Joplin Downtown Parking Study





July 2005

JOPLIN MISSOURI
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Joplin Downtown Parking Study

I. Introduction

A. Purpose of the Study

The purpose of the Joplin Downtown Parking Study is to analyze current and future parking usage, availability and needs in downtown Joplin in order to develop parking solutions that can support the overall economic redevelopment and revitalization of the downtown area. The particular focus of this study has been the Main Street corridor between 4th Street and 7th Street. However, information for other parking locations from the 2003 parking survey, bounded by 1st Street to 7th Street and Wall Avenue to Virginia Avenue, were used in support of the parking study. The 2003 parking survey performed an inventory of parking supply and occupancy for Main Street, Wall Avenue, Joplin Avenue, Virginia Avenue, 2nd Street through 6th Street, and parking lots A, B, D East, D West, E and the Church lot.

In order to ensure the current and potential future needs for parking in downtown Joplin were adequately addressed; several key study tasks were identified. The key tasks of the parking study included:

- Conducting an inventory of the current parking supply and usage.
- Evaluating the current and future parking demand and overall need for parking spaces.
- Gathering input from project stakeholders and the public.
- Recommending the appropriate number and type of parking spaces.
- Recommending the appropriate type of parking enforcement, public communications, signage and connections.

B. Study Area

The study area for the project generally encompassed the downtown Joplin area bounded by 1st Street to 7th Street and Wall Avenue to Virginia Avenue, with a specific focus on the Main Street corridor from 4th Street to 7th Street. Within the study corridor, Joplin Avenue is a one-way street carrying southbound traffic and Wall Avenue is a one-way street carrying northbound traffic. 5th Street is also a one-way street carrying westbound traffic. In addition, six public parking lots were included as a part of the study area including the following:

- Lot A – 500 Block Joplin Avenue
- Lot B – 600 Block Virginia Avenue
- Lot D East – Southeast Corner of 3rd and Pennsylvania
- Lot D West – Southwest Corner of 3rd and Pennsylvania
- Lot E – 600 Block Joplin Avenue
- Lot Church – 500 Block Virginia Avenue

Exhibit 1 shows the location of the six public parking lots and the streets defined to be in the project study area.

II. Parking Supply and Usage

A survey of the existing parking supply and usage for the Main Street corridor and the six parking lots was conducted on Wednesday, March 23, 2005. The day of the week chosen to perform parking

inventories can vary depending on the peak parking times, travel patterns and land uses associated with an area. It was determined that heavier parking usage occurred in downtown Joplin during the work week. Weather can also play a role in parking usage and can affect travel patterns. The weather on March 23rd was cloudy and cool, but with no precipitation, and would satisfactorily represent a typical day for parking in the downtown area.

A. Parking Supply

On-Street Parking

Table 1 shows the results of the parking supply inventory for the Main Street corridor from 1st Street to 7th Street. The parking type and number of parking spaces available was collected as a part of the inventory. There are a total of 49 on-street parallel parking spaces currently available for the Main Street corridor.

Table 1: On-Street Existing Parking Inventory

Parking Space Type	Main Street Corridor						
	1st St. to 2nd St.	2nd St. to 3rd St.	3rd St. to 4th St.	4th St. to 5th St.	5th St. to 6th St.	6th St. to 7th St.	Total
ADA[1] Spaces – SB[2]	2	0	0	0	0	0	2
Metered Spaces – NB[3]	1	5	5	3	5	3	22
Metered Spaces - SB[2]	6	6	4	2	5	2	25
Total Spaces	**9**	**11**	**9**	**5**	**10**	**5**	**49**

1: Parking spaces that conform to the requirements of the Americans with Disabilities Act.
2: SB: Southbound; 3: NB: Northbound

Off-Street Parking

Table 2 shows the results of the off-street parking inventory for the six public parking lots. There are a total of 854 parking spaces within the six lots.

Table 2: Off-Street Existing Parking Inventory

Parking Space Type	Parking Lot						
	A	B	D East	D West	E	Church	Total
ADA[1]	7	5	3	4	4	0	23
Permit	65	41	114	0	9	0	229
Metered	37	0	0	107	24	0	168
City Employee	0	0	31	0	82	0	113
Visiting City Employee[2]	0	0	0	0	11	0	11
Reserved	0	0	0	0	0	12	12
Public (2-Hour)	0	18	0	0	0	0	18
Business/Private[3]	21	87	0	6	0	166	280
Total Spaces	**130**	**151**	**148**	**117**	**130**	**178**	**854**

1: Parking spaces that conform to the requirements of the Americans with Disabilities Act.
2: Parking reserved for visitors to city employees or city business.
3: Parking reserved for specific businesses.

Within the limits of the study area for this project, there is a combined total of 903 parking spaces for on-street and off-street parking usage, as shown in Table 1 and 2.

B. Parking Usage

On-Street Parking

Table 3 summarizes the occupancy rates for the Main Street corridor. The occupancy results indicate that the highest percent occupancy experienced for the Main Street corridor was 43 percent at both 9:30 to 10:30 a.m. and 1:00 to 1:30 p.m. Exhibit 2 shows the peak hour percent occupancy for Main Street. Detailed tables and charts showing occupancy rate information for Main Street are provided in the Appendix.

Table 3: On-Street Parking Occupancy

Time Period	ADA Spaces			Metered Spaces			Total Spaces		
	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Metered Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	2	0	0%	47	9	19%	49	9	18%
9:30 to 10:30	2	1	50%	47	20	43%	49	21	43%
10:30 to 11:30	2	0	0%	47	13	28%	49	13	27%
11:30 to 12:00	2	1	50%	47	12	26%	49	13	27%
12:00 to 12:30	2	2	100%	47	11	23%	49	13	27%
12:30 to 1:00	2	0	0%	47	16	34%	49	16	33%
1:00 to 1:30	2	1	50%	47	20	43%	49	21	43%
1:30 to 2:30	2	0	0%	47	14	30%	49	14	29%
2:30 to 3:30	2	0	0%	47	15	32%	49	15	31%
3:30 to 4:30	2	0	0%	47	15	32%	49	15	31%

Shading indicates peak parking period of the day.

Off-Street Parking

Table 4 summarizes the occupancy rates for the six parking lots. The occupancy results indicate that the highest percent occupancy experienced overall for the six public lots was 43 percent from 1:30 to 2:30 p.m. However, the peak parking usage time of day varied greatly between lots, ranging from 8:30 a.m. for lots B and E to after 1:30 p.m. for lots A, D East, D West and the Church lot. Lot A was shown to have the highest overall occupancy rates indicating that it is currently the most heavily used public parking lot. Exhibit 2 shows the peak hour percent occupancy for each of the lots. Detailed tables and charts showing occupancy rate information for the six parking lots are provided in the Appendix.

Table 4: Off-Street Parking Occupancy

Time Period	Lot A	Lot B	Lot D West	Lot D East	Lot E	Lot Church	Total
	Percent Occupied	Percent Occupied	Percent Occupied	Percent Occupied	Percent Occupied	Percent Occupied	Percent Occupied
8:30 to 9:30	45%	35%	9%	28%	48%	33%	33%
9:30 to 10:30	62%	26%	11%	28%	42%	42%	35%
10:30 to 11:30	55%	24%	9%	28%	41%	53%	36%
11:30 to 12:00	51%	29%	21%	27%	35%	51%	36%
12:00 to 12:30	59%	31%	39%	25%	31%	48%	39%
12:30 to 1:00	67%	28%	45%	24%	32%	46%	40%
1:00 to 1:30	63%	32%	46%	25%	33%	46%	41%
1:30 to 2:30	72%	25%	49%	29%	36%	51%	43%
2:30 to 3:30	65%	28%	23%	30%	44%	58%	42%
3:30 to 4:30	61%	30%	16%	31%	47%	58%	41%

Shading indicates peak parking period of the day.

The combined total occupancy for both on-street parking on Main Street and off-street parking in the six lots was approximately 390 occupied spaces out of approximately 900 available or 43 percent occupied during the peak time of the day.

III. Parking Demand

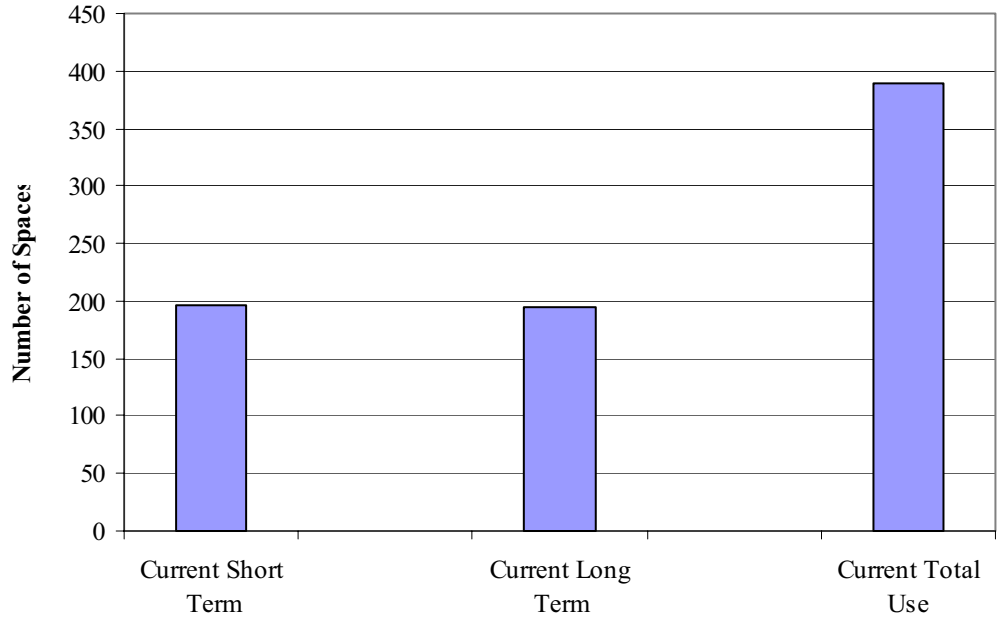
A. Land Use Inventory

A land use inventory was completed to identify the uses of buildings along Main Street, Virginia Avenue and Joplin Avenue between 3rd Street and 7th Street. This information was summarized and used to estimate the typical parking demand from these land uses. Parking demand by block was then estimated to provide an indication of what a typical parking demand for downtown Joplin would be based on land use. It also provides a general target to determine the needed number of long term parking spaces for employees, residents and all-day customers and the number of short term parking spaces for customers. The parking demand analysis followed these steps:

1. Parking demand generation was estimated for each building located along Main Street, Virginia Avenue and Joplin Avenue that would utilize public parking. This excludes buildings that have adequate private parking provided.
2. Typical parking demand was then estimated using typical parking generation rates for peak times taken from Parking Generation 3rd Edition by the Institute of Transportation Engineers.
3. The parking generation was separated into long term parking requirements associated with providing parking for employees and residents and for short term parking related to demands from customers.

