

## Village of Wilmette, Illinois

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# Parking Structure Feasibility Study

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## Report

July 10, 2007

**RICH AND ASSOCIATES, INC.**  
Parking Consultants - Planners

**T•Y•LIN INTERNATIONAL**

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## 1.0 Introduction

### 1.1 Project Understanding

The Village of Wilmette is in the process of investigating the construction of a parking structure. This project will be the western extension of the Village Center Business District as outlined in the 2000 Comprehensive Plan. The proposed parking structure is an extension of the Village's goal of providing infrastructure to the community and to enhance development opportunities.

The analysis prepared by Rich and Associates and TY Lin considered the following;

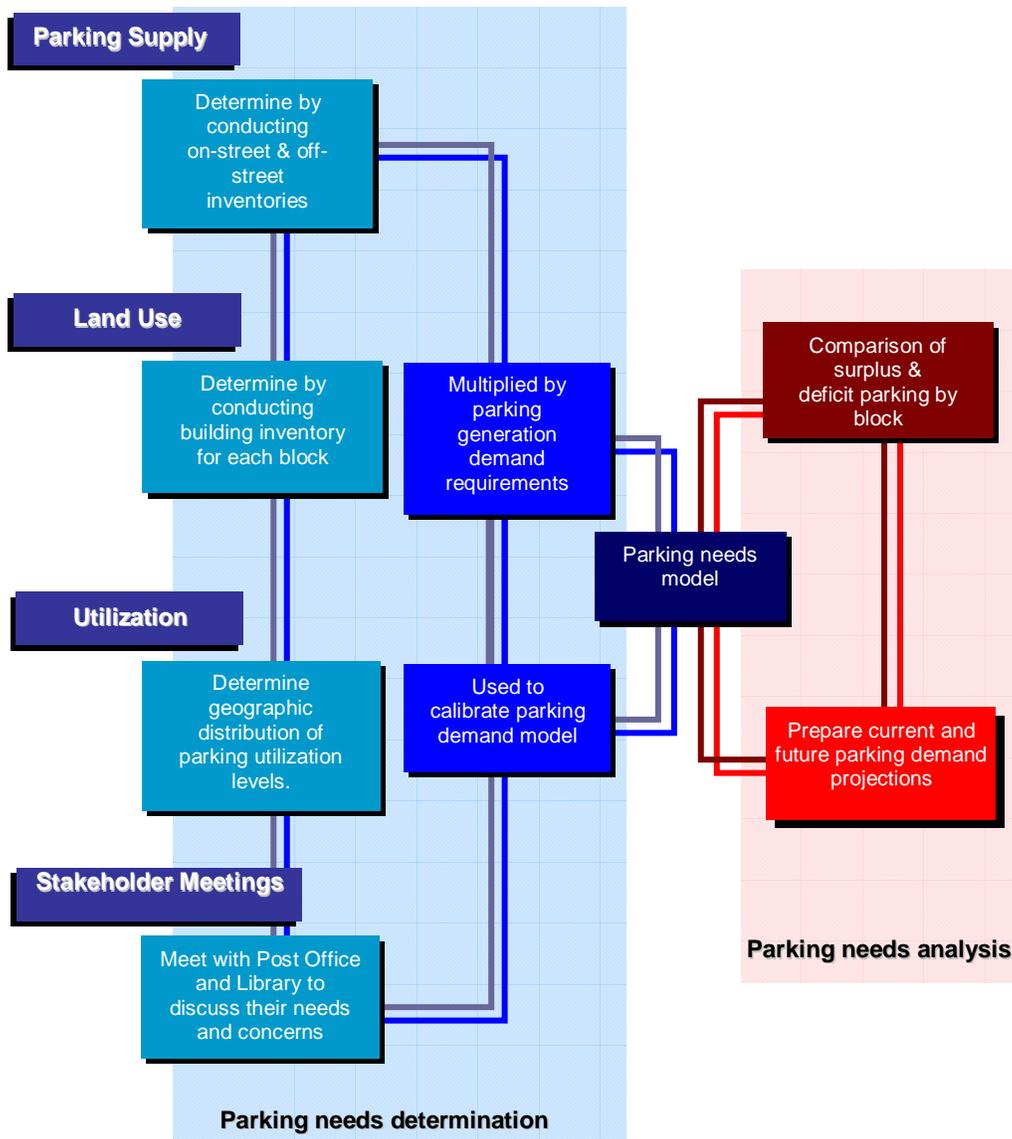
- How many parking spaces are available in the influence area around the proposed parking structure site (generally described as a one block radius around the site), how many of those spaces are public, and how many of the spaces are occupied at intervals throughout the day?
- What is the parking demand that exists on the block for the proposed parking structure, what demand exists in the influence area and how do the rail tracks influence parking demand and the use of parking spaces on the east and west side of the tracks? This includes the possible needs for commuter parking demand.
- What will be the parking needs of future developments and how do they impact peak hour parking and traffic?
- How many additional spaces are needed to satisfy the existing and projected needs for future development and any land use changes in the influence area? This will consider the parking spaces that currently exist on the site that will be lost to the footprint of the proposed parking structure.
- What is the optimal design for a parking structure on the proposed site considering the different user groups (Post Office, Library, new development, etc) and integration of the parking structure with the new development from a pedestrian/vehicle flow basis?
- What are the security requirements based upon existing conditions, the future user groups for the parking and finally what security measures are currently employed by the Village with respect to parking.
- The site is adjacent to a residential area, thus concerns will be with light and noise infiltration along with the massing and aesthetics of the building on the site.
- The Village is also looking for concept drawings of the preferred scheme to include the massing and façade of the parking structure, preliminary landscape/streetscape plan that follows points brought up in the Comprehensive Plan, and finally “Green Building” opportunities that can be employed in the parking structure.
- A cost estimate for the preferred scheme was to be prepared so that a pro-forma can be prepared.



## 1.2 Scope of Services

**Phase One** of project involved quantifying and qualifying the parking needs in the study area to determine the parking demand. This was done through field work, parking utilization studies, surveys and a projection of parking demand. The flow chart below details the process.

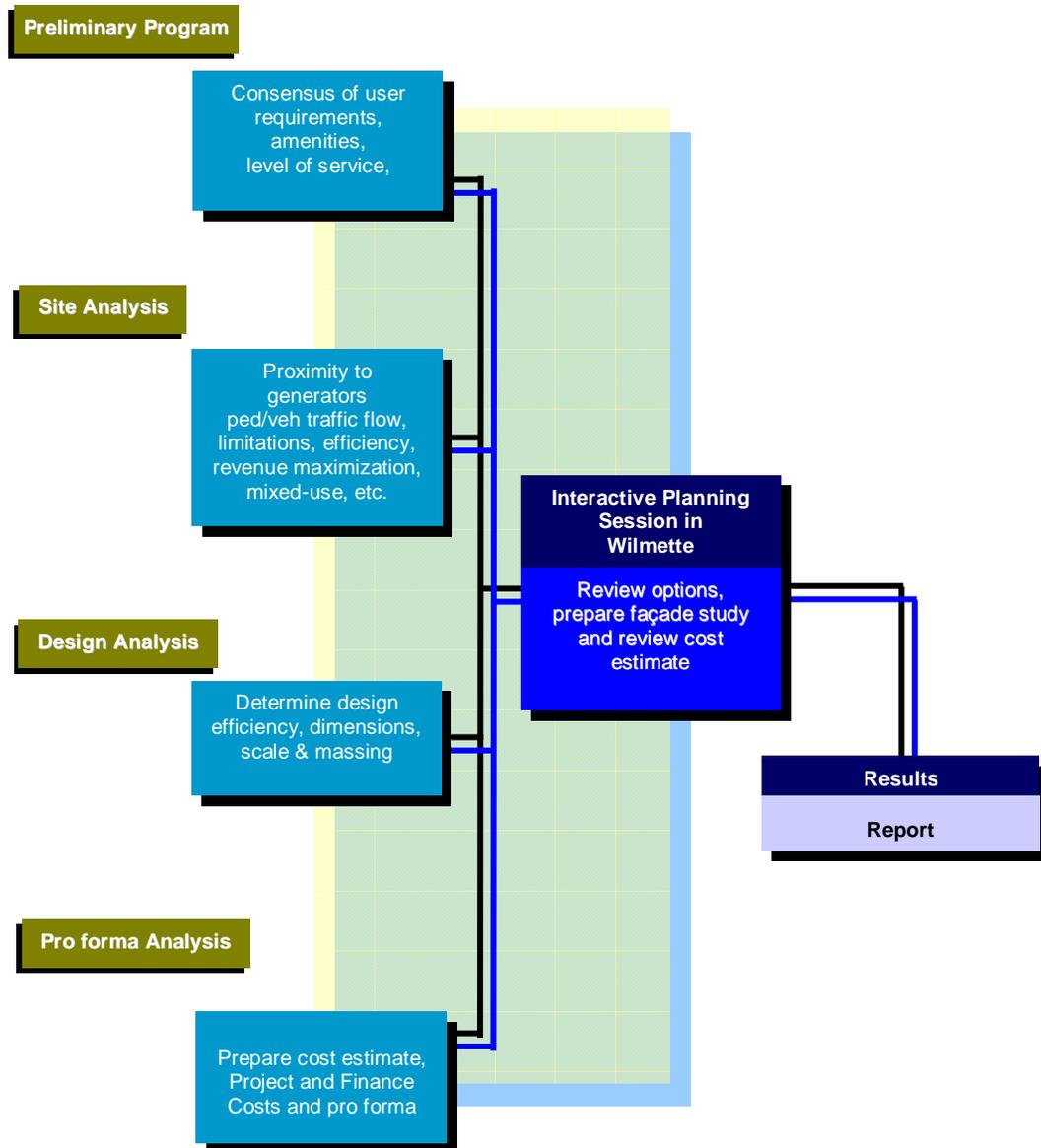
### Phase 1





**Phase Two** of the project involved reviewing the proposed parking structure site, preparing conceptual drawings including a façade and cost estimate. As a part of this analysis, a preliminary traffic analysis for the proposed site was prepared.

### Phase 2





### **1.3 Study Area**

The study area (see **Map 1**) is in downtown Wilmette and is bounded on the west by Washington Avenue on the north, Linden Avenue on the south, Park Avenue on the west and buildings that front Poplar Drive and the tracks including the METRA station to the east. The study area is bisected by the rail tracks and Green Bay Road. The east side of the study area is bounded by Lake Avenue on the north, 12<sup>th</sup> Street and 11<sup>th</sup> Street on the east.

The study area was determined based upon potential parking demand that might use parking at the proposed parking structure site which is located off of Park Avenue on parking lots between the Wilmette Public Library and the Wilmette Post Office.

The west side of Green Bay Road is characterized by two and three story buildings with commercial/retail/offices. On the east side of Green Bay Road there is the rail tracks, METRA station, Village Hall and commercial/retail and office land uses off Poplar Drive.



Map 1: Study Area





## 2.0 Fieldwork

### 2.1 Parking Supply Inventory

**Table 1** details the estimated existing parking supply in the study area. In most cases, the parking spaces could be definitively counted. However, in some cases, the number of parking spaces on-street or in a parking lot was estimated. This was especially true where spaces were not well marked.

There are a total of 1,198 parking spaces within the study area and of these, 219 are on-street, 112 are public off-street, 415 commuter off-street and 452 are private off-street parking. The on-street parking consists of five different types of spaces designated by maximum length of stay. These include unrestricted parking, and half-hour, two-hour, three-hour, four-hour and ten-hour time limited free parking.

Within the total study area, the Village controls about 33 percent of the parking in the downtown. Rich and Associates believes that if a municipality is going to successfully manage a parking program, that it is desirable to have public control of at least 50 percent of the parking supply. This allows the municipality to effectively manage the parking in terms of allocation and market pricing.

The control of over half or more of parking in the downtown also allows the parking to be enforced with more efficiency when properly performed. With management and enforcement, parking can also be used as an economic incentive. This allows the municipality to respond to use changes in the downtown and work with development proposals more effectively.

**Table 1: Existing Parking Supply**

Block	On-Street Public						Off-Street Public						Off-Street Private				Parking Supply
	4 hr	3 hr	2 hr	Hcp	Res.	30 min	10 hr	2 hr	Hcp	D/O	Res.	15 min.	UM	Hcp	Priv	Res.	
1	21		19	1		12								3	38	19	113
2			14	2		19		47			14		7		69	109	281
3	10		16	1										2	57	148	234
4			66				81										147
6		30		2			13	47	2		2						96
7/8					6		293		10	6	2	10					327
<b>Sum</b>	<b>31</b>	<b>30</b>	<b>115</b>	<b>6</b>	<b>6</b>	<b>31</b>	<b>387</b>	<b>94</b>	<b>12</b>	<b>6</b>	<b>18</b>	<b>10</b>	<b>7</b>	<b>5</b>	<b>164</b>	<b>276</b>	<b>1198</b>

Key

Hcp = Handicap

Res = Reserved

D/O = Drop Off

UM = Unmarked

Priv = Private



## 2.2 Turnover and Occupancy Study

A turnover and occupancy study was undertaken in the study area over the course of one day, Tuesday, January 30, 2007. The turnover study was undertaken to determine how long the parking spaces were being used and how many vehicles were parked in a space, especially on-street. This information is very important when examining allocation between long and short-term parking users. As an example, if long-term parking has a considerable number of parkers who stay for less than four hours, the long-term parking is being used for short-term purposes.

