

**A CITY OF MOAB RESOLUTION NO. 27-2019**  
**A RESOLUTION ADOPTING THE MOAB PARKING MANAGEMENT STUDY**

The following findings describe the reasons for this resolution and explain its purpose:

- a. The City is concerned about certain parking issues within the City.
- b. These concerns include availability of sufficient parking in the Downtown Area, relocation of parking necessitated by the upcoming HWY 191 widening project, safety of all vehicles including bicycles, and addressing the large number of oversized and trailered vehicle parking.
- c. The City has developed a Moab Parking Management Study to consider these and other parking issues.
- d. The City Council has reviewed the Draft Moab Parking Management Study dated April, 2019.

Therefore, the City of Moab resolves as follows:

1. The Moab Parking Management Study is approved and City staff is to use it as a Guide when addressing parking issues within the City
2. This ordinance shall take effect immediately upon passage.

PASSED AND APPROVED by a majority of the City of Moab City Council, This 14<sup>th</sup> day of May, 2019.

By: \_\_\_\_\_  
Emily S. Niehaus, Mayor

\_\_\_\_\_  
Date

Attest:

By: \_\_\_\_\_  
Sommar Johnson, Recorder

\_\_\_\_\_  
Date





# Moab Parking Management Study







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## 1. INTRODUCTION & BACKGROUND

Moab is a diverse and vibrant community with thousands of residents and well over a million visitors a year. Much of Moab's economy centers around downtown shops, restaurants, hotels, and other services. The recently completed Moab Downtown Plan addressed parking at a high-level mentioning that "parking was the number one issue the team heard during the community input process" and the plan specifically protected all the on-street parking in Downtown. But the Moab Downtown Plan never provided numbers or analysis of where and for how long people were using parking, and it never included parking demand projections.

This study was designed to measure parking utilization and see which parking spaces are the most occupied, when people were using them, and for how long. This information allows us to answer the questions like, Does Moab have enough parking? and Can it be used more efficiently?



*Downtown Moab: the center of the study area*

### PROJECT GOALS

The goals of this study were to:

- Create a detailed inventory of public (and some private) parking spaces in the study area (Chapter 2)
- Measure, evaluate, and analyze parking utilization of those spaces (Chapter 3)
- Calculate average parking duration for all areas (Chapter 4)
- Calculate expected parking demand and compare it to observed utilization (Chapter 5)
- Recommend parking management strategies to reduce the negative impacts of parking (Chapter 6)

This report is organized into chapters for each of the study goals. Each chapter details the methodologies used

and the outcomes of the parking analysis. It paints a comprehensive picture of parking in Moab and Chapter 6 includes detailed recommendations for enhancements that can improve the parking situation in certain areas.

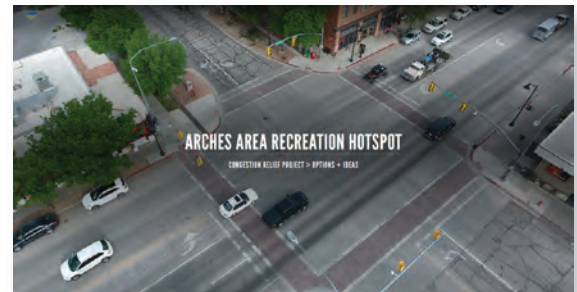
## PREVIOUS STUDIES

We acknowledge that several previous studies have addressed parking in Moab. This study builds off of those previously completed plans and we refer to those studies throughout this report. Previous studies include:

The **Moab Downtown Plan** by Downtown Redevelopment Services and Avenue Consultants, available here: <https://arcg.is/1neDrO>. The City of Moab set about developing a comprehensive plan to identify resident's needs and wants in the downtown area, specifically, the creation of a downtown that is walkable and resident-friendly. Vehicle parking within the downtown area was the number one issue brought up during the comprehensive community input process. Understanding the balance between available parking and demand is important to the long-term economic success of the downtown area. To understand this relationship, our team completed a detailed analysis of which spaces are most commonly occupied and how often vehicles are parked. This information was used to formulate parking recommendations for this plan.



The **Arches Area Recreation Hotspot Congestion Relief Project**, by Jones & DeMille Engineering and Rural Community Consultants, available here: <https://spark.adobe.com/page/qTc6Qu4syA2Gq> (further information is available here: <https://arcg.is/15T9uG>). The world-class recreational amenities in Moab have generated significant tourism activity, and all expectations are that this will continue to grow, creating stress on the local infrastructure. Moab's Main Street is particularly impacted because, unlike other recreation destination areas in Utah, this corridor is also a major freight traffic route. Parking in Moab is severely constrained, especially during the tourist season. All stakeholders agreed that the centralized parking for visitors and employees at a downtown transportation hub would likely mitigate downtown congestion significantly, if it existed in tandem with other design changes to Main Street. Use of centralized parking facilities can be encouraged by implementing a permitting system for nearby residential neighborhoods. Utilization of parking lots for trailers will be high if the locations are safely lit and monitored.



The **US-191: Moab Signal & Pedestrian Study**, by Fehr & Peers, available here: [www.fehrandpeers.com/moab](http://www.fehrandpeers.com/moab). In this study, UDOT and Moab City officials sought to understand mobility trade-offs between vehicle progression and enhancing the pedestrian accommodations on Main Street. This study evaluated a number of potential enhancements, including parking, that have been identified to improve multi-modal mobility along Moab's Main Street.

The UDOT **Main Street (US-191) Corridor Preservation Study**, available here: <https://tinyurl.com/US-191-corridor-preservation>, which developed a corridor agreement guiding the placement of future private driveway and public/private street accesses on Main Street. This impacts parking as well as promotes greater adherence to UDOT Access Management standards to balance safety and traffic flow.

The ongoing UDOT **Main Street (US-191) Moab Bypass Planning Study**, available here: <http://arcg.is/OXH0W5>. As part of the UDOT Recreational HotSpots program, UDOT, in cooperation with Moab and Grand County, evaluated the potential costs and benefits of a Main Street (US-191) Bypass around downtown Moab in order to improve the sense of place, alleviate the increasing freight congestion, mediate parking woes, and foster a comfortable and vibrant downtown.





## 2. PARKING INVENTORY & DATA COLLECTION

### Study Area

The study area was developed by Moab City to represent the portion of the city with the most used public parking spaces. This includes Downtown Moab (100 West to 100 East, and 200 South to 400 North), Center Street and 100 North (100 West to 300 East), Swanny Park, Williams Way, and 400 East.

The study area is presented on the map below. Parking spaces evaluated are shown in red.





## Parking Inventory

Moab's downtown parking supply consists of a mix of on-street parking, public parking lots, and other private lots. A total of 1,462 parking spaces were evaluated for the utilization analysis of which 1107 were on-street parking. The on-street parking consists of 470 angle parking stalls, 622 parallel parking stalls, and 15 accessible stalls. Within the study area there are two public parking lots. The city public lot has 69 parking stalls with two accessible stalls and the Moab Information Center (MIC) lot, located at 25 E Center Street, has 38 stalls, two accessible stalls, and five RV stalls. Other private lots evaluated have a total 239 stalls.





## Methodology

To understand existing parking availability as well as parking behavior in Moab, the following data were collected:

- Inventory and utilization data for on-street parking
- Inventory and utilization data for public parking lots (City Lot, Mic Lot)
- Inventory and utilization data for private lots (Canyonlands Inn, Greenwell Inn, McStiff's Plaza)
- Type of parking space by location (accessible, public, and reserved stalls)

## SAMPLE OF AERIAL PHOTOGRAPH TAKEN DURING OUR DRONE FLIGHTS



Data were collected for a weekday and weekend (Friday) for 10 hours throughout the day. To efficiently collect parking data an aerial drone was utilized completing a total 40 flights over the course of two days on Thursday, May 17 and Friday, May 18, 2018. Two flights occurred every hour from 9:00 am to 7:00 pm, gathering data on parking occupancy, frequency, and parking turn over for the entire study area. This resulted in a total of 10,152 aerial photos that were collected and used in the analysis.



## Peak Parking Days: Daily Approach Volume East/West Streets

Since Moab hosts a variety of events throughout the year and experiences seasonal variations in tourism, parking demand can fluctuate by day, month, and season. To identify if the parking data collection occurred during days with high parking demand, the approach volumes to Main Street on 100 South, Center Street, and 100 North were evaluated. These approach volumes are a proxy for parking demand since these streets provide access on street parking and to local businesses and residents.

Over the course of a year (August 1, 2017 to July 31, 2018), the daily vehicle approach volumes for downtown Moab were determined using Automated Traffic Signal Performance Measure from the Utah Department of Transportation (UDOT). The table below ranks these results in order of highest to lowest daily volumes for the top 20 days of the year. These downtown cross-streets average about 8,200 total daily vehicles with 4,100 vehicles a day on 100 South, 1,400 daily vehicles on Center Street and 2,700 daily vehicles on 100 North. As seen in the table below, the parking data collection occurred during days that had traffic volumes significantly higher than the average daily traffic volume. The data collection on Friday, May 18, 2018 represented 5th highest day and Thursday, May 17, 2018 was 17th highest day of the year. These high volumes on the downtown cross street indicate that the parking data collection occurred during days with higher than average parking demand.

| Rank | Downtown Streets<br>(100 S, Center, 100 N) |        | 100 South |        | Center Street |        | 100 North  |        |
|------|--|--------|-----------|--------|---------------|--------|------------|--------|
|      | Date                                       | Volume | Date      | Volume | Date          | Volume | Date       | Volume |
| 1    | 4/27/2018                                  | 12,278 | 4/27/2018 | 5,956  | 3/16/2018     | 2,261  | 4/28/2018  | 4,535  |
| 2    | 4/28/2018                                  | 12,170 | 5/25/2018 | 5,827  | 4/27/2018     | 2,225  | 4/27/2018  | 4,097  |
| 3    | 5/25/2018                                  | 11,919 | 4/5/2018  | 5,794  | 5/21/2018     | 2,166  | 4/5/2018   | 4,083  |
| 4    | 4/5/2018                                   | 11,888 | 4/6/2018  | 5,772  | 4/28/2018     | 2,164  | 3/30/2018  | 4,006  |
| 5    | 5/18/2018                                  | 11,776 | 5/18/2018 | 5,771  | 5/18/2018     | 2,149  | 5/4/2018   | 3,982  |
| 6    | 5/4/2018                                   | 11,748 | 3/29/2018 | 5,655  | 5/25/2018     | 2,136  | 5/25/2018  | 3,956  |
| 7    | 4/6/2018                                   | 11,695 | 5/24/2018 | 5,644  | 5/7/2018      | 2,133  | 3/29/2018  | 3,937  |
| 8    | 3/29/2018                                  | 11,661 | 5/4/2018  | 5,634  | 5/4/2018      | 2,132  | 3/28/2018  | 3,905  |
| 9    | 6/1/2018                                   | 11,623 | 6/1/2018  | 5,632  | 6/1/2018      | 2,130  | 4/6/2018   | 3,887  |
| 10   | 3/30/2018                                  | 11,608 | 4/26/2018 | 5,621  | 5/14/2018     | 2,118  | 4/20/2018  | 3,867  |
| 11   | 4/26/2018                                  | 11,405 | 3/30/2018 | 5,565  | 5/11/2018     | 2,108  | 6/1/2018   | 3,861  |
| 12   | 5/24/2018                                  | 11,367 | 4/2/2018  | 5,523  | 5/10/2018     | 2,100  | 5/18/2018  | 3,856  |
| 13   | 4/2/2018                                   | 11,337 | 6/13/2018 | 5,518  | 4/2/2018      | 2,094  | 4/26/2018  | 3,840  |
| 14   | 5/11/2018                                  | 11,275 | 4/28/2018 | 5,471  | 5/17/2018     | 2,082  | 5/2/2018   | 3,808  |
| 15   | 3/28/2018                                  | 11,271 | 4/3/2018  | 5,464  | 5/24/2018     | 2,070  | 4/3/2018   | 3,806  |
| 16   | 4/3/2018                                   | 11,216 | 5/11/2018 | 5,445  | 3/29/2018     | 2,069  | 4/4/2018   | 3,802  |
| 17   | 5/17/2018                                  | 11,183 | 5/17/2018 | 5,426  | 9/21/2017     | 2,066  | 3/23/2018  | 3,778  |
| 18   | 5/26/2018                                  | 11,133 | 5/26/2018 | 5,416  | 9/13/2017     | 2,056  | 3/26/2018  | 3,774  |
| 19   | 4/20/2018                                  | 11,090 | 4/4/2018  | 5,399  | 5/31/2018     | 2,053  | 10/13/2017 | 3,764  |
| 20   | 5/7/2018                                   | 11,089 | 4/13/2018 | 5,398  | 3/30/2018     | 2,037  | 4/12/2018  | 3,725  |

Observation Date 5/17/2018

Observation Date 5/18/2018

### 3. PARKING UTILIZATION

Hourly parking utilization was estimated from the parking inventory data and stall occupancy information from the aerial surveys. Individual parking stalls within the study area were identified as occupied or unoccupied for each of the 20 evaluation hours. As shown in the map below, 144 of the 187 public parking stalls evaluated were occupied - a 76% utilization rate for this area (5:00 PM, Thursday, May 17, 2018). For a stall to be identified as occupied, the vehicle must be observed within the stall. For example, the parking stall within the McStiff's Plaza parking lot with the white SUV either entering or exiting the stall was not identified as occupied. For stalls that were obscured by trees in the overhead mosaic aerial, individual images were reviewed to identify occupancy from angled

different images.



