



# Project Summary – Board of Alderman

Carrboro Parking Study

Presented by  
VHB

November, 15, 2016

# Overview

- Project Background
- Summary of Findings
  - What have we heard?
  - What does the data say?
  - What does this mean?
  - Are there additional options to consider?
- Questions and Discussion

# Project Background





# Project Collaborators

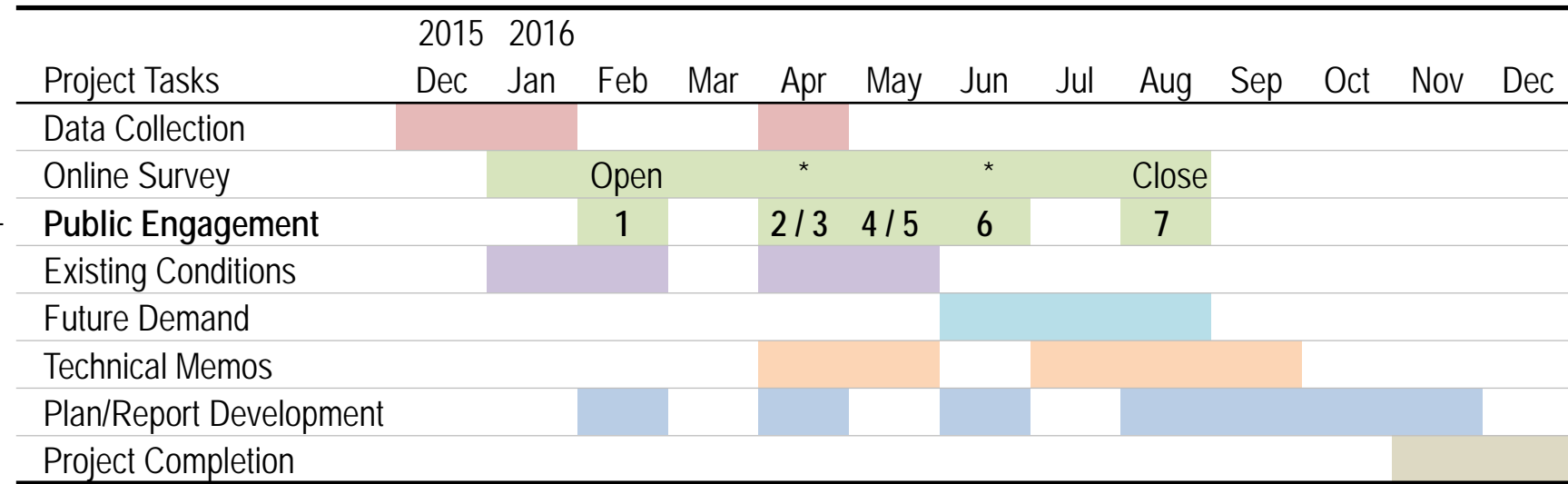
- This project has engaged with
  - Town of Carrboro staff
  - Town of Chapel Hill staff
  - CH-Carrboro Chamber of Commerce
  - UNC students/staff
  - Business owners
  - Local non-profit organizations
  - Residents
  - Farmers Market attendees



# Project Timeline

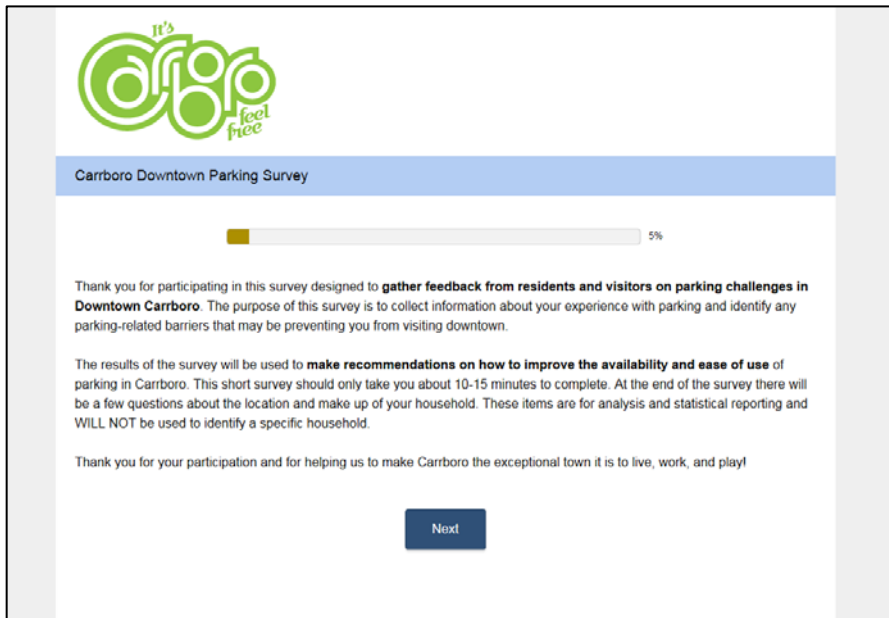
- Public Engagement

1. Public Meeting #1
2. Walkability Micro-Audit
3. Farmers Market event
4. Coffee with a Cop event
5. Business Alliance meeting
6. Public Meeting #2
7. Business owner interviews



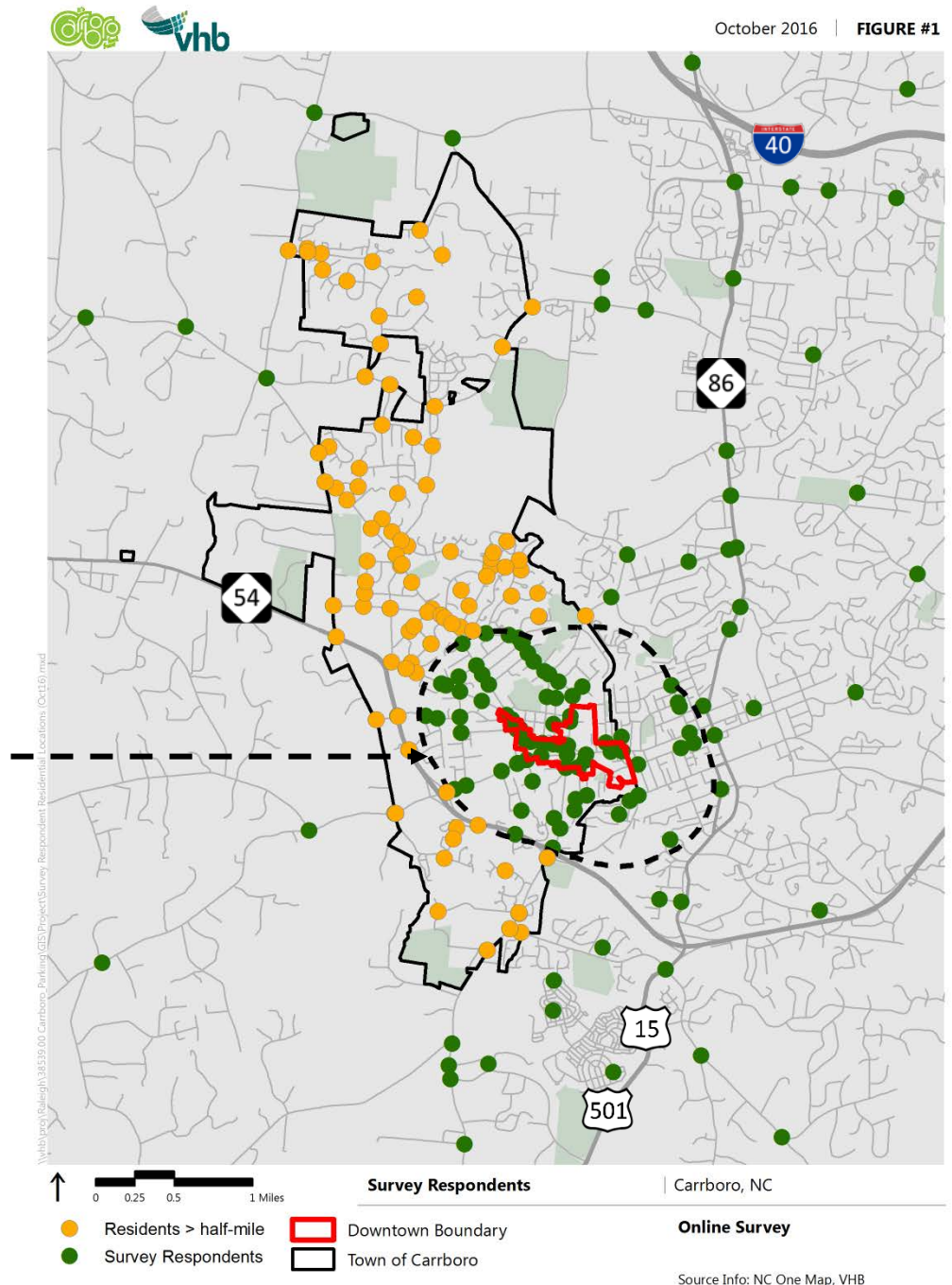
# Public Outreach – Survey

- 602 Survey respondents to date
  - 538 provided location
    - 499 Orange County residents
    - 400 Town of Carrboro residents
    - 202 residents further than half-mile (**orange**)



The screenshot shows the Carrboro Downtown Parking Survey online form. At the top is the logo "It's Carrboro feel free". Below it is a progress bar showing 5% completion. The text on the page reads: "Thank you for participating in this survey designed to **gather feedback from residents and visitors on parking challenges in Downtown Carrboro**. The purpose of this survey is to collect information about your experience with parking and identify any parking-related barriers that may be preventing you from visiting downtown." It continues: "The results of the survey will be used to **make recommendations on how to improve the availability and ease of use** of parking in Carrboro. This short survey should only take you about 10-15 minutes to complete. At the end of the survey there will be a few questions about the location and make up of your household. These items are for analysis and statistical reporting and WILL NOT be used to identify a specific household." It ends with: "Thank you for your participation and for helping us to make Carrboro the exceptional town it is to live, work, and play!" and a "Next" button.

Half-mile from  
Downtown



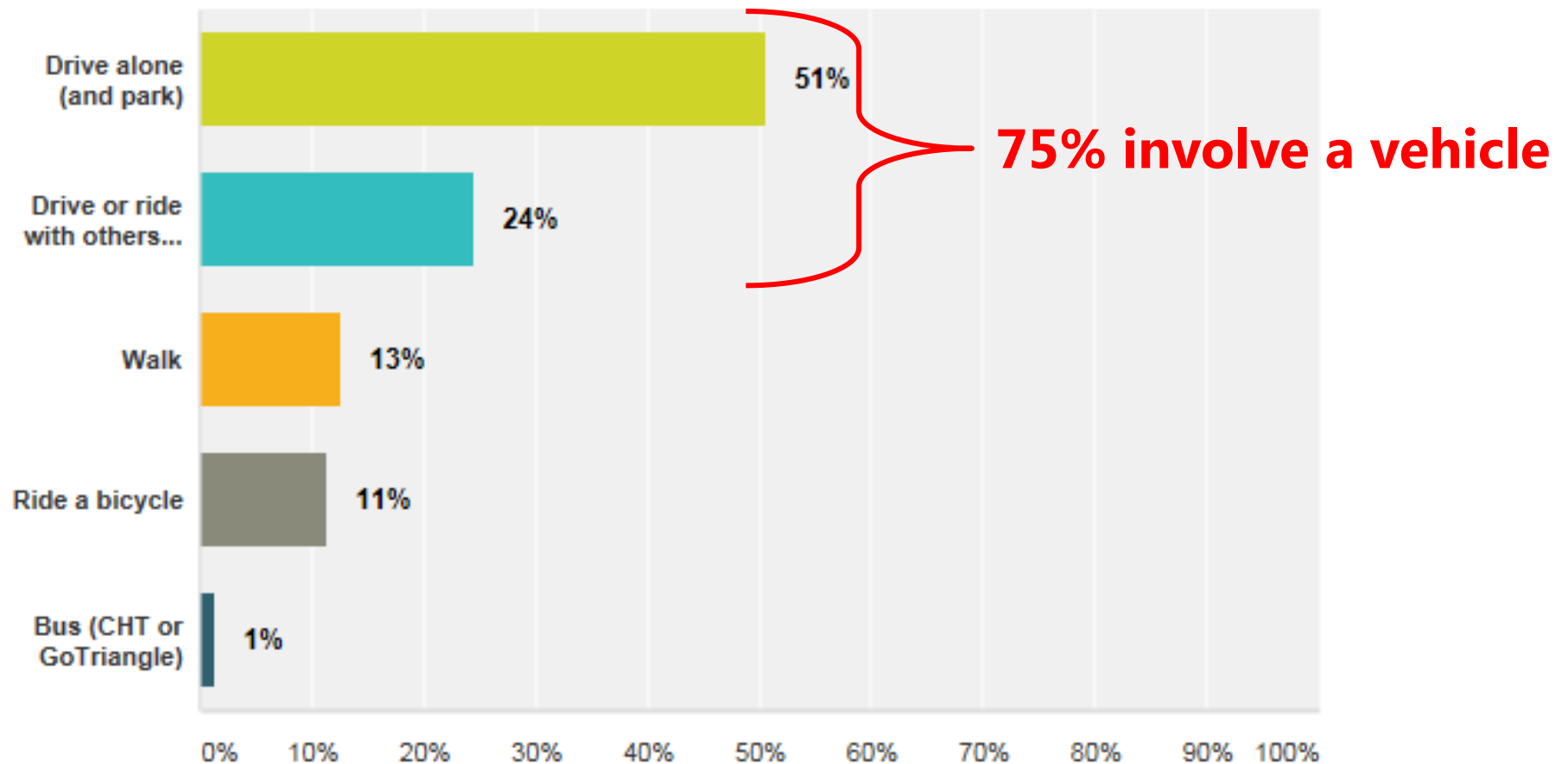


What have we heard?



# Public Outreach – Survey

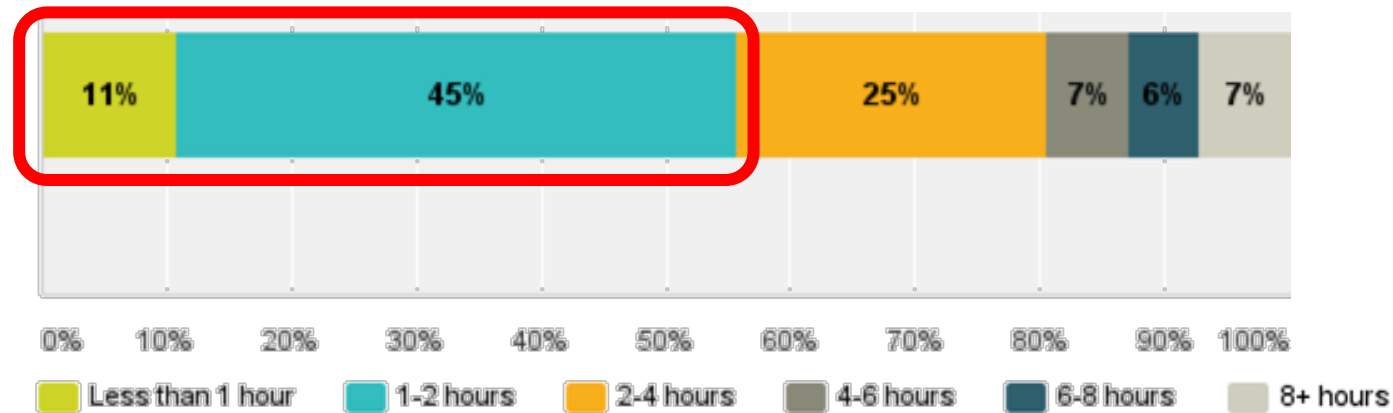
- How do you typically travel to Downtown Carrboro?





# Public Outreach – Survey

- How long do you TYPICALLY STAY when you visit?