The estimated total number of spaces needed to serve current long term and short term parking demand, based on the land use data, is shown in Figure 1.

Figure 1: Downtown Joplin Parking Demands



The information shows the current use of parking to be approximately 390 spaces (results from parking survey). In addition, the information suggests that during the peak parking time during an average weekday, there about 190 parkers that either work or spend all day in the study area that require a location to park long term. There are approximately 200 other parkers that currently use spaces for short term parking to go to area businesses, restaurants and offices. The available public parking spaces in downtown Joplin should be adequate to survey the current public parking needs. The parking supply inventory found that approximately 900 public parking spaces are currently available in the study area on Main Street and within the six public parking lots. This indicates that for the downtown Joplin area, the main issue might not be the availability of parking but rather the types of parking available and the convenience of existing parking.

The parking demand analysis also indicated that many of the persons who shop along Main Street or in the downtown are persons who are already in the downtown and walk to their destinations. Or, they may be persons who shop at multiple businesses and park only once. This concept is commonly known as "shared parking".

IV. Public Input

A public meeting for the parking study was held on May 4, 2005 at 6:30 p.m. at the Joplin City Hall. Approximately 45 citizens attended and provided their input on parking issues in downtown Joplin. A summary of the public comments received at the meeting is provided in the following section. Comments received from the general public during the public meeting covered a range of topics from specific parking issues at specific lots or on-street locations to broader general parking issues for the entire downtown area. Comments received are organized into the following categories:

- Main Street Corridor
- Type of Parking
- Parking Enforcement

The comments from the public meeting were taken into consideration when determining recommended improvements for this parking study.

A. Main Street Corridor

A significant number of comments focused on the Main Street corridor and its importance to the cultural experience and revitalization of downtown Joplin. An overview of comments received for the Main Street corridor is listed below:

- Provide more customer parking on Main Street. Either as parallel parking or angle parking.
- Consider loading zones for short duration business (i.e., 15-minute parking for loading/unloading).
- Eliminate or reduce truck traffic on Main Street. Possibly re-designate another parallel route as the downtown truck route.
- Use traffic calming measures to slow traffic down on Main Street.
- Consider free parking with time limits (i.e., free 1-hour or 2-hour public parking) in lieu of metered parking on Main Street.

B. Type of Parking

At the public meeting, the majority of the comments received centered around the types of parking spaces available in the downtown area. There was general agreement that the key parking issue for downtown Joplin was not a lack of availability of parking, but rather the convenience of parking. Comments received on the types of parking have been categorized into three general types of parking: 1) permit parking, 2) public customer parking, and 3) ADA parking.

Permit Parking

- Business/Private
    - Permit spaces for business and private use are not well enforced in the parking lots. There are concerns about whether the appropriate people are using the spaces reserved for specific businesses.
    - There are concerns that too much permit parking is available and not enough public/customer spaces in the lots. Businesses can purchase permit spaces in the lots and this limits the availability of public/customer spaces.
    - Concerns about lighting at night for safety for employees and bar/restaurant patrons.

- Residential
    - There is limited availability of residential spaces, which can impact the attraction of apartment/condo developers in the downtown area.
    - Residential parking needs to be convenient for residents, especially for loading and unloading.

Public Customer Parking

- Metered
    - Problems with correct change at metered parking. Majority of meters in downtown area take quarters only.
    - Businesses have to be prepared to provide change for customers.

- The time limits for metered parking are not long enough and tickets are often given, which impacts business.

- Free (Time Limit)
  - Could meters and permit parking be replaced with free, time limit parking (i.e., 1-hour, 2-hour) and the free parking monitored for enforcement.
  - Could additional free, time limit customer parking be made available in the downtown area?

ADA Parking

- Make sure ADA requirements are met for these spaces. Concerns about correct number of available spaces.
- Concerns about accessibility for ADA users in parking lots due to lot islands between signs and meters.
- Concerns about enforcement of ADA parking.
- Consider making ADA parking time-constrained (i.e., 1-hour, 2-hour) to provide more turnover.

C. Parking Enforcement

Several comments were received related to parking enforcement in the downtown area. A summary of comments is included in the following section:

- Could meters and permit parking be replaced with free, time limit parking (i.e., 1-hour, 2-hour) and the free parking monitored for enforcement?
- Permit spaces for business and private use are not well enforced in the parking lots. There are concerns about whether the appropriate people are using the spaces reserved for specific businesses.
- Could parking fines be reduced to be more customer-friendly?
- Concerns about charging/enforcing parking in the evenings and how it could impact customer's willingness to come downtown in the evenings.

V. Parking Improvement Concepts

Using the results of the parking survey, the parking demand estimates and public input, a number of parking improvement options were prepared. The following principles were followed in developing the options:

- Use of meters should be reduced or eliminated as they discourage customers from going to downtown businesses.
- Free short term parking should be evaluated to make parking more customer-friendly.
- Employees should not park where customer parking is most convenient; however, their needs should still be considered on a long term parking basis.
- Permit spaces have been available and generally effective so far, but if further used, they will limit the amount of parking available to the general public.

The following Options 1 through 4 were developed. These options considered improvements to the core area of downtown Joplin, including Main Street from 4th Street to 7th Street, Joplin Avenue from 5th Street to 7th Street and 5th and 6th Streets between Main Street and Joplin Avenue. It also

considered lots A, B and E. A comparison of the number of spaces provided by each option is shown in Table 5. Exhibits 3 through 6 showing these concepts are included at the end of this report.

Table 5: Number of Parking Spaces by Improvement Option

Parking Type	Improvement Option			
	Option 1	Option 2	Option 3	Option 4
On Street [1]				
Short Term Angle	0	14	65	63
Short Term Parallel	130	121	78	76
Subtotal	**130**	**135**	**143**	**139**
Off Street [2]				
Short Term 2-Hour	136	136	132	102
Long Term 10-Hour	258	258	262	292
Subtotal	**394**	**394**	**394**	**394**
Total Short Term	266	271	275	241
Total Long Term	258	258	262	292
Total	**524**	**529**	**537**	**533**

1: Includes Main Street from 4th to 7th, Joplin Ave. from 5th to 7th and 5th and 6th Streets between Main Street and Joplin Ave.
2: Includes lots A, B and E.

The existing number of spaces in this same area is roughly 475 spaces. In addition, downtown Joplin has public parking available in lots D East, D West and the Church lot which were not considered as part of the four improvement options.

A. Improvement Option 1

Description of Improvements

The parking survey found that there is sufficient supply of parking in downtown Joplin. However, to better serve the needs of the downtown community, it could be re-organized and space could be reallocated to make the parking more convenient and efficient to better serve the needs of downtown Joplin's patrons. Improvement Option 1 is primarily an improvement to the existing public parking by re-structuring downtown's current public parking without making large-scale changes such as the addition of angle parking. If desired, Option 1 could serve as an interim improvement to the ultimate implementation of either Option 2, 3 or 4.

For Option 1, the Main Street corridor from 4th Street to 7th Street is improved to provide additional parallel parking spaces on both sides of the street. In addition, Joplin Avenue from 5th Street to 7th Street has additional parallel parking spaces. The parking meters on all these streets would be removed and replaced with 60-minute free parking. Under this option, Main Street would be able to retain two through lanes in each direction as it does today.

Improvements in parking type distribution are also made to public parking lots A, B and E. For lots B and E, the first row of spaces will be designated short term 2-hour free parking and the three back rows will be designated long term 10-hour parking. For lot A, the first row and the back row of spaces will

be designated short term 2-hour free parking and the two middle rows will be designated long term 10-hour parking.

Advantages

There are several advantages for Option 1. The main advantages are that it would not require changes in traffic circulation on Main Street; it would eliminate parking meters on Main Street and Joplin Avenue and offer free 60-minute parking; it would expand the available parking on Main Street and Joplin Avenue; and it would be a less costly option since major modifications in the existing street typical section and costs due to traffic re-circulation will not be necessary. It would also re-organize the parking lots to be more customer-friendly, but still take into account the long term needs of the business owners and their employees. In addition, it could later be phased into one of the other options.

Disadvantages

Overall this option adds less parking than the other options. However, the increase is respectable, transitioning from 20 spaces to 62 spaces on Main Street between 4th and 7th Streets. In addition, lot A will gain short term parking, which is a benefit, but at the same time it will not be able to offer as much long term parking as lots B and E. Due to these reasons, Option 1 is not recommended as the preferred parking improvement option for downtown Joplin.

B. Improvement Option 2

Description of Improvements

This option would create 14 angle spaces along 5th Street between Virginia Avenue and Joplin Avenue. Currently, 5th Street is a narrow 32-foot wide street. Angle parking on 5th Street would leave only one lane for traffic with parking on the south side of the street. 6th Street is a 40-foot wide street. Angle parking was considered for 6th Street, but due to width limitations with the 40-foot wide street, it was not able to add enough additional spaces to be considered beneficial. Existing parking on 6th Street would be maintained, providing parallel parking on both sides of the street. For Option 2, the Main Street corridor from 4th Street to 7th Street and Joplin Avenue from 5th Street to 7th Street would have improved parallel parking on both sides of the street to incorporate additional spaces. The parking on all these streets would be converted to short term 60-minute free parking and meters would be removed.

For Option 2, the improvements in parking type distribution are the same as that shown for Option 1, 3 and 4 for lots B and E. Since angle parking on 5th Street would only provide 14 additional spaces, lot A provides two front rows of short term 2-hour free parking to add additional short term parking and the two back rows provide long term 10-hour parking.

Advantages

There are several advantages for Option 2. The main advantages are that it would eliminate parking meters on Main Street and Joplin Avenue and offer free 60-minute parking and it would expand the available parking on 5th Street in the center of downtown, as well as on Main Street and Joplin Avenue. It would also re-organize the parking lots to be more customer-friendly, but still take into account the long term needs of the business owners and their employees.

Disadvantages

Overall this option adds less parking than Options 3 and 4, but more than Option 1. One of the greatest challenges for this option will be the width constraints on 5th Street to allow for angle parking. In addition, lot A will gain short term parking, which is a benefit, but at the same time it will not be able to offer as much long term parking as lots B and E.