Map showing sample of occupancy data at 5pm



## Trends

The peak hour of parking demand was Thursday, May 17, 2018 at 6:00 PM with 768 parked vehicles within the study area. The parking stall with the highest turnover was in front of the Moonflower Community Cooperative (39 East 100 North) with 19 unique vehicles in 20 observed hours. While the longest any vehicle was parked was one vehicle that was parked for all 20 observation hours on Williams Way. Similarly, there were 51 stalls that were utilized for all 20 hours but by different vehicles throughout the period. The locations with these high utilization stalls were on Center Street with 19 stalls that were utilized during all 20 observation hours, 100 North with 6 stalls, and Main Street with 5 stalls. There were 162 stalls (11% of parking supply) that never had a parked vehicle during the observation. These unutilized stalls were located away from central downtown core with 34 utilized stalls on 100 North from 100 East to 300 East, 17 stalls by Swanny Park, and 15 stalls on 100 West with the remainder scattered through the study area.



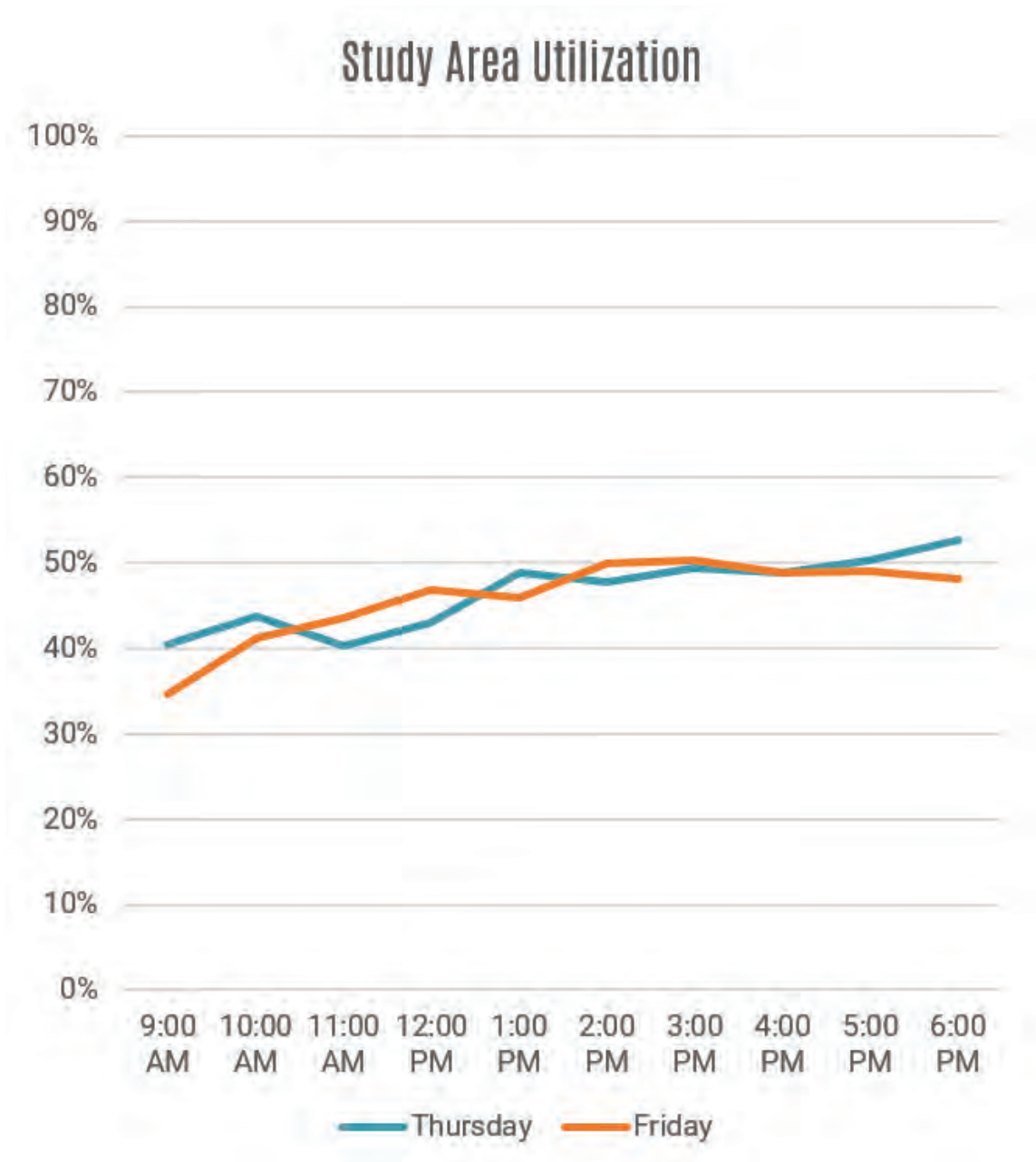
*Parking stall with the highest turnover.*



*Parking stall with the lowest turnover.*

Overall Parking & Peak Hour Utilization

On Thursday, May 17, 2018, 41% to 53% of all parking spaces were occupied. During the peak hour of 6:00 pm, there were 768 parking spaces occupied. On Friday, May 18, 2018, 35% to 50% of all parking spaces were occupied. During Friday's peak hour of 3:00 pm, there were 735 spaces occupied.

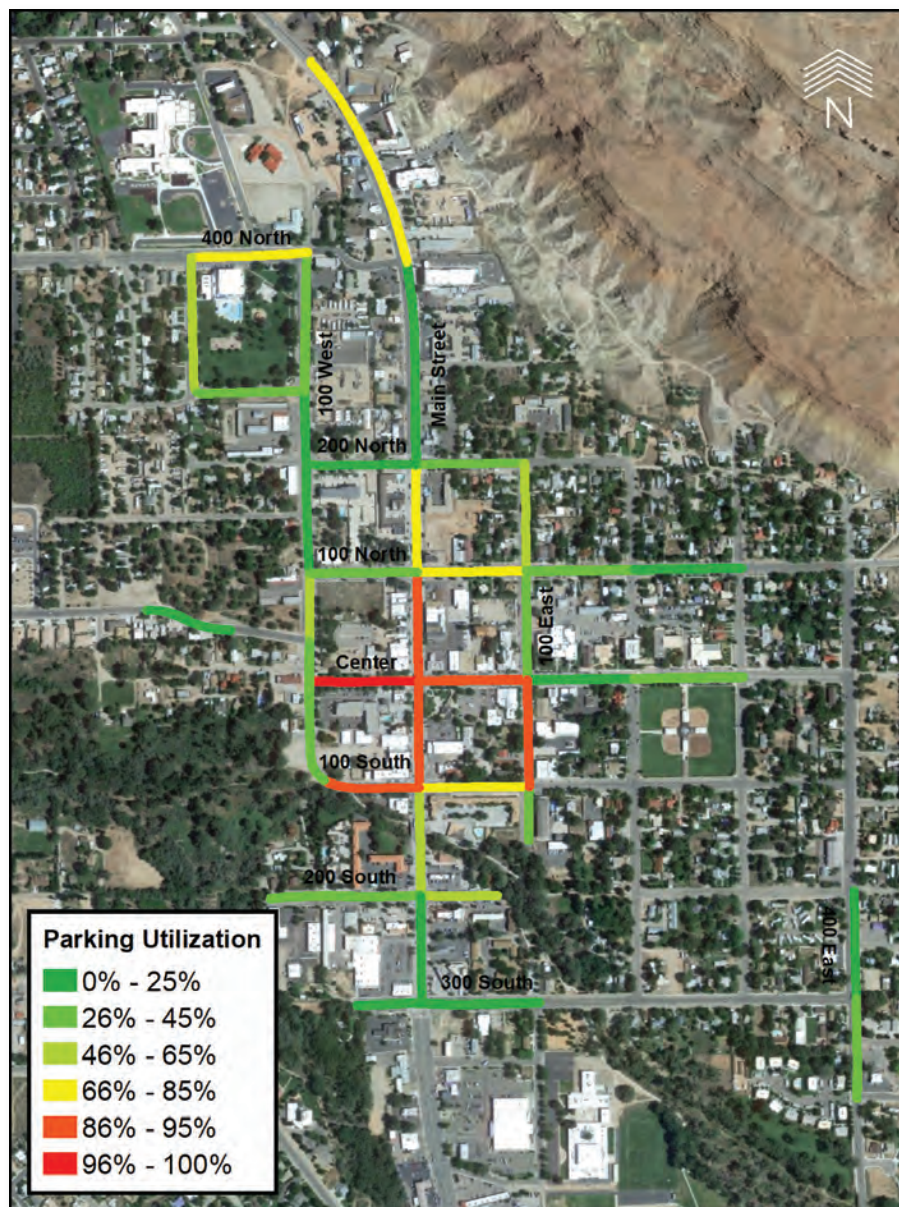




## Area-Specific Utilization

Parking can be difficult to find depending on location, time, and day. One of the necessary elements of this study is to determine the areas of limited parking availability. Generally, parking is efficiently utilized when approximately 85% of spaces are full. Above this level, the parking is functionally full and can frustrate drivers looking for a parking space. However, when parking facilities are below this level they are not functioning efficiently. In this study, limited available parking was identified in areas where utilization was greater than 85%, meaning there were generally one to two available parking spaces per block. The areas that experienced two or more hours of 85% utilization were Main Street, Center Street, 100 North, 100 South, and the MIC parking lot.

The map below shows the on-street parking utilization by block for the peak hour of parking.



## PARKING STALL LOSS



Some available on-street parking is lost due to oversized vehicles, vehicles towing trailers, and vehicles parking inefficiently. This loss is most prominent on Main Street where the parallel parking is not delineated, but it also occurs in some of the angled parking where trucks with trailers park along the curb blocking multiple spaces.

An example of parking loss on Main Street can be seen in this photograph, where the silver van which is towing a trailer did not leave enough room for a vehicle to park in front of or behind them. This is also an oversized vehicle and it has a trailer. In this case, the vehicle is blocking 3 parking stalls on Main.

In reviewing all the observed data, every instance of parking stall lost was documented. Often vehicles would leave a five to ten-foot gap in front of or behind them, allowing only 2 vehicles to park in 3 spaces.

The percentage of parking stall loss observed varies by location and time of day, but some was always present. For example, on Thursday May 17th during the noon hour 22 parking spaces (16%) on Main Street were lost due to oversized and inefficiently parked vehicles. If every vehicle was appropriately parked that hour it would make 22 more parking stalls available in the high demand area of Main Street.