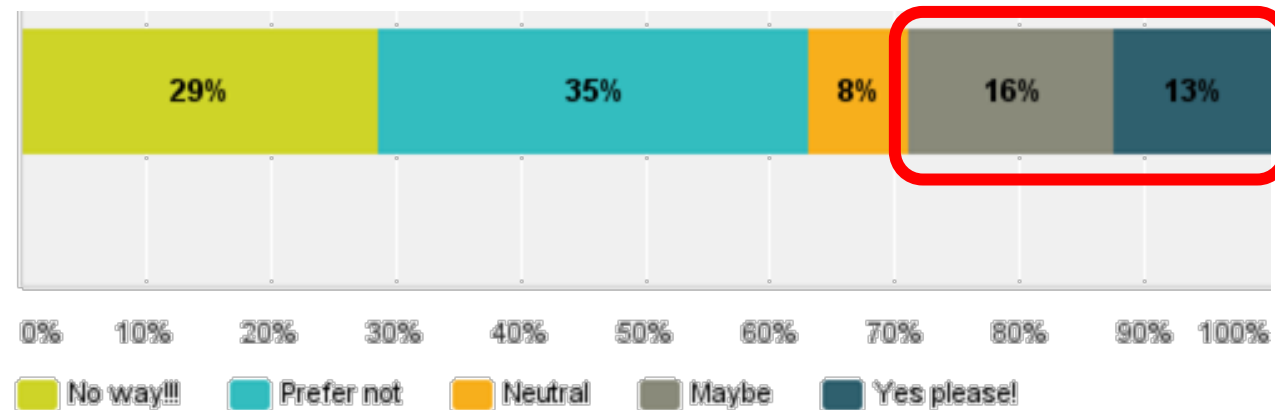


- 56% park  $\leq$  2 hours
- 81% park  $\leq$  4 hours

**Confirmed by Length of Stay analysis:  
59% park  $\leq$  2 hours**

# Public Outreach – Survey

- Are you willing to PAY AN HOURLY FEE to park?

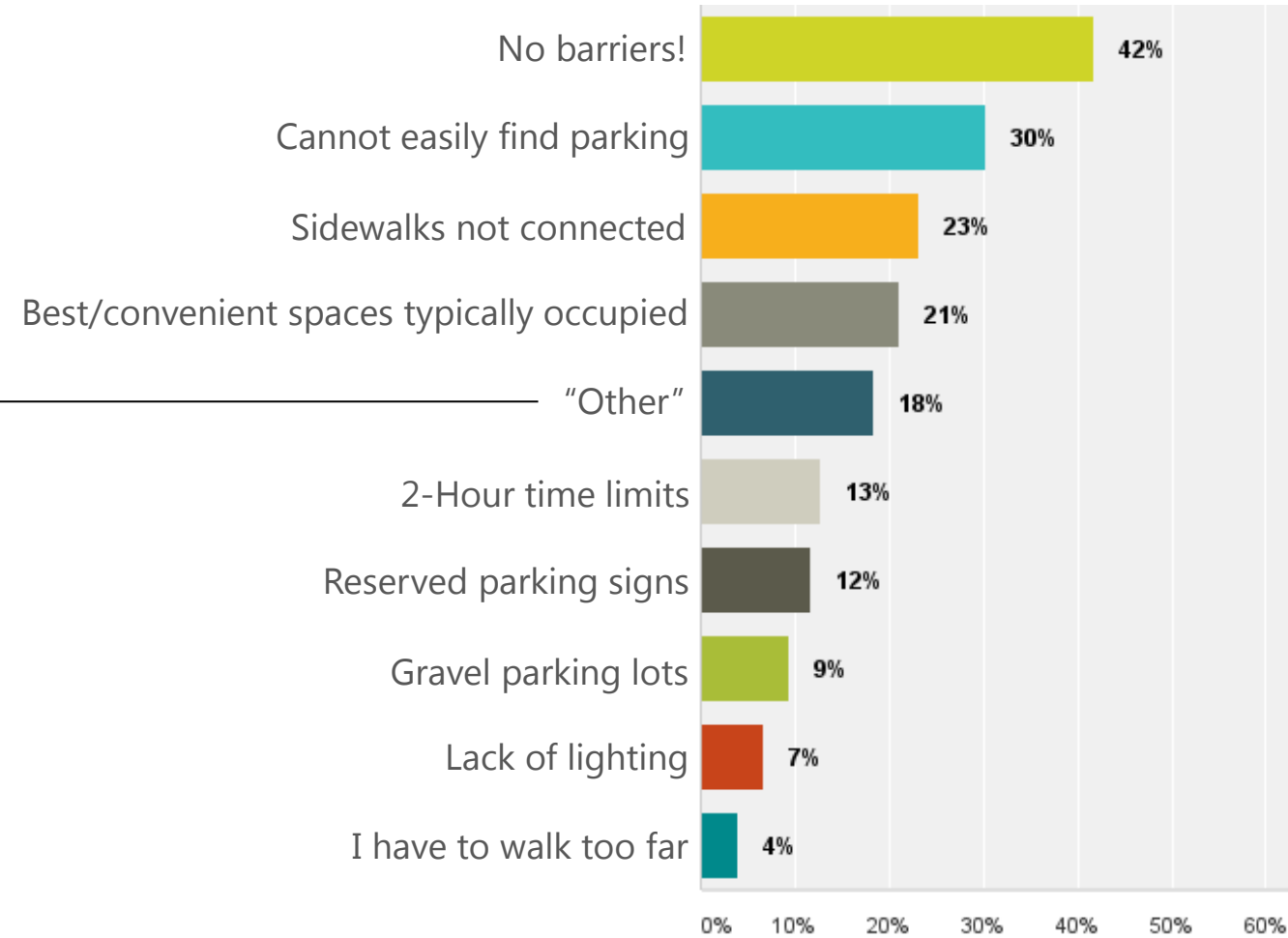


- 29% may be willing

# Public Outreach – Survey

- What are the barriers that prevent you from visiting more frequently?

- “Not enough [ADA] handicap parking”
- “I would probably avoid a parking deck”
- “I avoid major events and parades”
- “Higher frequency bus service”
- “Carr Mill Mall parking enforcement”
- “**Predatory towing practices**”
- “**Unfamiliar where to park**”
- “Unmarked spaces”
- “Traffic”

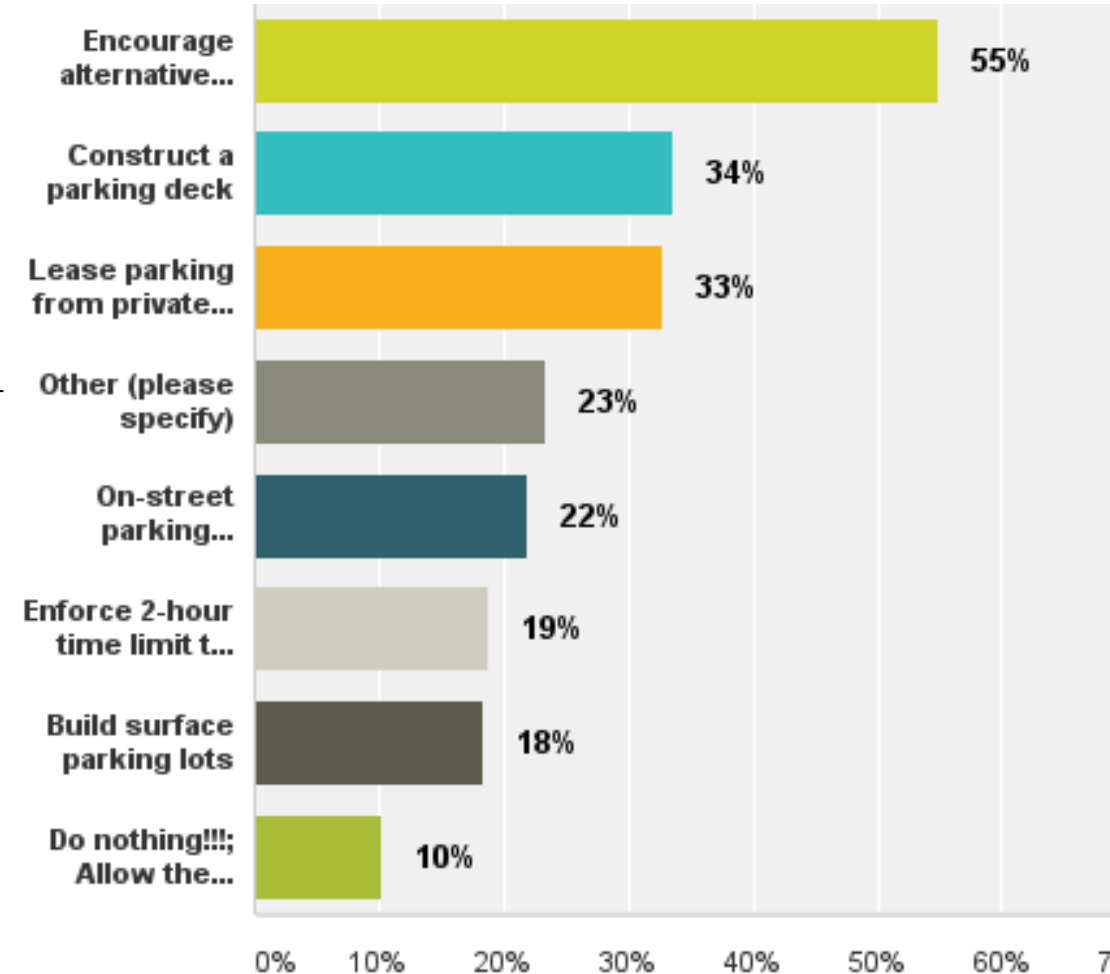




# Public Outreach – Survey

## ■ To improve parking in Downtown Carrboro the Town should...

- "Parking deck, but not too tall"
- "Construct more sidewalks" and "Expand sidewalks"
- "Address employee parking"
- "Bicycle and pedestrian connectivity"
- "Covered bicycle parking"
- **"Agreements for after-hours use of [empty] lots at night"**
- "Charge hourly rates for parking"
- **"Better signage"**
- "Different time limits (1-hr, 2-hr, and 4-hr) in some lots"
- "Enforce time limits"
- "Improve bus service" ... "later into evening"
- "Sell [public] surface lots to developers"



## Public Outreach – Various

- “I’ve never struggled to park downtown”
- “Long-term (employee) parking is concern” perceived as greatest problem
  - “Enforcement [of 2-hour parking] is the key”
  - Annual business owner survey
- “Charge a fee for public parking”
- **Identify private lots where the public may park after 5 pm**
- Focus on center of downtown
- **Include wayfinding signage and lighting improvements**
- Peak period is lunchtime, however public lots peak during evening 6-9 PM

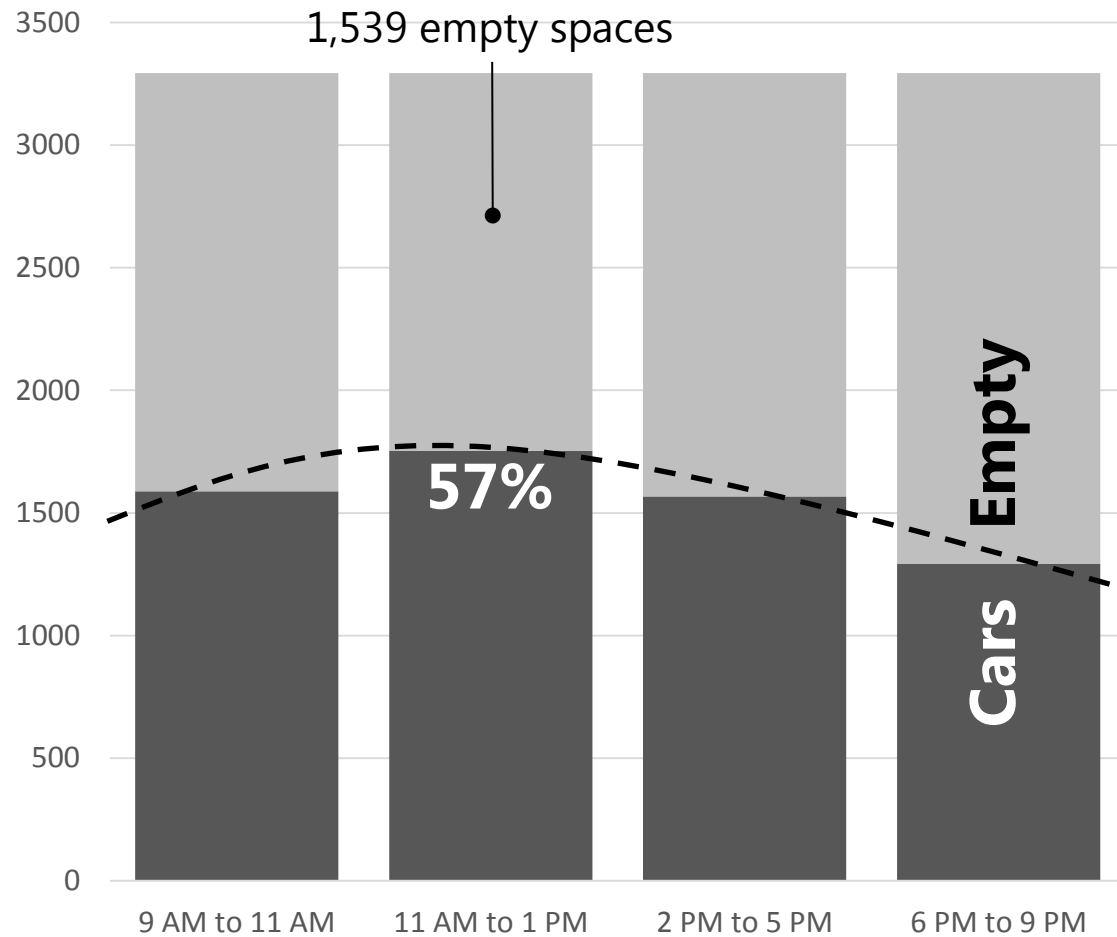
What does the data say?