Overall, this option was considered to best meet the needs of downtown Joplin and was selected as the recommended improvement option.

C. Improvement Option 3

Description of Improvements

This option would look at re-structuring parking on Joplin Avenue to incorporate angle parking. For Option 3, angle parking would be added to the west side of Joplin Avenue between 4th Street and 7th Street, providing approximately 65 angle parking spaces. Due to the addition of angle parking, parallel parking would no longer be available on the east side in order to maintain two southbound lanes on Joplin. Traffic would need to be calmed on the street for angled parking to function safely. For Option 3, the Main Street corridor from 4th Street to 7th Street would have improved parallel parking on both sides of the street to incorporate additional spaces.

For this option, the improvements in parking type distribution for lot A is the same as shown in Option 1. For lot A, the first rows and the back row of spaces will be designated short term 2-hour free parking and the two middle rows will be designated long term 10-hour parking. This is done to better distribute the short term parking between businesses on Main Street and businesses on Joplin Avenue since parallel parking on the east side of Joplin has been removed. Lots B and E will show the same improvements as in Options 1, 2 and 4. This option could be further developed as the building improvements in downtown Joplin spread to Joplin Avenue.

Advantages

There are several advantages for Option 3. This option offers more parking availability than the other three options without making the traffic circulation changes in Option 4. The main advantages are that it would provide additional spaces through angle parking on Joplin Avenue to serve these businesses and restaurants; would help spread economic development opportunities to adjacent blocks; and it would eliminate parking meters on Main Street and Joplin Avenue and offer free 60-minute parking. It would also re-organize the parking lots to be more customer-friendly to both Main Street and Joplin Avenue, but still take into account the long term needs of the business owners and their employees. This option focuses on developing the entire core area of downtown, not just the Main Street corridor.

Disadvantages

The main disadvantage for this option is that it focuses improvements on the Joplin corridor and makes more minor improvements to the Main Street corridor. It will also require some traffic calming measures on Joplin Avenue to ensure safe operations and eliminates parallel parking on the east side of Joplin Avenue. Traffic calming measures consist of measures to slow traffic down on Joplin Avenue and can include measures such as raised intersections with brick pavers which set the intersection slightly higher than the street level, rumble strips embedded within the street, bulb-outs or chokers to narrow on-street parking and enhance pedestrian crossings at intersections and mid-blocks, intersection

island chokers, lower atypical speed limits, and traffic circles. Due to these disadvantages, Option 3 is not recommended as the preferred parking improvement option for downtown Joplin.

D. Improvement Option 4

Description of Improvements

For Improvement Option 4, Main Street, from 4th Street to 7th Street, is converted from a four-lane roadway to a two-lane roadway with angle parking provided on the east side and improved parallel parking provided on the west side. Main Street will need to be converted to a two-lane roadway for through traffic because the street section would not be wide enough to provide angle parking and still maintain four through lanes for traffic. Traffic calming measures may be needed on Main Street to maintain safe traffic operations. Traffic calming measures consist of measures to slow traffic speeds down on Main Street and can include measures such as raised intersections with brick pavers which set the intersection slightly higher than the street level, rumble strips embedded within the street, bulb-outs or chokers to narrow on-street parking and enhance pedestrian crossings at intersections and mid-blocks, intersection island chokers, lower atypical speed limits, and traffic circles. Some through traffic could be diverted to Virginia Avenue to the east or the Wall Avenue and Joplin Avenue one-way pairs to the west. Truck traffic could also be re-designated to an appropriate parallel route. The metered parking would be removed on Main Street and replaced with 60-minute free parking. For Option 4, existing parallel parking on Joplin, 5th Street and 6th Street would be maintained but not improved.

Improvements in parking type distribution are also made to public parking lots A, B and E. For each of these lots, the first row of spaces will be designated short term 2-hour free parking and the three back rows will be designated long term 10-hour parking.

Advantages

This concept would provide approximately 63 angle parking spaces and 31 parallel parking spaces on Main Street between 4th Street and 7th Street, which is a significant improvement in the number of parking spaces over existing parking conditions (74 additional parking spaces) and was important to the general public at the public meeting. It would provide for close parking opportunities in sight of the stores, offering the businesses increased visibility, and slow down traffic circulation through the downtown area. In addition, this option would lessen drive-by traffic volumes not destined for downtown. It would also re-organize the parking lots to be more customer-friendly, but still take into account the long term needs of the business owners and their employees.

Disadvantages

If angle parking is implemented on Main Street the traffic load that is re-routed to the adjoining streets of Joplin Avenue, Wall Avenue and Virginia Avenue may experience traffic operational problems and delay on these parallel streets, as well as on Main Street, since it is converted from a four-lane roadway to a two-lane roadway. Angle parking will be challenging for a roadway carrying traffic within a range of 12,000 to 16,000 vehicles per day. The level of service (LOS) is shown to decrease from LOS C or Better to LOS E with angle parking since it is converted to a two-lane roadway. (See Section E, Level of Service below). This indicates that Main Street would experience congestion and delay at certain times of the day, making it more difficult to travel through the downtown area.

In addition, this option could require coordination with MoDOT to determine if the state route Missouri 43 designation should be relocated or if the truck route designation should be relocated. An appropriate route for the new Missouri 43 designation would need to be determined. Additionally, re-

routing Missouri 43 may negatively impact the volume of occasional and out-of-town visitors to the downtown area. There will also be additional costs for traffic circulation changes and possible traffic calming measures on Main Street. Traffic calming measures would involve measures that would slow traffic speeds on Main Street.

Angle parking may not be as safe an option as parallel parking for Main Street since it is the busiest roadway corridor through downtown with significant pass-through traffic. Angle parking has limited driver visibility compared with parallel parking, making it more difficult when exiting the parking space. This parking is also dependent on the type and size of vehicles that use the parking spaces. For instance, a small vehicle parked next to a sport utility vehicle (SUV) would find it more challenging to exit the parking space and see the street clearly. In addition, since Main Street carries significant traffic volumes, it may be difficult for drivers to find gaps in the traffic flow for exiting the parking spaces.

Due to these disadvantages, Option 4 is not recommended as the preferred parking improvement option for downtown Joplin. From a cost, traffic circulation and safety standpoint, this option is the least desirable option for the downtown area and these disadvantages outweigh the benefits of additional angle parking availability on Main Street. Angle parking would be more appropriate on lower volume side streets or lower volume parallel roadway corridors.

E. Level of Service

The affects on traffic operations in downtown Joplin were taken into consideration as part of the improvement options. As a means of describing the street operational efficiency, a range of driver service quality is defined in terms of six descriptive levels (A through F). LOS A represents the best LOS, and generally describes operations of very low delay for motorists. Typically, LOS C or better indicates satisfactory traffic operations and street capacity. However, LOS D can be considered satisfactory for urbanized areas. LOS F represents the worst operating conditions for motorists. LOS E represents flow at or near capacity. Table 6 shows the maximum daily traffic volume thresholds for urban streets and their resulting LOS, as defined in the 2001 Joplin Long-Range Transportation Plan Update.

Table 6: Maximum Daily Traffic Volume and Level of Service for Urban Streets

Type of Street	Maximum Daily Traffic Volume		
	LOS C or Better	LOS D	LOS E
2-Lane Undivided	7,400	12,200	13,400
3-Lane Undivided	9,200	15,200	16,800
4-Lane Undivided	15,300	24,600	27,000
5-Lane Undivided	19,400	31,200	34,200
4-Lane Divided	20,400	32,800	36,000
6-Lane Divided	31,000	50,200	54,200

Source: 2001 Joplin Long-Range Transportation Plan Update.

The estimated average daily traffic (ADT) volume and level of service (LOS) for existing conditions and each improvement option are shown in Table 7. As shown in the table, Main Street would operate at or over capacity (LOS E) under Option 4, unless a significant amount of traffic was diverted to parallel routes.

Table 7: Level of Service

Street	Average Daily Traffic Volumes	Level of Service [1]				
		Existing	Option 1	Option 2	Option 3	Option 4
Main	12,000 to 15,000	C or Better	C or Better	C or Better	C or Better	E
Joplin	5,000	C or Better	C or Better	C or Better	C or Better	C or Better
Wall	4,600	C or Better	C or Better	C or Better	C or Better	C or Better
4th	8,600	D	D	D	D	D
7th	9,700	C or Better	C or Better	C or Better	C or Better	C or Better

1: Levels of Service determined from 2001 Joplin Long-Range Transportation Plan Update table showing daily traffic volumes and their corresponding levels of service for urban streets.

VI. Recommended Improvement Option

Option 2 is the recommended parking improvement option for downtown Joplin. The parking supply inventory found that approximately 900 public parking spaces are currently available in the study area on Main Street and within the six public parking lots. At the same time, the current usage is about 390 parking spaces out of the 900 during the peak times of the day. This indicates that for the downtown Joplin area, the main issue at this point in time is not the availability of parking but rather the types of parking available and the convenience of existing parking. Option 2 provides a good distribution of parking spaces between short term and long term parking needs without making major modifications to traffic circulation or reductions in street capacity. In addition, it addresses the needs of the entire core area of downtown, focusing improvements from Virginia Avenue to Joplin Avenue. This could aid in attracting potential new land use development interests to the area. The improvement options considered are flexible and elements of some of the other improvement options could be incorporated into Option 2, if desired.

VII. Types of Parking Enforcement

Within improvement Options 1 through 4 several different types of parking were identified for possible use in downtown Joplin, including:

- Short term 60-minute free parking
- Short term 2-hour free parking
- Long term 10-hour parking

For each of these types of parking, different types and levels of parking enforcement may be required. Currently, parking enforcement in downtown Joplin is conducted between 8:00 a.m. and 5:00 p.m. The sections below identify some of the types of parking enforcement that may be appropriate for the downtown Joplin area.

A. Short Term Parking Enforcement Options

One of the main responses from the public meeting was that downtown Joplin needed more customer-friendly parking options. The existing parking meters were viewed as a barrier to attracting patrons to the downtown area. This study considered a range of possible short term parking time limits and locations. It is recommended that free 60-minute on-street parking and free 2-hour lot parking would best serve the short term needs of downtown. However, enforcement of this free parking is important

to its success. Several enforcement options could be used to monitor the free short term parking including:

- Chalking tires
- Handheld Devices
- SPIN Meters

One enforcement option is for a parking officer to manually "chalk" or mark the tire of a parked vehicle and then monitor how long the vehicle remains parked in the same location. The officer would check for the tire mark on a half-hour or hourly basis, depending on the designated parking time limit, and then give tickets for any violations. Electronic chalking is a system where parked vehicles are electronically scanned (videoed) along with license plate recognition capabilities. The scanning is either done on foot or from a vehicle. The electronic chalking systems can vary in cost from $8,000 to $80,000, depending on the complexity of the system.

