CITY OF BEND

2017

City of Bend, Oregon
Galveston Corridor Parking Study

Project Summary and Strategy Considerations

FINAL REPORT
December 8, 2017 (v5)

RICK WILLIAMS CONSULTING
Parking & Transportation

ACKNOWLEDGMENTS

Galveston Sounding Board

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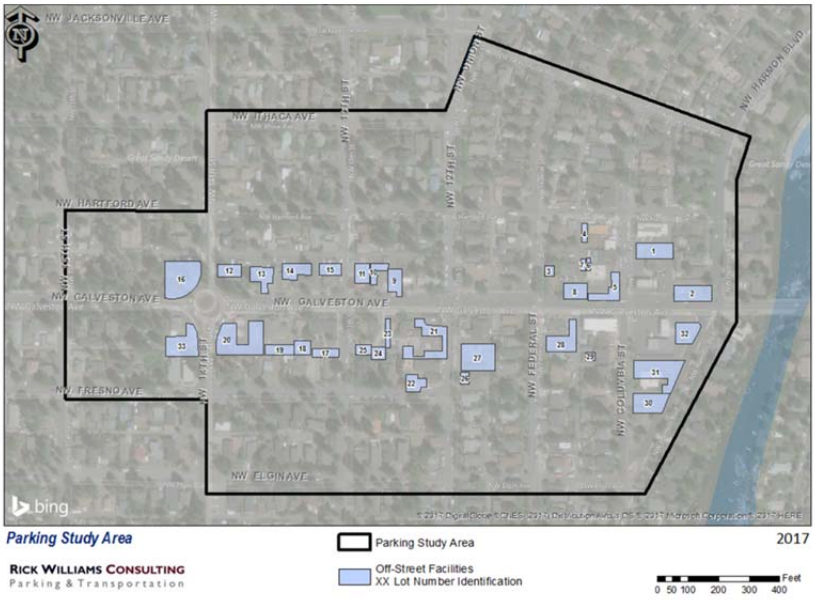
I. EXECUTIVE SUMMARY

Rick Williams Consulting (RWC) was retained by the City of Bend to evaluate parking conditions in the Galveston Corridor and to develop strategies for consideration by the City and stakeholders. In addition to RWC, the consultant team included Kittelson & Associates (KAI), and Anne E. George Facilitation, Mediation + Public Involvement (AG).

Their evaluation entailed a review of current parking operations, public engagement and outreach, and the collection of comprehensive data. The process was informed by discussions with the Galveston Corridor Sounding Board, one-on-one interviews with key stakeholders, and community input from two open houses.



The proposed strategies are summarized below. More detailed descriptions of the process, data findings, and the strategies themselves begin on **page 2**, and additional information is provided at the end of the report.

These strategies, developed in concert with project staff, the Sounding Board, and the community; effectively respond to the unique environment of the Galveston Corridor and to the goals and objectives of the City of Bend and affected stakeholders.

A. Findings – System Performance

Comprehensive data was collected, analyzed, and reported to the Sounding Board and the community through public engagement. Highlights include:

- **Solutions:** The total supply of parking is relatively small and diverse, serving residential, commercial, and visitor demand. Data suggests parking is available both on-street and off-street but that it is constrained in a subarea of the district. Better management of the on-street supply with appropriate striping and signage, among other tools, is appropriate for this area. .
- **Use:** Summer is the peak season, with the number of vehicle trips to the corridor and use of parking about 11% higher than in fall.

- **Parking Behavior:** There is no significant change in either long- or short-term parking behavior between the two surveyed seasons. This includes average duration of stay, turnover rate, and ratio of residents to non-residents.

- **Constrained Parking:** The Galveston study area comprises 23 blocks and includes 66 block faces that allow on-street parking. A 12-block area (38 block faces), bounded by NW Hartford and NW Fresno between NW 13th and NW Harmon, demonstrates constraint during the peak hour. At that time, up to 55% of block faces in this area exceed 85% occupancy, and in some cases are 100% occupied.

- **Congestion:** Factors that contribute to congestion, including poor sight lines caused by illegal parking, are present throughout the study area.

- **Off-Street Parking Availability:** By industry standards, use of the off-street system is moderate, with peak occupancy rates of less than 55%. However, all off-street parking is privately owned and its use restricted to employees and customers of specific businesses. Though there appears to be a significant amount of *empty* stalls[1], this is not to infer that such stalls are *available* for use by visitors or employees not associated those businesses.

- **Shared Use:** There are opportunities for shared use of off-street parking, although the small size and broad distribution of parking facilities along the corridor would make this challenging and current code language may need to be modified.

B. Strategy Considerations

The strategies summarized below grew from discussions among the City, the consultant team, and the public. They provide an outline for potential actions to address parking issues that could be completed by the City, residents, and/or businesses.

1. The City can prioritize the clear marking (with paint and/or signs) of clear-vision areas at intersections, prioritizing locations within the high-occupancy area identified in the 2017 parking study.
2. The residents and businesses could establish a Parking Work Group as a forum for addressing parking issues in the Galveston Corridor, with a first task of establishing guiding principles or agreements.
3. The City can clarify existing code guidelines related to shared parking to make it clearer that businesses with excess off-street parking could share with other uses.

[1] As little on-street parking in the Galveston Corridor is striped; stalls were established by estimating the lineal footage of block faces and assigning 23 feet per "stall" to create the initial inventory (curb cuts, fire hydrants, sight lines, etc., were accounted for). Additional modifications were made to the inventory during the data collection phase; when surveyors were able to validate estimated stalls to actual parking activity.

4. Businesses could explore the feasibility of off-street shared-use parking opportunities based on data from the 2017 parking study.
5. The City can increase enforcement in the district.
6. Residents could request that the US Postal Service consolidate individual residential mailboxes into cluster mailboxes as a means to improve congestion and assure greater access to on-street parking.
7. The City could implement the Galveston Avenue Design to add approximately 14 – 18 on-street spaces.
8. Businesses could add bicycle parking at strategic locations, potentially participating in a Bikeshare program such as Zagster, to encourage non-auto access, augment parking capacity, support employee bike commuting, and create connections between the Galveston Corridor and other Bend districts.
9. The City can develop a reasonable schedule of data collection to assess performance of the Galveston Corridor parking supply.
10. If the parking situation has not improved following implementation of Strategies 1 – 8 (supported by data from Strategy 9), the residents and business owners could consider formation of a Residential Parking Permit Zone and/or Commercial Parking District.

C. Summary

The Galveston Corridor is an active and vital neighborhood commercial district experiencing increasing pressure on its parking supply. The intersection of commercial and residential parking demands will increasingly require more strategic coordination. The strategies above represent a toolbox of methods with which to manage the parking-related challenges and barriers that come with a successful neighborhood commercial district. They are provided here for consideration by the City, residents, and businesses.

II. INTRODUCTION

Located in Bend's central west side, the Galveston Avenue Corridor includes a mix of businesses and homes, and is a vital east-west artery for drivers, bicyclists, and pedestrians. The area has become increasingly active, with residents and visitors frequenting its restaurants, bars, and shops. While most businesses provide off-street parking, visitors, employees, and business owners often use adjacent residential streets for parking during business hours.

No analysis of the parking system has previously been undertaken, and parking issues have not been well understood. The Galveston Avenue Corridor Parking Study was conducted between April and November 2017. The project team included City staff, parking and transportation professionals, and community outreach specialists. The study involved an analysis of current parking conditions in the area, collection of off- and on-street parking data, and community input.

That input shaped the study process, with neighborhood residents and groups, business and property owners, developers, architects, accessibility experts, planners, transit representatives, and the community at large engaged throughout. The process included stakeholder interviews, community sounding board meetings, two open houses, a project website, and social and traditional media outreach. The input received was instrumental in the planning and implementation of the project.

This final report details the study process, the data findings and analyses, and a set of potential parking strategies for consideration.

III. FORMAT OF INFORMATION – A TOOL BOX FOR SOLUTIONS

This project provides the City and Galveston Corridor residents and businesses an objective look at the parking situation in the Galveston Corridor. This is the first time that accurate data on how the parking system actually performs has been compiled for this area.

Information from the study is intended to provide a foundation for continuing discussion and evaluation of solutions for improving the quality and ease of access in the Galveston area. The existing conditions data will facilitate strategic decision-making.

This report summarizes:

- Public Involvement (Section IV)
- Summary of Galveston Avenue Corridor Study Area Parking Inventory (Section V)
- Measuring Performance (Section VI)
- Key Findings Related to Parking Utilization (Section VII)
- Strategies for Consideration (Section VIII)
- Summary Comments (Section IX)
- Summary Table – Strategy Considerations (Section X)

The strategies for consideration outlined in this document are intended to provide some concepts for consideration by the City, residents, and businesses in the Corridor.

IV. WHAT WE HEARD – PUBLIC INVOLVEMENT

The project team sought involvement from area stakeholders and interested parties throughout the study, both to inform the community about the project and solicit input. Early in the process, the following goals were identified for public involvement:

- Inform the community about current parking conditions in the Galveston Avenue Corridor and foster the exchange of ideas;
- Document stakeholder interests and concerns; and
- Share potential solutions to parking issues with stakeholders and the community, and solicit feedback.

A. Public Involvement

A series of efforts were undertaken to engage the community in the study and community input was instrumental in its refinement and improvement. The project team created a community project website to provide information about the study and share opportunities for community members to become involved. Stakeholder interviews were conducted early in the study with representative stakeholders to help frame the study and refine the study area. In addition, a community sounding board was formed to solicit input and experiences from representative stakeholder groups throughout the process. In addition, two community open houses were held during the study, in the summer and fall, to both provide information and data from the study and seek important community input.

Information about the study and public involvement events were shared widely throughout the study through traditional media, social media, email listservs, the City's website, and via informational fliers. The study benefited from broad traditional and social media coverage of its events and community input was robust. The project team utilized community input heavily in developing the study and completing the results.

B. Additional Information

Additional information on the public involvement efforts of the study can be found in **ATTACHMENT B.** Study data and public involvement summary reports, can be found on the project website at https://www.bendoregon.gov/government/departments/growth-management/parking-study/galveston-avenue-corridor-parking-study.

V. PARKING INVENTORY SUMMARY

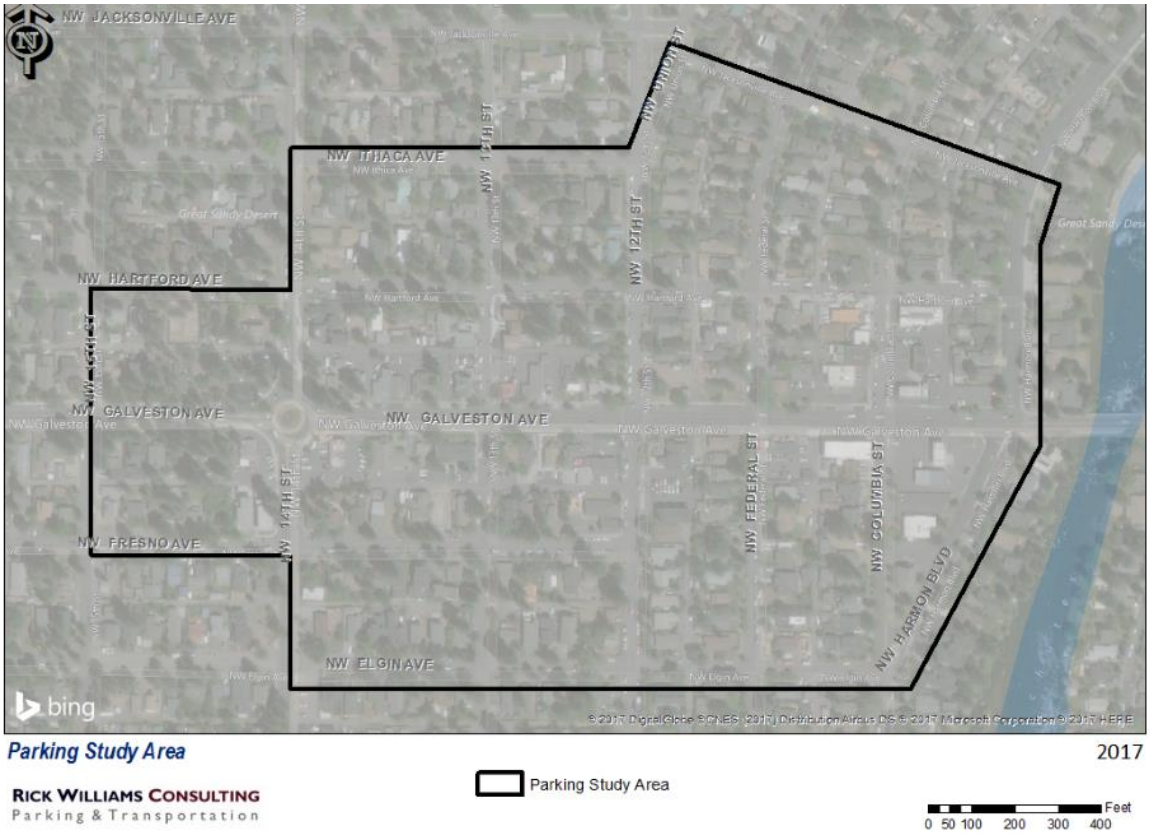
The consultant team inventoried the entire supply of on- and off-street parking in the Galveston Corridor. Results are summarized below.[2]

A. Study Area

The study area was determined by the City of Bend and the consultant team during the initial project scoping process. Refinements to the study area were made after input received at the first Sounding Board meeting and first open house.

The area is generally bounded by NW Ithaca and Jacksonville Avenues on the north, with a southern boundary that includes portions of NW Fresno and Elgin Avenues. NW Harmon Boulevard is on the east, with the western boundary consisting of NW 15th Street between Hartford and Fresno. **Figure A** illustrates the study area. There are 912 parking stalls in the study area, of which 605 are on-street and 307 off-street.

Figure A: Parking Area Study Boundary



2 **ATTACHMENT A** at the end of this report provides a detailed Parking Inventory and Utilization Summary for both the summer and fall 2017 data collection efforts. This section provides a shortened version of those reports.

The study area includes the commercial corridor that is NW Galveston Avenue, but also large areas of residential neighborhoods. This combined study area was established so that both business and residential parking activity could be captured. Stakeholders (at Sounding Board and Public Open House) felt this study boundary is a reasonable "capture" area to determine how residential and non-residential users are impacting the corridor.

B. Inventory of Measured Supply

Table 1 summarizes on-street stalls by type for the data samples used in the 2017 parking study. The consultant sampled 100% of all on- and off-street parking in the study area.

Nearly all on-street parking (99.8%) is unregulated, allowing unlimited stays (No Limit).

- There is one marked ADA stall on-street. It is located on the west side of NW Federal Street between NW Jacksonville and NW Hartford Avenues.
- Residential driveways provide an estimated off-street capacity for up to 477 vehicles. Vehicles parked in driveways were counted during the study and accounted for separately in the utilization analysis (see **Section VII** below).
- Blocking of residential mailboxes by parked cars was identified as a community concern in both the Sounding Board and open house meetings. The consulted team identified 100 parking spaces in the public right of way that were immediately adjacent to mailboxes and categorized these separately when collecting data.

Table 1: Galveston Corridor: On-Street Parking Inventory (main data set and other uses tracked)

Type of Stall	Stalls	% of Total	Other Use Types	Stalls
ADA accessible	1	0.2%	Driveway Capacity[3]	477
No Limit	604	99.8%	Mailboxes[4]	100
On-Street Supply	*605*	*100%*		

There are 307 off-street stalls distributed among 33 parking facilities. **Figure B** indicates their locations in the study area. The numbers identifying each site are correlated to **Table 6** below, with detailed data findings in the table associated with a specific location on the map. All 312 stalls were surveyed hourly on each of the survey days. **Table 2** summarizes the total and sampled off-street inventories.

[3] Estimated as part of the inventory process where curb cuts provided access to a driveway for vehicle storage. During the inventory, 166 curb cuts were documented. It is illegal for any user, including a homeowner, to park in front of a driveway.

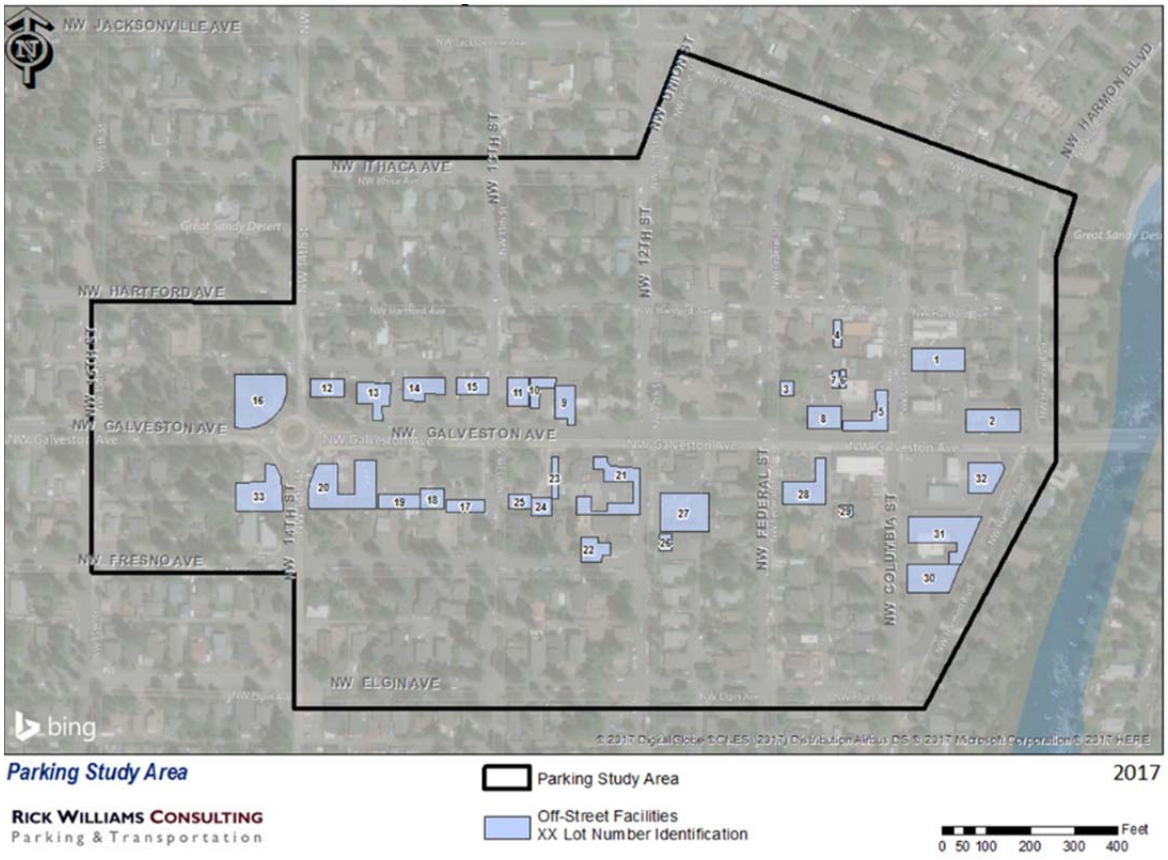
[4] Estimate determined by common parking stall length with the mailbox centered in that measurement.

Table 2: Galveston Corridor: Off-street Parking Inventory

Stall Type	All Stalls	% of Total	Sampled Stalls	% of Total
Off-Street	307 (33 sites)	100%	307 (33 sites)	100%

As shown in **Figure B,** off-street parking is concentrated along NW Galveston Avenue. All off-street parking is privately owned and its use restricted to specific buildings or businesses. The high percentage of private parking is not unusual for a neighborhood business corridor like Galveston, but does mean that shared-use agreements can be more complex, involving negotiations and partnerships with individual owners of private lots.

Figure B: Galveston Corridor: Off-street Parking Supply



Parking Study Area

RICK WILLIAMS CONSULTING
Parking & Transportation

Parking Study Area

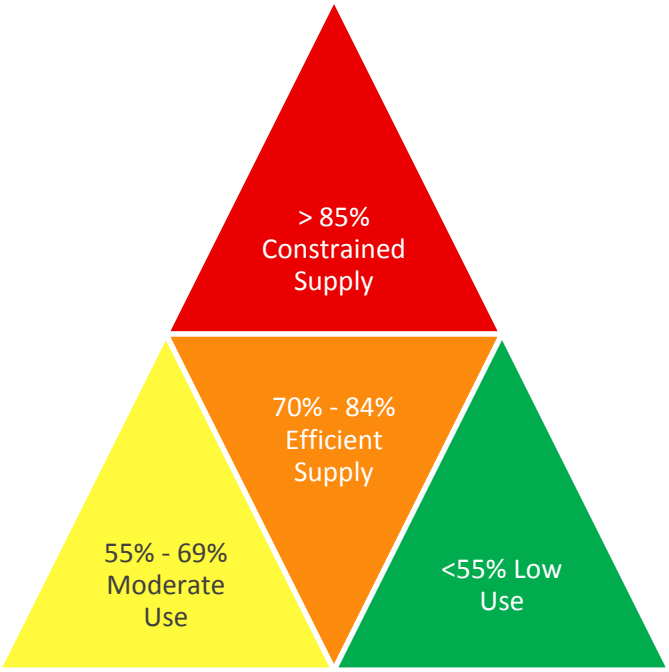
Off-Street Facilities
XX Lot Number Identification

2017

Feet
0 50 100 200 300 400

VI. MEASURING PERFORMANCE

Industry standards consider parking to be constrained when 85% or more of the available supply is routinely occupied during the peak hour. In a constrained system, finding an available spot is difficult, especially for infrequent users such as customers and visitors. This can cause frustration and negatively affect perceptions about an area or neighborhood. Continued constraint can make it difficult to absorb and attract new growth, or to manage fluctuations in demand—for example, seasonal or event-based spikes.