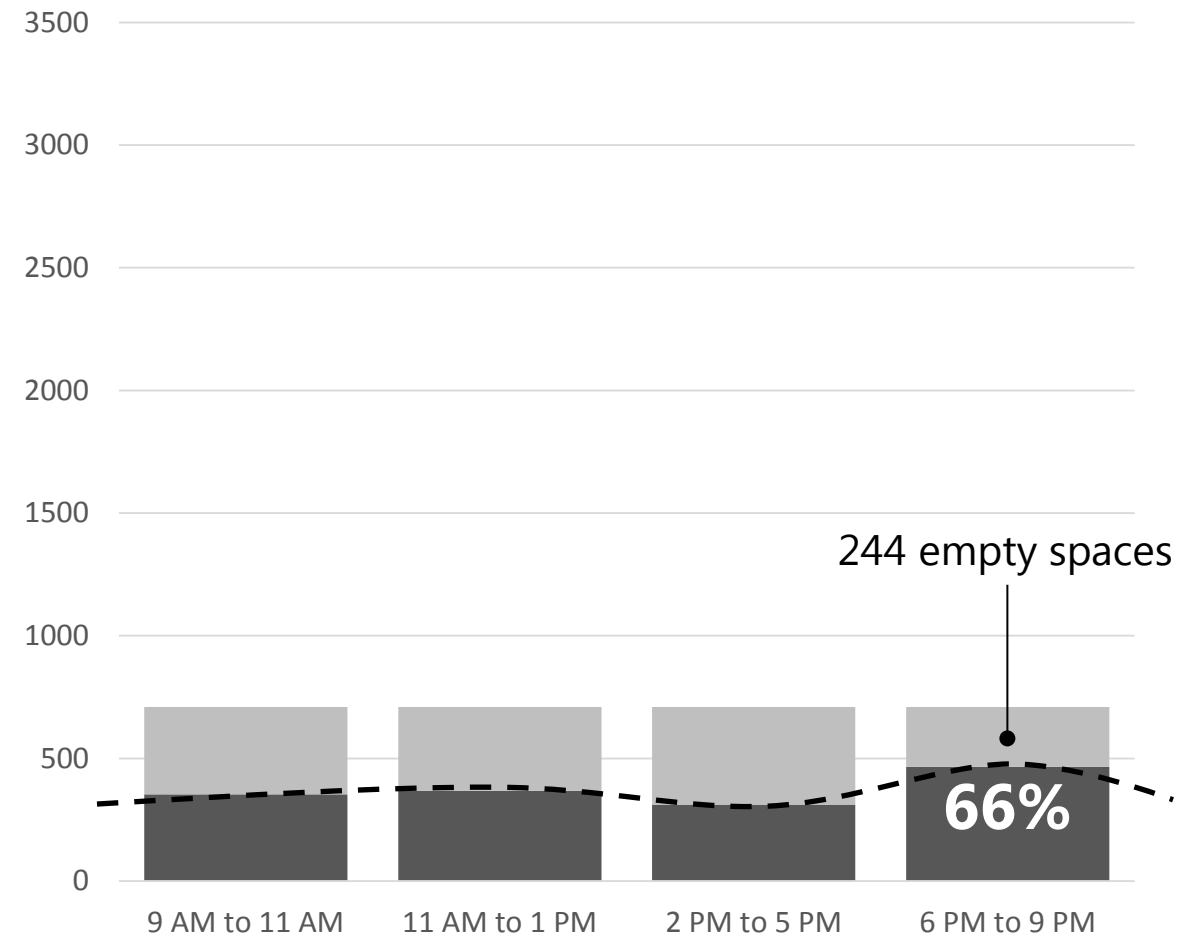


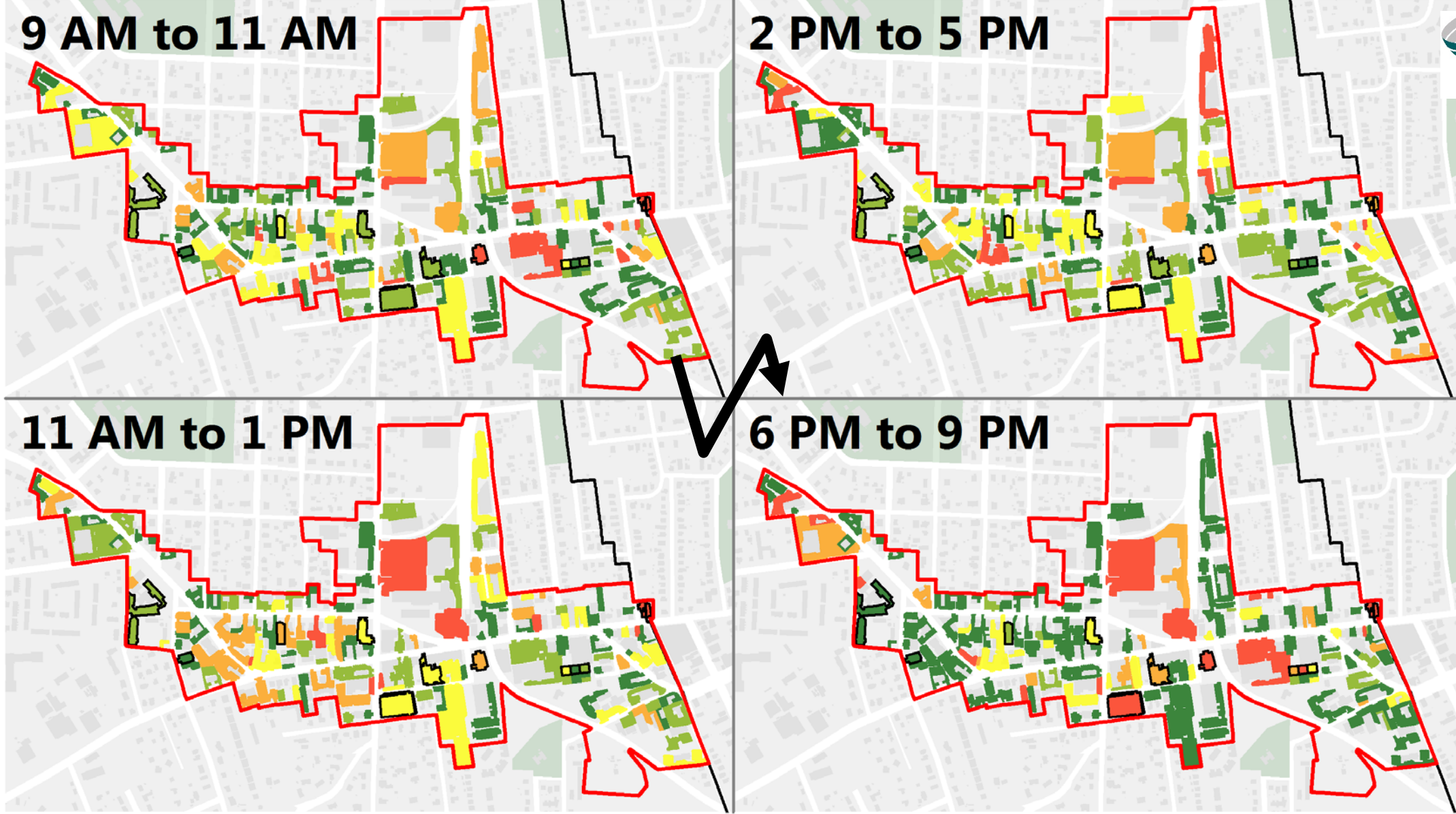
# Data Collection – Utilization

## Private Parking



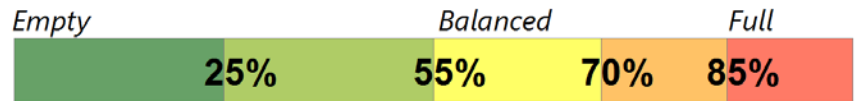
## Public Parking





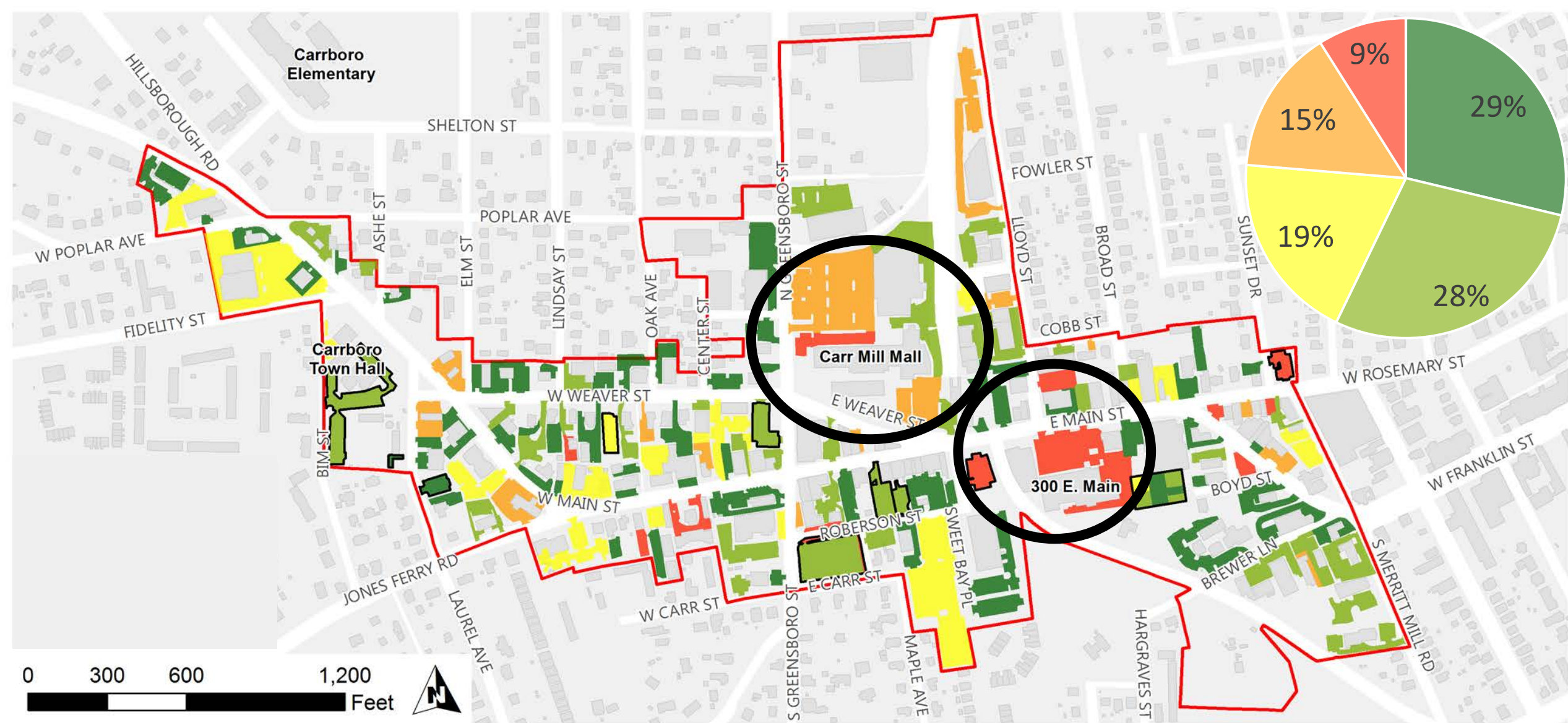
- Downtown Boundary
- Town of Carrboro
- Building Footprint
- Public Lots

**Parking Occupancy**



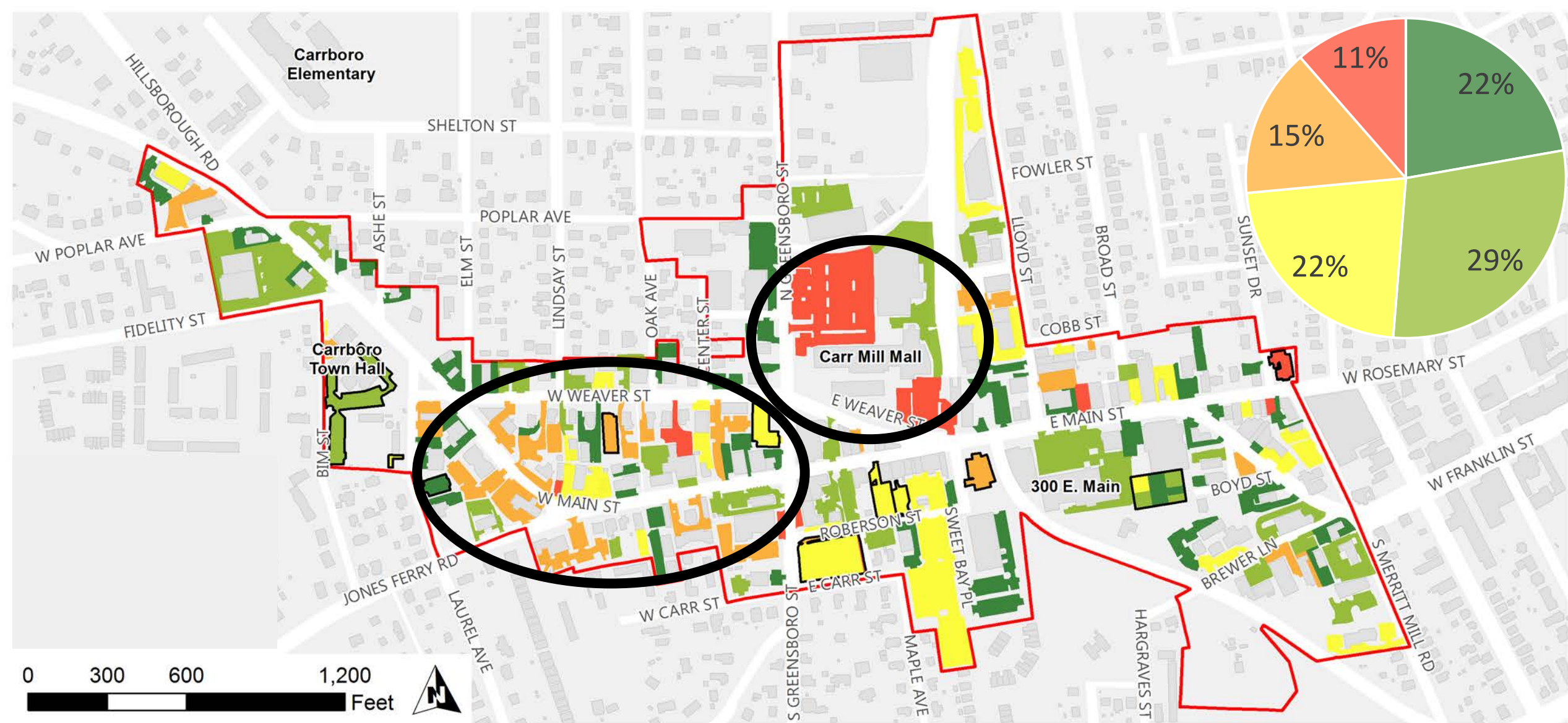
Parking Occupancy by Time of Day | Carrboro, NC

