

Lee's Summit, Missouri 2016 Downtown Parking Study



City of Lee's Summit, MO
Public Works Engineering

2016 Downtown Lee's Summit Parking Study

As part of the Downtown Lee's Summit Master Plan, a downtown parking and traffic study was completed by TranSystems Corporation in November 2003. The parking analysis completed in 2003 had been used to evaluate parking supply, especially shared-use parking, for development and redevelopment within the downtown core in accordance with Unified Development Ordinance, Article 12, Section 12.090. The aforementioned parking analysis was also the basis for several recommendations in the Downtown Parking Strategy presented to the City Council in 2004 and 2005 to meet long-term development forecasts by the firm EDAW, Inc., for the vision of Downtown Lee's Summit.

Staff prepared an updated parking study in 2010 to analyze the parking supply / demand caused by the completion of the downtown streetscape improvements and several major development projects. However data collection in the 2010 study solely focused on the core blocks depicted on *Figure 3*.

Since the 2010 study, the downtown area has seen an infusion of business and restaurant activity, as well as the following notable development projects.

- SE Douglas St between 3rd St and 4th St: Completion and occupancy of the Vogue Condominiums
- Southwest corner of 3rd St and Douglas St: Expansion of the Stanley Event Space
- 123 SE 3rd St: Conversion of the empty Arnold Hall into a high-turnover, sit-down restaurant
- 207 SE 3rd St: A new retail facility that replaced a single family residence
- 210 SW Market St: Change of use from postal service to office

This study includes a comprehensive inventory and assessment of existing parking conditions in Downtown Lee's Summit. While the parking inventory from 2010, built from the 2003 inventory, was periodically updated to reflect changes in capacity caused by street improvements and development or redevelopment, confidence in this information as a continued basis for evaluation has been diminished. This study can be used to evaluate the downtown parking model, future parking demand and assess the long-term recommendations for the vision of downtown. This study will serve as a more accurate, revised basis for future development and redevelopment review and continued discussion for long-term parking needs.

Survey Procedures

The data collection method, areas analyzed and time of the survey are very similar to previous studies, though there were slight variations in the data collection. Variations were made to better understand the impact of the increased business activity in Downtown: The survey hours were extended beyond 6 P.M. and included Saturday. Another variation concerned special events. Previous studies avoided surveys during special events, however the data collection considered an early morning marathon on Saturday without compromising a normal representation of weekend peak activity.

The area for the parking study is the same as previous studies and is generally bounded by 1st Street on the north, Johnson Street on the east, 5th Street on the south and Jefferson Street on the west. The 22 block area is defined on *Figure 1*. Each parking lot is assigned a lot number, and on-street parking is identified by street names and north, south, east or west facing.

Parking supply is the inventory of all on-street and off-street spaces. An inventory was surveyed in September 2016, and each space was further categorized as private or public. The number of marked parking spaces was counted, and in cases where markings weren't present an estimate was developed using the typical parking stall dimension (9'x19'). Additionally, the number of ADA (Americans with Disabilities Act) parking spaces was inventoried.

Parking demand is the inventory of parked vehicles (including motorcycles) during a given time period. Four survey routes were developed, and each route was walked at one hour intervals to observe occupancy of the parking supply. A total of thirteen City employees assisted in the study by counting parked vehicles over three days. The inventories were conducted on Saturday October 1st, Wednesday October 12th and Thursday October 13th, 2016. On Wednesday and Thursday the survey hours were from 7:00 A.M. to 8:00 P.M. and on Saturday from 9:00 A.M. to 9:00 P.M. The weather on each day was ideal, with clear skies and temperatures near average values.

Peak demand is the single highest occurrence of parked vehicles within a block. The peak demand for this study is based on hourly vehicle counts and determined for each block during the three day survey. The peak demand includes all parked vehicles, regardless of whether they are in private, public, off-street or on-street parking spaces.

An occupancy rate is calculated when the parking demand is divided by the parking supply. The occupancy rate is a common measure of the block parking capacity and allows for comparison to appropriate benchmarks. According to the 2003 study, an efficient occupancy rate varies by type of business the parking serves. For office employee parking, an occupancy rate from 90 to 95 percent is often acceptable. Customer-oriented businesses, such as retail stores and restaurants, typically desire a lower rate, from 80 to 85 percent. Given the limited quantity of parking and large number of small parking lots, an occupancy rate of 75 percent is desirable in a central business district. A central

business district is most similar to Downtown, and all the previous Downtown parking studies have used the 75% occupancy rate in their analysis as a target benchmark representing the parking capacity.

A land use assessment, using City and County records, was conducted to obtain information on the size (square feet) and type of businesses or the number of residential units within the study area. This assessment was used in a parking model to calculate a theoretical or designed parking demand based on building size and type of use.

Existing Parking Supply and Demand

The existing parking supply for all 22 blocks was inventoried and categorized by type. The complete study area is illustrated on *Figure 1*. *Figure 2* is a snapshot of the data collected for all 22 blocks, including the existing parking supply, peak demand and peak occupancy rate, and Appendix F has the observed peak occupancy rate for each parking lot and on street parking location. While the parking supply was determined for all 22 blocks, not all of the parking lots or on-street parking spaces were part of the inventory of parked vehicles (the parking demand). The reasons for excluding a parking lot or on-street parking space is documented in the appendix, and can generally be described as either being at the outer limits of the study area, having underutilized parking lots nearby, being observed to be empty, being along single family residential lots or having fenced lots dedicated to storing vehicles. A complete list of locations not part of the parking demand inventory is shown in Appendix G. It should be noted the net effect to a block with omitted locations very likely inflates the occupancy rate. Very few vehicles (if any) would be parked in the omitted locations, causing a lower parking demand while increasing the parking supply. Referring to Block 2 in Appendix G, the peak occupancy rate is 42%, however 69 spaces are not included in the parking supply. Of the 69 spaces, 49 are in Lot 2D, which is closed to parking. Adding the supply of 49 spaces and 0 demand, from Lot 2D, would lower the peak occupancy rate to 29%.