Industry standards further indicate that occupancy rates of less than 55% show that parking is readily available. While availability may be high, this can also indicate a volume of traffic inadequate to support active and vital businesses. Occupancy rates between these two thresholds indicate either moderate (55% to 69%) or efficient (70% to 84%) use.

Parking utilization rates in the efficient range indicate that there is active use with little constraint. Efficient use supports vital ground-level businesses and business growth, is attractive to potential new users, balances with adjacent residential demand, and is able to respond to routine fluctuations.

These categories were used to evaluate the performance of the Galveston Corridor parking system.

VII. KEY FINDINGS – PARKING UTILIZATION

Data on utilization and occupancy of the parking system was collected over three days, two in summer and one in fall.[5] Data collection days were selected in consultation with the City and with input received through the Sounding Board and open houses. Dates were chosen to represent typical days of robust activity. Survey days were:

Summer 2017

- Thursday, August 10
- Saturday, August 12

Fall 2017

- Tuesday, September 26

A. ON-STREET: Data Collection Methodology

Surveyors recorded the license plate numbers of all vehicles parked in the study area during each hour of the 10-hour period between 11:00 a.m. and 9:00 p.m. This was done for each of the three survey days.

Additionally, two "late night" surveys were conducted before and after the August 10 survey. These took place between 2:00 and 3:00 a.m. Vehicles counted during these hours were assumed to belong to residents. Their plate numbers could then be compared to those recorded during the 11:00 a.m. to 9:00 p.m. counts to determine which vehicles belonged to non-residents.

Surveyors also noted license plate numbers of vehicles parked in the 100 "mailbox" spaces in order to conduct a distinct analysis of how these stalls are utilized.[6]

Finally, surveyors counted vehicles parked in residential driveways during every survey hour. An estimated 477 stalls are located on residential properties (including tandem parking configurations).

B. OFF-STREET: Data Collection Methodology

Off-street facilities were surveyed on the same days over the same 10-hour period. Only occupancy data was collected.[7] As described above, a total of 307 stalls were surveyed across 33 lots, representing 100% of all off-street parking in the study area.

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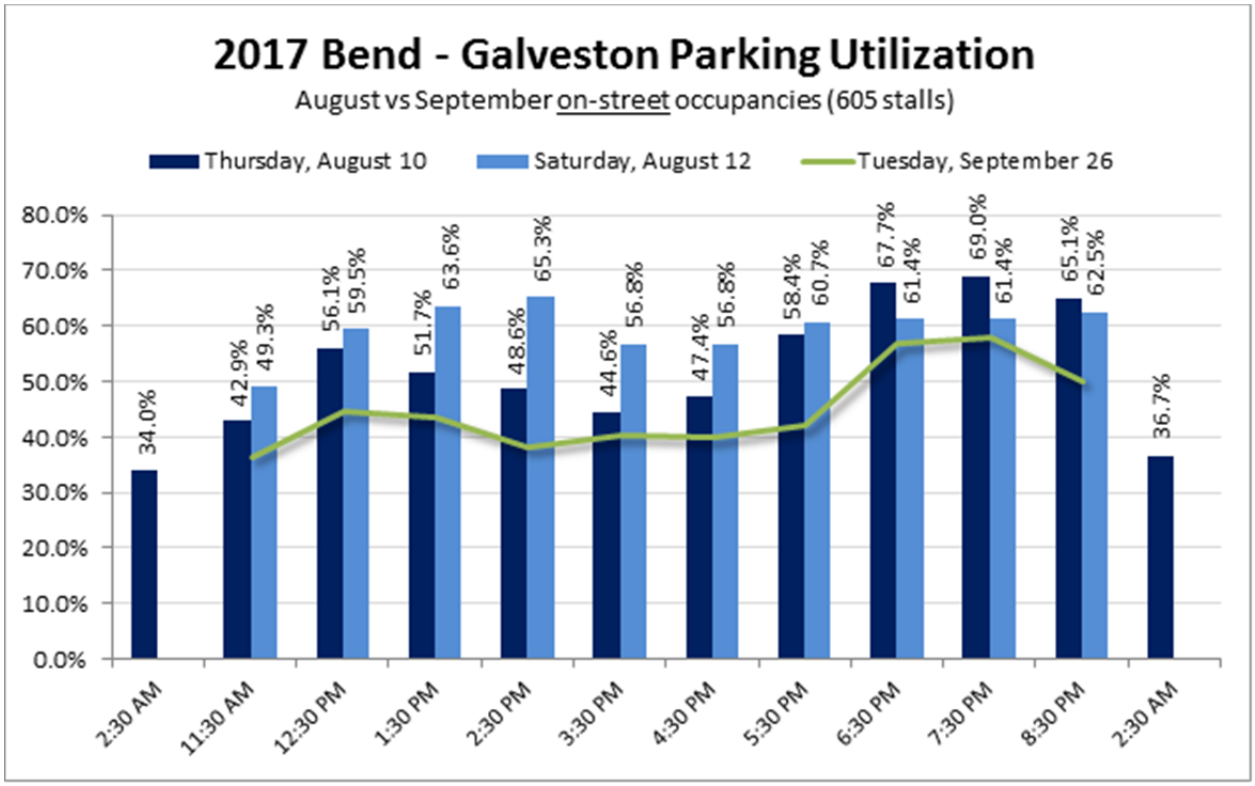
[5] **ATTACHMENT A** at the end of this report provides detailed Parking Utilization Summary Data Reports.

[6] See footnote 4.

C. ON-STREET: Occupancies

Figure C provides an hour-by-hour look at occupancy performance for each of the survey days.

Figure C: 2017 Bend/Galveston On-street Occupancies



- Peak occupancy rates are **moderate** (<70%) for all survey days.
- All-day average hourly occupancy rates range from <50% (September) to <60% (August).
- The highest peak-hour rate was on Thursday, August 10 between 7:00 and 8:00 p.m., at 69%.
- All days show midday and evening peaks, with a dip in occupancy between 3:00 and 5:00 p.m.
- Counts at 2:30 a.m. show average occupancy of 33%, primarily residents parked on-street.

D. ON-STREET: Utilization Metrics

Table 3 summarizes several performance metrics for Galveston's on-street parking system. Additional metrics are included in the full data summary report in **ATTACHMENT A**.

[7]License plate numbers were not recorded in off-street lots.

Table 3: 2017 Bend/Galveston - On-Street Parking Utilization – Three Survey Days

Type of Stall	Stalls	Survey Day	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay	Turnover Rate
On-Street Supply	**605**	**Thursday, August 10, 2017**	**69.0% 7:00 – 8:00 PM**	**187**	**2 hr./ 46 min**	**3.61**
		Saturday, August 12, 2017	**65.3% 2:00 – 3:00 PM**	**209**	**2 hr./ 44 min**	**3.65**
		Tuesday, September 16, 2017	**58.2% 7:00 – 8:00 PM**	**253**	**2 hr./ 53 min**	**3.47**
Driveways	*477*	Thursday, August 10, 2017	*40.9% 8:00 – 9:00 PM*	*282*	*N/A*	*N/A*
		Saturday, August 12, 2017	*37.7% 8:00 – 9:00 PM*	*297*	*N/A*	*N/A*
		Tuesday, September 16, 2017	*36.2% 8:00 – 9:00 PM*	*304*	*N/A*	*N/A*
Mailboxes	*100*	Thursday, August 10, 2017	*19.0% 7:00 – 8:00 PM*	*81*	*2 hr./ 15 min*	*4.43*
		Saturday, August 12, 2017	*16.0% 7:00 – 9:00 PM*	*84*	*2 hr./ 39 min*	*3.78*
		Tuesday, September 16, 2017	*19.0% 7:00 – 9:00 PM*	*81*	*2 hr./ 50 min*	*3.52*

- There were a significant number of empty on-street stalls in the entire study area during the peak hours: 187 on Thursday, 209 on Saturday, and 253 on Tuesday. See **Figure D**, **Figure E**, **and Figure F** below for maps indicating likely areas of empty parking.
- The average duration of stay for all on-street users was less than 3 hours and relatively consistent across study days: 2 hours 46 minutes on Thursday, 2 hours 44 minutes on Saturday, and 2 hours 53 minutes on Tuesday. Note that this includes all users. If employees and residents are parking on-street for long periods, this would affect the average duration of stay. The average stay for a visitor would be less than the above averages.
- Stalls turn over at a rate of less than 4 turns per 10-hour period, ranging from 3.47 (Tuesday) to 3.65 (Saturday). While this is not a high rate of turnover for a business district, it is not unusual in an area with residential land use. Industry standards for commercial areas target rates of 5.0 or more.
- Use of driveway capacity is very low, with peak occupancies for this dedicated residential supply ranging from 36.2% (Tuesday) to 40.9% (Thursday). As a result, there are 297 empty parking spaces available; however, this is a benefit only to those with curb cuts providing access to driveways.
- Use of parking space in front of mailboxes indicates that the public is uncertain whether this space is available for their use, in some cases because residents have placed "no parking" signage adjacent to the mailbox. Peak occupancies range from just 16% (Saturday) to 19% (Tuesday/Thursday). Interestingly, the peak hour for all three study days is between 7:00 and 9:00 p.m., meaning use is even lower earlier in the day.

E. ON-STREET: Resident versus Non-Resident Vehicles

During the summer data collection, surveyors recorded license plate numbers of vehicles parked on-street between 2:00 and 3:00 a.m. Counts were conducted on the morning of August 10 and again on the morning of August 11. For purposes of this analysis, these vehicles are considered as most likely associated with private residences. Plate numbers were then compared to all license plates recorded between 11:00 a.m. and 9:00 p.m. on the summer survey days, allowing residential vehicles to be separated out from non-residential vehicles with a high level of confidence. **Table 4** summarizes that analysis.

Table 4: 2017 Bend/Galveston – Use of the Supply (Resident vs. Non-Resident)

Stall Type	Stalls	Average Unique Vehicle Trips (UVT)	Estimated Resident Vehicle	Estimated Non-Resident Vehicles
On-Street Supply	605	1,258	381 (30% of UVT)	877 (70% of UVT)

As **Table 4** indicates, about 30% (381) of vehicles parked during a typical 11:00 a.m. – 9:00 p.m. belong to residents, with 70% (877) of vehicles associated with non-residents (employees, customers/visitors, vendors, etc.).

F. ON-STREET: Peak Hour Heat Maps

The Galveston study area is located in a 23-block area including 66 block faces that allow parking. **Figure D**, **Figure E**, and **Figure F** (following pages) provide a "heat map" of peak-hour parking by block face for the each of the survey days. Heat maps indicate occupancy rates by color, with red indicating rates of 85% or greater, at which parking is considered to be constrained. Intensity of use decreases from orange to yellow to green.

Each map also indicates an area of high occupancy, which is highlighted in white. Demand for parking in this area is much higher than the averages for the entire study area as illustrated in **Figure C** above. The high-occupancy area is generally bounded by NW Hartford and NW Fresno between NW 13th and NW Harmon. This represents about 12 blocks and 38 block faces that allow parking.

Key findings from the heat maps include:

- Parking constraints are more pronounced in smaller concentrated areas of the study area.
- The level of constraint in the study area is understated when the entire district is considered (see **Figure B** above).
- In summer, up to half of block faces in high-occupancy area exceed 85%, sometimes reaching 100%. See **Table 5** below.
- Though parking behavior does vary by season, constraints in this area are consistently evident.
- Public perception of congestion and parking constraint in these areas is very real.

- The majority of empty stalls are located on the western and northern sectors of the study area. These areas are most likely perceived by users as inconvenient.

Table 5: 2017 Bend/Galveston – Constrained Block Faces Comparison

Survey Date	Block Faces w/ Parking Allowed (entire zone)	Peak Hour	Block Faces Over 85%	Block Faces over 100%	% of Block Faces Constrained	% of Block Faces in "Box" (38 Block Faces)
Thursday, August 10, 2017	66	7PM – 8PM	15	5	30.3%	**47.4% (18)**
Saturday, August 12, 2017	66	2PM – 3PM	19	5	36.3%	**55.3% (21)**
Tuesday, September 26, 2017	66	7PM – 8PM	12	3	22.7%	**34.2% (13)**

On-Street Summary

The on-street parking system has areas of constraint in portions of the corridor. This is clearly apparent in the 12-block area (38 block faces) bounded by NW Hartford and NW Fresno between NW 13th and NW Harmon—the "high occupancy area"). At the peak hour, up to 55% of all block faces in this area have occupancy rates that exceed 85% and in some cases in excess of 100%). Though parking behavior does vary by season, constraints within the high occupancy area are consistently evident.

Figure D: 2017 Bend/Galveston On-street Peak Hour Heat Map (Saturday, August 10, 2017)

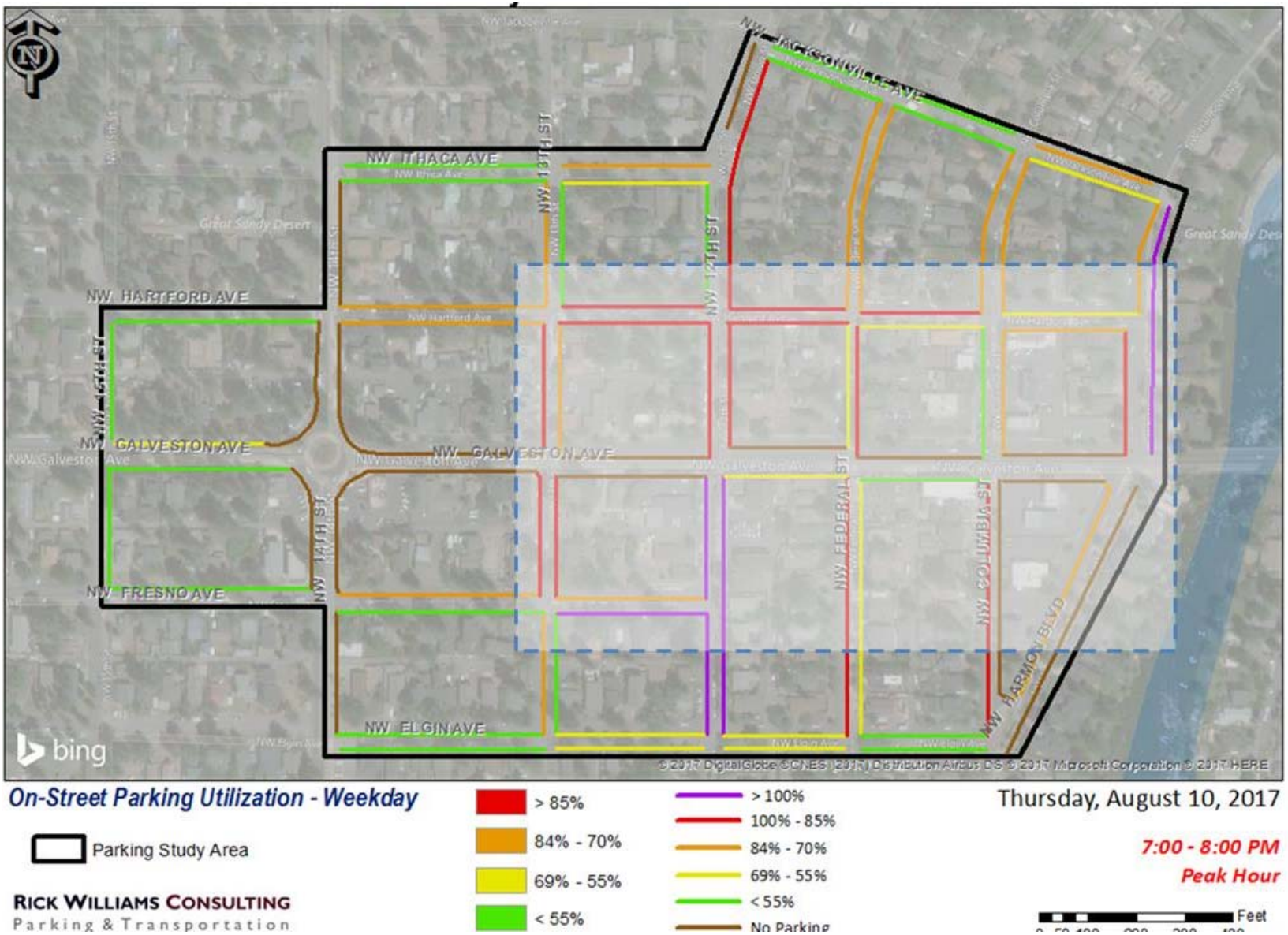


Figure E: 2017 Bend/Galveston On-street Peak Hour Heat Map (Saturday, August 12, 2017)