**Parking Analysis**



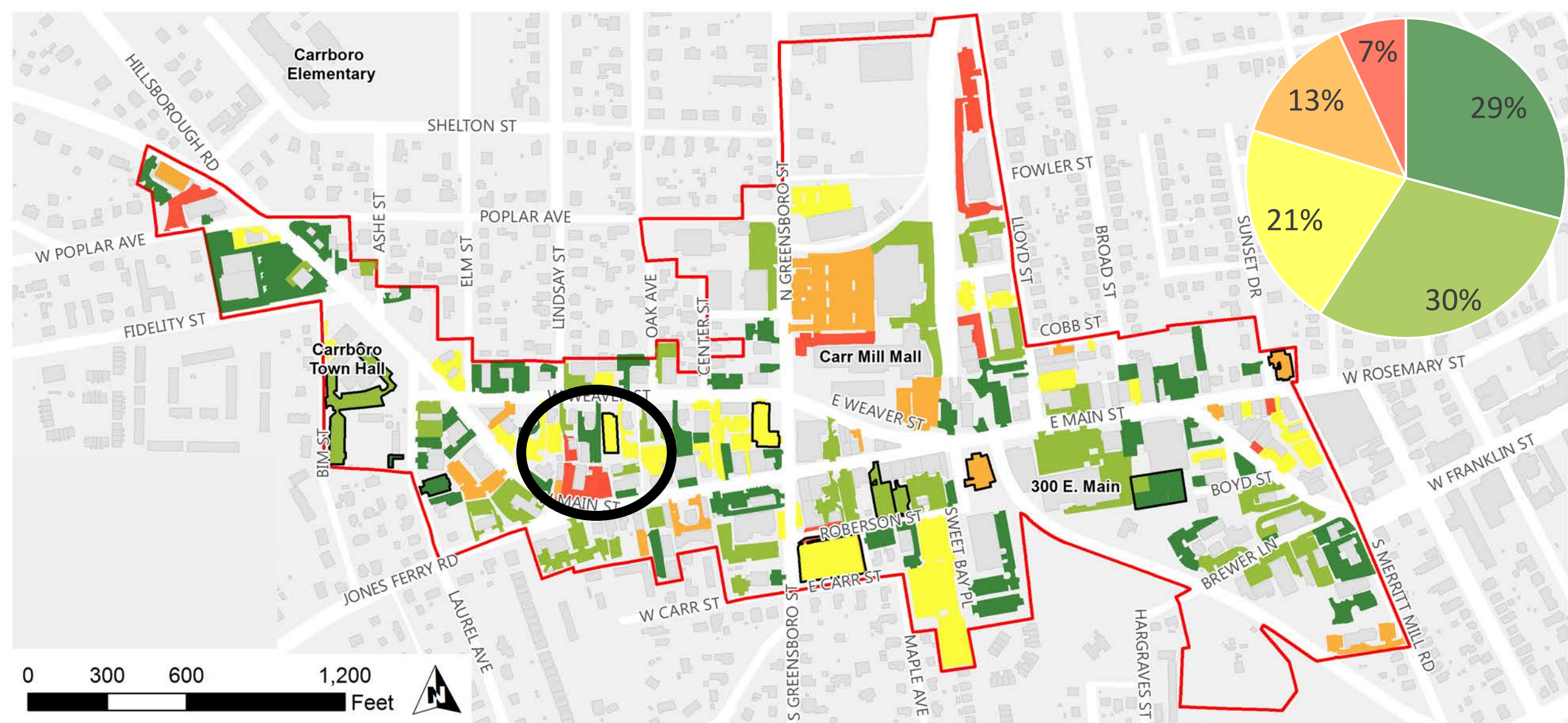
9 AM to 11 AM



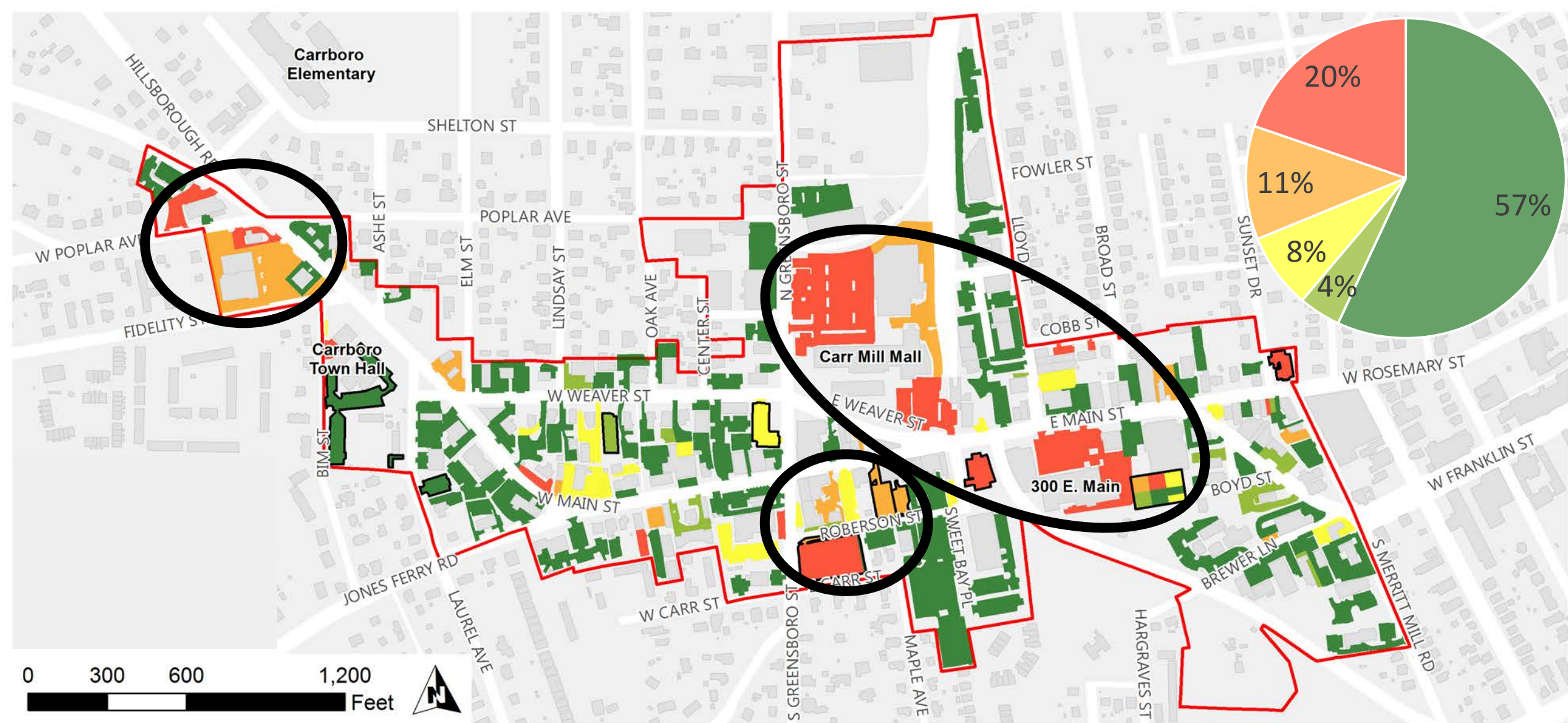


11 AM to 1 PM





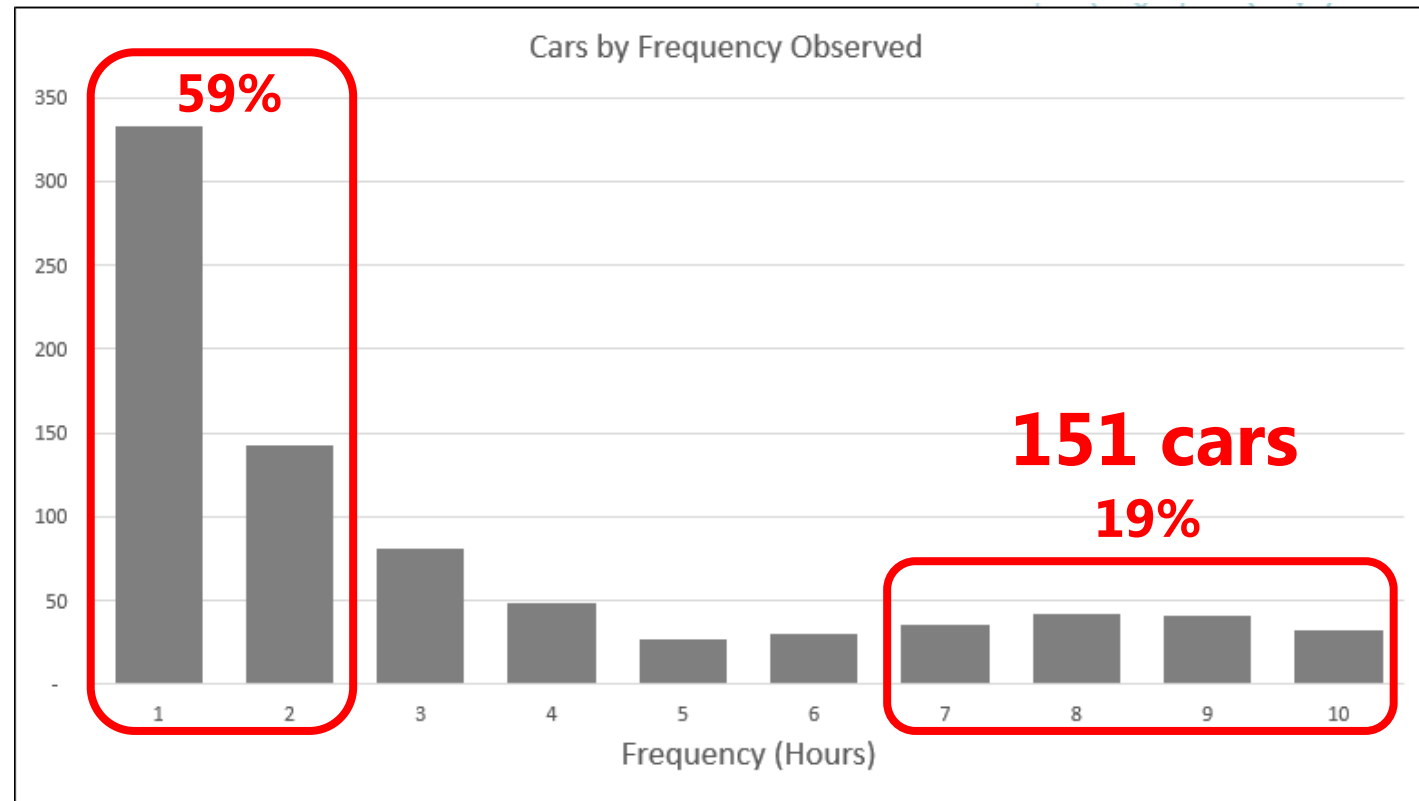




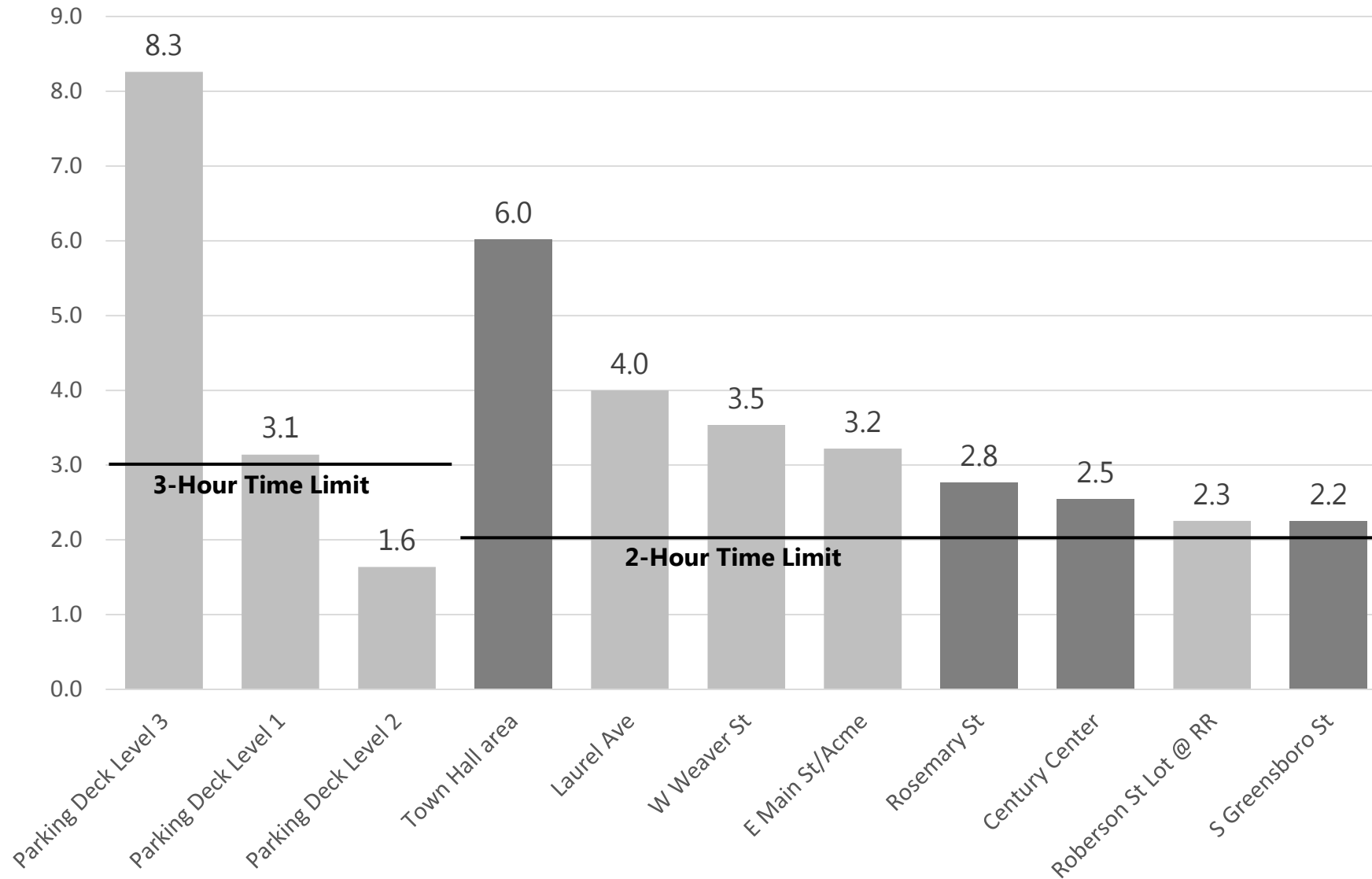


# Parking Turnover – Length of Stay Analysis

- Public parking lots only, license plate observations 8 AM to 5 PM
- **2,646** individual license plates were observed
- **813** unique license plates (cars)



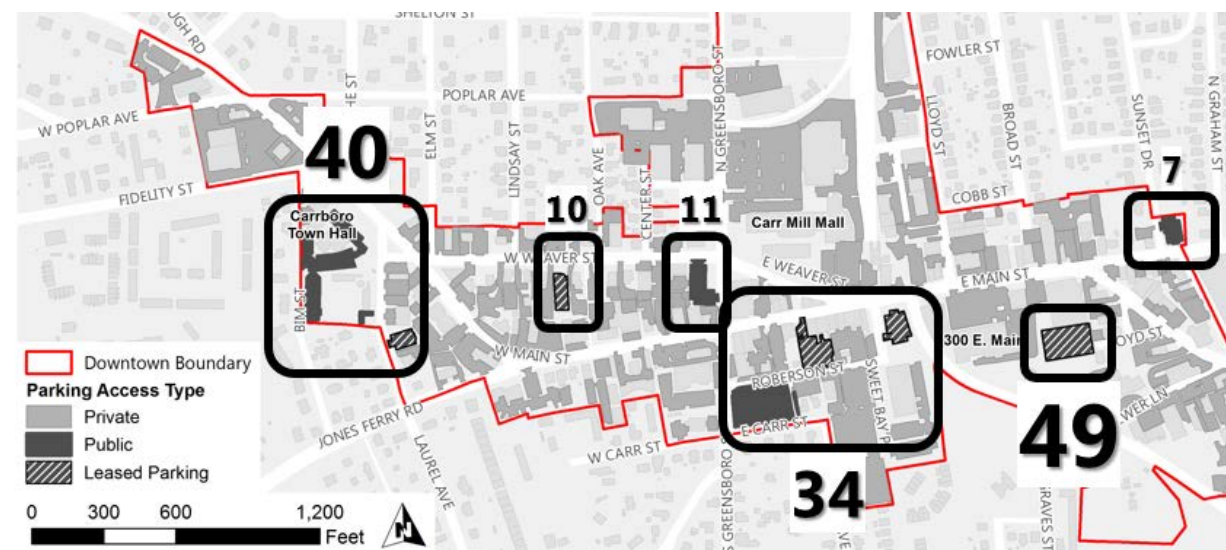
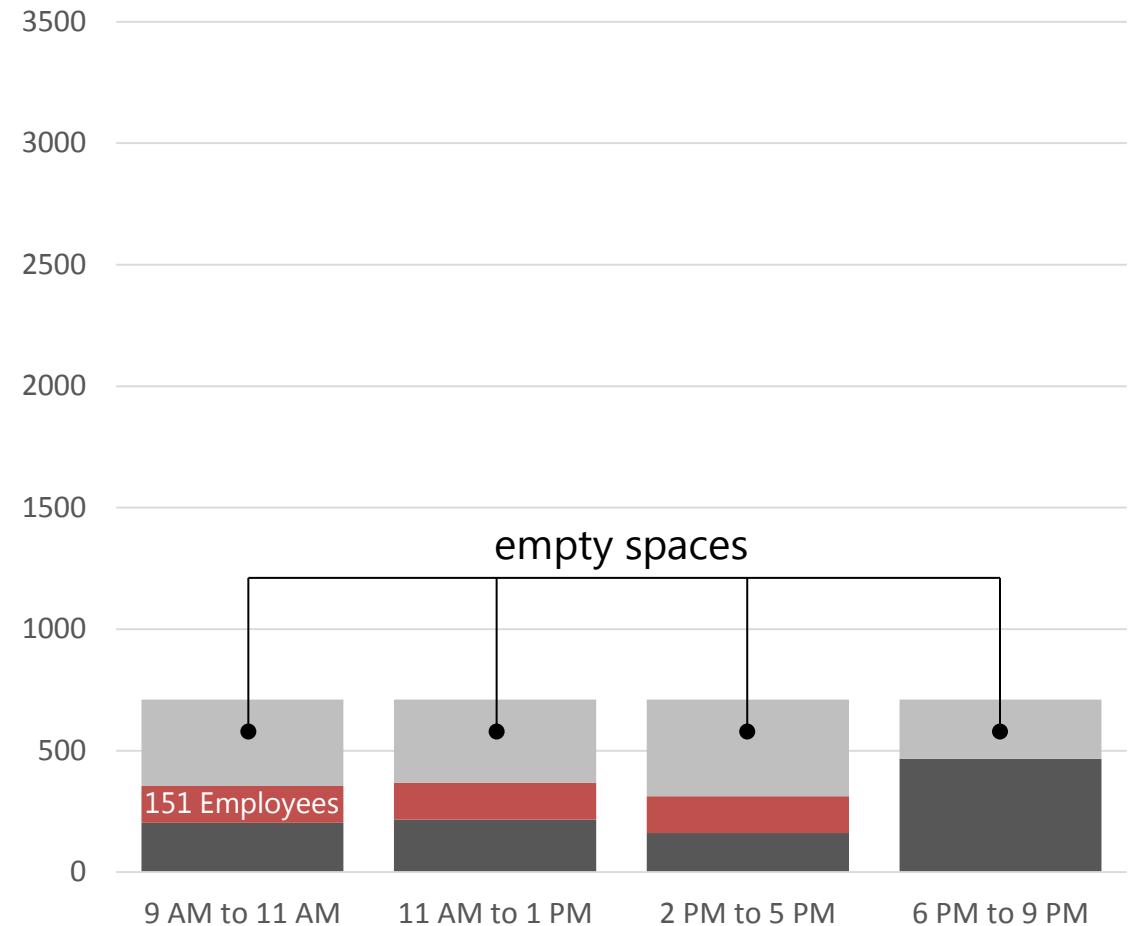
# Parking Turnover – *Average* Length of Stay (hours)