Parking occupancy was the second important aspect of the parking analysis undertaken by Rich. Occupancy is an important aspect of parking because it helps us to understand the dynamic of how parking demand fluctuates throughout the day. Likewise, the occupancy study/data results can be used to illustrate how parking demand is impacted by events in the downtown area. Overall, the occupancy data was used by Rich and Associates to calibrate the parking demand model.

There were turnover and occupancy counts completed every two hours beginning at 9:00 A.M., and running every two hours until 5:00 P.M.

### 2.2.1- Definitions

The following are definitions used for the turnover and occupancy analysis:

- **Turnover** - Turnover is the number of vehicles that occupied a parking space in a particular period. For example, if a parking lot has 100 spaces and during the course of the day 250 different vehicles occupied the lot, then the turnover is two and a half times (2.5).
- **Occupancy** - the length of time a parking space is occupied by a vehicle.
- **Circuit** - A circuit refers to the two-hour time period between observances of any one particular parking space. For the turnover and occupancy study, a defined route was developed for each survey vehicle. One circuit of the route took approximately 2 hours to complete and each space was observed once during that circuit.
- **Block Face** - A number was assigned to each block within the study area. Each block is then referenced by its block number and by a letter (A, B, C or D). The letter refers to the cardinal face of the block; with (A) being the north face, (B) the east face, (C) the south face and (D) the west face. Therefore, a block designated as 1A would refer to the north face of block 1.



### 2.2.2 Turnover Analysis

Rich and Associates examined turnover on Tuesday, January 30, 2007 as part of the study for Wilmette. This typical business day was selected to look at turnover to see how employees and commuter parking utilization was impacting the parking operations. Turnover is an indicator of how often a parking stall is being used by different vehicles throughout the course of the day. Turnover is relevant to time periods when parking is being enforced and is most important to short-term parking.

On-street turnover is particularly important to the customers and visitors to the Village. Higher turnover yields a greater effective supply of parking from the same number of parking stalls. Specifically, higher turnover indicates that vehicles are coming and going more often allowing a greater number of vehicles to utilize the same number of parking stalls than in an area with lower turnover. This is why one of the best policies for a community is to endeavor to keep on-street parking short-term for customers and visitors and to direct long-term parking activity to off-street lots and structures.

The average turnover rate for short-term on-street parking was 1.27 (times per day). This indicates that on average 1.27 vehicles parked in one parking stall over the course of an eight hour day. This turnover rate is artificially low due to the lower occupancy of short-term spaces on some block faces, especially on Park Avenue north of Central Avenue and south of Wilmette Avenue and spaces on Green Bay Road south of Wilmette.

For the Library lot, the turnover was 2.3 and in the adjacent Village lot the turnover was 1.8. In the Library lot 118 vehicles parked during the course of the survey and of those, 13 stayed approximately four hours, two stayed six hours and seven stayed eight hours.

In the Village lot (non permit) there were 64 vehicles parked at two-hour spaces. Of those, 21 stayed four hours and 8 stayed six hours.

### 2.2.3 Occupancy Analysis

Rich and Associates looked at parking occupancies to examine how capacity variations occurred throughout the day as user groups and business' needs for parking changed (**Table 2**). The peak occupancy for on and off-street occurred from 11:00 A.M. to 3:00 P.M. with 69 percent occupied. For the on-street, the peak occupancy reached 65 percent at its peak (1:00 to 3:00 P.M.) and the off-street reached its peak of 72 percent from 11:00 A.M. to 1:00 P.M.

For the off-street, the library reached peak occupancy of 96 percent and the Village two-hour lot reached peak occupancy of 106 percent between 1:00 and 3:00 P.M. The commuter lots were virtually at 100 percent occupancy for most of the day. In addition, the lots along the west face of Poplar south of Wilmette were virtually full the entire day. It was assumed that these spaces are used by commuters.

The map on the following page (**Map 2**) shows the peak occupancies of the on and off-street spaces from 11:00 A.M. to 1:00 P.M.



Table 2: On and Off Street Occupancy Results

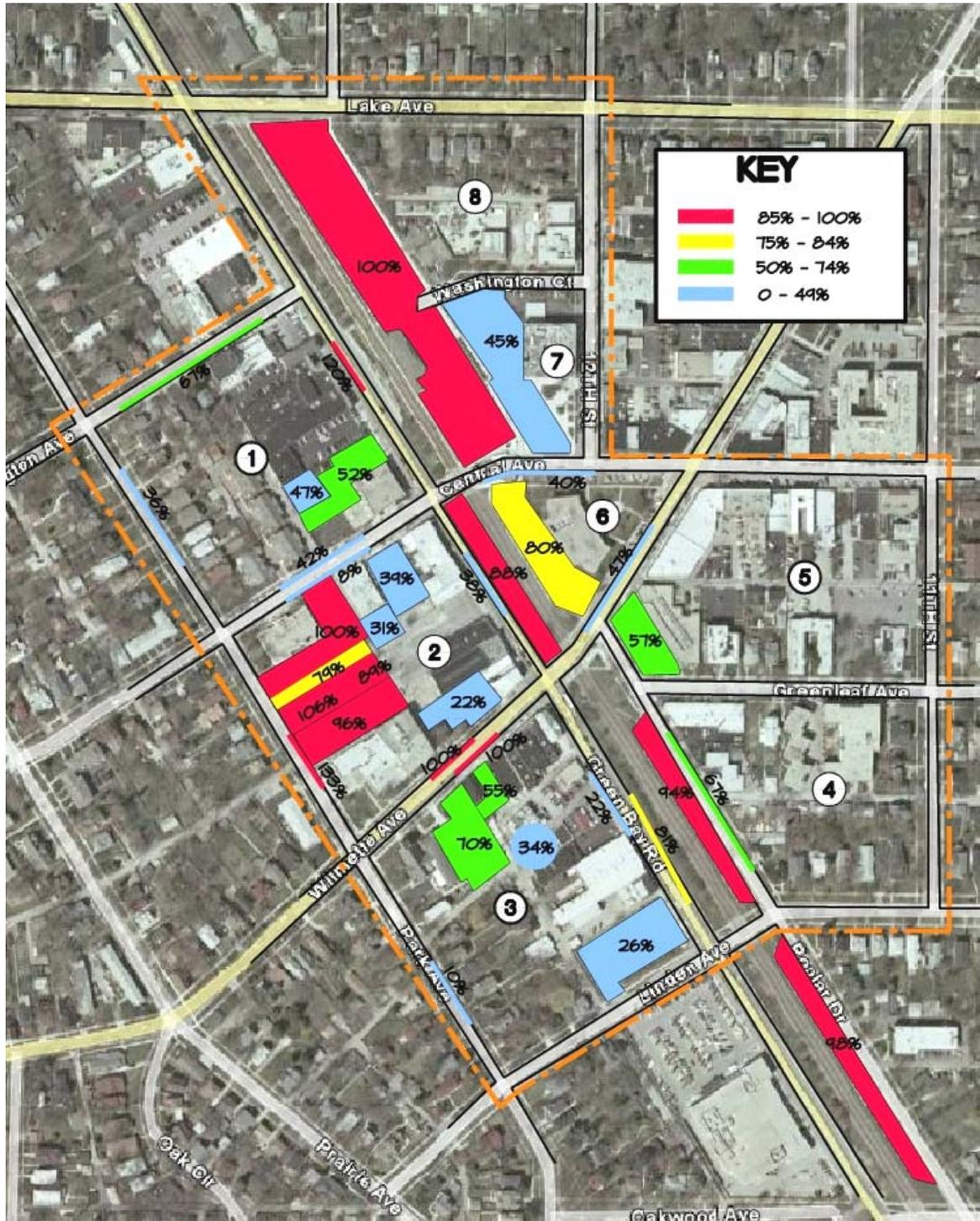
2007 On-Street and Off-Street Occupancy Results										
On-Street										
Block # and Face	# of Spaces	Space Type	9:00 A.M. to 11:00 A.M.	%Occ.	11:00 A.M. to 1:00 P.M.	%Occ.	1:00 P.M. to 3:00 P.M.	%Occ.	4:00 P.M. to 6:00 P.M.	%Occ.
1A	21	4 hr	18	86%	14	67%	18	86%	16	76%
1A	1	H	1	100%	0	0%	1	100%	0	0%
1B	5	2 hr	6	120%*	6	120%	3	60%	0	0%
1C	12	1/2 hr	5	42%	5	42%	6	50%	9	75%
1D	14	2 hr	4	29%	5	36%	4	29%	4	29%
2A	13	1/2 hr	5	38%	1	8%	9	69%	4	31%
2A	1	H	1	100%	0	0%	0	0%	0	0%
2B	8	2 hr	1	13%	3	38%	6	75%	1	13%
2C	6	2 hr	0	0%	6	100%	6	100%	5	83%
2D	6	1/2 hr	1	17%	8	133%*	8	133%*	3	50%
2D	1	H	0	0%	1	100%	1	100%	0	0%
3A	6	2 hr	3	50%	6	100%	1	17%	2	33%
3A	1	H	0	1%	1	3%	0	4%	0	0%
3B	9	2 hr	0	0%	2	22%	4	44%	0	0%
3D	10	4 hr	1	10%	1	10%	1	10%	1	10%
4D	21	2 hr	18	86%	14	67%	18	86%	16	76%
4D (Green Bay)	16	2 hr	16	100%	13	81%	11	69%	11	69%
6A	15	3 hr	2	13%	6	40%	7	47%	3	20%
6A	1	H	0	0%	0	0%	0	0%	0	0%
6C	15	3 hr	2	13%	7	47%	12	80%	9	60%
6C	1	H	0	0%	0	0%	0	0%	0	0%
6D	8	10hr	8	100%	7	88%	7	88%	7	88%
On-Street Sub Total	191		92	48%	106	55%	123	64%	91	48%
Off-Street										
Block # and Face	# of Spaces		9:00 A.M. to 11:00 A.M.	%Occ.	11:00 A.M. to 1:00 P.M.	%Occ.	1:00 P.M. to 3:00 P.M.	%Occ.	4:00 P.M. to 6:00 P.M.	%Occ.
Block 1 Premier Bank	33		14	42%	17	52%	14	42%	15	45%
Block 1 Residential Lot?	15		7	47%	7	47%	7	47%	7	47%
Block 2 Library Lot	51		15	29%	49	96%	33	65%	42	82%
Block 2 Post Office Lot(1)	32		18	56%	32	100%	30	94%	24	75%
Block 2 Village Lot 2 hr	36		27	75%	38	106%	32	89%	30	83%
Block @ Village Lot Permit	9		8	89%	8	89%	8	89%	6	67%
Block 2 Village Lot Permit	14		11	79%	11	79%	11	79%	9	64%
Block 2 Lot Central and Green Bay	38		11	29%	15	39%	19	50%	14	37%
Block 2 Lot Behind 1221-1225	13		3	23%	4	31%	6	46%	6	46%
Block 2 Lot behind 601 Building	23		8	35%	5	22%	11	48%	14	61%
Block 3 ACE parking lot	20		9	45%	11	55%	13	65%	8	40%
Block 3 Misc. Parking	74		26	35%	25	34%	29	39%	24	32%
Block 3 Jewel Overflow Lot	76		20	26%	20	26%	17	22%	15	20%
Block 3 St. John's Lots	37		17	46%	26	70%	20	54%	19	51%
Block 4 Commuter Metered Lot	35		35	100%	33	94%	33	94%	30	86%
Block 4A Commuter Lot	46		46	100%	45	98%	42	91%	42	91%
Block 6 Village Hall Lot	51		41	80%	41	80%	39	76%	35	69%
Block 7/8 Commuter Lot	293	10 hr	293	100%	292	100%	288	98%	275	94%
	10	H	10	100%	10	100%	10	100%	10	100%
	10	15 min.	6	60%	1	10%	1	10%	1	10%
	2	Resv'd	2	100%	1	50%	0	0%	0	0%
Off-Street Sub Total	918		627	59%	691	65%	663	63%	626	59%
Average Occupancy On and Off-Street	1109		719	65%	797	72%	786	71%	717	65%

(1) Post Office Lot is only employee parking lot

\* Vehicles parked illegally can result in a 'stacked' situation where parking area capacity is exceeded. This results in an observed occupancy of greater than 100%.



Map 2: Peak Observed Parking Occupancies (11:00 am – 1:00 pm)





### 2.3 Building Inventory and Parking Demand Calculations

Rich and Associates completed a building inventory in the study area. The inventory consisted of identifying land uses by building and then assigning a square footage to those land uses by building and then by block. The results of this inventory can be found in **Table 3, Parking Demand Calculations**.

The gross square footage of individual buildings was collected and then sorted by land use categories. The different land uses for each block are in general multiplied by a parking generation factor of parking stalls required per 1,000 square feet. Rich completed this using parking generation rates that were based on the results of parking studies completed for communities in the greater Chicago area.

The parking generation factors for each land use type include an estimate for employees and patrons to that particular land use. The overall effect is that each type of downtown visitor, whether an employee, business owner, resident, or commuter is accounted for in the demand model for Wilmette.