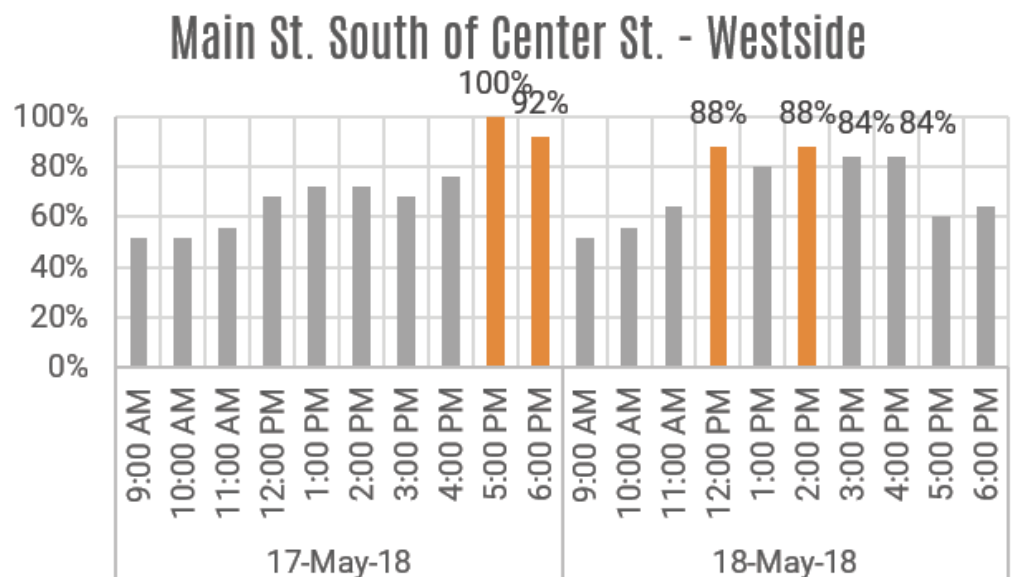
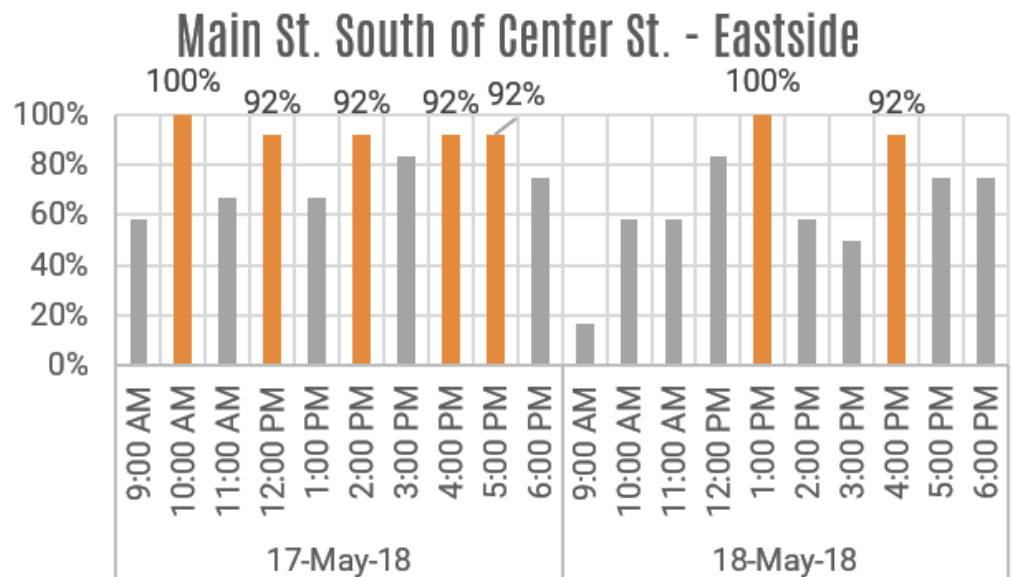
This parking stall lost can be mitigated by clearly delineating each 20-foot parking stall for parallel parking. Parked vehicles may not always stay within the lines of a single stall, but it will certainly improve the inefficient parking that can be observed now. This was also a recommendation of the Moab Downtown Plan.



## AREA-SPECIFIC UTILIZATION - MAIN STREET SOUTH OF CENTER STREET

There was a high utilization on Main Street south of Center Street, with a limited number of parking stalls. The east side of this area experienced a higher utilization than the west side. For seven hours, the east side was above 85% utilization, followed by two hours at 100% utilization. Up to 25% of available space was lost due to unmarked stalls and/or larger vehicles.

On the west side of Main Street, there were four hours where utilization was above 85%, followed by one hour at 100% utilization. In this area, 4% to 20% of available space lost due to unmarked stalls and/or larger vehicles.



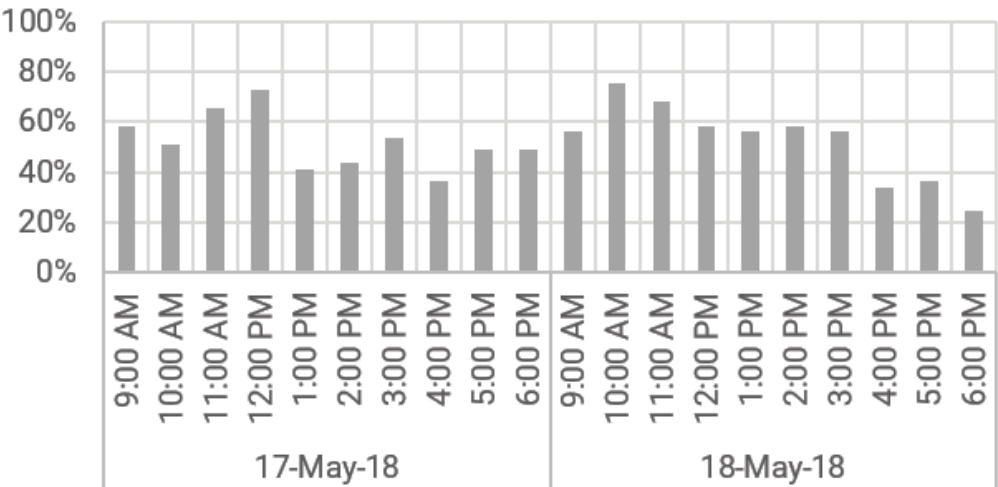
AREA-SPECIFIC UTILIZATION - MAIN STREET NORTH OF CENTER STREET

On Main Street north of Center Street, there were a higher number of stalls and more available parking than on Main Street south of Center Street. In this instance, the west side of Main Street experienced a higher utilization than the east side. The east side was always under 85% utilization, with 2% to 22% of available space lost due to unmarked stalls and/or larger vehicles.

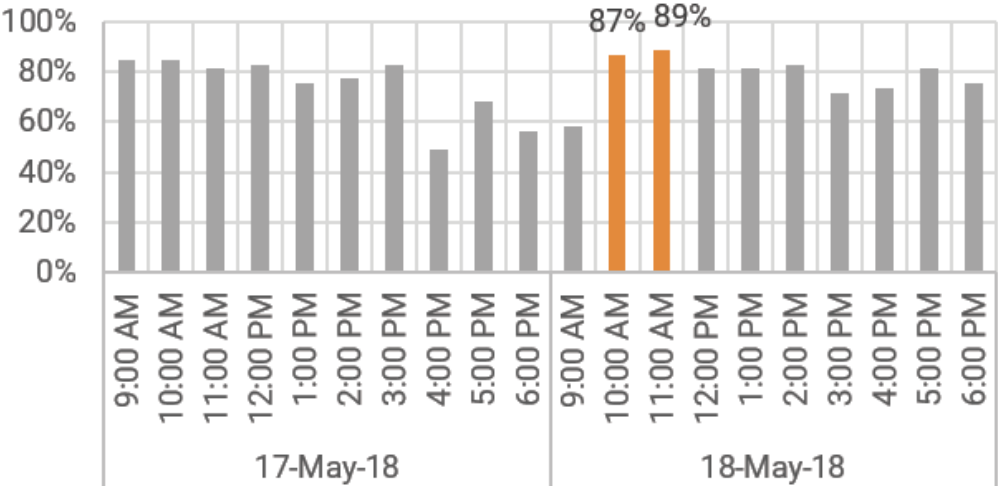
On the west side, there were two hours where utilization was above 85%. In this area, 6% to 19% of available space was lost due to



Main St. North of Center St. - Eastside



Main St. North of Center St. - Westside





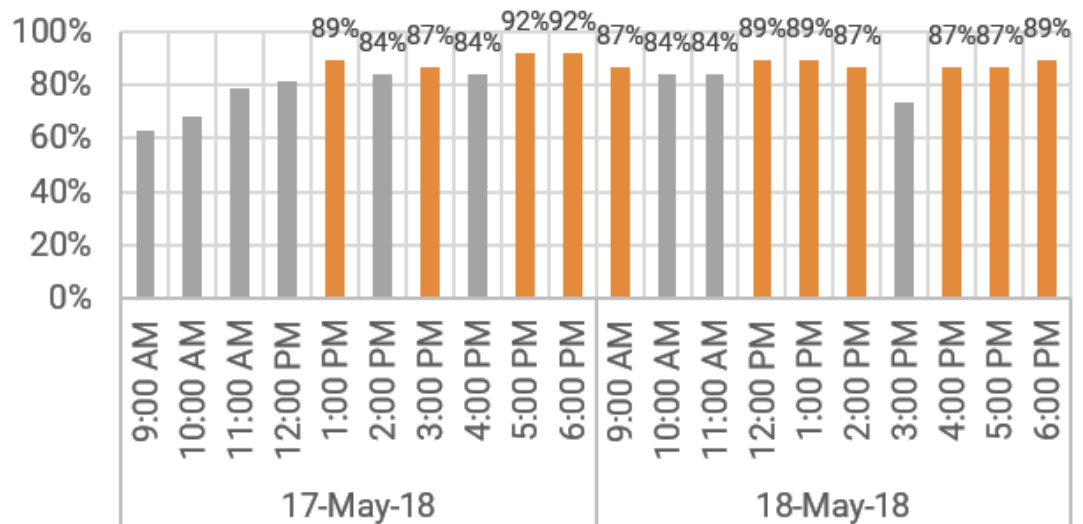
## AREA-SPECIFIC UTILIZATION - CENTER STREET

Center Street had the highest utilization. On the east side there were eleven hours above 85% utilization, followed by four hours that were at 84%. The parking on this side was all angled parking, so no parking was lost due to inefficient parking or larger vehicles.

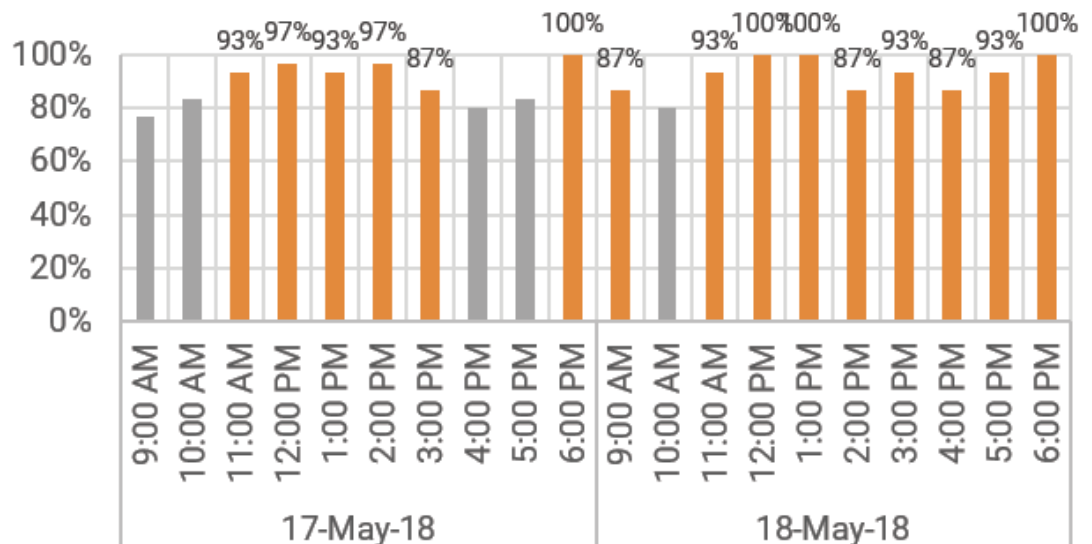
On the west side, 15 of the 20 observed hours were above 85% utilization, followed by four hours at 100%. In this area, up to 7% of the available space was lost due to unmarked parallel stalls and/or larger vehicles.