Perimeter Ring (Blocks 1 - 6, 11, 12, 17-22) Analysis

The parking supply is sufficient for existing businesses and residential housing within the Perimeter Ring. As exhibited by the data collection of Block 4 on Saturday Oct 1st, certain lots can serve as overflow parking for the Core Area when special events occur in Downtown.

Core Area (Blocks 7 - 10, 13-16) Analysis

The Core Area, Blocks 7 – 10 and 13 – 16, are comprised of multi-story buildings and businesses with high density uses. The area encompassed by each block is illustrated on *Figure 3*. Historically these blocks have the highest parking demand and occupancy rates, as exhibited in Tables 1A and 1B. The red font in Tables 1A and 1B indicates peak occupancy rates at or above the peak targeted occupancy rate of 75%. The 2016 peak occupancy rates from Tables 1A and 1B are illustrated on *Figure 6*.

| Table 1A. Comparison of Peak Occupancy Rates for Core Blocks 7, 8, 13, 14 (West of UPRR) | | | | | | | | | |
|--|---------------------------------|------|------|-------------|------|------|---------------------|------|------|
| Block / Year | Total Spaces (Private & Public) | | | Peak Demand | | | Peak Occupancy Rate | | |
| | 2003 | 2010 | 2016 | 2003 | 2010 | 2016 | 2003 | 2010 | 2016 |
| Block 7 | 196 | 212 | 214 | 90 | 151 | 67 | 46% | 71% | 31% |
| Block 8 | 150 | 153 | 150 | 114 | 104 | 83 | 76% | 68% | 55% |
| Block 13 | 176 | 179 | 179 | 101 | 63 | 87 | 57% | 35% | 49% |
| Block 14 | 153 | 174 | 173 | 100 | 92 | 135 | 65% | 53% | 78% |

| Table 1B. Comparison of Peak Occupancy Rates for Core Blocks 9, 10, 15, 16 (East of UPRR) | | | | | | | | | |
|---|---------------------------------|------|------|-------------|------|------|---------------------|------|------|
| Block / Year | Total Spaces (Private & Public) | | | Peak Demand | | | Peak Occupancy Rate | | |
| | 2003 | 2010 | 2016 | 2003 | 2010 | 2016 | 2003 | 2010 | 2016 |
| Block 9 | 215 | 259 | 260 | 189 | 184 | 200 | 88% | 71% | 77% |
| Block 10 | 273 | 456 | 460 | 147 | 264 | 257 | 54% | 58% | 56% |
| Block 15 | 221 | 211 | 216 | 122 | 93 | 156 | 55% | 44% | 72% |
| Block 16 | 231 | 212 | 223 | 120 | 110 | 173 | 52% | 52% | 78% |

Table 1A Note. Block 7 total space count from 2010 is correctly shown in Table 1A as 212. In Figure 3 of the 2010 Parking Study, Block 7 has an inaccurate total space count of 280.

Existing Core Block Supply

Aside from the construction of 314 parking spaces at the Public Parking Garage located at 2nd and Green (Block 10), the total parking supply has remained relatively steady since 2003, with changes in supply primarily coming from the private parking supply. *Figure 4* summarizes the on-street, public parking supply by block face. *Figure 5* summarizes the off-street parking supply for both private parking spaces and public parking spaces within each block.

Existing Core Block Peak Demand and Peak Occupancy Rate

Blocks 7 and 8 experienced a decrease in the peak occupancy rate since 2003 primarily due to the movement of City Hall from 207 SW Market St to its current facility at 220 SE Green St. Additionally the old City Hall site has not been redeveloped, and the land remains vacant after the building was torn down. The U.S. Post Office abandoned its facility at 210 SW Market St in early 2016, and while the building is occupied, the current business does not have the parking demand of the former Post Office.

Of note is that the 2016 peak occupancy rate in Blocks 15 and 16 occurred on Saturday evening. The three parking studies show a steady increase in demand on Blocks 10, 15 and 16 with Blocks 15 and 16 exhibiting a substantial increase in demand since 2010. Blocks 15 and 16 have also garnered the most significant redevelopment activity. Arnold Hall (123 SE 3rd St) was a vacant building for more than a decade and has been turned into a successful restaurant. The Vogue Condominiums (319 SE Douglas St) are complete and fully occupied. The Stanley Event Space increased the size of their facility and routinely bring in weddings and other special events with an average party size of 220 and a maximum

party size of 300. Several other successful new restaurants and businesses located on these Blocks have all contributed to the increased parking demand.

A parking model was developed by EDAW in 2003 to assess the parking demands of land use in the study area, using national trends for predicted parking rates. Based on the land use and assuming *no vacant buildings*, the model calculates a parking demand for every month of the year and for each hour between 7:00 a.m. and midnight. The model was updated, and the calculated peak occupancy rates are compared to the peak observed occupancy rates in Table 2 (below). Discrepancies between the modeled and observed peak occupancy rates can be attributed to the model analyzing seasonal fluctuations that occur over a year where-as the observed occupancy was surveyed during one particular month. The model also assumes no vacancies though a few vacancies were observed when the data was collected in October 2016. Overall the variations between modeled rates and observed rates are within a reasonable range. The observed rates were close enough to validate the use of the model for future planning exercises.

| Block No | Modeled | Observed | Block No | Modeled | Observed |
|-----------------|----------------|-----------------|-----------------|----------------|-----------------|
| 1 | 43% | NA | 12 | 77% | NA |
| 2 | 25% | 43% | 13 - Core | 34% | 49% |
| 3 | 44% | 52% | 14 - Core | 72% | 78% |
| 4 | 69% | 69% | 15 - Core | 81% | 72% |
| 5 | 32% | 46% | 16 - Core | 89% | 78% |
| 6 | 32% | 45% | 17 | 39% | 52% |
| 7 - Core | 35% | 31% | 18 | 106% | NA |
| 8 - Core | 78% | 55% | 19 | 28% | 42% |
| 9 - Core | 95% | 77% | 20 | 35% | 24% |
| 10 - Core | 60% | 56% | 21 | 40% | 39% |
| 11 | 46% | 50% | 22 | 64% | NA |

