The Town of Davidson

COMPREHENSIVE PARKING STUDY

The Town of Davidson, North Carolina | 2017

Stantec

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The Town of Davidson

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INTRODUCTION

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#1

This study, prepared for the Town of Davidson, updates the previous parking study completed by Rich and Associates in 2011. It reviews the existing parking conditions in downtown Davidson and the surrounding areas, and makes short-term and long-term recommendations for resolving parking issues for existing and planned development. Many issues were examined including, existing supply and demand, wayfinding and parking signage, and the exploration of additional parking solutions. Three public engagement sessions were held as a part of the Town's Public Facilities Study that analyzed not only parking needs but public space improvements and new space for Town Hall, Police, and Fire. The final recommendations for this parking study were created with the input from the public, assistance of town staff, and in collaboration with Creech & Associates.

IN THIS CHAPTER

DEFINITIONS

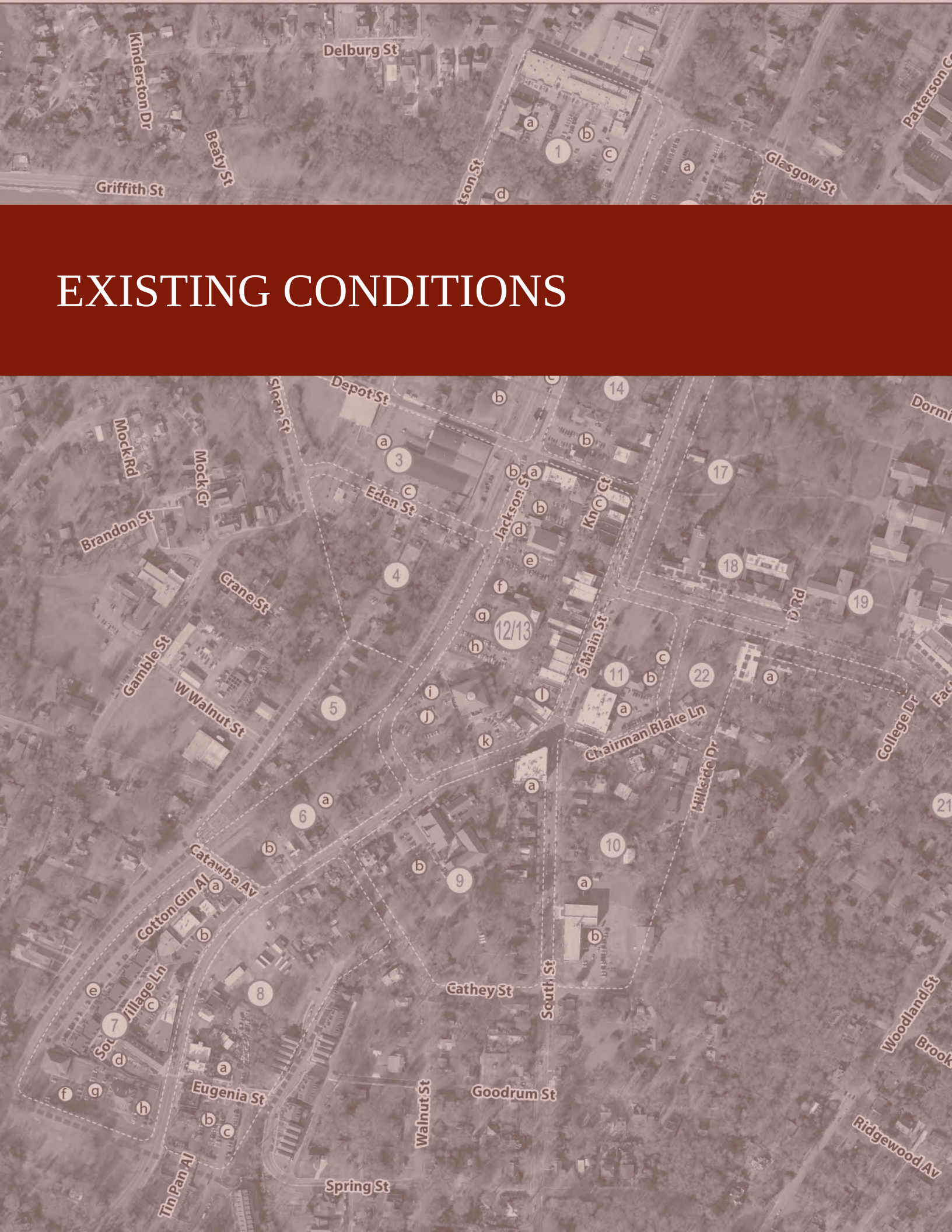
- **Parking Supply:** The number of parking spaces available for use by a specified group or groups of individuals (i.e. shoppers, employees, etc.).
- **Occupancy:** The number of vehicles observed in a specific lot or block face represented as a percentage of spaces occupied.
- **Occupancy Rate:** The percentage of all parking spaces with vehicles parked in them at a given time.
- **Circuit:** A circuit refers to the two-hour period between observances of any one particular parking space. For the turnover and occupancy study, a defined route was developed for each survey vehicle. One circuit of the route took approximately two hours to complete and each space was observed once during that circuit.
- **Block Face:** A number was assigned to each block within the study area. Each block is then referenced by its block number and by a letter (A, B, C or D). The letter refers to the cardinal face of the block; with (A) being the north face, (B) the east face, (C) the south face and (D) the west face. Therefore, a block designated as 1A would refer to the north face of block 1.
- **Modal Split**: Fractional split identifying what percentage of people travel by a certain transportation type (i.e. automobile, mass or public transit, walking, train, etc.).
- **Parking Demand:** The number of parking spaces generated by a single purpose building, multi-purpose building, group of buildings or outdoor amenity.
- **Parking Need:** Represents the number of parkers who need to be accommodated in a given block after the use of alternative parking facilities is considered. Use is affected by price, location, accessibility and user restriction.
- **Parking Surplus:** The number of parking spaces within the study area boundaries that surpass the parking demand.
- **Parking Deficit:** The number of insufficient parking spaces within the study area based on the parking demand.

STUDY AREA

The study area consists of the historic Downtown and surrounding blocks. In 2011, Rich & Associates evaluated the parking conditions, parking supply, and parking activity in the roughly 22 block study area. Areas outside of the study boundaries were also examined for parking supply opportunities and potential impacts on parking (Rich & Associates, 2011).

Stantec used the same process to update the study in 2017.

EXISTING CONDITIONS

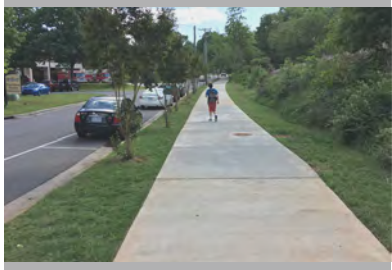


chapter

#2

Existing parking conditions were documented during two site visits and data was also analyzed that had been collected by town staff. To better divide the information for the field studies, each "block" in downtown and the surrounding area was numbered 1-22 beginning on the northwest side of town going southward, then traveling northward on Main Street to document the east side of town. The parking supply for each block was then calculated and compared to the 2011 study. The parking demand was calculated using traditional suburban parking requirements and projected future demands.

IN THIS CHAPTER



PARKING SUPPLY

Field work for this study entailed a review of the buildings and parking within the study area. There are a total of 1,930 parking spaces in the primary study area. Of these spaces, 371 are on-street and 298 are off-street public spaces. There are 1,231 private off-street spaces. Spaces that were not clearly marked were estimated. For the purpose of the study, any parking marked 'reserved' or 'privately owned' was designated as private parking. Also, any parking lots owned by the town, but used for specific public services (e.g., Town Hall) were counted as public all day. Parking available for use by the general public was designated as public parking. The Town of Davidson manages and controls 35 percent of the parking in the study area; however, the best practice to successfully manage municipal parking in small downtowns is for the municipality to have control of at least 50 percent of the parking supply. This allows the municipality to effectively manage parking in terms of allocation, reaction to changing demand, market pricing, and allows the parking to be enforced with greater efficiency (Rich & Associates, 2011).

Parking Supply Chart by Block

Block	*1*	*2*	*3*	*4*	*6*	*7*	*8*	*9*	*10*	*11*	*12/13*	*14*	*15*	*17*	*18*	*19*	*20*	*21*	*22*	
On-Street																				
2 Hour							10			33	36			9						88
All Day	41	20		16	12	14	10	15	18	14	4	18	8	14	8	19	8	14	26	279
Loading Zone															1				2	3
Barrier Free															1					1
Total On-Street																				**371**
Off-Street																				
Public																				
2 Hour										10	80									90
All Day			8							19	167									151
Barrier Free										3	11									14
Total Public																				**298**
Private																				
Private/ Reserved	185	179	30		32	266	97	183	34	14	14	76	88							1,198
Barrier Free	5	6			2	17	6	15	1		1	3	7							63
Total Private																				**1,231**
TOTAL SUPPLY	**231**	**205**	**38**	**16**	**46**	**297**	**123**	**213**	**53**	**93**	**313**	**97**	**103**	**23**	**10**	**19**	**8**	**14**	**28**	**1,930**

Parking Supply Chart Summary	
Parking Type	*Number of Spaces*
Public On-Street	371
Public Off-Street	328
Private Off-Street	1,231
TOTAL SUPPLY	**1,930 spaces**

Parking Supply Map

PARKING DEMAND

Projections were made to determine the current and future parking demands. The floor area and use of every building in the core study area were collected and compiled to calculate the parking demand on a block-by-block basis. The gross floor area of each property can be found in the Mecklenburg County Property Ownership and Land Records Information System.

Using the same methodology as in the 2011 study, parking demand based on land use is calculated with two methods. First, a mathematical or hypothetical model of parking demand is generated based on the building gross floor area. The mathematical model multiplies a parking demand generation ratio by the floor area of specific land uses to derive the number of spaces needed. The second is a method of using field observations to calibrate the mathematical model and help to establish projected parking spaces needed. Future parking demand was determined by the assumption of vacant space re-occupancy at a rate of 40 percent in five years and 80 percent in ten years.

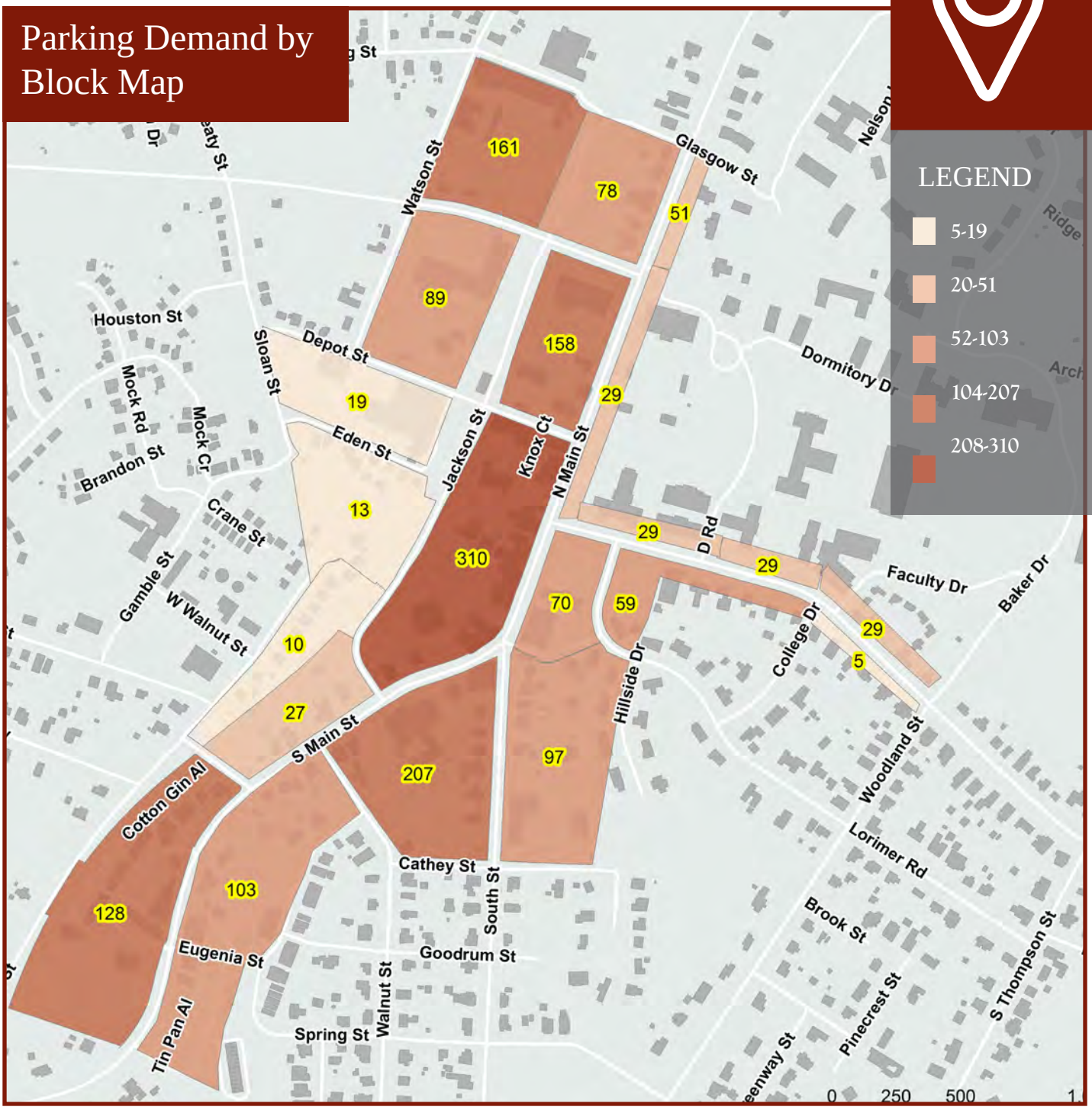
The parking spaces required for the study area were determined through an analysis of the number of parking spaces demanded and/or needed to serve the size and type of buildings present in the study area and for future re-occupancy planned or proposed. Most parking requirements are based on the gross floor area of a particular development and the actual generation rate or parking ratio is tied to the land use type (Rich & Associates, 2011).

The overall parking demand above shows the typical demand for a suburban community like Davidson based on typical parking space requirements per 1,000 square feet by land use type. The areas calculated are divided by 1,000 square feet and then multiplied by the number of spaces required by code to create an overall raw number of needed parking spaces. The overall raw number of spaces needed is only 703 parking spaces.

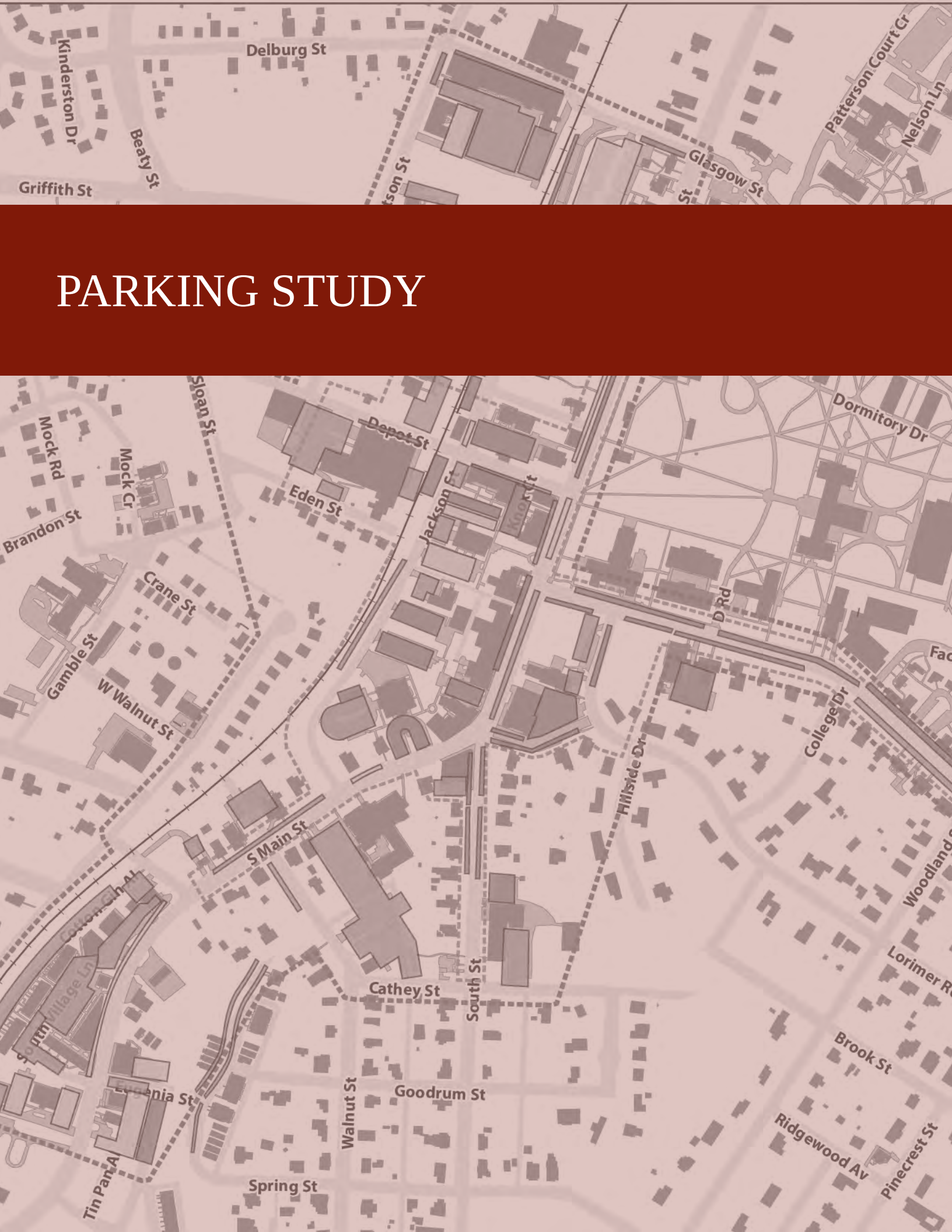
Typical Suburban Demand Chart		
Use	***Calculation***	***Area***
Office	4 spaces/1,000 sf	92,172
Retail	4 spaces/1,000 sf	28,786
Restaurant	4 spaces/1,000 sf	24,546
Institutional	3 spaces/1,000 sf	29,550
Hotel	2 spaces/1,000 sf	12,156
Other (Dance)	2 spaces/1,000 sf	4,193
Total Demand		**193,964**
TOTAL RAW NEED		**703 SPACES**

Since 2011, downtown has seen seven new restaurants open, dramatically changing peak parking demand. The map below illustrates the same parking demand process but for the projected analysis and future demand required by re-occupancy of vacant developments. The data is broken down by the number of spaces needed for each block of the study area. Lower demand is shown in beige color while darker red indicates higher demand. The blocks in the southern areas on the west side of the train tracks have the lowest demand. Block 12/13 at the center of community has the highest parking demand, where shops and restaurants are most concentrated.

Parking Demand by Block Map



PARKING STUDY



chapter

#3

To update the 2011 occupancy study, the data collected during the field studies on a weekday and weekend were used to find peak occupancies and study how predicted demand holds up against the existing capacity. Each lot within the twenty-two blocks was assigned a letter and all on-street parking was assigned a cardinal direction (north, south, etc.) in regards to its orientation on the block. The results of these studies will determine the subsequent recommendations and strategies for the future of parking in downtown Davidson.

IN THIS CHAPTER

OCCUPANCY STUDY

Occupancy studies were conducted via site visits and similar day/time variables were used as those in the 2011 study in order to generate an accurate comparison. The weekend circuit was completed on Saturday, April 1, 2017 from 8:30 A.M. to 1:30 P.M. This date corresponded with the first Farmer's Market of the season. The weather during this occupancy count was sunny and warm. During the circuit, both public and private on-street and off-street parking in the downtown were observed. The results revealed a surge in occupancy during the 10:30 A.M. block, when the Farmer's Market attendance was at it's peak.

Occupancy counts were taken again on Thursday, April 6 from 8:00 A.M. to 8:00 P.M. The day began windy and cool, but turned warm and cloudy. On-street and off-street parking was observed in the core of downtown and the surrounding area for this count. Three circuits showed high contrast between public and private occupancies: after the commute at 10:00 A.M; during lunch at 12:00 P.M; and during dinner at 6:00 P.M.