### Center St. - East of Main St.



### Center St. - West of Main St.



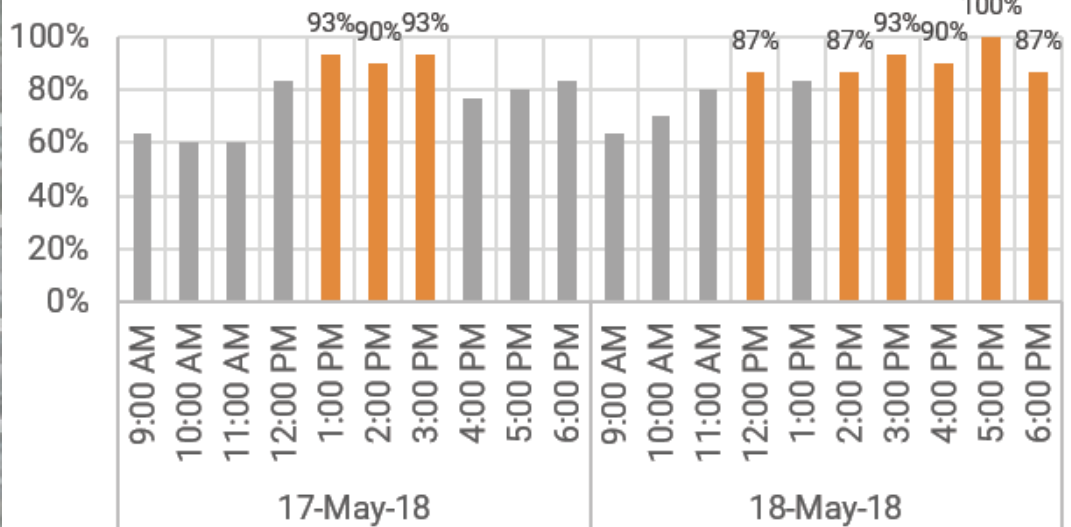
## AREA-SPECIFIC UTILIZATION - 100 NORTH

100 North had the second highest utilization. On the east side of Main Street, nine hours were above 85% utilization, followed by an hour at 100%. Up to 10% of available space was lost due to unmarked stalls and/or larger vehicles

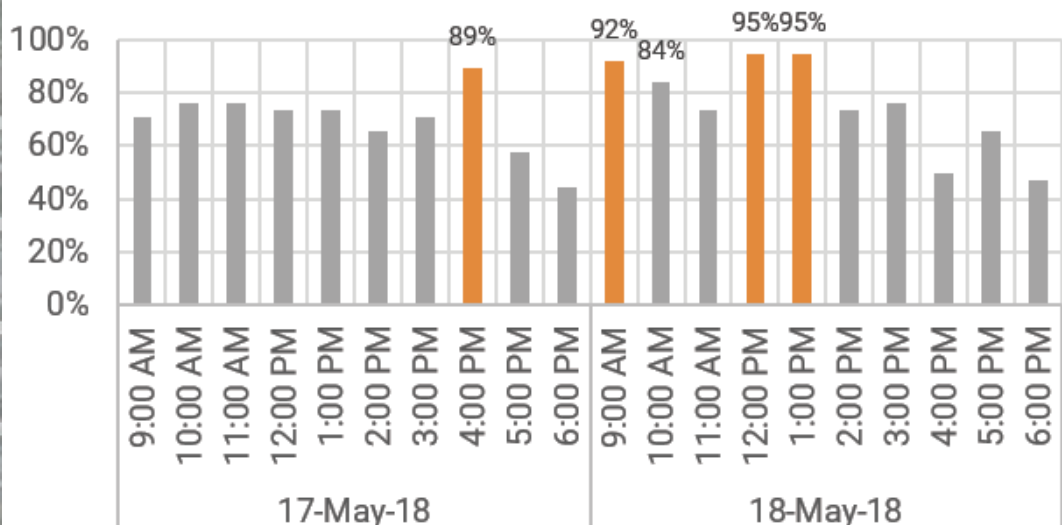
On the west side, four hours were above 85% utilization, followed by one hour at 100%. In this area, up to 13% of the available space was lost due to unmarked parallel stalls and/or larger vehicles.



### 100 North - East of Main St.



### 100 North - West of Main St.





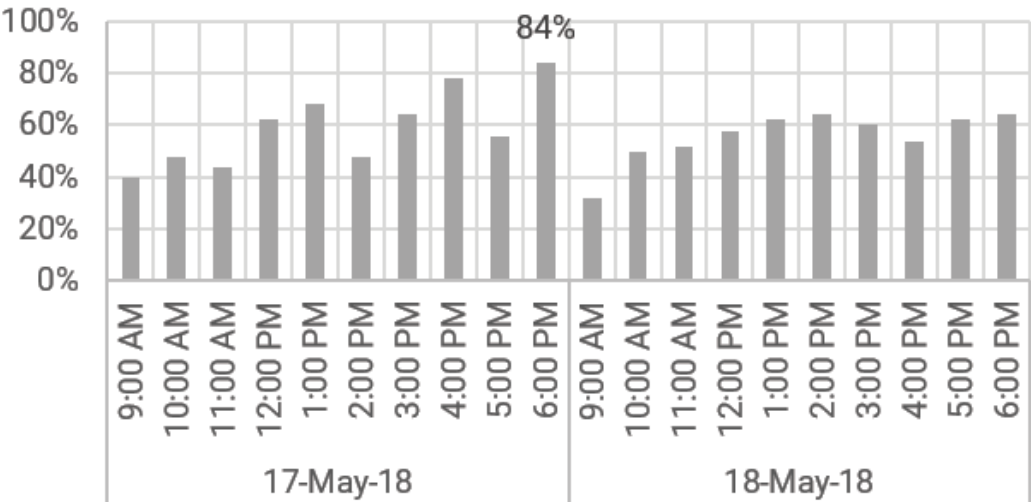
AREA-SPECIFIC UTILIZATION - 100 SOUTH

On 100 South, parking was concentrated near Moab Diner (189 S Main Street) and Pancake Haus (196 S Main Street). On the east side of Main Street, one hour was at 84% utilization with no hours above 85%. Up to 4% of available space was lost due to unmarked stalls and/or larger vehicles.

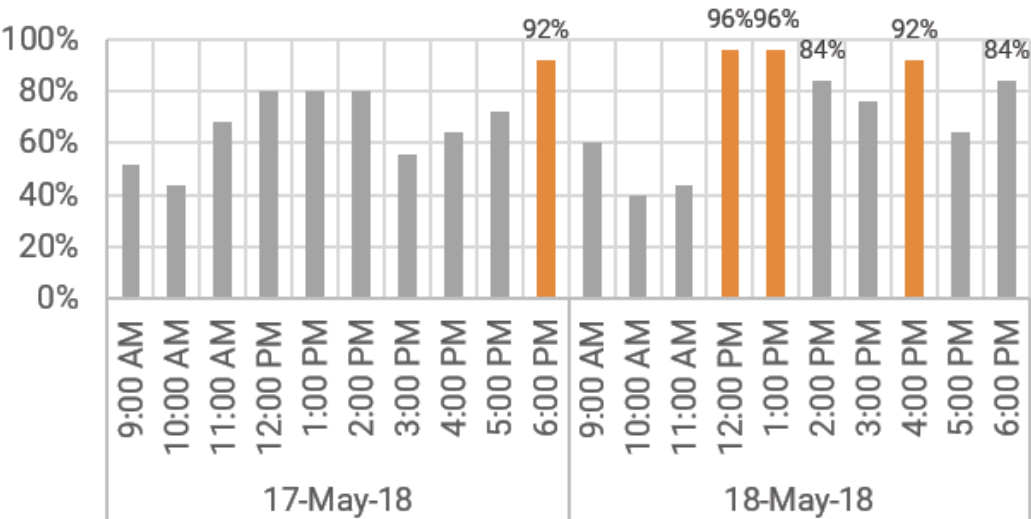
On the west side, four hours were above 85% utilization, followed by two hours at 84%. In this area, up to 28% of the available space was lost due to unmarked parallel stalls and/or larger vehicles.



100 South - East of Main St.



100 South - West of Main St.



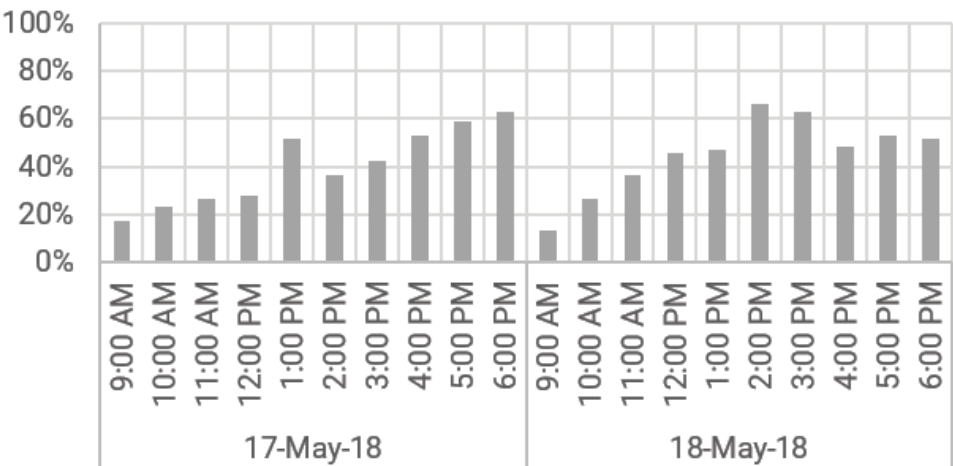
AREA-SPECIFIC UTILIZATION - PARKING LOTS

Two of the largest parking lots in Moab were evaluated. The city public lot near 100 North and 100 West and the Moab Information Center (MIC) parking lot located at 25 E Center Street.

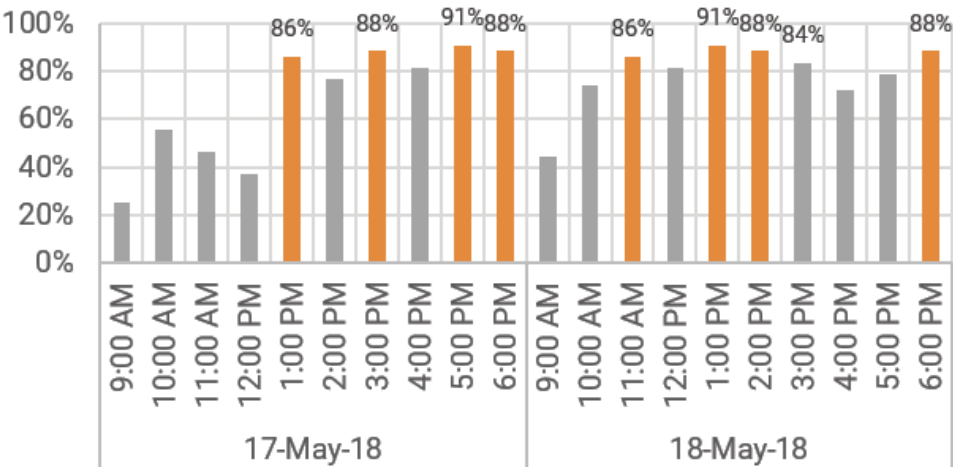
The public lot has an average utilization of 42%, with a maximum utilization of 65% at 6:00 pm Thursday and 2:00 pm Friday. Because all were designated parking stalls, no stalls were lost due to inefficient parking or larger vehicles. Despite the high utilization on west Center Street (see page 16), the utilization decreased significantly in this lot, which is approximately 200-feet away.

The MIC parking lot experienced eight hours above 85% utilization. This parking lot has designated parking stalls similar to the public lot. However, about half the cars and trucks in this lot were using designated RV/trailer parking stalls.

City Public Lot



MIC Parking Lot



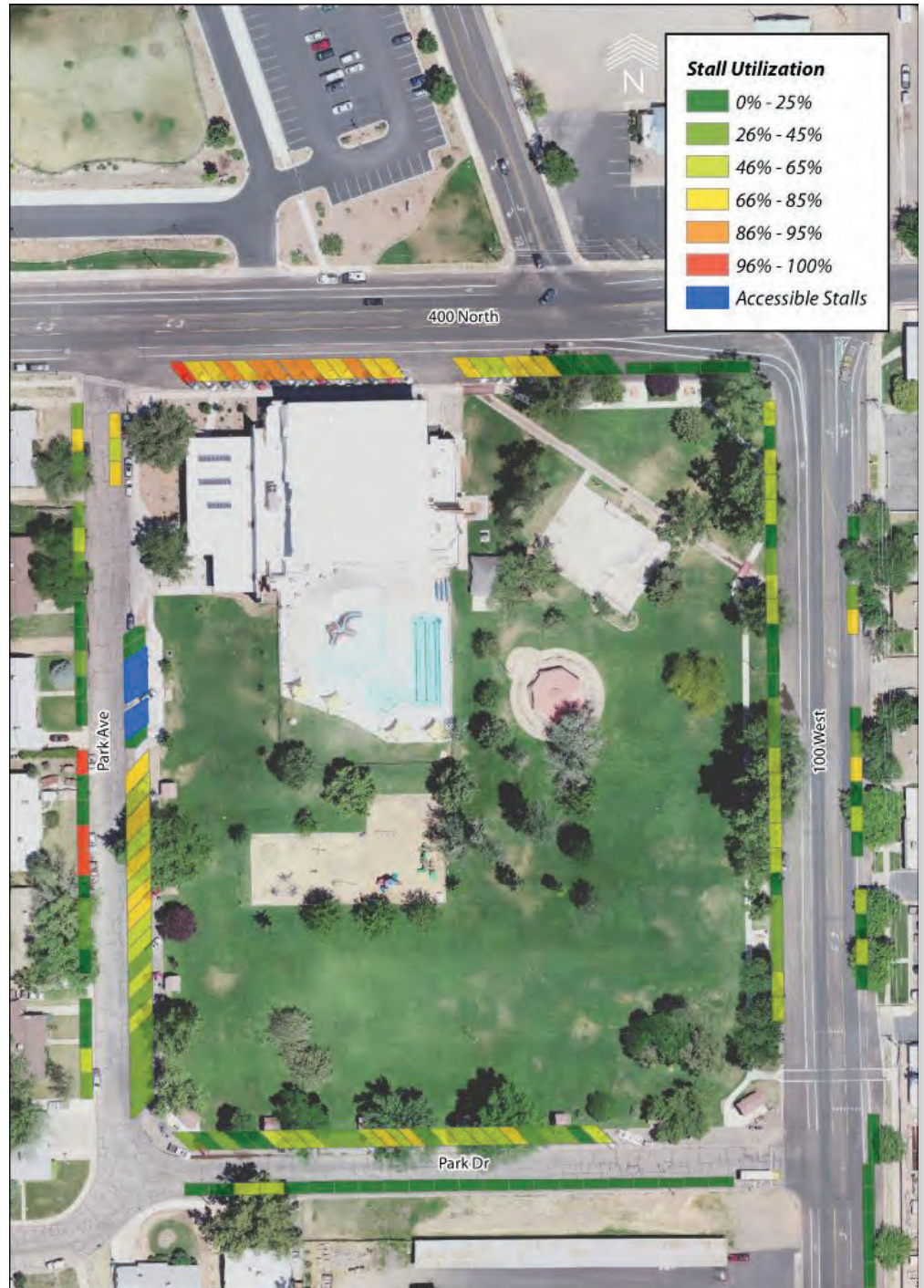


## STALL UTILIZATION

Parking utilization was also evaluated for each individual parking stall and is summarized below for the high utilization areas. Maps show stall utilization in terms of percent of observed time the that parking stalls are occupied. Red indicates parking stalls where a vehicle was parked during every observation hour while orange stalls had a parked vehicle during 18 or 19 hours of the 20-hour observation.