Future Conditions

In the 2003 parking study, the parking model was calibrated to predict the peak demand (in the core blocks) based on land uses and building sizes as proposed in EDAW’s February 2004 report entitled *Old Lee’s Summit Development Master Plan*. This development master plan was adopted by City Council in 2003 and has not been updated or revised since its publication, and the predicted peak demands (as developed from EDAW’s 2004 report) are presented in Table 3 and Figure 7. In Table 3 and Figure 7, it is important to note that the Projected Peak is from the EDAW Development Master Plan, but the Projected Surplus is updated to account for the parking supply documented in October 2016.

| West of UPRR | | | | East of UPRR | | | |
|--------------|----------------|------------------------|-------------------|--------------|----------------|------------------------|-------------------|
| Block No | Projected Peak | Current Parking Supply | Projected Surplus | Block No | Projected Peak | Current Parking Supply | Projected Surplus |
| 7 | 115 | 214 | 99 | 9 | 545 | 260 | (285) |
| 8 | 262 | 150 | (112) | 10 | 355 | 460 | 105 |
| 13 | 113 | 179 | 66 | 15 | 310 | 216 | (94) |
| 14 | 134 | 173 | 39 | 16 | 107 | 223 | 116 |
| Totals | 624 | 716 | 92 | Totals | 1317 | 1159 | (158) |

While implementation of the development master plan outlined in EDAW’s 2004 report has not fully materialized, the Lee’s Summit Downtown is thriving, in part, from isolated redevelopment projects. An example of a redevelopment project is the conversion of the vacant Arnold Hall building into a successful restaurant. Business changes have also spurred growth in downtown, and those changes are accounted for within the parking model by placing each business in a land use category. Though there are several categories, most downtown businesses fit into the retail or general office types, and a corresponding demand rate is calculated based on the square footage. Generally a change in category (general office to retail) has minimal impact to the parking demand compared to a redevelopment project or new development. Redevelopment projects are required to follow requirements in the Unified Development Ordinance (UDO), which includes an analysis of the parking demand generated by the project, and a solution to meet that demand.

Perimeter Ring (Blocks 1 - 6, 11, 12, 17-22) Future Conditions Analysis

Since the 2003 parking study, the perimeter ring has exhibited a fairly stable level of supply / demand, and the modeled peak occupancy rates (in Table 2) closely represent the observed peak occupancy rates, with few exceptions. Block 4 has a modeled and observed peak occupancy rate of 69%, and no changes are anticipated as the only business on this entire block is an elementary school. Block 12 has a modeled peak occupancy rate of 77%, and the primary driver of this rate is a restaurant. The model does not accurately reflect the nature of this style of restaurant (a Sonic), which only has parking for a drive through style service. The modeled peak occupancy rate of Block 18 is skewed by the presence of a small church and two to three single family homes that have been converted into apartments. Blocks 12 and 18 were outside the observed area, and there are no known complaints about parking on these blocks. Redevelopment or development of any sites within the perimeter ring would require a parking study in accordance with the UDO and industry best practices.

Core Area (Blocks 7 - 10, 13-16) Future Conditions Analysis

As indicated by both the modeled and observed peak occupancy rates in Table 2, three blocks (9, 15 and 16) on the east side of the railroad tracks and one block (14) on the west side of the railroad tracks are already at the recommended peak occupancy target rate of 75%. Any changes of land use (let alone

expansion) within these blocks, especially to a restaurant or vertical residences, would drive the peak occupancy rate to a higher percentage.

Referring to the projected peak demand in Table 3, which is based on the proposed infill development and redevelopment in EDAW's downtown master plan, the projected peak demand will exceed the overall parking supply within the blocks east of the railroad tracks (Blocks 9, 10, 15, 16), though according to the projected peak demand there is sufficient parking on the west side of the railroad tracks (Blocks 7, 8, 13, 14).

Since the adoption of EDAW's downtown master plan by City Council in 2003, developments similar to the types / uses in the EDAW master plan have been proposed within the core blocks of downtown. The developments have been multi-story, mixed-use (commercial, office, residential) developments with a high parking demand. While some of the development proposals have not gone beyond the exploratory phase, two development proposals have submitted concept plans, and these concept plans have included a parking analysis.

The Strother Lofts development, a concept plan submitted in 2016, was similar to the type in the EDAW master plan. Strother Lofts was to be located in Block 7 and was a four story mixed used development with a commercial / office on the first floor and 125 apartments spread over the remaining three floors. The developer's parking analysis included approximately 250 parking spaces in an adjacent parking garage. Of the approximately 4.5 acres of land available in Block 7, the Strother Lofts (including the parking garage) used approximately 2.0 acres.

The Market Street Lofts development, a concept plan submitted in 2008, was similar to the type in the EDAW master plan. Market Street Lofts was to be located in Block 8 and was a three story mixed used development with commercial / office and 27 residential units. The developer's parking plan provided for 75 of the 106 required parking spaces in an on-site parking garage. The remaining 31 parking spaces would be absorbed by 59 vacant public parking spaces within the required distance of the project. According to Article 12 of the UDO, public parking spaces within 500 feet of a nonresidential use (and not across the railroad tracks) may offset a parking shortfall in a shared parking scenario. Of the approximately 3.0 acres of land available in Block 8, the Market Street Lofts (including the parking garage) used approximately 0.9 acres.

Both the Strother Lofts and the Market Street Lofts submitted concept plans that included a parking analysis, and each concept plan relied upon a parking garage to meet the parking requirements of the proposed development.