# Data Collection – Employee Parking

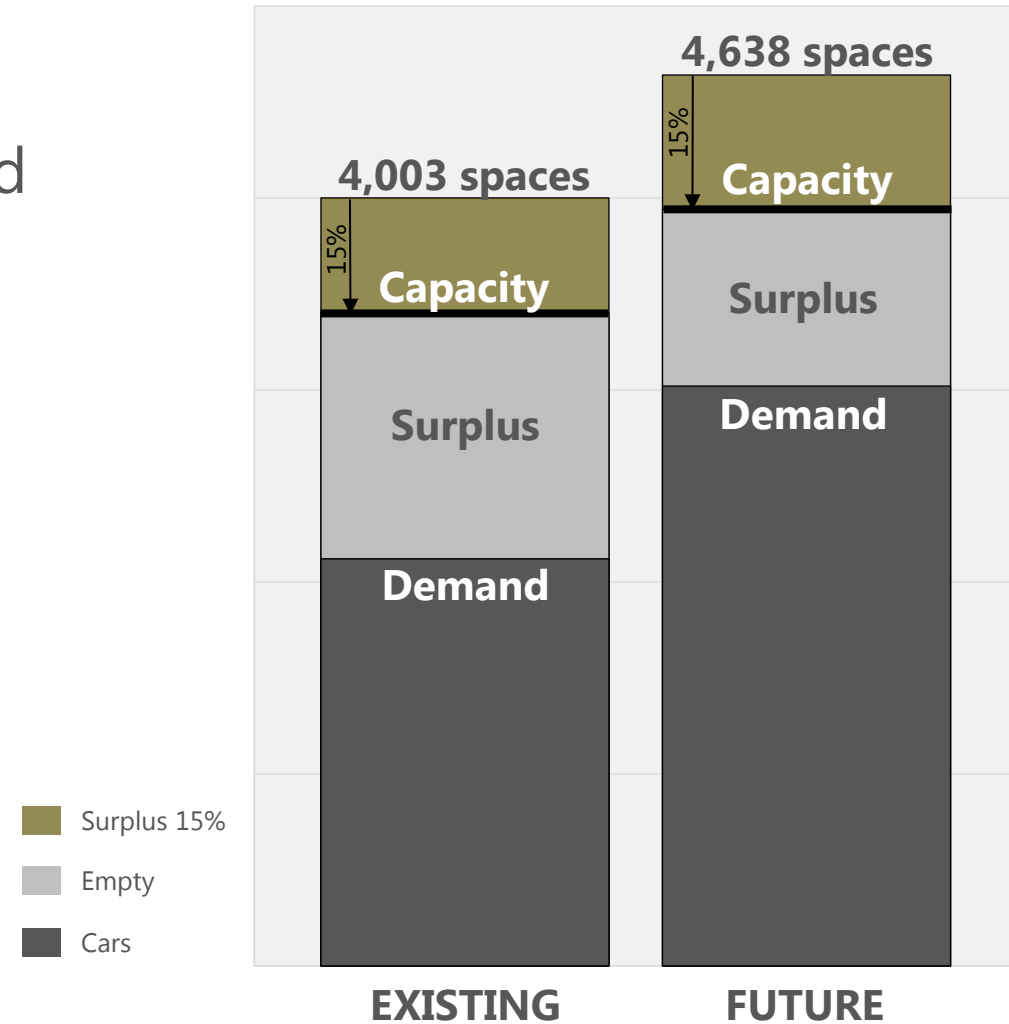
- Is employee parking a problem?
  - Yes, however not a *significant* problem
- **151 cars parked  $\geq$  7 hours**
  - Assumed to be employees

## Public Parking



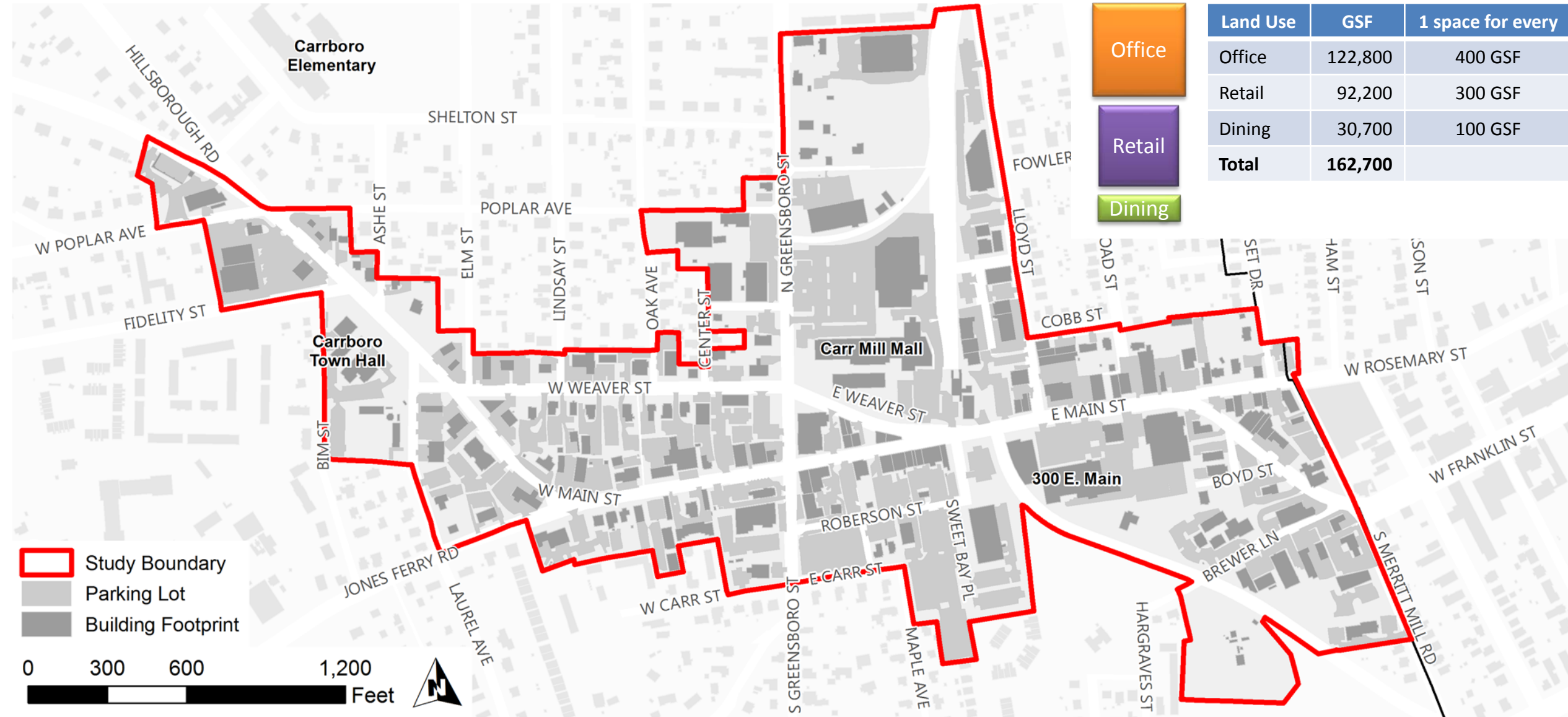
# Future Parking Demand Estimation

- Existing supply is adequate to meet demand
- Looking 5-10 years from now
  - Future supply is adequate to meet future demand
  - Surplus of parking could support:
    - 123,000 sqft Office
    - 92,200 sqft Retail
    - 30,700 sqft Dining





## Future Development - Parking Surplus would Support...



What does this mean?



# What does this mean?

- **Quantitative** – the data suggests...
  - Land Use Ordinance is on target and effective
  - Existing supply is adequate for existing demand
  - Future supply will be adequate for future demand (5-10 years)
- **Qualitative** – public outreach suggests...
  - Improvements to visibility/signage/lighting of public lots
  - Improvements to sidewalk connectivity
  - Shared parking arrangements, especially after 5 PM

# What does this mean? Qualitative

- Parking Management Strategies to effectively balance demand
  - Education ..... Information and signage
  - Encouragement ..... Incentives
  - Enforcement ..... Parking Enforcement
  - Evaluation ..... Data collection



# Education

- **Signage**
  - Consistency of message
  - Standardization of sign type
  - Limit confusion
- Long-term employee parking
  - Low-demand areas
- Walk-times map/signs



Source: BCBS of NC

## Public Signs



## Private Signs

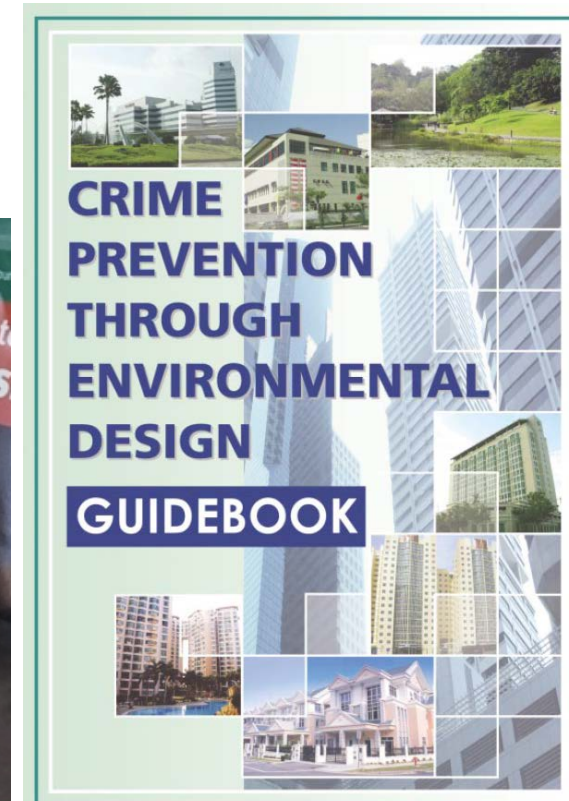


# Encouragement

- **Lighting and Sidewalk improvements**
- Perception of security
  - Crime Prevention Through Environmental Design (CPTED) concepts
- Bicycle Friendly Businesses
- Healthy lifestyle initiatives



Source: CBC



Source: NCPC



# Enforcement

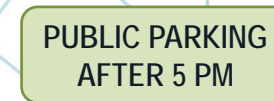
- Downtown Ambassador initiative
  - Be visible/friendly
  - Provide direction
- **Time Limited parking** for limited number of spaces
  - 30-min
  - 1-2-4 hour areas



Source: City of Coral Gables, FL

# Evaluation

- Data collection program (annual)
- Online survey or wikimap
- Formation of downtown parking committee/board
- **Shared Parking Arrangements**
  - Private-Private arrangements during the day
  - Public-Private arrangements after 5 PM
    - “Public parking after 5 PM” sign plaque





Are their additional  
options to consider?



# Engineering – Additional Considerations

## Not Recommendations

- Lot Design and Restriping
  - Site constraints
- Structured parking options
- Paid parking technologies
  - Hardware - paystations
  - Software – mobile Apps



Source: Pay by Phone



Source: Park Mobile



Source: T2 Systems

# Questions and Discussion

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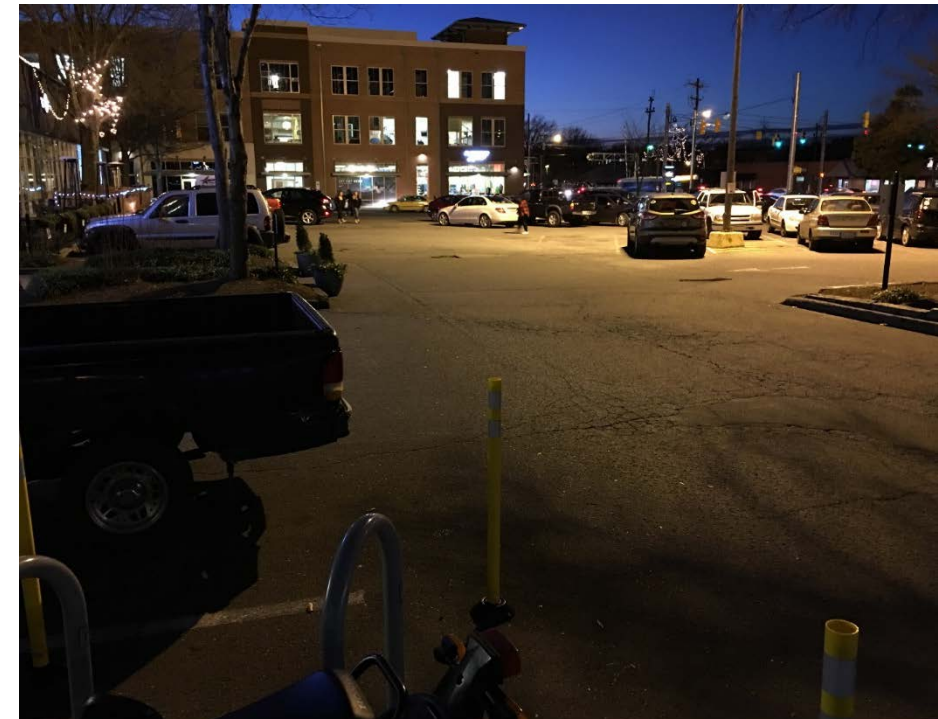


## Additional slides for reference

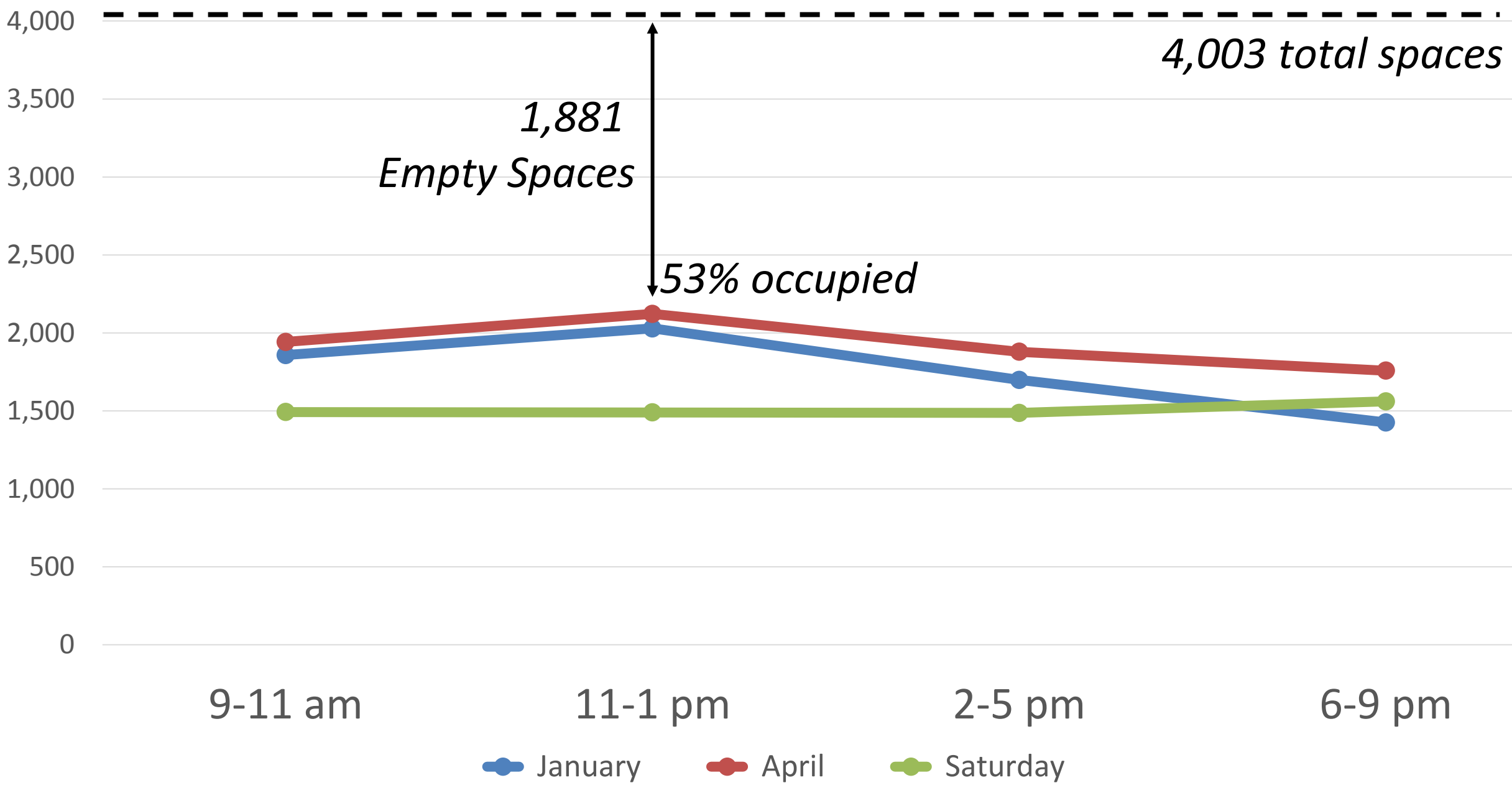


# Data Collection – Utilization

- Thursday January 14, 2016
- Thursday April 21, 2016
- Saturday April 30, 2016
- Performed four (4) parking counts of **ALL** parking lots
  - 9 AM to 11 AM
  - 11 AM to 1 PM
  - 2 PM to 5 PM
  - 6 PM to 9 PM