The map shows the individual stall utilization in the Swanny Park area over time.

This area has available parking most of the time. The area with the highest parking utilization is on 400 North in front of the Moab Recreation and Aquatic Center where seven parking spaces had over 85% utilization. The rest of the area around the park has mostly less than 65% utilization meaning that spaces are almost always available. This area has able parking. A couple of homes are Park Avenue seems to have cars parked in front during the hours of observation.



**SWANNY PARK**

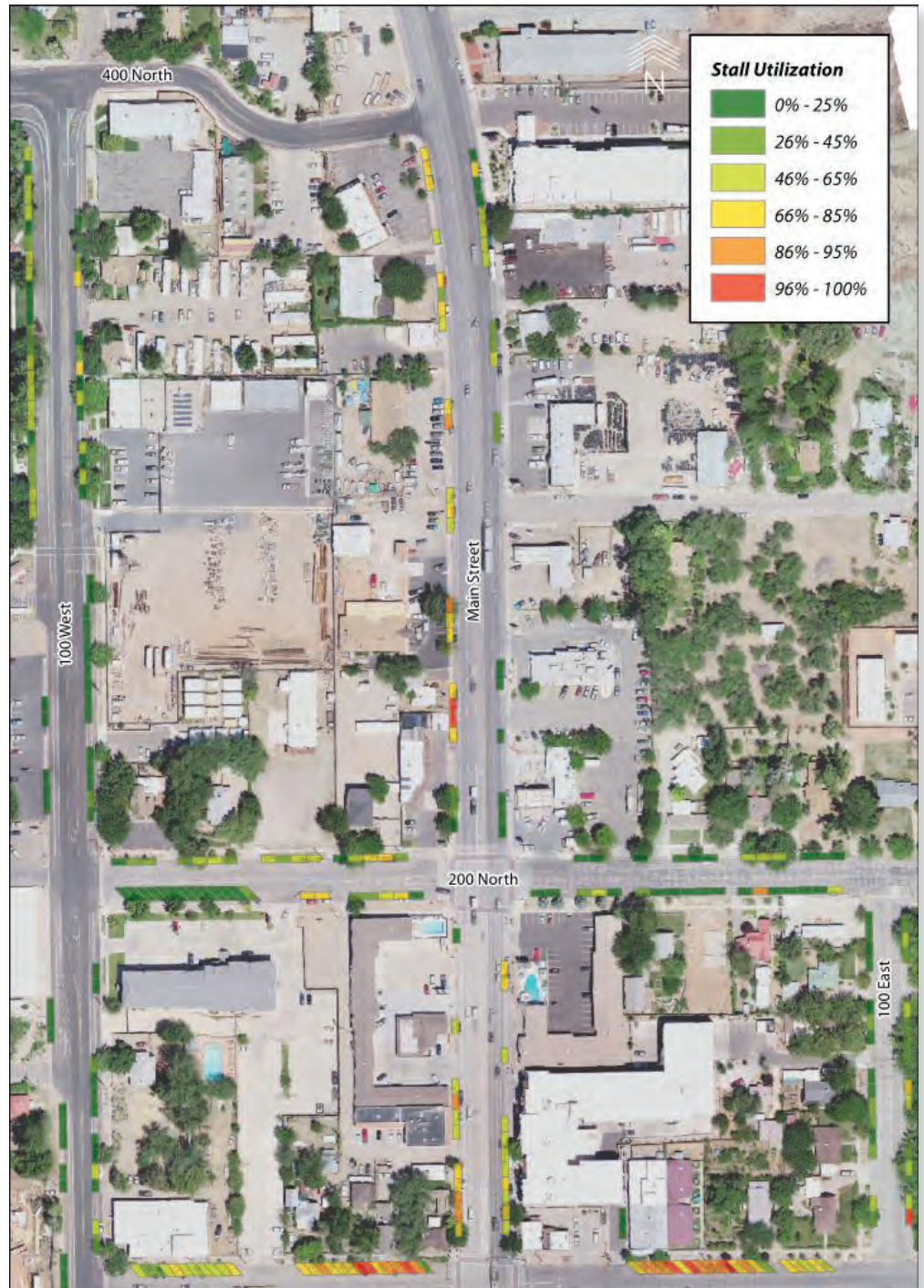


## MAIN STREET NORTH

The map shows the individual stall utilization in the North Main Street area over time.

This area has a mix of high utilization on the westside of Main Street and lower utilization area along 200 North and the eastside of Main Street. As shown previously, the westside of Main Street has much higher average utilization than the eastside of Main. This is especially true north of 200 North where the businesses on the East side like Wendy's and the 7-Eleven provide on site parking for their customers.

The parking stalls with the highest utilization are the parking stalls in front of the Moab Cliffs and Canyons next to Canyon Voyages. The parking stalls around these businesses averaged over 85% utilization, but around the corner on 200 North there are many parking stalls that average 0%-25% utilization. This means there are sufficient parking spaces available a short distance from all the businesses in this area.





## DOWNTOWN CORE

The map shows the individual stall utilization in the downtown core over time.

Over 70% of the stalls on Center Street were occupied for at least 18 hours or 85 % of the time. Of these stalls 19 had a vehicle parked during every hour and 28 had parked vehicles in 18 or 19 hours. Center Street has the most occupied parking.

Main Street and 100 North also had parking stalls with high utilization with a total of 29 stalls on Main Street and 18 stalls on 100 North having vehicles parked over 85 % of the time. These higher utilization stalls were generally located on the west side of Main Street and the north side 100 North. Overall, angle parking stalls were utilized more than parallel parking stalls with having a parked vehicle 77% of the time compared to 68% for parallel stalls.

While Center Street parking utilization was very high, there were able available parking stalls in the city lot a short walk away. This means that while many spaces are occupied most of the time, there are always a few spaces available in this area and there are likely enough spaces to meet the current parking demand.



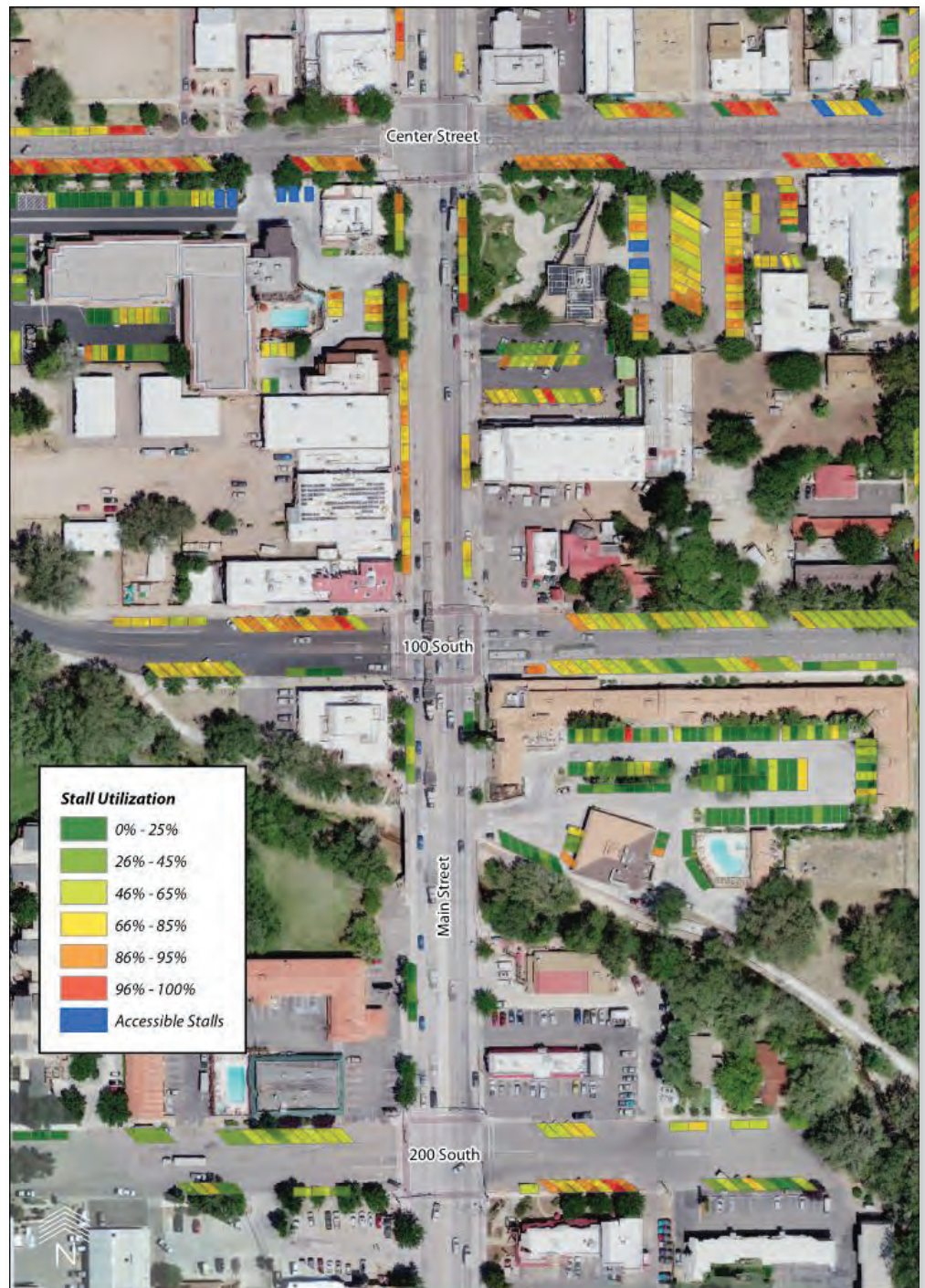


## MAIN STREET SOUTH

The map shows the individual stall utilization in the South Main Street area over time.

This area has a mix of high utilization throughout with a few spaces of low utilization peppered in. In this area we also documented several of the private parking lots and stalls specifically for the two hotels and the McStiff's plaza.

On-street parking in this area is highly used with dozens of spaces registering over 85% utilization. Even a few spaces on 100 South and 200 South show that level of occupancy, however only 3 spaces south of Center Street show over 95% occupancy. This means that while many spaces are occupied most of the time, there are always a few spaces available in this area and there are likely enough spaces to meet the current parking demand.



