



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

## Final Report

December 1, 2016

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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'S<sup>1</sup> 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).

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<sup>1</sup> 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.

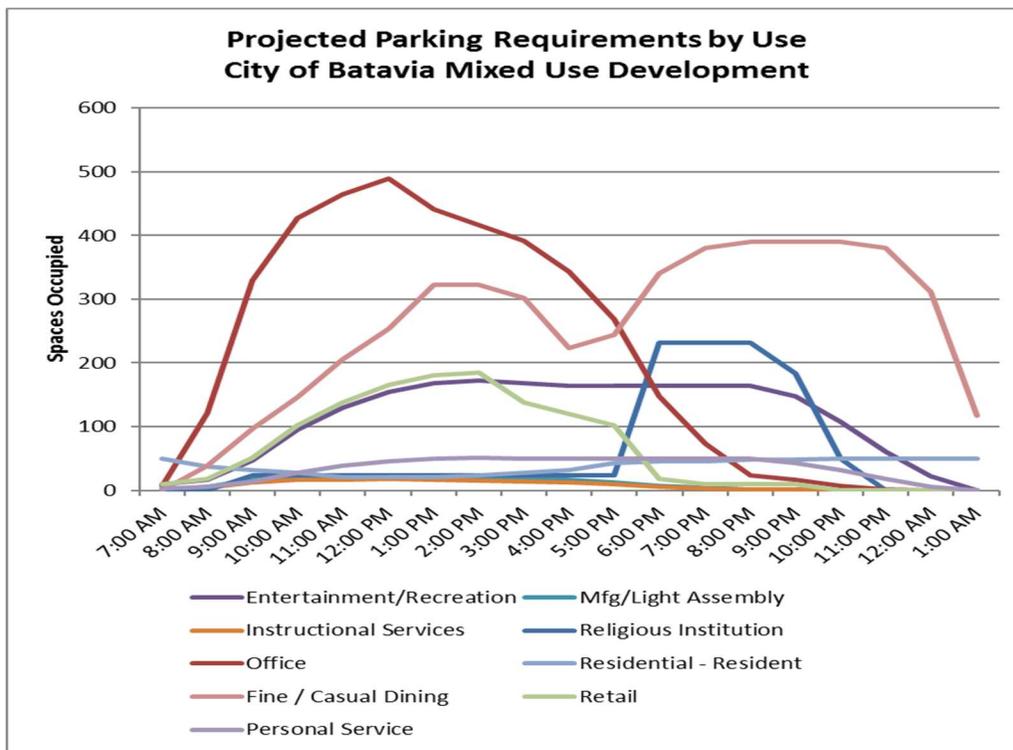
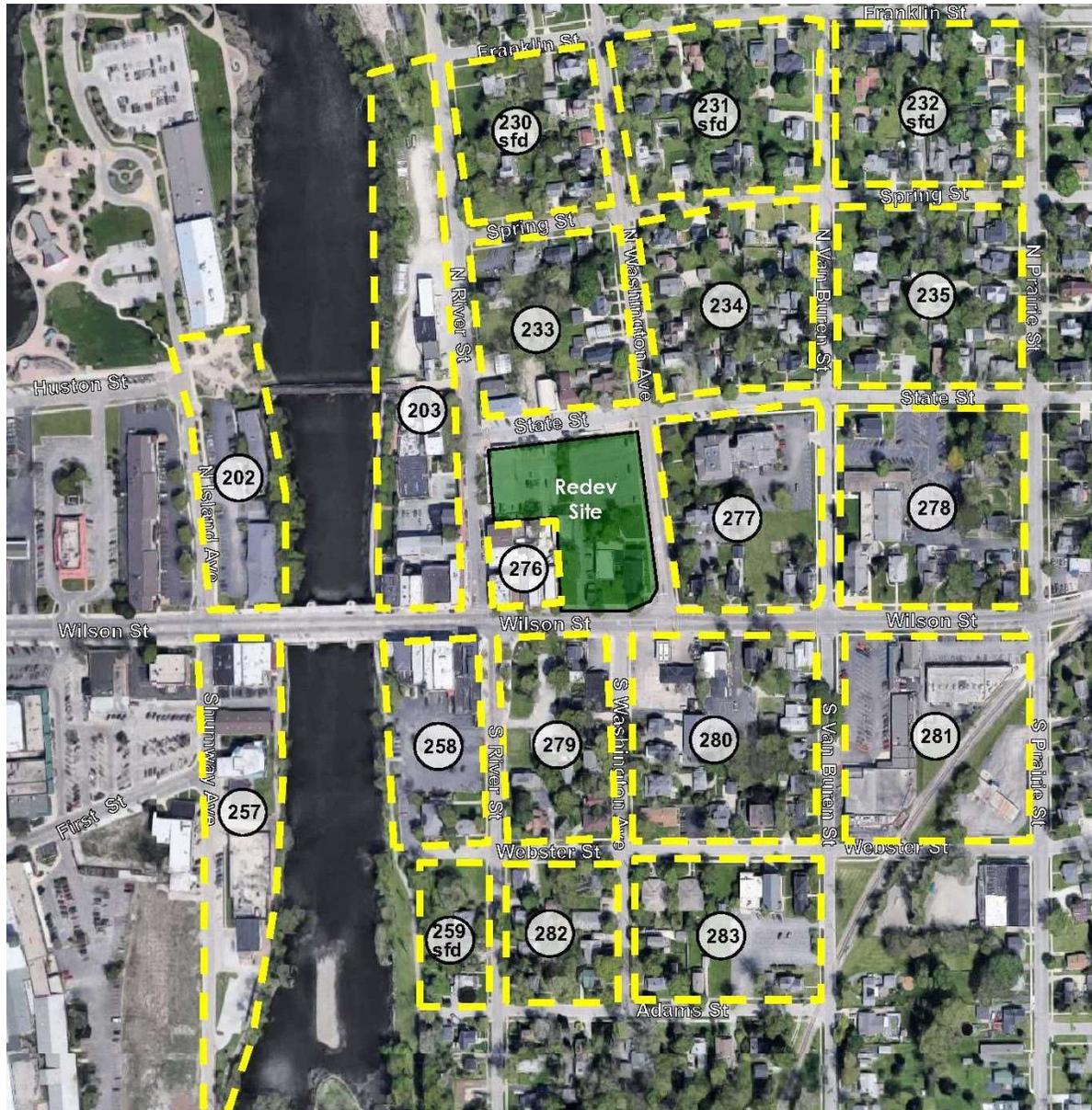