A wide range of handheld devices are available for use in parking enforcement and as a part of electronic chalking. New technologies are allowing parking operations to generate revenue, share data with other departments, and streamline operations through wireless, real-time parking information systems. These handheld devices can use vehicle license plate recognition or wireless magnetic sensors to detect vehicles and relay the data in real-time to monitor parking and determine violations. The handheld devices also have the capability to write citations and warnings, download scofflaw lists and permits, issue temporary parking permits. These handheld devices can range in price from $6,000 without license plate recognition to anywhere from $8,000 to $45,000 for license plate recognition, software and other features. However, overall, only one or two devices may be required to monitor and enforce Joplin's entire parking system.

SPIN meters or Street Parking Information System use meters to monitor parking time limits, but do not require payment as with traditional meters. The customer parks and then pushes a button on the meter to a specified time limit. Parking enforcement officers then monitor parking for violations shown on the SPIN meter screen as with a traditional meter.

B. Long Term Parking Enforcement Options

Long term parking could be monitored by different methods than short term parking. However, many of the handheld devices available have applications for monitoring long term parking if desired.

VIII. Communications/Signage

Effective communications with the public are important to the ultimate success of the downtown Joplin public parking system. Parking in downtown Joplin could be construed as confusing to some people. There are a variety of methods the city of Joplin could use to provide information about parking in the downtown area to make it user-friendly to both frequent and infrequent patrons.

One option would be to improve the signage for the public parking lots to make them more visible to customers. This could be done as part of the parking and streetscape design. Better signage for each lot could lead to more usage of the lots. Public parking areas should clearly be delineated from private parking areas, restricted areas as well as reserved areas. Parking signs should include this information in text and graphic form. Parking signs could convey this information by color designation. For



example, public parking signs could incorporate the color blue, restricted parking areas red and reserved areas yellow. Additionally, parking signage could be incorporated on adjacent streets directing traffic to the nearest parking lot. This signage could be incorporated on street lights (as shown in the photo), poles and even within the driving lane.

Another option may be to post parking information on the city of Joplin website. For example, the city of Kalamazoo, Michigan has recently undergone a re-vamping of their downtown parking. On their website, they provide information and maps for downtown parking and a facts and myths section on downtown parking to respond to public parking questions. The city of Joplin could also prepare parking maps and brochures to be distributed within the city building.

In addition, one of the key reasons this study recommended re-organizing the parking space allocation in the parking lots was to make it less confusing to customers. By dividing each type of parking into specific rows with specific types of parking it lessens the uncertainty for patrons about where to park.

IX. Connections

The ***2003 Comprehensive Plan Update*** identified off-street parking improvements as a primary issue in helping revitalize downtown. A perceived lack of parking exists because motorists cannot see the parking lots or areas from their destinations. More importantly, even if individuals are aware of parking areas that may be a block or less away, they may be uncomfortable walking from those parking areas to their destinations because of an unfriendly pedestrian environment. Therefore, any downtown parking improvement option should include a commitment to addressing connection issues between parking lots to Main Street and other primary destinations.

A. Suggested Streetscape Options

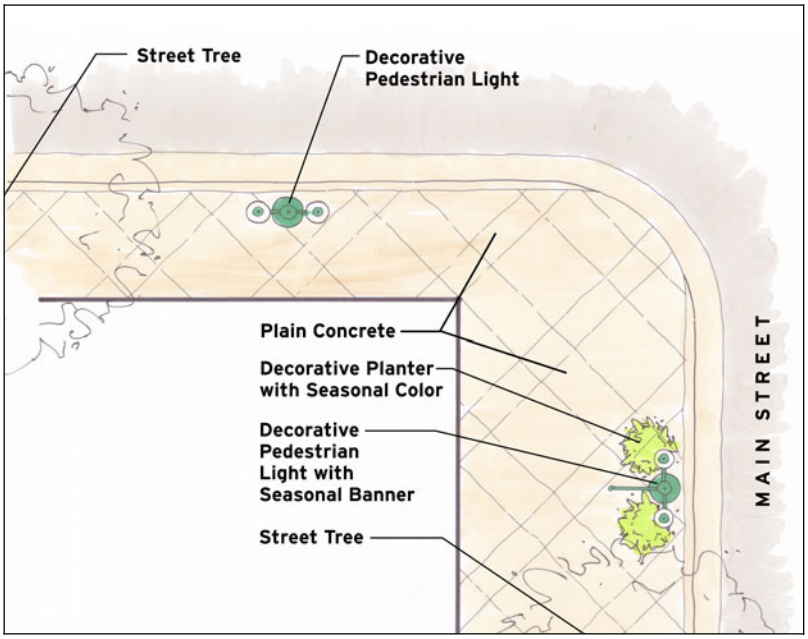
The City of Joplin is currently in the process of providing streetscape enhancements along Main Street. These streetscape enhancements include but are not limited to street trees, pedestrian lighting, decorative paving, benches and planters. This study recommends the City build on these efforts and consider extending these streetscape elements along the east-west streets and alleys connecting the City parking lots behind Main Street. These adjacent streets and alleys, referred to as "Enhancement Corridors" are shown in yellow on Exhibit 7.

The following Options 1 through 3 were developed to show how the approved streetscape design standards for Main Street between 4th and 6th Streets can be extended along the identified Enhancement Corridors to connect the off-street parking facilities to Main Street businesses. Each option shows a typical intersection along Main Street. The east-west street (or alley) in each option is intended to depict suggested treatments along the Enhancement Corridors.

Streetscape Option 1

Option 1, shown in Figure 1 below, provides a basic level of streetscape improvements along the east-west streets. These improvements include concrete sidewalks with a decorative scoring pattern, decorative street lights, decorative planters and street trees. The scoring pattern and decorative pedestrian lights are carried onto the east-west side streets through to the next intersection east and west of Main Street.

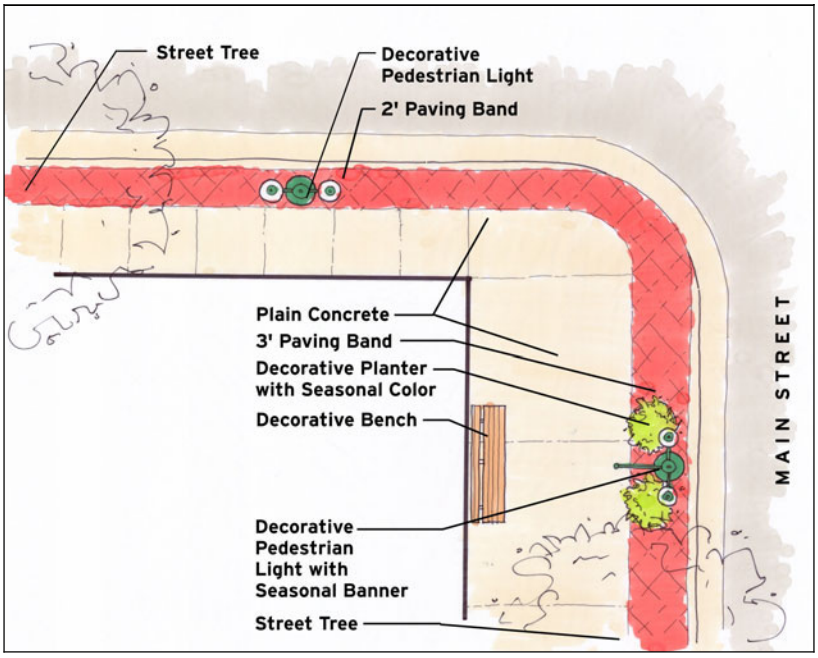
Figure 1: Basic-Level Streetscape Improvements



Streetscape Option 2

Option 2, shown in Figure 2 below, provides a moderate level of streetscape improvements along the east-west streets. These improvements include a two-foot decorative paving band along the back of curb, decorative pedestrian lights, benches, planters, and street trees. The decorative paving band serves as a buffer separating the sidewalk and street to provide a sense of security to pedestrians as well as an interesting aesthetic element. The decorative paving band, along with the decorative bench, planters and seasonal banners is wider along Main Street to create a sense of hierarchy to reinforce the importance of Main Street while creating visual continuity and orientation for the pedestrian onto the east-west side streets connecting to the parking lots and adjacent uses.

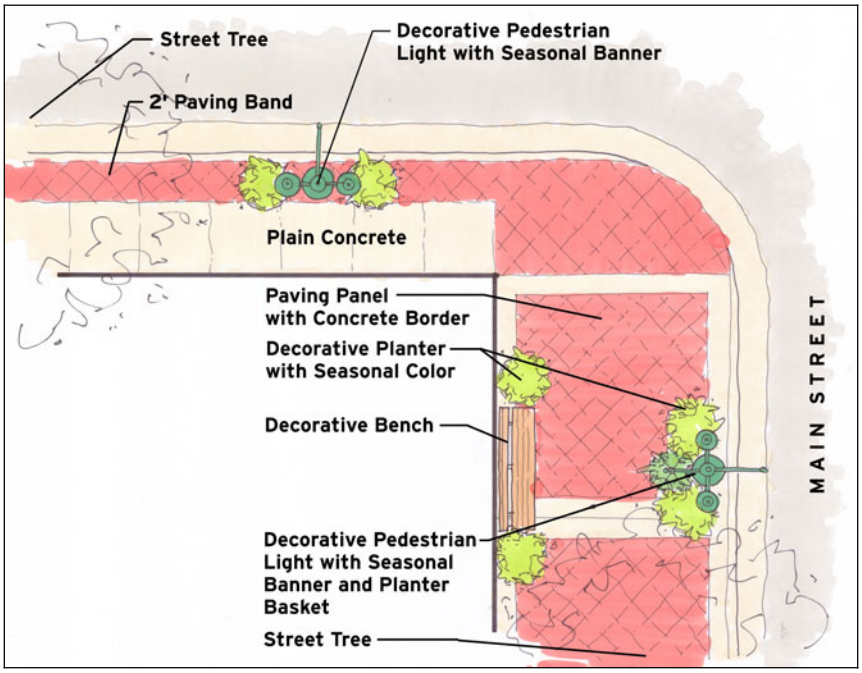
Figure 2: Moderate-Level Streetscape Improvements