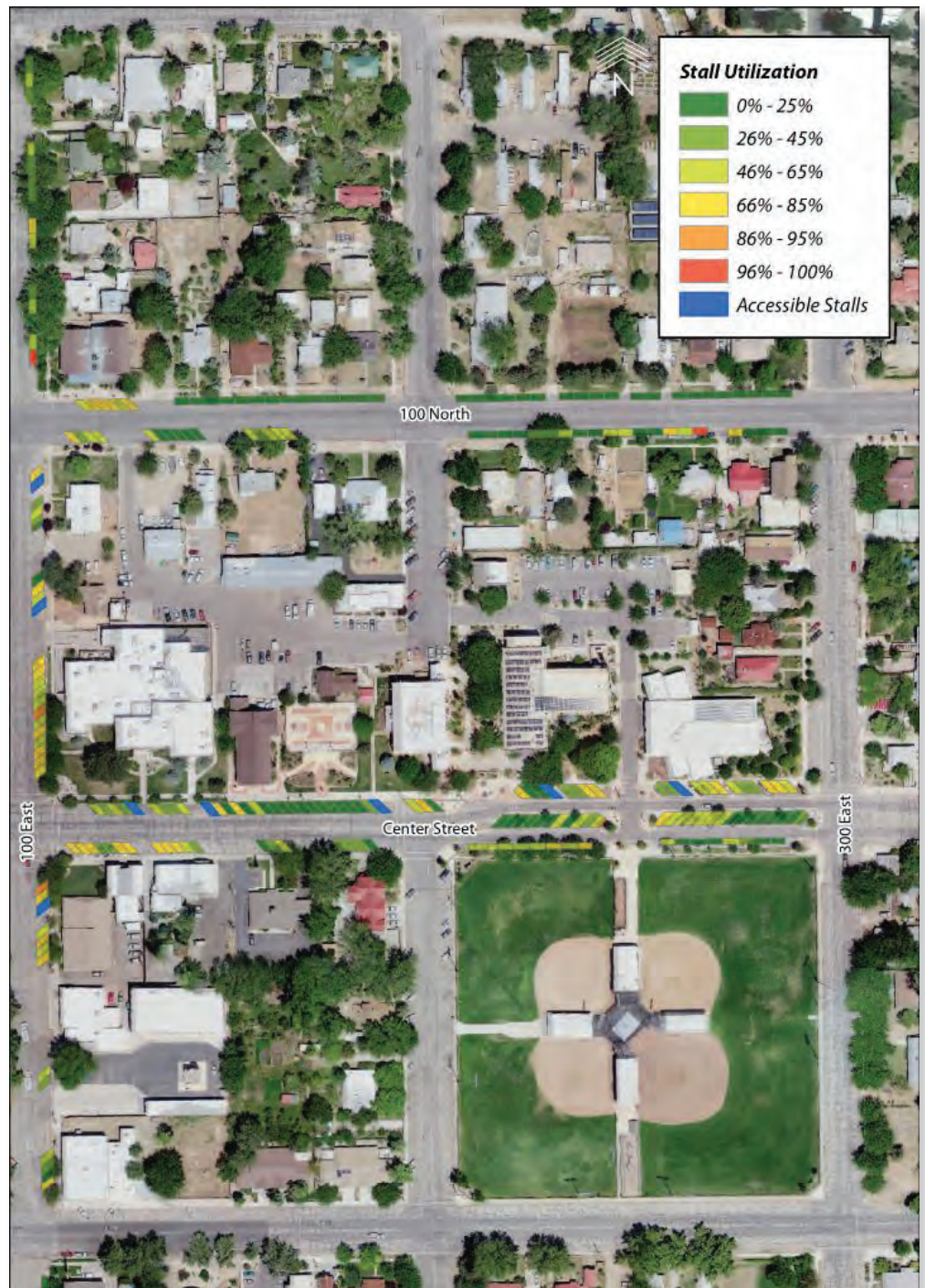


## CITY HALL

The map shows the individual stall utilization in the City Hall Area area over time.

The parking in front of City Hall as well as the Utah Highway Patrol Office have a medium level of utilization with most spaces averaging between 45% and 85% occupied. This is an ideal level for parking utilization. It also indicates a relatively high turnover. All of these stalls showed some utilization, but none were so busy that there were occupied all the time.

Many of the parking spaces on 100 North and several on Center Street saw little to no use with 0%-25% utilization around all the hours of the two days of observation. This means that there is always parking available in this area and the supply seems to be greater than the demand.





## 400 EAST

The map shows the individual stall utilization in the 400 East over time.

This area had the least occupied parking of anywhere in the study area. The parking on 400 East was seldom used during observations, with the exception of one vehicle on the westside that was parked there the entire time. 37 out of the 47 counted parking stalls were occupied 0-25% of the time. There was parking available on 400 East every hour of the day.

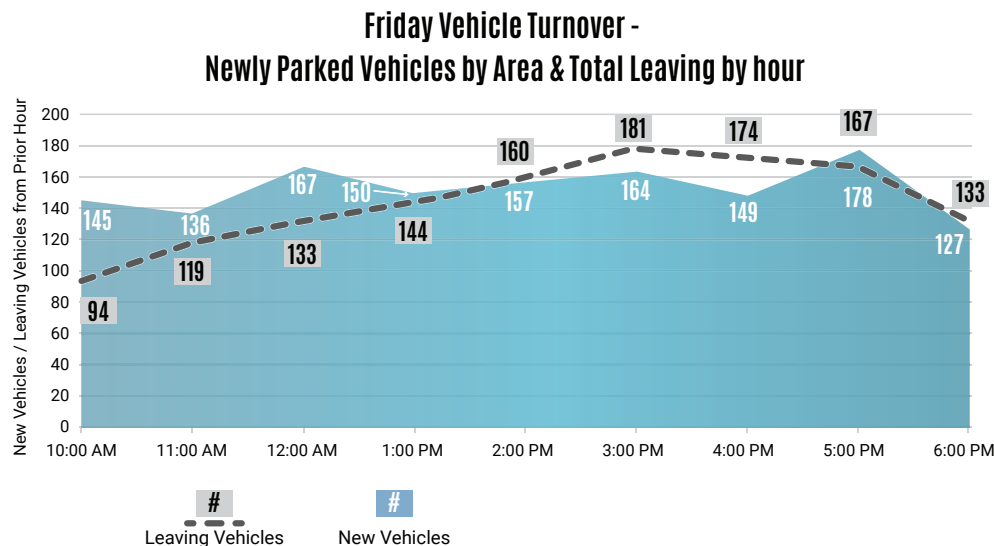
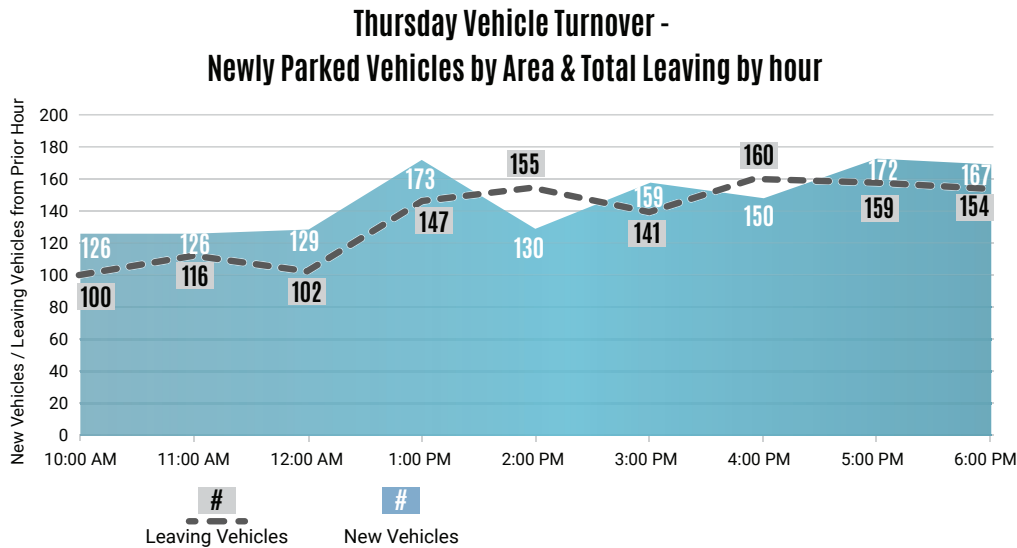




## 4. PARKING DURATION

### Duration Calculation & Method

As each space was marked occupied/unoccupied, individual vehicles were identified from the aerial images to determine if it was the same vehicle or a new vehicle in the subsequent hour. This data was used to estimate the number of new vehicles parking each hour as shown (black numbers) in the graph below for Thursday and Friday. The highest number of new vehicles arrived between 12:00-1:00 PM on Thursday (173 newly parked vehicles) and 4:00-5:00 PM on Friday (178 newly parked vehicles). Vehicle turnover shows similar patterns both days with peaks in newly parked vehicles around lunch and again at 5:00 PM. The number of vehicles leaving (dashed lines) increases through the day peaking at 4:00 PM on Thursday with 160 vehicles, and on Friday at 3:00 PM with 181 vehicles leaving during these hours.



## Parking Duration by Area

Based upon data from the vehicle turnover, the estimated overall parking duration in downtown Moab is 2.4 hours and city wide it is 2.6 hours. As seen in the table below, the downtown streets generally have lower parking durations than the city as a whole. The lowest average parking duration was 1.6 hours on Main Street south of Center Street.

| Average time a vehicle is parked in a typical parking spot in downtown Moab | Location                              |
|---|---------------------------------------|
| <b>2.6 hours</b>  | <b>City Average</b>                   |
| 1.6 hours   | Main St., South of Center - East Side |
| 1.6 hours   | Main St., South of Center - West Side |
| 2.9 hours   | Main St., North of Center - West Side |
| 2.1 hours   | Main St., North of Center - East Side |
| 2.2 hours   | Center St. - East of Main Street      |
| 2.7 hours   | Center St. - West of Main Street      |
| 2.5 hours   | 100 North - East of Main St.          |
| 1.8 hours   | 100 North - West of Main St.          |
| 2.7 hours   | 100 South - East of Main St.          |
| 1.6 hours   | 100 South - West of Main St.          |
| 2.6 hours   | MIC Parking Lot                       |
| 2.6 hours   | Public Lot                            |

One observation to note is that the highest utilized areas or areas of highest demand on Main Street north of Center and Center Street west of Main have average parking durations of 2.9 hours and 2.7 hours respectively. Because parking in these areas is limited and in high demand reducing the duration and increasing the vehicle turnover would allow for more vehicles to park there throughout the day. If the parking duration was shorted to under 2 hours the spaces would likely be able to be used by 6 or 7 vehicles per day instead of 4 or 5.

Therefore it is recommended to simply post 2 hour parking limit signs throughout the downtown parking area. This doesn't need to be enforced the signing alone will reduce the parking duration and many of the drivers parking their vehicles will be compliant with the signs.



## 5. PARKING DEMAND

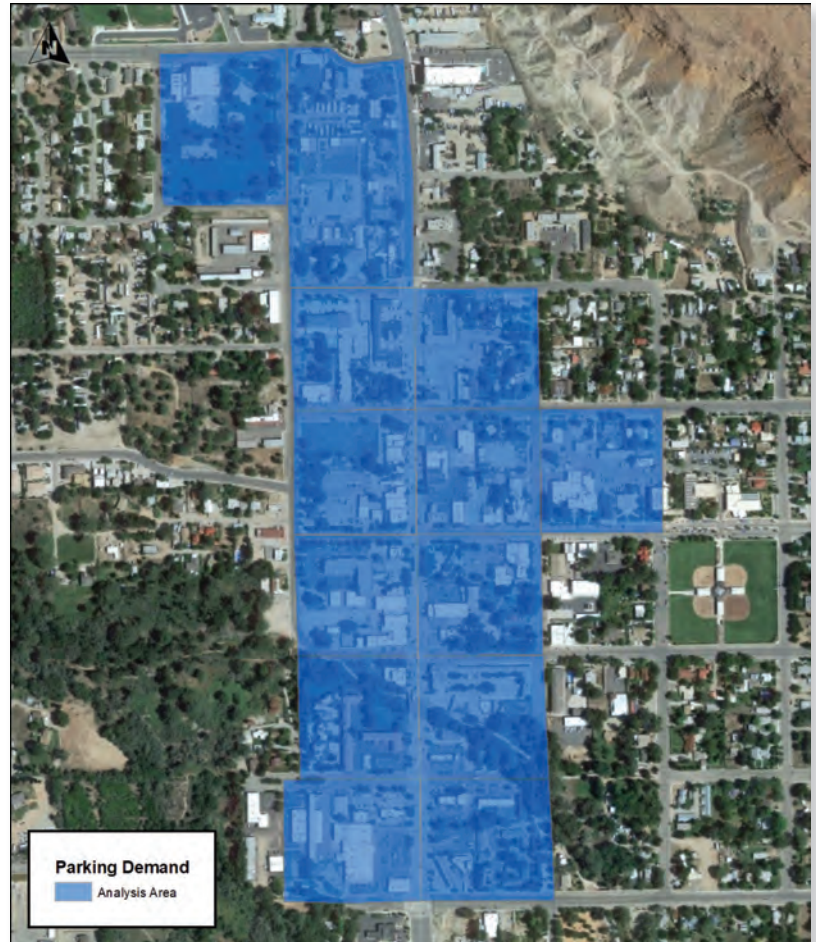
Parking demand is different than the observed parking utilization analysis the report has included to this point. Parking Demand is a calculated value of the amount of parking expected for different land uses. For example, a restaurant will expect to have different parking demand than a retail shop and the expected parking demand would occur at different times of day. Similarly a residential house, a post office, coffee shop, hotel, all have different expected parking demand.