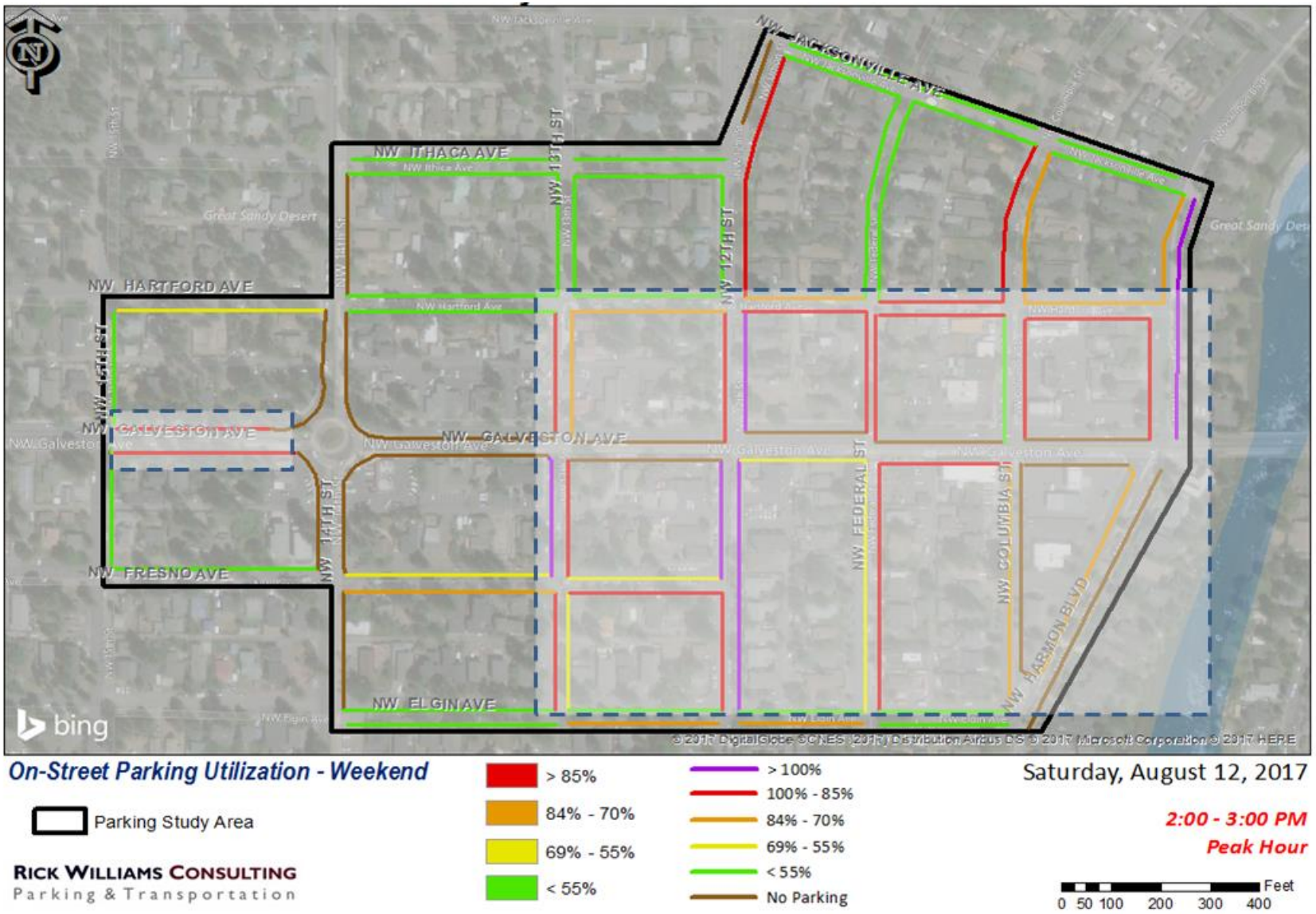
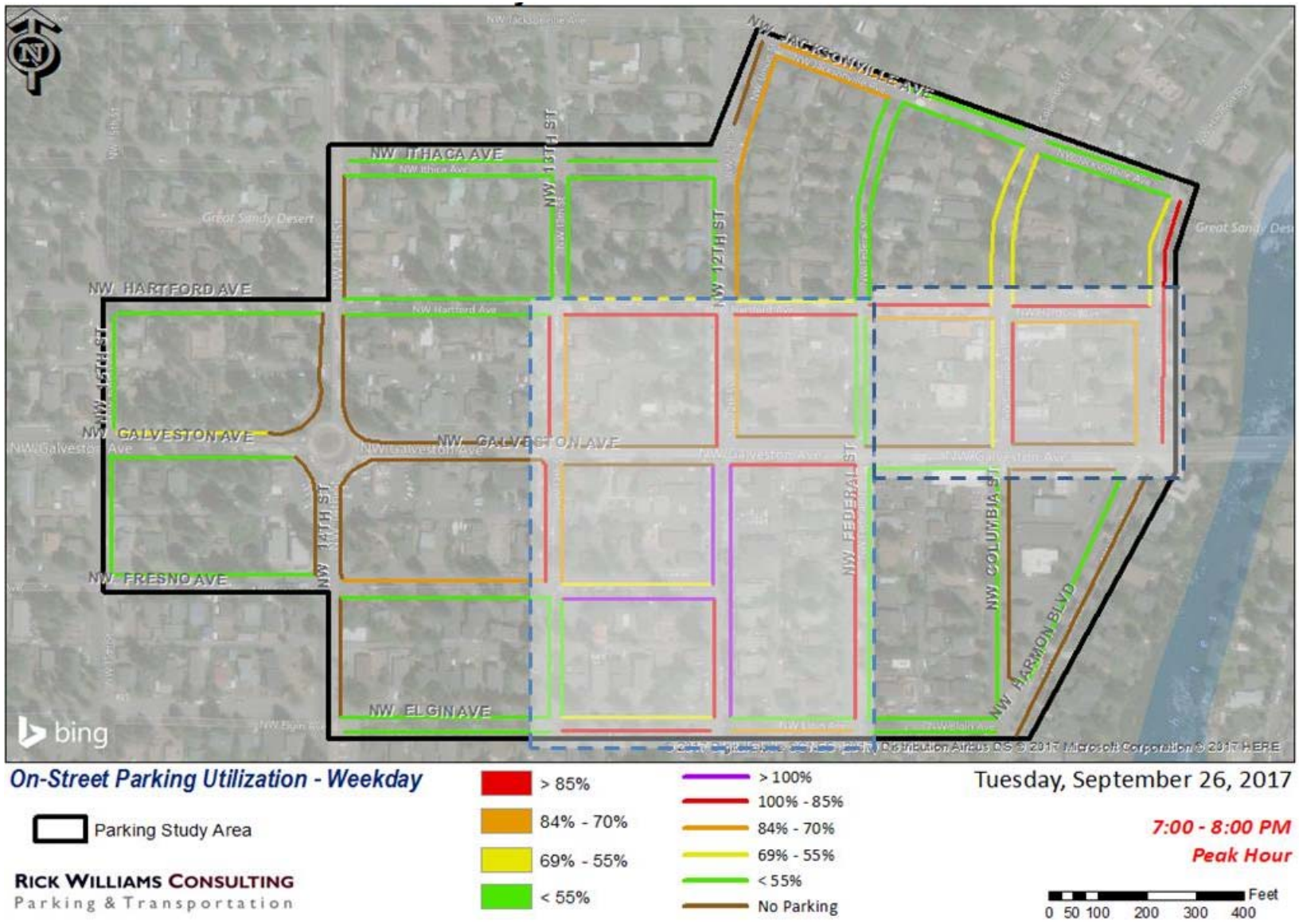


Figure F: 2017 Bend/Galveston On-street Peak Hour Heat Map (Tuesday, September 26, 2017)



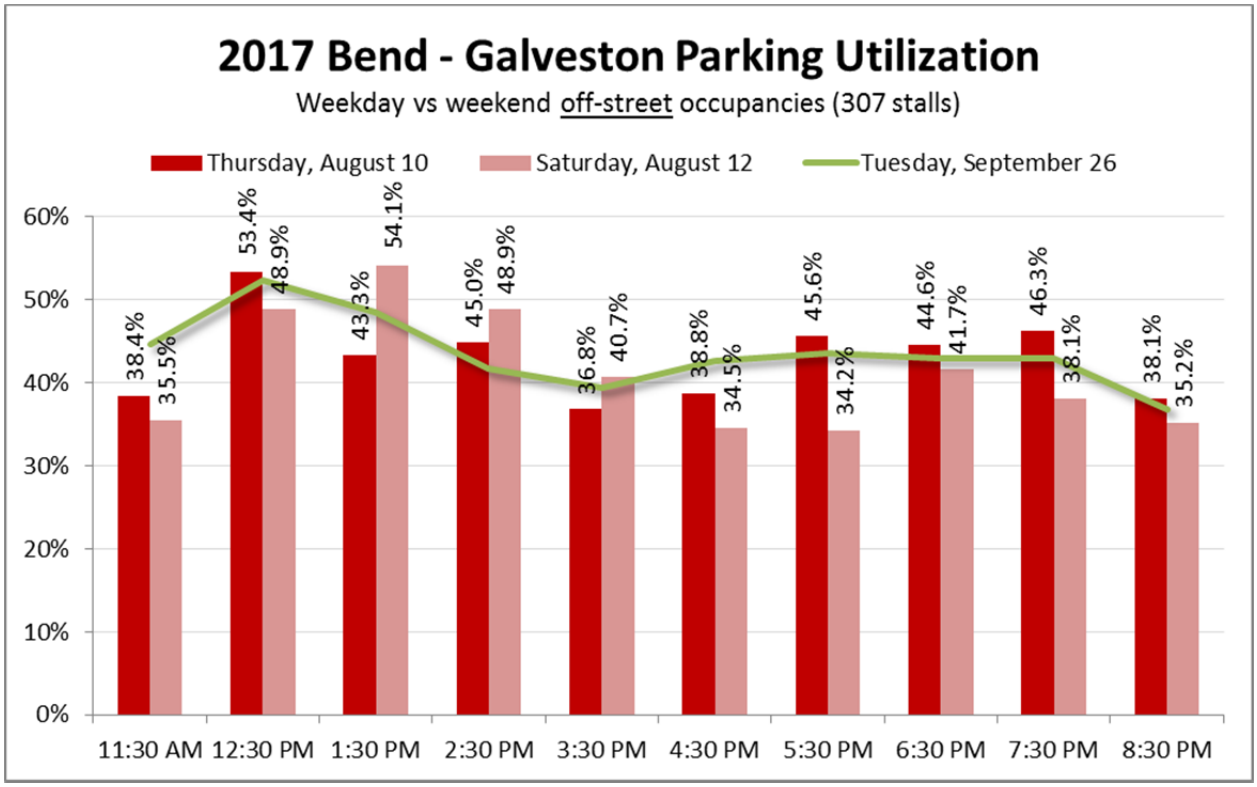
G. OFF-STREET: Occupancies

A total of 307 off-street parking stalls located across 33 sites were surveyed for 10 hours on each of the three survey days. **Figure G** summarizes occupancy rates by hour for each day.

As **Figure G** indicates:

- Overall occupancy of the off-street supply is moderate at peak hours.
- Occupancy trends follow the on-street system, with a dip between 3:00 and 5:00 p.m.
- Thursday (August 10) peak occupancy reaches 53% at 12:30 p.m.
- Saturday (August 12) peak occupancy reaches 54% at 1:30 p.m.
- Tuesday (September 26) peak occupancy reaches 53% at 12:30 p.m.
- The average number of empty stalls at the peak hour is 144.

Figure G: 2017 Bend/Galveston Off-street Occupancies (all stalls - by day/by hour)



OFF-STREET: Occupancy by Observed Lot (33 sites)

Table 6 summarizes findings from each of the 33 lots observed on each of the survey days. All lots in the study area are privately owned; the City does not own or operate any off-street parking in this area. Each lot has an identifying number correlated to the study area map in **Figure B.** Data for each lot includes its stall total, peak occupancy by survey day, and number of empty stalls at the peak hour.

Key findings from **Table 6** include:

- When all off-street lots are combined, the total number of empty stalls was 143 on Thursday, 141 on Saturday, and 146 on Tuesday.
- While there appear to be a significant number of empty stalls, their use is restricted to visitors or employees of specific businesses and they are not available for use by the general public.

Table 6: 2017 Bend/Galveston - Off-Street Parking Utilization (Three Survey Days)

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
1	Flipped/Westside Coin-Op Laundry/Cibelli's Pizza	12	Thursday, August 10	75.0% 1:00 – 2:00 PM	3
			Saturday, August 12	91.7% 1:00 – 2:00 PM	1
			Tuesday, September 16	83.3% 1:00 – 2:00 PM	2
2	Westside Tavern	12	Thursday, August 10	75.0% 7:00 – 8:00 PM	3
			Saturday, August 12	91.7% 12:00 – 1:00 PM 2:00 – 3:00 PM	1
			Tuesday, September 16	83.3% 4:00 – 8:00 PM	2
3	Sol Verde	4	Thursday, August 10	50.0% 1:00 – 4:00 PM	2
			Saturday, August 12	75.0% 11:00 AM – 12:00 PM 1:00 – 3:00 PM	1
			Tuesday, September 16	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 4:00 – 6:00 PM	2
4	Food Carts	4	Thursday, August 10	75.0% 1:00 – 2:00 PM 5:00 – 7:00 PM 8:00 – 9:00 PM	1
			Saturday, August 12	75.0% 12:00 – 2:00 PM 3:00 – 9:00 PM	1
			Tuesday, September 16	75.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
				7:00 – 9:00 PM	
5	7-Eleven	10	Thursday, August 10	90.0% 3:00 – 4:00 PM	1
			Saturday, August 12	100% 4:00 – 5:00 PM	0
			Tuesday, September 16	50.0% 12:00 – 1:00 PM 5:00 – 6:00 PM	5
6	Hutch's	2	Thursday, August 10	100% 11:00 AM – 3:00 PM	1
			Saturday, August 12	100% 11:00 AM – 7:00 PM	0
			Tuesday, September 16	100% 12:00 – 1:00 PM 5:00 – 7:00 PM 8:00 – 9:00 PM	0
7	724 NW Federal St	4	Thursday, August 10	50.0% 12:00 – 2:00 PM 4:00 – 9:00 PM	0
			Saturday, August 12	50.0% 11:00 AM – 12:00 PM	2
			Tuesday, September 16	75.0% 12:00 – 1:00 PM	1
8	Big O Bagels	6	Thursday, August 10	50.0% 12:00 – 2:00 PM	2
			Saturday, August 12	83.3% 11:00 AM – 12:00 PM	1
			Tuesday, September 16	83.3% 12:00 – 1:00 PM	1
9	Paradise Produce	5	Thursday, August 10	80.0% 12:00 – 1:00 PM	3
			Saturday, August 12	60.0% 11:00 AM – 12:00 PM	2
			Tuesday, September 16	60.0% 4:00 – 5:00 PM	2
10	Primal Cuts/Growler Phil's	5	Thursday, August 10	80.0% 12:00 – 1:00 PM 5:00 – 6:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
			Saturday, August 12	80.0% 6:00 – 7:00 PM	1
			Tuesday, September 16	80.0% 1:00 – 2:00 PM	1
11	Longboard Louie's	10	Thursday, August 10	90.0% 7:00 – 8:00 PM	1
			Saturday, August 12	80.0% 8:00 – 9:00 PM	2
			Tuesday, September 16	80.0% 3:00 – 4:00 PM	2
12	Sip	5	Thursday, August 10	120.0% 6:00 – 7:00 PM	-1
			Saturday, August 12	80.0% 6:00 – 7:00 PM	1
			Tuesday, September 16	100% 3:00 – 4:00 PM	0
13	Bend Furniture & Design/Sole	11	Thursday, August 10	63.6% 4:00 – 5:00 PM	4
			Saturday, August 12	45.5% 12:00 – 2:00 PM	6
			Tuesday, September 16	63.6% 3:00 – 4:00 PM	4
14	Fleet Feet/Knitting Place	10	Thursday, August 10	60.0% 11:00 AM – 12:00 PM	4
			Saturday, August 12	100% 1:00 – 2:00 PM	0
			Tuesday, September 16	60.0% 11:00 AM – 12:00 PM	4
15	Ida's Cupcakes/Ariana Restaurant	15	Thursday, August 10	73.3% 6:00 – 7:00 PM	4
			Saturday, August 12	73.3% 8:00 – 9:00 PM	4
			Tuesday, September 16	86.7% 6:00 – 7:00 PM	2
16	The Victorian Café	15	Thursday, August 10	80.0% 11:00 AM – 12:00 PM	3
			Saturday, August 12	86.7% 12:00 – 1:00 PM	2

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
			Tuesday, September 16	93.3% 11:00 AM – 12:00 PM	1
17	Hopscotch Kids/Trophy Properties	10	Thursday, August 10	90.0% 11:00 AM – 12:00 PM	1
			Saturday, August 12	60.0% 12:00 – 1:00 PM	4
			Tuesday, September 16	30.0% 11:00 AM – 1:00 PM 3:00 – 4:00 PM	7
18	Studio 541 Salon	3	Thursday, August 10	100% 11:00 AM – 3:00 PM	0
			Saturday, August 12	100% 11:00 AM – 12:00 PM 2:00 – 3:00 PM	0
			Tuesday, September 16	66.7% 11:00 AM – 1:00 PM	1
19	Cutting Club/East Lake Framing	9	Thursday, August 10	111.1% 1:00 – 2:00 PM	-1
			Saturday, August 12	33.3% 1:00 – 2:00 PM	6
			Tuesday, September 16	100% 11:00 AM – 12:00 PM	0
20	Taco Salsa	24	Thursday, August 10	62.5% 12:00 – 1:00 PM	9
			Saturday, August 12	75.0% 6:00 – 7:00 PM	6
			Tuesday, September 16	45.8% 12:00 – 1:00 PM	13
21	Brother Jon's Public House	19	Thursday, August 10	78.9% 7:00 – 8:00 PM	4
			Saturday, August 12	84.2% 1:00 – 2:00 PM 8:00 – 9:00 PM	3
			Tuesday, September 16	105.3% 7:00 – 8:00 PM	-1
22	Westside Shorty's	10	Thursday, August 10	50.0% 1:00 – 2:00 PM 3:00 – 5:00 PM	5

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
			Saturday, August 12	20.0% 2:00 – 3:00 PM	8
			Tuesday, September 16	10.0% 12:00 – 3:00 PM	9
23	Diamond Tree	4	Thursday, August 10	50.0% 4:00 – 5:00 PM	2
			Saturday, August 12	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM	2
			Tuesday, September 16	75.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 7:00 – 8:00 PM	1
24	Westside Family Clinic	6	Thursday, August 10	33.3% 11:00 AM – 12:00 PM 2:00 – 4:00 PM	4
			Saturday, August 12	16.7% 1:00 – 2:00 PM 3:00 – 5:00 PM	5
			Tuesday, September 16	33.3% 11:00 AM – 12:00 PM 1:00 – 4:00 PM	4
25	Mothers Juice Cafe	4	Thursday, August 10	75.0% 11:00 AM – 1:00 PM	1
			Saturday, August 12	75.0% 11:00 AM – 3:00 PM	1
			Tuesday, September 16	75.0% 11:00 AM – 12:00 PM	1
26	1 Day Signs	2	Thursday, August 10	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 6:00 – 7:00 PM	1
			Saturday, August 12	0% 11:00 AM – 9:00 PM	2
			Tuesday, September 16	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 4:00 – 5:00 PM	1
27	10 Barrel/Namaspa	17	Thursday, August 10	94.1% 12:00 – 4:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
				5:00 – 9:00 PM	
			Saturday, August 12	100% 8:00 – 9:00 PM	0
			Tuesday, September 16	100% 12:00 – 1:00 PM 4:00 – 5:00 PM	0
28	Aspect Boards and Brews	20	Thursday, August 10	100% 6:00 – 7:00 PM 8:00 – 9:00 PM	0
			Saturday, August 12	100% 5:00 – 6:00 PM	0
			Tuesday, September 16	90.0% 1:00 – 2:00 PM 7:00 – 8:00 PM	2
29	Sunriver Brewing Co	1	Thursday, August 10	0% 11:00 AM – 9:00 PM	1
			Saturday, August 12	0% 11:00 AM – 9:00 PM	1
			Tuesday, September 16	100% 4:00 – 5:00 PM	0
30	Sons of Norway Fjeldheim Lodge	15	Thursday, August 10	20.0% 2:00 – 3:00 PM	12
			Saturday, August 12	26.7% 6:00 – 7:00 PM	11
			Tuesday, September 16	80.0% 11:00 AM – 12:00 PM	3
31	Serenity Lane	13	Thursday, August 10	61.5% 6:00 – 7:00 PM	5
			Saturday, August 12	15.4% 2:00 – 3:00 PM	11
			Tuesday, September 16	38.5% 6:00 – 9:00 PM	8
32	Shell/Espresso	9	Thursday, August 10	77.8% 4:00 – 6:00 PM	2
			Saturday, August 12	44.4% 11:00 AM – 4:00 PM 8:00 – 9:00 PM	5
			Tuesday, September 16	155.6%	-5

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Empty Stalls
				3:00 – 5:00 PM 8:00 – 9:00 PM	
33	Parrilla Grill	11	Thursday, August 10	100% 12:00 – 1:00 PM	0
			Saturday, August 12	90.9% 12:00 – 3:00 PM	1
			Tuesday, September 16	90.9% 12:00 – 1:00 PM	1
Off-Street Supply		**307**	Thursday, August 10	**53.4% 12:00 – 1:00 PM**	**143**
			Saturday, August 12	**54.1% 1:00 – 2:00 PM**	**141**
			Tuesday, September 16	**52.4% 12:00 – 1:00 PM**	**146**

H. OFF-STREET: Peak Hour Heat Maps

Figure H, **Figure I**, and **Figure J** provide heat maps of the combined peak hours for on- and off-street parking for each of the survey days.

Key findings include:

- Most lots show low to moderate use.
- Seven of 33 lots reached 85%+ occupancy on at least one survey day.
- Lots 27 (10 Barrel/Namaspa) and 33 (Parilla Grill) were constrained on all three survey days. Lot 20 (Taco Salsa) was constrained on two of three days.
- The challenge for potentially capturing surplus parking in off-street lots is the spatial distribution of lots across a long corridor and small lot sizes.

Off-Street Summary

The off-street system is comprised of 33 very small lots spread across a long corridor. The largest lot is just 24 stalls – Lot 20 (Taco Salsa). All lots are currently underutilized, primarily because their use is restricted to specific sites or buildings, regardless of demand.

In the peak hour, up to 144 stalls are empty, suggesting that a more active program of shared use could be beneficial. Shared parking is certainly feasible, but given the small size of the lots, establishment of such a program would require coordination by area businesses, most likely between adjacent individual businesses.