Summary

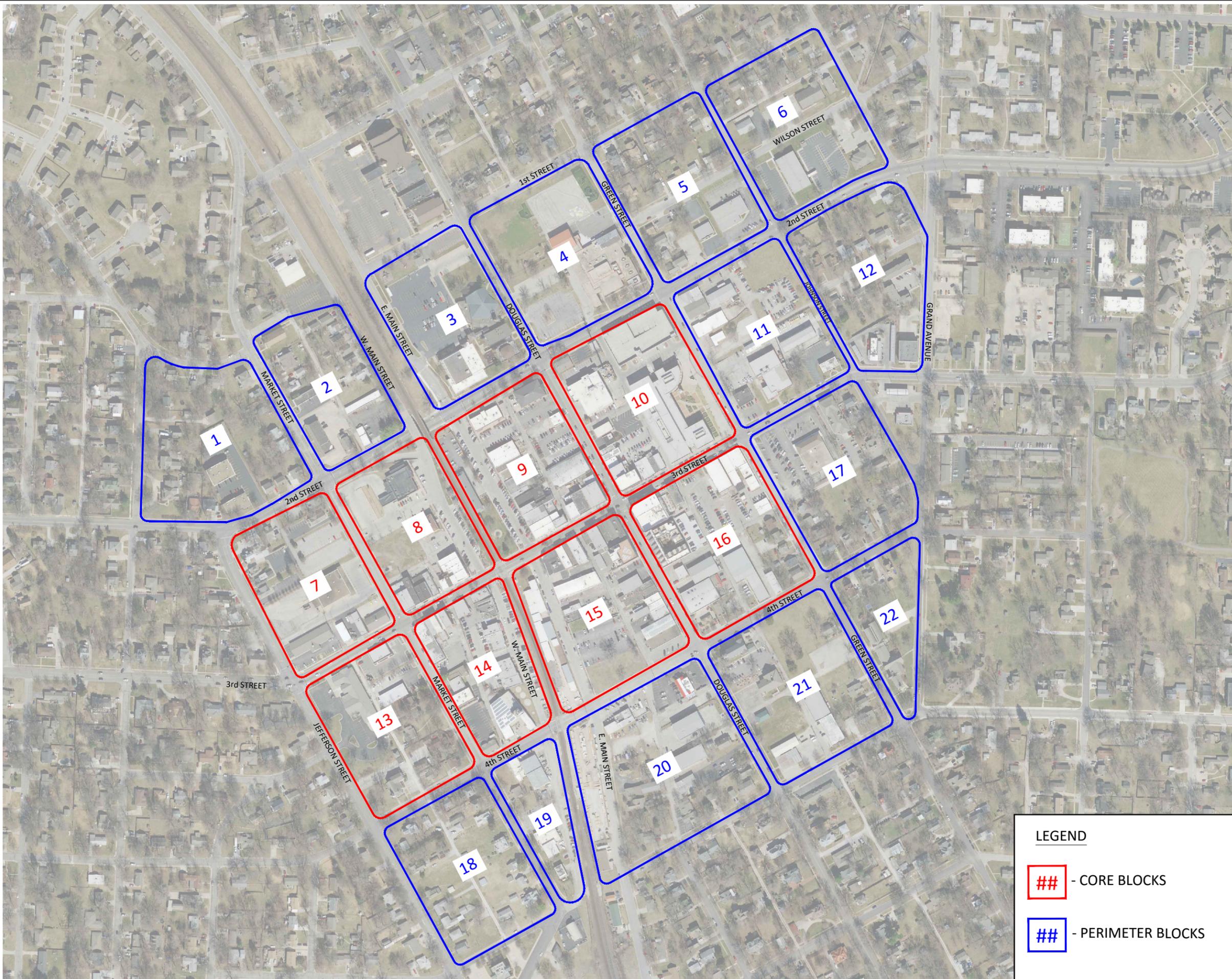
The estimation of future parking demands is generally considered to have a wider range in potential needs. As such, future recommendations should be looked at as approximate ranges that could occur as individual market trends and businesses could significantly impact the amount of parking needed. While additional parking is recommended west of the railroad tracks, these spaces could be accommodated

through careful planning and implementation of the infill developments. Parking east of the railroad tracks should take a similar approach, but additional measures identified in the Downtown Parking Strategies discussed with City Council in 2004 and 2005, should be pursued as development and redevelopment opportunities are presented.

A series of data collection efforts were completed to gather information on the existing parking characteristics in the study area. This new data will be used to assess development and redevelopment scenarios, as well as future parking demands. Since 2003 the overall parking supply has remained steady though there were modest gains in Blocks 9 (+45) and 14 (+20) as well as the significant increase from the Public Parking Garage in Block 10 (+187). However, the parking demand has increased at a greater rate than the supply, and four of the eight Core Blocks are near or above the industry best practice peak occupancy rate of 75%. The ability of existing parking facilities to meet additional parking demands is limited, and though some improvements have occurred to accommodate future growth within downtown, the long-term projection derived in the 2003 study is still unmet. The long-term parking strategies identified in previous studies and Council strategies, some of which have already been accomplished, remain applicable. Recommend monitoring and pursuing additional parking in areas where existing occupancy exceeds the targeted benchmark of 75%.

Appendix

- Appendix A – Private and Public Parking Spaces Graph (Blocks 7, 8, 13, 14) for Oct 1, Oct 12, Oct 13, 2016
- Appendix B – Public Parking Spaces Graph (Blocks 7, 8, 13, 14) for Oct 1, Oct 12, Oct 13, 2016
- Appendix C – Private and Public Parking Spaces Graph (Blocks 9, 10, 15, 16) for Oct 1, Oct 12, Oct 13, 2016
- Appendix D – Public Parking Spaces Graph (Blocks 9, 10, 15, 16) for Oct 1, Oct 12, Oct 13, 2016
- Appendix E – Parking Model Projected Peak Occupancy Rates
- Appendix F – By Lot Peak Demand
- Appendix G – Parking Lots not included in Study