Figure 1 – Individual Land Uses Parking Needs throughout the day (existing conditions)

**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

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**LEGEND:**

-  Block Numbers
-  Study Area
-  Redevelopment Site

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Sheet Title:

**STUDY AREA**

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Existing Conditions

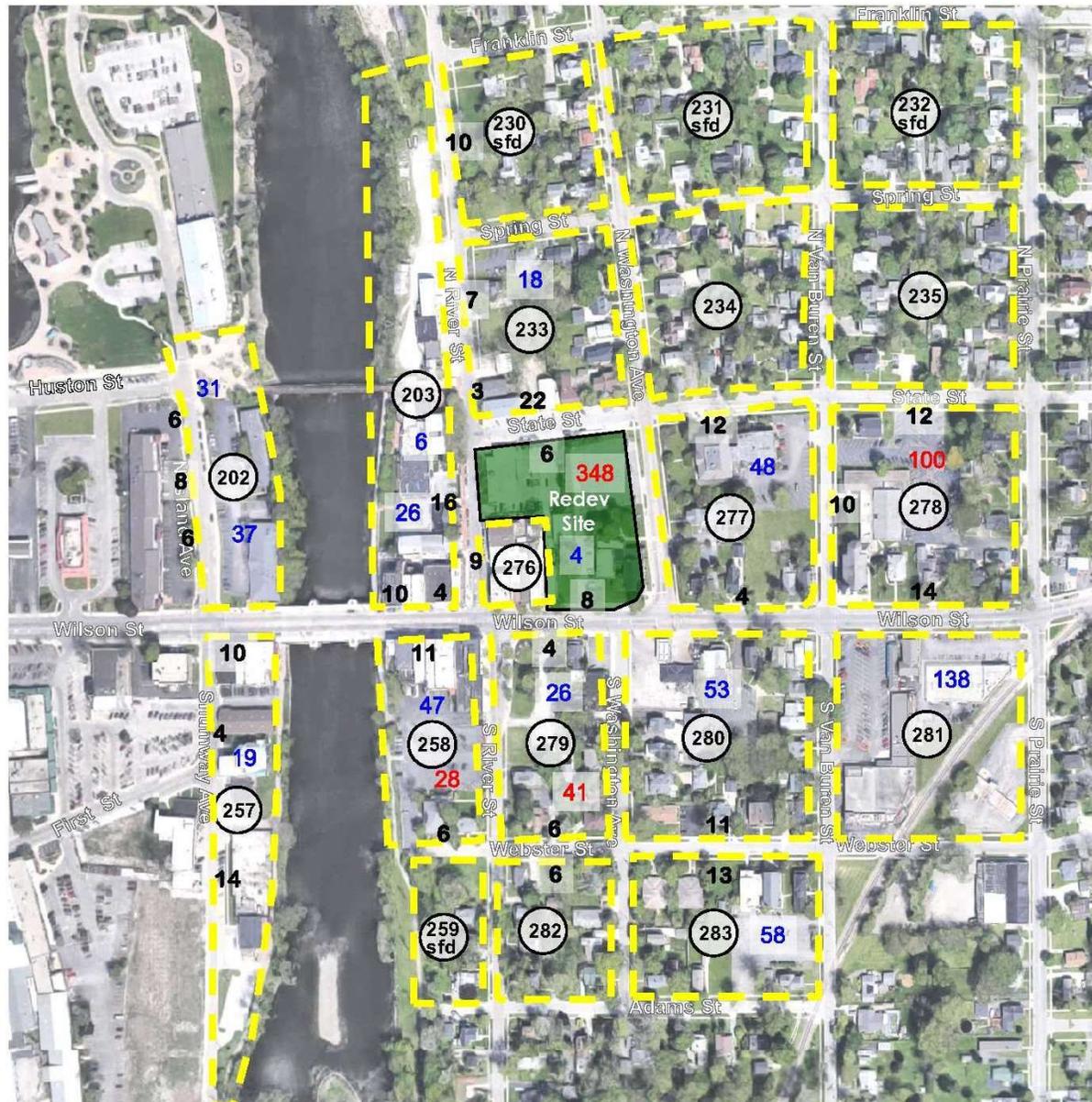
Parking Supply

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
<b>Total</b>	<b>252</b>	<b>298</b>	<b>550</b>	<b>506</b>	<b>252</b>	<b>804</b>	<b>1,056</b>