Figure H: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Thursday, August 10, 2017)

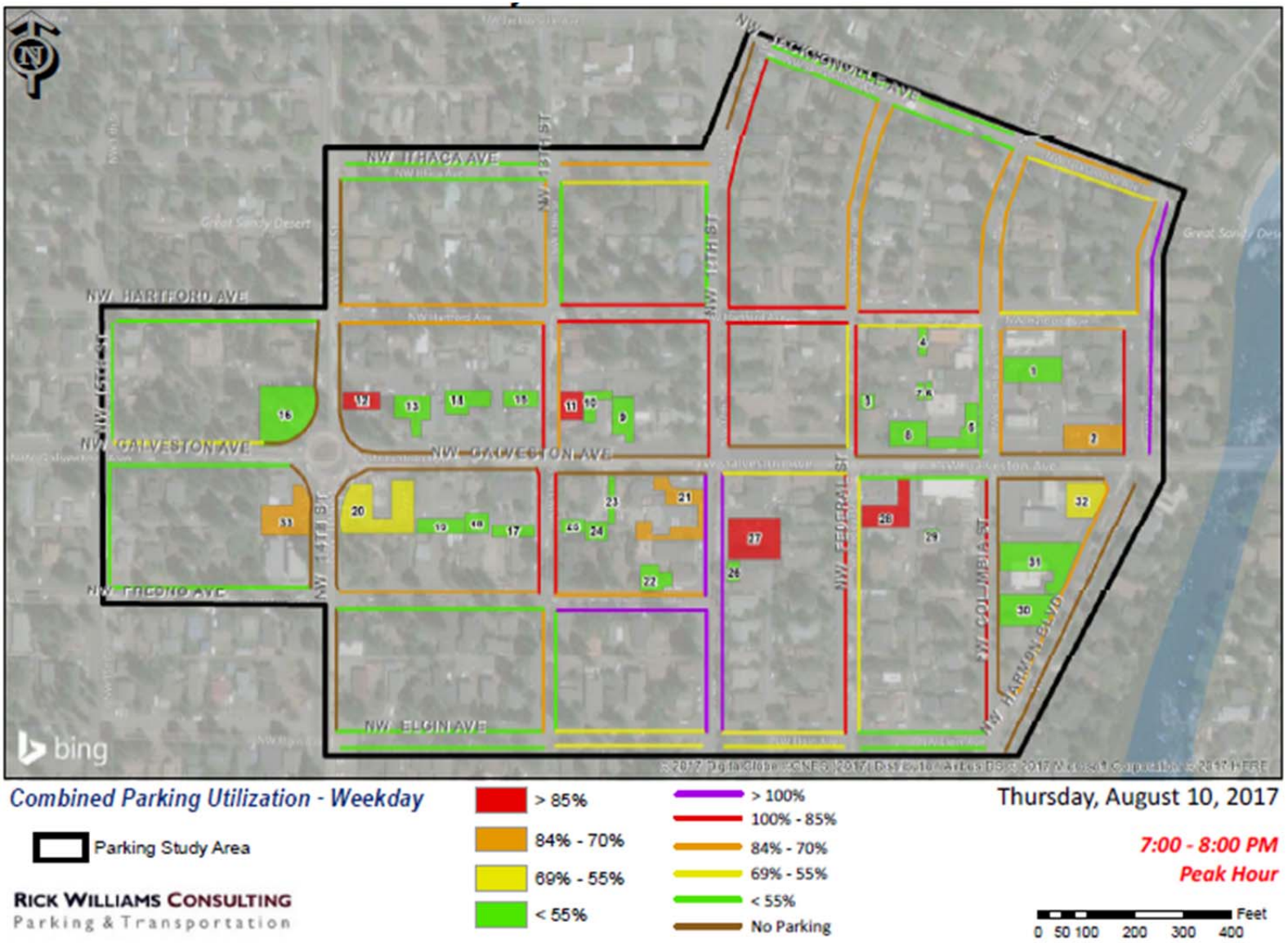


Figure I: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Saturday, August 12, 2017)

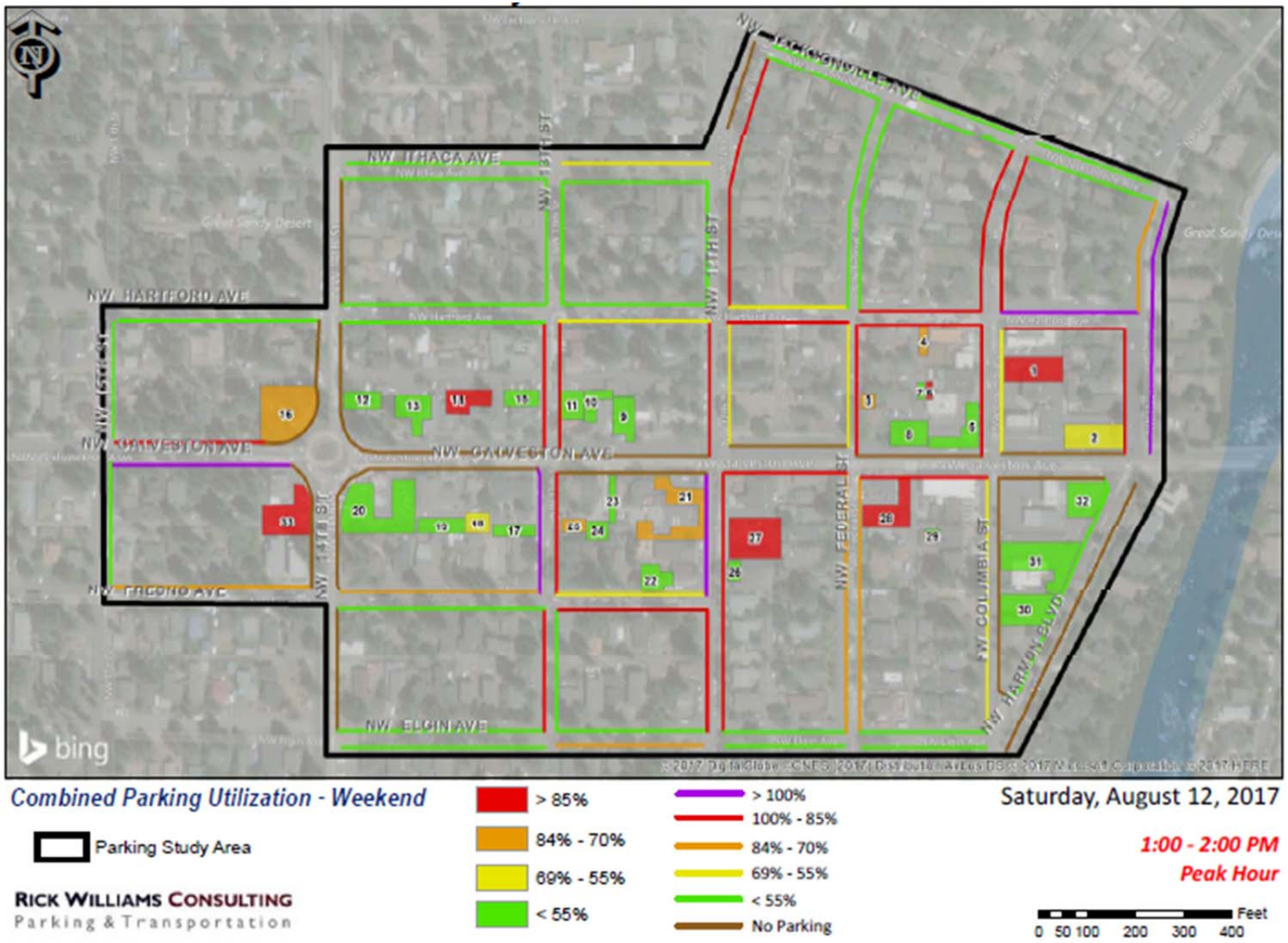
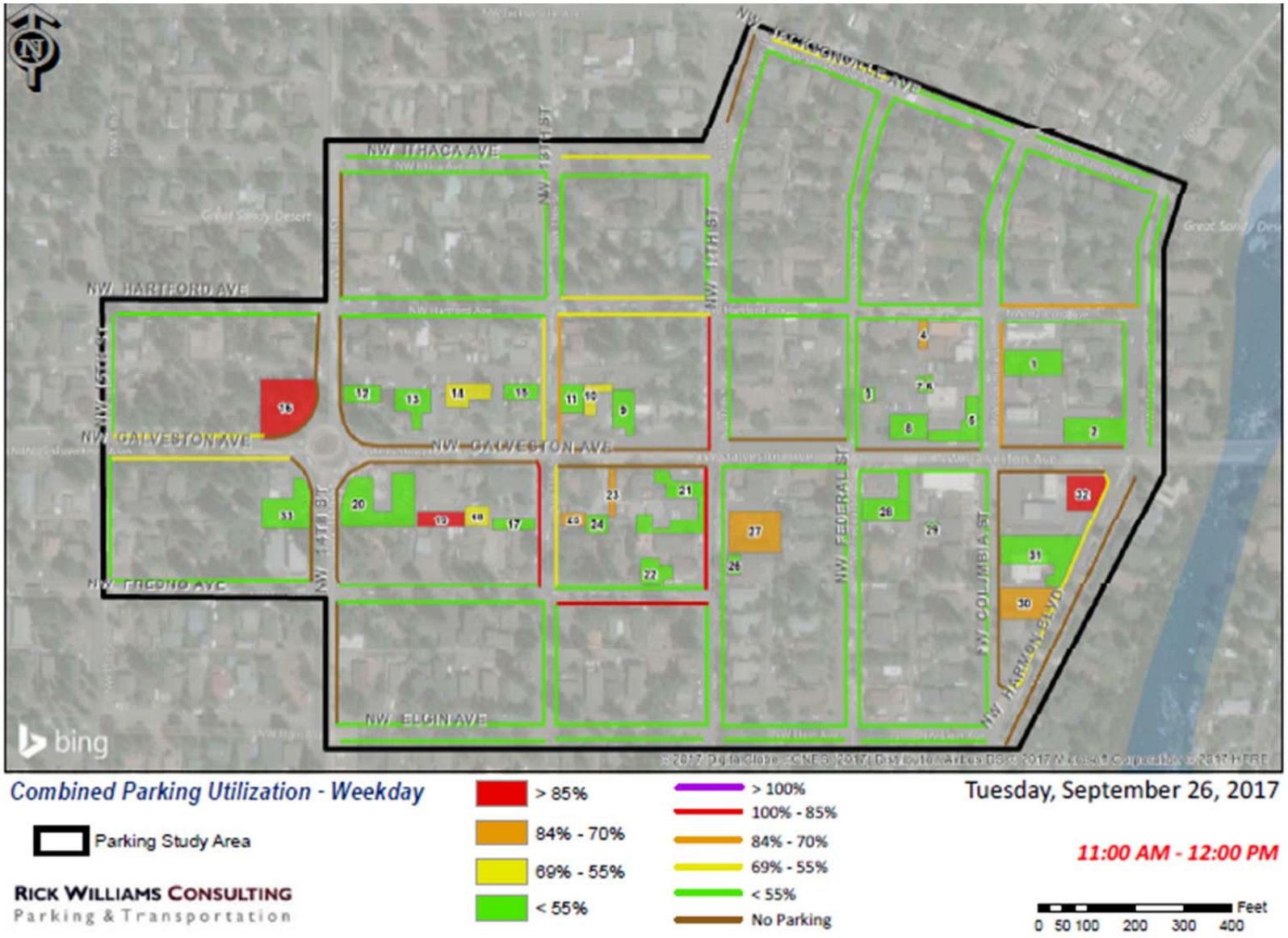


Figure J: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Tuesday, September 26, 2017)



VIII. STRATEGIES FOR CONSIDERATION

The solutions outlined below grew from discussions among the City, the consultant team, and the public. They provide an outline for potential actions to address parking issues that could be completed by the City, residents, and/or businesses. The strategies follow a logical progression in which each action provides a foundation for subsequent actions. Primary responsibility for initiating the strategy is shown as part of the Strategy title (e.g., City of Bend, Residents/Business Owners). Where possible, cost estimates are provided, but only within the framework of planning. Final costs would require additional evaluation, scoping, and estimating.

STRATEGY 1 (City of Bend):

The City can prioritize the clear marking (with paint and/or signs) of clear-vision areas at intersections, prioritizing locations within the high-occupancy area identified in the 2017 parking study.

Among the notable challenges communicated through the public process, and observed by the consulting team, was the lack of on-street parking controls in the study area. No-parking areas (e.g., clear vision setbacks at intersections) are identified with either adequate signage or on-street markings. Where signage does exist, there is a high rate of violation. This creates a perception of congestion, particularly in the "high-occupancy area" described in **Section VII**.

Striping and/or signage should be consistent and communicate clear and positive messages to users. Effective striping will communicate "you cannot park here," facilitate compliance, and improve current negative perceptions of congestion. The City should prioritize improvements in the high-occupancy area.

Estimated Costs (STRATEGY 1)

Not enough is known to estimate costs associated with this strategy at the present time. Compiling an inventory of locations, using this analysis as a basis, where improvements are needed would be a first step toward creating a budget.

STRATEGY 2 (Residents/Business Owners/Other Stakeholders):

The residents and businesses could establish a Parking Work Group as a forum for addressing parking issues in the Galveston Corridor, with a first task of establishing guiding principles or agreements.

If Galveston Corridor stakeholders (residents and/or businesses) desire to move forward with

the strategies outlined here that are not strictly City responsibility, a more formalized process for coordinating such an effort would be beneficial. Participation by those affected guarantees an understanding of and consensus on parking management and trigger points for decision-making. This is best accomplished through a representative work group that reviews performance, serves as a sounding board for issues, and acts as a liaison to the broader stakeholder community.

A Parking Work Group for the Galveston Corridor could use the recommendations in this plan as a basis for continued discussion and communication. Without clear and consensus priorities, it can be difficult to make changes to the parking system and the status quo. A set of guiding principles will keep partnerships among stakeholders strong and help ensure the success of any parking management plan.

Potential guiding principles include:

- Use the 85% Rule to facilitate decision-making.[8]
- Mitigate congestion within the corridor.
- Expand shared-use partnerships for off-street parking whenever possible and treat all on-street parking as a community resource.
- Provide a forum for ongoing community involvement in parking decisions.
- Treat parking management as a partnership between the Galveston residential and business communities.
- Include and integrate transportation demand management (TDM) into parking management.
- Enforce parking to ensure that user priorities are accommodated (particularly if an RPPZ was formed).

Estimated Costs (STRATEGY 2)

There should be no significant costs associated with this strategy if it can be maintained as a volunteer effort with business and residential stakeholders.

STRATEGY 3 (City of Bend):

The City can clarify existing code guidelines related to shared parking to make it clearer that businesses with excess off-street parking could share with other uses.

The City and stakeholders indicate that they favor greater shared use of existing and future off-street parking. The current code, BDC 3.3.300(C)(5), could be modified to make it clear that an owner of a lot with available parking (based on the results of a parking study) could provide and/or sell that parking to other businesses.

[8] The 85% Rule is an operating principle and parking industry standard. When occupancies routinely reach 85% in the peak hour, more *intensive and aggressive* parking management strategies are called for.

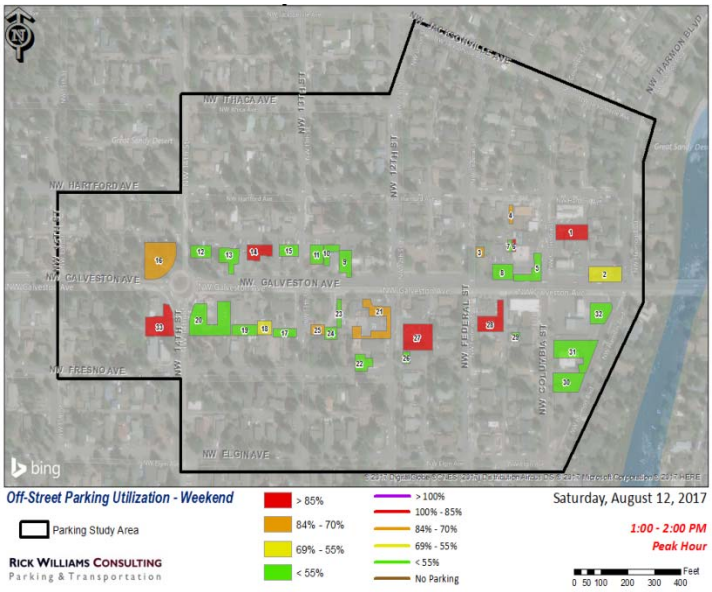
Estimated Costs (STRATEGY 3)

There should be no additional costs associated with this recommendation if it can be initiated as a staff-led effort in consultation with the City Council, and included in a code cleanup/update project.

STRATEGY 4 (Business Owners):

Businesses could explore the feasibility of off-street shared-use parking opportunities based on data from the 2017 parking study.

All 33 off-street parking sites in the Galveston Corridor are privately owned. The 2017 parking study indicates that the number of empty parking stalls during the peak hour averages 144 each day.



Directing employees to underutilized off-street lots will open up on on-street parking for use by customers and visitors. As noted in Strategy 3, shared use is currently only allowed between businesses that can demonstrate that their business hours do not overlap. The City can prioritize amending the code, to allow businesses the opportunity to offer excess parking to others for use by employees and/or customers.

Estimated Costs (STRATEGY 4):

It is estimated that costs associated with this strategy would be mostly expended in efforts of existing staff and/or volunteers to identify opportunity sites and conduct outreach to potential private sector partners. Planning may determine that funds are needed to create incentives and/or improve the condition of facilities and connections.

STRATEGY 5 (City of Bend):

The City can increase enforcement in the district.

The 2017 study identified a significant amount of illegal parking in the study area, which creates a general feeling of congestion in parts of the study area. Vehicles are parked too close to intersections, encroaching on driveways, blocking fire hydrants, and parking in other "no parking" areas. Congestion in the corridor, especially in the high occupancy area, is

significantly driven by the lack of directional systems that clearly delineate parking from no-parking areas.

Once new systems are established per Strategies 1, 3 and 4, enforcement will become more efficient and reasonable. Enforcement personnel will have the tools necessary to cite parking violations, and the City and stakeholders will be confident that users can clearly understand where it is legal to park and where it is not. That level of confidence is not supported by the parking system currently in place.

Estimated Costs (STRATEGY 5):

Costs for additional enforcement in the Galveston Corridor are unknown at this time.

STRATEGY 6 (Residents):

Residents could request that the US Postal Service consolidate individual residential mailboxes into cluster mailboxes as a means to improve congestion and assure greater access to on-street parking.

The 2017 study identified 100 mailboxes adjacent to the street with space available to use as parking. Interestingly, a number of residential properties place signage in front of the mailbox indicating it as "no parking." These signs are privately made and placed and are not legal. There is no City-adopted regulation in the Bend Code that prevents any user from parking in front of a mailbox on a public street in Bend. However, data indicates that only 19 of these 100 stalls have a vehicle parked in front of them during the peak hour, leaving 81 stalls empty. It appears that the illegal signage has created uncertainty as to whether this parking may be used.

Consolidating individual mailboxes into clusters at the end of blocks would free up space in front of residences. It would also mitigate instances of mail carriers parking in the street to deliver to individual mailboxes and blocking traffic.[9]

The City currently requires this type of system in new residential subdivisions, but there is no provision in code or practice for retrofitting existing neighborhood block faces with cluster mailboxes. Such a request would need to be made by residents to the US Postal Service, possibly through a neighborhood

[9] Conversations in the field between RWC surveyors and postal delivery personnel indicated that this occurs frequently in the study area.

association. In addition, it should be noted that the US Postal Service requires that cluster mailboxes be fully accessible, so considerable retrofit would be required on streets without sidewalks.

Estimated Costs (STRATEGY 6):

The cost of cluster mailboxes ranges from $1,200 (8 units) to $2,500 (16 units). The cost of installation is unknown at this time. Additional cost would be expended in striping the roadway to create a "postal vehicle only" stall (to access the cluster mailboxes) and in ensuring accessibility to the mailboxes.

STRATEGY 7 (Residents/Business Owners/City of Bend):

The City could implement the Galveston Avenue Design to add approximately 14 – 18 on-street spaces.

The City recently completed an analysis of the Columbia Street & Harmon Boulevard Parking Concept. The conceptual configuration envisions Columbia Street and Harmon Boulevard as one-way streets with on-street angled parking. Columbia Street would be one-way in the southbound direction, with angled parking on the east side of the roadway. Harmon Boulevard would be one-way in the northbound direction, with angled parking on the west side of the roadway. A "mini-roundabout would be necessary in order for this configuration to work.

The conceptual configuration would result in approximately 28 on-street angled parking stalls along Columbia Street and Harmon Boulevard, or a net increase of 14-18 parking stalls over the existing configuration. However, it should be noted that this parking configuration was dropped by Council several years ago due to neighborhood opposition to the roundabout and one-way configuration, so the concept would need to be reintroduced by residents.

Implementation of this design would add parking to the on-street system in an area that was shown in the 2017 Parking Study to be constrained. This plan would also integrate well with Strategy 1, which could result in a reduction of parking in locations where illegal parking frequently occurs.

Estimated Costs (STRATEGY 7):

Costs for the Columbia Street & Harmon Boulevard Parking Concept would be further developed if the residents' request, and the City elects, to move forward with the plan.

STRATEGY 8 (Business Owners):

Businesses could add bicycle parking at strategic locations, potentially participating in a Bikeshare program such as Zagster, to encourage non-auto access, augment parking capacity, support employee bike commuting, and create connections between the Galveston Corridor and other Bend districts.

"Zagster" Bike Share – Bend, OR

Communities throughout Oregon support bicycling as a key sustainable transportation strategy, and the Oregon Transportation Planning Rule requires bike parking for new developments. Input from Galveston stakeholders and the public also envisioned a greater role for bicycling in the corridor.

Providing adequate bicycle parking also expands the capacity of the overall parking supply. Galveston currently has racks in front of some businesses, but more racks are a visible indicator of a bike-friendly community. The possibility of connecting to the downtown Zagster Bike Sharing program should also be considered (see photo at right, above). Business owners could evaluate potential locations for additional bike parking, bike sharing, and bike corrals. Locations should be considered in both the public right of way (the businesses would work with the City for appropriate locations) and on private property.

Estimated Costs (STRATEGY 8)

Site identification could be done by businesses and through volunteer efforts and by working with corridor stakeholders and bike advocates. Costs are likely minimal.