LEGEND

- CORE BLOCKS

- PERIMETER BLOCKS

Figure 2. Existing Parking Supply, Peak Demand and Peak Occupancy Rate by Block - 2016 Data Collection

| Block No | Parking Supply | Saturday Oct 1 | | Wednesday Oct 12 | | Thursday Oct 13 | | Highest Over 3 Days | | Notes | |
|----------|----------------|----------------|----------------|------------------|----------------|-----------------|----------------|---------------------|----------------|--------------------------------------|-------------------|
| | | Peak Demand | Occupancy Rate | Peak Demand | Occupancy Rate | Peak Demand | Occupancy Rate | Peak Demand | Occupancy Rate | Day / Time of Highest Occupancy Rate | Block Notes |
| 1 | 92 | NA | NA | NA | NA | NA | NA | NA | NA | NA | Block Omitted |
| 2 | 103 | 10 | 9.7% | 36 | 35.0% | 44 | 42.7% | 44 | 42.7% | Thursday 10 am | 69 spaces omitted |
| 3 | 194 | 57 | 29.4% | 101 | 52.1% | 46 | 23.7% | 101 | 52.1% | Wednesday 8 pm | 43 spaces omitted |
| 4 | 111 | 77 | 69.4% | 48 | 43.2% | 43 | 38.7% | 77 | 69.4% | Saturday 11 am | 20 spaces omitted |
| 5 | 123 | 25 | 20.3% | 48 | 39.0% | 57 | 46.3% | 57 | 46.3% | Thursday 10 & 11am | 22 spaces omitted |
| 6 | 164 | 8 | 4.9% | 73 | 44.5% | 67 | 40.9% | 73 | 44.5% | Wednesday 2 pm | 50 spaces omitted |
| 7 | 214 | 28 | 13.1% | 55 | 25.7% | 67 | 31.3% | 67 | 31.3% | Thursday 11 am | |
| 8 | 150 | 62 | 41.3% | 73 | 48.7% | 83 | 55.3% | 83 | 55.3% | Thursday 11 am | |
| 9 | 260 | 170 | 65.4% | 201 | 77.3% | 200 | 76.9% | 201 | 77.3% | Wednesday 12 pm | 1 space omitted |
| 10 | 460 | 175 | 38.0% | 247 | 53.7% | 257 | 55.9% | 257 | 55.9% | Thursday 11 am | |
| 11 | 150 | 51 | 34.0% | 75 | 50.0% | 71 | 47.3% | 75 | 50.0% | Wednesday 11 am | 51 spaces omitted |
| 12 | 97 | NA | NA | NA | NA | NA | NA | NA | NA | NA | Block Omitted |
| 13 | 179 | 27 | 15.1% | 33 | 18.4% | 87 | 48.6% | 87 | 48.6% | Thursday 11 am | |
| 14 | 173 | 82 | 47.4% | 116 | 67.1% | 135 | 78.0% | 135 | 78.0% | Thursday 12 pm | |
| 15 | 216 | 156 | 72.2% | 95 | 44.0% | 129 | 59.7% | 156 | 72.2% | Saturday 9 pm | |
| 16 | 223 | 173 | 77.6% | 159 | 71.3% | 156 | 70.0% | 173 | 77.6% | Saturday 7 pm | |
| 17 | 123 | 64 | 52.0% | 54 | 43.9% | 56 | 45.5% | 64 | 52.0% | Saturday 8 pm | 25 spaces omitted |
| 18 | 41 | NA | NA | NA | NA | NA | NA | NA | NA | NA | Block Omitted |
| 19 | 98 | 25 | 25.5% | 36 | 36.7% | 41 | 41.8% | 41 | 41.8% | Thursday 2 pm | |
| 20 | 202 | 23 | 11.4% | 44 | 21.8% | 49 | 24.3% | 49 | 24.3% | Thursday 1 pm | 83 spaces omitted |
| 21 | 96 | 26 | 27.1% | 26 | 27.1% | 37 | 38.5% | 37 | 38.5% | Thursday 1 pm | 69 spaces omitted |
| 22 | 79 | NA | NA | NA | NA | NA | NA | NA | NA | NA | Block Omitted |

Note 1: 75% Occupancy rate is desirable in a Central Business District according to 2003 study.

Note 2: Red color represents near or above 75% occupancy rate.

Note 3: Orange color represents 50% to 70% occupancy rate. Color for informational purposes only, and percent range was estimated.

Note 4: Green color represents below 50% occupancy rate. Color for informational purposes only, and percent range was estimated.

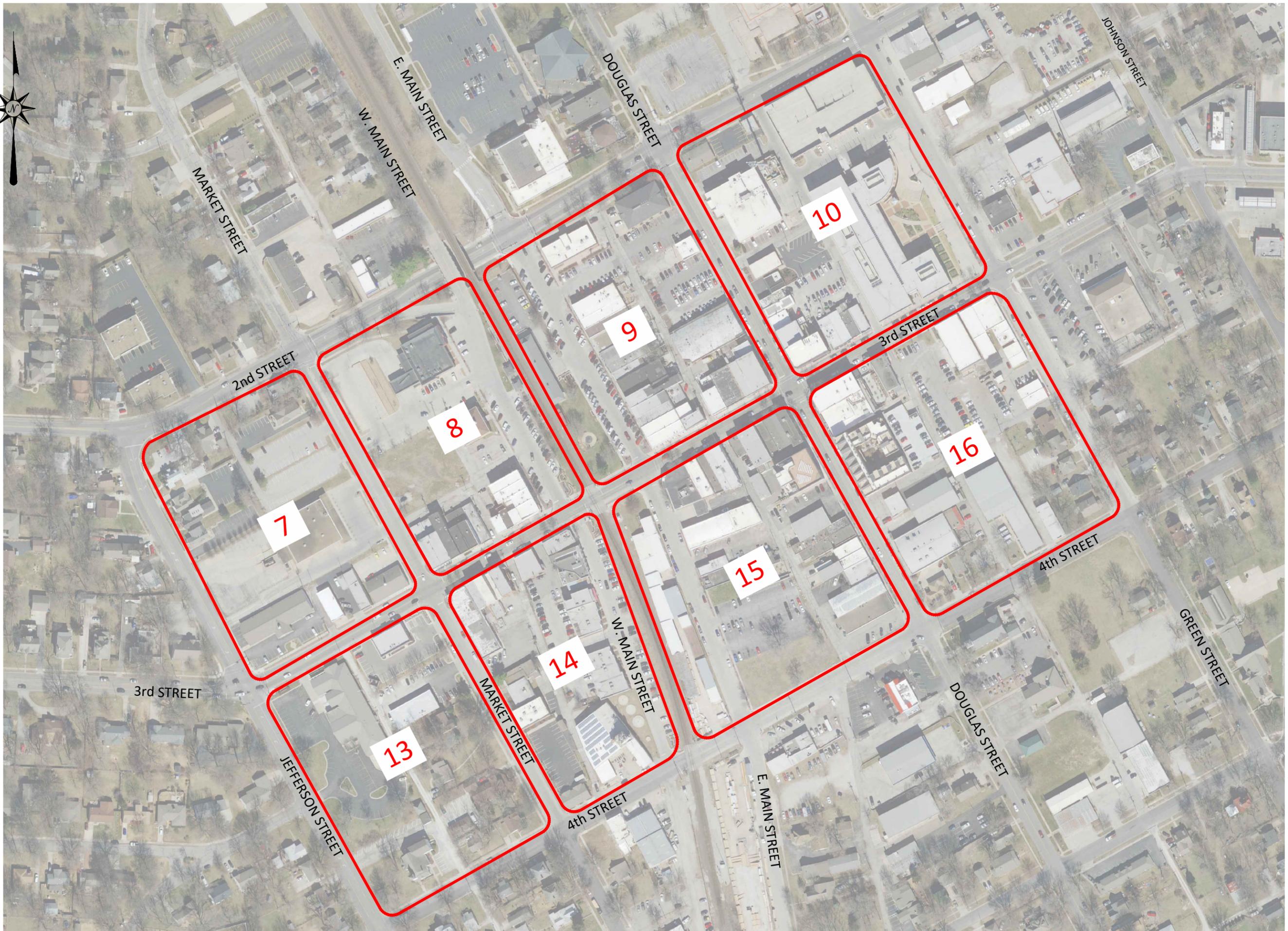
Note 5: Block 4 max of 69% occupancy is believed to be from the marathon on Oct 1st.