Occupancy is an important aspect of parking because it helps us to understand the dynamic of how parking demand fluctuates throughout the day. Likewise, the occupancy can be used to illustrate how parking demand is impacted by events in the downtown area. Overall, the occupancy data is used to calibrate the parking demand model (Rich & Associates, 2011).

Occupancy Results

Saturday, April 1, 2017 | 8:30 A.M. to 1:30 P.M.

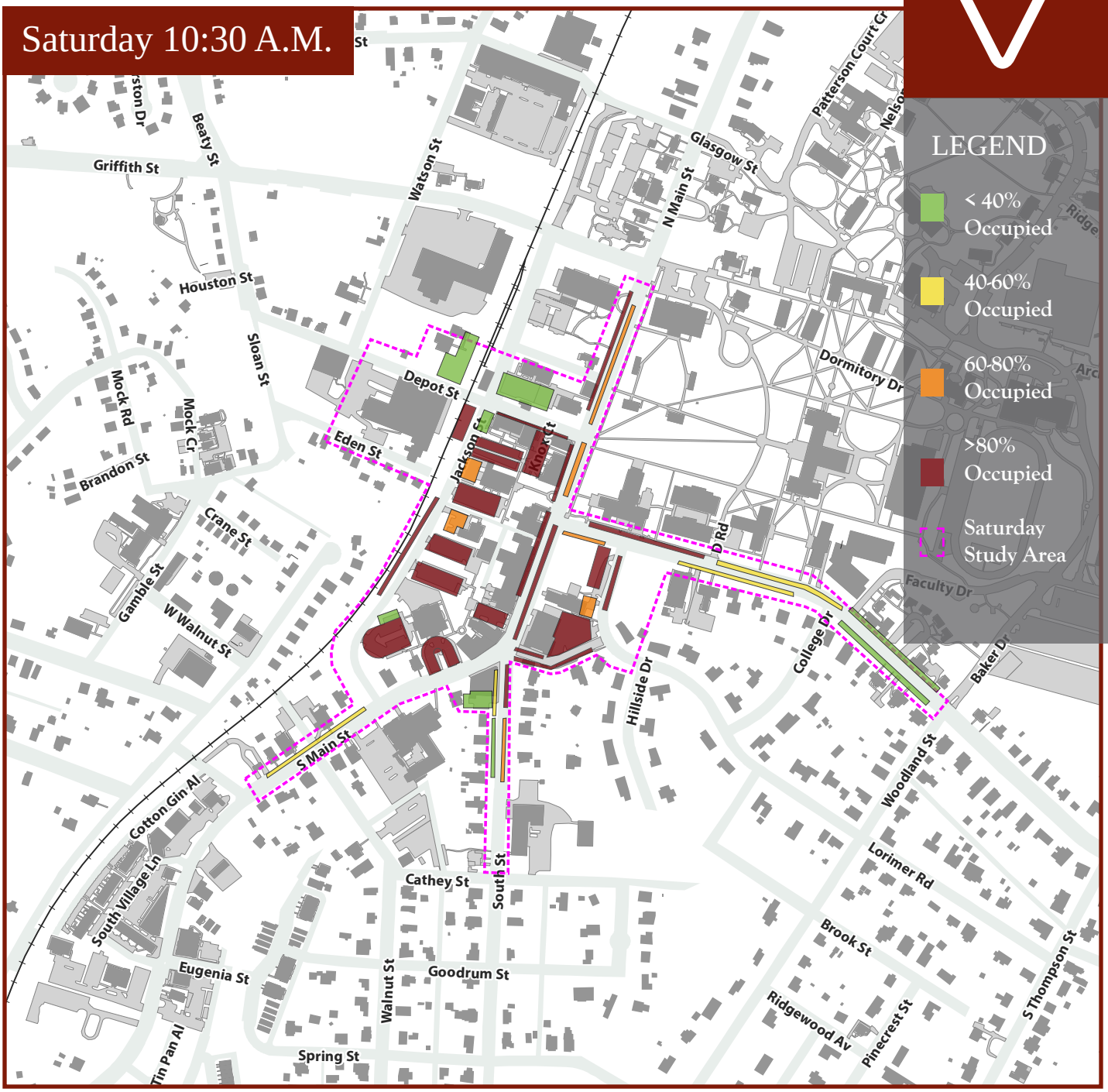
An occupancy observation was completed on Saturday April 1st, 2017 from 8:30 A.M. to 1:30 P.M. This was the season opening of the Davidson Farmer's Market. The counts were done in the core downtown every hour to compare a weekend day to the next study conducted on a weekday. A summary of the results from the observations is in the chart below and a 'heat map' of the occupancy for the peak time of 10:30 to 11:30 P.M. is illustrated in the map on the next page. The chart shows the observed occupancy with parking separated by type: on-street, off-street, public and private. The map combines all parking types but separates them into occupancy levels ranging from less than 40% to over 80% occupied.

The full occupancy results can be found in Appendix A.

Saturday Occupancy Chart											
Description	*# Spaces*	*8:30*	*Occ.*	*9:30*	*Occ.*	*10:30*	*Occ.*	*11:30*	*Occ.*	*12:30*	*Occ.*
Public On-Street	273	165	60%	187	68%	199	73%	180	66%	135	49%
Public Off-Street	311	233	75%	258	83%	262	84%	245	79%	179	58%
Private Off-Street	110	23	21%	48	44%	54	49%	53	48%	50	45%
TOTALS	**694**	**421**	**61%**	**493**	**71%**	**515**	**74%**	**478**	**69%**	**364**	**52%**

The occupancy key observations:

- The overall peak observed occupancy was 74 percent at 10:30 A.M.
- Several of the on-street parking areas were at or near 100 percent occupancy
- A majority of the public lots were at the highest occupancy in the core, within view of the Farmer's Market
- The Farmer's Market stalls occupied 28 spaces in the public lot adjacent to the Fire Station and all 15 spaces in the 2-hour public lot adjacent to Summit Coffee



Thursday, April 6, 2017 | 8:00 A.M. to 8:00 P.M.

The next occupancy study was conducted on Thursday, April 6th, 2017 from 8:00 A.M. to 8:00 P.M. in two-hour circuits. The study area was expanded to include the downtown core and surrounding blocks, consistent with the 2011 study. A summary of the occupancy results can be found in the chart below. Peak occupancy diagrams are shown on the following pages for two circuits: 10:00 A.M. to 12:00 P.M. and 12:00 P.M. to 2:00 P.M. These are the time frames when most employees are in the city for work and/or lunch. To continue studying the flow of the average local employee, the circuit from 6:00 P.M. to 8:00 P.M. was documented. This circuit had high occupancy rates for public on-street parking but low private parking numbers, which could be due to patrons parking close to restaurants and bars at the end of the workday.

The full occupancy results are found in Appendix B.

Saturday Occupancy Chart													
Description	***# Spaces***	***8:00***	***Occ.***	***10:00***	***Occ.***	***12:00***	***Occ.***	***2:00***	***Occ.***	***4:00***	***Occ.***	***6:00***	***Occ.***
Public On-Street	419	202	48%	263	63%	286	68%	219	52%	174	48%	226	54%
Public Off-Street	509	256	50%	300	59%	332	65%	292	57%	261	51%	194	38%
Private Off-Street	1,116	433	39%	567	51%	592	53%	577	52%	544	49%	427	38%
TOTALS	**2,044**	**891**	**44%**	**1130**	**55%**	**1210**	**59%**	**1088**	**53%**	**979**	**48%**	**847**	**41%**

The overall occupancy key points:

- The overall peak observed occupancy was 59 percent at 12:00 P.M.
- The occupancy in the core was 52 percent at 12:00 P.M.
- Several of the on-street parking areas were at or near 100 percent occupancy
- The public parking had higher overall occupancy levels than the private parking with the highest levels for each reaching: On-Street = 68%, Public Off-Street = 65%, Private = 53%

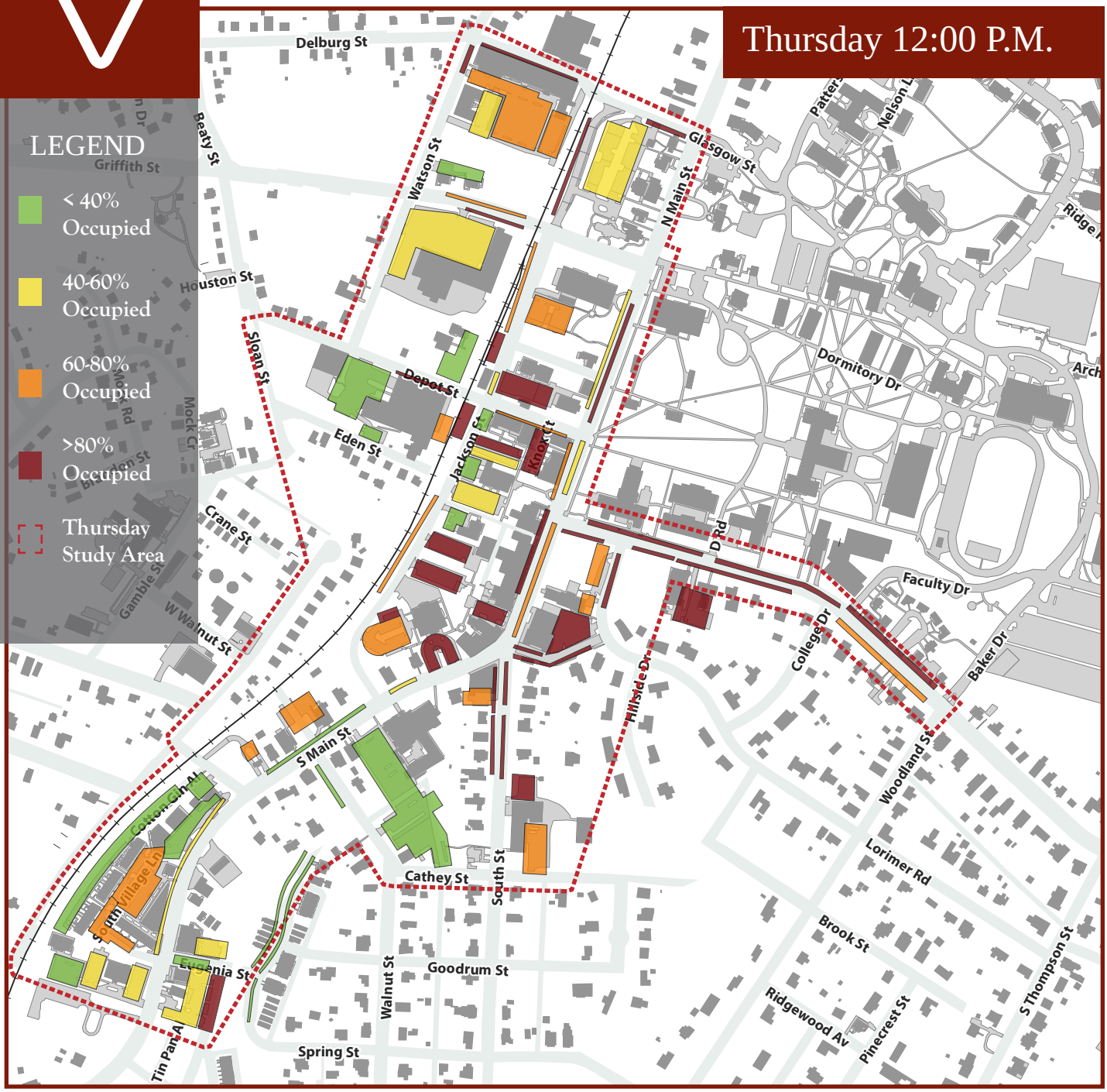
The 10:00 A.M. occupancy key observations:

- The 8:00 to 9:00 A.M. data was skewed due to employees arriving to work during the study time. Most seemed to have parked in private office lots by the 10:00 A.M. study time.
- The private CVS parking lot, despite posted 'CVS Customer Parking Only' signs, seemed to be full at this time with other business' patrons in addition to CVS patrons and employees.
- The occupancy of on-street parking along Concord Road is much greater than on Saturday, likely due to the proximity to Davidson College.
- Many parents were observed parking in the Library public lot and on-street parking along Lorimer Road then walking their kids across Concord Road to school.
- This time frame was the only point at which the Davidson United Methodist Church parking lot was over 40% capacity, mainly due to children being dropped off for school.
- During school hours, the Lake Norman Christian School parking appeared to spill out from the school's two private lots into the public on-street parking along South Street and in informal grass lots.


Thursday 10:00 A.M.
LEGEND
< 40% Occupied
40-60% Occupied
60-80% Occupied
>80% Occupied
Thursday Study Area
Griffith St
Beaty St
Houston St
Watson St
Glasgow St
N Main St
Patterson Court Cr
Dormitory Dr
Depot St
Sloan St
Eden St
Jackson Ct
Knox Ct
Mock Rd
Mock Cr
Brandon St
Crane St
Gamble St
W Walnut St
S Main St
D Rd
Faculty Dr
College Dr
Baker Dr
Hillside Dr
Woodland St
Lorimer Rd
Brook St
S Thompson St
Ridgewood Av
Pinecrest St
Cathey St
South St
Goodrum St
Walnut St
Eugenia St
Spring St
Tin Pan A

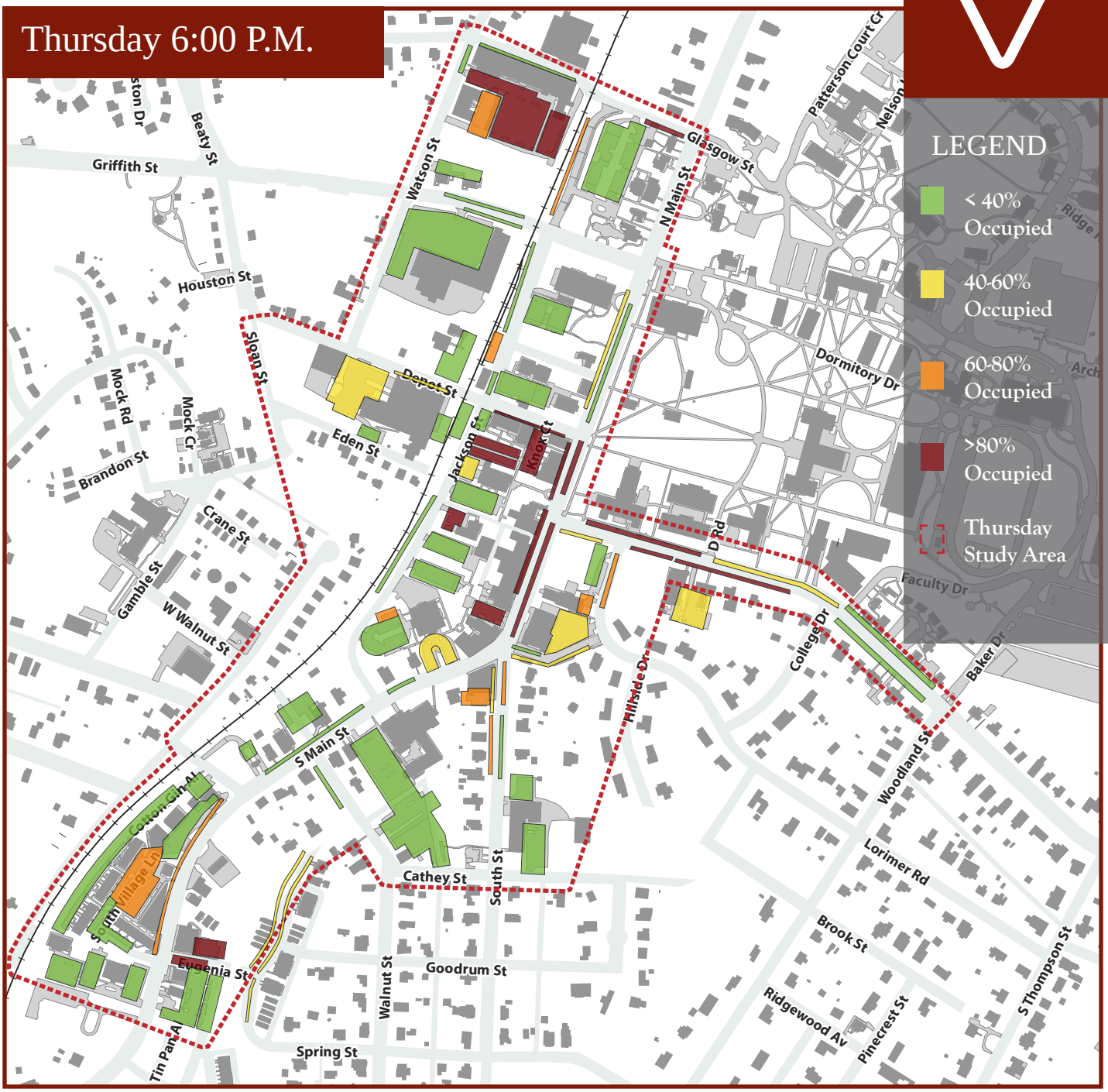
The 12:00 P.M. occupancy key observations:

- This time frame, for every parking type, had the highest occupancy of the day.
- Much of the study area's occupancy appears to be driven by an influx of restaurant patrons.
- The core 12/13 block steadily increased in occupancy until this time frame, peaking at 75%, then steadily decreased again to the lowest occupancy at 6:00 P.M. with only 49%.
- 'Reserved Parking' signs were recently added to the private lots in South Main Square, on the southern most portion of the study area, to deter overflow parking from restaurants.



The 6:00 P.M. occupancy key observations:

- The data may be slightly skewed due to employees and restaurant customers still transitioning during the study time.
- Public and private lot parking reached the lowest occupancy during this time frame, both with only 38%.
- Many parking spaces around restaurants reached the highest occupancy rate of over 80%.
- Many office - and school - adjacent parking spots decreased or dropped in occupancy.



DEMAND VS. CAPACITY

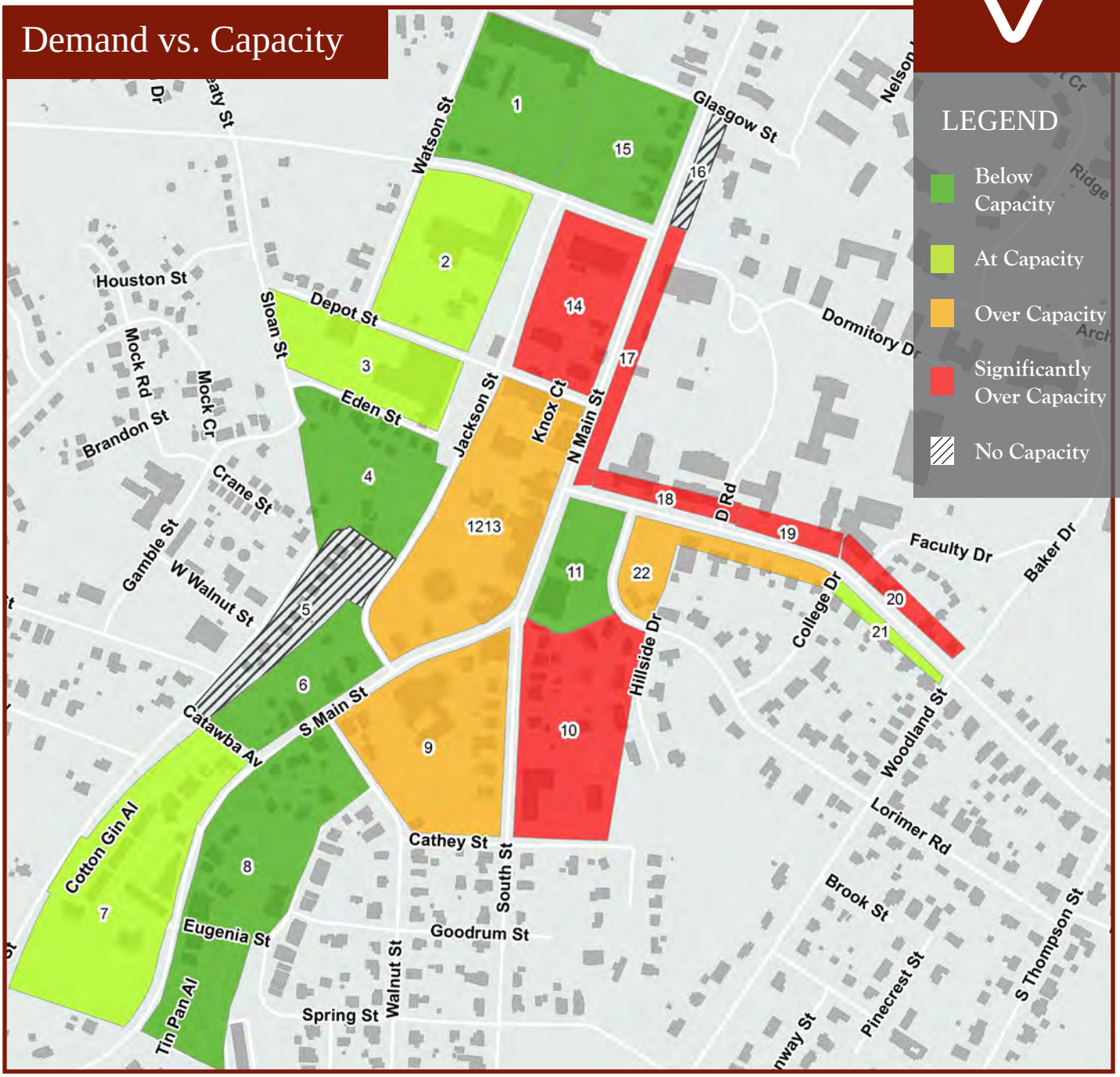
The total supply of on-street and off-street public parking was used to compare the demand for parking in each block. The difference is either positive, meaning there is a surplus of parking, or negative, which shows a parking deficit. Overall, the lots with surplus parking outweigh those with a deficit; however, the core blocks have the greatest deficits. This can cause a perception that there is an overall parking deficit in downtown because there is not enough parking in the core activity areas. Recommendations have been outlined later in the document which may resolve that perception.