### Analysis Area

The parking demand analysis area is within this project's study area (see map below). This includes Downtown Moab, 100 West to 100 East, 300 South to 400 North, Swanny Park, and County Court blocks.

### Methodology

The Institute of Transportation Engineers (ITE) Parking Generation Manual (4th Edition) is the industry standard to estimate parking demand. The ITE standards are based on national data and generally reflect isolated, suburban sites. As a result, ITE data should be used for informational purposes only but can establish a starting point to understand potential parking demand. A typical analysis takes the size of the development and multiplies it with a "standard" peak parking generation rate - for example, 10.6 spaces per 1,000 square feet of a sit-down restaurant or 0.89 spaces per occupied hotel room.



For this analysis, each parcel within the study area commercial, residential or institutional land uses were identified along with the square feet of structure or number of units. This information was used to estimate parking demand within the study area.

To compare the ITE calculated parking demand to parking supply, the number of parking spaces within private lots (For example, the Wendy's parking lot, USFS parking lot, private driveways, etc., that were not included in the utilization analysis) was also required.

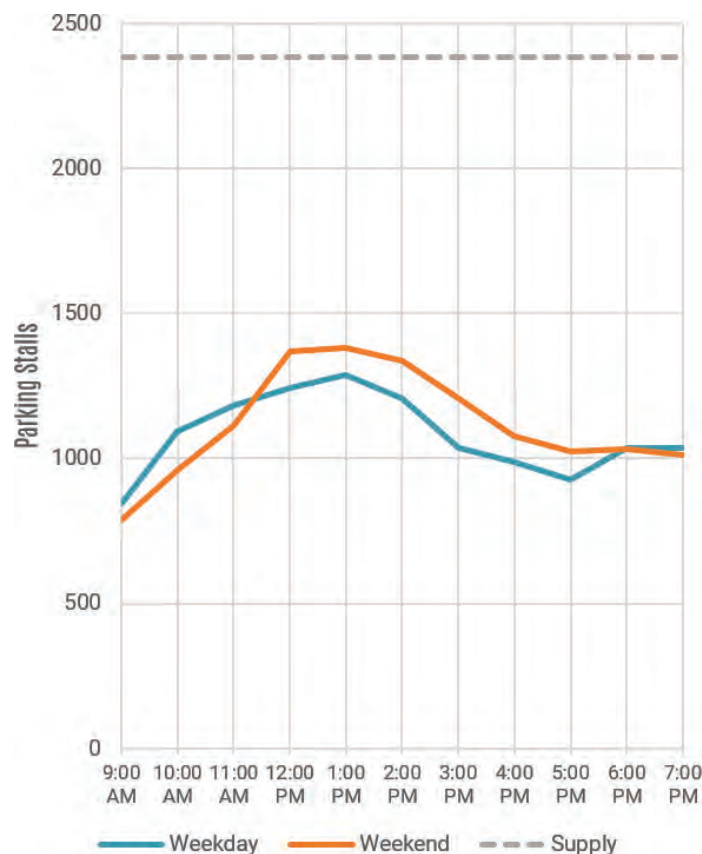
Since ITE parking demand generally represents demand at isolated suburban sites, an important concept is multi-stop trips. Multi-stop trips are where a vehicle is parked in one space and a person or group makes multiple trips to several land uses. In Moab, a multi-stop trip would consist of parking to go to dinner then walking to one or more stores along Main Street or parking at the hotel then going to a restaurant without moving your vehicle.

To account for multi-stop trips within the demand analysis, the parking utilization data for a two-block area from 100 West to Main Street and 100 South to 100 North were compared to the estimated ITE parking demand. These two blocks had the most robust data from the utilization analysis with most parking stalls included in the analysis while other blocks in the study area had many private parking lots that were not evaluated. Within these blocks, parking utilization was found to be only 48% of the ITE predicted demand on weekdays and 38% on weekends. This translates to people making 2.08 trips each time they park their vehicle on a weekday and 2.6 trips on weekends.

Instead of using these direct estimates to adjust the ITE predicted demand to match conditions for downtown Moab, a more conservative estimate of 1.67 multi-stop trips was assumed. The 1.67 multi-stop trips adjustment translates 60% of the predicted ITE demand for isolated suburban sites and is higher than both the weekday and weekend estimate for the two-block area. By using this more conservative adjustment, predicted demand is higher and helps identify areas where near-term parking demand may exceed supply.

## Parking Demand Over Time

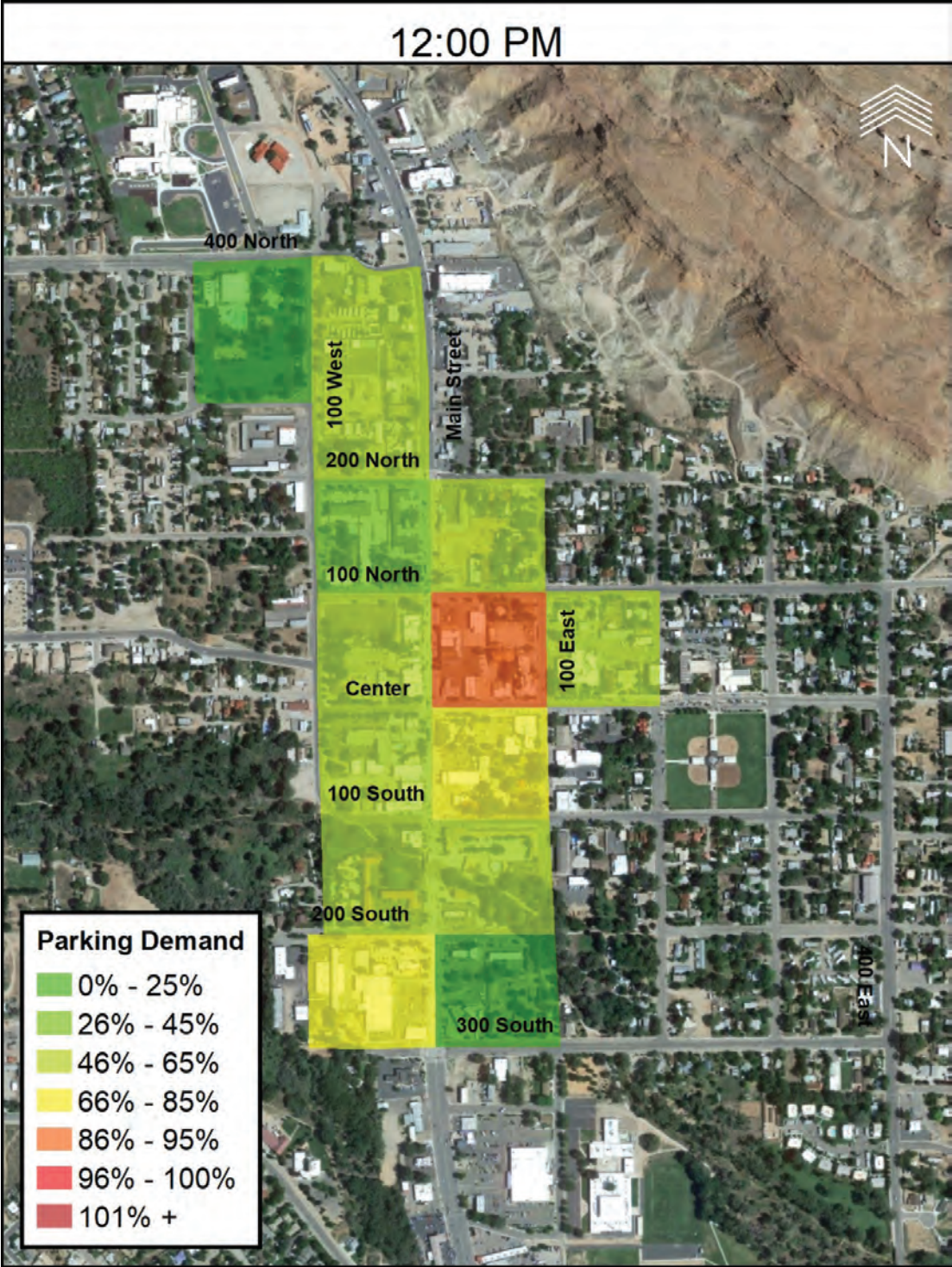
Predicted peak demand is at 1:00 pm on both weekdays and weekends, with 1,289 spaces on the weekdays, and 1,382 spaces on the weekends as illustrated below. While localized demand is over 85% for both weekdays and weekends as discussed in Area-Specific Utilization, there are more than 1,000 empty parking spaces among all public and private lots within study area during peak demand.





Parking Demand - Weekday

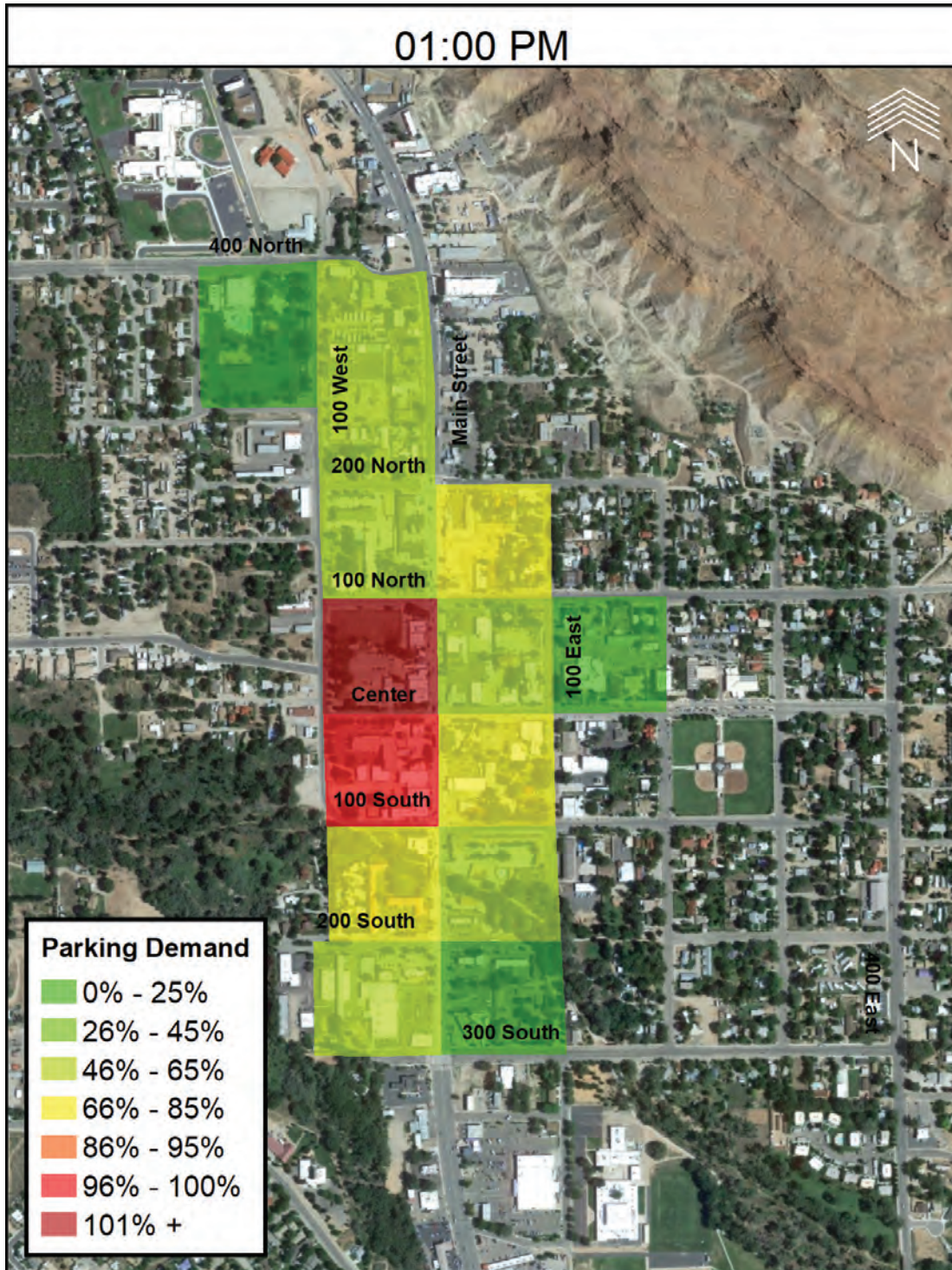
On weekdays parking demand was generally less than 85% occupied. However, between 10:00 am and 1:00 pm the block of Center Street to 100 North and Main Street to 100 East had greater than 85% occupancy during that same time because of the proximity of the U.S. Post Office (50 East 100 North) that has very high parking rate.