Example: Bike Corral Ashland, OR

Estimated unit costs[10] for actual bike infrastructure:

- Staple or inverted U racks[11]: $150-$200
- Wall-mounted racks: $130-$150
- Bike corral: $1,200[12]

[10] Does not include the cost of installation.

[11] The consultant discourages the installation of "wave" racks, as they are more difficult to use.

[12] Based on City of Portland estimate for six staple racks (12 bike parking spaces), striping, bollards, and installation.

STRATEGY 9 (City of Bend):

The City can develop a reasonable schedule of data collection to assess performance of the Galveston Corridor parking supply.

The 2017 parking study provided good data on parking activity during the summer and fall. Once new parking management strategies are implemented, the pattern of parking activity will change. To track and monitor the strategies' impact, a system for routine data collection should be established.

Objective, up-to-date data will help the City and stakeholders make better informed decisions as the corridor grows and redevelops. The system does not need to be elaborate, but it should be consistent, routine, and structured to answer relevant questions about occupancy, seasonality, turnover, duration of stay, patterns of use, and enforcement. Parking information can be collected in samples, and other measures of success can be gathered through third-party data collection and/or volunteer processes. On- and off-street inventories and occupancy analyses should be conducted no less than every two years. This project has provided a good example of providing better data through field collection as when compared with the quality of data in published resources that are dated.

As part of the City's Citywide Parking Study, policy is being developed that will establish a program for "testing" Bend's actual parking demand for various land uses to make sure that the code continues to "right-size" parking requirement. The City and/or Galveston stakeholders may want to do this more frequently within the corridor.

Estimated Costs (STRATEGY 9):

It is estimated that an inventory and occupancy/utilization study would range from $25,000-$35,000 if conducted by a third-party consultant. Factors affecting cost include whether license plate data is collected, measurement of occupancy only versus occupancy and utilization, and whether sampling is used. For the Galveston Corridor, costs can be minimized by using the existing inventory database and by potentially using volunteers to collect data.

STRATEGY 10 (City of Bend/Business Owners):

If the parking situation has not improved following implementation of Strategies 1 – 8 (supported by data from Strategy 9), the residents and business owners could consider formation of a Residential Parking Permit Zone and/or Commercial Parking District.

As part of a larger parking study project, new policies for citywide parking management have been developed. Current policies regarding vehicle parking will be revised to meet the requirements of Oregon Administrative Rule 660-012-0045 (Transportation Planning Rule or TPR), and to help the City and the Bend Metropolitan Planning Organization (MPO) meet industry best practices for parking. Two

recommended policy revisions would establish code and process allowing for the formation of Residential Parking Permit Zones (RPPZ) and Commercial Parking Districts (CPD).[13] At present, there is no policy, code, or process that would allow an RPPZ or CPD in the Galveston Corridor, even at the request of the community.

RPPZs are a response to situations in which parking related to commercial or institutional use extends into adjacent residential neighborhoods, and are generally formed at the request of residents[14] but are managed by the City. When constraint creates conflict between residential and commercial parking demand, RPPZs allow parking to be managed through permits and time limits that give preference to residents. Permits allow parking beyond a posted time limit within the RPPZ.[15]

A CPD actively manages on-street parking for the benefit of a commercial area, such as a downtown or commercial street and can be initiated and managed by a Business District. Generally, on-street parking is prioritized for customers and strategically managed to encourage turnover. Off-street parking is closely coordinated with the on-street system to maximize capacity and encourage shared use of supply to serve multiple users (e.g., employees, customers and visitors). CPDs are partnerships between the City and area businesses and property owners to develop and implement parking management solutions, which may include (but not be limited to):

- Direct participation in CPD decision-making by stakeholders.
- Improved traffic circulation and infrastructure to encourage economic development.
- Reinvestment of parking revenues to improve parking conditions and/or alternative mode access.
- Formal coordination between commercial and affected residential areas.

With these new policies, stakeholders in the Galveston Corridor would be able to move toward more formal, active, and coordinated management of the parking system.

Estimated Costs (STRATEGY 10)

Costs associated with RPPZs and CBDs would be determined at the time such management areas are requested by stakeholders and established. Both RPPZs and CBDs can generate revenue to cover implementation and operational costs. This would be determined through the formation process.

[13] These documents are posted on line at https://www.bendoregon.gov/government/departments/growth-management/parking-study/citywide-parking-study

[14] In most cities requests are made by petition.

[15] Provisions are made in some cities for the sale of non-residential permits (e.g., employee permits from an adjacent commercial district) in RPPZs if there are demonstrated surpluses of parking.

IX. SUMMARY

The Galveston Corridor is an active and vital neighborhood experiencing increasing pressure on its parking supply. The intersection of commercial and residential parking demands will increasingly require more strategic coordination. The strategies above constitute a toolbox with which to manage the parking-related challenges and barriers that come with a successful commercial district. They are provided here for consideration by the City and stakeholders.

ATTACHMENT A

2017 Parking Inventory and Utilization Summary

2017 Bend – Galveston Avenue Corridor Parking Study
Occupancy/Utilization Data Summary

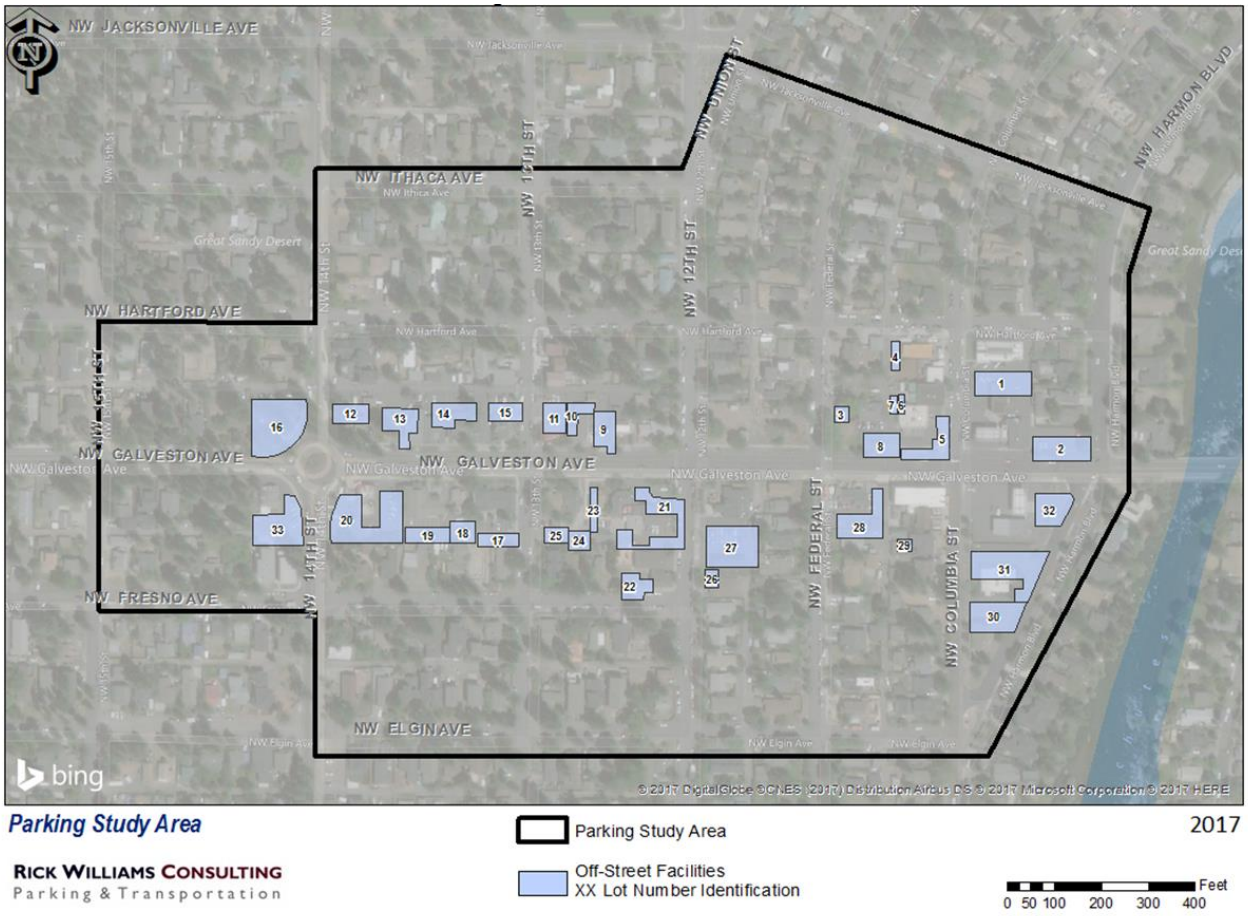
October 12, 2017

Study Area

Per input from the City of Bend and area stakeholders, the 2017 parking survey boundaries were drawn to generally include all parking within the below listed streets. **Figure A** provides an illustration of the study area (which also shows off-street sites):

- NW Ithaca / Jacksonville (north)
- NW Elgin Ave. (south)
- NW 15th Street between Hartford and Fresno (west)
- NW Harmon Blvd. (east)

Figure A: 2016 Parking Study Area (indicating off-street sites)



RICK WILLIAMS CONSULTING
Parking & Transportation

SURVEYED PARKING INVENTORY

Table 1 provides a summary breakout of all parking located within the study area by type of use (on-street or off-street). A full summary of all 33 off-street sites is provided below

Table 1: 2017 Bend/Galveston - Parking Inventory by Use Type

Type of Stall	Stalls	% of Total	Other Use Types	Spaces
ADA accessible	1	0.2%	Driveway Capacity[1]	477
No Limit	604	99.8%	Mailboxes[2]	100
On-Street Supply	*605*	*100%*		
Off-Street Supply	*307*	*100%*		
Total Supply	**912**	**100%**		

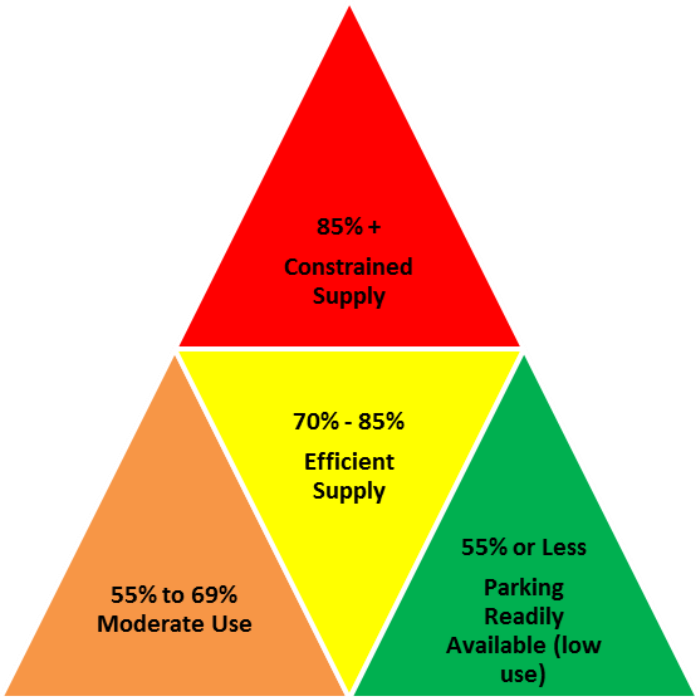
As **Table 1** indicates:

- There are a total of 912 parking stalls in the study area; 605 on-street and 307 off-street.
- Nearly all on-street parking (99.8%) is unregulated parking allowing unlimited time stays – No Limit.
- There is one (1) ADA stall provided on street (marked as such).
- The consultant team also identified all curb cuts that provide access into residential driveways. These driveways are estimated to provide off-street capacity for up to 477 vehicles. Vehicles parked in these driveways were counted during the study process.
- The consultant team identified the location of 100 mailboxes serving residential units located next to right of way parking areas. This supply was treated as a separate category for data collection purposes because blocking of mailboxes by parked cars was identified as a community concern.

[1] Driveway capacity was estimated as part of the inventory process where curb cuts provided access to a driveway area for vehicle storage. During the inventory process 166 driveways or curb cuts were documented. For clarification, it is illegal for any user to park in front of a driveway (including home owners).
[2] Estimate determined by common parking stall length with the mailbox centered in that measurement.

MEASURING PERFORMANCE

Industry standards consider parking to be constrained when 85% or more of the available supply is routinely occupied during the peak hour. In a constrained system, finding an available spot is difficult, especially for infrequent users such as customers and visitors. This can cause frustration and negatively affect perceptions about access into an area or district. Continued constraint can make it difficult to absorb and attract new growth, or to manage fluctuations in demand—for example, seasonal or event-based spikes.



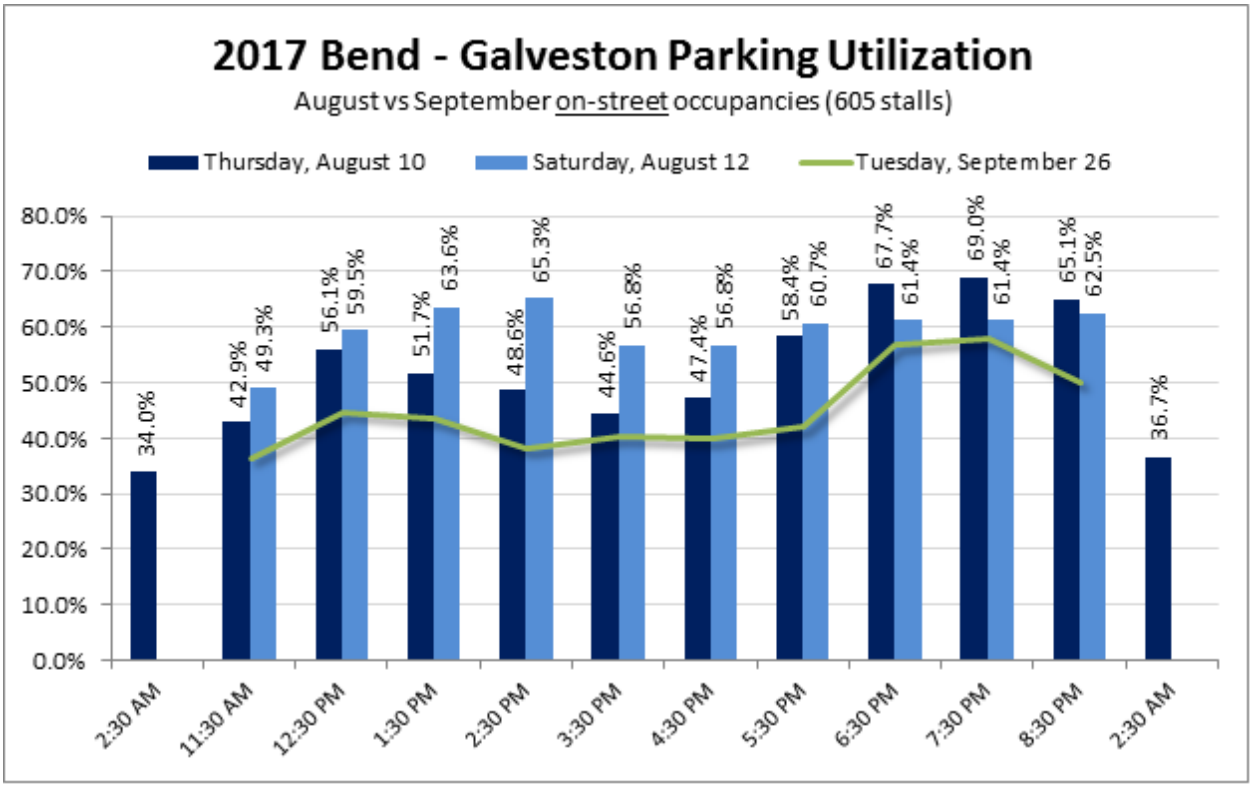
Industry standards also indicate that occupancy rates of 55% or less show that parking is readily available. While availability may be high, this may also indicate a volume of traffic inadequate to support active and vital businesses. Occupancy rates between these two thresholds indicate either moderate (55% to 69%) or efficient (70% to 85%) use.

Parking utilization rates in the efficient range indicates that there is active use with little constraint. Efficient use supports vital ground-level businesses and business growth, is attractive to potential new users, balances with adjacent residential demand, and is able to respond to routine fluctuations.

RWC's analysis of parking in the Bend/Galveston study zone uses these categories to evaluate the performance of the system.

ON-STREET DATA FINDINGS (OCCUPANCY)

Figure B: 2017 Bend/Galveston On-street Occupancies (all stalls - by day/by hour)



As **Figure B** indicates:

- Peak occupancies are **moderate** by industry standards for all survey days (<70%)
- All day average hourly occupancies range from <50% (September) to <60% (August)
- Highest peak hour was Thursday (Aug. 10) @ 69% between 7:00 and 8:00 PM.
- All days show midday and evening peaks, with dip in occupancy between 3PM and 5PM.
- 2:30 AM counts show average occupancy of 33% (this would be primarily residents on-street)

ON-STREET DATA FINDINGS (UTILIZATION)

Table 2 provides a summary of several utilization metrics for the performance of Galveston's on-street parking system.

Table 2: 2017 Bend/Galveston - On-Street Parking Utilization – Three Survey Days

Type of Stall	# of Stalls	Survey Day	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay	Turnover Rate
On-Street Supply	**605**	**Thursday, August 10, 2017[3]**	**69.0% 7:00 – 8:00 PM**	**187**	**2 hr./ 46 min**	**3.61**
		Saturday, August 12, 2017[4]	**65.3% 2:00 – 3:00 PM**	**209**	**2 hr./ 44 min**	**3.65**
		Tuesday, September 16, 2017[5]	**58.2% 7:00 – 8:00 PM**	**253**	**2 hr./ 53 min**	**3.47**
Driveways	*477*	Thursday, August 10, 2017	*40.9% 8:00 – 9:00 PM*	*282[6]*	*N/A*	*N/A*
		Saturday, August 12, 2017	*37.7% 8:00 – 9:00 PM*	*297*	*N/A*	*N/A*
		Tuesday, September 16, 2017	*36.2% 8:00 – 9:00 PM*	*304*	*N/A*	*N/A*
Mailboxes	*100*	Thursday, August 10, 2017	*19.0% 7:00 – 8:00 PM*	*81*	*2 hr./ 15 min*	*4.43*
		Saturday, August 12, 2017	*16.0% 7:00 – 9:00 PM*	*84*	*2 hr./ 39 min*	*3.78*
		Tuesday, September 16, 2017	*19.0% 7:00 – 9:00 PM*	*81*	*2 hr./ 50 min*	*3.52*

As **Table 2** indicates:

- Within the entire study zone, there are a significant number of empty on-street stalls during the peak hours; 187 on Thursday, 209 on Saturday and 253 on the Tuesday (September 26) study day. This is not to suggest that such stalls are convenient to visitors (see **Figures C and D** below for a look at heat maps that indicate likely areas of empty parking).
- The average duration of stay for all on-street users is less than 3 hours and is relatively consistent across study days; 2 hours 46 minutes (Thursday), 2 hours 44 minutes (Saturday) and 2 hours 53 minutes (Tuesday). It is important to note that the duration of stay includes all users. If employees and residents are parking on-street all day (or for long-periods), this would affect the duration of stay average, indicating that the average length of stay for a visitor would be less than these averages. On average, 208 vehicles a day park for 5 or more hours (see **Table 3** below).
- Stalls turnover at a rate of less than 4 turns per 10 hour period; ranging from 3.47 (Tuesday) to 3.65 (Saturday). While this is not a high rate of turnover within a business district; it is not unusual in a district with such a high density of residential land use. Industry standards (for commercial areas) would target rates at 5.0 or more.

[3] Thursday, August 10, 2017
[4] Saturday, August 12, 2017
[5] Tuesday, September 26, 2017
[6] Availability for residents only and based on estimated total.

- Use of driveway capacity is very low, with peak occupancies for this dedicated residential supply ranging from 36.2% (Tuesday) to a high of 40.9% (Thursday). As a result, there are 294 empty parking spaces available within this supply of parking. This is a benefit only to those residential units with curb cuts accessing driveways.
- Use of parking "space" in front of mail boxes indicates that there is uncertainty by users as to whether this space is available for use by the public. Peak occupancies of use range from just 16% (Saturday) to 19% (Tuesday/Thursday). Interestingly, the peak hour for all three study days is between 7:00 PM and 9:00 PM; meaning use is even lower earlier in the day.

ON-STREET DATA FINDINGS (OTHER CHARACTERISTICS OF USE)

Table 3 provides additional metrics of use for the on-street system. Key indicators include:

- The number of unique vehicle trips (UVT)[7] parked on-street over the 10 hour data collection period totaled 1,202 (Thursday), 1,313 (Saturday) and 945 (Tuesday).
- Vehicle volume during the summer days (Thursday/Saturday) is fairly consistent; though Saturday does have the highest vehicle load at 1,313 UVT.
- Vehicle volume dropped on the fall survey day (Tuesday) to 945, a difference of about 313 cars (or 25%) from the two day summer average.
- Quite a few vehicles park on street for long periods of the day (5 or more hours), ranging from 178 (Tuesday) to 236 (Saturday). On average, this represents about 18% of all vehicles parked over the course of a day. These vehicles would generally be associated with employee and resident stays.
- Vehicles do move throughout the day from one stall in the district to another. The number of vehicles moving from one parking spot to another within the study area is low, averaging 3.0% for the two summer days (Thursday/Saturday) and dropping to just 1.0% for the fall survey day (Tuesday).