Demand vs. Capacity Chart					
	Parking Spaces			*Estimated*	
Zone	*On-Street*	*Lot*	*Total*	*Demand*	*Difference*
1	46	204	250	161	+89
2	21	182	203	89	+114
3	6	64	70	19	+51
4	19	0	19	13	+6
5	0	0	0	10	-10
6	12	30	42	27	+15
7	17	286	303	128	+175
8	46	99	145	103	+42
9	18	199	217	207	+10
10	16	37	53	97	-44
11	47	46	93	70	+23
12/13	55	260	305	310	-5
14	22	84	106	158	-52
15	6	88	94	78	+16
16	0	0	0	51	-51
17	24	0	24	29	-5
18	10	0	10	29	-19
19	19	0	19	29	-10
20	8	0	8	29	-21
21	14	0	14	5	+9
22	28	31	59	59	0
TOTAL	**434**	**1610**	**2034**	**1699**	**333**

The key points:

- In the study area, there is an overall surplus of 333 parking spaces.
- Based on the current Town of Davidson demand projection model, the deficit in block 12/13 has been reduced to -5 spaces (as compared to a -91 deficit in the 2011 study).
- The blocks with the largest deficits based on the modeled demand are block 14 (-52), block 16 (-51), and block 10 (-44).
- Blocks 5 and 10 have a demand but zero capacity.
- The blocks with the largest surpluses are block 1 (+89), block 2 (+114), and block 7 (+175).

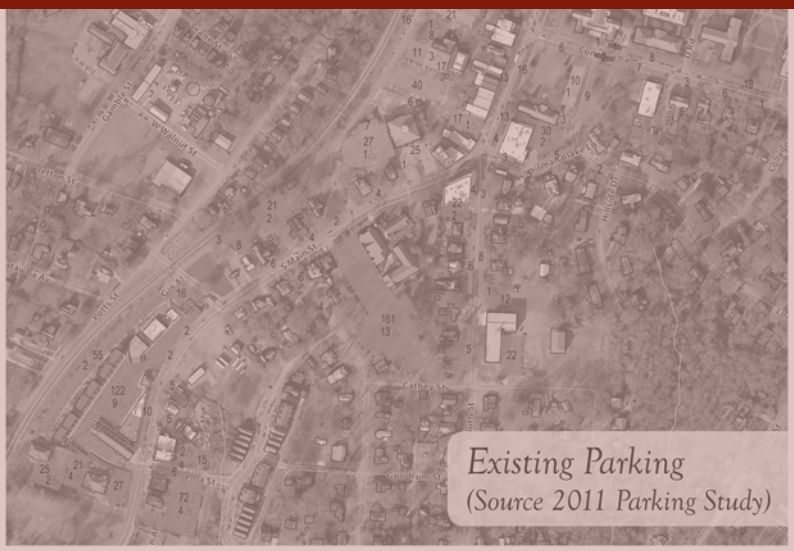
Demand vs. Capacity



PARKING AND MOBILITY

STATION #4

PUBLIC ENGAGEMENT

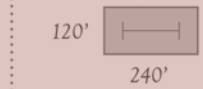


In 2011, Davidson's parking supply was:

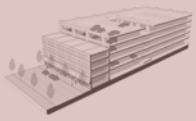
Public on street	371
Public off street	298
Private off street	1,261
Total	1,930

Weekday peak occupancies were 51% and 62-64% for private and public spaces respectively. Weekend occupancy was 72% overall.

Parking decks vary in size and cost, but a standard size is 240 feet by 120 feet and cost is $15,000 per parking spot.



This diagram represents a typical parking deck footprint scaled to fit the map above



Mixed use buildings can screen decks from street view

Decks can be designed to look like traditional buildings and/or decorated with art or greenery.

Do we need a parking deck downtown?

Would you park in a deck downtown?

Where could a deck be located downtown?

yes	no

Davidson Town Hall Planning | Public Workshop

The Town of Davidson

CREECH & ASSOCIATES

Stantec

URBAN PLACES GROUP

chapter

#4

Public engagement for the study was completed in conjunction with the public facilities planning process. Three workshops were held where participants visited stations to cast votes, ask questions, and interact with maps. One station at each workshops was dedicated to parking and mobility to give participants the opportunity to discuss parking issues and receive information on the parking study including current parking inventory and demand, details of parking deck cost and design, and new technological solutions for parking management.

Meeting #1
Date: March 9, 2017
Time: 6:00 - 7:30pm
Location: Davidson College Presbyterian Church's Congregation House
218 Concord Road

Meeting #2
Date: April 6, 2017
Time: 6:00 - 7:30pm
Location: Davidson College Presbyterian Church's Congregation House
218 Concord Road

Meeting #3
Date: May 11, 2017
Time: 6:00 - 7:30pm
Location: DUMC Fellowship Hall
233 South Main Street

IN THIS CHAPTER

WORKSHOP #1 OVERVIEW

More than 75 individuals attended the first workshop. At the "Parking & Mobility" station, executive summary details from the 2011 parking study were shared with participants, as well as general details on the costs of surface parking versus structured parking. Attendees were asked to respond to a few questions as well. The resulting responses are as follows:

Parking

» Where is the greatest parking need in downtown?

Generally near Summit Coffee and Town Hall

» Do we need a parking deck downtown?

Yes = 21; No = 6

» Would you park in a deck downtown?

Yes = 16; No = 2

» Would you pay to park in a deck downtown?

Yes = 7; No = 10

Mobility

» Which mode do you most often use to get downtown?


WALK
36


DRIVE
34


BIKE
14

» What could we do to encourage you to come downtown without your car?

Implement a downtown/neighborhoods shuttle
Increase protected bike facilities into downtown
Increase greenways into downtown

Takeaways

» Participants seemed OK with the idea of a parking deck and at this point thought one was necessary.

» They seemed generally opposed to paying to park in a deck.

» Several comments collected suggested a thorough evaluation of other options before looking further at building a deck.

» Regarding mobility, several comments suggested a shuttle system to connect surrounding neighborhoods to downtown.

» If the shuttle system were of high quality and service were frequent enough, many citizens commented that it might be a more convenient option to travel downtown than the personal car.

WORKSHOP #2 OVERVIEW

This station was primarily designed to inform participants of the preliminary observations from the field study on Saturday, April 1, to show a high level cost analysis for a parking deck and present emerging ideas for short term parking solutions.

Key Comments:

- Need employees to park further away
- App that shows all available parking in town
- We have enough parking, but people need to understand where it is and become OK with parking a few blocks away.

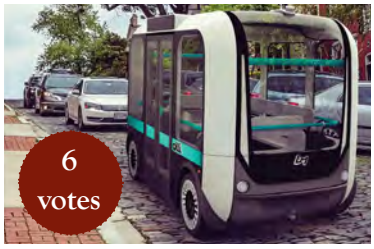
Management Changes To Improve Parking Efficiency

▲ *Subsidized Ride Sharing*

▲ *Fixed-Route Trolley*

▲ *Metered/Fee-Based Parking*

▲ *Enhanced Bike Facilities*



▲ *Autonomous Transit*

Takeaways

- Contrary to Workshop #1, participants at this meeting overwhelmingly thought a parking deck was not a good solution.
- Overall, people were astounded to learn the cost of a parking deck, to see how long the town would be paying for the facility, and how much it could raise taxes.
- Participants were generally supportive of implementing new parking areas where possible, such as renovating the lots off of Jackson Street to add parking spots and adding on street parking in select locations.
- Comments were recorded that noted a need for more disabled parking.

WORKSHOP #3 OVERVIEW

The third public workshop also covered the broader Public Facilities Planning along with Parking Strategies. The resulting responses are as follows:

Shared Parking Opportunities

» Begin conversations with Post Office to discuss opportunities with their lot.

Those conversations are underway and town staff are leading the effort.

» Davidson United Methodist lot contains 175 spaces. The busy times for this lot are:

Evenings generally from 4pm to 8pm Monday, Wednesday, Thursday, Friday and Saturday
Sunday from 7am - 1pm
Various mornings times during the school year for preschool service
Occasional Saturday weddings

Public Parking Enhancements

» Color code signs based on 2 -hour all-day lots

» Use pervious paving in potential library lot expansion

» Regarding Jackson Street lot, could the curbs be removed and pavers used from building edge to building edge? Essentially this treatment would make the lot flexible for use as a public gathering space at times.

» Where should pick-up/drop-off spots be located for rideshare services?

» Investigate EasyMile as another SAV shuttle service

Takeaways

» DUMC's parking lot has considerable daytime availability. But, a more detailed analysis of its occupancy is necessary. Such data can then be used to discuss more specific shared parking arrangements.

» Rather than simply renovating and combining the two Jackson Street public lots to add more spaces, could the combined lot be a flexible curbless space with a paver base rather than using traditional asphalt and concrete curb and gutter? This flexible treatment would allow the space to be used for a variety of purposes, not only parking.

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SIGNAGE


Delburg St
Kinderston Dr
Beaty St
Griffith St
Glasgow St
Mock Rd
Mock Cr
Sloan St
Depot St
Eden St
Knox Ct
Brandon St
Crane St
Gamble St
W Walnut St
D Rd
College Dr
Hillside Dr
S Main St
Cotton Gin Al
South Village Ln
Cathey St
South St
Eugenia St
Walnut St
Goodrum St
Ridgewood
Tin Pant Al
Spring St

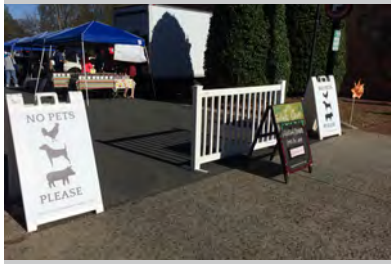
chapter

#5

Signage and wayfinding are critical parts of a functional parking system. Users should be able to find appropriate parking locations for their specific needs with relative ease. Less complicated and more predictable signage creates a more user friendly and efficient parking system.

Aligning with the walkability of downtown, signage should encourage "park once" or "park and walk" behavior. Many of Davidson's wonderful and eclectic public parking lot signs do this very well. However, there are some aspects of the signage program that could be improved.

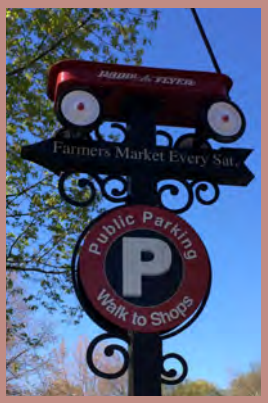
IN THIS CHAPTER



EXISTING PUBLIC SIGNS

Most of Davidson's public parking lot and wayfinding signs are high quality and have a consistent graphic appearance. However, other public parking signage is sometimes inconsistent or unclear. Easy to read and understand parking and wayfinding signage is a critical piece of a functional parking system. It can reduce customer confusion, which may impact whether or not a visitor decides to return to do business in Davidson. Clear signage can increase efficient use of parking spaces. Visitors are less likely to park in spaces that are not clearly marked, leaving such spaces unused.

In some locations in the study area, parallel on street parking areas and signage are confusing and/or not clearly marked (see bottom right image). Signage may not align with pavement markings or the pavement markings may be worn and difficult to read. In other cases, it is difficult to determine which parallel spaces a nearby sign applies to.



▲ *Creative public sign*

▲ *Typical public sign*

▲ *Directional and informational public sign*

▲ *2-hour on-street sign*

▲ *Confusing parking sign*

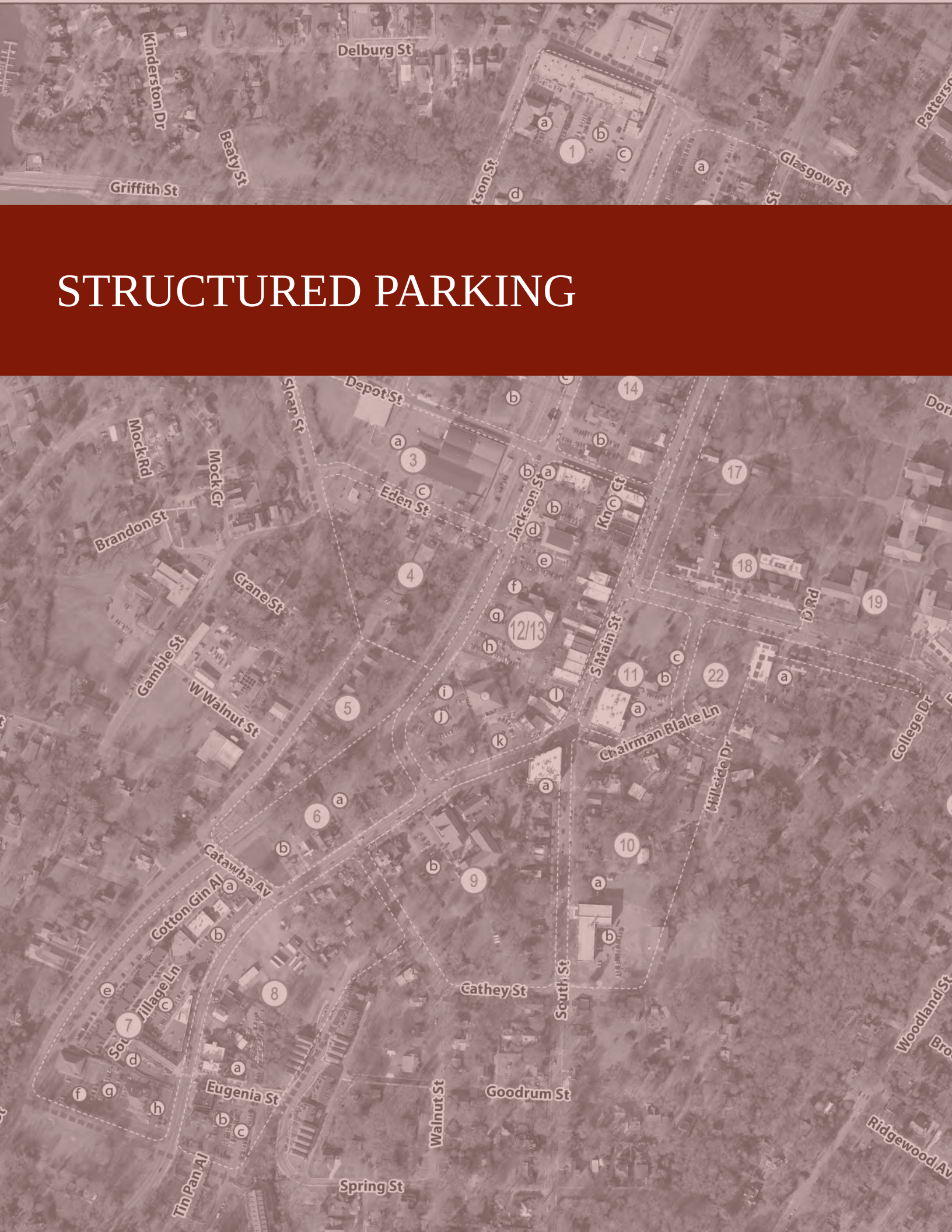
Public Parking Signage

EXISTING PRIVATE LOT SIGNS

On the private side, downtown Davidson has a broad and inconsistent mix of parking signage with different color schemes, formats, information, and fonts. All of these issues make it harder for visitors to determine which spaces are available for what purposes. This impacts the entire parking system. To the greatest extent possible, private parking spaces should have simplified regulations and signs should have a consistent layout, only including essential information. Additionally, some private lots have clearly visible signage at the entry to the lot letting visitors know that it is only available for private businesses. Many other private lots do not have these simple signs, rather they have individual spaces marked as private and others marked for public use. This highly variable situation serves to further confuse visitors and frustrate them, especially if they accidentally park in the wrong space and are fined or towed.

▲ *Inconsistent private parking signs in downtown*

STRUCTURED PARKING

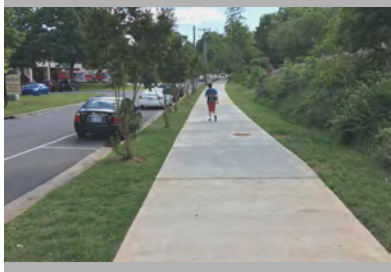


chapter

#6

Structured public parking decks have been used in cities and towns as a parking solution. By stacking parking areas floor by floor vertically, the need for sprawling surface parking lots can be minimized and the quality of the public realm can be maintained; however, with construction costs continuing to rise, the costs of parking decks is becoming more prohibitive. Additionally, communities are changing their behavior when it comes to owning a car and driving. Across the U.S. car ownership is declining and people are driving less, as well as choosing other mobility options over the single occupancy vehicle. These trends are especially evident in walkable areas like downtown Davidson. Still, the feasibility of a public parking deck as a parking management solution is worth evaluating.

IN THIS CHAPTER



DECK DESIGN

The following deck design analysis on pages 36-39 is provided by Rich & Associates for the Comprehensive Parking Study, 2011.

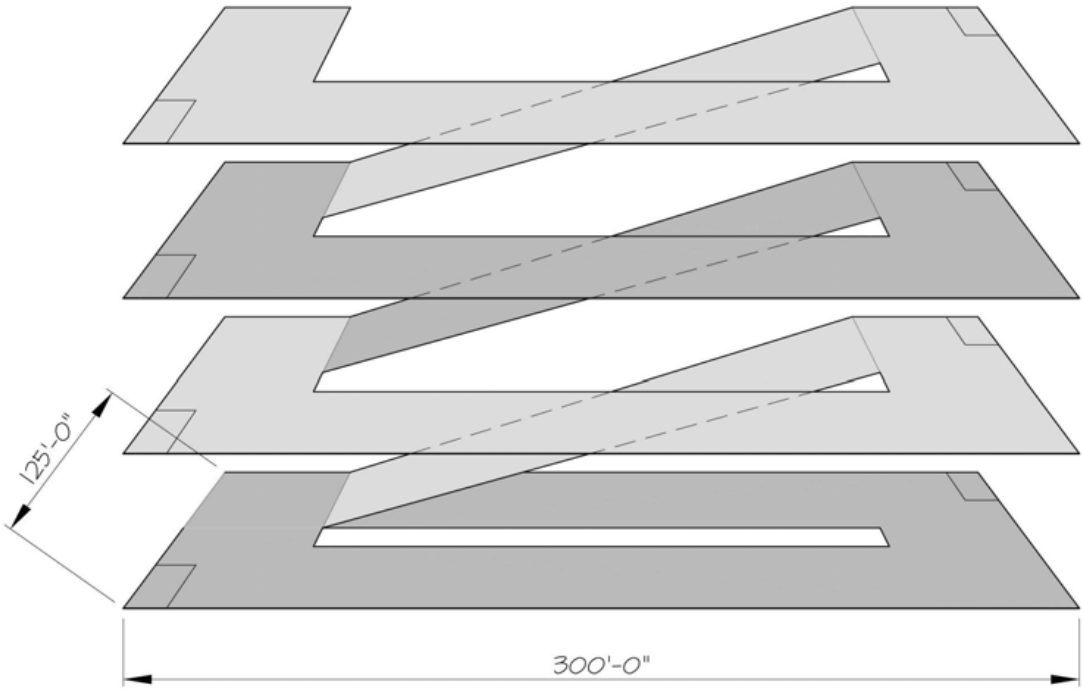
Selecting a site for a parking structure on blocks in the downtown must take into account the potential for development and redevelopment on the blocks surrounding each potential site. In addition, there are minimum site dimensions that are required for an efficient and cost effective parking structure design.