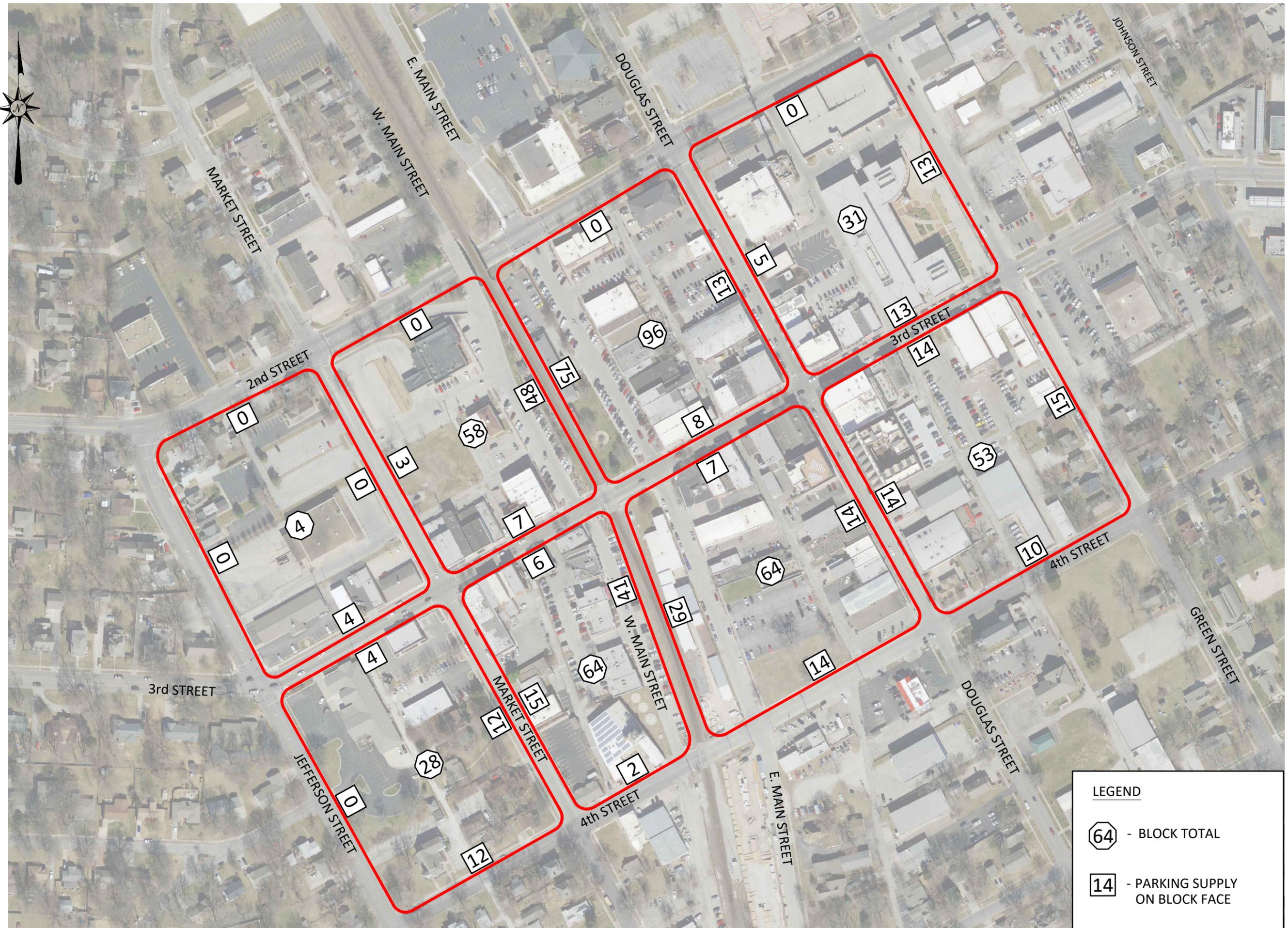
Note 6: Omitted spaces would add to the supply of spaces and would result in a lower occupancy rate for the block.

Peak Demand: Single highest occurrence of parked vehicles within a block.