Table 3: 2017 Bend/Galveston - Summary of On-Street Parking Use Characteristics

Use Characteristics	Thursday August 10	Saturday August 12	Tuesday September 26
Unique vehicle trips (UVT)	1,202	1,313	945
UVT parked ≥5 hours (% of UVT)	211 (17.6%)	236 (18.0%)	178 (18.8%)
Number of UVT observed in multiple stalls over the course of study day (#/% of all vehicles)	37 (3.0%)	40 (3.0%)	24 (1.0%)

[7] Unique vehicle trips (UVT) include documentation of each unique license plate number recorded each hour of the survey day.

ON-STREET DATA FINDINGS (RESIDENT VERSUS NON-RESIDENT VEHICLES)

During the summer data collection effort, the consultant team recorded unique license plates parking on-street in the very early morning hours (i.e., 2:00 AM – 3:00 AM). Two counts were conducted, one on the morning of August 10 and again on the morning of August 11. This provided two days of license plates that, for purposes of this analysis, most likely represent residents. These unique plates were put into a data base that was then compared with all license plates recorded between 11:00 AM and 9:00PM on the summer Thursday/Saturday survey days. This allowed the consultant to separate out, with a high level of confidence, residential plates from non-residential plates. **Table 4** summarizes that analysis.

Table 4: 2017 Bend/Galveston – Use of the Supply (Resident vs. Non-Resident)

Stall Type	# of Stalls	Average Unique Vehicle Trips (UVT)	Estimated Resident Vehicle	Estimated Non-Resident Vehicles
On-Street Supply	605	1,258	381 (30% of UVT)	877 (70% of UVT)

As **Table 4** indicates, about 30% (381 vehicles) parked during a typical day (11:00 AM – 9:00 PM) are residents; with 70% (877 vehicles) associated with non-residential vehicles (employees, customers/visitors, vendors).

ON-STREET DATA FINDINGS (PEAK HOUR HEAT MAPS)

The Galveston study area is located within a 23 block area. Within this area, there are 66 block faces that allow for parking. **Figures C, D** and **E** (following 3 pages) provide a block-face level "heat map" view of the peak hours for the each of the survey day data sets. Heat maps display occupancy by color with red indicating occupancies of 85% or more (constrained). Intensity of use then decreases from orange, to yellow, to green.

Each heat map displays peak hour occupancies for each of the study days as well as an area of high occupancy, which is provided in a "box" highlighted in white. The highlighted boxes are important in that demand for parking in this area of the study area is much higher than the study area averages for occupancy illustrated in **Figure B** above.

The high occupancy "boxes" are generally comprised of the area bounded by NW Hartford/NW Fresno between NW 13th/NW Harmon. This smaller area represents about 12 city blocks and 38 block faces that allow parking.

Key findings from the heat maps include:

- Parking constraints are more pronounced in smaller concentrated areas of the study area.
- The heat maps reveal that the level of constraint in the study area is understated when occupancies of all stalls are considered (see **Figure B** above).

- In summer, up to half of block faces in the "box" exceed 85%+ (and 100%) – see **Table 5** below.
- Public sense of congestion and parking constraint is very real in this box.
- As the heat maps indicate, the majority of empty stalls are located on the western and northern sectors of the study area; these areas may not be perceived as convenient to users.

Table 5: 2017 Bend/Galveston – Summary of Constrained Block Faces (entire study area vs. "box.")

Survey Date	Block Faces w/ Parking Allowed (entire zone)	Peak Hour	Block Faces Over 85%	Block Faces over 100%	% of Block Faces Constrained	% of Block Faces in "Box" (38 Block Faces)
Thursday, August 10, 2017	66	7PM – 8PM	15	5	30.3%	**47.4% (18)**
Saturday, August 12, 2017	66	2PM – 3PM	19	5	36.3%	**55.3% (21)**
Tuesday, September 26, 2017	66	7PM – 8PM	12	3	22.7%	**34.2% (13)**

Figure C: 2017 Bend/Galveston On-street Peak Hour Heat Map (Saturday, August 10, 2017)

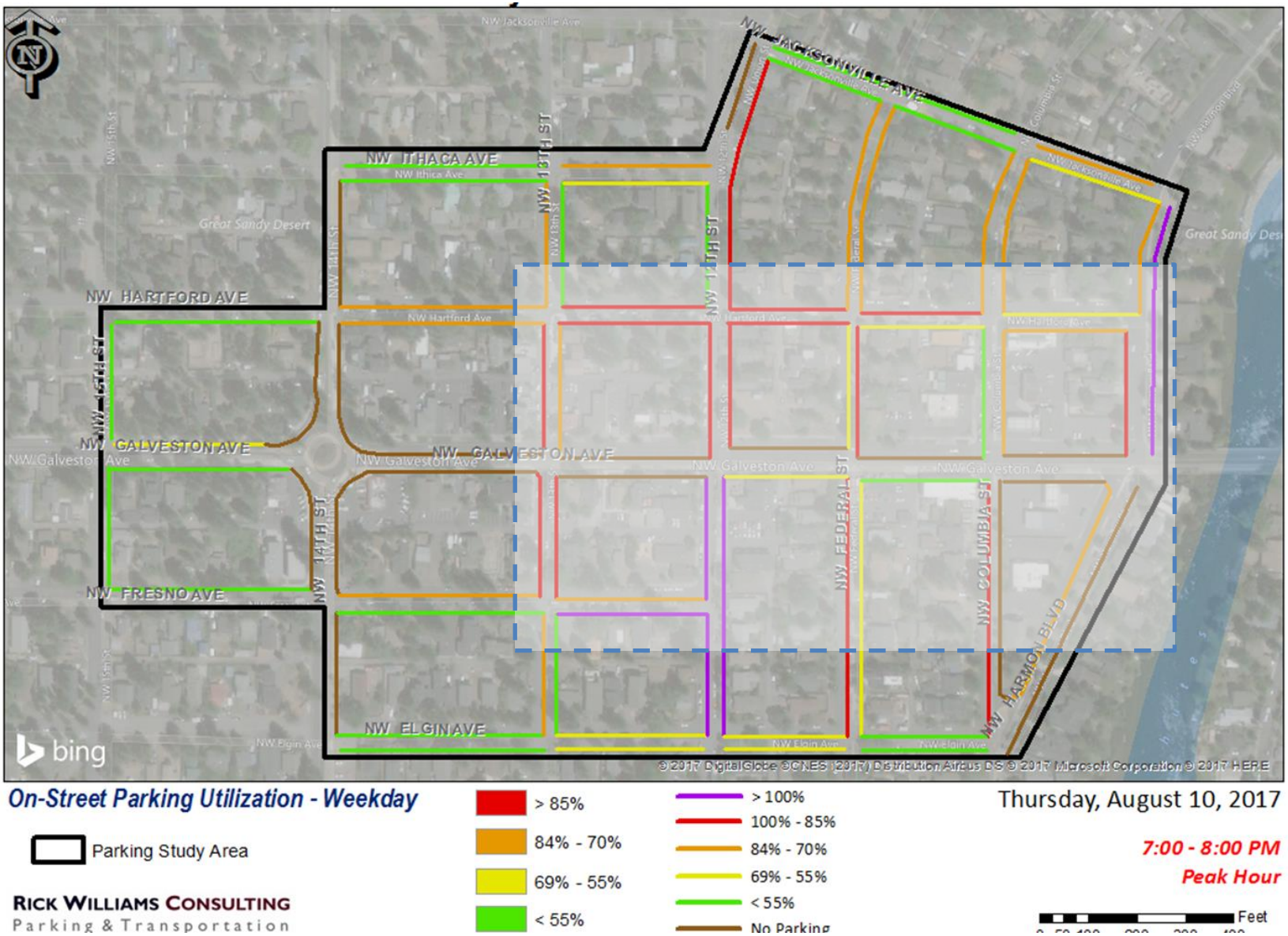


Figure D: 2017 Bend/Galveston On-street Peak Hour Heat Map (Saturday, August 12, 2017)

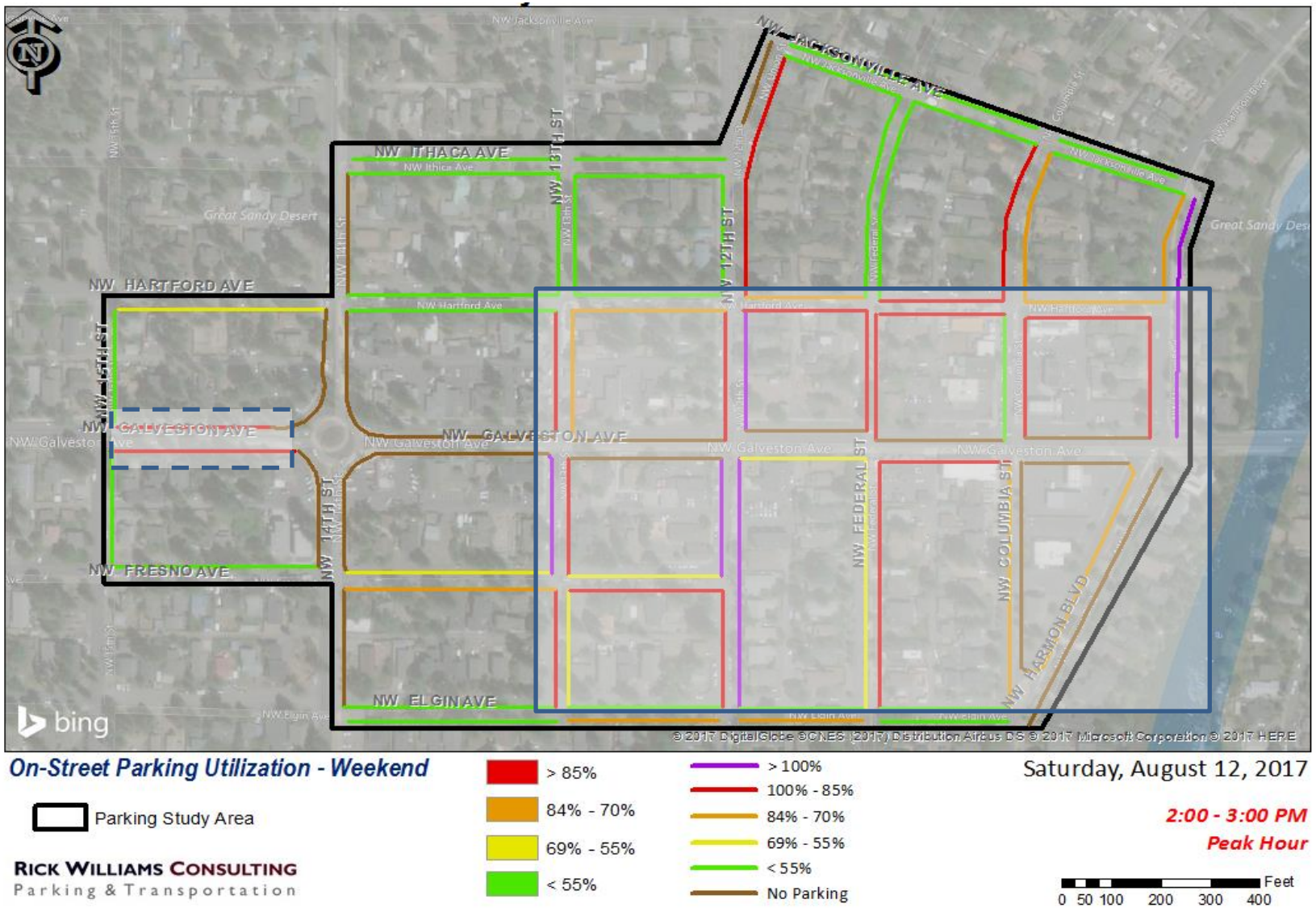
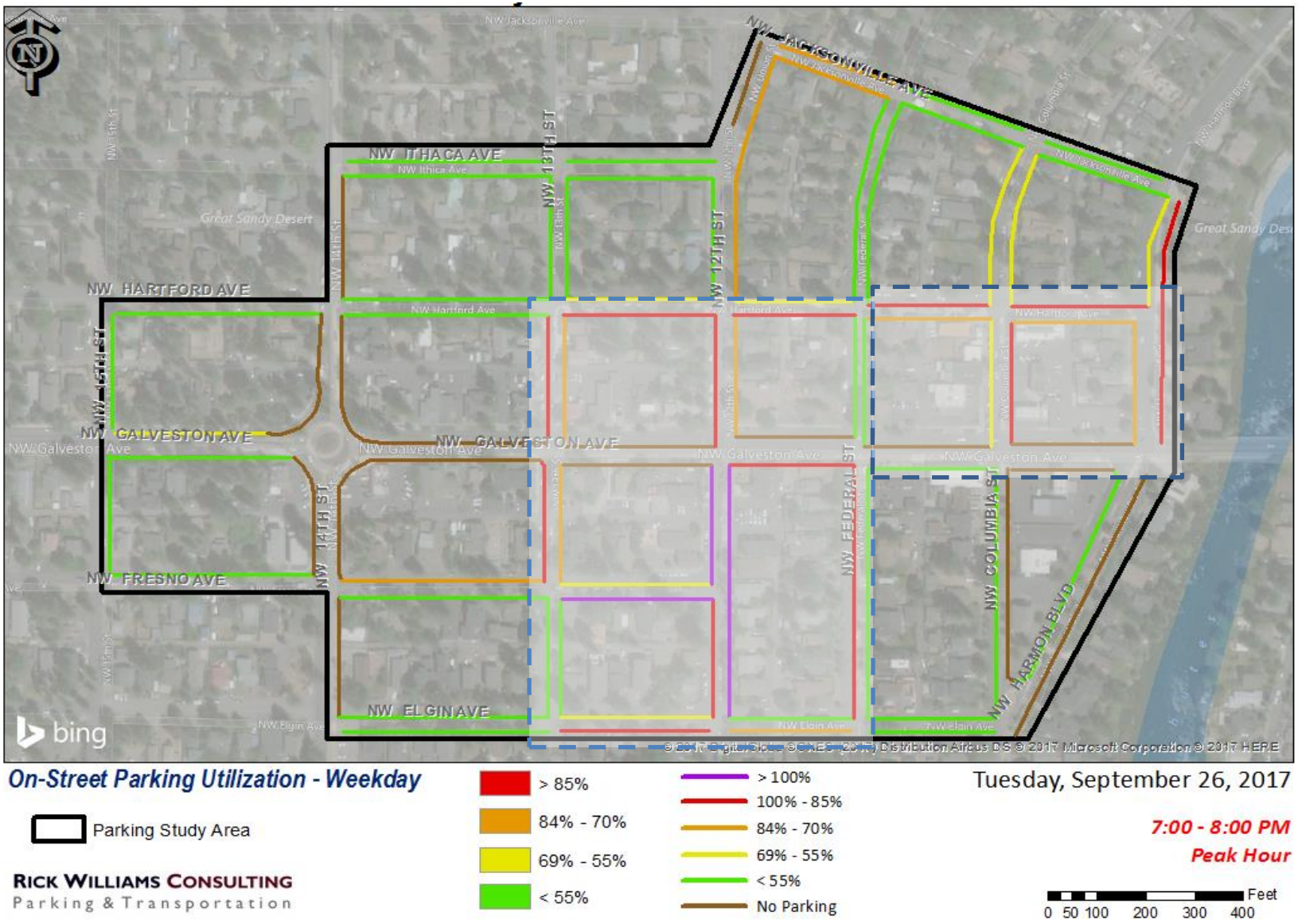


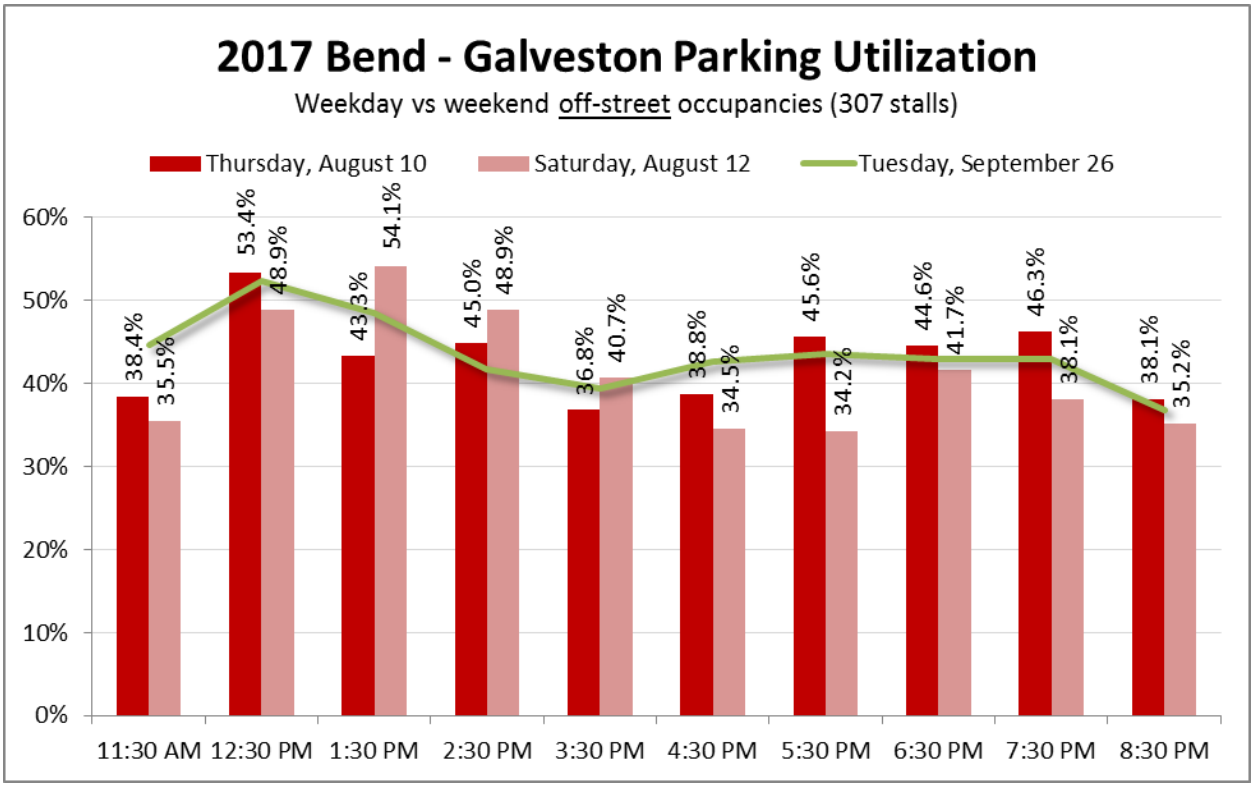
Figure E: 2017 Bend/Galveston On-street Peak Hour Heat Map (Tuesday, September 26, 2017)



OFF-STREET DATA FINDINGS (OCCUPANCY)

A total of 307 off-street parking stalls were sampled for 10 hours on each of the survey days. These stalls were located on 33 separate sites. **Figure F** provides a summary of occupancy by hour for each of the three survey days.

Figure F: 2017 Bend/Galveston Off-street Occupancies (all stalls - by day/by hour)



As **Figure F** indicates:

- Overall occupancy of off-street supply is moderate at peak hours.
- Occupancy trend follows on-street system with dip in occupancy between 3PM and 5PM.
- Thursday (8/10) peak occupancy reaches 53% (@ 12:30 PM).
- Saturday (8/12) peak occupancy reaches 54% (@ 1:30 PM).
- Tuesday (9/26) peak occupancy reaches 53% (@12:30 PM).
- Average number of empty stalls at peak hour = 144

OFF-STREET DATA FINDINGS (UTILIZATION BY OBSERVED LOT – 33 SITES)

Table 6 summarizes findings from each of the 33 sampled lots observed on each of the survey days. All lots in the study area are privately owned; the City does not own or operate off-street parking in this area. Each lot has a unique identifying number that correlates the study area map provided in **Figure A.** Data for each lot is included that indicates its stall total, unique peak occupancy by survey day, and empty stalls at the peak hour. All lot activity is totaled at the end of the table that consolidates each survey day to the peak hour for the larger study area. A breakout of each lot and its relationship as a % of all off-street parking is provided in **ATTACHMENT A** at the end of this report.

Key outputs from **Table 6** include:

- When all occupancies are combined, there are a total of 143 (Thursday) and 141 (Saturday) and 146 (Tuesday) empty parking stalls located on off-street lots within the study area.
- Though there appears to be a significant amount of *empty* stalls, this is not to infer that such stalls are *available* for use by visitors or employees not associated with specific businesses as all of the off-street parking is in private ownership.
- Similar pattern most days, lunch hour peak (AVG: 141 empty stalls).