Two Module Flat Floor / Sloped Floor

The general deck designs are as follows:

- The optimal site length for a Flat Floor/Sloped Floor, exclusive of setbacks, is +/- 300 feet and a width of +/- 125 feet for a two module layout (see diagram below).
- A flat floor/sloped floor system allows one long dimension elevation to be flat and can maximize occupied space on the ground floor. Only the ends of the building will be flat.
- This layout can accommodate an occupied ground floor use on one side (the flat floor side of the parking structure).

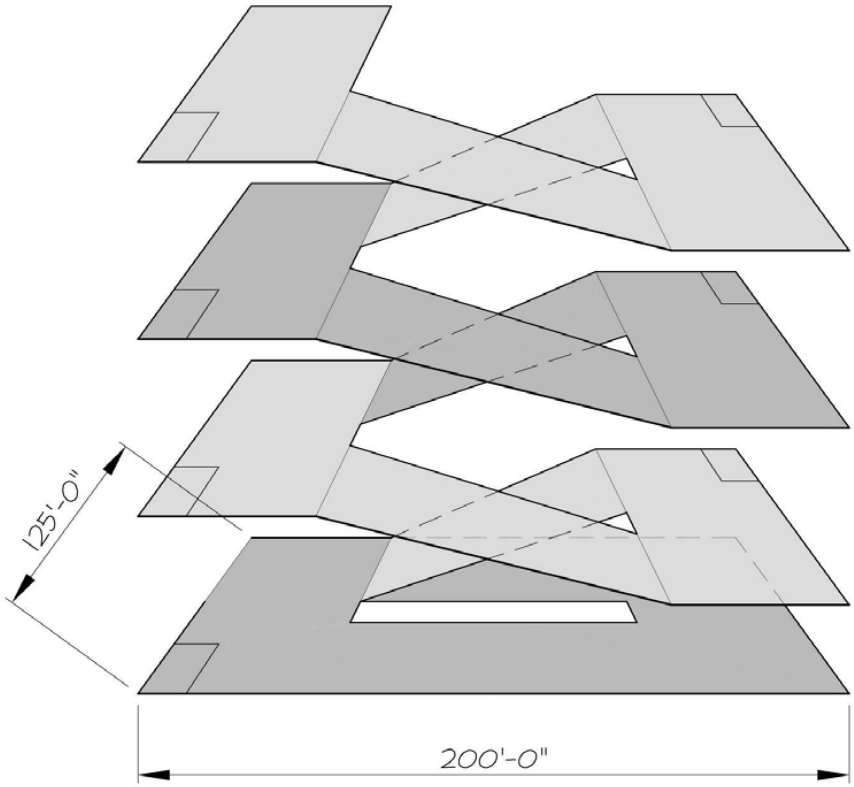
In general, the flat floor/sloped floor layout is the most efficient layout as measured by square foot per parking space.



▲ *Deck Design Diagram (Image Source: Rich & Associates)*

Sloped Floor / Sloped Floor

- To design a sloped floor/sloped floor parking structure the optimal site length, exclusive of setbacks, is +/- 200 feet and a width of +/- 125 feet for a two module layout (see diagram below).
- A sloped floor/sloped floor parking structure will have no flat facades on the long dimension and only the ends of the building will be flat.
- In general, the sloped floor/sloped floor layout is an efficient layout as measured by square foot per parking space.

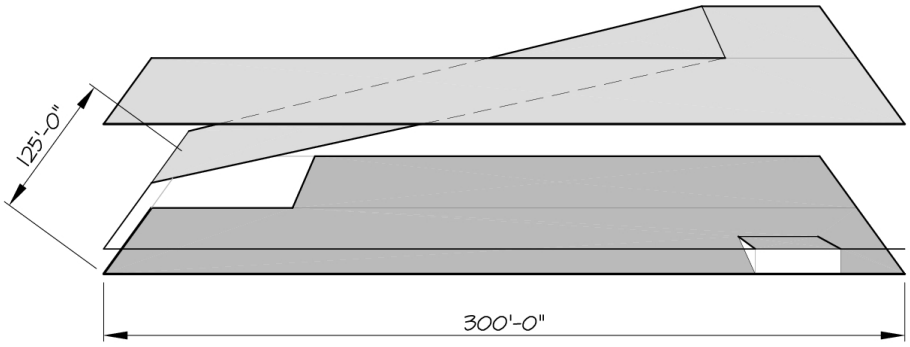


▲ *Deck Design Diagram (Image Source: Rich & Associates)*

Table Top Parking

» Another option is a table top parking structure. This structure type generally does not have an internal ramp connecting the ground floor to the second floor. It is usually used on sloped sites to avoid any ramps at all. In these cases, the first floor may be partially below grade and accessed from the lowest point on the site while the second floor is accessed from the highest point.

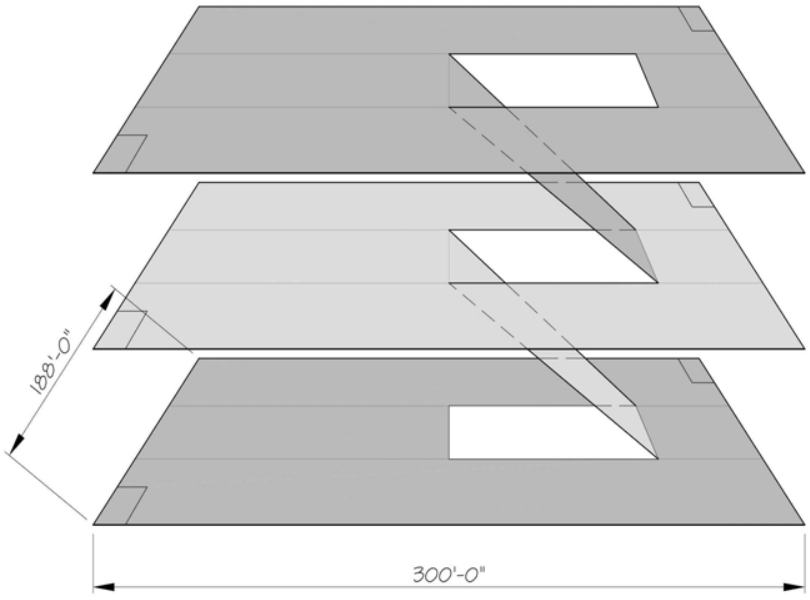
» The diagram below shows a table top deck that fits roughly on half a block, it can be designed for a quarter block site as well.



▲ *Deck Design Diagram (Image Source: Rich & Associates)*

Three Module with Express Ramp

» This can only be done with a site that is +/- 188 feet wide and ideally at least 300 feet long exclusive of setbacks (see diagram below).



▲ *Deck Design Diagram (Image Source: Rich & Associates)*

Other Site and Design Criteria

- Other site dimensions are possible, especially if they are incorporated with a building, though their efficiency will be less than either the flat floor/sloped floor or the sloped floor/sloped floor layout.
- Underground parking structures, especially those below a building, will generally be less efficient than any other type of parking facility (more square feet per parking space) and the construction costs are at least 150 percent of an above grade parking structure.
- Additionally, an underground parking structure will have higher operating costs due to mechanical ventilation and additional lighting that run more hours of the day.
- In general, both an underground and above grade parking structure with another building type above it will require fire suppression (sprinklers), which adds to the overall construction and operating costs.
- To incorporate ground floor commercial/retail or office there needs to be +/- eight feet of clear head room which translates into a height of +/- 12 feet for the first finished floor. This can be done easiest in a flat floor/sloped floor scheme.

Additional criteria to consider:

- Distance from key intersections (ingress/egress considerations and stacking of vehicles)
- Traffic flow on adjacent streets
- Distance from key intersections with respect to demand generators - plan on a +/- 350 foot walk from parking to destination
- How the parking structure will fit into surrounding context respects historic character of downtown and won't overwhelm existing development's "small town" charm

DECK LOCATION

Ideal Deck Location

The publicly owned land on Jackson Street, currently the location of two surface parking lots, is the most appropriate location for a potential parking deck. It is centrally located, publicly owned land, and does not front onto a major street. However, the area on which a deck could be built is roughly a maximum of 205 feet by 245 feet (see diagram below.) Such a building envelope would remove some of the public space currently used for Farmer's Market programming. Nonetheless, this area is not large enough to accommodate all of the deck typologies discussed in the previous section.

The most efficient deck typology to fit in this area is the sloped floor/sloped floor design. This design is not as efficient as a flat floor design, but still fairly efficient. The general footprint is 125 feet x 200 feet. Additionally, Section 3.2.26 of Davidson's Planning Ordinance requires a parking deck as a principal use to be screened on the Jackson Street frontage by an active use, such as retail or multifamily. The Ordinance also limits the height of the building to 3 stories. These requirements limit the amount of parking spaces that can fit in the deck, as well as raise the cost of design and construction, further reducing the feasibility. Additionally, this typology does not lend itself to adaptive reuse like other deck designs do. In other words, the deck would be difficult to retrofit into a different use at a later point as mobility choices increase.

Potential Site Layouts

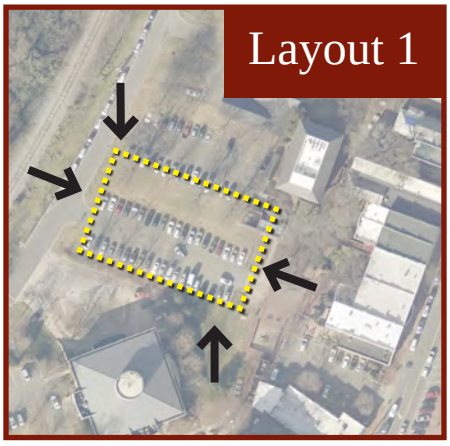
The diagrams below illustrate three different potential site layouts for a sloped floor/sloped floor deck with dimensions of roughly 125 feet by 200 feet.

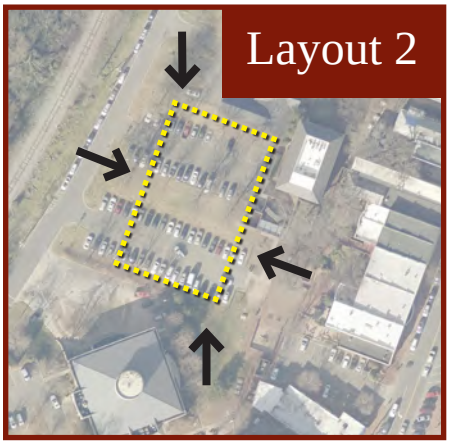
In Layout 1, the surface lot to the north would remain unchanged, but the deck would have very little setback from the street and the Farmer's Market public space to the east. Layout 2 gives more setback on the street side and the public space side on the east, but the northern surface lot would not remain and the deck would have very little separation from Dance Davidson's building to the north.

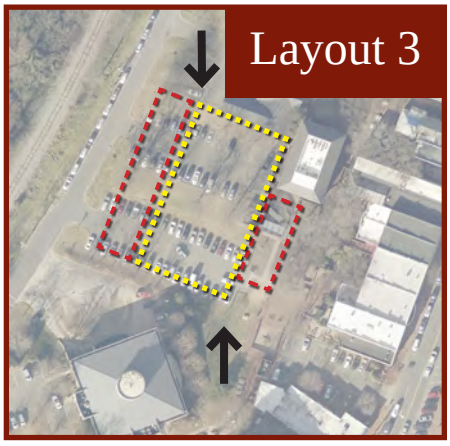
Both layouts have similar issues and conflicts. The unsightly deck facades would be visible (illustrated by the black arrows) from Jackson Street and adjacent neighborhoods to the west and Town Hall, as well as from the Farmer's Market area behind Summit Coffee, thus creating a sub par public realm experience for pedestrians. While green walls and artistic elements could be used to screen the facades, they would also significantly add cost to the project.

Layout 3 illustrates the most ideal option. Lining the parking deck with mixed use buildings on the east and west facades is possible. This would serve to screen the parking deck from view on the respective facades, but does leave the northern and southern facades visible from key public areas.

Layout 3 isn't without issues. The added cost of lining these edges with development would be potentially prohibitive and further reduces the feasibility of building such a deck on this location. Furthermore, some of the existing public space utilized by the Farmer's Market would be removed. In this option, the most efficient deck design could provide approximately 100 spaces per floor.







COST ESTIMATE & EVALUATION

Cost Estimate

It has been determined that the most efficient deck design would not fit in the most ideal deck location on Jackson Street. But, for the purposes of estimating a ball park cost, the sloped floor/sloped floor deck at 125 feet by 200 feet will be used. Such a deck could provide approximately 100 spaces per floor. The Planning Ordinance limits the height to 3 floors, so the maximum number of potential spaces is 300. A conservative construction estimate for the deck alone is $18,000 per space making the total cost of the deck approximately $5.4 million. Additional soft costs required would be approximately $1.1 million, bringing the total to about $6.5 million. The debt service per year over 25 years for this amount would be approximately $603,000. This would bring more than a $0.03 increase in the Ad Valorem tax rate

Number of Parking Spaces in an Efficient Deck

3 floors x 100 spaces = 300 spaces

Total Hard Cost | Multiple Number of Spaces by Average Cost per Space

300 spaces x $18,000 = $5.4 million

Total Cost | Add Hard and Soft Costs

$5.4 + $1.1 soft costs = $6.5 million total

Cost Evaluation

Constructing a parking deck is NOT recommended at this time for the following reasons:

1. There is currently a surplus of 333 parking spots in downtown. While there are some blocks that have more demand for parking spots during peak times than the block itself supplies, there are several underutilized parking areas immediately adjacent to those high deficit blocks.
2. The real demand for parking is during the weekday at lunch time. As all-day parking is more likely to use a deck, it would displace more convenient surface lot spaces for short term patrons.
3. Shared parking opportunities (further described in Chapter 7) have great potential to add significant parking supply. Two privately owned parking lots are well located and best suited for shared parking opportunities. Together, mostly during evening and weekend hours, those lots could provide around 215 parking spots within a 3 minute walk of the downtown's core.
4. Opportunities to add small amounts of new public parking in strategic locations are less costly and easier to implement (further described in Chapter 7). For approximately $990,000, the town could implement around 120 new public parking spots, versus spending $6.5 million for 300 spots in a deck. The cost per space of implementing the "opportunity" parking areas is approximately $8,000 per spot versus more than $18,000 per spot for structured parking.
5. The relevance of a parking deck in 20 years is questionable. A deck is cost prohibitive for a town like Davidson. The grand total of approximately $6.5 million plus interest would need to be paid over 25 years and local taxes would likely need to rise significantly to cover the annual debt service of approximately $603,000. With driving rates dropping annually and autonomous vehicles on the horizon, it is questionable whether the demand for parking spots will continue to rise, remain relatively stable, or potentially fall over time. Add to this the continuing trend of walkable and bikable communities, along with Davidson's support for alternative mobility options, and it seems unlikely that the town would get the return on investment for a parking deck.
6. Given the uncertainty of future demand for a deck, structured parking could be built in such a way to make adaptive reuse highly feasible. However, the cost of such a design would be well above the estimated $6.5 million for a basic design.
7. Constructing a deck in the most feasible location identified would drastically disrupt the currently cohesive urban design and small town feel that downtown Davidson enjoys. The scale of a parking deck would massively overshadow the intimacy and human scale of Davidson's downtown as it is today. It is likely that such a move would degrade the quality of life in Davidson, especially given that community engagement completed during this planning process determined that the small town feel is one of the most beloved qualities by Davidson residents.

IMPLEMENTATION STRATEGIES

chapter

#7

IN THIS CHAPTER

REVIEW OF 2011 RECOMMENDATIONS

Since the 2011 parking study, some recommendations have been implemented while others remain on-going. Over the last few years, the town has implemented recommendations that included both public and private parking solutions. The downtown has also seen 7 new restaurants open, changing the activity level and parking demand rather significantly.

Implemented since 2011

- Conversion of some all day spaces to 2 hour spaces
- Formed a partnership with the Presbyterian Church on Depot Street to share parking
- Placed new signage at all of the public lots, including some fun artistic ones (i.e. the Farmer's Market truck on top of the parking sign in the 2-hour lot used for the market)
- The recycling center has been reconfigured

On-going Issues

- Communication/wayfinding
- There are less complaints about visitor tickets, but many more complaints about employee parking in public spaces.
- The Post Office is not a town lot and so the parking is not enforced.
- The town have been unsuccessful in getting management over the CVS and the Post Office lots.
- There is some desire for 3 hour spaces.
- Some employees move their cars around from 2-hour spot to another 2-hour spot throughout the day.

OTHER CONSIDERATIONS IN UPDATE

Meetings were conducted with town staff and a consultant team to suggest future considerations in this update of the 2011 parking study. There are currently a few initiatives the town as implemented that were not mentioned in the previous study and wish to move forward with in the update. There are also other considerations and observations outlined that influence new recommendations.

Other Initiatives

- Moving from paper tickets to Passport parking would let the town charge for parking in the future.
- If needed, the town likes the idea of metered parking using technology instead of installing meters.
- The Passport system can have variable pricing without meters based on peak hours.
- The town evaluated adding 17 spaces on Jackson Street ,but constructed a new, wide sidewalk instead.
- The town tested using the Parks and Rec shuttle for the Farmer's Market. The route started with the east side neighborhoods and had good ridership.
- Citizens previously voiced concern over traffic congestion and parking concerns downtown and cited a circulating trolley as a potential solution. The town began a pilot project running a trolley on Saturday morning from 8 A.M. to 12 P.M. in east and west side neighborhoods, as well as on Friday evenings. The service used general fund dollars for the trolleys and was free of charge. Unfortunately, the service did not accommodate pets and children in car seats.

Other Considerations

- The current parking enforcement manager only works 10 A.M. to 2 P.M.
- Ride share vehicles (Uber, Lyft, etc.) have begun lining up outside of restaurants at peak hours
- With the addition of so many new restaurants, the number of truck deliveries has increased, which can be problematic on Main Street.
- The town is interested in using alternative shared vehicle or public transportation options like a shared autonomous vehicle (e.g., Olli).

SHORT TERM RECOMMENDATIONS

1. Clarify Wayfinding Signage for Parking

1.1. Strategy

Continue to upgrade wayfinding signage with uniform and easily identifiable public parking signs to guide visitors, as well as clearly mark private lots.

1.2. Issues and Opportunities

- The Town's parking lots are not named and are difficult to identify as public parking areas. This lack of identification creates issues with marketing and wayfinding.
- There are opportunities to install pedestrian wayfinding signs further away from the Main Street shops, along Concord Road, for example, to let people know that parking areas which seem further away from the downtown shops are actually only a 5 minute walk.
- Ensure that each parking area is clearly noted with pavement markings and visible signage is obviously associated with respective parking spaces.
- Identify parking areas with faded pavement markings and update, enhance or re-paint the markings to make them more visible.
- Explore enhancing the visibility of existing public parking signage by increasing contrast and/or changing color schemes.

▲ *Existing high quality locational signage, which would benefit from increased contrast and "motivational information"*

▲ *Addition of directional sign including minutes and steps to get to a public facility (3 minutes or 330 steps to The Green), a brighter red field, and inverting the center to the "P" is black and stands out more*

▲ *Sign with brighter, higher contrasting colors can be more noticeable to a driver*

Best Practices

The following are established best practices for vehicle and pedestrian wayfinding signage. These were developed after studying successful signage in other communities and their signage programs. There are four types of parking signs that increases drivers' wayfinding experience that are recommended. Communities often miss the important role that signs play in making visitors comfortable with their surroundings and the effect that signs can have on vehicle travel and parking use efficiency. Additionally, pedestrian wayfinding signs help manage the driver/passenger transition from vehicular to pedestrian modes. It should be noted that sign color, size, design, and placement may be impacted by local, county, or state highway department's regulations.