As an example, the daytime parking generation factor for office was 2.85 spaces per 1,000 square feet of space. On block 2, Rich and Associates estimated that there was 7,930 square feet of office space which resulted in a projection of 23 spaces needed on block 2 for office. This was done for each land use and then the number of spaces totaled up for each block. The resulting number of parking spaces needed is deducted from the available parking supply on that block to determine a surplus or deficit of parking on each block.

The following are assumptions for the analysis:

- Assumption 1: It was assumed that parking demand per block was dependent on the gross floor area contained in the block. Parking demand computed for one block was not affected by the amount of gross floor area available on surrounding blocks. Therefore, a block with surplus parking supply was unavailable to a block with a deficit parking supply.
- Assumption 2: The parking demand calculations were derived under the assumption that currently occupied properties would remain occupied at existing, or higher than existing levels, into the future.
- Assumption 3: Parking demand is not affected by parking availability, use, location and price.

In the overall study area, there is a surplus of 121 parking spaces. This overall result is shown in **Table 3** and graphically represented on **Map 3**.

As noted previously, Rich and Associates, Inc. uses the results of the turnover and occupancy studies to validate the parking demand model. Within the study area, Rich analyzed 100 percent of the available on-street and off-street parking supply and found the occupancy to peak at about 69 percent. The calculated parking surplus from the demand projections for the study area is 121 spaces.



The projected parking surplus from the turnover and occupancy study was approximately 327 spaces. Since the turnover and occupancy study was only a one day sample, the actual surplus on a typical day could be expected to be less. Based on this, Rich and Associates is satisfied that the model that was prepared is reasonably projecting parking demand on a typical day in the study area.

**Table 3: Parking Surplus/Deficit Work Sheet**

A Block	B Office	C Retail	D Bank	E Mix	F Health	G Serv.	H Rest.	I Library (occ.)	J Post Office
Daytime	2.85	2.35	2.85	2.60	0.85	1.40	9.00	0.38	4.76
1	0	0	21,860	0	16,000	33,600	0	0	0
2	7,930	4,015	0	15,236	0	4,010	0	300	18,900
3	1,320	37,504	7,392	0	0	4,500	2,720	0	0
4	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7/8	0	0	0	0	0	0	0	0	0
	9,250	41,519	29,252	15,236	16,000	42,110	2,720	300	18,900

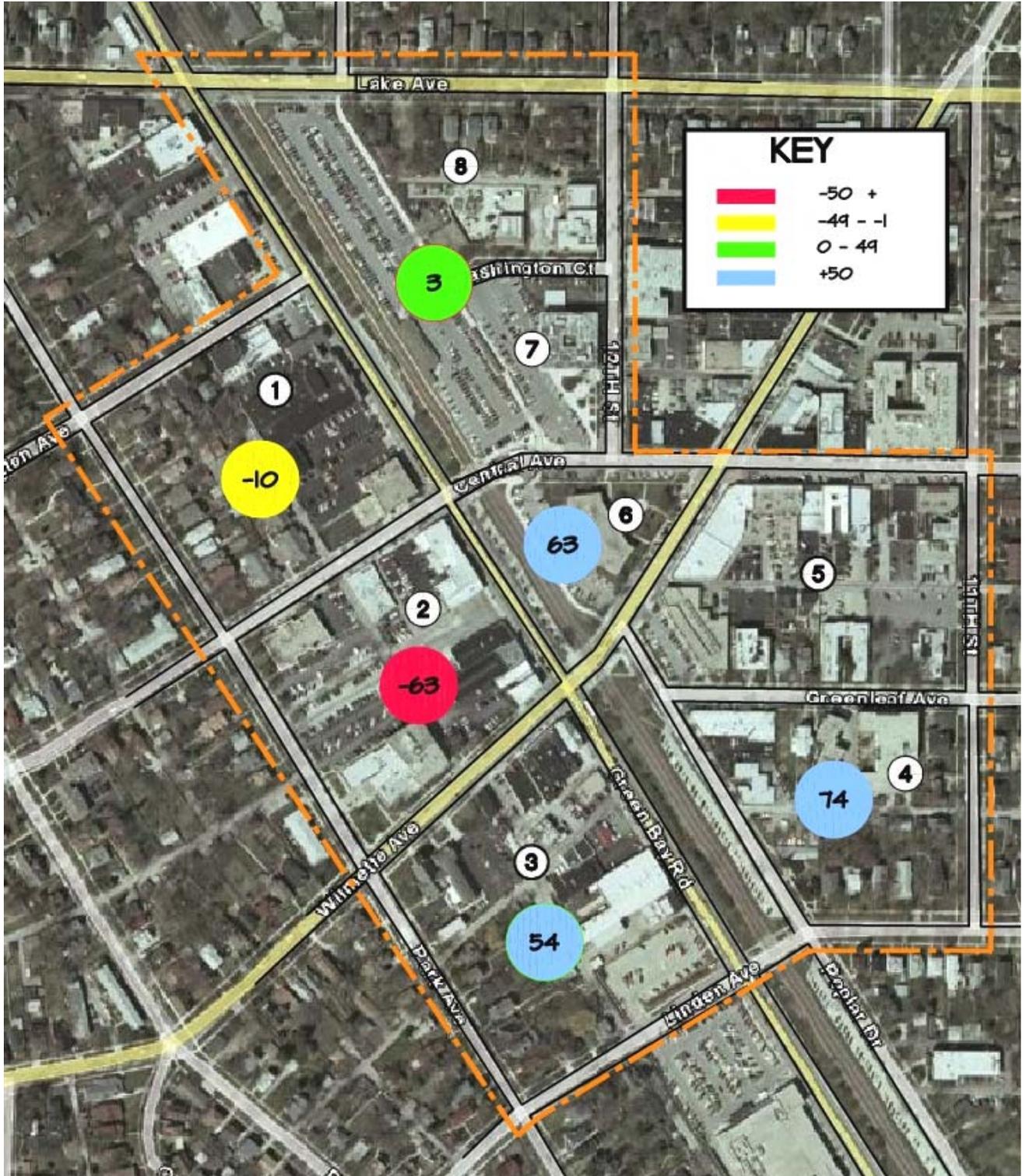
Block	K Gov.	L Church	M Industrial	N Vacant	O Multi- Modal	P	Q	R
						Demand (current)	Parking Supply	Surplus/ Deficit (current)
Daytime	2.90	0.30	0.40	2.47	0.32			
1	0	0	0	0	0	123	113	-10
2	19,656	0	0	2,170	0	344	281	-63
3	0	7,320	4,500	13,000	0	180	234	54
4	0	0	0	0	230	73	147	74
6	11,500	0	0	0	0	33	96	63
7/8	0	0	0	0	1,012	324	327	3
	31,156	7,320	4,500	15,170	1,242	1,077	1,198	121

**Notes:**

- 1) Library projection based on occupants, parking ratio reflects employees, volunteers and patrons.
- 2) TFB - Banquet Facilities, Fraternal Halls, etc.



Map 3: Parking Surplus/Deficit





A point to consider regarding the parking supply and demand is that motorists, in general, perceive on-street and off-street spaces with occupancies greater than 85 percent to be at capacity, depending on the overall capacity of the parking area. The greater the capacity of the parking area, the greater the occupancy can be before it is perceived as being full.

For smaller parking areas the parking is perceived as being full when the 85 percent occupancy is reached. When the perception of full occupancy occurs, motorists will begin to re-circulate to seek more parking, adding to downtown traffic congestion and the parkers’ perception that there is no parking available in the downtown.

During the course of the fieldwork, the Village Community Development Department provided Rich and Associates with information on a new project that is planned specifically for block 2, which is the site of the proposed parking structure. The proposed project was recently approved is the Wilmette Village Center. This project will consist of 57 residential units, 15,671 square feet of retail space and 122 parking spaces on site, of which 85 are to be below the building.

In addition to this, the Village envisions the rest of the block to redevelop, specifically to the north and south of the Wilmette Village Center. At the direction of the Village, Rich and Associates projected that the properties would be redeveloped with commercial on the ground floor and then residential on the upper floors. There would be no parking provided on-site for the commercial square footage, but we assumed that the developments would provide parking for the residential component under the buildings.

**Table 4** shows the calculation of parking needs specifically for block 2, the proposed site for the parking structure. In the current condition, the Library, Post Office, the other demand generators and the commuters have a combined parking need for 679 spaces. If we remove the Library lot, the Village lot and 24 spaces from the Post Office lot there is a projected deficit of -122 spaces. In the future with increased use projected for the Library, the completion of the Wilmette Village Center, the build-out projected for the rest of the block (added demand for 139 spaces) and no changes to the commuter demand, there is a need projected for 302 additional spaces.

This analysis does not consider any additional parking demand that may come from surrounding blocks such as the blocks directly north and south and did not consider any increase in commuter ridership which would put added pressure on existing commuter parking areas. Based on this analysis, Rich and Associates recommends that the capacity of the parking structure range from 300 to 400 spaces.

**Table 4: Future Parking Needs for Block 2**

Breakdown	Deck Demand Current	Surplus/ Deficit w/ loss of Deck Site	Deck Demand Future Build – out	Remaining Lot Supply	Surplus/ Deficit in Deck
Library	114	-114	152	0	-152
Post Office	90	-53	90	37	-53
<b>Area</b>	<b>78</b>	<b>27</b>	<b>217</b>	<b>102</b>	<b>-115</b>
Commuter	397	18	397	415	18
	679	-122	<b>856</b>	<b>554</b>	<b>-302</b>



## 3.0 Site Analysis and Preliminary Design

### 3.1 Introduction

The proposed West Village parking structure site is located on the west half of the block bounded by Central Avenue on the north, Green Bay Road on the east, Wilmette Avenue on the south and Park Avenue on the west. The site is a series of existing parking lots owned by the Library and the Village. In addition, the site does extend into the Post Office property taking up a row of parking used by postal vehicles and postal employee parking. There is a 20-foot public alley that runs north/south through the block.

To the south of the parking structure site is the Wilmette Public Library and to the north is the Wilmette Post Office. To the east of the site is the proposed Wilmette Village Center development.

The proposed parking structure will provide public parking for the Library, Post Office, commercial, retail and office uses on the east side of the block as well as parkers in surrounding blocks and possibly commuters and other employees who work east of Green Bay Road.

### 3.2 Existing Site

The proposed existing site encompasses the Library parking lot, Village parking lots and a portion of the Post Office parking lot. There are 112 parking spaces in the Library and Village lots and there are approximately 24 spaces that would be eliminated in the Post Office lot for a total of 136 spaces lost to the site of the parking structure.

The Library lot has two book return boxes in their parking lot and there are five mail boxes located in the Village lot. The Library lot has one entry and one exit on Park Avenue with no vehicular access to the alley. The Village lot consists of two adjacent lots. The southern most lot is perpendicular parking with a two way traffic aisle that includes an entry/exit from Park Avenue and the alley. The northern most lot is one way flow (entry from Park Avenue and exit through the alley) and this is the lot that contains the five mail boxes.





### 3.2.1 Utilities

There are utility poles located in an easement on the south side of the site parallel to the Library. There are also utility poles that run parallel to the alley on the east side. One pole on the Library side contains transformers. Rich has not received any documents that show any other utilities that run below ground through the proposed site.

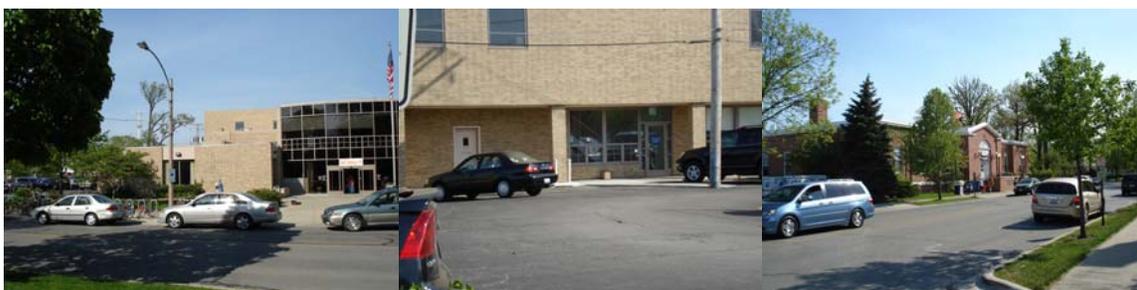


### 3.2.2 Pedestrian Flows

The parking on the current site basically serves the Library and the Post Office. The Library's main entrance is on Park Avenue with an employee entrance on the parking lot (north side) of the building. Additionally, there is a loading entrance at the northeast corner of the Library building.

The post office's main customer entrance is on Central Avenue with employee entrances on the south side of the building. There is a loading dock on the south side of the Post Office. This location is used by customers who are dropping off bulk mail.

In any of the parking lots parkers or passengers, once they exit their vehicles, are either walking through the parking lot(s) or from the parking lot to the sidewalk.





### 3.3 Delivery Vehicle Access

There are several issues with delivery vehicle access and trash pick up to the Library and Post Office. The Post Office has mail delivery by off road tractor trailers that enter through the Post Office lot on Park Avenue and then back up into the dock area (see picture below). There are also smaller delivery trucks and customers dropping off bulk mail near the location of the dock pictured below. Trash removal occurs near this area as well.