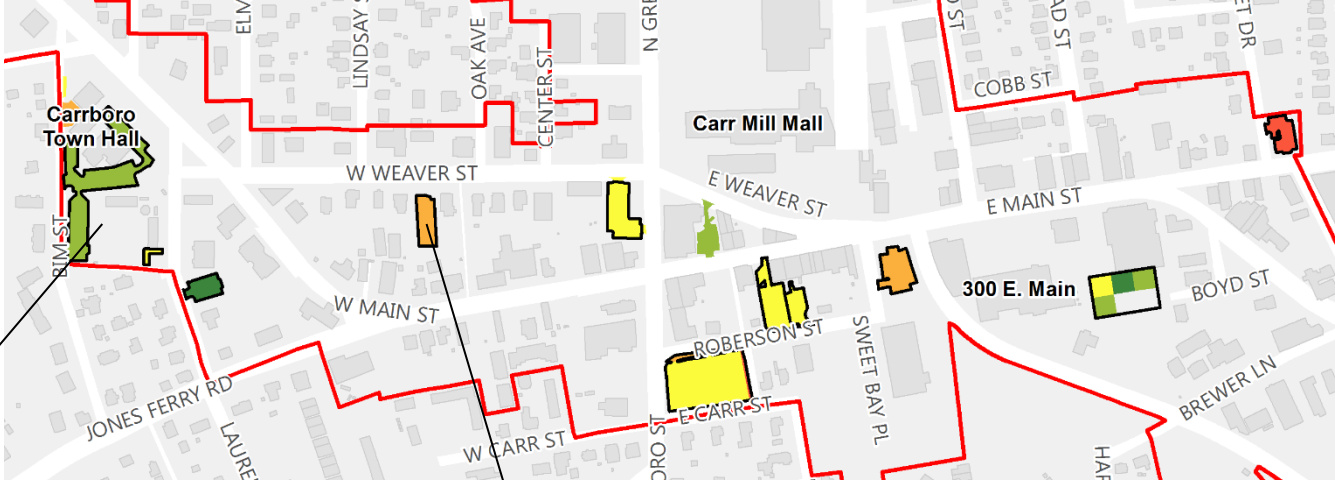


# Total Cars Observed



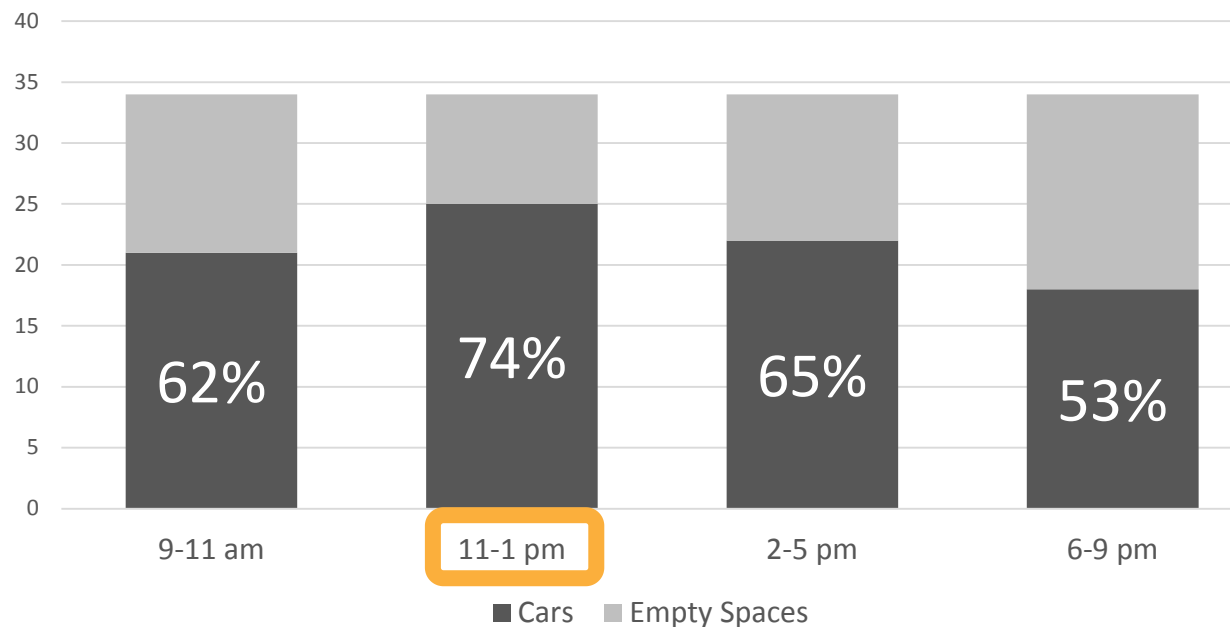
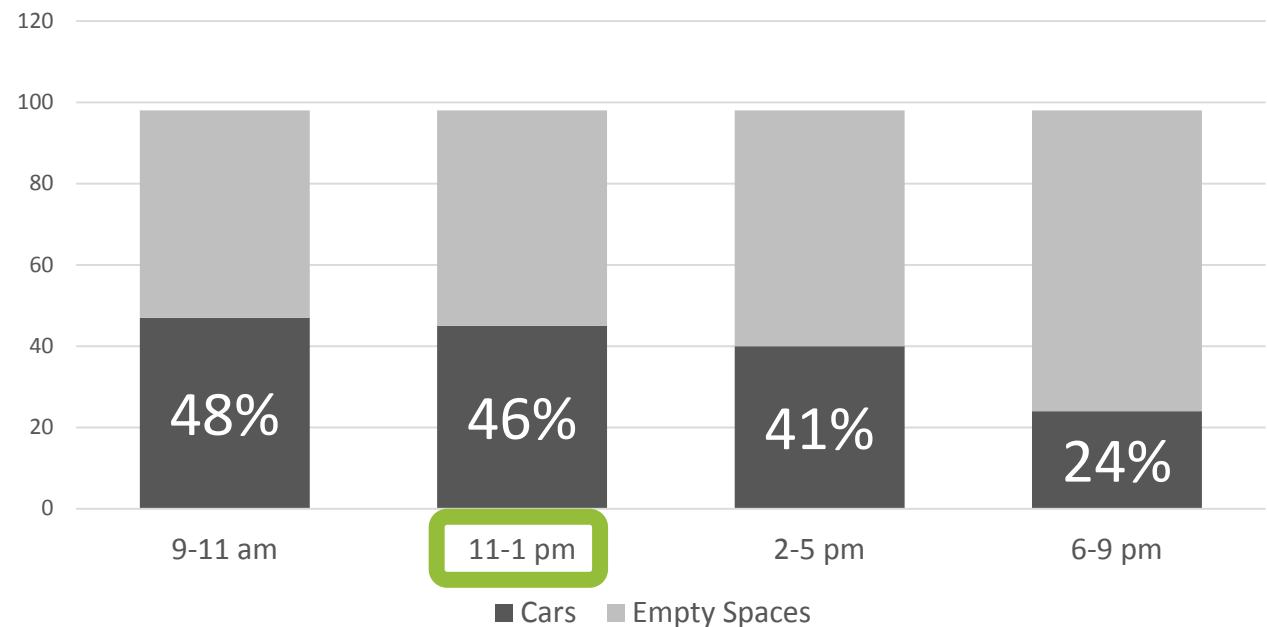
# Town Hall Area