Streetscape Option 3

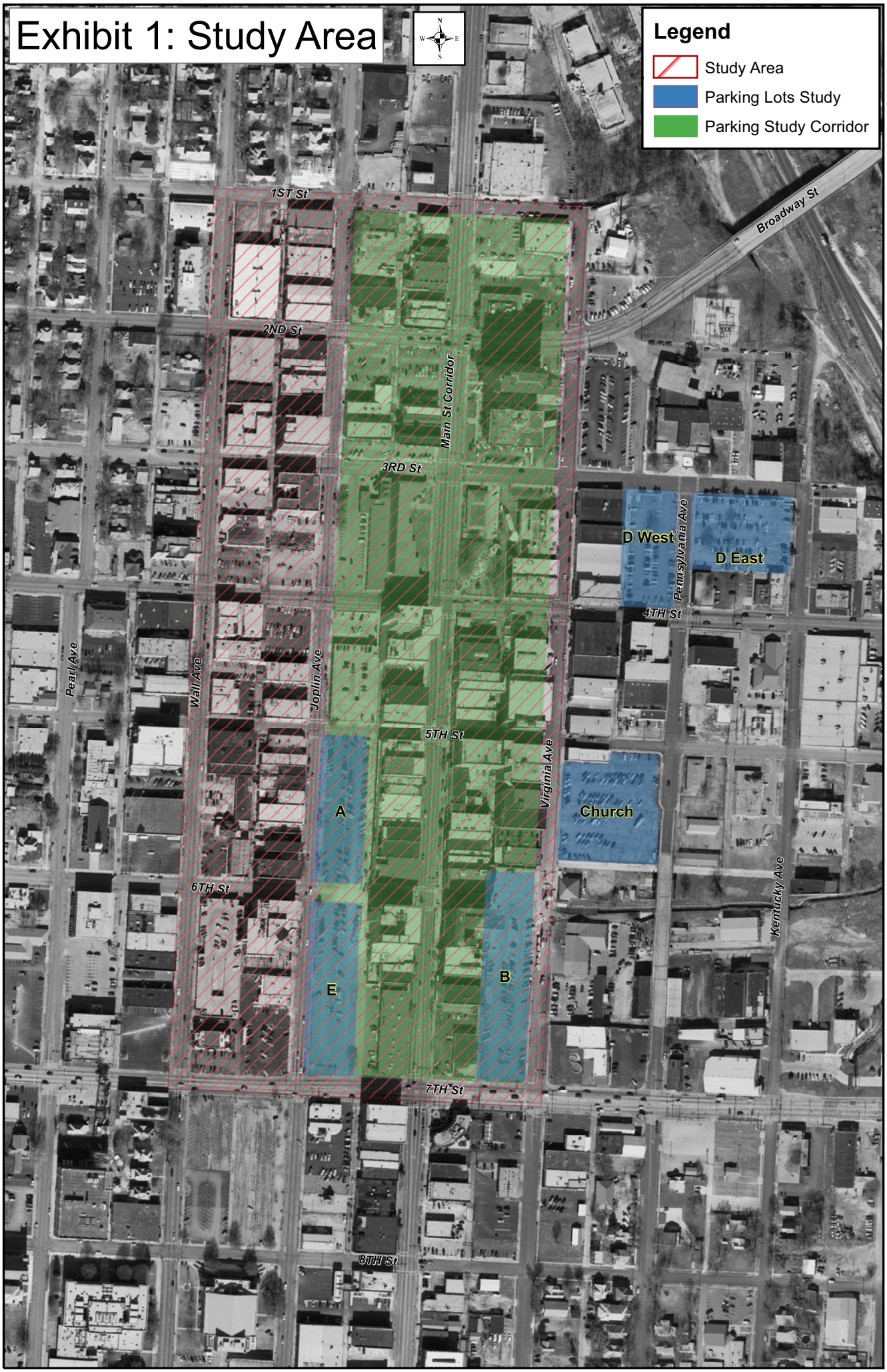
Option 3, shown on the following page, provides an enhanced level of streetscape improvements along the east-west streets as well as Main Street. These improvements include decorative paving panels along Main Street and a two-foot paving band along the back of curb of the east-west side street, decorative pedestrian lights, benches, planters, hanging baskets and street trees. Within this option, the decorative paving band, along with the decorative pedestrian lights, planters and street trees provide a strong visual connection from the east-west side street to Main Street.

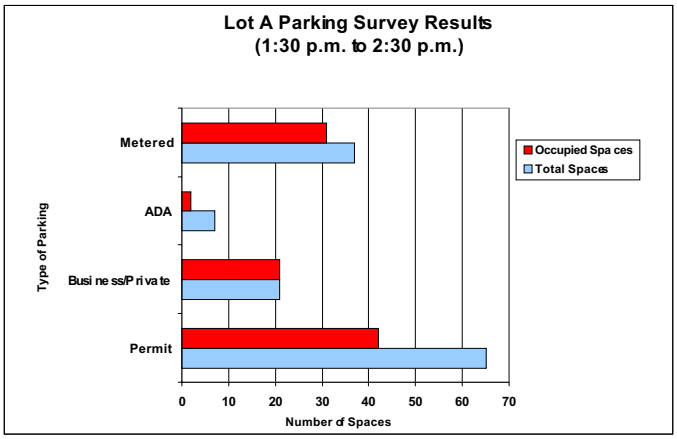
Figure 3: Enhanced-Level Streetscape Improvements

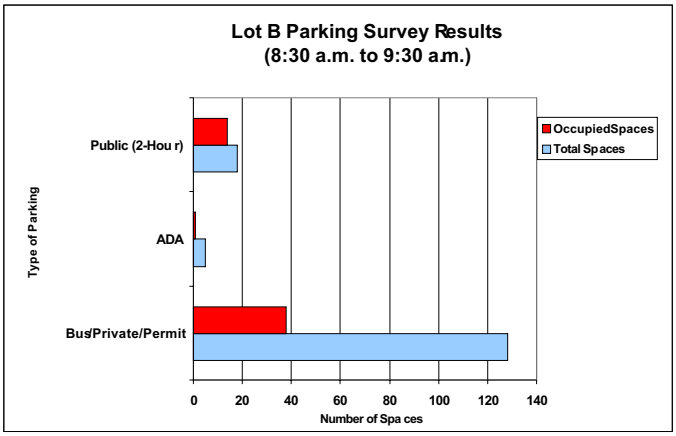


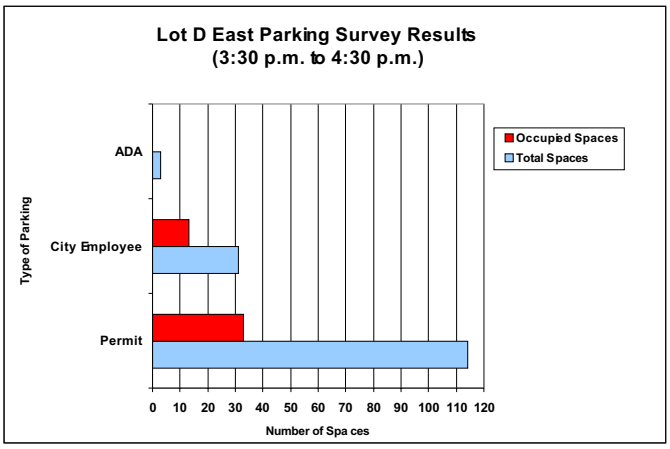
B. Streetscape Recommendations

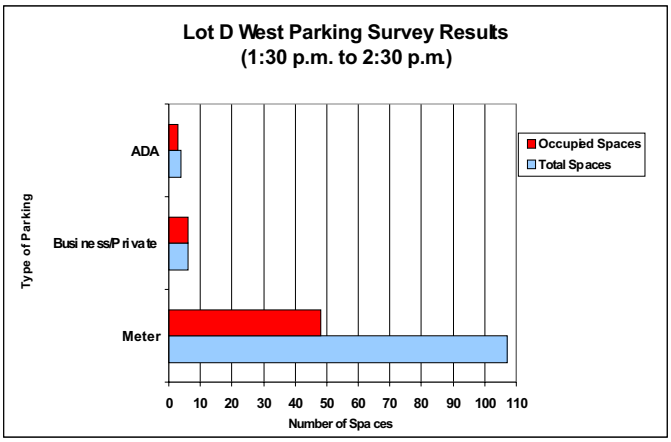
The streetscape improvement options are not intended to be mutually exclusive. Elements of each option may be mixed and matched to create a friendly and cohesive pedestrian experience. Each option recognizes Main Street as the priority street, so more emphasis should be placed on the streetscape elements along Main Street over the elements along adjacent streets. The goal is to create a visual connection for the pedestrian and the motorist to ease navigation between the City's off-street parking facilities and the businesses along Main Street.

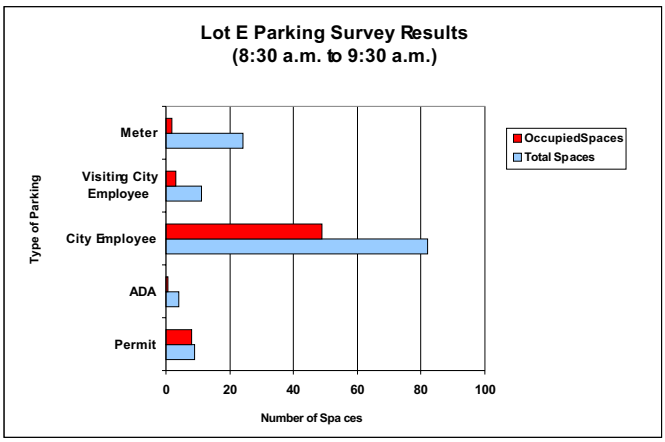

Exhibit 1: Study Area
Legend
Study Area
Parking Lots Study
Parking Study Corridor
1ST St
2ND St
3RD St
4TH St
5TH St
6TH St
7TH St
8TH St
Broadway St
Main St Corridor
Pearl Ave
Wall Ave
Joplin Ave
Pennsylvania Ave
Virginia Ave
Kentucky Ave
D West
D East
A
B
E
Church