For the Post Office, the most important loading and unloading activity is related to postal delivery vehicles. The loading of postal vehicles occurs in the Post Office lot on both the north and south sides. The postal employees roll a cart or hamper out to their delivery vehicles to load. In addition, postal vehicles are also stored in the lot in the northeast corner of the Post Office site.



The Library does most of its loading and unloading at the rear of the building at the northeast corner. Deliveries, pick ups and the trash are all handled on this side. Trucks use the alley to access this corner and will park there as they load or unload.



### 3.4 Project Goals

The goals of the project are:

- Target capacity  $\pm$  400 parking spaces. The existing lot would eliminate 136 spaces for a net add of 264 spaces.
- Develop a parking façade that is compatible with the Library, Post Office, Wilmette Village Center development and surrounding buildings.
- Respect the potential concerns of residents to the west of the site, including the façade, massing, sound and light coming from the parking structure.
- Provide storm water detention within the parking structure for the block.
- Limit traffic from the parking structure infiltrating into the residential neighborhood, especially to and from Park Avenue.
- Provide a well landscaped project using native plant material and incorporate wherever possible green building principles.

### 3.5 Zoning and Code Issues

The proposed parking structure location is currently in an R2 district, “Townhouse Residence District”, which forbids the construction of parking structures. The adjacent property to the east (across the alley) is zoned VC (Village Center), which allows the construction of parking structures. The Village will need to determine the best approach to addressing the zoning requirements.

### 3.6 Parking Design Requirements

The Village code has the following parking design requirements.

- Stall dimension eight and one-half feet wide by 18 feet long. The 18-foot length may include up to two feet of abutting space in vegetative buffer over which the vehicle may extend, provided that no parked vehicle will project over a sidewalk or other pedestrian walkway.
- Aisle dimension for 90 degree parking with a double loaded module is 22 feet wide. Other dimensions are by angle;
  - 45 degree angle - 14 foot aisle
  - 60 degree angle - 19 foot aisle
- Enclosed parking spaces will have vertical clearance of at least seven feet
- Illumination of an off-street parking area shall be arraigned so as not to reflect direct rays of light into adjacent residential districts and streets and shall meet the following standards;
  - All outdoor lighting for non-residential uses shall be designed, located and mounted so that the maximum illumination, as measured horizontally at the lot lines, does not exceed 0.5 foot candles



- No outdoor lighting shall be of such intensity or brilliance as to cause glare which would impair the vision of drivers
- Steps shall be taken to minimize glare from such lighting to the maximum extent possible, such as by orienting the lights away from abutting properties or planting trees to block other properties from glare.
- Most parking lots in the Village are 90 degree parking with two-way aisles.

### 3.7 User Groups and Requirements

The parking structure has been planned for several user groups;

- the Library patrons and visitors,
- the Post Office delivery vehicles, postal employees, and post office visitors and customers,
- additional parking for the Wilmette Village Center,
- additional parking for commuters and employees east of Green Bay Road,
- employees customers and visitors from businesses on block 2 and surrounding blocks,
- finally the future parking demand from redevelopment on the remainder of block 2.

The Wilmette Village Center project will provide a mid-block access from their parking lot or the parking structure to businesses on Green Bay Road. This will facilitate the use of the parking facility by area businesses and commuters.

Within the West Village Center Parking Committee there were several design and user issues that were discussed;

- Parking structure should be user friendly to include:
  - Lighting
    - Light levels on parking floors have a minimum of six foot candles.
    - Light levels at vertical cores and at entry and exit have a minimum of 20 foot candles.
    - Lighting on the roof level must take into account lighting affects on surrounding buildings, especially residents across Park Avenue.
    - Lighting spill over from parking floors must also be considered.
    - Type of lighting was not specified.
  - Noise
    - Vehicle noise and people noises in the structure, especially at night must be considered, especially with respect to the residences on Park Avenue.
    - The hours of operation on weekends will affect noise levels.



- Safety and Security
  - At a minimum, the parking structure should be wired to accept CCTV if the system is not installed up front.
  - The parking structure and site design should take the principles of CPTED (Crime Prevention Through Environmental Design) into account.
  - Limit hiding places in parking structure.
  - Use glass elevator cabs, shafts and glass enclosed stairways.
  - Use landscape that will not conceal a person.
  - Appropriate outdoor/indoor lighting.
  - Make way finding easy.
- Parking Operations
  - If paid hourly parking was to be implemented, a pay-by-space system is recommended. This would require that every space be numbered and that the parker would go to a machine and enter their stall number and then the amount of time they wished to stay. Payment could be by coin, paper bills, credit card, debit card and smart card.
  - Permit or monthly parkers would have a sticker or other way of alerting the enforcement officer that they are a permit parker.
- Facade and Massing
  - The facade should not look like a typical gray concrete parking structure,
  - The facade should help block noise and light.
  - Trees along Park Avenue should be saved if possible.
  - All four sides of the parking structure can be treated differently architecturally.
  - The height of the parking structure is a concern.
- Post Office
  - There is a need to accommodate postal vehicles that may be displaced due to the parking structure footprint.
  - There are approximately 50 postal employee spaces needed during the daytime.
  - If postal vehicles will park within the parking structure to be loaded or unloaded, the access to those spaces and the parking areas for those spaces need to be flat, rather than sloped.
  - The Post Office needs a maximum of two mailboxes for drop off mail incorporated into the project.



- Library
  - The Library has a need for staff and patron parking in the parking structure.
  - Primary access for patrons is on the west side of the Library for patrons.
  - The Library needs two book drop boxes incorporated into the parking structure.
  - A loading area needs to be maintained at the northeast corner of the Library that accommodates deliveries, recycling and trash.

### **3.8 Issues Related to Construction Period**

#### **3.8.1 Interim Parking**

Regardless of when the construction period occurs, there will be a temporary loss of parking on the site. During the next phase of the project (design), specific plans will need to be developed to determine a location for temporary parking. It would be premature to identify a location(s) now. There are several issues to be considered with the temporary lot.

**Employee Parking:** This group will be the easiest to manage from a logistics and location standpoint. Since an employee is a re-occurring parker, temporary signage is not a considerable concern. The parking locations can be further away than a visitor/customer location. This option may require utilizing a shuttle. Additionally, the ability to communicate with the employee is easier than with a customer/visitor.

**Visitor/Customer Parking:** Visitor/customer parking is more difficult to manage. These parkers may not be frequent parkers, thus signage must be used. Where temporary visitor/customer parking will be located is important. If the parking area is remote, a shuttle will have to be incorporated, though this is not the preference. A marketing plan should also be developed for customers and visitors.

#### **3.8.2 Access During Construction**

Questions may come up about access to the alley and loading/unloading during construction. The timing of the construction of the parking structure with respect to the construction of the Wilmette Village Center will be important. A portion of the alley should remain open during construction. This will be written into the specifications for the contractors. Temporary signage will be used. Information on construction should be put in the monthly newsletter described below.

There will be impacts to the Post Office and their ability to load postal vehicles on the south side of their lot. Additionally, the driveway in their lot from Park Avenue must be maintained for mail delivery and for access by postal vehicles.

For the Library, the issues will be access from the alley and the ability for a delivery vehicle to sit in the alley for any given period of time. This issue will have to be addressed during the design and construction phases.



### 3.8.3 Effects of Construction

There are several issues with the construction of the parking structure:

- **Noise:** While noise is a factor during construction, it should be written into the specifications specific times when construction may occur i.e. Monday to Friday, 7:00 a.m. to 7:00 p.m.
- **Dust and Dirt:** This may also be a problem during construction. The specifications should contain requirements for debris removal, dust mitigation and general maintenance of the site.
- **Safety:** The construction will be fenced in. Storage of materials will be in a fenced-in area.
- **Damage to Surrounding Buildings:** During the normal construction process there is the possibility of vibration damage. Buildings with basements should be photographed (walls) and outside walls of all buildings should also be included.
- In general, the contractor will be required to present a plan to address these issues. Also, there will be the issue of truck access to the site and lay-down area for materials. The proposed method of construction is pre-cast concrete which will require delivery of the material on flat bed trailers, but generally the material is delivered and then erected the same day.

### 3.8.4 Monthly Newsletter

Rich and Associates strongly recommends that the Village prepare a newsletter be sent out each month during the design and construction phases. During the design phase, planning for the structure may be highlighted, including the issues discussed above (temporary parking, access and effects from construction). During construction, the newsletter should discuss schedule, closures and general progress of the project.

During construction, it is recommended that monthly meetings be held to discuss progress and any specific problems. Area businesses, residents and property owners should be on the mailing list.

### 3.9 Traffic Issues

Traffic concerns were addressed by TY Lin, and the PowerPoint presentation that they prepared is in the Appendix. TY Lin staff analyzed existing traffic counts and looked at the weekday and weekday night peaks, as well as weekend mid-day traffic. The results of the analysis of the parking structure on traffic was that there would be little impact at peak times. It was felt that in some cases, parkers that usually park east of Green Bay would choose to park in the new parking facility to avoid crossing Green Bay and the METRA tracks and the delays that result, especially in the A.M. and P.M. peaks.



## 4.0 Parking Structure Design Study

An important task to be completed by Rich and Associates was to develop parking structure concepts for the site. This included a preparation of schemes that met the various criteria discussed in Section 3. Two options were developed for the site. Both options run the parking aisles east to west as the lots are currently oriented. In order to respect the height concerns and meet the target capacity, three modules\* were required for either option. This resulted in the footprint for the parking structure taking up all of the Library parking lot, Village lots and the first row of spaces in the Post Office parking lot. The possible parking structure on this site is impacted by the overall length. Because the length is not sufficient for a slope floor/flat floor design, all of the modules need to slope.

\*[A module is defined as a configuration of parking stall - drive aisle - parking stall. Module widths vary, but commonly range from 60 to 62 feet for 90 degree parking.]

### 4.1 Review of Options

#### 4.1.1 Option 1

**Exhibits 1 through 4** show Option 1. Option 1 is the preferred scheme after review of two schemes by the committee. There are two entry and exit points planned, one entrance and exit from Park Avenue and the other is from the alley. The ramp from the ground floor to the first supported level is an express ramp that is not parked since the slope is approximately 11 percent. This allows the ground floor to be flat. As preliminarily planned, the ground floor is set aside for hourly parking; specifically for Library patrons. Also, the northern most row of parking on the ground floor (14 spaces) would be accessed from the Post Office driveway and would be set aside for postal vehicles. In addition, the postal vehicles could park in the five spaces on the west face as marked. These spaces would be used to load and unload postal vehicles. The carts or hampers could be pushed from the Post Office drive into the parking structure through a passage way. This gives a total of 19 spaces for postal vehicles.

In order to meet the design requirements identified in Section 3, the site plan shows a pull off from the entrance to the parking structure on the Park Avenue side to accommodate the book drop off and mail boxes. **Exhibit 2** specifically shows a landscape plan for the Park Avenue side of the parking structure. The plan shows native plants, planters and a seating area between the parking structure and the Library. Rich and Associates is suggesting a piece of art in the seating area. Additionally, the seating area would contain a walkway that would extend to the alley. This would then allow a pedestrian to travel from Park Avenue to Green Bay Road through the Wilmette Village Center project. The parking structure is set back approximately 20 feet from the Library and 38 feet from the rear of the Post Office (not including the canopy). This setback is consistent with the other buildings along the Park Avenue frontage.

There are three stair and/or elevator towers planned, two with one elevator and stair and one stair tower. The elevators were placed in the southeast and southwest corners. The facility serves the Wilmette Village Center project, the ultimate build out and other parking demand from Green Bay Rd and for the Library. The stair in the northwest corner would serve the Post Office.



Option 1 develops approximately 400 parking spaces on grade and three supported floors. At the highest point, which is on the alley side of the parking structure, the top of the spandrel would be at about 44 feet, and approximately 57 feet to the top of the elevator penthouse at the southeast corner of the building. On the Park Avenue side, the maximum elevation at the spandrel panel is about 37 feet and about 52 feet to the top of the stair and elevator towers.

Finally, **Exhibit 1** shows the outline of a potential storm water detention tank on the ground floor. The tank would be pre-cast and as shown on the drawing this tank could hold 100,000 gallons.

Option 1 was chosen for the following reasons;

- Approximately 19 postal vehicles can be accommodated on the ground floor. Option 2 can not accommodate postal vehicles for loading or unloading.
- There can be an entry and exit from Park Avenue and the alley. Option 2 cannot have both an entry and exit to Park Avenue.
- All but a very small area of the ground floor will be flat. Option 2 only has a limited flat floor area on the ground floor which would negatively impact the Library patrons.

#### 4.1.2 Option 2

This option is shown on **Exhibits 5 through 7**. Option 2 is on the same footprint as Option 1, but differs from Option 1 in several ways. First, there could only be an exit from Park Avenue since the ground floor level would not be at one elevation but would have to slope in order to achieve the necessary head room throughout the ground floor. The ramp from the ground floor to the first supported floor would be a parked ramp.