Davidson draws a significant amount of visitors from dozens of nearby cities and towns, especially during evenings and weekends. Such signs would help those visitors understand the high degree of walkability that Davidson offers and could make them more amenable to parking a few blocks away from their ultimate destination. Similarly, such signs may help to change the behavior of resident visitors to downtown. Rather than expecting to park in front of their destination, they may become more comfortable parking further away if they understood that most parking areas are within 3-5 minutes walk of any location in downtown (Rich & Associates, 2011).

Quality Sign Elements

- Use of common logos and colors
- Placement at or near eye level
- Use of reflective, durable material
- All four types used in conjunction to guide motorist and pedestrian activity
- All gateways to the downtown should have wayfinding signage
- All parking areas should have identification signage
- All routes through the downtown need to have directional and location signage oriented on the same side of the street as vehicles are traveling
- All pedestrian routes to and from major customer/visitor parking areas need to have wayfinding signs
- The identification signs located at parking areas need to convey parking rates, hours of operation, and maximum durations (Rich & Associates, 2011)

▲ *Existing Directional Sign*

▲ *Existing Identification Sign*

Different Sign Types

» Direction/location - Distinct in color, size, and logo, it directs drivers to off-street parking areas. Parking location signage complements the directional parking signage. The signs have arrows pointing to off-street lots and are mounted on poles at standard heights at the back of curb. Many of these have already been implemented in downtown.

▲ *Directional Sign*

» Identification - Placed at the entry of each parking lot. The name of the parking area is identified and the type of parking available, as well as hours of enforcement and the hours of lot operation are listed. The identification signage is distinctive in color and size, and it is located on a pole at a lower height.

▲ *Identification Sign*

» Vehicular wayfinding - signs are placed at strategic points in downtown to lead visitors to places of interest and parking locations. These signs point out the various landmarks or attractions that can be found. They are placed at locations easily found by motorists and are intended to help visitors orient themselves to the downtown area.

▲ *Vehicular Wayfinding Sign*

» Pedestrian wayfinding - Signs or kiosks placed at points of pedestrian entry/exit to parking areas. Typically they include a map of the downtown area that highlights various shops or attractions. This sign type is placed at locations easily found by pedestrians and is intended to inform them of downtown amenities, locate their destination and easily locate their parked vehicles upon departure (Rich & Associates, 2011).

▲ *Pedestrian Wayfinding Sign*

1.4. Recommendations

A. Develop a cohesive family of direction/location, identification, and vehicle wayfinding signage.

B. Increase the number of directional/locational signs in downtown, especially signs that lead drivers from Depot and Griffith Streets to Jackson Street. These signs should identify customer/visitor parking areas.

C. Add "behavioral information" motivation signs to public parking signs in strategic locations, denoting walking distances to important public landmarks and/or facilities (e.g., The Green, Farmer's Market).

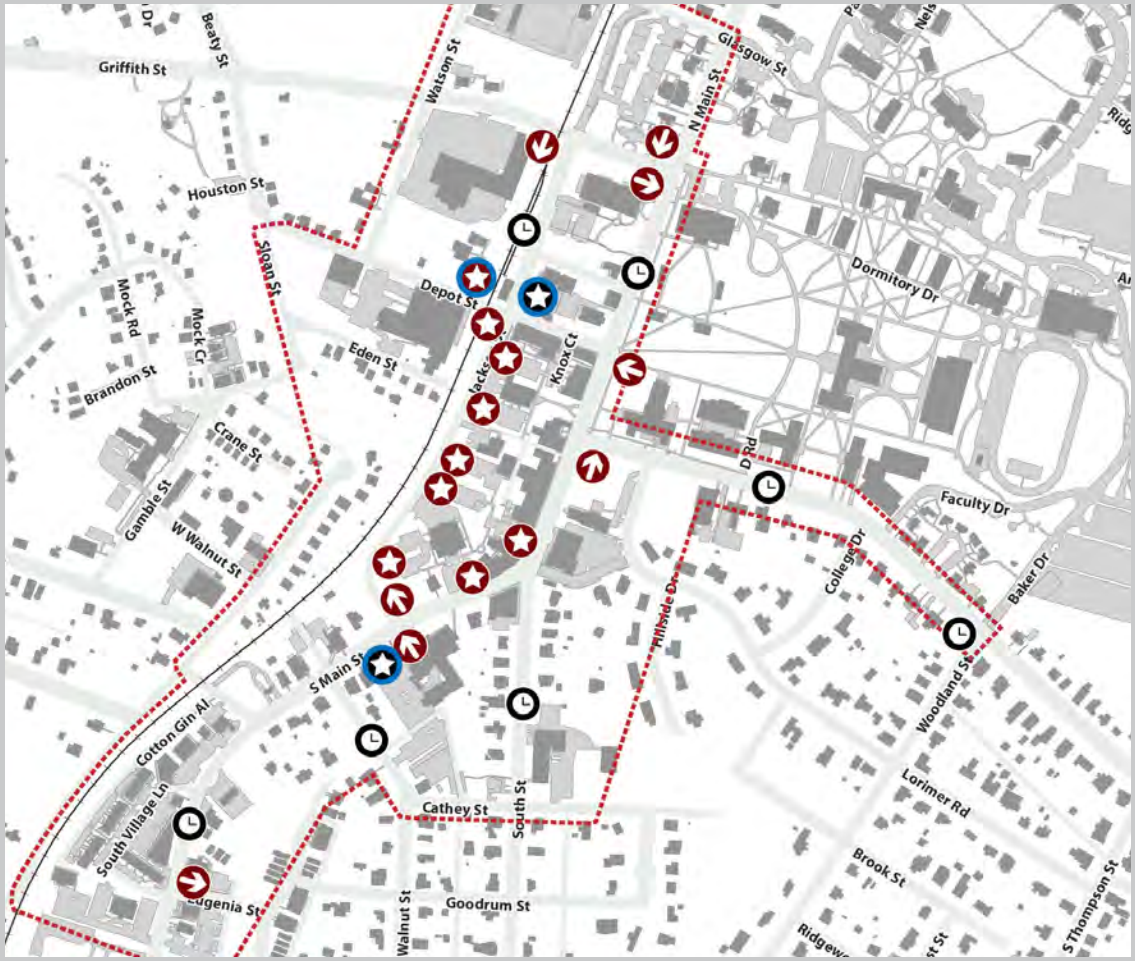
D. Name all the parking lots and use identification signs that let users know which lots are public, the duration of parking, and hours of operation. Naming the parking lots based on street location is preferable.

E. Encourage private lot owners to post clear signage at the entryways to their lots (or in other high visibility areas).

F. Monitor tree growth and trim foliage that blocks signage in lots and on-street.

G. Install pedestrian wayfinding signs in parking areas and along Main Street and Jackson Street.

H. Install at least two kiosks with a map, business listings, and parking directions.



LEGEND

- Existing Public Parking Sign
- Existing Directional Sign
- New Public Parking Sign
- New Motivational Sign (On-Street)
- Add Motivational Sign (Lots)

New parking sign map with additional public parking lots marked at the Davidson I.T. Lot and the Methodist Church Lot, as well as new timed or distance sign opportunities.

2. Construct Additional Public Parking

2.1. Strategy

Better utilize public land and right-of-way to increase public parking, on and off the street. This can be done by converting parallel on-street parking to angled or reverse angled where possible and re-configuring inefficient parking lots.

2.2. Issues and Opportunities

- Most on-street parking spots are currently parallel, except for those on Main Street in front of the Green, Libray, and CVS.
- Many off-street lots are not designed to maximize available spaces. For example, the two public lots off of Jackson Street could be expanded and connected to create more parking. There were many cars observed during the parking audit parked informally along the perimeter of the Town Hall/Police lot off of Jackson Street. These areas could be formalized and marked to create more spots, similar to the striping along the interior of the Town Hall horseshoe lot along Main Street.
- There is limited space for additional public parking on public land but there is an opportunity to begin communications with private land-owners for future shared parking arrangements.
- Employers should encourage employees to park further away from the core (block 12/13) to make these premium spaces available to visitors.

▲ *Existing parking lot*

▶ *New parking log with 24 more spaces*

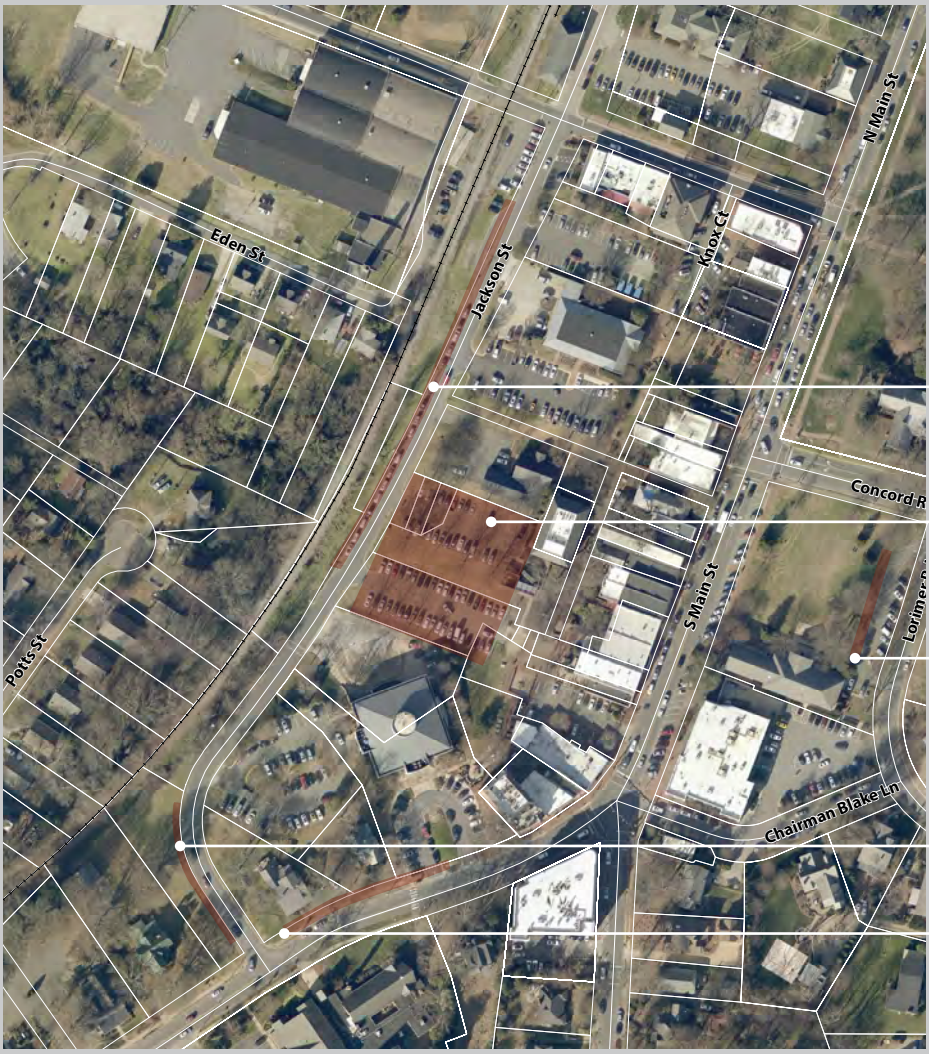
2.3. Recommendations

A. Partner with private parking lot owners to create shared parking opportunities. Such lots could be opened up for public parking during strategic times.

B. Connect, expand, and/or renovate poorly designed public parking lots, like the two on Jackson Street. A new lot design would gain 24 spaces and improve circulation, making it safer and more convenient. In places that are more environmentally sensitive or culturally significant consider using a lighter footprint.

C. Add parking spaces to existing lots of access drives where appropriate. For example, 16 spaces can be added to the library lot. However, it's adjacency to the Green requires a softer parking solution and materials, like pervious pavers or crushed stone.

D. Convert parallel on-street parking to angled or reverse angled where appropriate. More spaces can be gained from these re-designs, as well as make the on-street parking environment safer for drivers and pedestrians.



Convert parallel parking on Jackson Street to reverse angle
Gain = 33 spaces
Difficulty: Hard

Connect and expand public lots off of Jackson Street
Gain = 24 spaces
Difficulty: Moderate

Add angle spaces using a permeable surface adjacent to the Library
Gain = 16
Difficulty: Easy

Add reverse angle spaces along Jackson Street on publicly owned land
Gain = 20 spaces
Difficulty: Hard

Convert parallel to angle/ reverse angle spaces on Main Street
Gain = 20 spaces
Difficulty: Easy

3. Facilitate Shared Parking Opportunities

3.1. Strategy

Shared parking, an arrangement where different land uses occupy the same parking spaces at different times, is one of the most efficient ways to manage existing parking resources. Successful shared parking depends on attention to implementation and enforcement of effective agreements between partners. As mentioned in the 2011 parking study, an optimum downtown parking system is one where the municipality is in control of at least 50 percent of the available parking so shared use is possible for a majority of the spaces (Rich & Associates, 2011).

3.2. Issues and Opportunities

- Davidson falls short of the ideal shared parking strategy, controlling only 35 percent of the parking downtown.
- Currently, of the 35 percent controlled by the town, some remain reserved for specific facility uses (e.g., the Police reserved spots in the Town Hall lot off of Jackson Street). Many of these spots were observed at low occupancies during the field studies.
- Shared parking requires partnerships between public and private entities, which can sometimes be difficult to manage.

3.3. Effective Agreements

- Use clear language to establish the rights of each party to the parking inventory at specific times.
- Define exclusive and shared portions of the parking facility, payments between parties for use, collection, and disposition of revenues, etc.
- Consider facility maintenance, utilities, and taxes, signage, insurance, passive and active security, indemnification, termination, and supplemental covenants.
- Define enforcement mechanisms, such as requests to comply with parking security personnel, time limits, length-of-stay fees, validation strategies, designated parking areas, various levels of parking reservations, physical separations, identifying placards or stickers accompanied by enforcement, tracking of repeat offenders, license plate recognition, right-to-tow, and any other mechanisms.
- Provide procedures for preventing parking intrusion from uses that are not part of the shared agreement.
- Coordinate mechanisms between the parties to monitor data about sharing, identifying, and resolving operational issues, establishing communications mechanisms, and regular meetings to adjust and monitor process.
- Ensure parking proximity and site design makes walking between the parking and the uses sharing it convenient and pleasurable.

3.4. Recommendations

A. Continue conversations with CVS to create a partnership and use their private lot for 2-hour public parking.

B. Partner with Davidson College to use their I.T. Lot as public parking, for nights and weekends only.

C. Partner with the Davidson United Methodist Church to use their private lot as all day employee parking.

D. In approaching new shared parking partnerships, the Town should consider developing possible incentives such as revenue share, tax breaks, and contributions to maintenance, landscaping, and redesign expenses.

E. Continue to discourage the development of any new private parking lots in downtown. Davidson College has several lots close to downtown that would be model candidates for downtown employee parking.

Partner with owner Davidson College to make the lot available for public parking during off peak times (nights and weekends).
Gain = 41 shared spaces

Partner with owner Davidson United Methodist Church to make spaces available for public parking during select times, particularly for all day employee parking.
Gain = 175 shared spaces

4. Support Ride Sharing & Valet Parking Through Design and Policy

4.1. Strategy

» Create pick-up and drop-off zones for shared parking services and subsidize shared rides to lower parking demand.

4.2. Issues and Opportunities

» There is already a constrained amount of space on Main Street so that unloading of trucks has become an issue. Implementing other drop-off zones may prove difficult as well. Consider changing zones to accommodate both unloading and ride sharing services.

» With the introduction of alternative transportation options on the rise, the future decline in driving and parking necessities is likely. Any new facilities and/or policies should be flexible and consider many different alternatives to the traditional idea of single-occupant, personal vehicles and suburban parking requirements.

4.3. Pick-up and Drop-off Zones

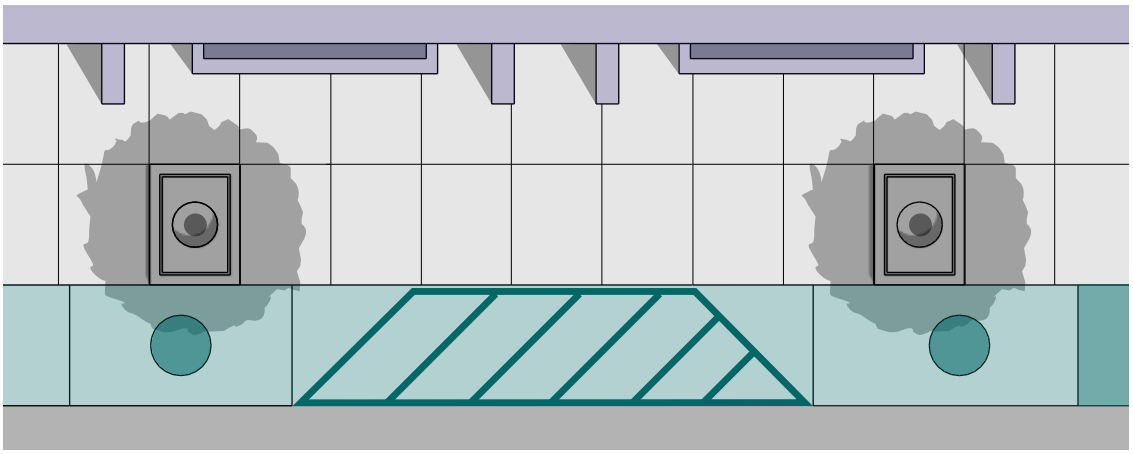
The support of driving alternatives, including temporary car rental programs, ride share services, transit, walking, and bicycling, is an important component of parking management. Loading or drop-off zones reserve short-term parking to the benefit of businesses who experience frequent deliveries or shipments. Rather than creating loading zones on Main Street, trucks could be directed to unload in lots off Jackson Street instead of occupying potential customer spaces in the front of the businesses. Similarly, spaces could be reserved for pick-up/drop-off via high-occupancy vehicles, taxis, or ride share services (i.e., Uber, Lyft.) near convenient destinations, ideally located on Main Street. On South Main, one option is the restricted space in front of the fire hydrant and Wells Fargo. Reserving a pick-up/drop-off zone on North Main would likely require removing two parking spaces and would ideally be located near the intersection with Depot Street.

▲ *Potential location for pick-up/drop-off area on South Main Street*

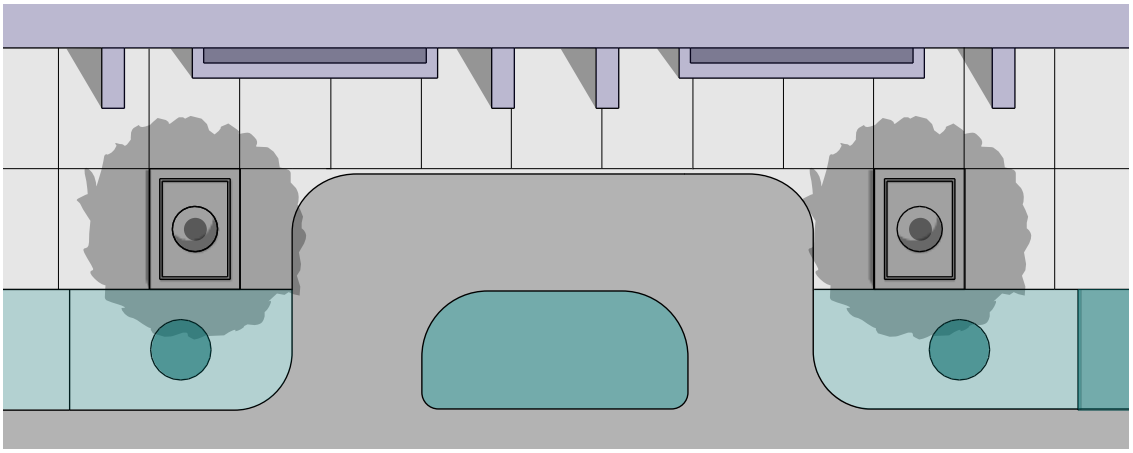
▲ *Bus turn out lane for pick-up & drop-off (Charlotte, NC)*

▲ *Bus pick-up & drop-off loop (Charlotte, NC)*

▲ *Fire Station driveway loop (Charlotte, NC)*



▲ *Diagram for loading zones in line with parallel on-street parking. The length of these zones depends on the length of vehicles being accommodated (i.e. delivery trucks or ridesharing vehicles). On average a loading zone may take up 1 or 2 spaces and could have flexible time restrictions (e.g., 2 hour parking during work hours and no parking during peak evening hours for rideshare drop-offs.)*



▲ *Properly designed drop off loops can have a minimal impact on the public realm like tree planting zones and other amenities.*

4.4. Recommendations

A. Create strategically placed pick-up, and drop-off zones for valet and ridesharing services.

B. The town can contract with a ridesharing service like Uber or Lyft to provide subsidized transportation around town with steeper discounts given to trips originating or ending in downtown.