Occupancy Rate: Parking Demand divided Parking Supply.

Figure 2

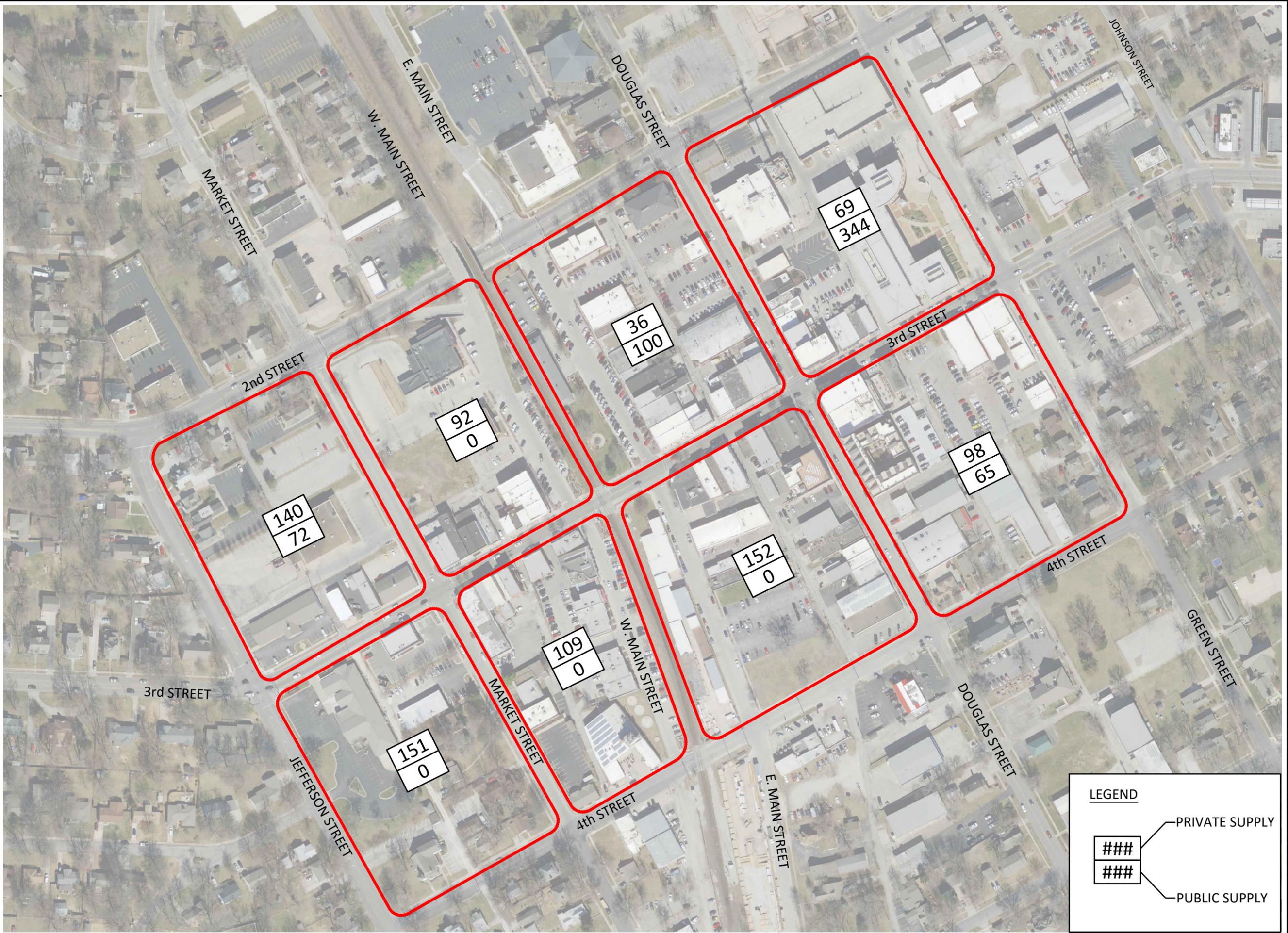




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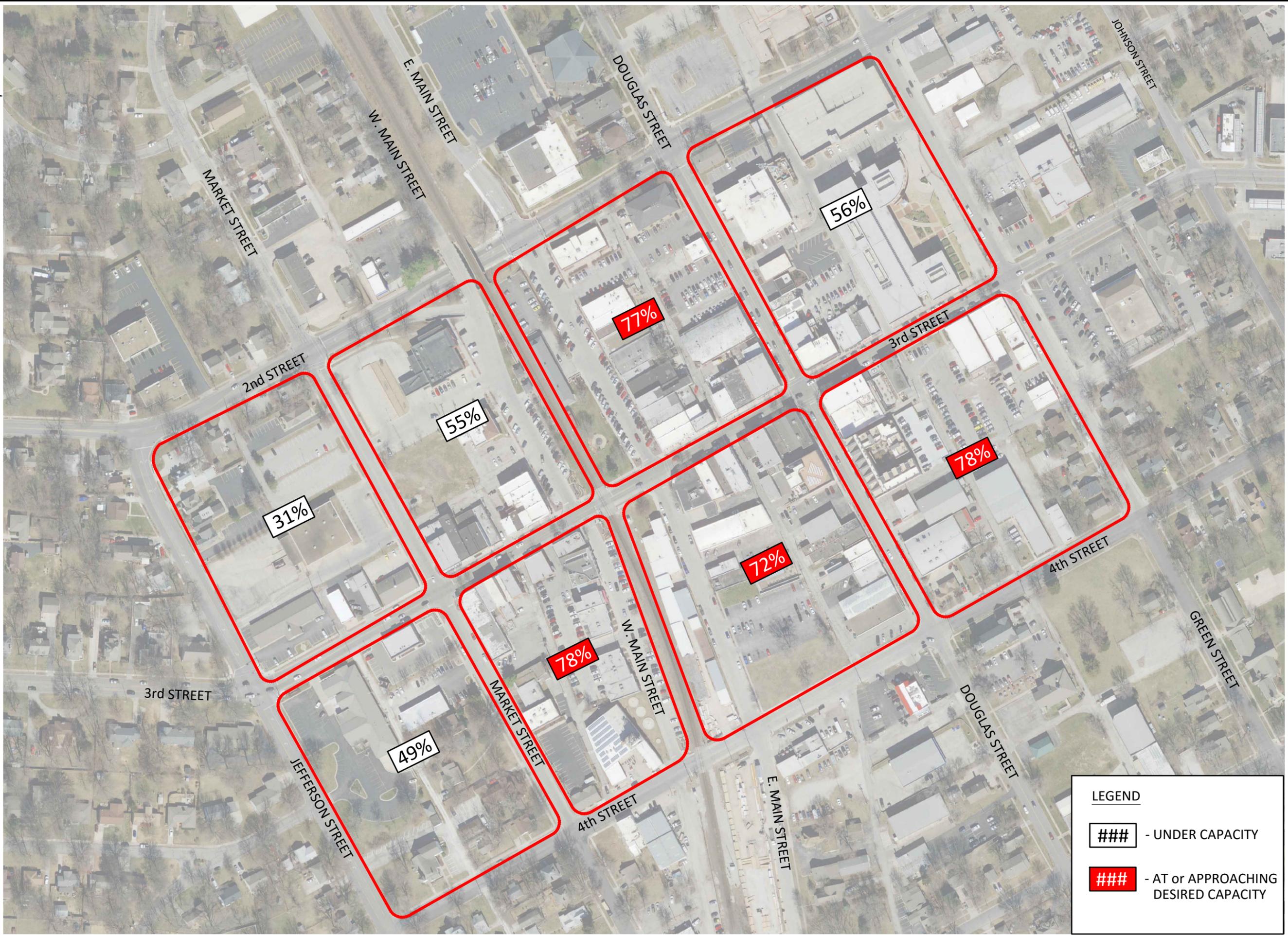
 - BLOCK TOTAL