The capacity of Option 2 is approximately 387 spaces. At the highest point, which is on the alley side of the parking structure, the elevation at the top of the spandrel would be 38 feet and approximately 51 feet to the top of the elevator penthouse at the southeast corner of the building. On the Park Avenue side, the maximum elevation at the spandrel panel would be 29 feet and about 46 feet to the top of the stair and elevator towers.

#### 4.1.3 Additional Options

Additional options were discussed such as depressing the ground floor anywhere from 3 feet to 10.5 feet below grade to reduce the overall height of the parking structure. This was ruled out for several reasons, including the additional cost of going below grade and potentially eliminating the openness of the lower level which would require mechanical ventilation, possible fire suppression. In addition, there is a general negative perception of underground parking.

Another option was to totally depress the parking structure below grade. The cost for this option is almost double the cost of an above grade parking structure. Additionally, this would increase operating costs due to mechanical ventilation and the need to run all of the lighting longer during the operating day. As previously stated, underground parking tends to have a negative perception, especially where night time parking is provided.





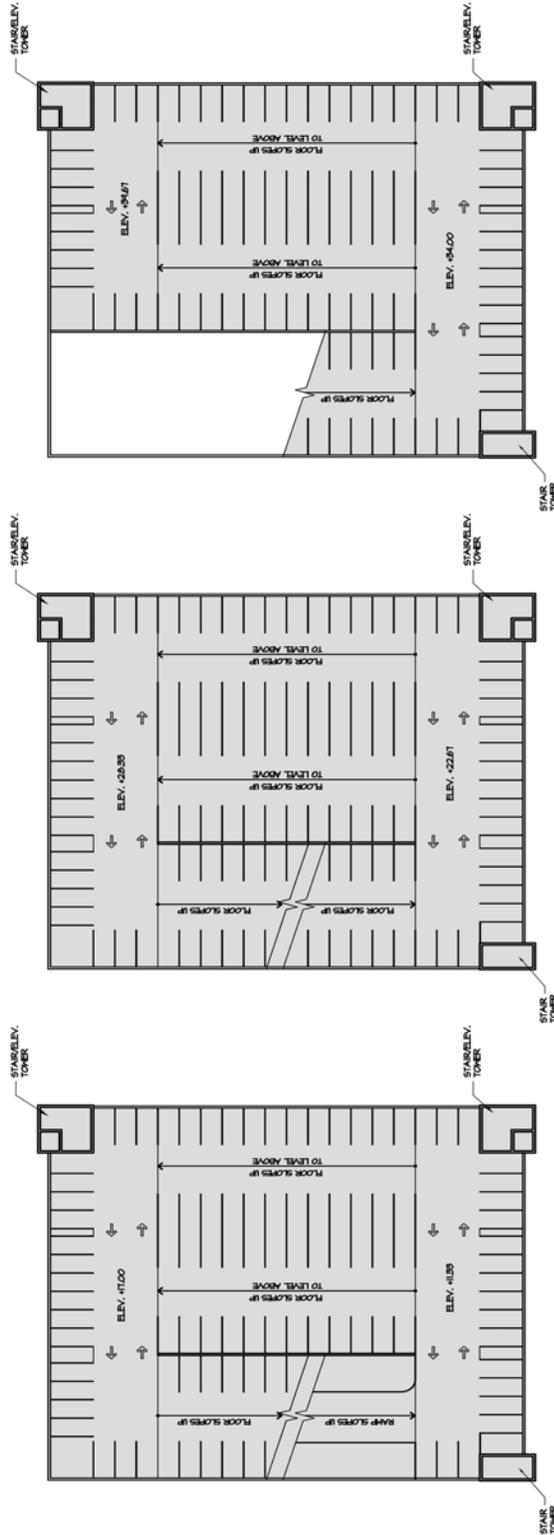


Exhibit 3: Option 1 Floor Plans



VILLAGE OF WILMETTE  
PARKING

OPTION 1



SECOND LEVEL PLAN  
SCALE 1/2"

THIRD LEVEL PLAN  
SCALE 1/2"

FOURTH (ROOF) LEVEL PLAN  
SCALE 1/2"

CAR COUNT SUMMARY

FIRST	45 SPACES
SECOND	112 SPACES
THIRD	112 SPACES
FOURTH	83 SPACES
<b>TOTAL</b>	<b>452 SPACES</b>

PARK AVENUE



Exhibit 4: Option 1 Isometric

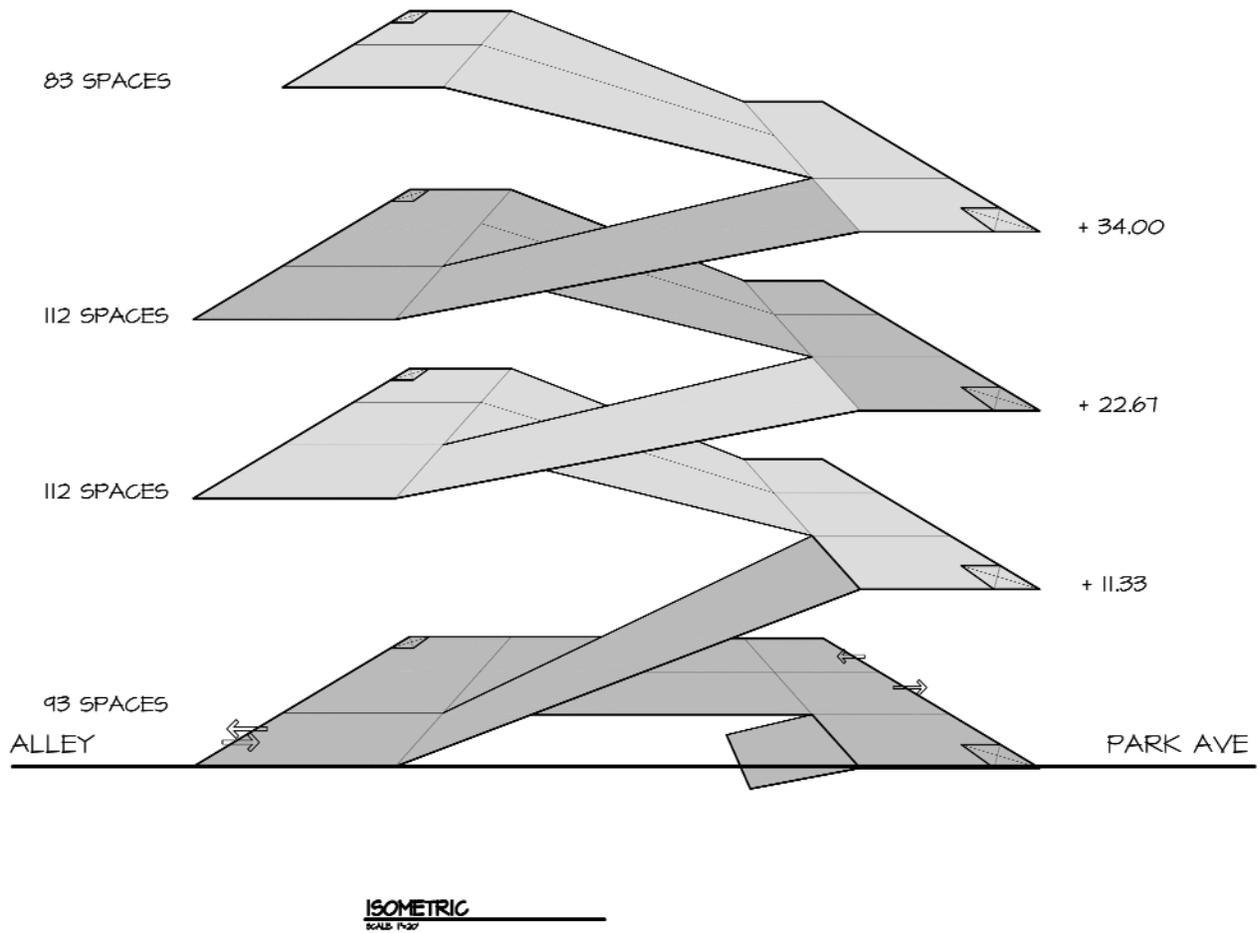




Exhibit 5: Option 2 Site Plan

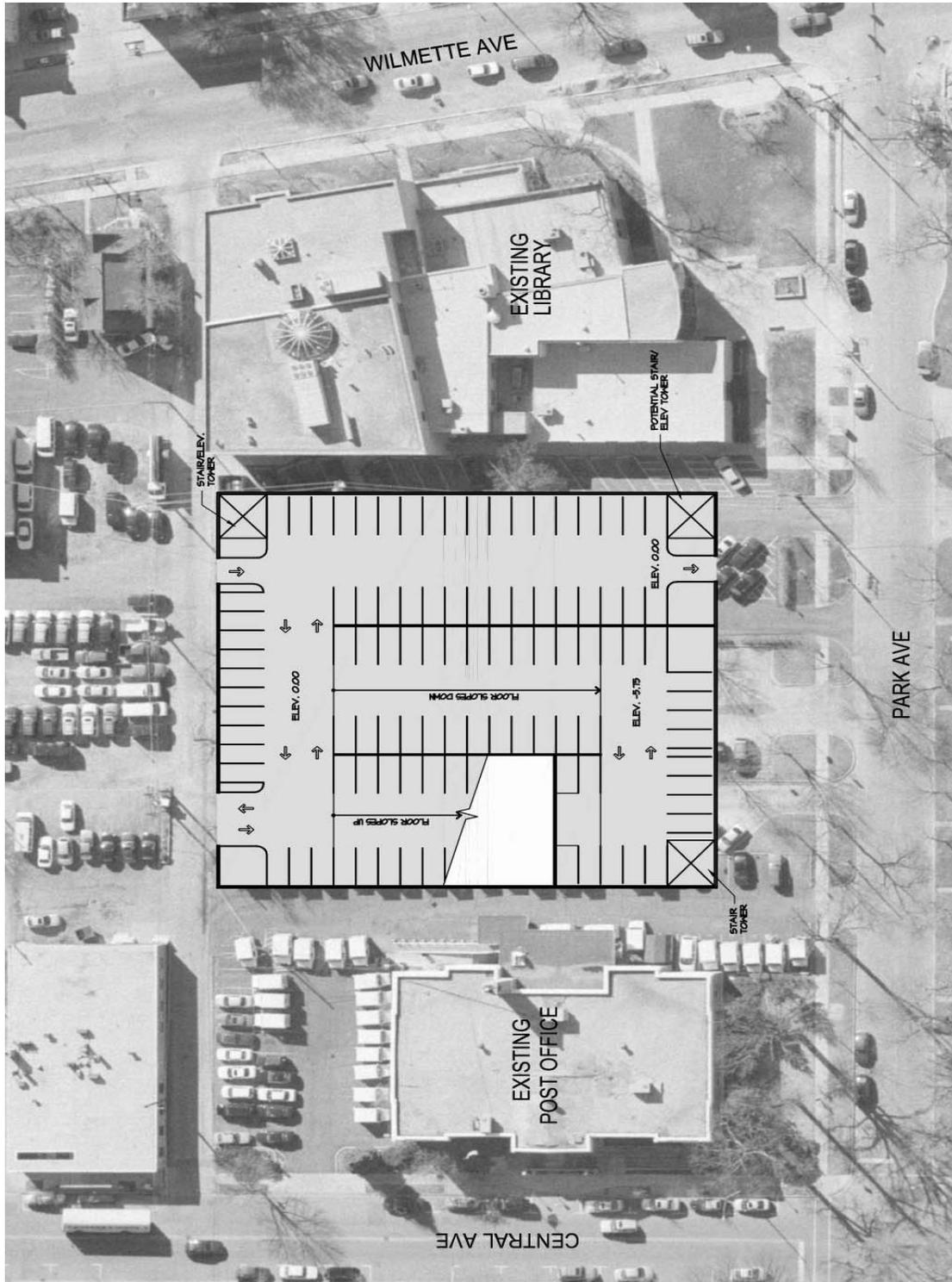


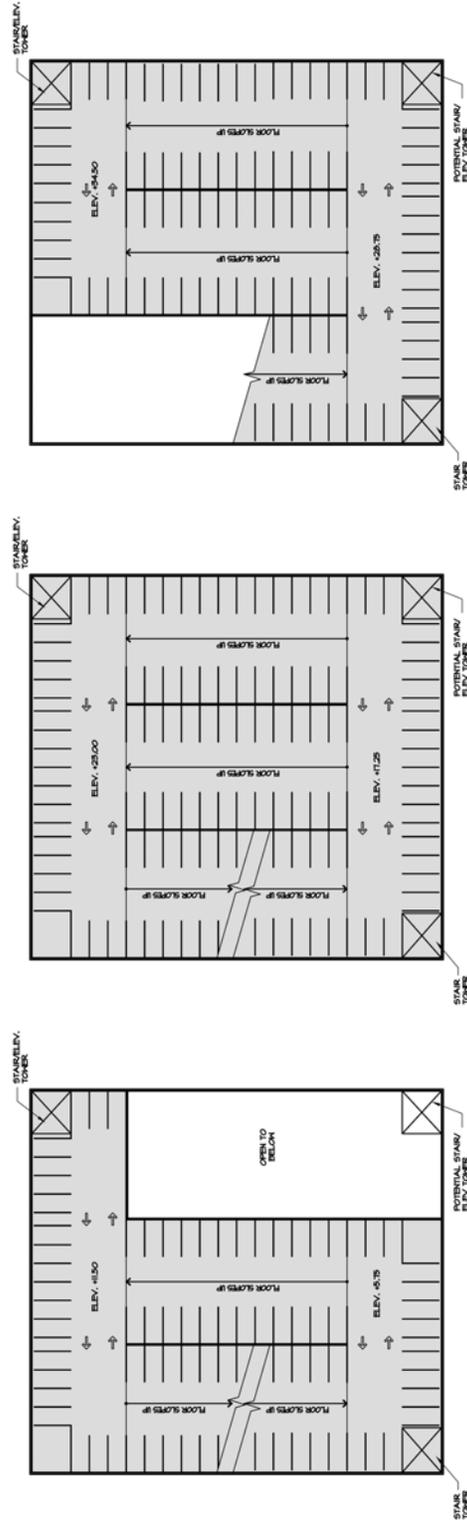


Exhibit 6: Option 2 Floor Plans



VILLAGE OF WILMETTE  
 PARKING

OPTION 2



SECOND LEVEL PLAN  
SCALE: 1/8" = 1'-0"