Table 6: 2017 Bend/Galveston - Off-Street Parking Utilization (Three Survey Days)

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
1	Flipped/Westside Coin-OP Laundry/Cibelli's Pizza	12	Thursday, August 10, 2017	75.0% 1:00 – 2:00 PM	3
			Saturday, August 12, 2017	91.7% 1:00 – 2:00 PM	1
			Tuesday, September 16, 2017	83.3% 1:00 – 2:00 PM	2
2	Westside Tavern	12	Thursday, August 10, 2017	75.0% 7:00 – 8:00 PM	3
			Saturday, August 12, 2017	91.7% 12:00 – 1:00 PM 2:00 – 3:00 PM	1
			Tuesday, September 16, 2017	83.3% 4:00 – 8:00 PM	2
3	Sol Verde	4	Thursday, August 10, 2017	50.0% 1:00 – 4:00 PM	2
			Saturday, August 12, 2017	75.0% 11:00 AM – 12:00 PM 1:00 – 3:00 PM	1
			Tuesday, September 16, 2017	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 4:00 – 6:00 PM	2
4	Food Carts	4	Thursday, August 10, 2017	75.0% 1:00 – 2:00 PM 5:00 – 7:00 PM 8:00 – 9:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
			Saturday, August 12, 2017	75.0% 12:00 – 2:00 PM 3:00 – 9:00 PM	1
			Tuesday, September 16, 2017	75.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 7:00 – 9:00 PM	1
5	7-Eleven	10	Thursday, August 10, 2017	90.0% 3:00 – 4:00 PM	1
			Saturday, August 12, 2017	100% 4:00 – 5:00 PM	0
			Tuesday, September 16, 2017	50.0% 12:00 – 1:00 PM 5:00 – 6:00 PM	5
6	Hutch's	2	Thursday, August 10, 2017	100% 11:00 AM – 3:00 PM	1
			Saturday, August 12, 2017	100% 11:00 AM – 7:00 PM	0
			Tuesday, September 16, 2017	100% 12:00 – 1:00 PM 5:00 – 7:00 PM 8:00 – 9:00 PM	0
7	724 NW Federal St	4	Thursday, August 10, 2017	50.0% 12:00 – 2:00 PM 4:00 – 9:00 PM	0
			Saturday, August 12, 2017	50.0% 11:00 AM – 12:00 PM	2
			Tuesday, September 16, 2017	75.0% 12:00 – 1:00 PM	1
8	Big O Bagels	6	Thursday, August 10, 2017	50.0% 12:00 – 2:00 PM	2
			Saturday, August 12, 2017	83.3% 11:00 AM – 12:00 PM	1
			Tuesday, September 16, 2017	83.3% 12:00 – 1:00 PM	1
9	Paradise Produce	5	Thursday, August 10, 2017	80.0% 12:00 – 1:00 PM	3
			Saturday, August 12, 2017	60.0% 11:00 AM – 12:00 PM	2
			Tuesday, September 16, 2017	60.0% 4:00 – 5:00 PM	2
10	Primal Cuts/Growler Phil's	5	Thursday, August 10, 2017	80.0% 12:00 – 1:00 PM 5:00 – 6:00 PM	1
			Saturday, August 12, 2017	80.0% 6:00 – 7:00 PM	1
			Tuesday, September 16, 2017	80.0% 1:00 – 2:00 PM	1
11	Longboard Louie's	10	Thursday, August 10, 2017	90.0% 7:00 – 8:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
			Saturday, August 12, 2017	80.0% 8:00 – 9:00 PM	2
			Tuesday, September 16, 2017	80.0% 3:00 – 4:00 PM	2
12	Sip	5	Thursday, August 10, 2017	120.0% 6:00 – 7:00 PM	-1
			Saturday, August 12, 2017	80.0% 6:00 – 7:00 PM	1
			Tuesday, September 16, 2017	100% 3:00 – 4:00 PM	0
13	Bend Furniture & Design/Sole	11	Thursday, August 10, 2017	63.6% 4:00 – 5:00 PM	4
			Saturday, August 12, 2017	45.5% 12:00 – 2:00 PM	6
			Tuesday, September 16, 2017	63.6% 3:00 – 4:00 PM	4
14	Fleet Feet/Knitting Place	10	Thursday, August 10, 2017	60.0% 11:00 AM – 12:00 PM	4
			Saturday, August 12, 2017	100% 1:00 – 2:00 PM	0
			Tuesday, September 16, 2017	60.0% 11:00 AM – 12:00 PM	4
15	Ida's Cupcakes/Ariana Restaurant	15	Thursday, August 10, 2017	73.3% 6:00 – 7:00 PM	4
			Saturday, August 12, 2017	73.3% 8:00 – 9:00 PM	4
			Tuesday, September 16, 2017	86.7% 6:00 – 7:00 PM	2
16	The Victorian Café	15	Thursday, August 10, 2017	80.0% 11:00 AM – 12:00 PM	3
			Saturday, August 12, 2017	86.7% 12:00 – 1:00 PM	2
			Tuesday, September 16, 2017	93.3% 11:00 AM – 12:00 PM	1
17	Hopscotch Kids/Trophy Properties	10	Thursday, August 10, 2017	90.0% 11:00 AM – 12:00 PM	1
			Saturday, August 12, 2017	60.0% 12:00 – 1:00 PM	4
			Tuesday, September 16, 2017	30.0% 11:00 AM – 1:00 PM 3:00 – 4:00 PM	7
18	Studio 541 Salon	3	Thursday, August 10, 2017	100% 11:00 AM – 3:00 PM	0
			Saturday, August 12, 2017	100% 11:00 AM – 12:00 PM 2:00 – 3:00 PM	0
			Tuesday, September 16, 2017	66.7% 11:00 AM – 1:00 PM	1
19	Cutting Club/East Lake Framing	9	Thursday, August 10, 2017	111.1% 1:00 – 2:00 PM	-1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
			Saturday, August 12, 2017	33.3% 1:00 – 2:00 PM	6
			Tuesday, September 16, 2017	100% 11:00 AM – 12:00 PM	0
20	Taco Salsa	24	Thursday, August 10, 2017	62.5% 12:00 – 1:00 PM	9
			Saturday, August 12, 2017	75.0% 6:00 – 7:00 PM	6
			Tuesday, September 16, 2017	45.8% 12:00 – 1:00 PM	13
21	Brother Jon's Public House	19	Thursday, August 10, 2017	78.9% 7:00 – 8:00 PM	4
			Saturday, August 12, 2017	84.2% 1:00 – 2:00 PM 8:00 – 9:00 PM	3
			Tuesday, September 16, 2017	105.3% 7:00 – 8:00 PM	-1
22	Westside Shorty's	10	Thursday, August 10, 2017	50.0% 1:00 – 2:00 PM 3:00 – 5:00 PM	5
			Saturday, August 12, 2017	20.0% 2:00 – 3:00 PM	8
			Tuesday, September 16, 2017	10.0% 12:00 – 3:00 PM	9
23	Diamond Tree	4	Thursday, August 10, 2017	50.0% 4:00 – 5:00 PM	2
			Saturday, August 12, 2017	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM	2
			Tuesday, September 16, 2017	75.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 7:00 – 8:00 PM	1
24	Westside Family Clinic	6	Thursday, August 10, 2017	33.3% 11:00 AM – 12:00 PM 2:00 – 4:00 PM	4
			Saturday, August 12, 2017	16.7% 1:00 – 2:00 PM 3:00 – 5:00 PM	5
			Tuesday, September 16, 2017	33.3% 11:00 AM – 12:00 PM 1:00 – 4:00 PM	4
25	Mothers Juice Cafe	4	Thursday, August 10, 2017	75.0% 11:00 AM – 1:00 PM	1
			Saturday, August 12, 2017	75.0% 11:00 AM – 3:00 PM	1
			Tuesday, September 16, 2017	75.0% 11:00 AM – 12:00 PM	1
26	1 Day Signs	2	Thursday, August 10, 2017	50.0% 11:00 AM – 12:00 PM	1

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
				1:00 – 2:00 PM 6:00 – 7:00 PM	
			Saturday, August 12, 2017	0% 11:00 AM – 9:00 PM	2
			Tuesday, September 16, 2017	50.0% 11:00 AM – 12:00 PM 1:00 – 2:00 PM 4:00 – 5:00 PM	1
27	10 Barrel/Namaspa	17	Thursday, August 10, 2017	94.1% 12:00 – 4:00 PM 5:00 – 9:00 PM	1
			Saturday, August 12, 2017	100% 8:00 – 9:00 PM	0
			Tuesday, September 16, 2017	100% 12:00 – 1:00 PM 4:00 – 5:00 PM	0
28	Aspect Boards and Brews	20	Thursday, August 10, 2017	100% 6:00 – 7:00 PM 8:00 – 9:00 PM	0
			Saturday, August 12, 2017	100% 5:00 – 6:00 PM	0
			Tuesday, September 16, 2017	90.0% 1:00 – 2:00 PM 7:00 – 8:00 PM	2
29	Sunriver Brewing Co	1	Thursday, August 10, 2017	0% 11:00 AM – 9:00 PM	1
			Saturday, August 12, 2017	0% 11:00 AM – 9:00 PM	1
			Tuesday, September 16, 2017	100% 4:00 – 5:00 PM	0
30	Sons of Norway Fjeldheim Lodge	15	Thursday, August 10, 2017	20.0% 2:00 – 3:00 PM	12
			Saturday, August 12, 2017	26.7% 6:00 – 7:00 PM	11
			Tuesday, September 16, 2017	80.0% 11:00 AM – 12:00 PM	3
31	Serenity Lane	13	Thursday, August 10, 2017	61.5% 6:00 – 7:00 PM	5
			Saturday, August 12, 2017	15.4% 2:00 – 3:00 PM	11
			Tuesday, September 16, 2017	38.5% 6:00 – 9:00 PM	8
32	Shell/Espresso	9	Thursday, August 10, 2017	77.8% 4:00 – 6:00 PM	2
			Saturday, August 12, 2017	44.4% 11:00 AM – 4:00 PM 8:00 – 9:00 PM	5
			Tuesday, September 16, 2017	155.6% 3:00 – 5:00 PM 8:00 – 9:00 PM	-5

Lot ID	Facility	Stalls	Study Day	Peak Occupancy Peak Hour	Stalls Available
33	Parrilla Grill	11	Thursday, August 10, 2017	100% 12:00 – 1:00 PM	0
			Saturday, August 12, 2017	90.9% 12:00 – 3:00 PM	1
			Tuesday, September 16, 2017	90.9% 12:00 – 1:00 PM	1
Off-Street Supply		**307**	**Thursday, August 10, 2017**	**53.4% 12:00 – 1:00 PM**	**143**
			Saturday, August 12, 2017	**54.1% 1:00 – 2:00 PM**	**141**
			Tuesday, September 16, 2017	**52.4% 12:00 – 1:00 PM**	**146**

OFF-STREET DATA FINDINGS (PEAK HOUR HEAT MAPS)

Figures G, H and **I** provide a block-face level "heat map" view of the peak hours for off-street parking for the three separate data sets. Heat maps display occupancy by color with red indicating occupancies of 85% or more (constrained). Intensity of use then decreases from orange, to yellow, to green. **Figures J, K** and **L** provide heat maps that combine on and off-street parking.

Key findings from the heat maps include:

- Most lots have low to moderate use.
- 7 of 33 lots reach 85%+ on at least one survey day.
- Lots 27 and 33 were constrained all three survey days. Lot 20 was constrained on two of three days.
- The challenge of off-street is spatial distribution of lots and small lot sizes (largest lot is 24 stalls – Lot 20).

Figure G: 2017 Bend/Galveston Off-street Peak Hour Heat Map (Thursday, August 10, 2017)

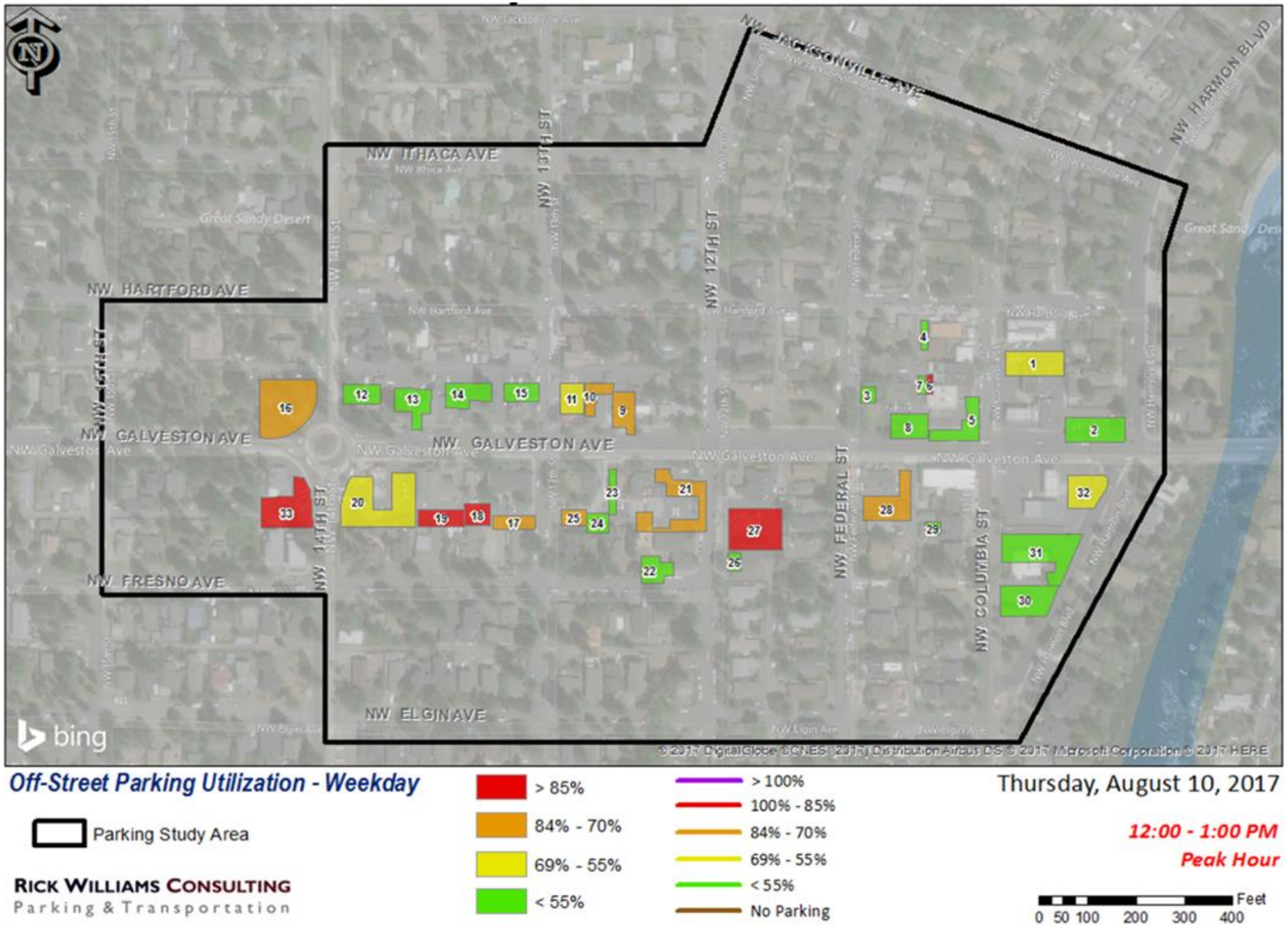


Figure H: 2017 Bend/Galveston Off-street Peak Hour Heat Map (Saturday, August 12, 2017)

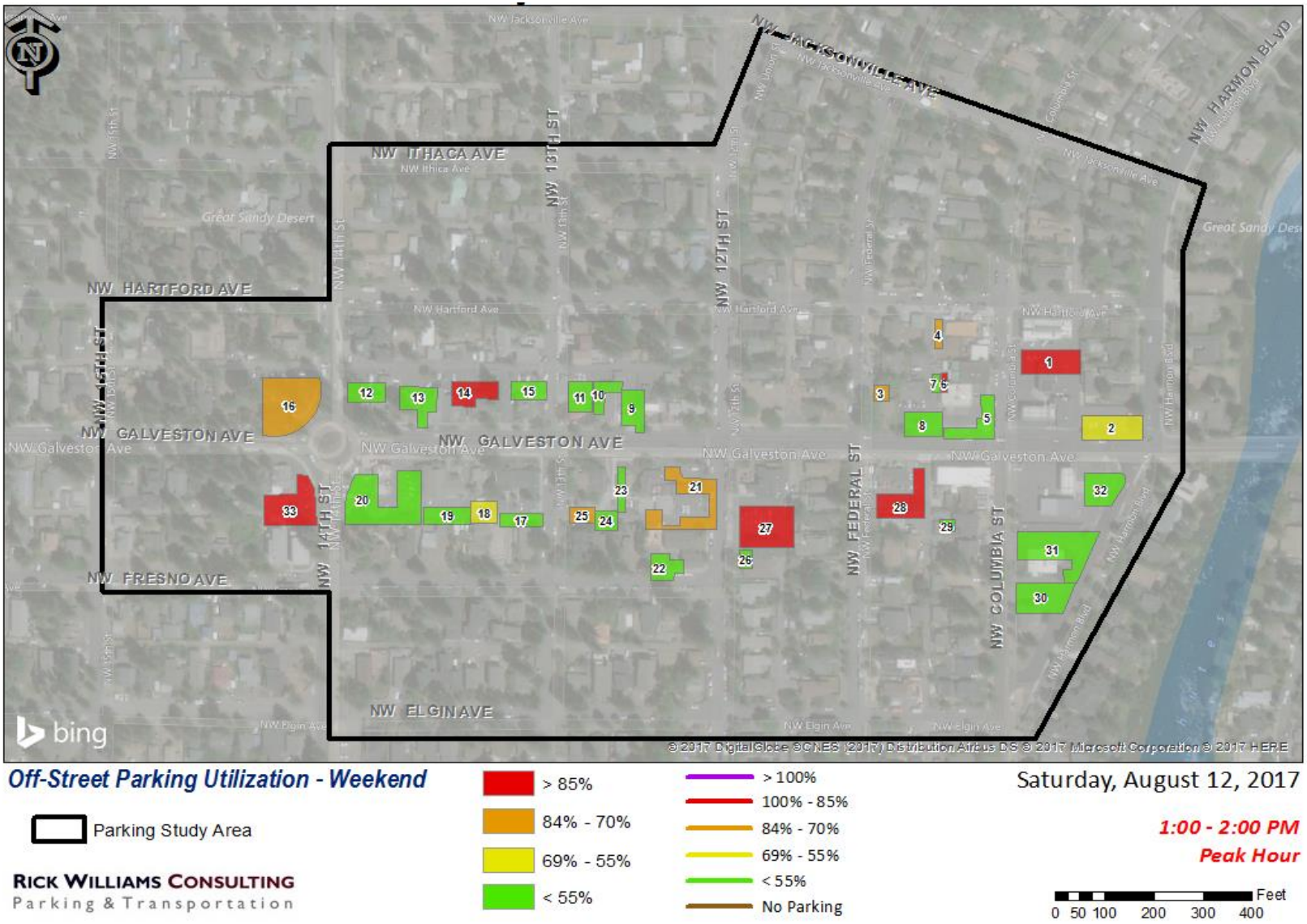


Figure I: 2017 Bend/Galveston Off-street Peak Hour Heat Map (Tuesday, September 26, 2017)