Source: City of Batavia



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**LEGEND:**

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

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Sheet Title:

PARKING SUPPLY

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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
<b>Total</b>	<b>64,091</b>	<b>43,317</b>	<b>135,802</b>	<b>13,508</b>	<b>26</b>	<b>11,354</b>	<b>28,769</b>	<b>1,741</b>	<b>3,956</b>	<b>7,328</b>	<b>27,059</b>	<b>336,925</b>

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
<b>Total</b>	<b>57,682</b>	<b>38,985</b>	<b>122,222</b>	<b>12,157</b>	<b>26</b>	<b>10,219</b>	<b>25,892</b>	<b>3,560</b>	<b>6,595</b>	<b>24,353</b>	<b>336,925</b>	<b>35,259</b>	<b>301,666</b>

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

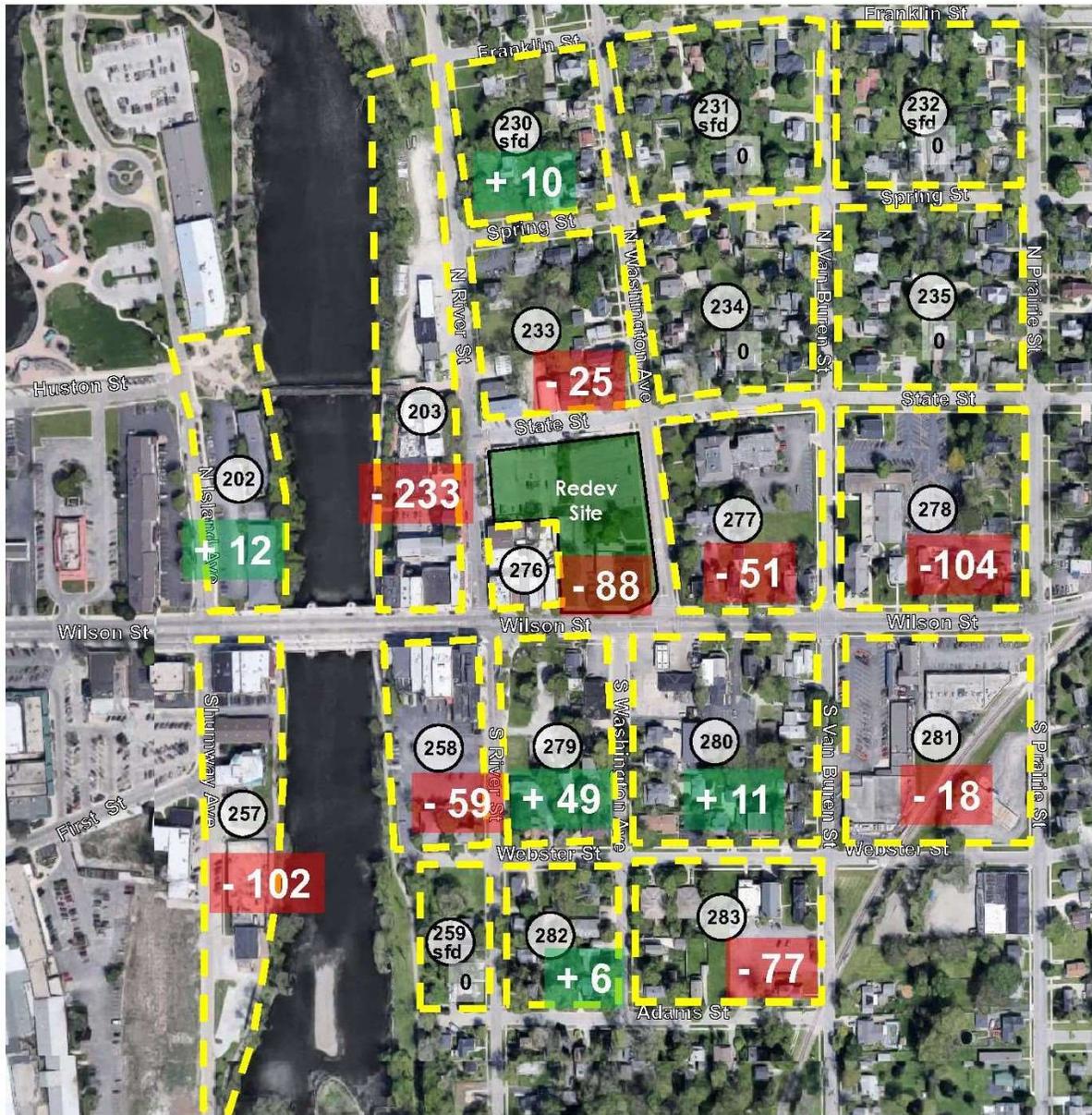
**Existing Parking Demand – Zoning Code**

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			
<b>Parking Generation Rates (Zoning Ordinance)</b>																					
<b>Number of Parking Spaces Required at Parking Generation Rate</b>																					
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)	
<b>Total</b>	<b>231</b>	<b>390</b>	<b>489</b>	<b>24</b>	<b>49</b>	<b>51</b>	<b>173</b>	<b>18</b>	<b>33</b>	<b>244</b>	<b>1,701</b>	<b>252</b>	<b>298</b>	<b>550</b>	<b>506</b>	<b>252</b>	<b>804</b>	<b>1,056</b>	<b>(645)</b>	<b>(672)</b>	



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**LEGEND:**

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

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Sheet Title:

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

File No.	1709	
Scale		
Date	08/19/16	
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**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±).