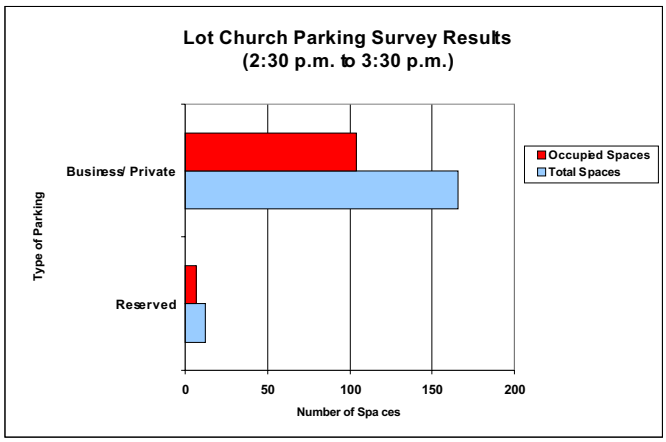


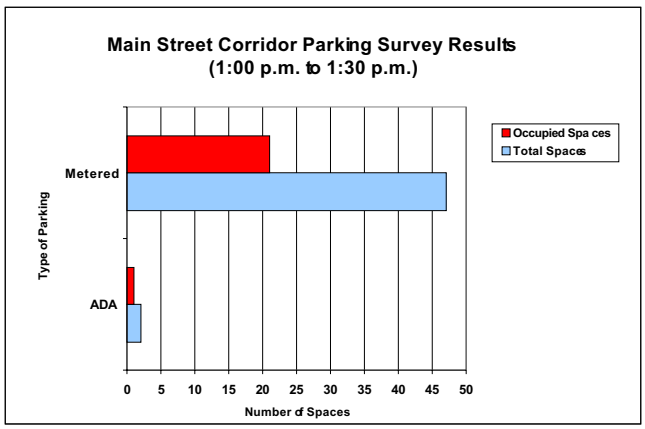












JOPLIN PARKING STUDY

Exhibit 2: Existing Parking Occupancy by Peak Hour

HNTB

Exhibit 3: Improvement Option 1



Exhibit 4: Improvement Option 2

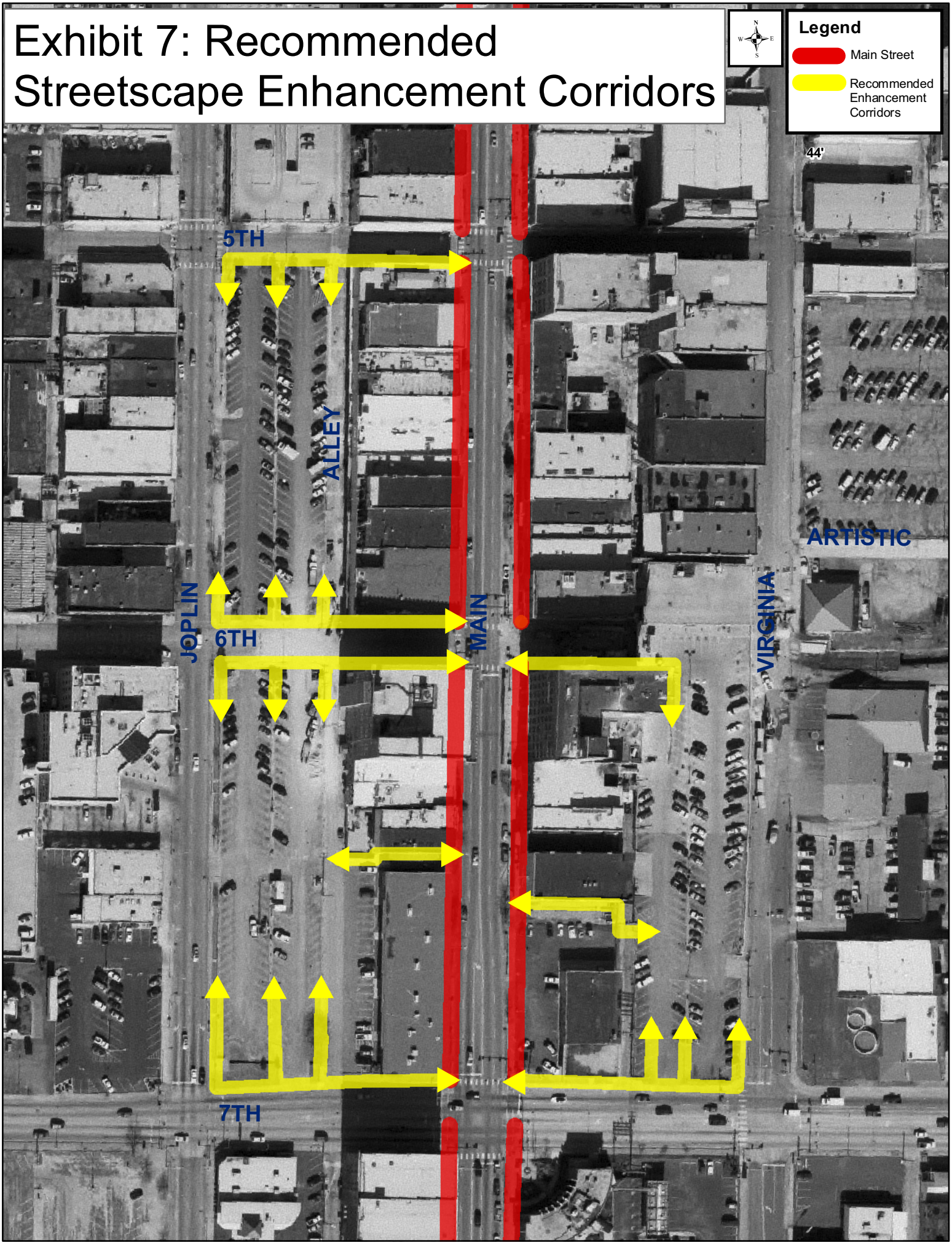



Exhibit 5: Improvement Option 3
Legend
Short Term Parallel
Short Term Angle
Short Term Lot
Long Term Lot
4TH
5TH
6TH
7TH
WALL
ALLEY
MAIN
VIRGINIA
JOPLIN
30'
40'
44'
40'

Exhibit 6: Improvement Option 4



Exhibit 7: Recommended Streetscape Enhancement Corridors



APPENDIX

Date: 23-Mar-05

On-Street Average Daily Parking Survey Results

Time	Main Street Corridor Occupied Spaces													
	1st St. to 2nd St.			2nd St. to 3rd St.		3rd St. to 4th St.		4th St. to 5th St.		5th St. to 6th St.		6th St. to 7th St.		Total Occupied Spaces
	ADA (SB)	Metered (NB)	Metered (SB)	Metered (NB)	Metered (SB)	Metered (NB)	Metered (SB)	Metered (NB)	Metered (SB)	Metered (NB)	Metered (SB)	Metered (NB)	Metered (SB)	
8:30 to 9:30	0	0	1	0	0	0	0	2	1	5	0	0	0	**9**
9:30 to 10:30	1	0	2	1	3	0	0	2	2	4	4	2	0	**21**
10:30 to 11:30	0	0	1	1	2	1	0	2	1	3	0	0	2	**13**
11:30 to 12:00	1	0	3	1	1	0	0	3	0	3	0	1	0	**13**
12:00 to 12:30	2	0	3	1	1	0	0	2	1	2	0	1	0	**13**
12:30 to 1:00	0	0	2	1	2	0	0	2	1	3	3	1	1	**16**
1:00 to 1:30	1	0	2	1	2	1	0	2	0	5	3	2	2	**21**
1:30 to 2:30	0	0	1	1	2	1	1	2	0	3	2	1	0	**14**
2:30 to 3:30	0	0	2	1	1	1	0	2	0	1	5	1	1	**15**
3:30 to 4:30	0	0	1	1	1	0	0	2	0	5	3	2	0	**15**

Date: 23-Mar-05

Off-Street Average Daily Parking Survey Results

	Parking Lot Occupied Spaces																									
	Lot A Occupied Spaces					Lot B Occupied Spaces				Lot D West Occupied Spaces				Lot D East Occupied Spaces				Lot E Occupied Spaces						Lot Church Occupied Spaces		
Time Period	Permit	Business/ Private	ADA	Metered	Total Lot A	Business/ Private/ Permit	Public (2-Hour)	ADA	Total Lot B	Business/ Private	ADA	Metered	Total Lot D West	Permit	City Employee	ADA	Total Lot D East	Permit	City Employee	ADA	Metered	Visiting City Employee	Total Lot E	Reserved	Business/ Private	Total Lot Church
8:30 to 9:30	37	8	2	11	**58**	38	14	1	**53**	4	3	4	**11**	34	8	0	**42**	8	49	0	2	3	**62**	5	53	**58**
9:30 to 10:30	34	18	3	25	**80**	21	18	1	**40**	6	2	5	**13**	31	10	0	**41**	6	46	0	1	2	**55**	4	70	**74**
10:30 to 11:30	33	16	3	20	**72**	27	9	0	**36**	6	2	3	**11**	32	10	0	**42**	4	46	0	2	1	**53**	8	87	**95**
11:30 to 12:00	24	18	1	23	**66**	38	6	0	**44**	5	2	18	**25**	31	9	0	**40**	0	41	0	2	2	**45**	7	84	**91**
12:00 to 12:30	30	18	1	28	**77**	31	16	0	**47**	6	2	38	**46**	27	10	0	**37**	4	32	0	1	3	**40**	6	80	**86**
12:30 to 1:00	37	21	1	28	**87**	28	12	3	**43**	5	3	45	**53**	28	7	0	**35**	0	30	1	9	2	**42**	5	76	**81**
1:00 to 1:30	36	21	2	23	**82**	27	18	4	**49**	6	3	45	**54**	28	9	0	**37**	4	35	0	4	0	**43**	3	79	**82**
1:30 to 2:30	39	21	2	31	**93**	17	18	2	**37**	6	3	48	**57**	32	11	0	**43**	3	38	0	5	1	**47**	5	86	**91**
2:30 to 3:30	32	20	1	32	**85**	24	16	2	**42**	4	3	20	**27**	32	12	0	**44**	4	41	0	9	3	**57**	7	97	**104**
3:30 to 4:30	35	19	0	25	**79**	28	15	2	**45**	5	3	11	**19**	33	13	0	**46**	4	45	0	6	6	**61**	6	97	**103**

Lot A: 500 Block Joplin Avenue
Lot B: 600 Block Joplin Avenue
Lot D East: Southeast Corner of 3rd and Pennsylvania
Lot D West: Southwest Corner of 3rd and Pennsylvania
Lot E: 600 Block Joplin Avenue
Lot Church: 500 Block Virginia Avenue

Summary: Average Daily Parking Survey Results

Time Period	Lot A			Lot B			Lot D West			Lot D East			Lot E			Lot Church			Main St.			Total Spaces		
	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	130	58	45%	151	53	35%	117	11	9%	148	42	28%	130	62	48%	178	58	33%	49	9	18%	903	293	32%
9:30 to 10:30	130	80	62%	151	40	26%	117	13	11%	148	41	28%	130	55	42%	178	74	42%	49	21	43%	903	324	36%
10:30 to 11:30	130	72	55%	151	36	24%	117	11	9%	148	42	28%	130	53	41%	178	95	53%	49	13	27%	903	322	36%
11:30 to 12:00	130	66	51%	151	44	29%	117	25	21%	148	40	27%	130	45	35%	178	91	51%	49	13	27%	903	324	36%
12:00 to 12:30	130	77	59%	151	47	31%	117	46	39%	148	37	25%	130	40	31%	178	86	48%	49	13	27%	903	346	38%
12:30 to 1:00	130	87	67%	151	43	28%	117	53	45%	148	35	24%	130	42	32%	178	81	46%	49	16	33%	903	357	40%
1:00 to 1:30	130	82	63%	151	49	32%	117	54	46%	148	37	25%	130	43	33%	178	82	46%	49	21	43%	903	368	41%
1:30 to 2:30	130	93	72%	151	37	25%	117	57	49%	148	43	29%	130	47	36%	178	91	51%	49	14	29%	903	382	42%
2:30 to 3:30	130	85	65%	151	42	28%	117	27	23%	148	44	30%	130	57	44%	178	104	58%	49	15	31%	903	374	41%
3:30 to 4:30	130	79	61%	151	45	30%	117	19	16%	148	46	31%	130	61	47%	178	103	58%	49	15	31%	903	368	41%

Shading indicates peak parking period of the day.