- Occupancy by time of day



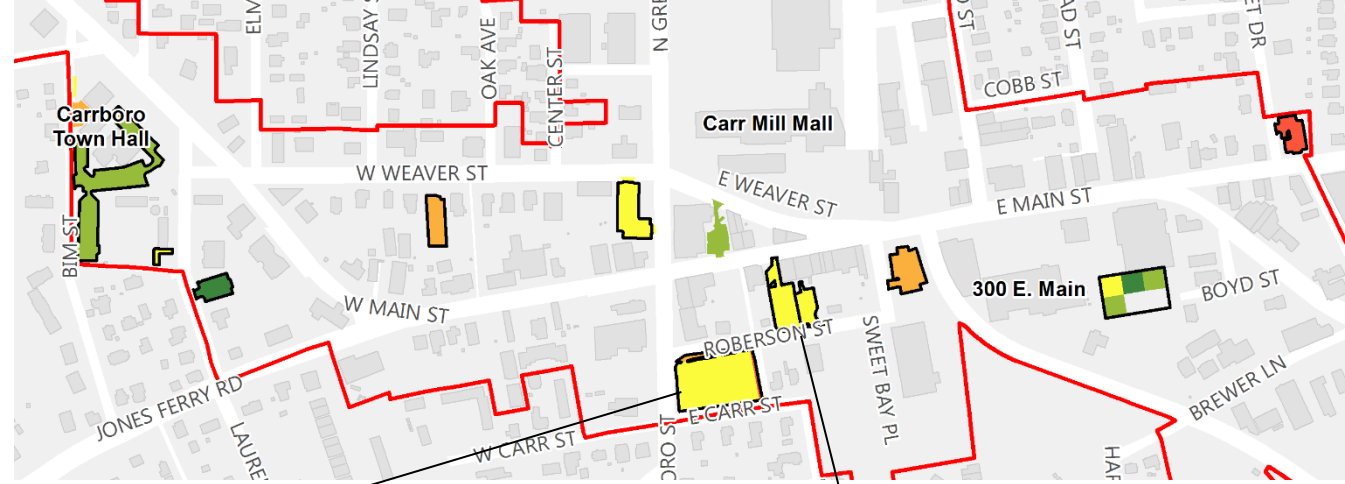
Town Hall / Town Commons

W Weaver St

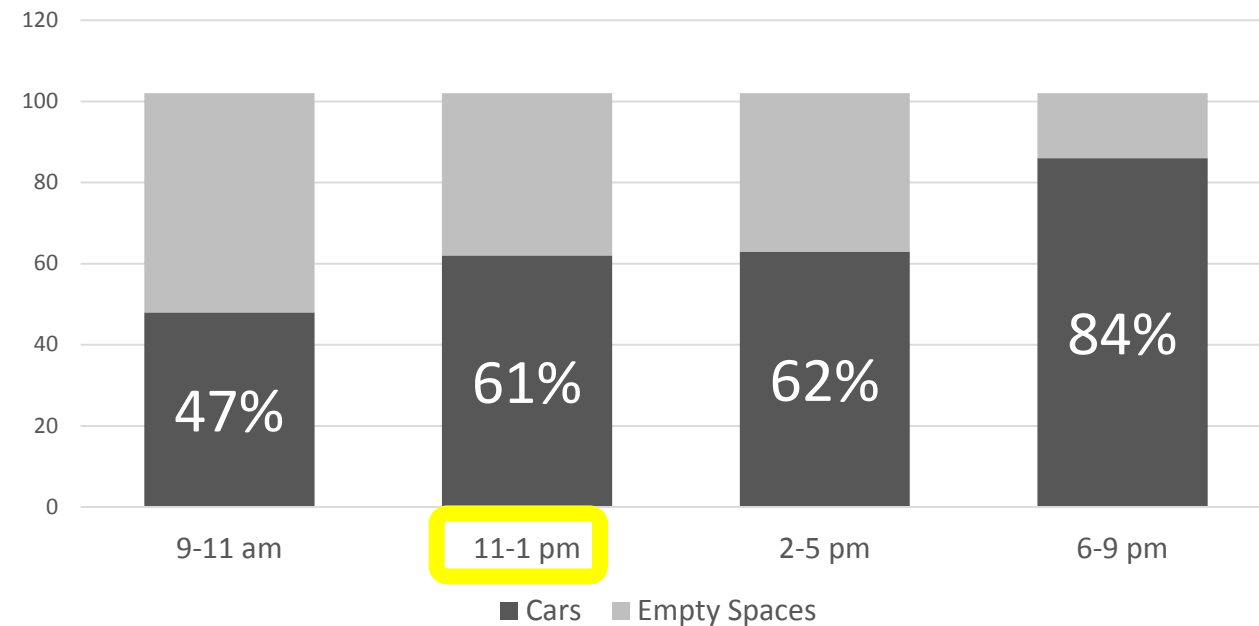


# Weaver / Main St Area

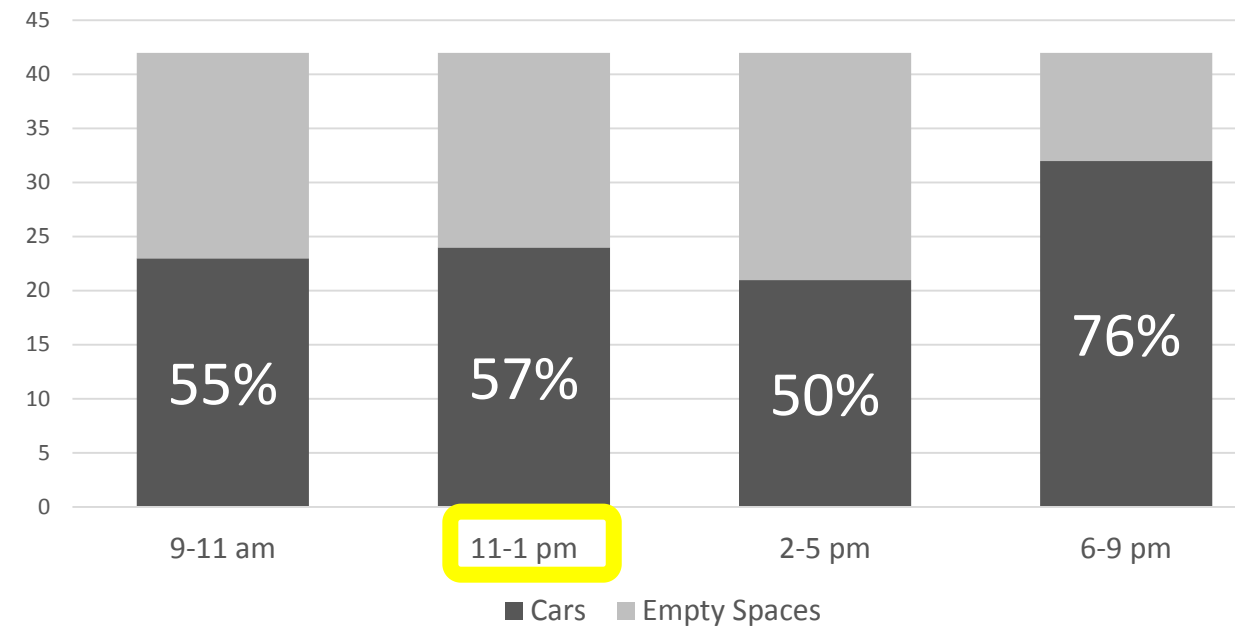
- Occupancy by time of day



Greensboro Lot



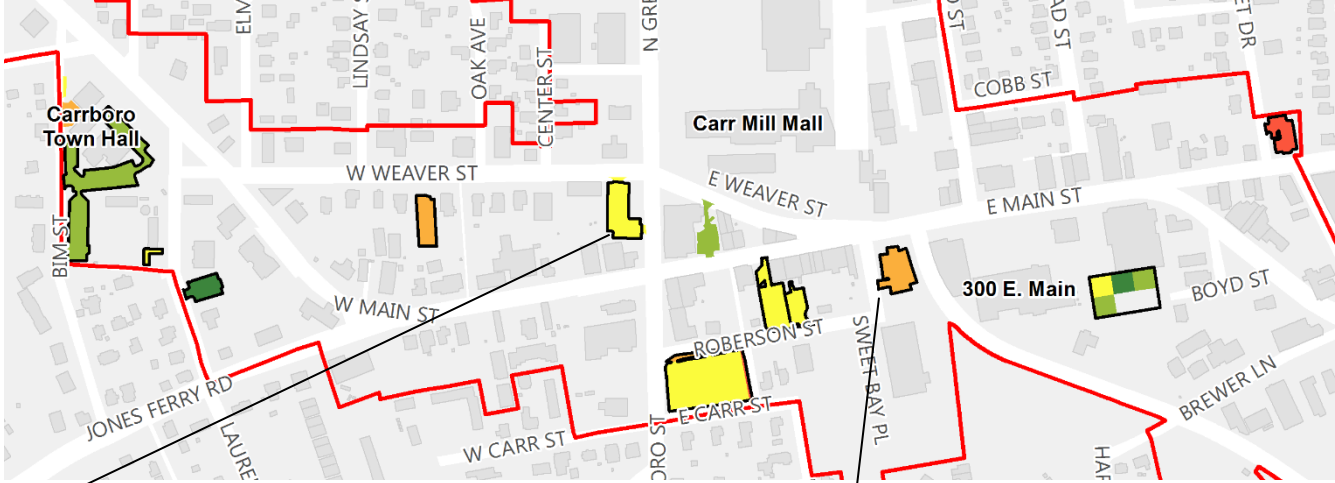
E Main St/Acme Lot





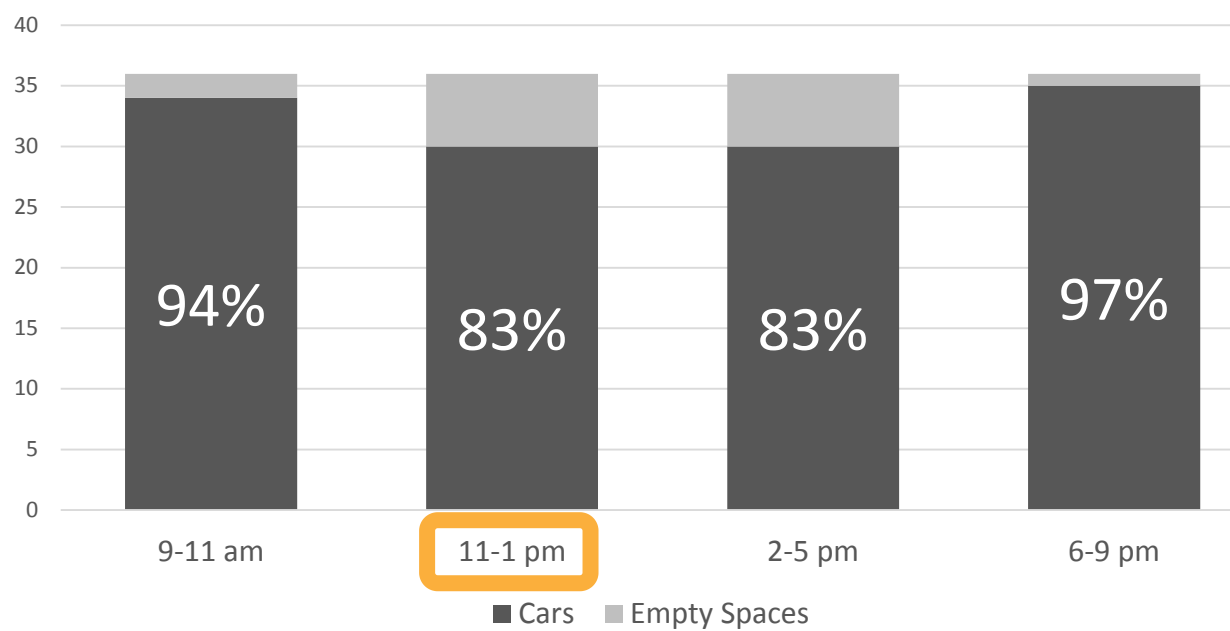
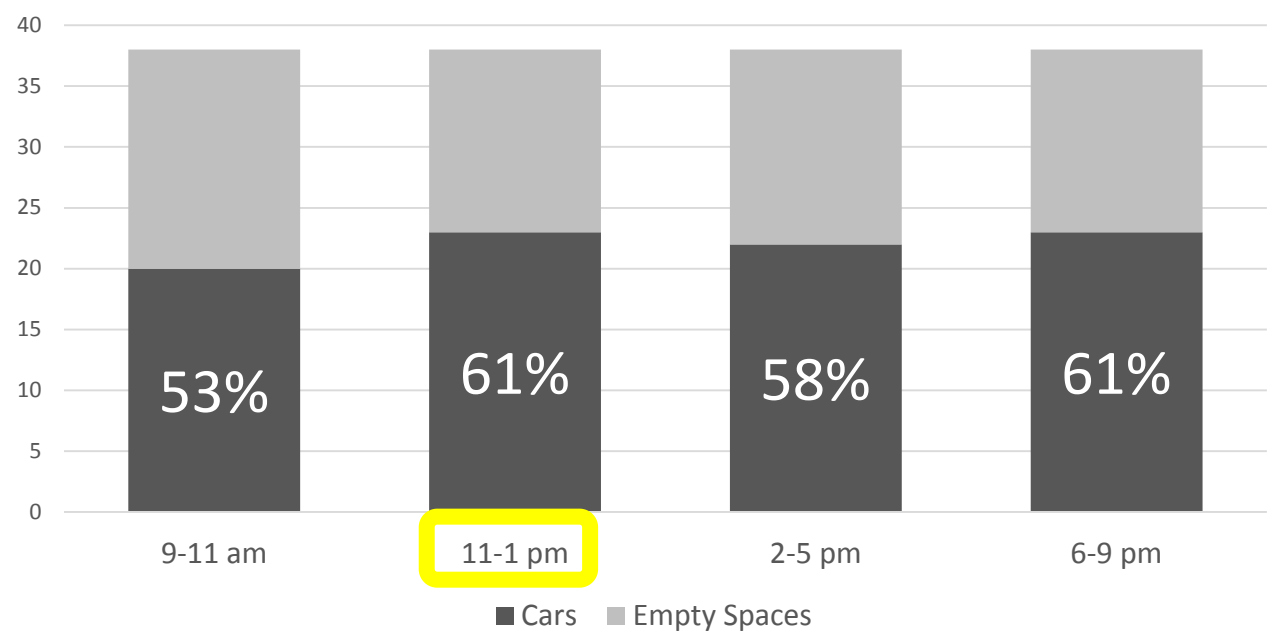
# Weaver / Main St Area

- Occupancy by time of day



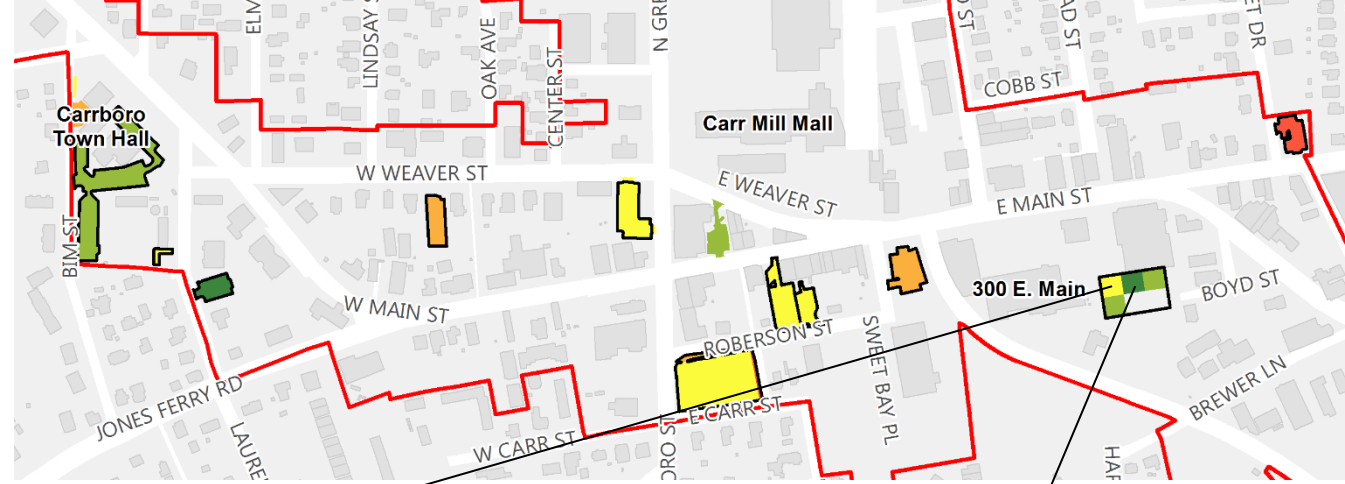
Century Center Lot

Roberson St Lot

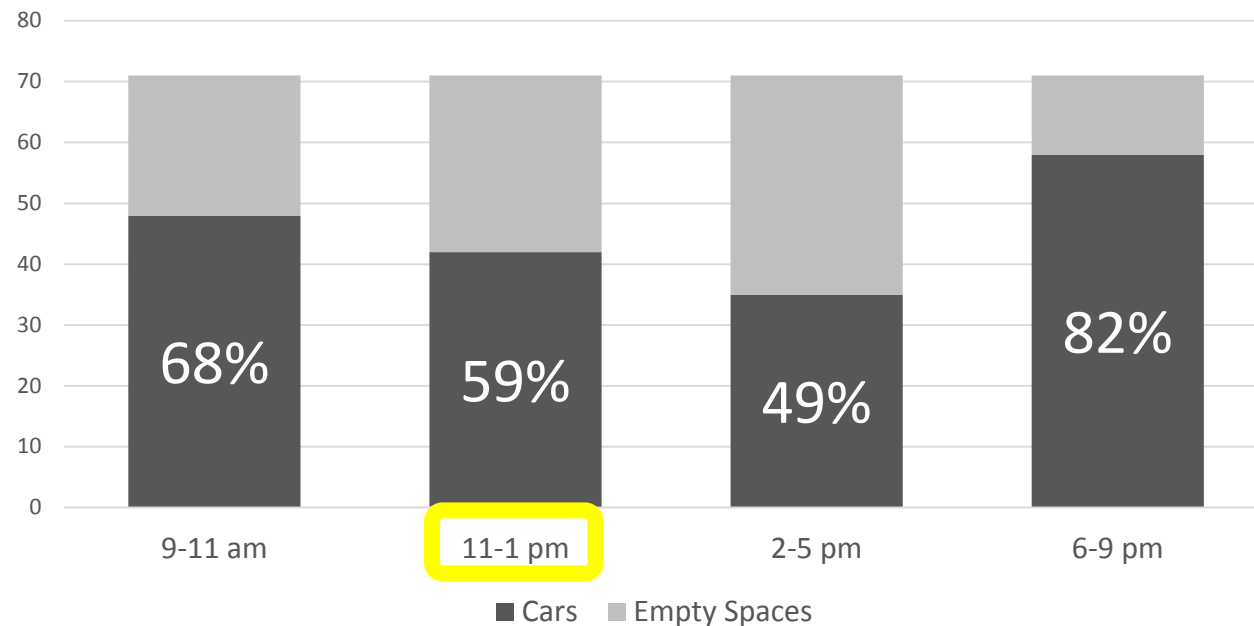


# Parking Deck

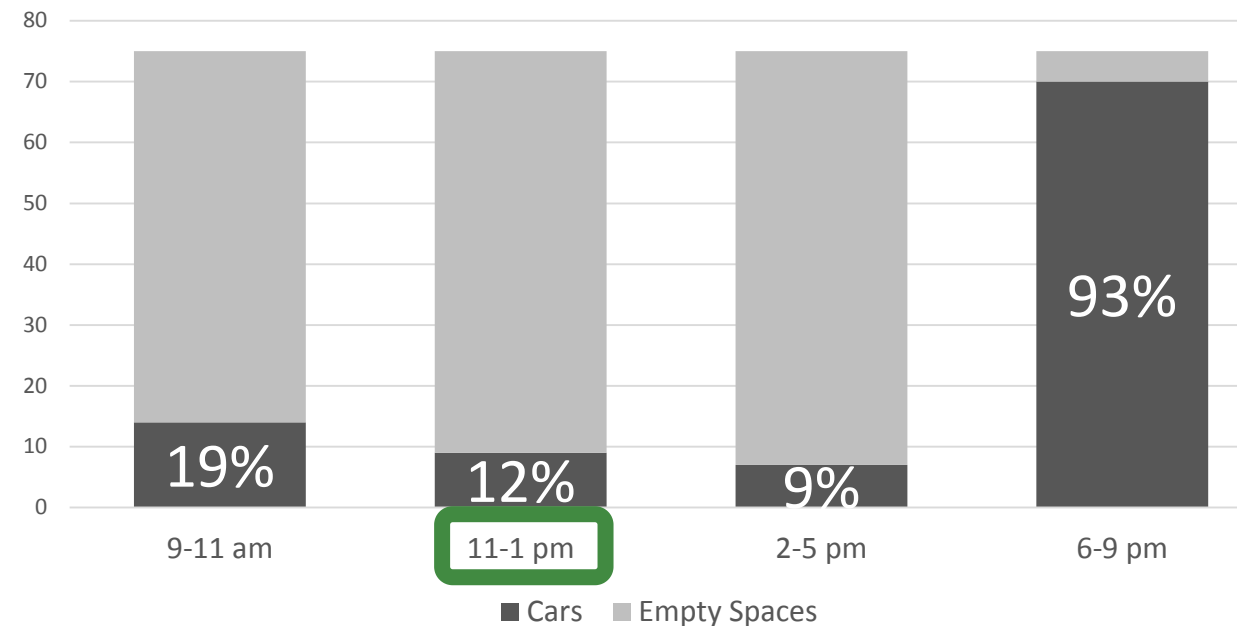
- Occupancy by time of day



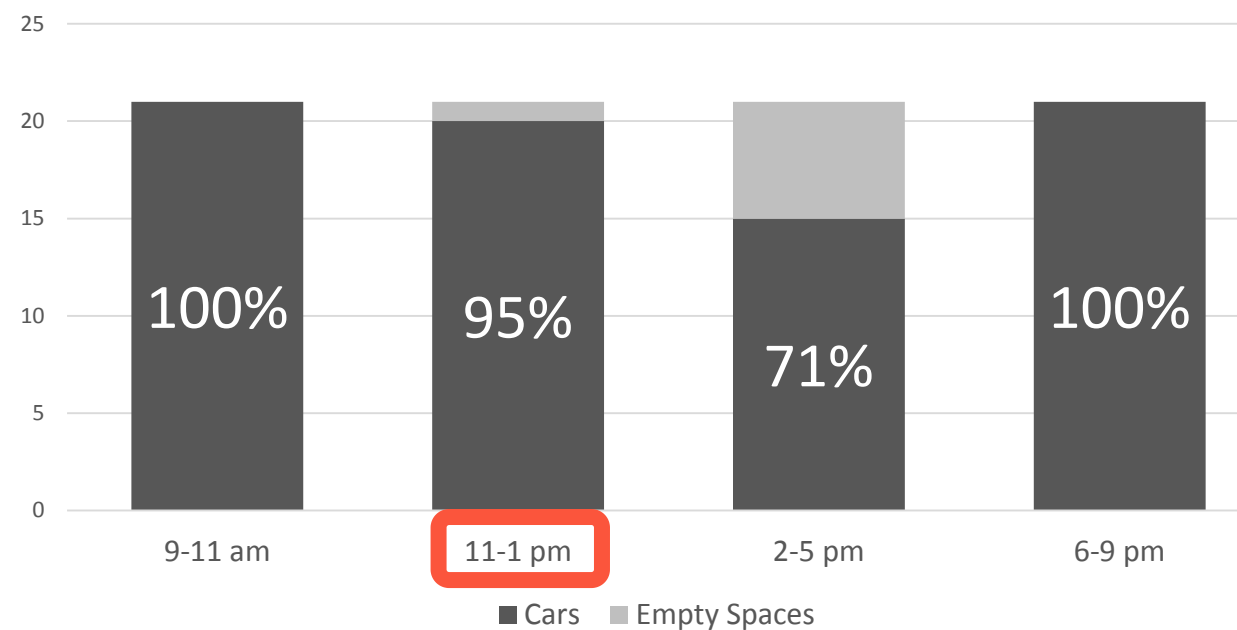
Parking Deck - First Level



Parking Deck - Second Level



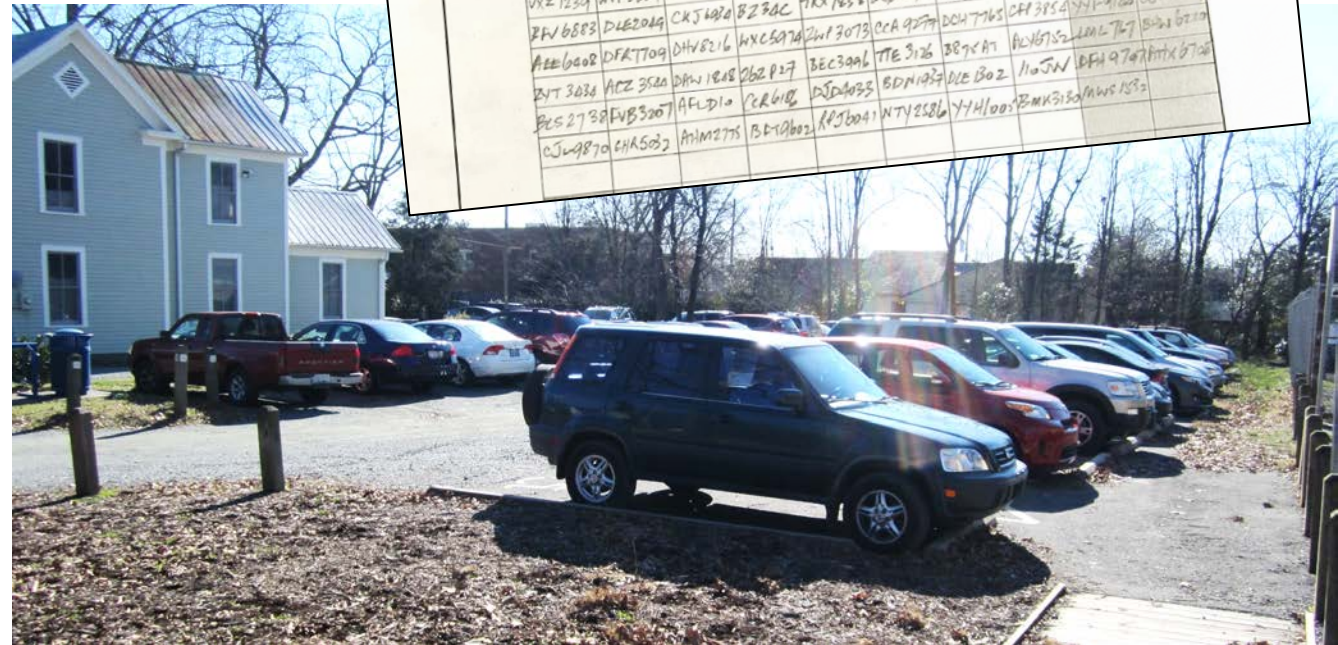
- Occupancy by time of day



# Parking Turnover – Length of Stay Analysis

- Public parking lots only
- License plate observations 8 AM to 5 PM
  - 1 cycle per hour – 10 total cycles
- **2,646** individual license plates were observed
- **813** unique license plates (cars)

