Begins P.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
4:00		161	4	165	4	199		203	368	3		1	4				0	4	372
4:15		159	2	161	4	182		186	347	0		1	1				0	1	348
4:30		156	2	158	1	223		224	382	1		3	4				0	4	386
4:45		145	2	147	3	210		213	360	1		2	3				0	3	363
5:00		159	7	166	2	216		218	384	1		3	4				0	4	388
5:15		156	6	162	2	205		207	369	2		3	5				0	5	374
5:30		177	3	180	2	225		227	407	2		2	4				0	4	411
5:45		147	6	153	4	237		241	394	0		1	1				0	1	395
Total	0	1260	32	1292	22	1697	0	1719	3011	10	0	16	26	0	0	0	0	26	3037
Peak Hour	0	639	22	661	10	883	0	893	1554	5	0	9	14	0	0	0	0	14	1568
System Pk Hr	0	637	18	655	9	856	0	865	1520	6	0	10	16	0	0	0	0	16	1536

Peak Hour Factor 0.95
 4:45 - 5:45 System Peak Hour Factor 0.93



EXISTING TRAFFIC VOLUMES

Wilson Street
North Washington Avenue (IL Rte 25)
System Peak Hour

SUMMARY OF VEHICLE COUNTS
MORNING PEAK PERIOD

Observer: JAJ, PMT, SMP Date: October 25, 2016 Day: Tuesday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: North Washington Avenue (IL Rte 25)

Time Begins A.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
7:00	49	121		170		117	13	130	300				0	5	35	40	40	340	
7:15	54	142		196		188	12	200	396				0	11	51	62	62	458	
7:30	58	172		230		97	16	113	343				0	5	52	57	57	400	
7:45	65	152		217		87	20	107	324				0	4	60	64	64	388	
8:00	50	104		154		73	23	96	250				0	10	34	44	44	294	
8:15	46	124		170		93	20	113	283				0	5	33	38	38	321	
8:30	35	87		122		115	22	137	259				0	10	31	41	41	300	
8:45	32	95		127		146	17	163	290				0	18	33	51	51	341	
Total	389	997	0	1386	0	916	143	1059	2445	0	0	0	0	68	0	329	397	2842	
Peak Hour	226	587	0	813	0	489	61	550	1363	0	0	0	0	25	0	198	223	1586	
System Pk Hr	227	570	0	797	0	445	71	516	1313	0	0	0	0	30	0	197	227	1540	

Peak Hour Factor 0.87
 7:15 - 8:15 System Peak Hour Factor 0.84

SUMMARY OF VEHICLE COUNTS
EVENING PEAK PERIOD

Observer: JAJ, PMT, SMP Date: October 25, 2016 Day: Tuesday City: Batavia, Illinois
 East-West Street: Wilson Street North-South Street: North Washington Avenue (IL Rte 25)

Time Begins P.M.	EASTBOUND				WESTBOUND				Total East West	NORTHBOUND				SOUTHBOUND				Total North South	Total
	Left	Thru	Right	Total	Left	Thru	Right	Total		Left	Thru	Right	Total	Left	Thru	Right	Total		
4:00	54	108		162		143	21	164	326				0	14	60	74	74	400	
4:15	55	105		160		120	12	132	292				0	8	66	74	74	366	
4:30	50	109		159		151	18	169	328				0	27	73	100	100	428	
4:45	44	103		147		143	16	159	306				0	13	70	83	83	389	
5:00	56	106		162		152	9	161	323				0	13	66	79	79	402	
5:15	47	112		159		155	6	161	320				0	13	52	65	65	385	
5:30	65	114		179		159	21	180	359				0	28	68	96	96	455	
5:45	41	107		148		162	21	183	331				0	13	79	92	92	423	
Total	412	864	0	1276	0	1185	124	1309	2585	0	0	0	0	129	0	534	663	3248	
Peak Hour	209	439	0	648	0	628	57	685	1333	0	0	0	0	67	0	265	332	1665	
System Pk Hr	212	435	0	647	0	609	52	661	1308	0	0	0	0	67	0	256	323	1631	

Peak Hour Factor 0.91
 4:45 - 5:45 System Peak Hour Factor 0.90