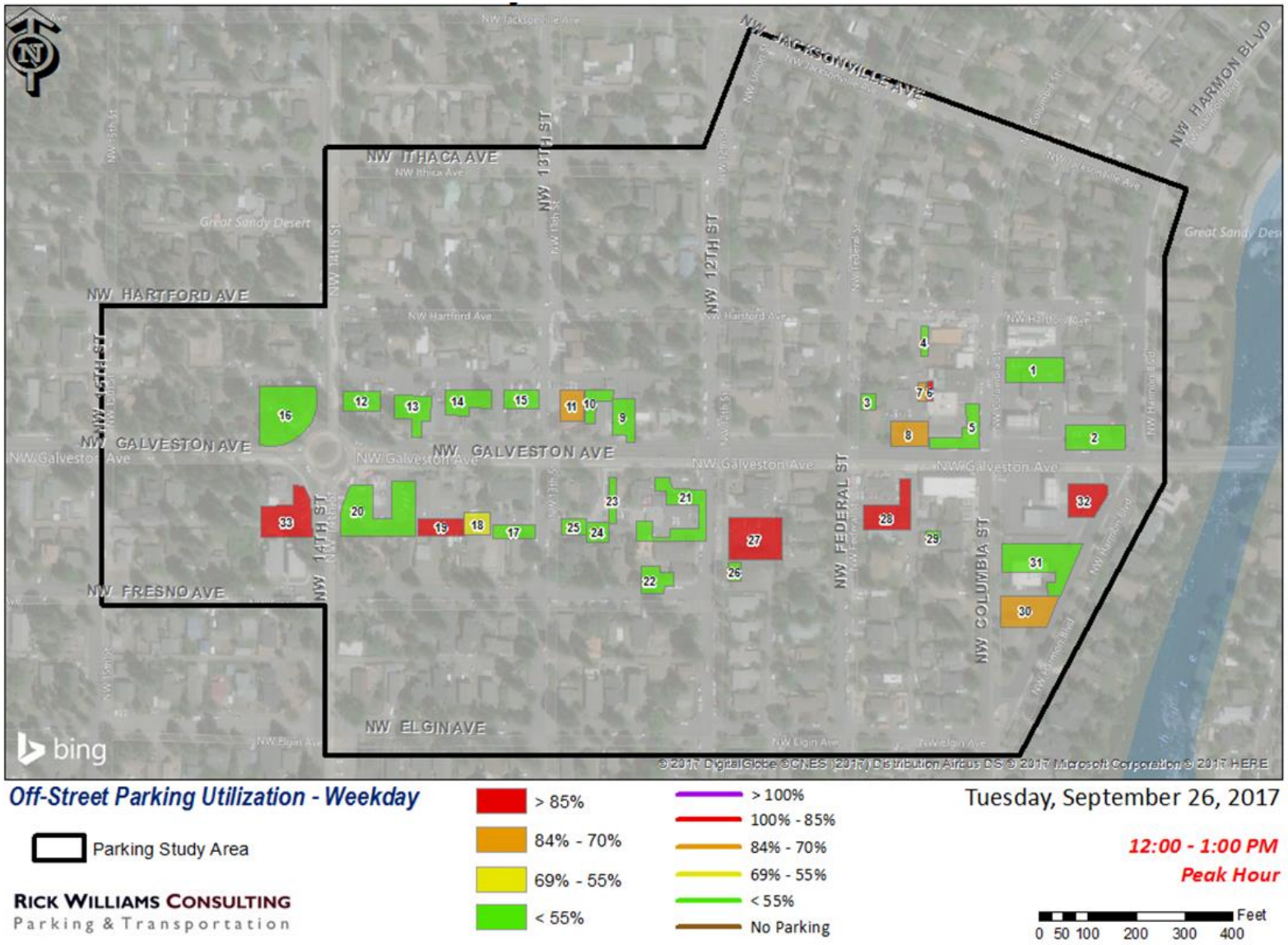


Figure J: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Thursday, August 10, 2017)

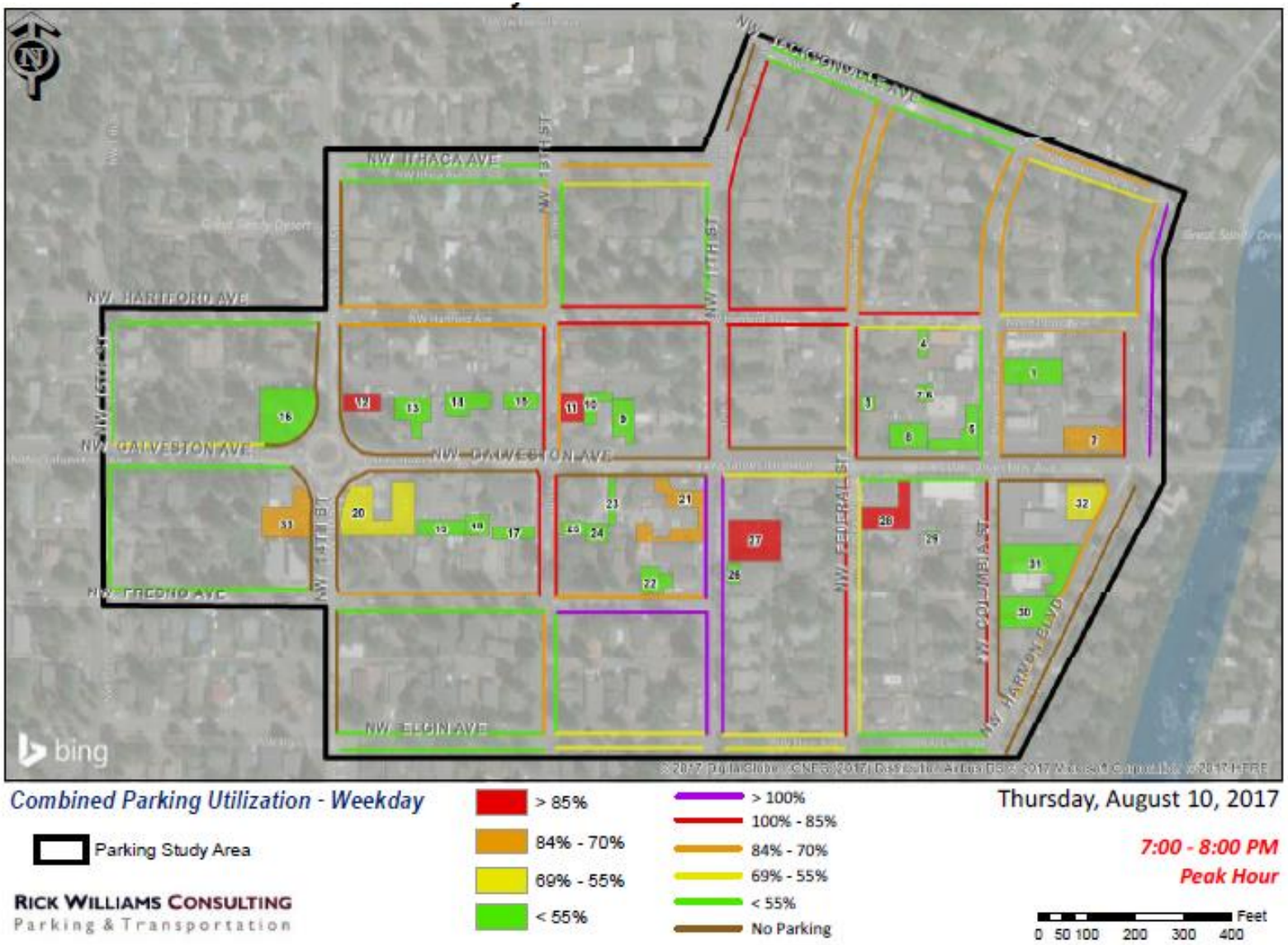


Figure K: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Saturday, August 12, 2017)

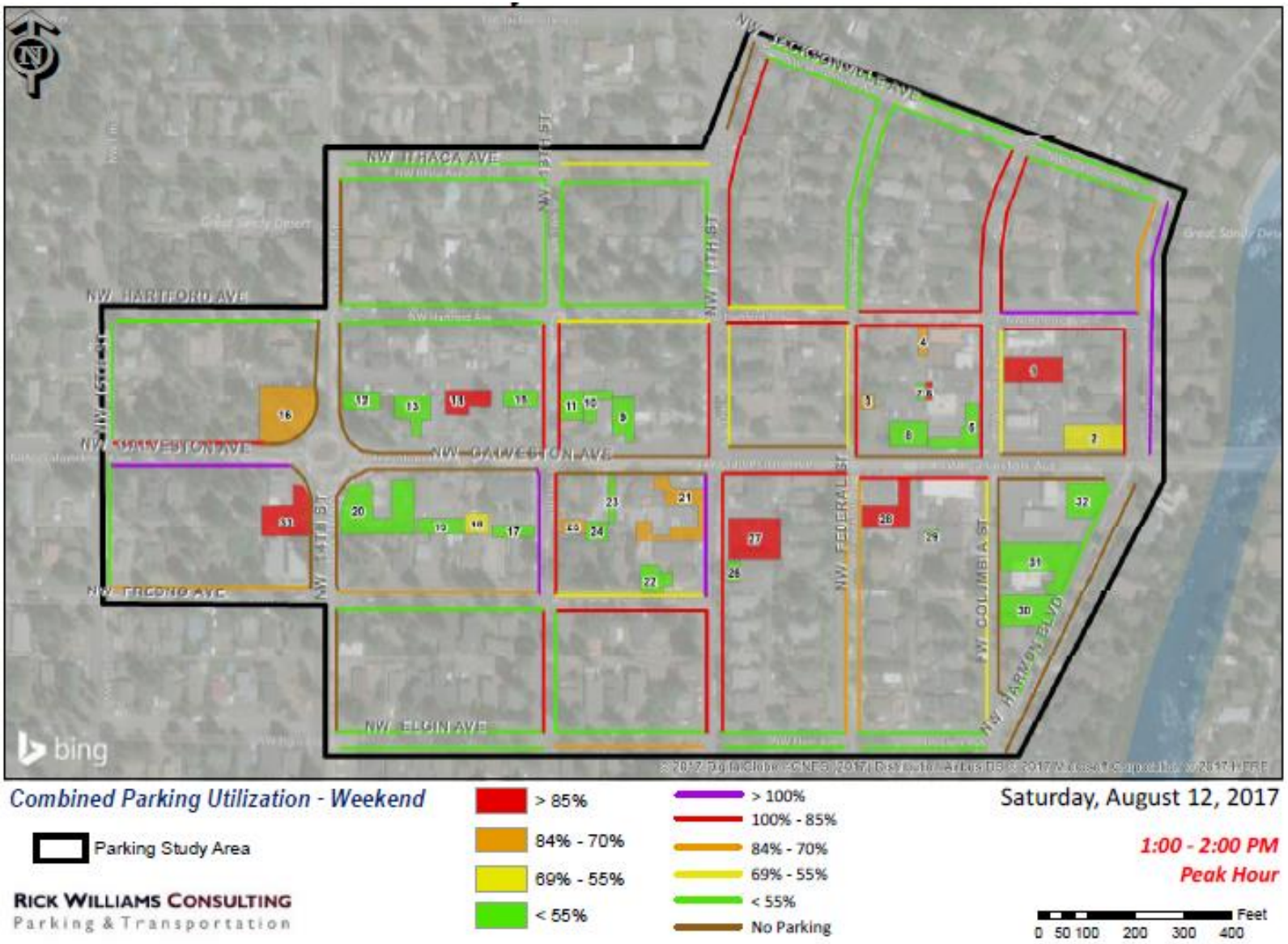
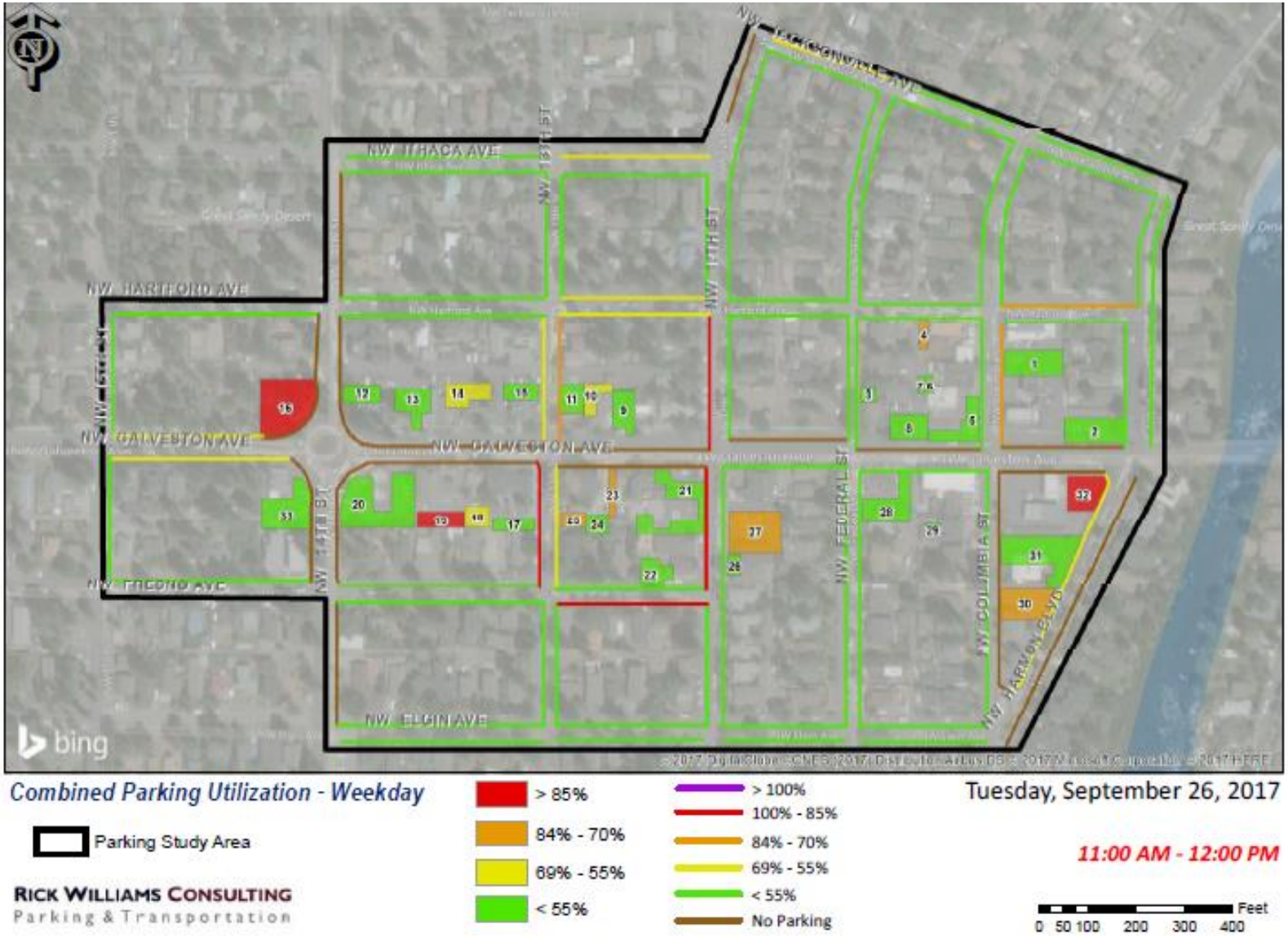


Figure L: 2017 Bend/Galveston - Combined (on and off-street) Peak Hour Heat Map (Tuesday, September 26, 2017)



ATTACHMENT A

SUMMARY OF OFF-STREET SITES (w/in Study Area)

Lot ID	Facility	Stalls	% of Total
1	Flipped/Westside Coin-OP Laundry/Cibelli's Pizza	12	3.9%
2	Westside Tavern	12	3.9%
3	Sol Verde	4	1.3%
4	Food Carts	4	1.3%
5	7-Eleven	10	3.3%
6	Hutch's	2	0.7%
7	724 NW Federal St	4	1.3%
8	Big O Bagels	6	2.0%
9	Paradise Produce	5	1.6%
10	Primal Cuts/Growler Phil's	5	1.6%
11	Longboard Louie's	10	3.3%
12	Sip	5	1.6%
13	Bend Furniture & Design/Sole	11	3.6%
14	Fleet Feet/Knitting Place	10	3.3%
15	Ida's Cupcakes/Ariana Restaurant	15	4.9%
16	The Victorian Café	15	4.9%
17	Hopscotch Kids/Trophy Properties	10	3.3%
18	Studio 541 Salon	3	1.0%
19	Cutting Club/East Lake Framing	9	2.9%
20	Taco Salsa	24	7.8%
21	Brother Jon's Public House	19	6.2%
22	Westside Shorty's	10	3.3%

Lot ID	Facility	Stalls	% of Total
23	Diamond Tree	4	1.3%
24	Westside Family Clinic	6	2.0%
25	Mothers Juice Cafe	4	1.3%
26	1 Day Signs	2	0.7%
27	10 Barrel/Namaspa	17	5.5%
28	Aspect Boards and Brews	20	6.5%
29	Sunriver Brewing Co	1	0.3%
30	Sons of Norway Fjeldheim Lodge	15	4.9%
31	Serenity Lane	13	4.2%
32	Shell/Espresso	9	2.9%
33	Parrilla Grill	11	3.6%
Off-Street Supply		**307**	**100%**

ATTACHMENT B

2017 Public Involvement Summary

PUBLIC INVOLVEMENT SUMMARY

A. Public Involvement Goals

As mentioned in the study report, early in the process, the following goals were identified for public involvement:

- Inform the community about current parking conditions in the Galveston Avenue Corridor and foster the exchange of ideas;
- Document stakeholder interests and concerns; and
- Share potential solutions to parking issues with stakeholders and the community, and solicit feedback.

B. Stakeholder Identification

The project team sought involvement from area stakeholders and interested parties, both to inform them about the project and to solicit their input. The following groups were specifically targeted:

- Galveston Avenue Corridor business owners and managers
- Galveston Avenue Corridor employees
- Galveston Avenue Corridor residents
- Galveston Avenue Corridor property owners/developers
- River West Neighborhood Association
- Transit representatives (Cascades East Transit)
- Accessibility community
- Multi-modal community (Commute Options, Bend Bikes)
- Schools and youth
- Community at large/visitors to the study area/individuals who travel through the Corridor

C. Community Involvement

Galveston Avenue Corridor Parking Study Website

A website was created to share data and analysis, public meeting information, and outreach materials. The website can be found at https://www.bendoregon.gov/government/departments/growth-management/parking-study/galveston-avenue-corridor-parking-study.

Stakeholder Interviews

In May 2017, the project team conducted 10 interviews with 14 representative stakeholders to learn more about their experiences with parking conditions and to help define an appropriate boundary for the study area.
Interviewees were selected for the active role each plays in the community, their varied interests, and their knowledge and skills. They included business and commercial property owners, residents, developers, city councilors, a planning commissioner, an architect, and a city planner. The interviews allowed the project team to assess the community's interest in the parking study and to document their ideas and concerns.

Galveston Avenue Corridor Parking Study Sounding Board

A stakeholder Sounding Board was created, with members selected from the community stakeholder groups identified in the public involvement plan. An initial meeting was held early in the process, and a second following the collection of study data. More than 25 stakeholders were invited, and eight elected to participate in the meetings. Those unable to attend were invited to share their input with the project lead.

Sounding Board members offered feedback on specific issues and data needs and on the study area boundary. As a result, the boundary was expanded and an additional data collection date added in fall to complement the two summer data collection dates already scheduled.

Community Open Houses

The project team held two Open Houses to share information and solicit broad community input. Both events were held at the Westside Village Magnet School at Kingston Elementary Gymnasium, 1101 NW 12th Street, Bend, Oregon 97703, immediately adjacent to the study area.

The first open house was held on Tuesday, June 27, 2017, from 4:30 to 7:00 p.m. Attendees were invited to review informational display boards on the goals and scope of the study and speak with project team members. The project team twice offered a presentation on study plans; each presentation was followed by a robust question and answer period. Attendees were also asked to share their comments and questions on moderated display boards, on comment cards, and via the project website.

Information about the event was shared widely through social and traditional media, email, and fliers. An event was created on the City of Bend Facebook page, and information posted on Facebook, Twitter, and Next Door. The project website was updated with information about the open house and opportunities to provide input. The City circulated press releases to its media list. The City and project team sent email announcements and an electronic flyer to the Bend neighborhood associations, interested parties lists and other contacts, and the City created a calendar event on its website. The interested parties email list comprised email addresses compiled from this study as well as other projects completed in the area in the past few years. In addition to many local postings, *The Bulletin*,

the regional daily newspaper, ran an article about the event the day prior, encouraging community participation.

The open house was attended by more than 60 people. Forty comment cards were received at the event and two by email in the week following. Local news stations KTVZ and KBND ran stories on the event on their broadcasts. A summary report of comments was provided to the project team for incorporation into the study. The open house comment report can be found on the project website.

The second open house was held on Wednesday, October 18, 2017, from 4:30 to 7:00 p.m. This event was designed for the project team to share information on data collected during the study and its initial analysis. The team also introduced a list of potential parking solutions for the community's consideration. Community members unable to attend the event were able to review materials online, contact the project team leader with any questions, and provide comments via the open house comment card through October 25, 2017. The presentation slides and the data were also provided on the project website.

Information about the event was again shared widely through social media platforms Facebook, Twitter, and Next Door, as well as through traditional media releases and email blasts. In addition to many local postings, *The Bulletin* ran an article about the event the day prior, and local news station KTVZ did so the week prior, encouraging community participation. KTVZ and Central Oregon Daily News media stations both covered the open house, with Central Oregon Daily hosting a live Facebook stream of the event.

The open house was attended by more than 30 people. Attendees were invited to review maps of parking demand in the study area, and to speak with project team members. The project team presented data findings from the study and a question and answer period followed. Attendees were also asked to share their comments and questions on paper comment cards or via email. Those comments were shared with the project team for their review prior to finalizing the study. A comment summary report was also made available to the public and is available on the project website.

Additional Information

For additional information, including public involvement summary reports, please see the project website at https://www.bendoregon.gov/government/departments/growth-management/parking-study/galveston-avenue-corridor-parking-study.