C. Ridesharing policies should plan for adaptability and evolution into shared autonomous vehicle services in the future. One option to consider is Local Motor's Olli, an autonomous mini-bus with the ability to adapt to customer's specific needs and concerns.

Case Study: Altamonte Springs Subsidized Ride Share

A few towns in the U.S. have begun to look to shared ride service providers like Uber and Lyft to enhance their public transit systems. The city of Altamonte Springs, in central Florida, has a population of 42,000 and is likely the first town in the nation to enter into an agreement with Uber as a public transit provider. The city had issues landing state or federal funding for public transit, so they reached out to the private market. The city had a plan for an on-demand bus service that would cost approximately $1.5 million for one year, but they've budgeted 1/3 of that to subsidize ride sharing in the city through Uber. The city would pay 20% of the cost of the ride if it begins and ends within the city limits and 25% if it begins and ends at the local light rail station.

Offical Word from the City of Altamonte Springs Website:

Uber and the City of Altamonte Springs have partnered to create a landmark pilot project where the City will integrate Uber's ride-share technology to boost SunRail ridership and address transportation needs. This convenient service eliminates worry over finding parking at popular venues, allows individuals who can't drive the ability to get around the City and provides solutions to urgent situations such as car repair, health care, etc.

The City is providing a 20% discount on all Uber trips that both begin and end in the city limits, meaning riders pay less. As an added benefit to encourage increased SunRail ridership, all trips starting or ending at the Altamonte Springs SunRail station will receive a 25% discount.

To use the new feature, riders must enter the promo code " altAMONTE" and choose the Altamonte option to receive the discounted services. The app will recognize if the user is within the Altamonte Springs city limits. The subsidized portion of rides is automatically deducted from the rider's cost of the trip.

UBER

CITY OF ALTAMONTE Springs

6. Use App-Based Parking Occupancy Sensors

6.1. Strategy

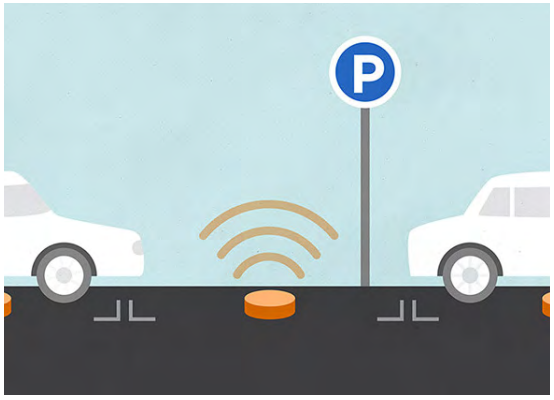
Technology is improving parking management by providing convenient access to space availability and price data. The Town of Davidson can manage parking by implementing parking occupancy sensors that pair with the "Passport" mobile app, which the town has already purchased. The sensors connect to the software application to allow customers to locate available spaces on their cell phones. They also can flag meter maids when a car has overstayed the posted time limit.

6.2. Issues and Opportunities

- Current practices are inefficiently enforcing time limits and limiting turnover.
- The Town staff is already using a compatible app.
- Parking sensors are relatively inexpensive compared to many other solutions.
- An app's ability to direct visitors to real-time available spaces could reduce confusion, underutilized spaces and parking violations.
- Apps can access real-time data that allows for accurate and immediate analysis to inform decision making of parking policy issues.
- As a relatively new concept in parking management, adoption of the new technology will require marketing, communications, and outreach to maximize user participation.
- Digital signage with real-time space availability can be placed at the entry to larger parking lots

Image source: The Denver Post

▲ *Occupancy sensors can be easily applied to existing parking spaces*



Imge source: money.cnn.com

▲ *Parking sensors applied to each spot can transmit occupancy via bluetooth capability*

7.3. Recommendation

A. Purchase and install occupancy sensors in public parking spaces and connect to the Passport app to show real-time availability of parking spaces.

B. Install digital signage at the entryway to larger public parking lots, like those on Jackson Street, that pairs with the Passport app and occupancy sensors to display real-time availability in those lots.

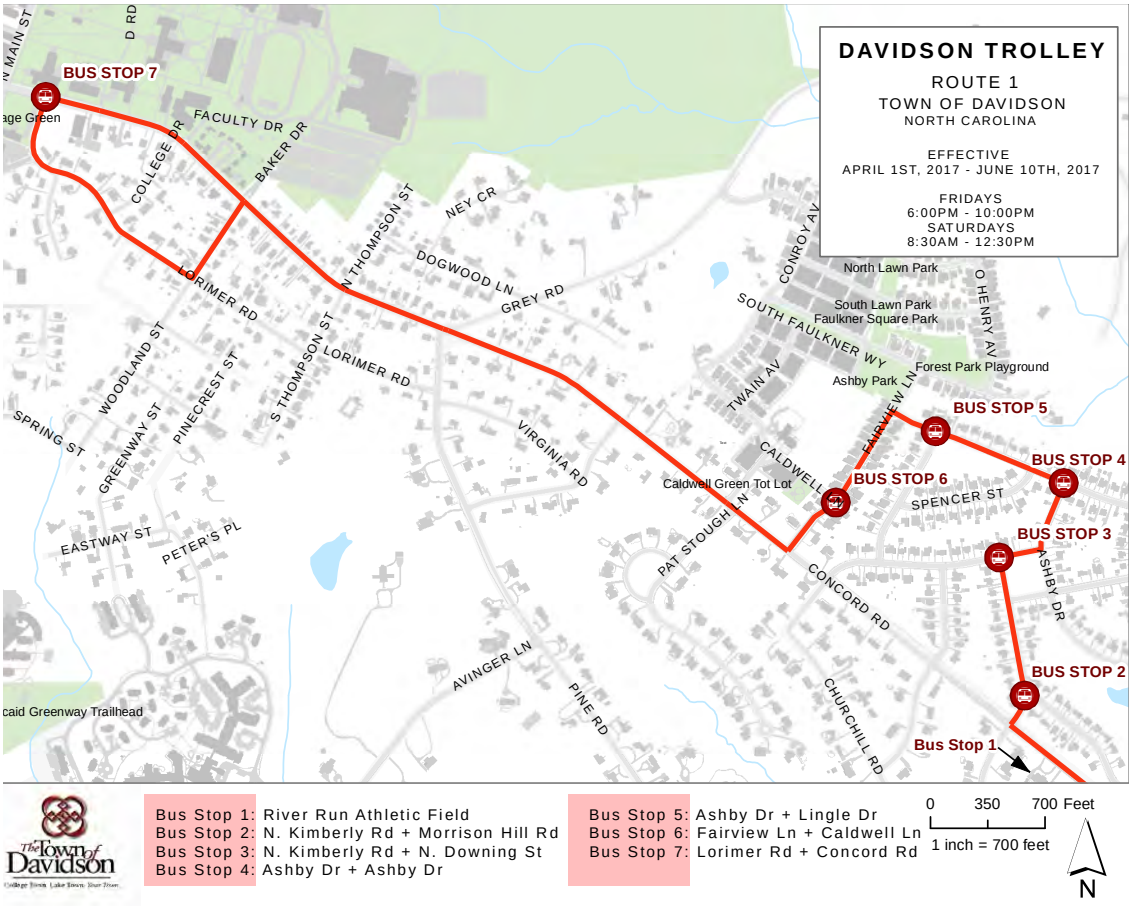
7. Continue and Expand Fixed Route Trolley Services

7.1. Strategy

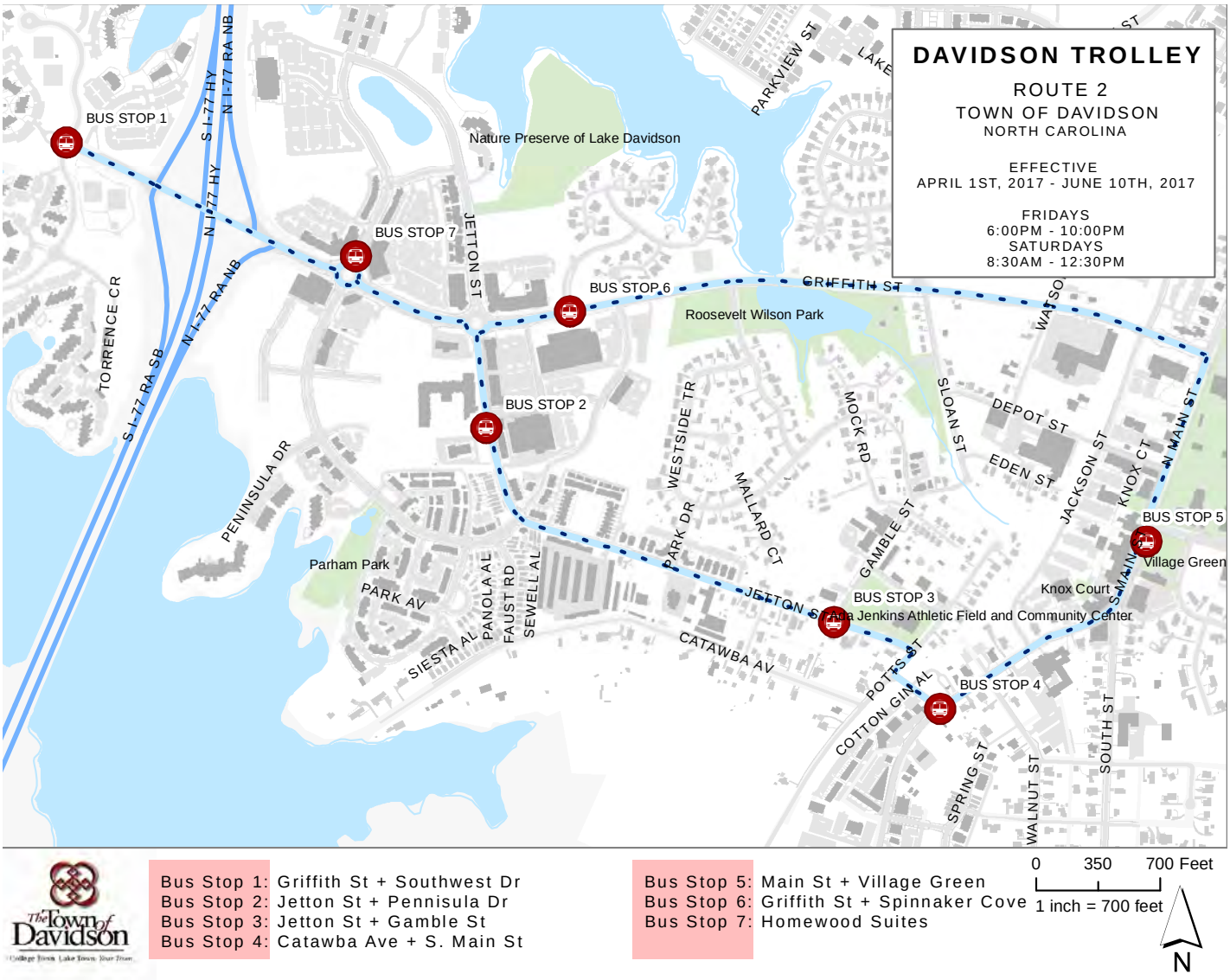
Continue and expand the fixed trolley pilot program, including the two current routes operating on Friday evenings and Saturday mornings and consider future expansion as a shared autonomous vehicle (SAV).

7.2. Issues and Opportunities

- The two current routes are within a 5-minute walk of a high percentage of the in-town residents.
- The route is fixed and less adaptable or user friendly than other recommended services, like ridesharing.
- The expansion of public transportation is especially important during downtown festivities like the Farmer's Market on Saturdays.



▲ *Trolley Route 1 for Friday and Saturdays, mainly running east to west on Concord Road. This route helps connect downtown to the neighborhoods in the east.*



▲ *Trolley Route 2 for Friday and Saturdays, mainly looping from Griffth to Jetton Street. This route helps connect downtown with neighborhoods to the west.*

7.3. Recommendation

A. The town should continue the trolley program and extend the hours of operation to make the service more predictable and convenient for potential users at lunch time.

B. Explore the possibility of expanding this transportation service with SAVs.

LONG TERM RECOMMENDATIONS

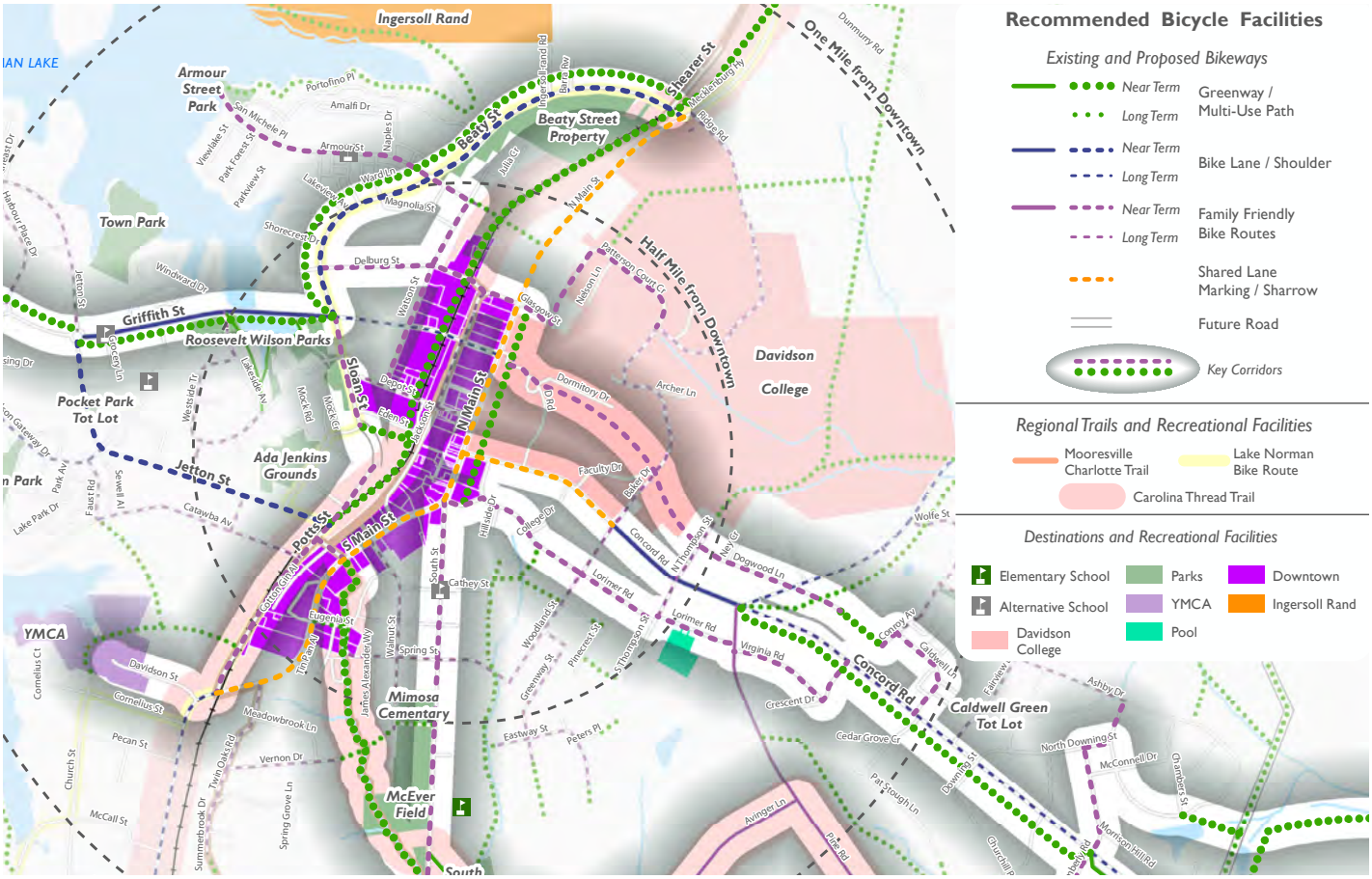
1. Enhance Bicycling Infrastructure

1.1. Strategy

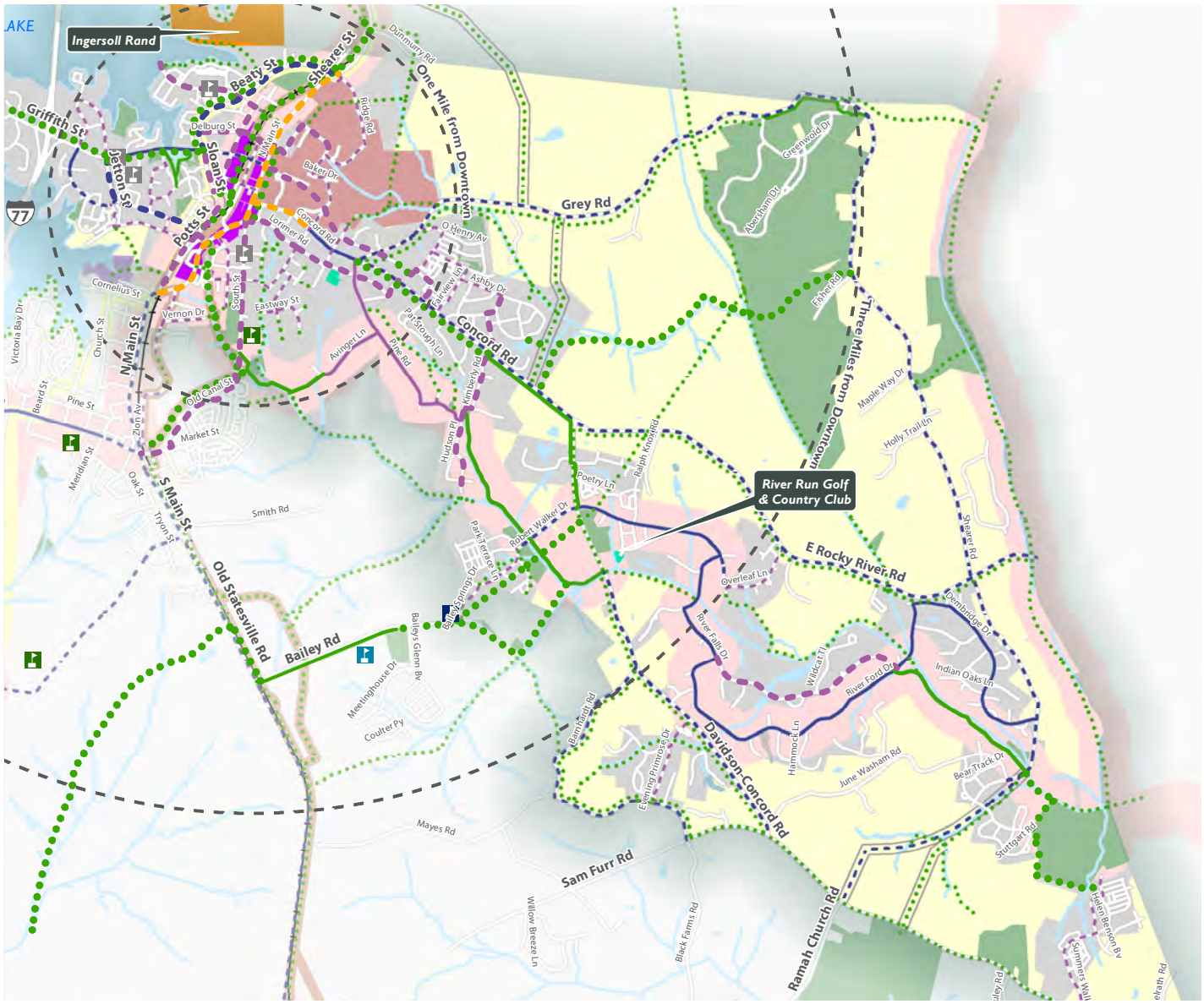
Find opportunities to implement new and enhance existing bicycle infrastructure.