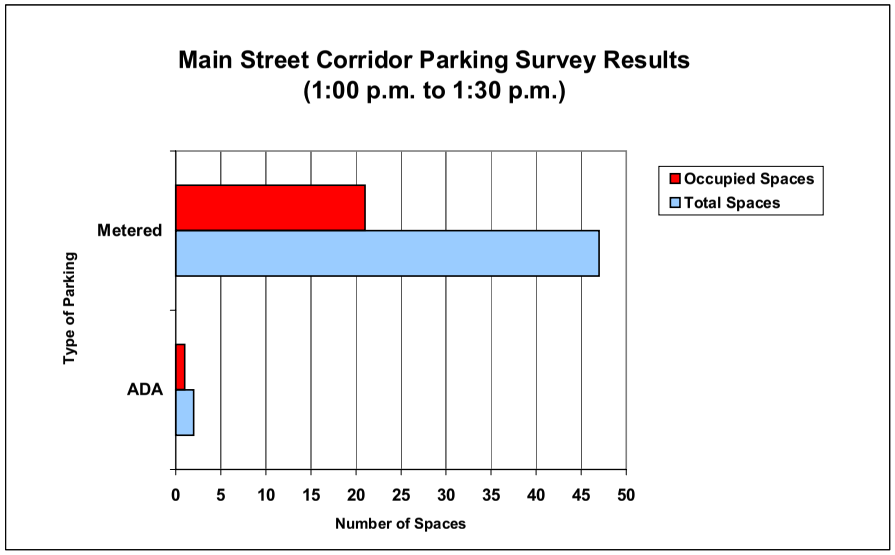
Shading indicates peak parking period of the day.

Main Street Corridor Average Daily Parking Survey Results

Time Period	ADA Spaces			Metered Spaces			Total Spaces		
	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Metered Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	2	0	0%	47	9	19%	49	9	18%
9:30 to 10:30	2	1	50%	47	20	43%	49	21	43%
10:30 to 11:30	2	0	0%	47	13	28%	49	13	27%
11:30 to 12:00	2	1	50%	47	12	26%	49	13	27%
12:00 to 12:30	2	2	100%	47	11	23%	49	13	27%
12:30 to 1:00	2	0	0%	47	16	34%	49	16	33%
1:00 to 1:30	2	1	50%	47	20	43%	49	21	43%
1:30 to 2:30	2	0	0%	47	14	30%	49	14	29%
2:30 to 3:30	2	0	0%	47	15	32%	49	15	31%
3:30 to 4:30	2	0	0%	47	15	32%	49	15	31%

Shading indicates peak parking period of the day.

	ADA	Metered
Total Spaces	2	47
Occupied Spaces	1	21

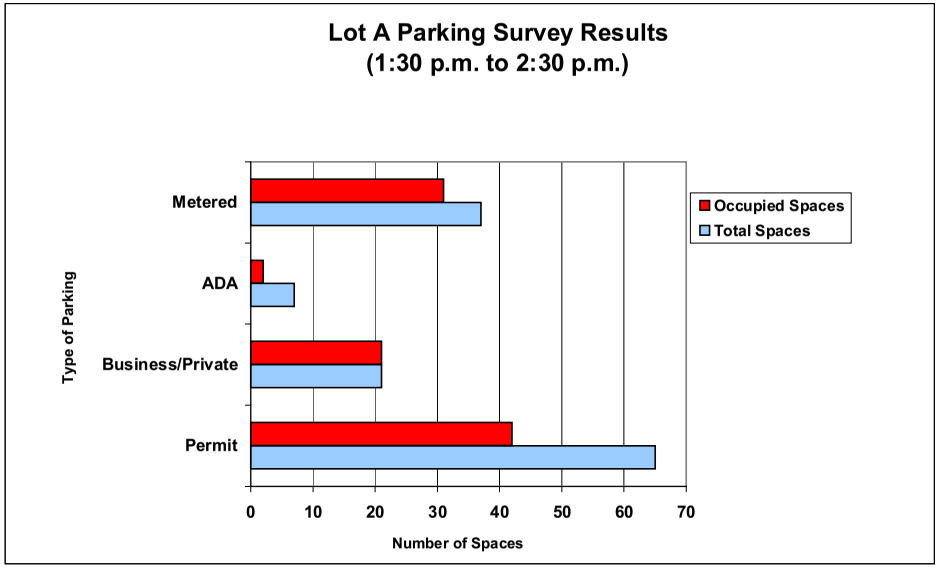


Lot A Average Daily Parking Survey Results

Time Period	Permit Spaces			Business/Private Spaces			ADA Spaces			Metered Spaces			Total Spaces		
	Total Permit Spaces	Occupied Spaces	Percent Occupied	Total Business/ Private Spaces	Occupied Spaces	Percent Occupied	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Metered Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	65	37	57%	21	8	38%	7	2	29%	37	11	30%	130	58	45%
9:30 to 10:30	65	34	52%	21	18	86%	7	3	43%	37	25	68%	130	80	62%
10:30 to 11:30	65	33	51%	21	16	76%	7	3	43%	37	20	54%	130	72	55%
11:30 to 12:00	65	24	37%	21	18	86%	7	1	14%	37	23	62%	130	66	51%
12:00 to 12:30	65	30	46%	21	18	86%	7	1	14%	37	28	76%	130	77	59%
12:30 to 1:00	65	42	65%	21	21	100%	7	1	14%	37	28	76%	130	87	67%
1:00 to 1:30	65	39	60%	21	21	100%	7	2	29%	37	23	62%	130	82	63%
1:30 to 2:30	65	42	65%	21	21	100%	7	2	29%	37	31	84%	130	93	72%
2:30 to 3:30	65	32	49%	21	20	95%	7	1	14%	37	32	86%	130	85	65%
3:30 to 4:30	65	35	54%	21	19	90%	7	0	0%	37	25	68%	130	79	61%

Shading indicates peak parking period of the day.

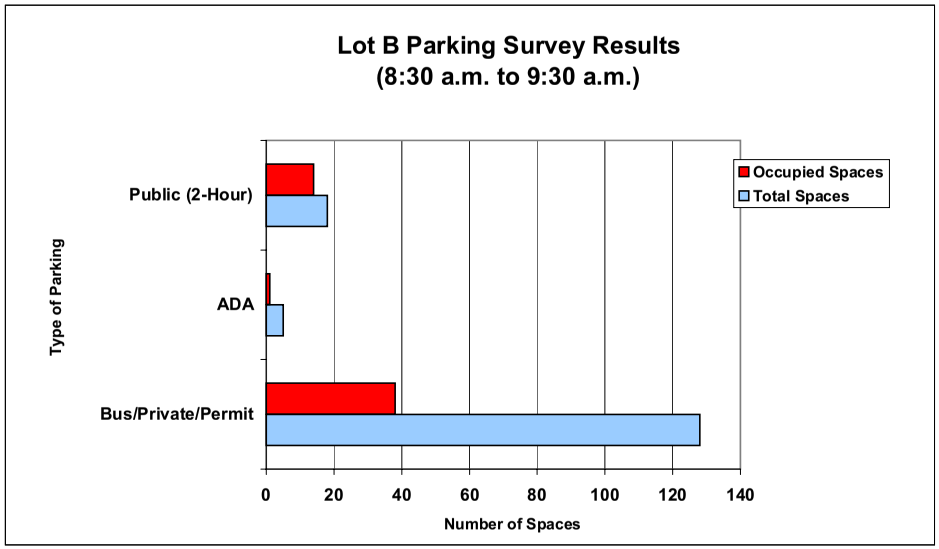
	Total Spaces	Occupied Spaces
Permit	65	42
Business/Private	21	21
ADA	7	2
Metered	37	31



Lot B Average Daily Parking Survey Results

Time Period	Business/Private/Permit Spaces			ADA Spaces			Public 2- Hour Spaces			Total Spaces		
	Total Business/ Private Spaces	Occupied Spaces	Percent Occupied	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Public Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	128	38	30%	5	1	20%	18	14	78%	151	53	35%
9:30 to 10:30	128	21	16%	5	1	20%	18	18	100%	151	40	26%
10:30 to 11:30	128	27	21%	5	0	0%	18	9	50%	151	36	24%
11:30 to 12:00	128	38	30%	5	0	0%	18	6	33%	151	44	29%
12:00 to 12:30	128	31	24%	5	0	0%	18	16	89%	151	47	31%
12:30 to 1:00	128	28	22%	5	3	60%	18	12	67%	151	43	28%
1:00 to 1:30	128	27	21%	5	4	80%	18	18	100%	151	49	32%
1:30 to 2:30	128	17	13%	5	2	40%	18	18	100%	151	37	25%
2:30 to 3:30	128	24	19%	5	2	40%	18	16	89%	151	42	28%
3:30 to 4:30	128	28	22%	5	2	40%	18	15	83%	151	45	30%

	Total Spaces	Occupied Spaces
us/Private/Permit	128	38
ADA	5	1
Public (2-Hour)	18	14