THIRD LEVEL PLAN  
SCALE: 1/8" = 1'-0"

FOURTH (ROOF) LEVEL PLAN  
SCALE: 1/8" = 1'-0"

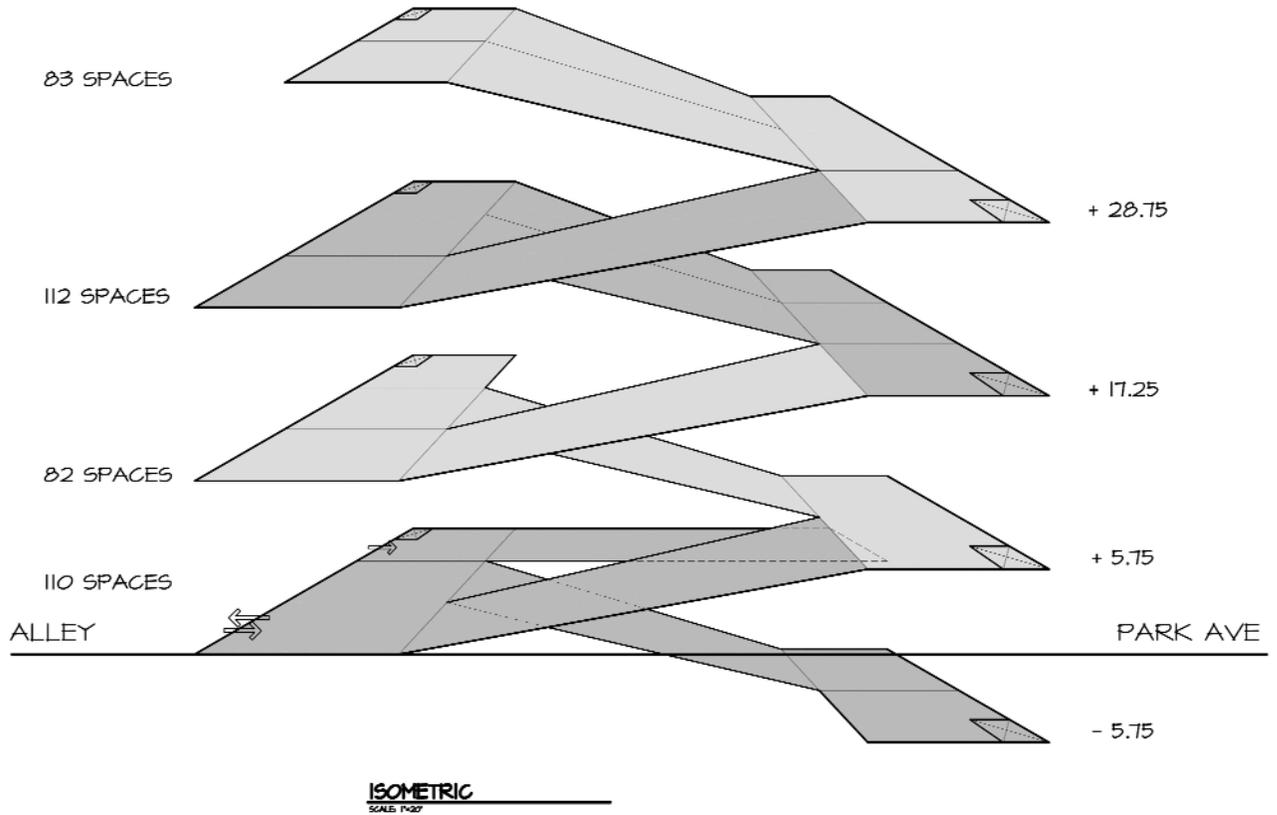
CAR COUNT SUMMARY

GROUND	10 SPACES
FIRST	12 SPACES
THIRD	12 SPACES
FOURTH	88 SPACES
<b>TOTAL</b>	<b>122 SPACES</b>

PARK AVENUE



Exhibit 7: Option 2 Isometric





## 4.2 Parking Façade Design Options

Two preliminary options were developed for the selected option (Option 1). Option A is developed using a wall panel. The parking committee had expressed a desire to have a façade, especially on the Park Avenue side that was not uniform. Exhibits 8 through 17 show the different elevations of the parking structure as well as an aerial view and a view from different perspectives. Exhibits 15 and 16 show street elevations of the courtyard area between the parking structure and the Library and the proposed landscaping on the Park Avenue frontage of the parking structure.

The additional perspectives of the proposed parking structure using the Option A façade were completed since it appeared that the Committee was interested in this façade design more than Option B. Option B facade is a simple brick spandrel on the east and west facades and a colored precast spandrel panel on the north and south facades. In addition, Rich and Associates completed a computer generated animated drive around the proposed parking structure.

The façade design includes alternating panels of brick and concrete that would be tinted or dyed a complimentary color. In order to avoid a uniform façade across the face of the building, we have placed cornices on the brick panel walls at a different height than the concrete panel walls. Finally, to give the parking structure a “non-parking structure” look, mullions have been provided in the window openings in the brick panel wall sections. For economic reasons, the north (Post Office) and south (Library) elevations can use the same wall panel concept but eliminate the brick. As an option, tinted or colored concrete can be used instead of the brick.

In both façade designs, the stair towers and elevator shafts are enclosed in glass. This is done primarily for security purposes.

The second façade was less complex and as a result less expensive (Exhibits 18 through 21). The east and west facades would incorporate brick in the spandrel walls and on the north and west facades use tinted or dyed concrete.

The preliminary facade options are subject to future public review and comment.



Exhibits 8 & 9: Option A, East and West Elevations



**PARK AVE. (WEST) ELEVATION**  
 SCALE: 1/8" = 1'-0"



**ALLEY (EAST) ELEVATION**  
 SCALE: 1/8" = 1'-0"

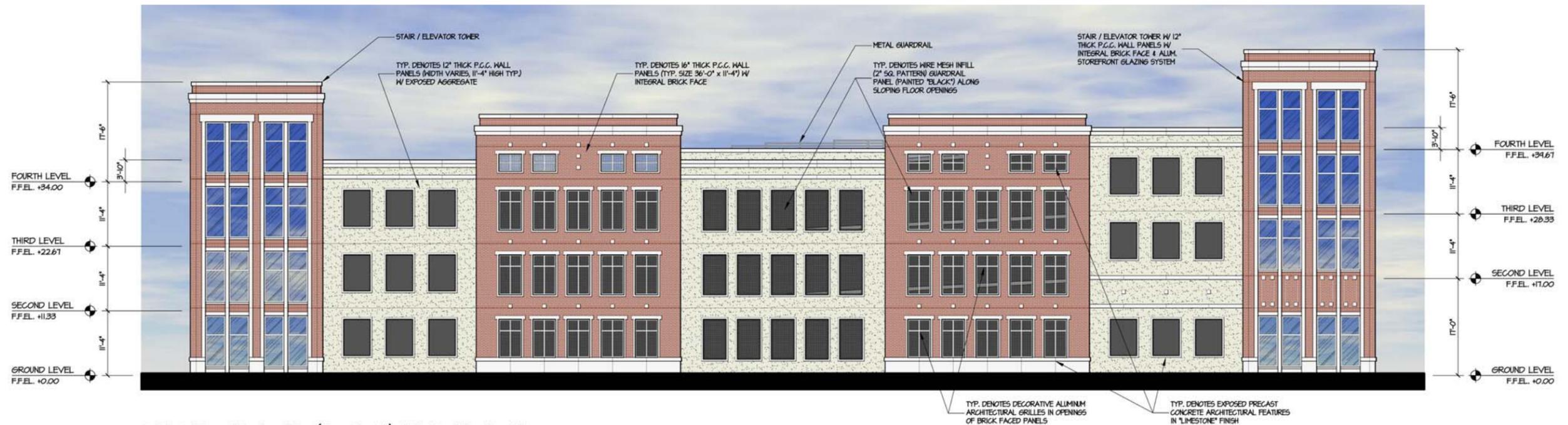


Exhibits 10 & 11: Option A, North and South Elevations



**CENTRAL AVE. (NORTH) ELEVATION**

SCALE: 1/8" = 1'-0"



**WILMETTE AVE. (SOUTH) ELEVATION**

SCALE: 1/8" = 1'-0"



**Exhibits 12&13: Option A Renderings**





Exhibits 14&15: Option A Renderings





Exhibits 16&17: Option A Renderings





Exhibits 18 & 19: Option B, East and West Elevations



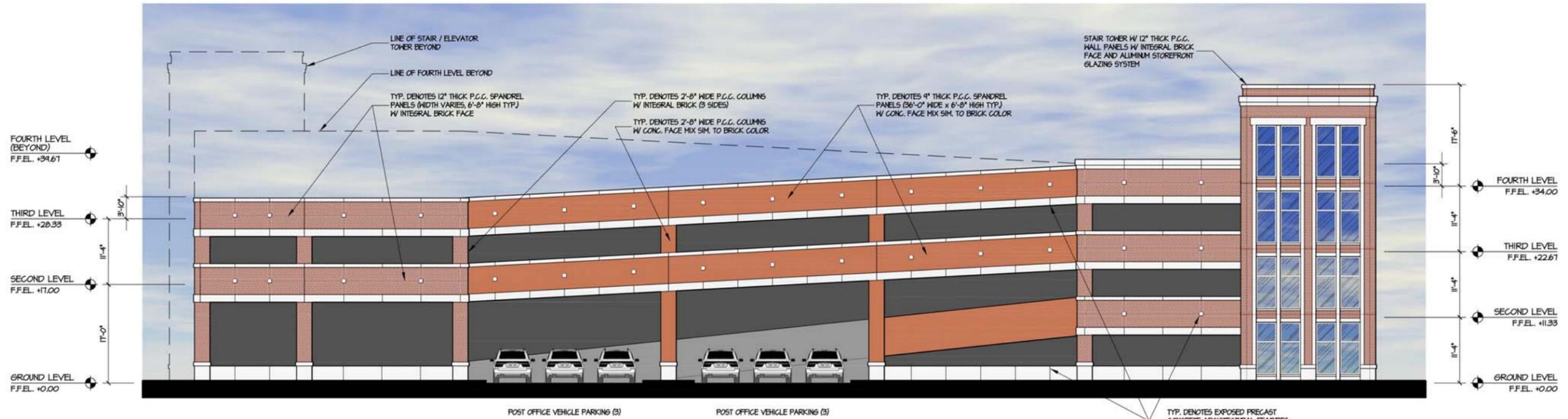
PARK AVE. (WEST) ELEVATION  
SCALE: 1/8" = 1'-0"



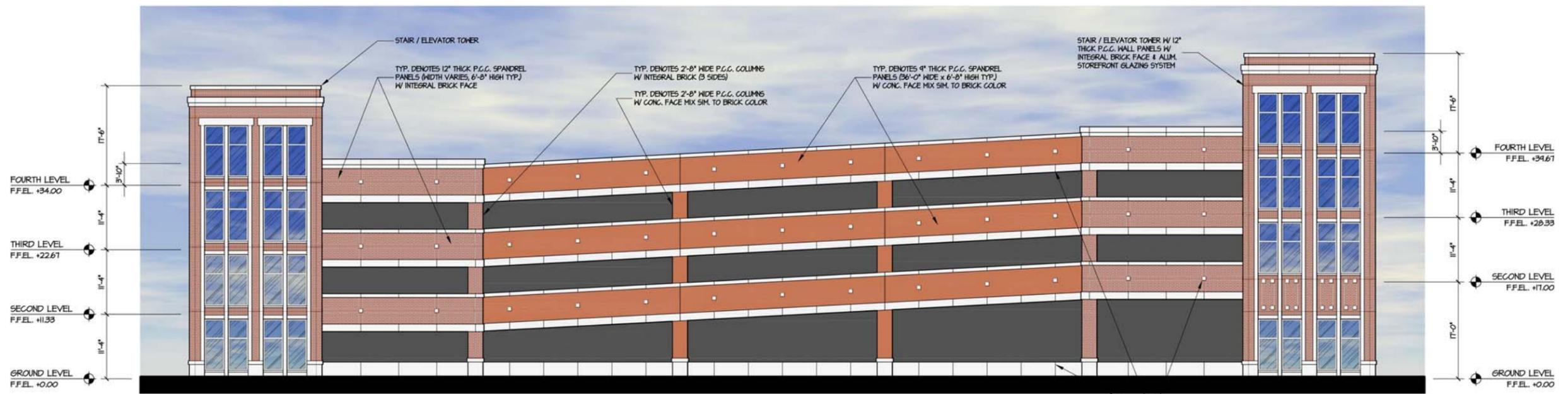
ALLEY (EAST) ELEVATION  
SCALE: 1/8" = 1'-0"



Exhibits 20 & 21: Option B, North and South Elevations



**CENTRAL AVE. (NORTH) ELEVATION**  
 SCALE: 1/8" = 1'-0"



**WILMETTE AVE. (SOUTH) ELEVATION**  
 SCALE: 1/8" = 1'-0"



### 4.3 Project and Finance Costs

Rich and Associates prepared project and finance costs for the proposed parking structure. First the construction costs were estimated. Rich and Associates worked with the construction company of Barton-Malow from Chicago to estimate the costs of the Option 1 layout and then both of the façade design options.