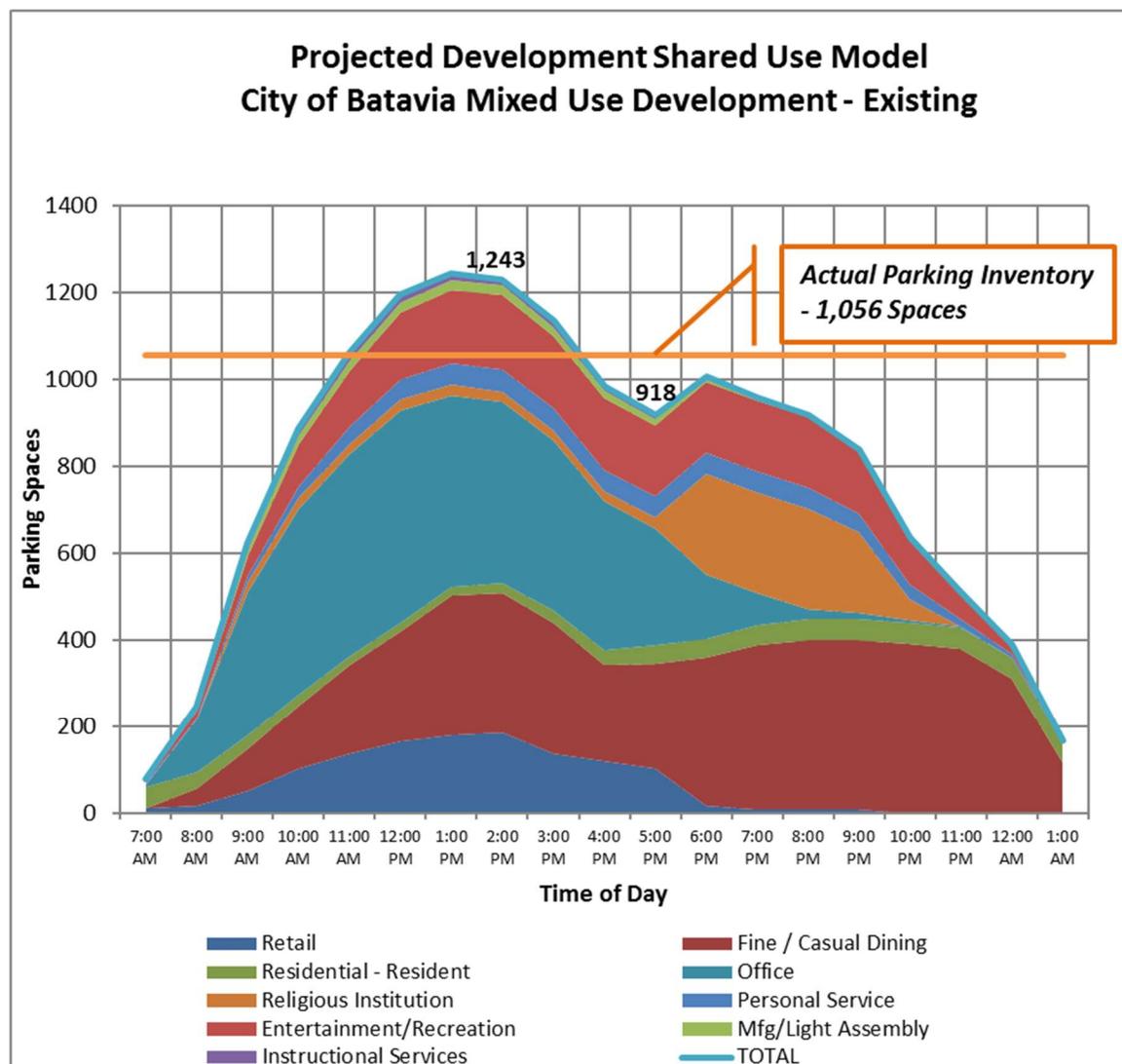


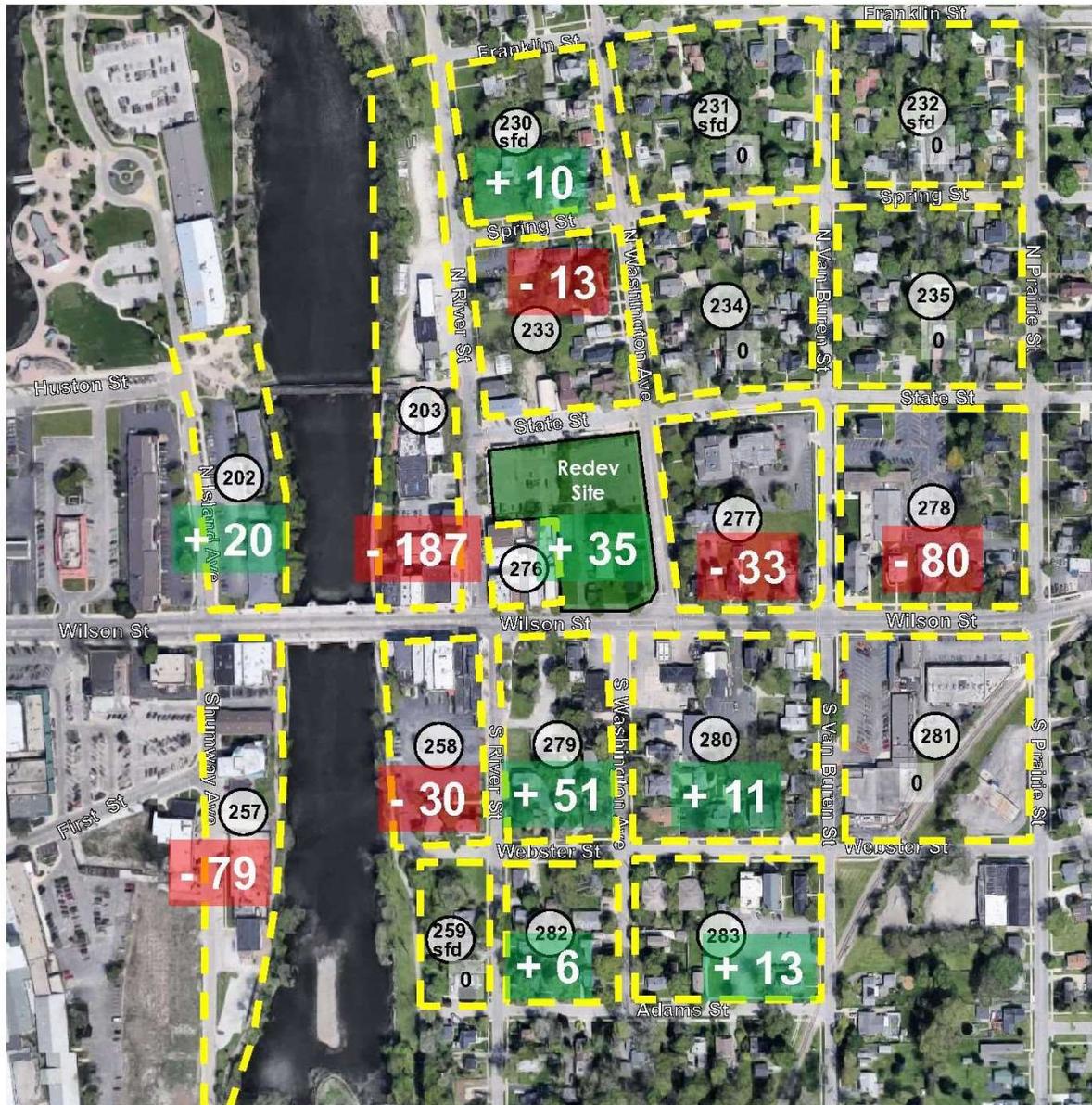
Figure 2 - Shared Use Parking Needs by Use

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**

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			Gross Surplus / (Deficit)	Net Surplus / (Deficit)		
	3.12	8.26	3.42	1.81	0.77	4.89	6.49	4.49	3.42	0.99		On-Street	Off-Street	Total	Off-Street	On-Street	Off-Street			Combined	
<b>Parking Generation Rates (Shared Use)</b>																					
<b>Parking Spaces Required at Parking Generation Rate</b>																					
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	
<b>Total</b>	<b>180</b>	<b>322</b>	<b>418</b>	<b>22</b>	<b>20</b>	<b>50</b>	<b>168</b>	<b>16</b>	<b>23</b>	<b>24</b>	<b>1,243</b>	<b>252</b>	<b>298</b>	<b>550</b>	<b>506</b>	<b>252</b>	<b>804</b>	<b>1,056</b>	<b>(187)</b>	<b>(276)</b>	

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
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NORTH

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### 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
<b>Total</b>	<b>252</b>	<b>517</b>	<b>769</b>	<b>500</b>	<b>252</b>	<b>1,017</b>	<b>1,269</b>

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 units<sup>2</sup>. ***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
<b>Total</b>	<b>77,941</b>	<b>43,317</b>	<b>132,886</b>	<b>13,508</b>	<b>211</b>	<b>11,354</b>	<b>28,769</b>	<b>4,235</b>	<b>2,600</b>	<b>7,328</b>	<b>15,000</b>	<b>336,938</b>

<sup>2</sup> 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
<b>Total</b>	<b>71,532</b>	<b>38,985</b>	<b>119,597</b>	<b>12,157</b>	<b>211</b>	<b>10,219</b>	<b>25,892</b>	<b>2,340</b>	<b>6,595</b>	<b>13,500</b>	<b>336,938</b>	<b>36,120</b>	<b>300,818</b>