## Parking Demand - Weekend

On the weekend between noon and 5:00 pm, parking demand on the blocks west of Main Street from 100 South to 100 North (shown in red) was generally greater than 85% occupied. This high parking demand was driven by restaurants and retail uses.

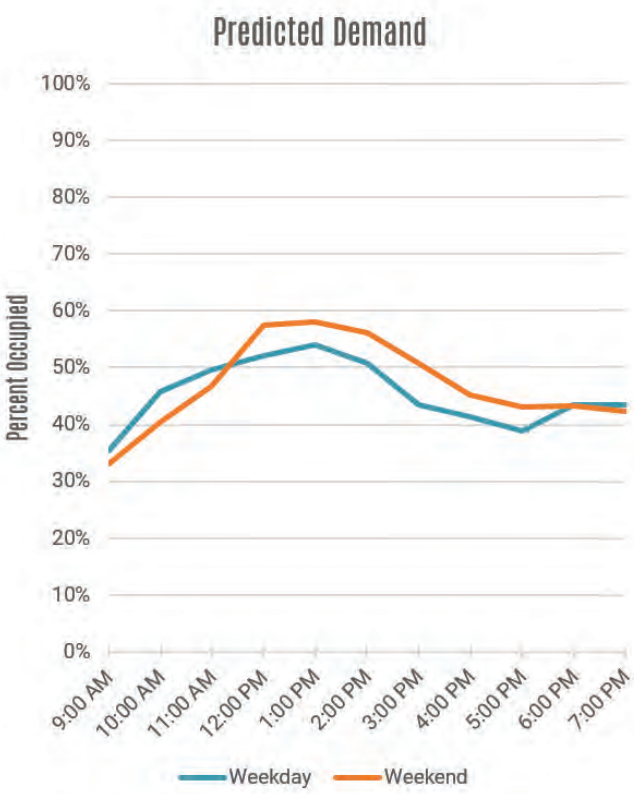
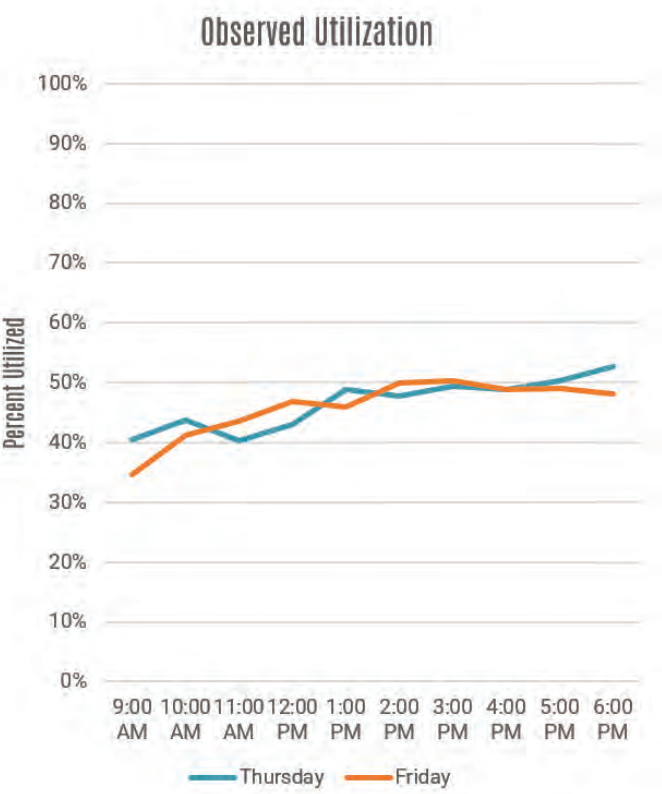




### Observed Utilization vs. Predicted Demand

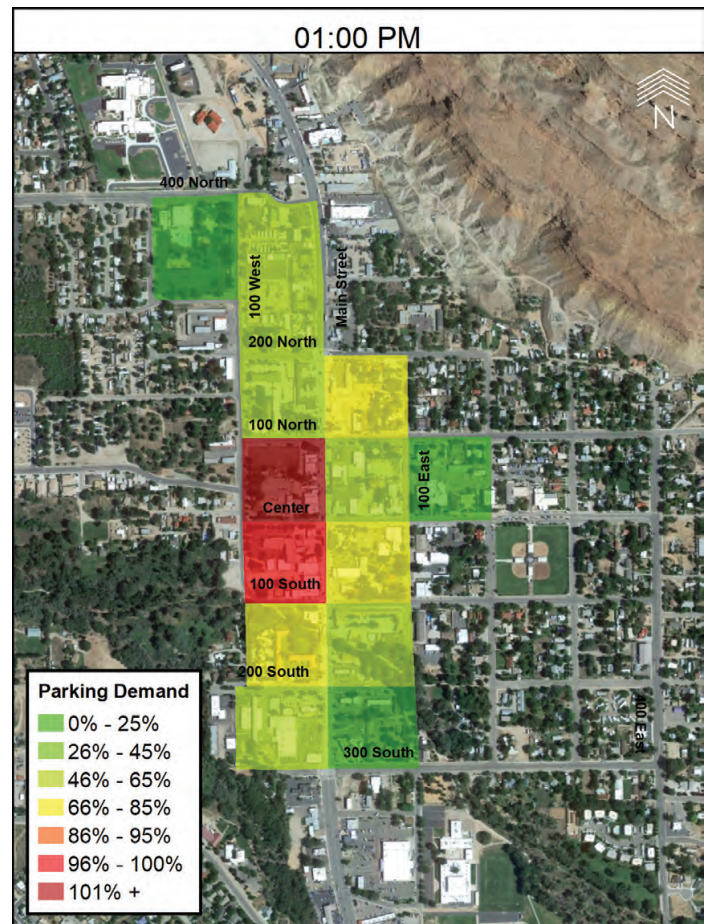
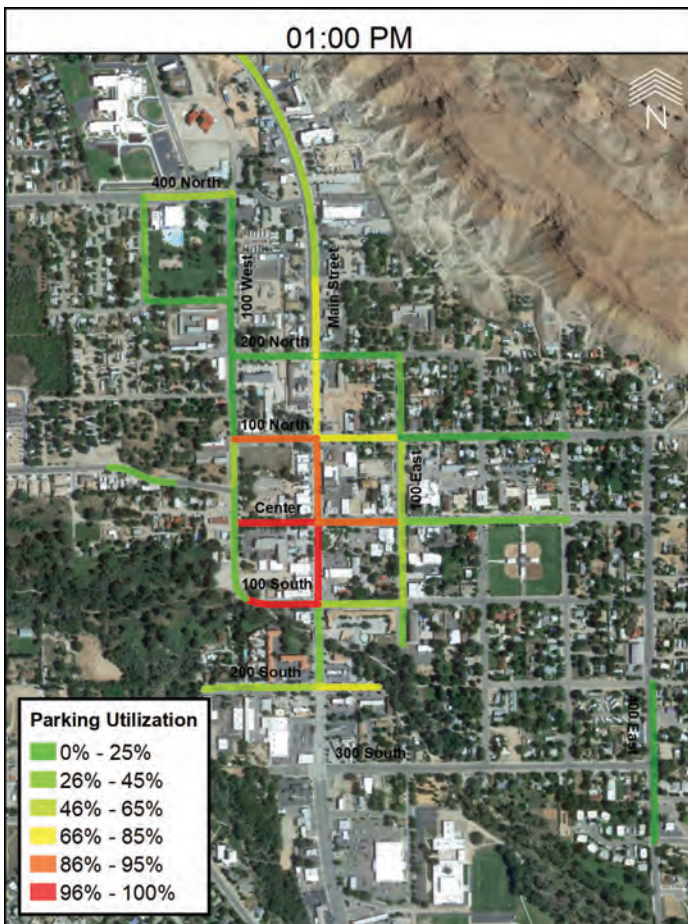
The daily utilization and predicted demand for the study area are summarized below. Generally, utilization and demand are similar with 40% to 50% of parking utilized and predicted to be occupied throughout the day. However, predicted demand does have a mid-day peak that was not observed in the parking utilization possibly due to the higher multi-stop trip percentage identified within the two-block area.

Regardless these two analyses validate each other. We can feel confident in the observed parking utilization because people’s parking behavior was very similar to what the predicted demand would expect.



## Observed Utilization vs. Predicted Demand - By Location

As shown below, utilization and predicted demand have similar spatial distributions. During the weekend peak hour there is high utilization and limited available parking from 100 South to 100 North and 100 West to Main Street. This matches the predicted demand that shows these areas with 95% plus of parking spaces occupied. In addition to these areas Center Street as well as adjacent blocks Main Street and 100 North are above or approaching 85% occupancy indicating limited parking in these locations.





## 6. PARKING RECOMMENDATIONS

### Conclusions

Before listing specific recommendations, below are some general observations and parking conclusions:

- There is ample parking available in the study area for the needs of all land uses and the desires of all drivers to park vehicles
- The goal for parking areas should be achieve 85% utilization, most areas never reach that number (green and yellow areas on the maps) indicating an excess supply
- Some Main Street Shoulder parking is lost due to vehicles with trailers and inefficient spacing
- Restaurants generate the highest public parking demand on Moab
- Peak demand hours are 1 PM and 6 PM
- There are few localized areas (like Center Street between Main and 100 West) where parking demand exceeds parking supply
- People seem unwilling to walk greater than 300 feet from their vehicle to their destination as witnessed by the available parking in the highest demand hours
- In many cases vehicles park on average for over 2 hours at a time
- People may be unaware of available parking in the city owned lot and other areas

Moab is in a good position with more total parking available than is needed to meet the demand. However, during the highest demand hours of the day parking immediately adjacent to some destinations will not be available.






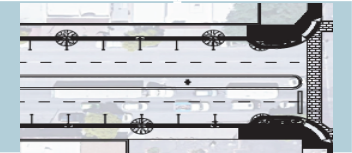



That means that anecdotally, if you are going out to dinner at Pasta Jay's or The Spoke, then you won't be able to find parking by the restaurant. This may be frustrating, and you may think, "There is not enough parking in Moab." However, at that same time you will be able to find plenty of parking on 100 West and you can simply walk the block or block and a half to the restaurant.



*Pasta Jay's Restaurant (4 N. Main Street)*

## Recommendations

While there is sufficient parking available in the study area there are still several things that Moab can do to enhance parking and increase efficiency of parking utilization. These recommendations are applicable citywide however Moab would likely see the biggest benefit by applying them in the downtown area.

| Project   | Why   | Benefit  | Cost   |
|---|---|--|--|
|  Continue with FREE parking  | The demand does not seem high enough to begin to charge and there is no appetite for paid parking from businesses or residents  | Keep the same number of stalls, businesses and drivers agree             | None. No cost needed for meter monitoring & collection of parking fees |
|  Public parking sign with a 2-hour time limit  | Increase the vehicle turn-over in public parking spaces   | More drivers will be able to park downtown in the most desired places    | \$100-300 per installed sign   |
|  Additional Parking  | Increase the parking utilization of some of the lesser used spaces  | Drivers will likely be able to find parking quicker during peak times    | \$100-300 per installed sign   |
|  Add red curb paint to restrict parking within 30 feet of an intersection                       | Utah State Code restricts parking within 30 feet of point to curb (Utah Code 41-6a-1401).   | Improves sight distances for drivers and pedestrians at intersections.   | \$20-\$40 per painted curb   |
|  Back-in angle parking on roads with planned bike lanes  | Safer bicycle and pedestrian access on roads like 100 North and 100 South   | Reduced bicycle crashes and increased pedestrian safety                  | \$10-\$20 per line   |
|  Delineate specific parking stalls for the parallel parking Downtown especially on Main Street | This will decrease the amount of parking lost to bad parking gaps and increase efficiency   | More drivers will be able to park on Main Street                         | \$7-\$15 per line  |
|  Continue forward with the plan to add a parking garage on the current city lot                | That is the best location for additional parking as the most occupied parking in on Center Street west of Main Street, plus the State of Utah is providing funds for its construction | Adds 200+ new parking stalls in the highest demand area of Downtown Moab | \$7.5 million but funded through the State of Utah's Hotspot funding   |
|  Continue forward with the plan to add over-sized parking lots north and south of Moab         | Drivers will be able to drop off trailers or consolidate vehicles   | Fewer large trailers taking up parking spaces                            | Unknown  |
|  Add wayfinding signs to encourage walking to destinations 1-2 blocks away.                    | Increase the parking utilization of some of the lesser used spaces  | Parking would improve system wide if there was a bit more distribution   | \$100-300 per installed sign   |

Several of these recommendations are already underway with the city pursuing State funding for the new parking garage. The other recommendations are all low cost, just the expense of signing or striping.