The construction cost for façade Option A is \$19,200 per space and assumes a 2008 construction start. There are additional costs estimated for a security system that consist of cameras, recorder and sound activated alarm system. Other costs include 'detention' vault, landscaping the courtyard and Park Avenue frontage, and a 10 percent contingency.

For Option B facade, the basic construction cost is estimated at \$17,500 per space. There are similar additional costs as referenced above.

**Tables 5 and 6** illustrate the estimated project and finance costs for the selected scheme and the two façade options. The following are explanations of the various line items:

1. Construction Costs: Based on average cost per space and ranged from \$17,500 to \$19,200 per space (assuming 2008 construction). This cost assumes an architectural façade as described in Section 4.2. The assumptions also assume spread footings which will need to be confirmed with soil borings and a geotechnical report.
2. Professional Fees: These are the design fees and reimbursable expenses. Project delivery assumes a conventional design/bid scenario.
3. Geo-Tech and Survey: Fees for a survey and topography of the site, soil borings and report on foundations.
4. Security System: Includes cameras, recorder and sound activated sound system.
5. Detention Vault: This is the cost of a 100,000 gallon pre-cast vault.
6. Landscaping: This is the estimated cost of the courtyard between the Library and parking structure and Park Avenue landscaping.
7. Contingency: Rich has used a 10 percent contingency for the design and construction to cover unanticipated costs during construction.
8. Project Costs to be Financed: Project costs represent the construction hard and soft costs.
9. Finance Term: The term of the bond is 30 years. A shorter amortization schedule is also possible.
10. Interest Rate: Based on an un-rated bond issue with no insurance and rates as of the second quarter of 2007. The rate assumed a general obligation type bond issue.
11. Term of Construction: The construction period is estimated at 1 year. This depends on the time of year that the project is started and site availability for material storage and staging for example.
12. Interest During Construction: All bond proceeds are received up front and draws are made on these funds to pay for construction. This represents capitalized interest for the term of construction.



13. Interest Income: The bond proceeds are put into an interest bearing account and generate interest income that is used to offset costs.
14. Legal and Accounting Fees: These are the legal fees and accounting fees of the bond issuer.
15. Debt Service Reserve: No debt service was assumed.
16. Financing Fees: These are the points paid to the bond underwriter.
17. Cost of Issuance: These are expenses such as printing of offering/official statements.
18. Total Financing Fees: Total soft costs for financing.
19. Addition of the Project Costs: from line 10.
20. Total Amount of Bonds: Total of lines 20 and 21.
21. Debt Service: The annual principal and interest payment assuming a level payment each year.
22. The calculated debt service for Option A façade is estimated at \$649,000 and for Option B façade \$594,000. In addition to this cost, Rich and Associates recommends that owners establish a Repair and Replacement fund for the repairs that are required during the life of the facility, which can be 40 years or more.



Table 5: Option 1, 400 Stalls (Panel Façade A) – Project and Finance Cost Worksheet

1 Construction Cost	400 x \$19,200	\$7,680,000
2 Professional Fees (Architectural/Engineering & Reimbursed)		\$461,000
3 Geotech and Survey		\$35,000
4 Security System		\$99,000
5 Detention Vault		\$125,000
6 Landscaping		\$50,000
7 Contingency		\$768,000

8 Project Cost to be Financed	\$9,218,000
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9 Financing Term	30 Years
10 Interest Rate	5 %
11 Term of Construction	12 Months

**Financing Costs**

12 Interest During Construction		\$496,000
13 Interest Income	40% @ 3%	(\$99,000)
14 Legal & Accounting Fees		\$10,000
15 Debt Service Reserve		NA
16 Financing Fees (Points)	2.00%	\$198,000
17 Cost of Issuance	@ 1.00%	\$99,000

18	<b>Total Financing Costs</b>	\$704,000
19	<b>+ Project Cost to Be Financed</b>	<u>\$9,218,000</u>
20	<b>Total Amount of Bonds</b>	<b>\$9,922,000</b>
21	<b>Debt Service</b>	<u>\$645,000</u>



Table 6: Option 1, 400 Stalls (Spandrel Façade B) – Project and Finance Cost Worksheet

1 Construction Cost	400 x \$17,500	\$7,000,000
2 Professional Fees (Architectural/Engineering & Reimbursed)		\$420,000
3 Geotech and Survey		\$35,000
4 Security System		\$99,000
5 Detention		\$125,000
6 Landscaping		\$50,000
7 Contingency		\$700,000

8 Project Cost to be Financed	\$8,429,000
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9 Financing Term	30 Years
10 Interest Rate	5 %
11 Term of Construction	12 Months

**Financing Costs**

12 Interest During Construction		\$454,000
13 Interest Income	40% @ 3%	(\$91,000)
14 Legal & Accounting Fees		\$10,000
15 Debt Service Reserve		NA
16 Financing Fees (Points)	2.00%	\$181,000
17 Cost of Issuance	@ 1.00%	\$91,000

18	<b>Total Financing Costs</b>	<b>\$645,000</b>
19	<b>+ Project Cost to Be Financed</b>	<b>\$8,429,000</b>
20	<b>Total Amount of Bonds</b>	<b>\$9,074,000</b>
21	<b>Debt Service</b>	<b>\$590,000</b>



#### **4.4 Project Delivery Methods**

There are three possible project delivery methods for the design and construction of the proposed parking structure; conventional design/bid, design build and construction management. Each delivery method has certain positive and negative aspects.

##### **4.4.1 Conventional Design/Bid**

Conventional design/bid starts with the Village retaining a design firm to design the facility. The project would then be bid out after the design process. It is assumed that the Village would manage the project or retain a person or firm to fulfill that responsibility.

The positive aspects of the design/bid process are that the Village controls the design process during all stages and that the architect/engineer works for the Village and not the contractor. However design/bid can involve more time during design, more effort on the part of the Village to manage the process, and the costs are not known until the time of bidding.

##### **4.4.2 Design/Build**

Design/build is a process where the Village would retain a design firm to prepare a set of bridging documents, including design and specification information. The Village would then issue the bridging documents to design/build contractor teams consisting of a general contractor and architect. The successful design build team would complete the working drawings and construction based on a guaranteed maximum price.

The design/build process can potentially result in a lower overall cost for the project and compressed schedule. The Village should retain the firm that prepared the bridging documents to review the bids, review the design (so that it conforms to the performance specifications) and review the project during construction.

##### **4.4.3 Alternative Delivery**

The Village could decide to retain a construction manager at the beginning of the design phase. The role of the construction manager is to provide pre-construction services, cost estimating during the design phase, and value engineering.

Working with the design team and the Village, the construction manager would recommend bidding packages, bid the project and then manage the construction process. The construction manager may also provide a guaranteed maximum price for the project similar to a design build project. This would be termed an “at risk” construction management contract.



#### 4.5 Possible Project Schedule

Rich and Associates prepared a preliminary schedule (Table 7) for the design and construction of the parking structure. The schedule does not include the time that may be required to present and obtain approvals from the property owners or for finding alternate financing sources.

The next step in the process is to complete a preliminary design for a parking structure based on the work completed in this study. This would require an accurate, up-to-date survey and topography of the site, including any underground utilities. The purpose of this step is to confirm the parking structure footprint, layout and cost estimate. The preliminary design process may take from four to six weeks. During this time, the facade needs to be finalized and then submitted to the Village. The review by the Village could occur during the Design Development phase.

The next steps are design related and depend on the delivery system. In general, design development would take six weeks and construction documents six more weeks. Bidding would be approximately six weeks and construction (which would vary by site, size, etc.) and would run approximately 50 weeks

**Table 7: Potential Project Schedule**

A. Complete Schematic Design	Weeks 1 to 4
B. Complete Design Development	Weeks 5 to 11
C. Issue Early Pre-cast Bid Package	Week 12
a. Review Pre-cast Bids	Week 15
b. Award Pre-cast Bids	Week 16
D. Complete Construction Documents	Weeks 12 to 18
E. Bidding	Weeks 19 to 24
a. Pre-bid Conference	Week 22
b. Bids Due	Week 22
F. Award Of Bid*	Weeks 23 to 24
G. Construction	Weeks 25 to 75

\* Does not include time for issuance of building permit.



## 4.6 Green Design

Green design elements can be included in the design and construction of a concrete parking structure. In the plan, the amount of pervious land area will be increased by the landscape areas that will be added and that storm water will be held. Another element that meets the green design principles is that we are adding several hundred parking spaces under cover and therefore they are not on surface lots that reflect solar light. Consideration for the top level of the parking structure would be a reflective surface (high albedo level) which do not absorb as much solar radiation.

From a construction standpoint, the use of recycled materials is a principle of green buildings. For the concrete part of the building, which is the majority of a parking structure, there can be concrete add mixtures such as fly ash, silica fume and slag cement. These are all considered post-industrial recycled material. Rebar, which is generally from recycled steel, is also considered recycled material.

Finally, there is the use of regional materials which supports local materials and reduces transportation distances. Generally, the requirement is that a minimum of 20 percent of the materials are manufactured regionally, within 500 miles. This can also assume landscaping and the use of native planting material to screen the parking structure or on the face or roof of the structure which will help reduce solar heat.

## 5.0 Pro Forma

Rich and Associates prepared a projection of revenues and expenses for the parking structure (Option 1, 400 stalls – Façade A). **Table 8** is the Preliminary Pro forma.

The revenue projection was based on charging for employee permit parking and for commuter parking in the parking structure. For purposes of this projection, we have assumed 60 employee and 60 commuter parkers in the structure. We did not project any hourly parking revenue from Library patrons, Post Office visitors or area visitors. As a result, there was no parking revenue equipment included in the preliminary plan.

At this point, we have assumed that patrons to the Library would not be charged for parking, nor would their employees or employees or visitors to the Library. This, of course, is subject to agreements with the Village with respect to land acquisition.

Should there be the possibility to charge for hourly parking, we would recommend a pay-by-space system where each parking stall would be numbered and the parker would go to the machine and enter in their stall number and then put the appropriate amount of money in for the amount of time they want to stay. The machine can accept coins and bills, credit cards, debit cards and smart cards. Additionally, the machine could accept validations.

The parking rates used for the pro forma were based on the current charges in the Village. For example, the daily rate for the commuter is currently \$1.75 and the permit parking in Village lots range from the equivalent of \$10.00 to \$27.00 per month. For the pro forma, we used \$1.75 per day for the commuters and \$35.00 per month for a permit. The rates were increased the second year and then every three years thereafter.



Expenses were projected for the parking structure at \$200.00 per space for the first year of operation (2008/2009). The expenses include elevator maintenance, utilities, cleaning and general maintenance, landscape maintenance and snow removal. The expenses were increased by 4 percent per year. Also included in the expense category was the Repair and Replacement sinking fund referenced earlier. This was projected at \$100.00 per space per year.

Finally, the pro forma shows the debt service for the façade Option 1(A) plan. As can be seen by the pro forma, the projected revenue does not cover the operating expenses and deposit into the sinking fund.