### 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)

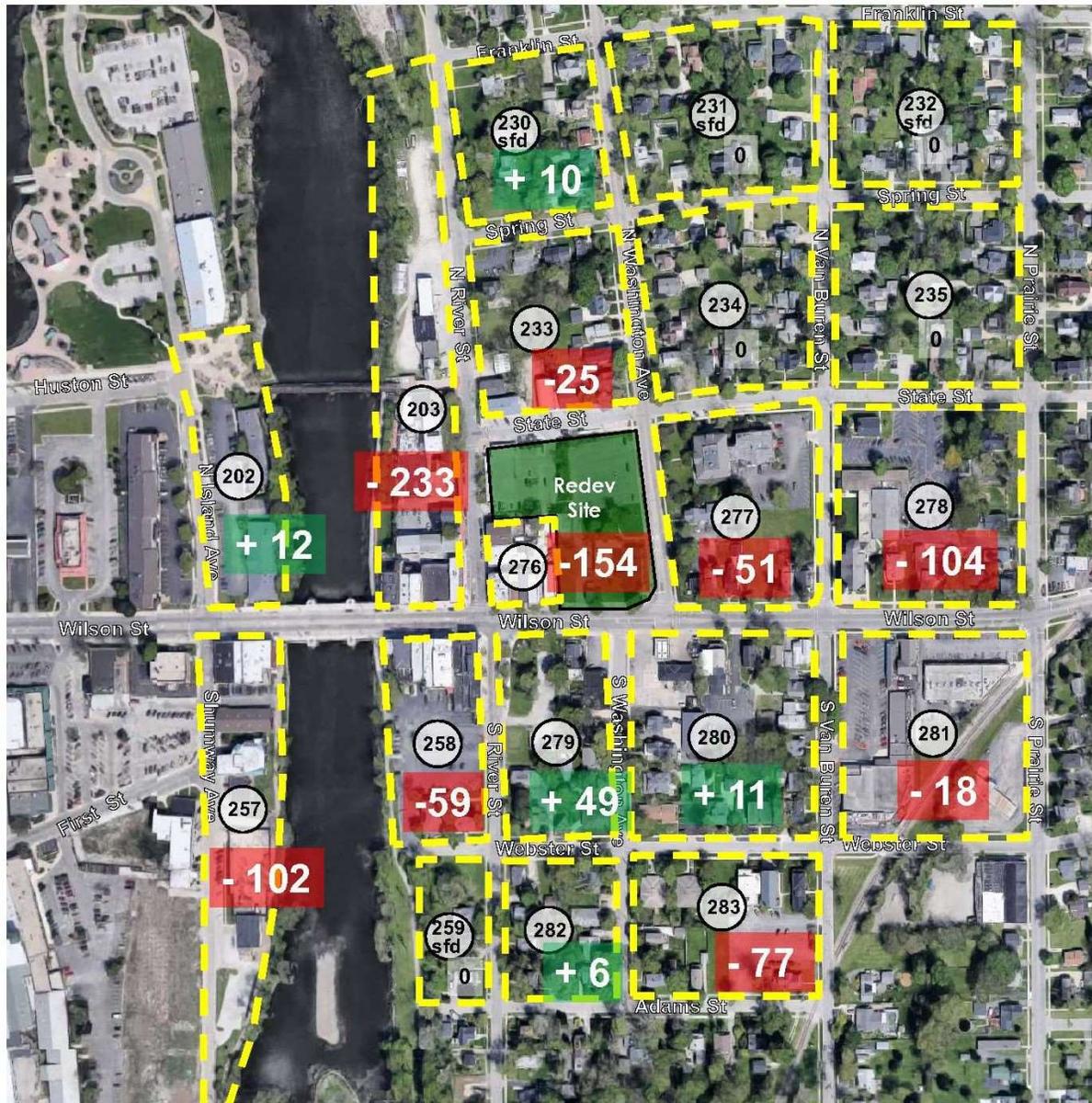
### Future Parking Surplus / Deficit Using Zoning Requirements

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										
<b>Parking Generation Rates (Zoning Ordinance)</b>																													
<b>Block #</b>	<b>4.00</b>	<b>10.00</b>	<b>4.00</b>	<b>2.00</b>	<b>1.88</b>	<b>5.00</b>	<b>6.67</b>	<b>0.00</b>	<b>5.00</b>	<b>5.00</b>	<b>10.00</b>																		
<b>Parking Spaces Required at Parking Generation Rate</b>																													
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	0	33	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	148	148	13	0	13	58	13	58	71	(77)	(77)								
<b>Total</b>	<b>286</b>	<b>390</b>	<b>478</b>	<b>24</b>	<b>397</b>	<b>51</b>	<b>173</b>	<b>0</b>	<b>12</b>	<b>33</b>	<b>135</b>	<b>1,979</b>	<b>252</b>	<b>517</b>	<b>769</b>	<b>500</b>	<b>252</b>	<b>1,017</b>	<b>1,269</b>	<b>(710)</b>	<b>(737)</b>								

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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**LEGEND:**

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

Sheet Title:

**FUTURE NET SURPLUS/DEFICIT  
ZONING REQUIREMENTS**

File No.	1709	
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**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.