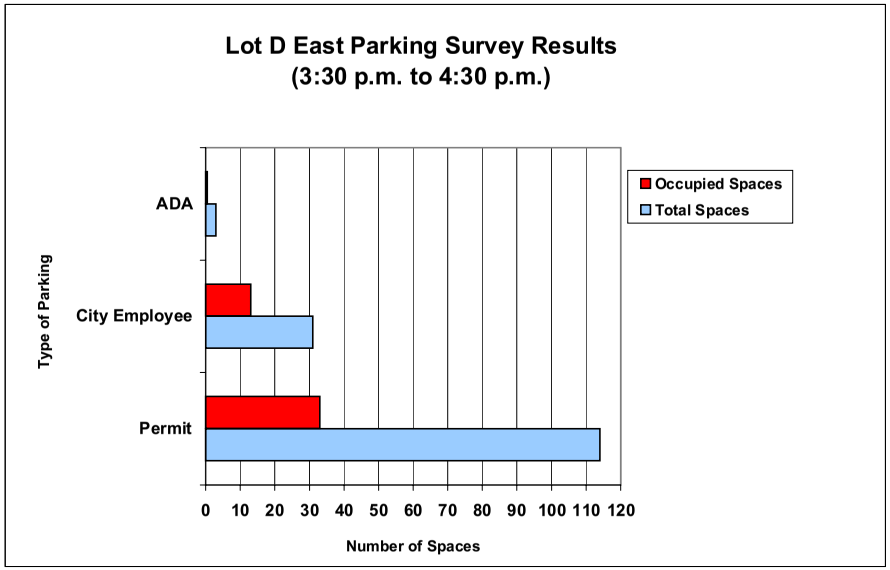


Lot D East Average Daily Parking Survey Results

Time Period	Permit Spaces			City Employee Spaces			ADA Spaces			Total Spaces		
	Total Permit Spaces	Occupied Spaces	Percent Occupied	Total City EmployeeSpaces	Occupied Spaces	Percent Occupied	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	114	34	30%	31	8	26%	3	0	0%	148	42	28%
9:30 to 10:30	114	31	27%	31	10	32%	3	0	0%	148	41	28%
10:30 to 11:30	114	32	28%	31	10	32%	3	0	0%	148	42	28%
11:30 to 12:00	114	31	27%	31	9	29%	3	0	0%	148	40	27%
12:00 to 12:30	114	27	24%	31	10	32%	3	0	0%	148	37	25%
12:30 to 1:00	114	28	25%	31	7	23%	3	0	0%	148	35	24%
1:00 to 1:30	114	28	25%	31	9	29%	3	0	0%	148	37	25%
1:30 to 2:30	114	32	28%	31	11	35%	3	0	0%	148	43	29%
2:30 to 3:30	114	32	28%	31	12	39%	3	0	0%	148	44	30%
3:30 to 4:30	114	33	29%	31	13	42%	3	0	0%	148	46	31%

Shading indicates peak parking period of the day.

	Total Spaces	Occupied Spaces
Permit	114	33
City Employee	31	13
ADA	3	0.5

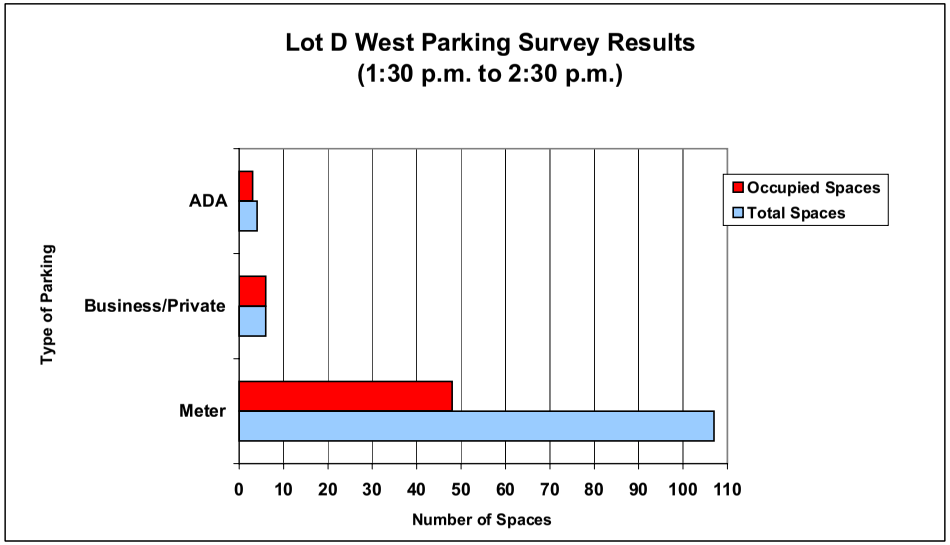


Lot D West Average Daily Parking Survey Results

Time Period	Metered Spaces			Business/Private Spaces			ADA Spaces			Total Spaces		
	Total Metered Spaces	Occupied Spaces	Percent Occupied	Total Business/ Private Spaces	Occupied Spaces	Percent Occupied	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	107	4	4%	6	4	67%	4	3	75%	117	11	9%
9:30 to 10:30	107	5	5%	6	6	100%	4	2	50%	117	13	11%
10:30 to 11:30	107	3	3%	6	6	100%	4	2	50%	117	11	9%
11:30 to 12:00	107	18	17%	6	5	83%	4	2	50%	117	25	21%
12:00 to 12:30	107	38	36%	6	6	100%	4	2	50%	117	46	39%
12:30 to 1:00	107	45	42%	6	5	83%	4	3	75%	117	53	45%
1:00 to 1:30	107	45	42%	6	6	100%	4	3	75%	117	54	46%
1:30 to 2:30	107	48	45%	6	6	100%	4	3	75%	117	57	49%
2:30 to 3:30	107	20	19%	6	4	67%	4	3	75%	117	27	23%
3:30 to 4:30	107	11	10%	6	5	83%	4	3	75%	117	19	16%

Shading indicates peak parking period of the day.

	Total Spaces	Occupied Spaces
Meter	107	48
Business/Private	6	6
ADA	4	3

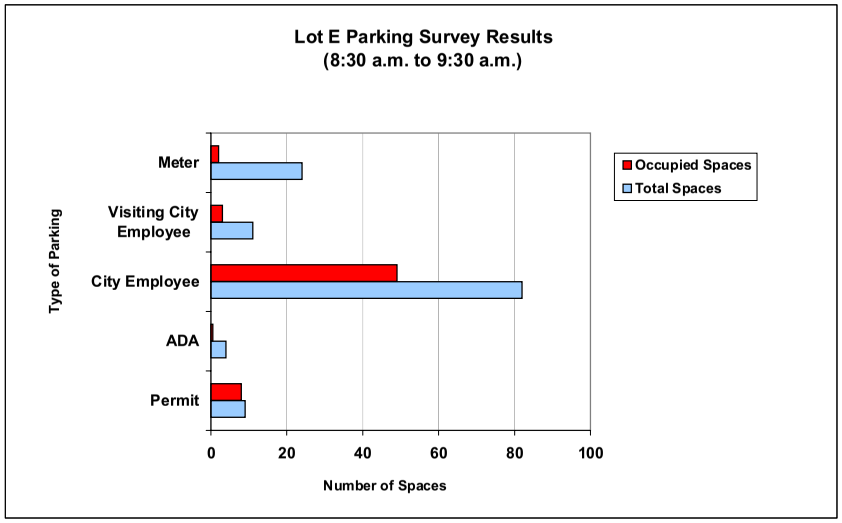


Lot E Average Daily Parking Survey Results

Time Period	Permit Spaces			City Employee Spaces			Visiting City Empoyee Spaces			ADA Spaces			Metered Spaces			Total Spaces		
	Total Permit Spaces	Occupied Spaces	Percent Occupied	Total City Employee Spaces	Occupied Spaces	Percent Occupied	Total Visiting Employee Spaces	Occupied Spaces	Percent Occupied	Total ADA Spaces	Occupied Spaces	Percent Occupied	Total Metered Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	9	8	89%	82	49	60%	11	3	27%	4	0	0%	24	2	8%	130	62	48%
9:30 to 10:30	9	6	67%	82	46	56%	11	2	18%	4	0	0%	24	1	4%	130	55	42%
10:30 to 11:30	9	4	44%	82	46	56%	11	1	9%	4	0	0%	24	2	8%	130	53	41%
11:30 to 12:00	9	0	0%	82	41	50%	11	2	18%	4	0	0%	24	2	8%	130	45	35%
12:00 to 12:30	9	4	44%	82	32	39%	11	3	27%	4	0	0%	24	1	4%	130	40	31%
12:30 to 1:00	9	0	0%	82	30	37%	11	2	18%	4	1	25%	24	9	38%	130	42	32%
1:00 to 1:30	9	4	44%	82	35	43%	11	0	0%	4	0	0%	24	4	17%	130	43	33%
1:30 to 2:30	9	3	33%	82	38	46%	11	1	9%	4	0	0%	24	5	21%	130	47	36%
2:30 to 3:30	9	4	44%	82	41	50%	11	3	27%	4	0	0%	24	9	38%	130	57	44%
3:30 to 4:30	9	4	44%	82	45	55%	11	6	55%	4	0	0%	24	6	25%	130	61	47%

Shading indicates peak parking period of the day.

	Total Spaces	Occupied Spaces
Permit	9	8
ADA	4	0.5
City Employee	82	49
Visiting City Employee	11	3
Meter	24	2



Lot Church Average Daily Parking Survey Results

Time Period	Reserved Spaces			Business/Private Spaces			Total Spaces		
	Total Reserved Spaces	Occupied Spaces	Percent Occupied	Total Business/ Private Spaces	Occupied Spaces	Percent Occupied	Total Spaces	Occupied Spaces	Percent Occupied
8:30 to 9:30	12	5	42%	166	53	32%	178	58	33%
9:30 to 10:30	12	4	33%	166	70	42%	178	74	42%
10:30 to 11:30	12	8	67%	166	87	52%	178	95	53%
11:30 to 12:00	12	7	58%	166	84	51%	178	91	51%
12:00 to 12:30	12	6	50%	166	80	48%	178	86	48%
12:30 to 1:00	12	5	42%	166	76	46%	178	81	46%
1:00 to 1:30	12	3	25%	166	79	48%	178	82	46%
1:30 to 2:30	12	5	42%	166	86	52%	178	91	51%
2:30 to 3:30	12	7	58%	166	97	58%	178	104	58%
3:30 to 4:30	12	6	50%	166	97	58%	178	103	58%

Shading indicates peak parking period of the day.

	Reserved	Business/ Private
Total Spaces	12	166
Occupied Spaces	7	104