**Table 8: Option 1, Pro-Forma**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
<b>Rates</b>							
Commuter Parking(daily)	\$1.75	\$2.00	\$2.00	\$2.00	\$2.50	\$2.50	\$2.50
Employee Permit Parking(per month)	\$35.00	\$40.00	\$40.00	\$40.00	\$45.00	\$45.00	\$45.00
<b>Revenue</b>							
Commuter Parking	\$26,250.00	\$30,000.00	\$30,000.00	\$30,000.00	\$37,500.00	\$37,500.00	\$37,500.00
Permits	\$25,200.00	\$28,800.00	\$28,800.00	\$28,800.00	\$32,400.00	\$32,400.00	\$32,400.00
<b>Total Revenue</b>	\$51,450.00	\$58,800.00	\$58,800.00	\$58,800.00	\$69,900.00	\$69,900.00	\$69,900.00
<b>Expenses</b>							
New Parking Structure(Cashierless)	\$80,000.00	\$83,200.00	\$86,528.00	\$89,989.12	\$93,588.68	\$97,332.23	\$101,225.52
Repair/Replacement Sinking Fund	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00
<b>Total Expenses</b>	\$120,000.00	\$123,200.00	\$126,528.00	\$129,989.12	\$133,588.68	\$137,332.23	\$141,225.52
<b>Net Available for Debt Service</b>	-\$68,550.00	-\$64,400.00	-\$67,728.00	-\$71,189.12	-\$63,688.68	-\$67,432.23	-\$71,325.52
<b>Debt Service</b>	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00



**Table 8: Option 1, Pro-Forma (con't)**

	YEAR 8	YEAR 9	YEAR 10	YEAR 11	YEAR 12	YEAR 13	YEAR 14
<b>Rates</b>							
Commuter Parking(daily)	\$3.00	\$3.00	\$3.00	\$3.50	\$3.50	\$3.50	\$4.00
Employee Permit Parking(per month)	\$50.00	\$50.00	\$50.00	\$55.00	\$55.00	\$55.00	\$60.00
<b>Revenue</b>							
Commuter Parking	\$45,000.00	\$45,000.00	\$45,000.00	\$52,500.00	\$52,500.00	\$52,500.00	\$60,000.00
Permits	\$36,000.00	\$36,000.00	\$36,000.00	\$39,600.00	\$39,600.00	\$39,600.00	\$43,200.00
<b>Total Revenue</b>	\$81,000.00	\$81,000.00	\$81,000.00	\$92,100.00	\$92,100.00	\$92,100.00	\$103,200.00
<b>Expenses</b>							
New Parking Structure(Cashierless)	\$105,274.54	\$109,485.52	\$113,864.94	\$118,419.54	\$123,156.32	\$128,082.58	\$133,205.88
Repair/Replacement Sinking Fund	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00	\$40,000.00
<b>Total Expenses</b>	\$145,274.54	\$149,485.52	\$153,864.94	\$158,419.54	\$163,156.32	\$168,082.58	\$173,205.88
<b>Net Available for Debt Service</b>	-\$64,274.54	-\$68,485.52	-\$72,864.94	-\$66,319.54	-\$71,056.32	-\$75,982.58	-\$70,005.88
<b>Debt Service</b>	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00

	YEAR 15	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20
<b>Rates</b>						
Commuter Parking(daily)	\$4.00	\$4.00	\$4.50	\$4.50	\$4.50	\$5.00
Employee Permit Parking(per month)	\$60.00	\$60.00	\$65.00	\$65.00	\$65.00	\$70.00
<b>Revenue</b>						
Commuter Parking	\$60,000.00	\$60,000.00	\$67,500.00	\$67,500.00	\$67,500.00	\$75,000.00
Permits	\$43,200.00	\$43,200.00	\$46,800.00	\$46,800.00	\$46,800.00	\$50,400.00
<b>Total Revenue</b>	\$103,200.00	\$103,200.00	\$114,300.00	\$114,300.00	\$114,300.00	\$125,400.00
<b>Expenses</b>						
New Parking Structure(Cashierless)	\$138,534.12	\$144,075.48	\$149,838.50	\$155,832.04	\$162,065.32	\$168,547.93
Repair/Replacement Sinking Fund	\$40,000.00	\$40,001.00	\$40,002.00	\$40,003.00	\$40,004.00	\$40,005.00
<b>Total Expenses</b>	\$178,534.12	\$184,076.48	\$189,840.50	\$195,835.04	\$202,069.32	\$208,552.93
<b>Net Available for Debt Service</b>	-\$75,334.12	-\$80,876.48	-\$75,540.50	-\$81,535.04	-\$87,769.32	-\$83,152.93
<b>Debt Service</b>	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00	\$645,000.00



Appendix A: T.Y. Lin West Village Parking Study - Traffic Impacts Presentation



# Village of Wilmette West Village Parking Study

Project Update Meeting  
Monday, May 14, 2007

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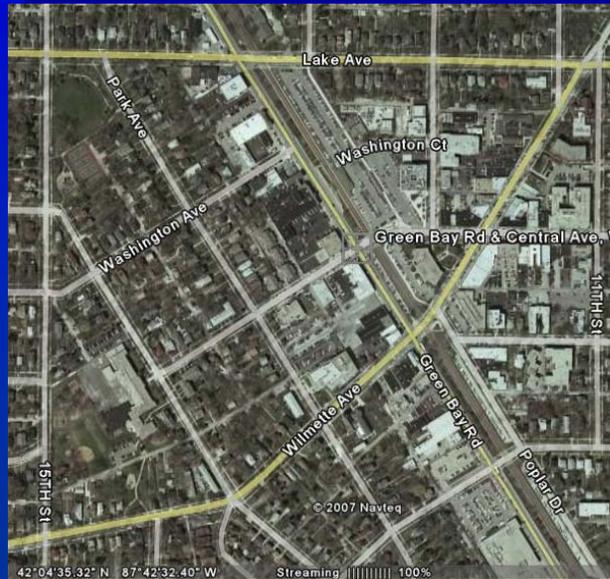
Background



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**Background**



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**Introduction**

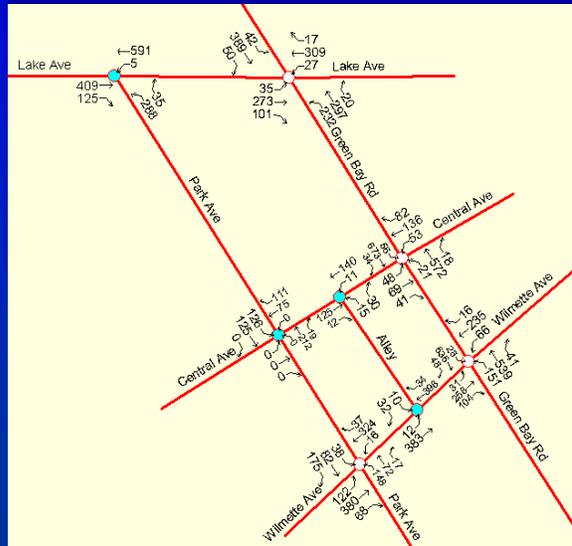
**Traffic Assumptions**

- Existing morning and afternoon peak hour volumes on surrounding streets as baseline

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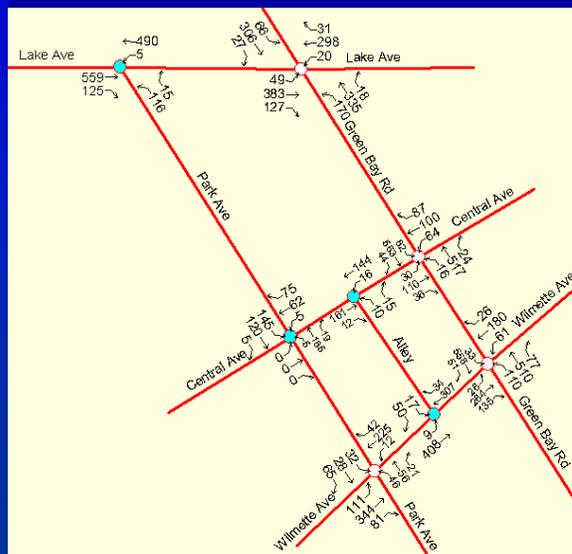
**Traffic Volumes**



**Weekday PM peak hour baseline traffic volumes**

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**Traffic Volumes**

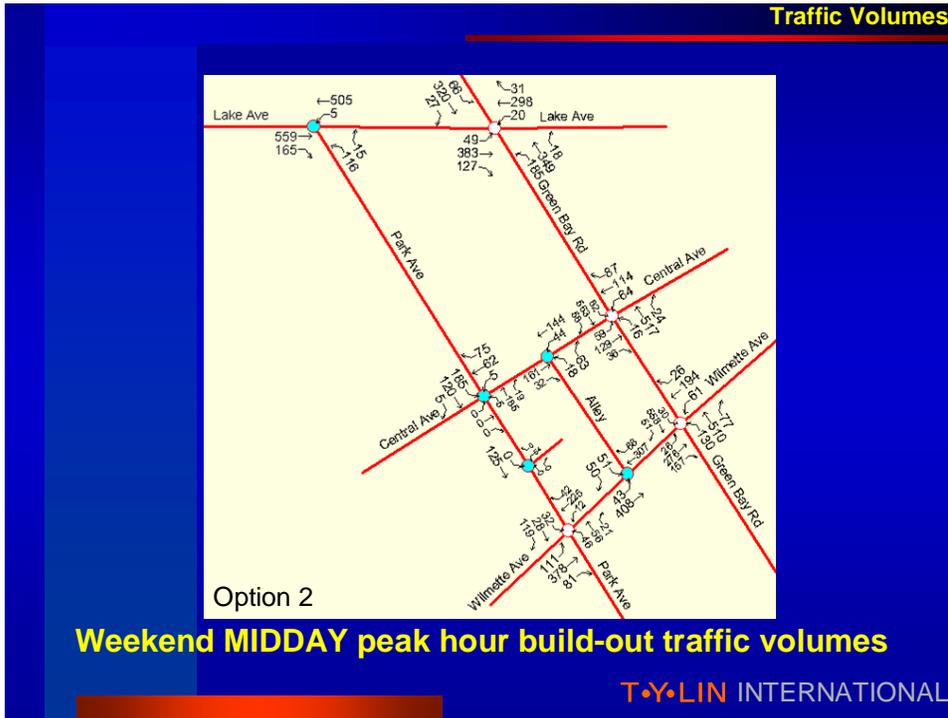


**Weekend MIDDAY peak hour baseline traffic volumes**

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### Average Delay Per Vehicle (Seconds), Level of Service

**Weekday PM**

Signalized Intersections All Movements	Original Delay	Option 1 Projected Delay	Increase (Decrease) In Delay	Option 2 Projected Delay	Increase (Decrease) In Delay
Green Bay Road & Lake Avenue	25	25	0	25	0
LOS	C	C		C	
Green Bay Road & Central Avenue	20	22	2	22	2
LOS	C	C		C	
Green Bay Road & Wilmette Avenue	18	19	1	19	1
LOS	B	B		B	
Wilmette Avenue & Park Avenue	27	26	(1)	26	(1)
LOS	C	C		C	

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**Average Delay Per Vehicle (Seconds), Level of Service**

**Weekday PM**

Unsignalized Intersections Critical Movement	Original Delay	Option 1 Projected Delay	Increase (Decrease) In Delay	Option 2 Projected Delay	Increase (Decrease) In Delay
Lake Avenue & Park Avenue	101	112	11	112	11
LOS	F	F		F	
Central Avenue & Park Avenue	11	10	(1)	11	0
LOS	B	B		B	
Central Avenue & Alley	10	10	0	10	0
LOS	B	B		B	
Wilmette Avenue & Alley	12	14	2	15	3
LOS	B	B		C	
Park Avenue & Garage	0	8	8	8	8
LOS		A		A	

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**Average Delay Per Vehicle (Seconds), Level of Service**

**Weekend MIDDAY**

Signalized Intersections All Movements	Original Delay	Option 1 Projected Delay	Increase (Decrease) In Delay	Option 2 Projected Delay	Increase (Decrease) In Delay
Green Bay Road & Lake Avenue	29	14	(15)	29	0
LOS	C	B		C	
Green Bay Road & Central Avenue	19	19	0	19	0
LOS	B	B		B	
Green Bay Road & Wilmette Avenue	14	16	2	15	1
LOS	B	B		B	
Wilmette Avenue & Park Avenue	30	29	(1)	28	(2)
LOS	C	C		C	

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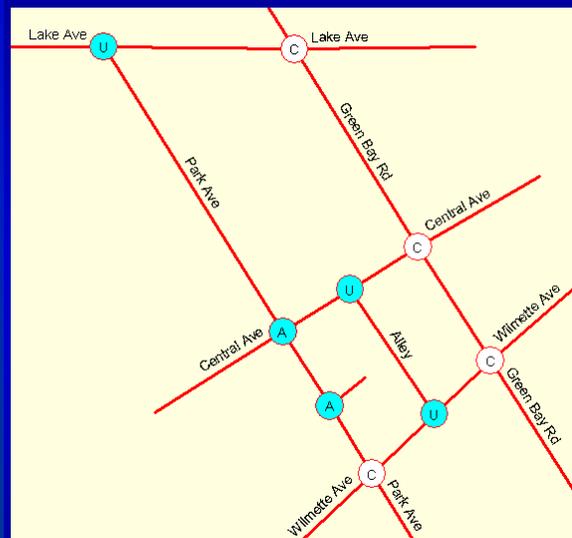
**Average Delay Per Vehicle (Seconds), Level of Service**

**Weekend MIDDAY**

Unsignalized Intersections Critical Movement	Original Delay	Option 1 Projected Delay	Increase (Decrease) In Delay	Option 2 Projected Delay	Increase (Decrease) In Delay
Lake Avenue & Park Avenue	30	33	3	33	3
LOS	D	D		D	
Central Avenue & Park Avenue	11	10	(1)	11	0
LOS	B	B		B	
Central Avenue & Alley	10	10	0	10	0
LOS	B	B		B	
Wilmette Avenue & Alley	12	14	2	16	4
LOS	B	B		C	
Park Avenue & Garage	0	9	9	8	8
LOS		A		A	

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**Level of Service**



**Weekday PM peak hour Levels of Service**

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