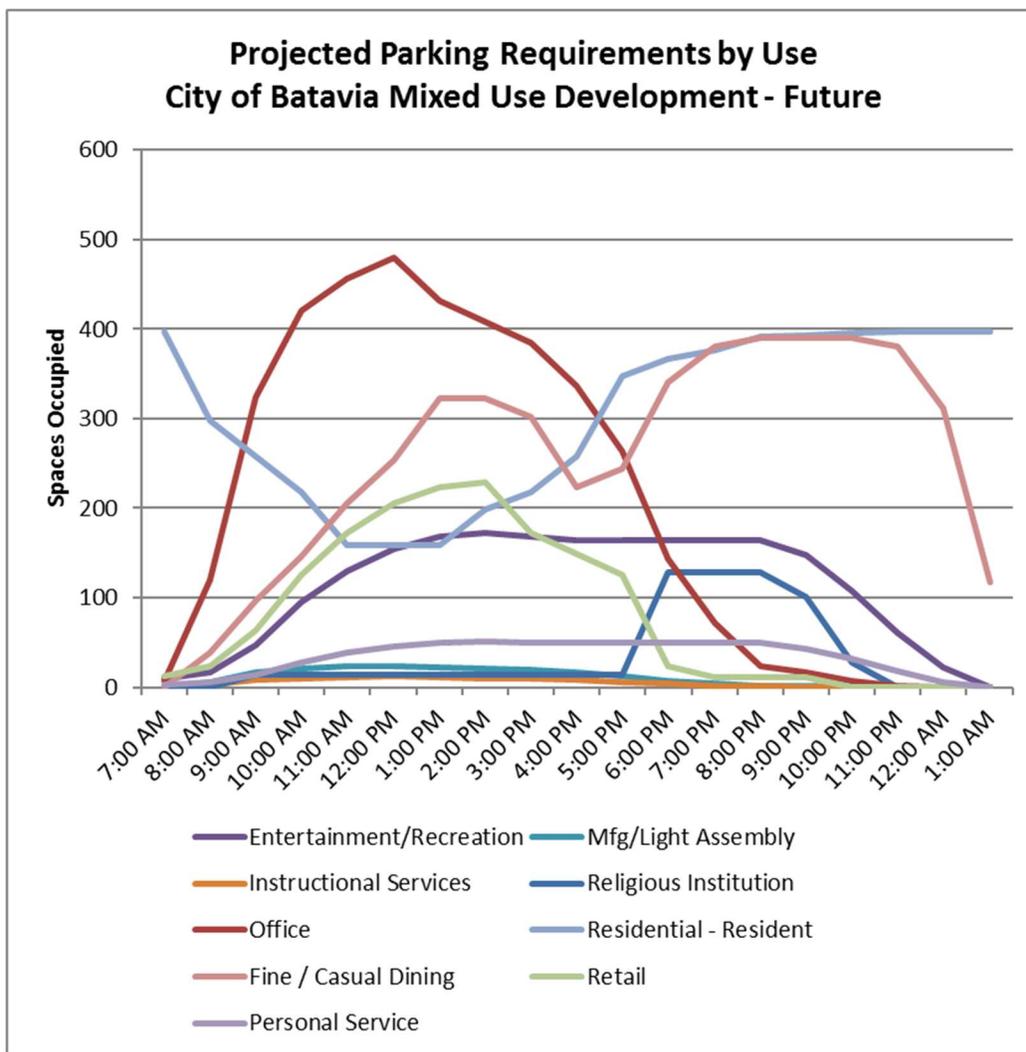


Figure 3 - Individual land use periodic parking requirements

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.