1.2. Issues and Opportunities

- Facility improvements were planned for downtown and the surrounding area in 2013 and have progressed since the planning phase, including the greenway along Jackson Street.
- There is a town-wide regional bike facility plan to lay out important connections and corridors in a greater context than downtown.
- Incorporate a bike share program with stations around key destinations at the core of downtown and strategic points along major bicycle routes.



▲ *Existing bike facilities map with additional recommended facilities in downtown and the surrounding area*



▲ *Regional existing and proposed bicycle facilities map the Town of Davidson, including connections to surrounding towns*

Benefits of Protected and Separated Bike Lanes

In order to promote bicycling to downtown as an alternative mobility choice to the personal single occupant car and reduce traffic congestion and parking demand in downtown, Davidson could implement new and/or enhance existing on-street bike facilities. Specifically, protected and/or separated facilities are recommended versus a standard unprotected bike lane. According to the National Association of City Transportation Officials (NACTO), benefits of protected and/or separated cycle track facilities over standard bike lanes are:

- Provide some form of physical protection from passing vehicular traffic
- Dedicate space for cyclists
- Improve perceived comfort and safety for cyclists
- Eliminates risk and fear of collisions with over-taking
- Reduces risk of cyclist colliding with doors opening from adjacent parked cars or "dooring"
- Prevents double parking in bike lanes
- Low implementation costs by making use of existing pavement
- More attractive for bicyclists of all ages and abilities

▲ *Protected one way cycle track in Minneapolis, MN*

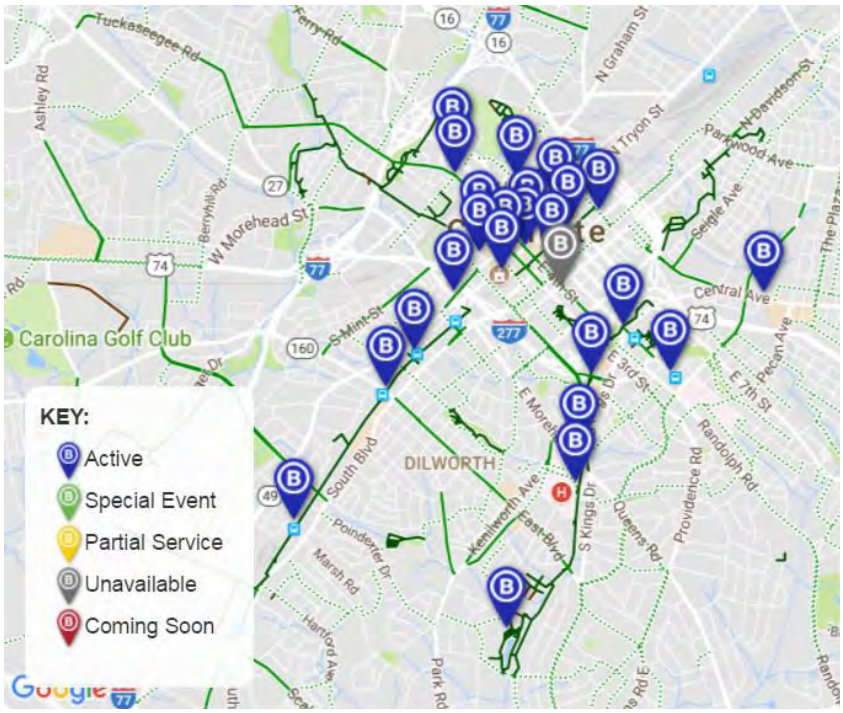
▲ *Parking protected one way buffered cycle track in New York, NY*

1.3. Bike Share Program

Another growing public bike facility is a bike share program. The largest bike sharing operation in the southeast, B-Cycle, is located in Charlotte. Bike sharing eliminates the cost of owning, maintaining, and storing a bike, as well as promoting health and wellness. Typical bike sharing programs provide memberships for purchase that allow free rides for a specified period of time. Bikes are picked up and dropped off at docking stations placed in strategic areas around town. In Charlotte, the program has become so popular that developers are paying to have docking stations installed with their projects, whereas at the start of the program, all stations and bikes were funded by donations and sponsors.

▲ *B-Cycle headquarters in Charlotte*

▲ *A B-Cycle station on the Rail Trail in Charlotte*



▲ *B-Cycle station map for Charlotte*

1.4. Recommendations

A. Continue to implement bicycle improvement plans in Davidson.

B. Upgrade standard bike lanes to buffered bike lanes or parking protected bike lanes where possible. This solution predominately requires restriping, not altering curb and gutter.

C. Implement a bike share program.

2. Fee-Based Parking

2.1. Strategy

Charge for on-street public parking using the pay-by-phone app and parking sensors.

2.2. Issues and Opportunities

- The town currently does not require payment for public parking and during public workshops, citizens expressed reluctance to pay for parking downtown.
- Parking management would involve less infrastructure than physical meters and be fairly easy to monitor, collect fees from and ticket violators with the app and sensor combination.
- On-street parking near shops and restaurants should be charged at a premium.
- The revenue should be used to cover parking operative expenses and any net revenue can go back into downtown through improvements to sidewalks, signs, lighting, etc.
- Charging for parking can encourage turnover, which should increase availability for visitors while employees will be encouraged to park in all-day lots.

◀ *Passport Parking App*

2.3. Recommendation

A. Begin metering on-street parking and progress to public or shared lots, in proximity to the highest demand locations. These locations include Main Street (from Depot Street to South Street) and Concord Road (Main Street to College Drive), as well as parking lots on Main Street and Jackson Street between Depot Street and Walnut Street. Use the Passport app and invest in a robust marketing campaign to promote the new program.

3. Shared Autonomous Transit

3.1. Strategy

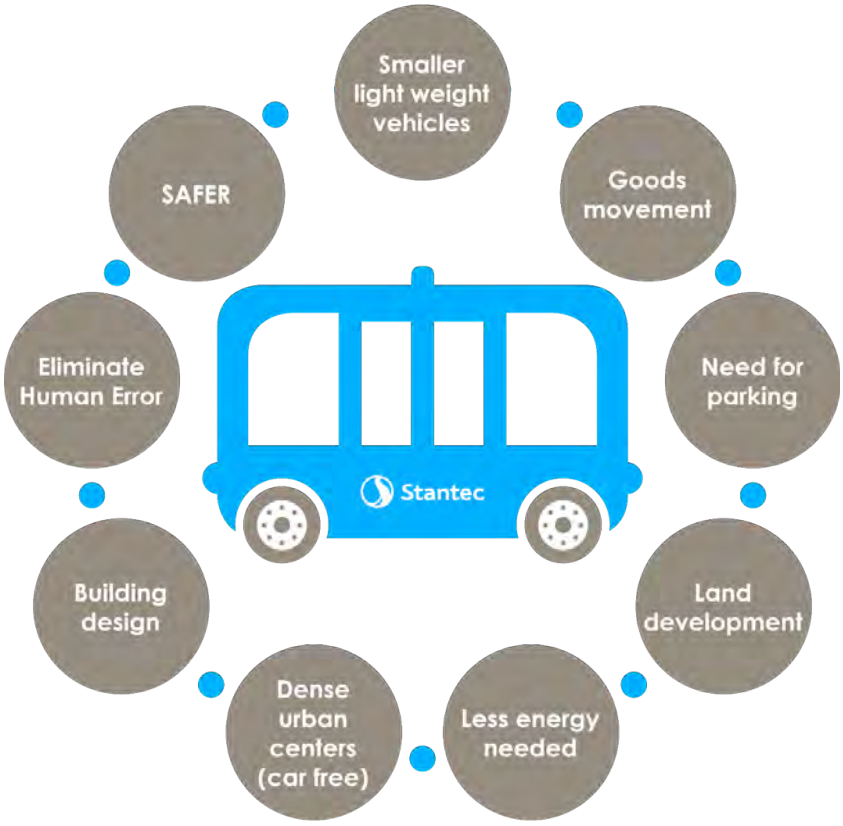
Over time, replace the fixed trolley vehicles with shared autonomous vehicles (SAV).

3.2. Issues and Opportunities

- Currently SAVs have a high capital cost, but it is expected to drop.
- SAVs have lower operational costs than the fixed trolley system.
- At first, it will need a dedicated path, but over time it will be able to run in mixed traffic.

▲ *Olli (Local Motors)*

- SAVs like the Olli can carry 8-12 passengers depending on the type
- They are monitored by human operators remotely at all times.
- SAVs are electric vehicles with a typical operating range of 14 hours.
- Top speed is about 25 mph
- They're equipped with 360 degree sensors



▲ *Illustration showing the benefits of utilizing autonomous vehicles*

3.3. Recommendation

A. When appropriate, explore the replacement of trolleys with SAVs.

SATURDAY PARKING STUDY

Downtown Davidson Parking Survey Saturday April 1, 2017

Block/ Face	Description	# of Spaces	8:30 am	9:30 am	10:30 am	11:30 am	12:30 am
3	Unmarked Corner lot	8					
4B	On-Street no time limit	16					
11C	On-Street no time limit (why?)	✓ 3	3	3	3	3	2
11C	On-Street no time limit (why?)	✓ 5	5	5	5	4	2
11D	On-Street 2hr	33					
11	Library Public Lot (2hr)	✓11	9	9	11	11	8
11	Library Employee	✓ 3	3	3	2	2	1
12/13	Dance Lot	9					
12/13	Public 3hr Lot	18					
12/13 k	Town Hall 2 hr Lot	✓ 26	~~25~~ 24	24	23	21	22
12/13	Public Long Term/2 hr lot	31					
12/13	Farmers Market Lot	~~24~~ 40					
12/13 j	Town Hall/Police Lot (2H)	~~28~~ 29	20	27	27 (*)	25 ~~21~~ (*)	10
12/13 ~~g~~ j	Police Only	✓ 7	4	4	2	3	3
12/13	Public Lot off Depot	21					
12/13	Public lot behind Inn	31					
12/13	Post Office Lot reserved	~~18~~ 15					
12/13	Post Office Lot ~~2hr~~ ?	~~21~~ 40					
12/13	Insurance Lot private	5					
12/13A	On-Street 2hr	~~13~~ 11					
12/13B	On-Street 2hr	10					
12/13B	On-Street 2hr	13					
14	College IT Lot private	42					
14B	On-Street ~~no time limit~~ 2hr	16 ~~18~~					
17D	On-Street 2hr	9					
17D	On-Street no time limit	14					
18C	~~On-Street no time limit~~ 2HR	10 ~~8~~	4	7	9	7	10
19C	On-Street no time limit	(16) 19	13	12	9	9	10
20C	On-Street no time limit	~~✓ 8~~	2	2	2	3	1
21A	On-Street no time limit	? (~~18~~ 14)	~~D~~ 4	~~D~~ 4	4	1	1
22A	On-Street no time limit 2HR	~~20 17~~ 11	4	8	9	8 7	~~23~~
22D	~~On-Street no time limit~~ 2HR	~~8 8~~	~~8~~ 8	8	8	7	~~3~~

(*) ~~Town Hall on street~~ 4 | 2 | | | | 3

Walnut South side no time limit

0 0

4B 2 (1) NIL

5 (3) ? Hwy

3 (3)

*19C add'l 3 spots avail after construct. 3

(*) 10 2HR 3 spc.

830 1

(*) 12/13 C OS NTL 4

830 2
930 4
1030 4
1130 3
1230 2

2 no barrier

Unmarked
~~2 HCP 6 ? police~~
5 parked in unmarked
6 unmarked

22C? #?

730 0

√?

22A NTL 9 spc

830 1
930 2
1030 2
1130 1
1230 1

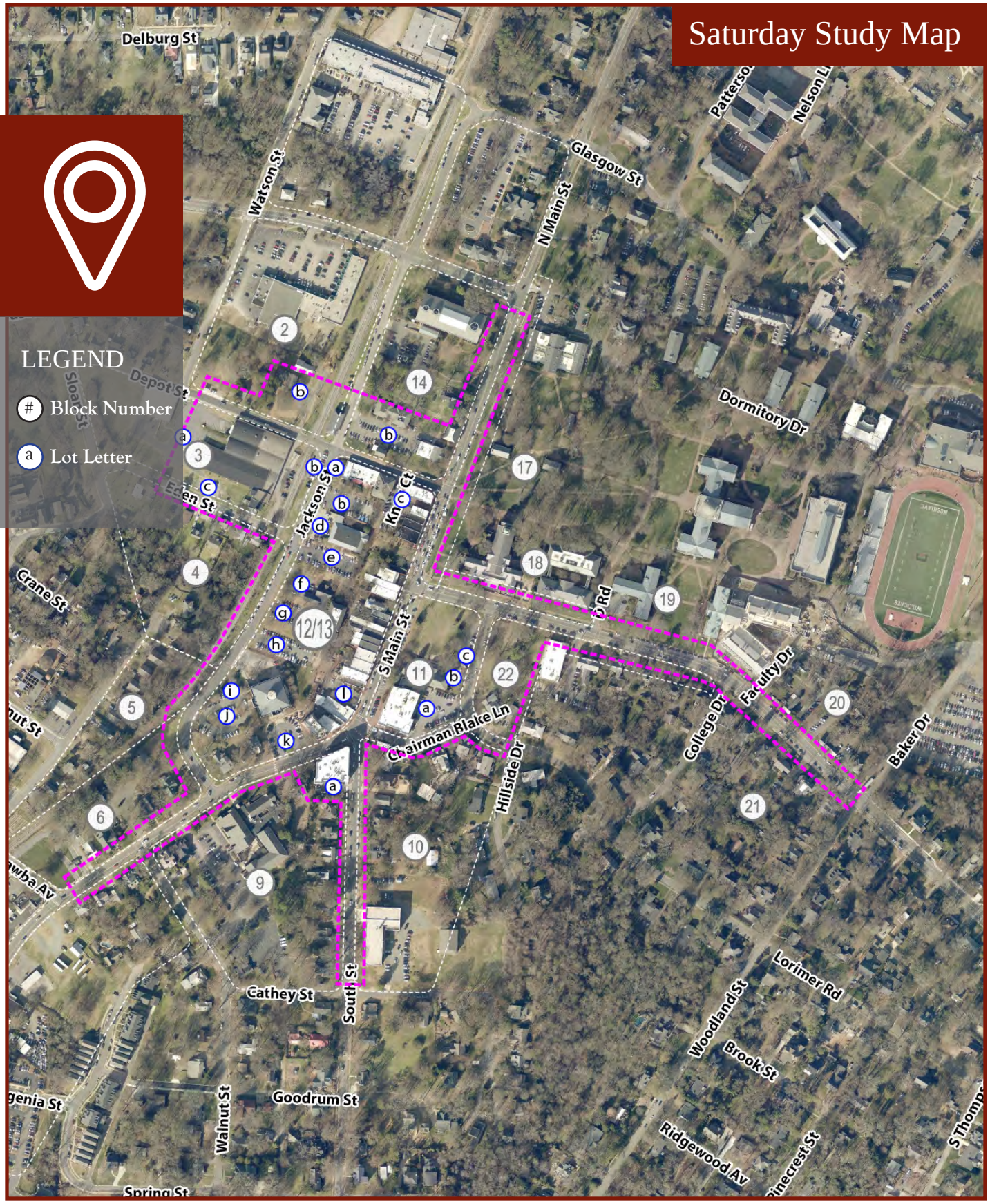
appendix

A

Two auditors divided the Saturday study area in the core of downtown, to complete one circuit every hour on the thirty-minute mark starting at 8:30 A.M. and ending at 1:30 P.M. The area was divided into blocks by numbers, off-street lots by letters, and on-street parking by the cardinal directions. Special conditions were noted including: informal parking outside of pavement markings, existing parking signs, reserved or permit only zones, loading zones, accessible parking spaces, public vs. private lots, and time limited zones.

IN THIS APPENDIX

Saturday Study Map



SATURDAY APRIL 1, 2017 PARKING SURVEY

Block/ Face	Description	# of Spaces	8:30 AM	9:30 AM	10:30 AM	11:30 AM	12:20 PM
2	Church lot	30	1	4	3	10	6
3	Unmarked Corner lot	9	9	9	9	7	6
4B	On-Street no time limit	19	16	18	19	16	10
6B	On-Street no time limit	12	0	1	6	6	2
9	Stowe's Private Lot	24	7	9	5	12	14
9B	On-Street 2 hr	12	9	8	7	4	4
9B	On-Street no time limit	11	10	3	4	2	3
9B	On-Street unmarked	2	0	0	0	2	2
10A	On-Street no time limit	5	3	5	5	4	4
10D	On-Street 2 hr	3	1	2	3	2	1
10D	On-Street no time limit	8	4	6	5	3	1
11	CVS parking lot	32	13	29	30	23	17
11A	On-Street 2 hr	6	4	3	4	5	2
11C	On-Street no time limit	3	3	3	3	3	2
11C	On-Street no time limit	5	5	5	5	4	2
11D	On-Street 2hr	33	27	33	32	33	30
11	Library Public Lot 2 hr	11	9	9	11	11	8
11	Library Employee	3	3	3	2	2	1
12/13	Dance Lot	7	2	4	5	4	2
12/13	Public Lot 2 hr (Summit Lot)	15	15	15	15	15	9
12/13	Town Hall 2 hr Lot	26	24	24	23	21	22
12/13	Public Lot 2 hr	31	25	29	28	22	13
12/13	Farmers Market Lot	40	38	40	40	40	29
12/13	Town Hall/Police Lot	29	20	27	27	25	10
12/13	Town Hall/Police Lot (unmarked)	6	0	0	5	6	5
12/13	Police Only	7	4	4	2	3	3
12/13	Public Lot off Depot (Unrestricted)	16	15	16	15	13	16
12/13	Public Lot off Depot (Restricted)	4	1	0	2	3	1
12/13	Public lot behind Inn no limit	18	15	16	18	16	12
12/13	Public lot behind Inn 2 hr	13	13	13	13	12	8

Block/ Face	Description	# of Spaces	8:30 AM	9:30 AM	10:30 AM	11:30 AM	12:20 PM
12/13	Post Office Lot reserved	13	10	10	10	5	2
12/13	Post Office Lot	40	31	39	39	34	28
12/13	Insurance Lot private	5	0	0	1	1	1
12/13A	On-Street 2hr	11	10	11	11	9	7
12/13B	On-Street 2hr	11	8	8	10	11	8
12/13B	On-Street 2hr	13	12	12	13	13	9
14	College IT Lot private	42	1	6	13	13	16
14B	On-Street 2 hr	16	7	15	13	13	13
17D	On-Street 2 hr	10	9	10	7	9	6
17D	On-Street 2 hr	14	1	2	9	6	5
18C	On-Street 2 hr	10	4	7	9	7	6
19C	On-Street no time limit	16	13	12	9	9	10
20C	On-Street no time limit	8	2	1	2	3	1
21A	On-Street no time limit	19	4	4	4	1	1
22A	On-Street 2 hr	11	4	8	9	7	2
22A	On-Street no time limit	9	1	2	2	1	1
22D	On-Street 2 hr	8	8	8	8	7	3
TOTALS		**694**	**421**	**493**	**515**	**478**	**364**