 - PARKING SUPPLY ON BLOCK FACE



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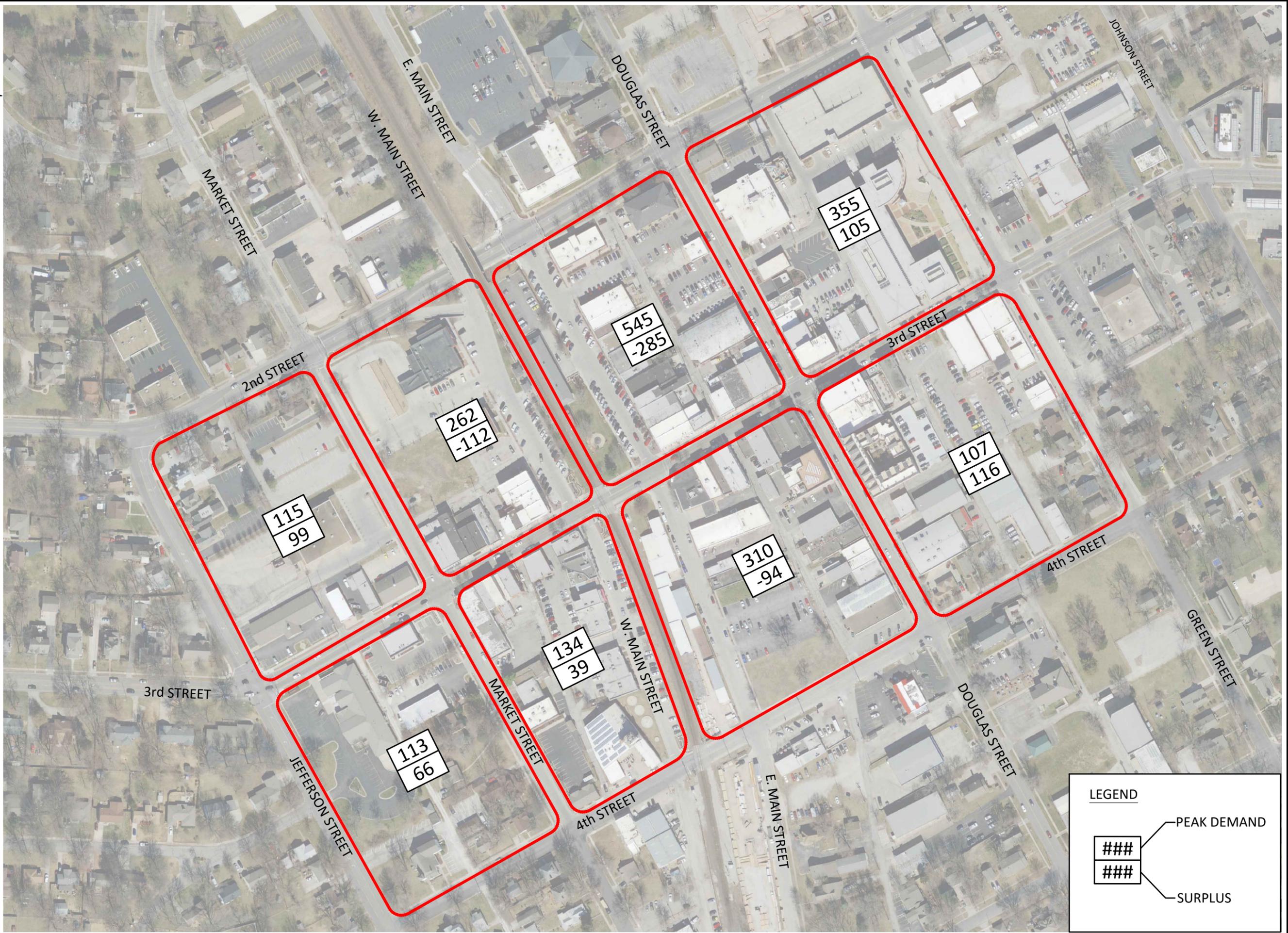
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LEGEND

- UNDER CAPACITY

- AT or APPROACHING DESIRED CAPACITY



LEGEND

PEAK DEMAND

SURPLUS