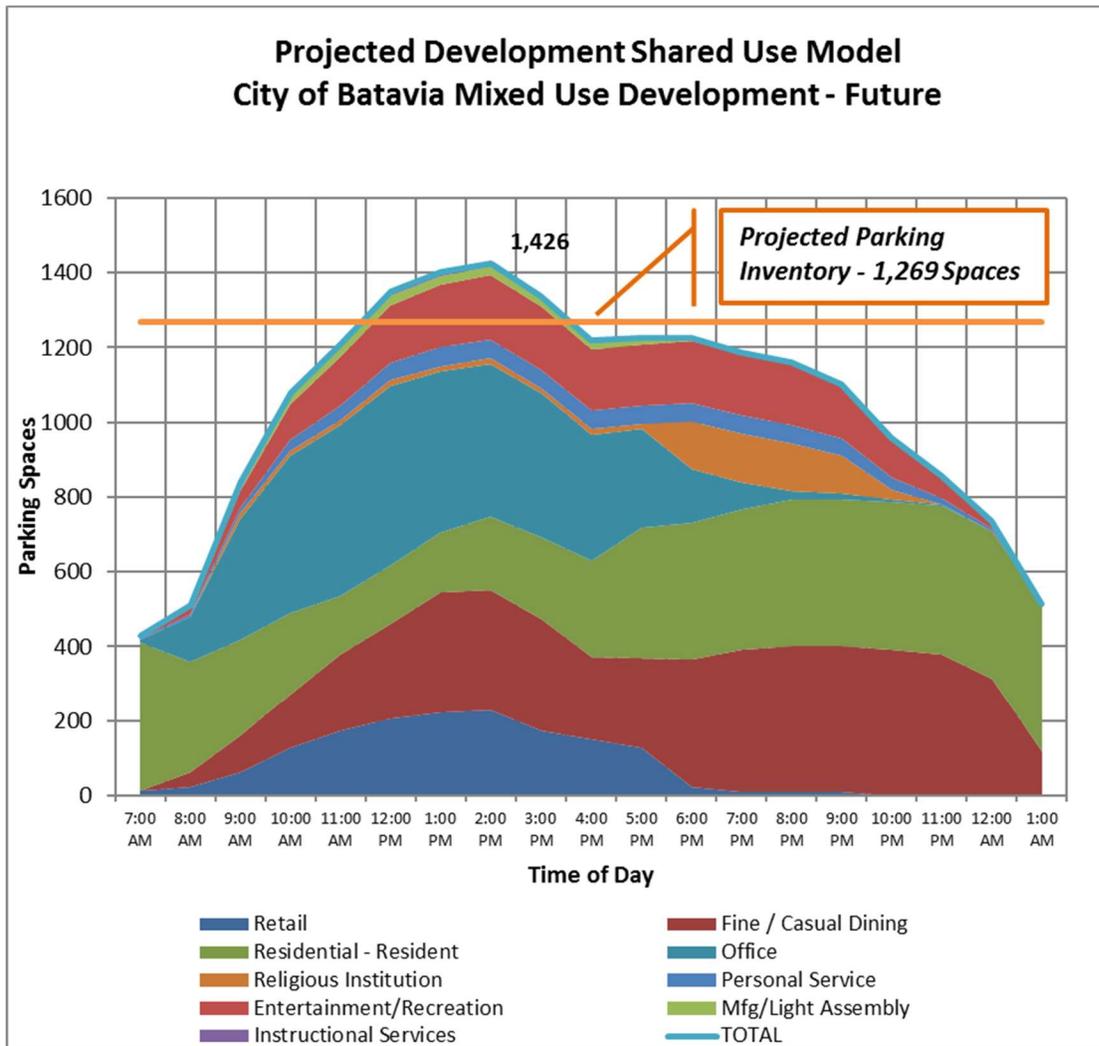
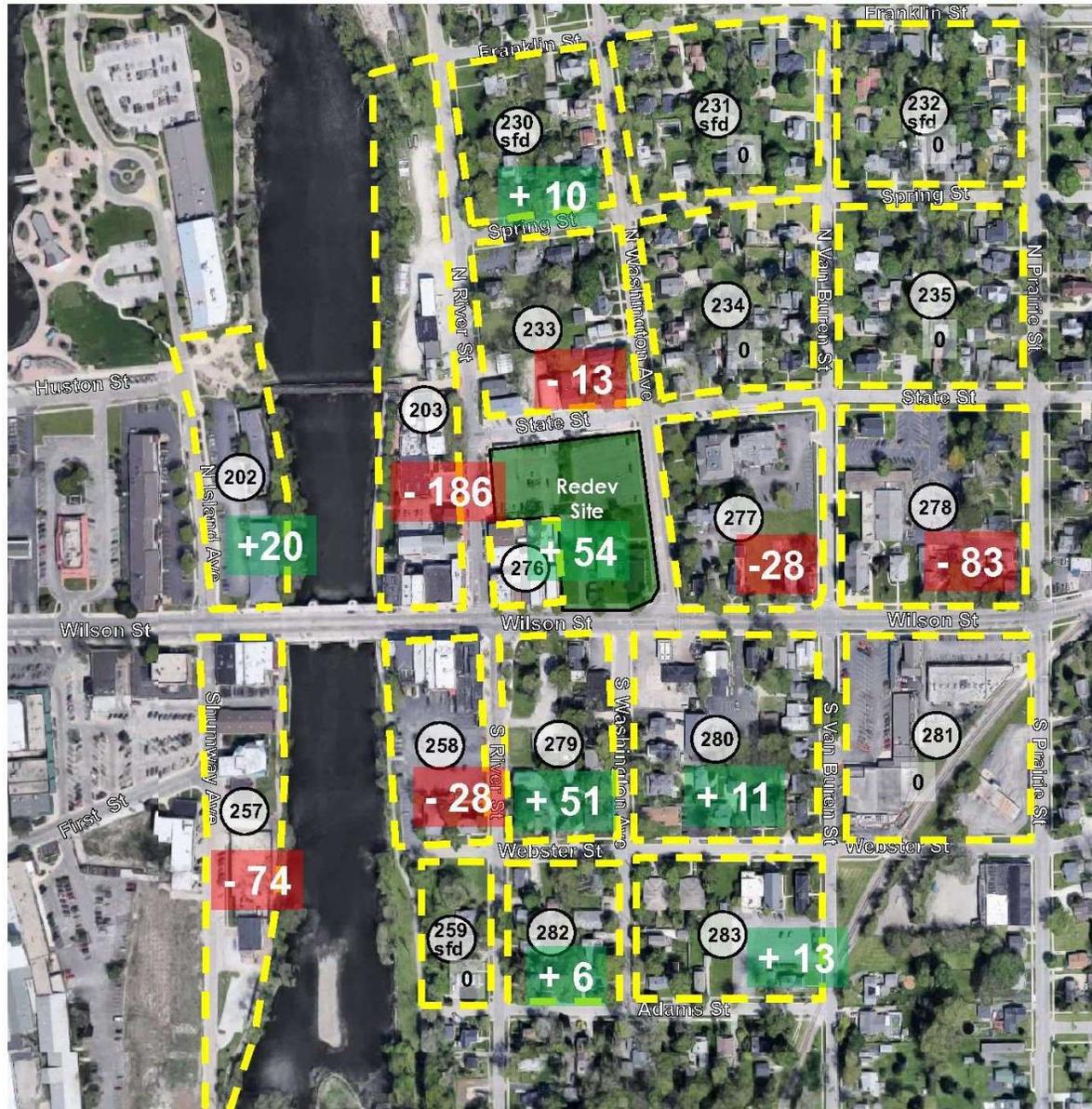


Figure 4 - Composite Parking Needs Shared Use (Future)

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.





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- # Block Numbers
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- 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.