SATURDAY APRIL 1, 2017 OCCUPANCIES

Block/ Face	Description	8:30 AM	9:30 AM	10:30 AM	11:30 AM	12:20 PM
2	Church lot	3%	13%	10%	33%	20%
3	Unmarked Corner lot	100%	100%	100%	78%	67%
4B	On-Street no time limit	84%	95%	100%	84%	53%
6B	On-Street no time limit	0%	8%	50%	50%	17%
9	Stowe's Private Lot	29%	38%	21%	50%	58%
9B	On-Street 2 hr	75%	67%	58%	33%	33%
9B	On-Street no time limit	91%	27%	36%	18%	27%
9B	On-Street unmarked	0%	0%	0%	100%	100%
10A	On-Street no time limit	60%	100%	100%	80%	80%
10D	On-Street 2 hr	33%	67%	100%	67%	33%
10D	On-Street no time limit	50%	75%	63%	38%	13%
11	CVS parking lot	41%	91%	94%	72%	53%
11A	On-Street 2 hr	67%	50%	67%	83%	33%
11C	On-Street no time limit	100%	100%	100%	100%	67%
11C	On-Street no time limit	100%	100%	100%	80%	40%
11D	On-Street 2hr	82%	100%	97%	100%	91%
11	Library Public Lot 2 hr	82%	82%	100%	100%	73%
11	Library Employee	100%	100%	67%	67%	33%
12/13	Dance Lot	29%	57%	71%	57%	29%
12/13	Public Lot 2 hr (Summit Lot)	100%	100%	100%	100%	60%
12/13	Town Hall 2 hr Lot	92%	92%	88%	81%	85%
12/13	Public Lot 2 hr	81%	94%	90%	71%	42%
12/13	Farmers Market Lot	95%	100%	100%	100%	73%
12/13	Town Hall/Police Lot	69%	93%	93%	86%	34%
12/13	Town Hall/Police Lot (unmarked)	0%	0%	83%	100%	83%
12/13	Police Only	57%	57%	29%	43%	43%
12/13	Public Lot off Depot (Unrestricted)	94%	100%	94%	81%	100%
12/13	Public Lot off Depot (Restricted)	25%	0%	50%	75%	25%
12/13	Public lot behind Inn no limit	83%	89%	100%	89%	67%
12/13	Public lot behind Inn 2 hr	100%	100%	100%	92%	62%

Block/ Face	Description	8:30 AM	9:30 AM	10:30 AM	11:30 AM	12:20 PM
12/13	Post Office Lot reserved	77%	77%	77%	38%	15%
12/13	Post Office Lot	78%	98%	98%	85%	70%
12/13	Insurance Lot private	0%	0%	20%	20%	20%
12/13A	On-Street 2hr	91%	100%	100%	82%	64%
12/13B	On-Street 2hr	73%	73%	91%	100%	73%
12/13B	On-Street 2hr	92%	92%	100%	100%	69%
14	College IT Lot private	2%	14%	31%	31%	38%
14B	On-Street 2 hr	44%	94%	81%	81%	81%
17D	On-Street 2 hr	90%	100%	70%	90%	60%
17D	On-Street 2 hr	7%	14%	64%	43%	36%
18C	On-Street 2 hr	40%	70%	90%	70%	60%
19C	On-Street no time limit	81%	75%	56%	56%	63%
20C	On-Street no time limit	25%	13%	25%	38%	13%
21A	On-Street no time limit	21%	21%	21%	5%	5%
22A	On-Street 2 hr	36%	73%	82%	64%	18%
22A	On-Street no time limit	11%	22%	22%	11%	11%
22D	On-Street 2 hr	100%	100%	100%	88%	38%
TOTALS		**61%**	**71%**	**74%**	**69%**	**52%**

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THURSDAY PARKING STUDY

Downtown Davidson Parking Survey — **Thursday April 6, 2017**

Block/ Face	Description	# of Spaces	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
1a	Apartment Lot	14	21	17	15	21	21	22
1b	Cotton Mill	136	38	78	90	68	100	114
2c	RR facing grass lot	n/a						
2d	Market back lot	N/A						
2A	On-Street (Griffith)	9	4	5	5	5	3	1
2A	On-Street semi-marked (Griffith)	n/a				0	0	0
2B	On-Street (Jackson)	13	0	8	9	4	3	2
3a	Crossfit Lot	28	0	4	2	3	14	14
3b	Unmarked Corner lot	9	6	14	19	12	6	7
3c	Eden St facing lot	8	0	0	1	4	1	0
4B	On-Street no time limit (Jackson)	19	10	19	14	16	6	5
6a	DUMC Chapel lot	23	2	3	6	1	1	1
6b	Lake Norman Realty lot	7	3	4	5	3	2	0
6B	On-Street no time limit (Main)	12	0	3	2	2	1	0
7a	Catawba Ave Lot	15	1	2	3	3	3	2
7b	Large Central Lot 1	33	0	4	8	9	10	13
7c	Large Central Lot 2	71	24	42	42	54	58	44
7d	Large Central Lot 3	32	17	18	21	18	12	9
7e	RR facing lot	56	19	19	20	14	16	21
7f	Professional Park Lot 1	27	8	5	8	10	11	1
7g	Professional Park Lot 2	25	13	14	11	17	13	3
7h	Professional Park Lot 3	27	14	8	16	11	16	2
7B	On-Street (Main)	17	4	6	10	7	8	11
8a	Carruburritos Lot	17	10	11	9	11	8	14
8b	Dental Office Lot	51	19	30	28	41	40	12
8c	Griffth Village Ln Lot	31	18	28	26	27	24	16
8A	On-Street semi-marked (Walnut)	n/a	0	3	0	0	0	1
8B	On-Street West side (Goodrum)	14	6			4	5	6
8B	On-Street East side (Goodrum)	12	5			4	5	6
8B	On-Street (Spring)	6	3	3	4	1	3	3
8C	On-Street (Village)	11	1	2	2	5	3	10
9a	Stowe's Private Lot	24	12	18	16	15	17	16
9b	Methodist Church front lot	116	31	46	30	19	20	25
9b	Methodist Church back lot	59	23	24	23	12	16	16
9B	On-Street 2 hr (South)	12 (13?)	3	5	8	5	6	5
	EDEN ST MARKET	NOT MARK	5	4	6	9	4	2
1d	OFFICES	14	6	5	2	6	6	0

appendix

B

Two auditors divided the Thursday study area in the core of downtown and the surrounding area, to complete one circuit every 2-hours on the hour mark starting at 8:00 A.M. and ending at 8:00 P.M. The area was divided into blocks by numbers, off-street lots by letters, and on-street parking by the cardinal directions. Special conditions were noted including: informal parking outside of pavement markings, existing parking signs, reserved or permit only zones, loading zones, accessible parking spaces, public vs. private lots, and time limited zones.

IN THIS APPENDIX

Thursday Study Map

THURSDAY APRIL 6, 2017 PARKING SURVEY

Block/ Face	Description	# of Spaces	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
1a	Apartment Lot	28	21	17	15	21	21	22
1b	Cotton Mill	136	38	78	90	68	100	114
1c	RR facing lot	26	0	7	17	7	25	23
1d	Office Lot	14	6	5	2	6	6	0
1A	On-Street (Delburg)	10	5	9	10	5	7	3
1B	On-Street semi-marked (Jackson)	20	16	20	20	16	15	14
1C	On-Street (Griffith)	14	10	9	10	5	7	3
1D	On-Street unmarked (Watson)	2	0	0	2	2	1	0
2a	Market Lot	144	40	46	60	49	68	44
2b	Church Lot	30	2	4	4	1	1	7
2c	RR facing grass lot	8	4	7	8	8	6	5
2A	On-Street (Griffith)	6	4	5	5	5	3	1
2A	On-Street semi-marked (Griffith)	2	0	0	0	0	0	0
2B	On-Street (Jackson)	13	0	8	9	4	3	2
3a	Crossfit Lot	28	0	4	2	3	14	14
3b	Corner lot	19	6	14	19	12	8	7
3c	Eden St facing lot	8	0	0	1	4	1	0
3d	RR facing lot	9	5	4	6	9	4	2
3A	On-street unmarked (Depot)	6	0	5	6	5	2	3
4B	On-Street no time limit (Jackson)	19	10	19	14	16	6	5
6a	DUMC Chapel lot	23	2	3	16	1	1	1
6b	Lake Norman Realty lot	7	3	4	5	3	2	0
6B	On-Street no time limit (Main)	12	0	3	2	2	1	0
7a	Catawba Ave Lot	15	1	2	3	3	2	2
7b	Large Central Lot 1	33	0	4	8	9	10	13
7c	Large Central Lot 2	71	24	43	43	54	58	44
7d	Large Central Lot 3	32	10	18	21	18	12	9
7e	RR facing lot	56	19	19	20	14	16	21
7f	Professional Park Lot 1	27	8	5	8	10	11	1
7g	Professional Park Lot 2	25	13	14	11	17	13	3
7h	Professional Park Lot 3	27	14	8	16	11	16	2

Block/ Face	Description	# of Spaces	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
7B	On-Street (Main)	17	4	6	10	7	8	11
8a	Carrburritos Lot	17	10	11	9	11	8	14
8b	Dental Office Lot	51	19	30	28	41	40	12
8c	Griffith Village Ln Lot	31	18	28	26	27	24	10
8A	On-Street semi-marked (Walnut)	3	0	3	0	0	0	1
8B	On-Street West side (Goodrum)	14	6	1	2	4	5	6
8B	On-Street East side (Goodrum)	12	5	2	1	4	5	6
8B	On-Street (Spring)	6	3	0	1	1	3	3
8C	On-Street (Village)	11	1	2	2	5	3	10
9a	Stowe's Private Lot	24	12	18	16	15	17	16
9b	Methodist Church front lot	116	31	48	30	19	20	25
9b	Methodist Church back lot	59	23	24	23	12	6	6
9B	On-Street 2 hr (South)	10	3	5	8	5	6	5
9B	On-Street no time limit (South)	2	0	2	2	1	1	0
9B	On-Street unmarked (South)	4	0	4	0	2	2	3
9C	On-Street semi-marked (Walnut)	2	0	0	0	0	0	0
10a	Christian School side lot	11	10	11	11	9	4	3
10b	Christian School back lot	26	26	17	19	22	13	10
10A	On-Street no time limit (Chairman)	5	4	5	5	5	1	2
10D	On-Street 2 hr (South)	3	2	3	3	1	2	2
10D	On-Street no time limit (South)	8	4	8	8	6	3	2
11a	CVS parking lot	32	31	29	28	22	26	13
11b	Library Public Lot 2 hr	11	9	6	7	7	9	1
11c	Library Employee	3	2	3	3	1	2	2
11A	On-Street 2 hr (Concord)	6	4	1	6	3	1	3
11C	On-Street no time limit (Chairman)	3	3	3	2	1	1	1
11C	On-Street no time limit (Lorimer)	5	4	5	5	3	3	4
11D	On-Street 2hr (Main)	33	21	23	20	20	13	33
12/13a	Insurance Lot private	5	0	2	1	1	0	1
12/13b	Public lot behind Inn no limit	18	13	16	15	14	10	16
12/13b	Public lot behind Inn 2 hr	13	0	2	6	3	8	12
12/13c	Public Lot off Depot	16	5	9	16	4	9	15
12/13c	Public Lot - permit spots	4	0	0	0	1	0	0

Block/ Face	Description	# of Spaces	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
12/13d	Post Office Lot reserved	13	13	5	4	8	7	7
12/13e	Post Office Lot	40	15	17	17	15	8	5
12/13f	Dance Lot	7	2	3	2	3	5	6
12/13g	Public Lot 2 hr	31	16	28	28	27	18	9
12/13h	Farmers Market Lot	40	40	40	40	34	21	15
12/13i	Police Only	7	5	7	7	7	5	5
12/13j	Town Hall/Police Lot	29	25	28	27	28	24	8
12/13j	Town Hall/Police unmarked	11	7	4	8	11	6	1
12/13k	Town Hall 2 hr Lot	26	22	25	24	21	22	12
12/13l	Public Lot 2 hr	15	14	11	13	14	5	13
12/13A	On-Street 2hr (Depot)	11	2	3	7	2	5	9
12/13B	On-Street 2hr (Main)	11	6	10	8	2	2	8
12/13B	On-Street 2hr (Main)	13	13	5	11	4	5	12
12/13C	On-Street no time limit (Main)	5	5	4	2	1	0	0
14a	Satellite Lot	42	6	26	26	34	10	11
14b	College IT Lot private	42	36	38	37	33	10	6
14B	On-Street 2 hr (Main)	18	2	7	9	6	3	9
14D	On-Street semi-marked (Depot)	4	1	2	2	0	0	0
15a	Public Radio lot	88	34	46	51	74	61	19
15A	On-Street semi-marked (Delburg)	6	5	6	6	6	5	6
17D	On-Street 2 hr (Main)	10	2	6	8	6	1	3
17D	On-Street 2 hr (Main)	14	2	7	8	3	2	12
18C	On-Street 2 hr (Concord)	10	3	7	10	5	10	9
19C	On-Street no time limit (Concord)	19	14	16	16	17	13	10
20C	On-Street no time limit (Concord)	8	7	7	8	8	6	3
21A	On-Street no time limit (Concord)	14	10	11	10	9	7	2
22a	Congressional House lot	31	29	29	27	23	12	14
22A	On-Street 2 hr (Concord)	11	7	9	11	9	5	10
22A	On-Street no time limit (Concord)	9	9	7	9	9	6	3
22D	On-Street 2 hr (Lorimer)	8	5	5	8	4	2	7
TOTALS		**1460**	**719**	**859**	**887**	**836**	**677**	**577**

THURSDAY APRIL 6, 2017 OCCUPANCIES

Block/ Face	Description	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
1a	Apartment Lot	75%	61%	54%	75%	75%	79%
1b	Cotton Mill	28%	57%	66%	50%	74%	84%
1c	RR facing lot	0%	27%	65%	27%	96%	88%
1d	Office Lot	43%	36%	14%	43%	43%	0%
1A	On-Street (Delburg)	50%	90%	100%	50%	70%	30%
1B	On-Street semi-marked (Jackson)	80%	100%	100%	80%	75%	70%
1C	On-Street (Griffith)	71%	64%	71%	36%	50%	21%
1D	On-Street unmarked (Watson)	0%	0%	100%	100%	50%	0%
2a	Market Lot	28%	32%	42%	34%	47%	31%
2b	Church Lot	7%	13%	13%	3%	3%	23%
2c	RR facing grass lot	50%	88%	100%	100%	75%	63%
2A	On-Street (Griffith)	67%	83%	83%	83%	50%	17%
2A	On-Street semi-marked (Griffith)	0%	0%	0%	0%	0%	0%
2B	On-Street (Jackson)	0%	62%	69%	31%	23%	15%
3a	Crossfit Lot	0%	14%	7%	11%	50%	50%
3b	Corner lot	32%	74%	100%	63%	42%	37%
3c	Eden St facing lot	0%	0%	13%	50%	13%	0%
3d	RR facing lot	56%	44%	67%	100%	44%	22%
3A	On-street unmarked (Depot)	0%	83%	100%	83%	33%	50%
4B	On-Street no time limit (Jackson)	53%	100%	74%	84%	32%	26%
6a	DUMC Chapel lot	9%	13%	70%	4%	4%	4%
6b	Lake Norman Realty lot	43%	57%	71%	43%	29%	0%
6B	On-Street no time limit (Main)	0%	25%	17%	17%	8%	0%
7a	Catawba Ave Lot	7%	13%	20%	20%	13%	13%
7b	Large Central Lot 1	0%	12%	24%	27%	30%	39%
7c	Large Central Lot 2	34%	61%	61%	76%	82%	62%
7d	Large Central Lot 3	31%	56%	66%	56%	38%	28%
7e	RR facing lot	34%	34%	36%	25%	29%	38%
7f	Professional Park Lot 1	30%	19%	30%	37%	41%	4%

Block/ Face	Description	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
7g	Professional Park Lot 2	52%	56%	44%	68%	52%	12%
7h	Professional Park Lot 3	52%	30%	59%	41%	59%	7%
7B	On-Street (Main)	24%	35%	59%	41%	47%	65%
8a	Carrburritos Lot	59%	65%	53%	65%	47%	82%
8b	Dental Office Lot	37%	59%	55%	80%	78%	24%
8c	Griffith Village Ln Lot	58%	90%	84%	87%	77%	32%
8A	On-Street semi-marked (Walnut)	0%	100%	0%	0%	0%	33%
8B	On-Street West side (Goodrum)	43%	7%	14%	29%	36%	43%
8B	On-Street East side (Goodrum)	42%	17%	8%	33%	42%	50%
8B	On-Street (Spring)	50%	0%	17%	17%	50%	50%
8C	On-Street (Village)	9%	18%	18%	45%	27%	91%
9a	Stowe's Private Lot	50%	75%	67%	63%	71%	67%
9b	Methodist Church front lot	27%	41%	26%	16%	17%	22%
9b	Methodist Church back lot	39%	41%	39%	20%	10%	10%
9B	On-Street 2 hr (South)	30%	50%	80%	50%	60%	50%
9B	On-Street no time limit (South)	0%	100%	100%	50%	50%	0%
9B	On-Street unmarked (South)	0%	100%	0%	50%	50%	75%
9C	On-Street semi-marked (Walnut)	0%	0%	0%	0%	0%	0%
10a	Christian School side lot	91%	100%	100%	82%	36%	27%
10b	Christian School back lot	100%	65%	73%	85%	50%	38%
10A	On-Street no time limit (Chairman)	80%	100%	100%	100%	20%	40%
10D	On-Street 2 hr (South)	67%	100%	100%	33%	67%	67%
10D	On-Street no time limit (South)	50%	100%	100%	75%	38%	25%
11a	CVS parking lot	97%	91%	88%	69%	81%	41%
11b	Library Public Lot 2 hr	82%	55%	64%	64%	82%	9%
11c	Library Employee	67%	100%	100%	33%	67%	67%
11A	On-Street 2 hr (Concord)	67%	17%	100%	50%	17%	50%

Block/ Face	Description	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
11C	On-Street no time limit (Chairman)	100%	100%	67%	33%	33%	33%
11C	On-Street no time limit (Lorimer)	80%	100%	100%	60%	60%	80%
11D	On-Street 2hr (Main)	64%	70%	61%	61%	39%	100%
12/13a	Insurance Lot private	0%	40%	20%	20%	0%	20%
12/13b	Public lot behind Inn no limit	72%	89%	83%	78%	56%	89%
12/13b	Public lot behind Inn 2 hr	0%	15%	46%	23%	62%	92%
12/13c	Public Lot off Depot	31%	56%	100%	25%	56%	94%
12/13c	Public Lot - permit spots	0%	0%	0%	25%	0%	0%
12/13d	Post Office Lot reserved	100%	38%	31%	62%	54%	54%
12/13e	Post Office Lot	38%	43%	43%	38%	20%	13%
12/13f	Dance Lot	29%	43%	29%	43%	71%	86%
12/13g	Public Lot 2 hr	52%	90%	90%	87%	58%	29%
12/13h	Farmers Market Lot	100%	100%	100%	85%	53%	38%
12/13i	Police Only	71%	100%	100%	100%	71%	71%
12/13j	Town Hall/Police Lot	86%	97%	93%	97%	83%	28%
12/13j	Town Hall/Police unmarked	64%	36%	73%	100%	55%	9%
12/13k	Town Hall 2 hr Lot	85%	96%	92%	81%	85%	46%
12/13l	Public Lot 2 hr	93%	73%	87%	93%	33%	87%
12/13A	On-Street 2hr (Depot)	18%	27%	64%	18%	45%	82%
12/13B	On-Street 2hr (Main)	55%	91%	73%	18%	18%	73%
12/13B	On-Street 2hr (Main)	100%	38%	85%	31%	38%	92%
12/13C	On-Street no time limit (Main)	100%	80%	40%	20%	0%	0%
14a	Satellite Lot	14%	62%	62%	81%	24%	26%
14b	College IT Lot private	86%	90%	88%	79%	24%	14%
14B	On-Street 2 hr (Main)	11%	39%	50%	33%	17%	50%
14D	On-Street semi-marked (Depot)	25%	50%	50%	0%	0%	0%
15a	Public Radio lot	39%	52%	58%	84%	69%	22%
15A	On-Street semi-marked (Delburg)	83%	100%	100%	100%	83%	100%
17D	On-Street 2 hr (Main)	20%	60%	80%	60%	10%	30%
17D	On-Street 2 hr (Main)	14%	50%	57%	21%	14%	86%

Block/ Face	Description	8:00 AM	10:00 AM	12:00 PM	2:00 PM	4:00 PM	6:00 PM
18C	On-Street 2 hr (Concord)	30%	70%	100%	50%	100%	90%
19C	On-Street no time limit (Concord)	74%	84%	84%	89%	68%	53%
20C	On-Street no time limit (Concord)	88%	88%	100%	100%	75%	38%
21A	On-Street no time limit (Concord)	71%	79%	71%	64%	50%	14%
22a	Congressional House lot	94%	94%	87%	74%	39%	45%
22A	On-Street 2 hr (Concord)	64%	82%	100%	82%	45%	91%
22A	On-Street no time limit (Concord)	100%	78%	100%	100%	67%	33%
22D	On-Street 2 hr (Lorimer)	63%	63%	100%	50%	25%	88%
TOTALS		**49%**	**59%**	**61%**	**57%**	**46%**	**40%**

2017