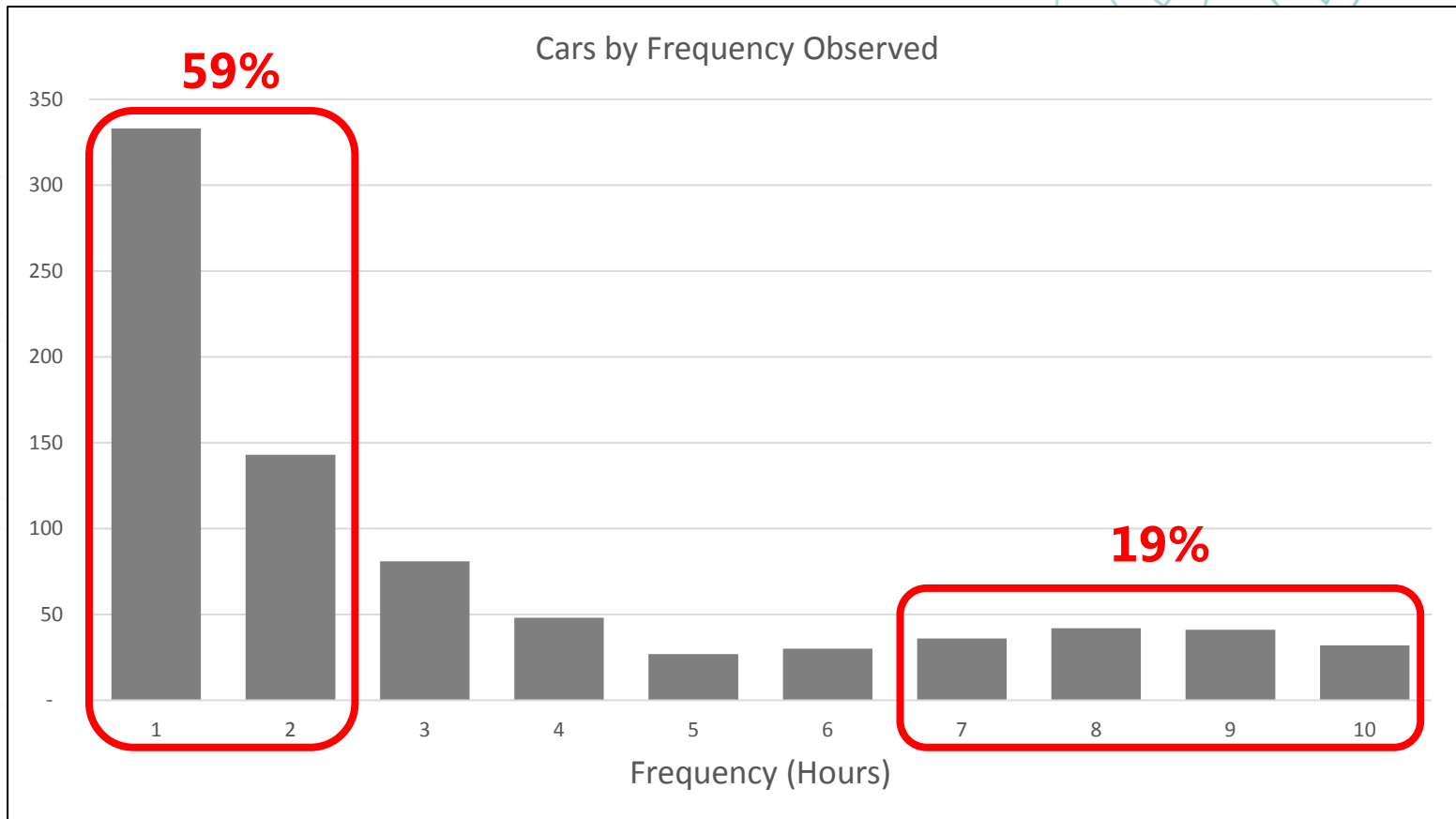
Carrboro Parking Study - Length of Stay									
Parking Lot/Area					Date	Thursday 1/14/2015			
Observed						7	8	9	10
Time	1	2	3	4	5	6			
2:00 PM	DDH7250	CFB609	DEF1031	BFV583	DDH7332	WJA233	FFH533	YIC6113	
	XZ9429	ZIA336	3138C	MY2833S	PAM5663	SSA955	CCD471	COO295	VXZ1239
	HEM3630	DDH4799	BEH1808	DLC2636	BFV683	BES7103	DLD9885	BFV542	ZIA7007
	RLV5825	HEE6048	DHV8216	HXC5874	XVCS955	CA9277	CFH3850	YVC9400	CAF9519
	747750	26ZP27	BEC3906	NTX7833	BDH5AT	DLE2272	LMH767	THH4921	BES2730
	FVD3207	AFD10	DLE1302	1KJUV	CCRB156	BDH187	BDH9707	ATX6702	JL9970
	BDH4603	DLE2672	BANK5130						
3:00 PM	DDH7250	199057	CJL2069	BFV583	DEH031	DAA9059	WJA233	DEH4667	SSA955
	FFH533	YIC6113	CCG909	3138C	MY2833S	PAM5663	SSA955	COH2260	FFH5461
	VXZ1239	WIP5527	ABOPAS	DLD1237	HEM3630	X99A	BEH1808	CAW7043	DLC2636
	BFV6883	DLE2049	CKJ4020	BZ30C	TRX7833	DLD2917	BFV583	ZVA2946	VIS7160
	HEE6048	DFA7009	DHV8216	HXC5874	ZMT3073	CCA9277	DDH7265	CFH3850	YVC9400
	ZYT3030	ATC3500	DDH1848	26ZP27	BEC3906	TTE3126	387CAT	BDH752	LMH767
	BES2730	FVB3207	AFD10	CCRB156	DJH4635	BDH187	DLE302	1KJUV	BDH9707
	CJL9870	CHAS082	ATM2775	BET9002	FFH6041	NTV2586	YTH1000	BMK3130	PAM583





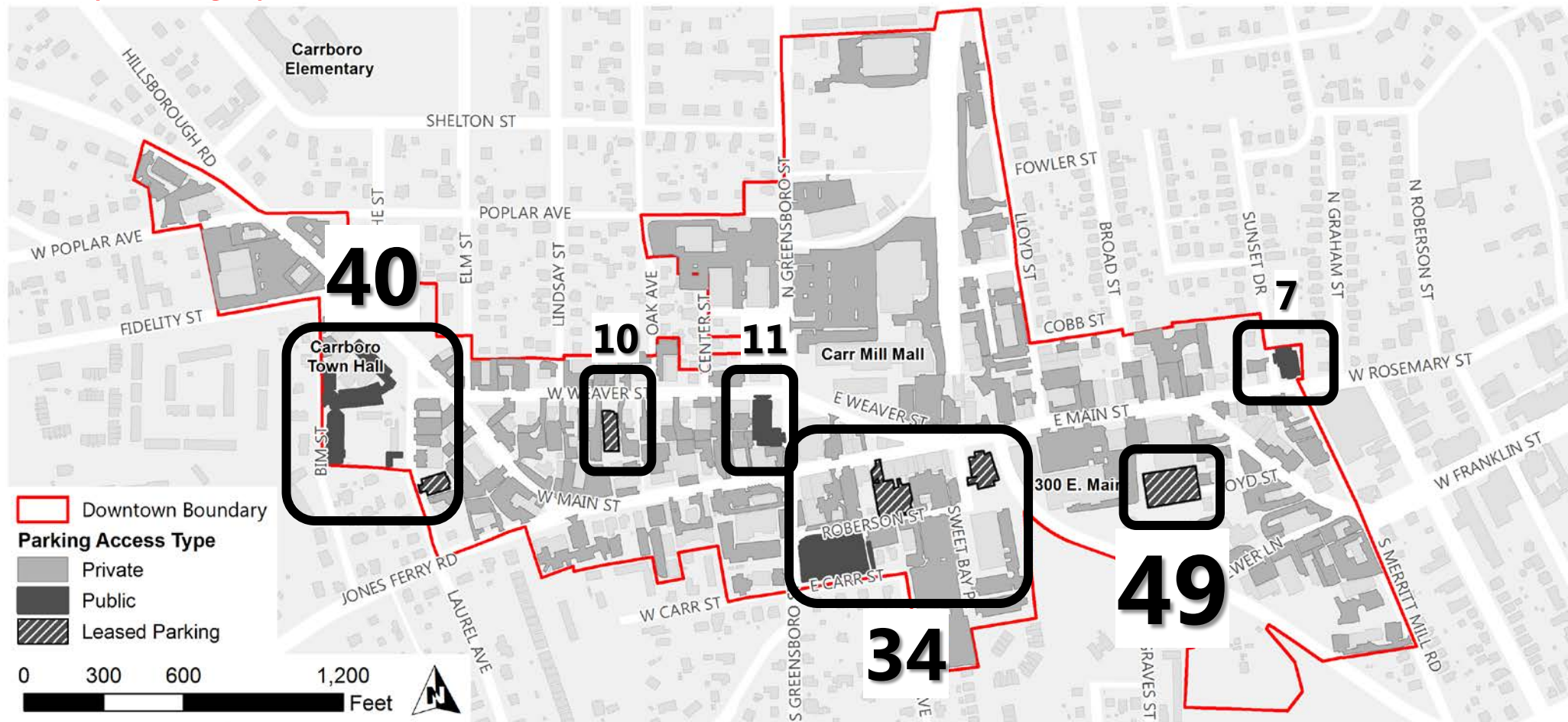
# Parking Turnover – *What does this mean?*

- 476 cars (59%) parked  $\leq$  **2 hours** (short-term visitors)
- 151 cars (19%) parked  $\geq$  **7 hours** (employees)



# Length of Stay Analysis

- 151 cars parked  $\geq 7$  hours (employees) were parked here
  - 38 reserved parking spaces in these lots



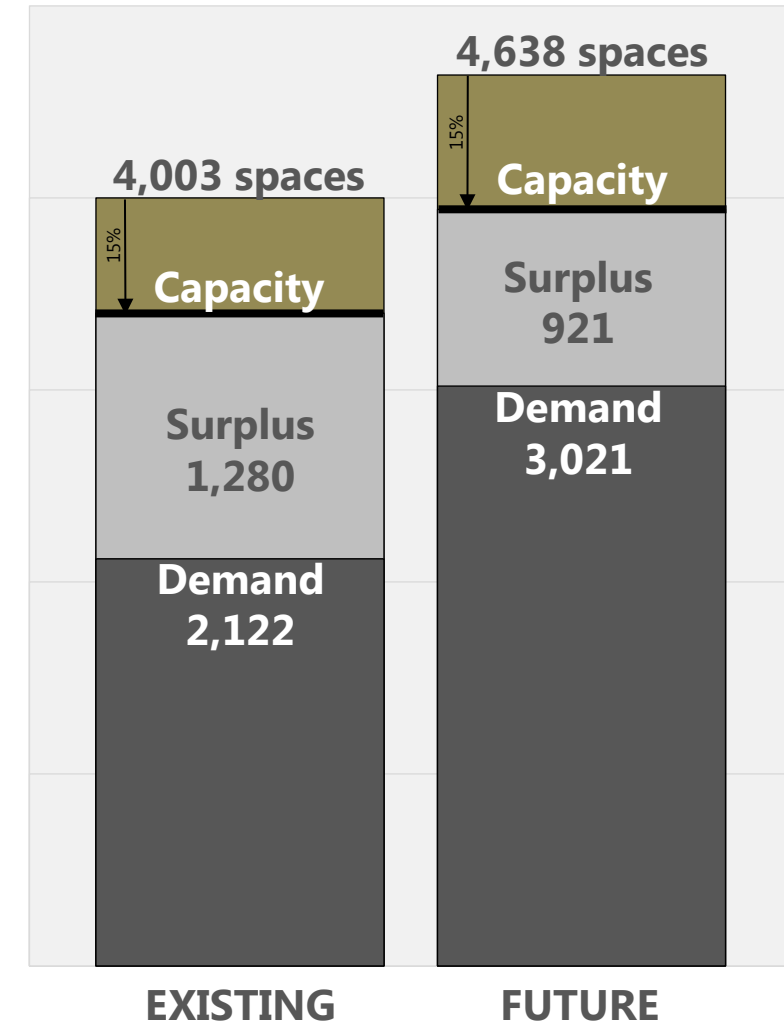
# Future Parking Demand Estimation

- Looking at near-term development projects
  - Existing supply is adequate to meet demand

Scenario	Spaces	Targeted Occupancy	Effective Capacity	Actual Demand (Cars)	Existing Surplus
Public	710	85%	604	368	236
Private	3,293	85%	2,798	1,754	1,044
Total	4,003	85%	3,402	2,122	1,280

- Future developments will add parking and reduce surplus

Scenario	Future Spaces	Targeted Occupancy	Effective Capacity	Future Demand	Future Surplus
Public	839	85%	713	524	189
Private	3,799	85%	3,229	2,497	732
Total	4,638	85%	3,942	3,021	921
Change	+635		+540	+899	-359



# Engineering – Additional Considerations

- Paystation Technology providers



- Mobile Payment Technology providers





# Implementation



# Implementation

Category	Management Strategy	Year									
		1	2	3	4	5	6	7	8	9	10
Education	Wayfinding and regulatory signage										
	Long-term employee parking										
	Walk-times map										
	Alternative transportation mode shift										
	Cost of construction, O&M										
	Land tradeoffs										
Encouragement	Lighting and sidewalk improvements										
	Improved perception of security										
	Bicycle friendly businesses										
	Healthy lifestyles initiative										
Enforcement	Downtown Ambassador Initiative										
	Time Limited Parking										
	Citation and Appeals procedures										
Evaluation	Annual data collection program										
	Online survey										
	Formation of Downtown Parking Board										
	Shared Parking Arrangements										
Engineering	Lot Design and Restriping										
	Paid Parking Options										
	Structured Parking Options										

Note: Dark cells refer to near-term initiatives; Light cells refer to long-term initiatives.

# Implementation

## ■ Near-Term (1-5 years)

- Collect data during peak period
- Deploy more-consistent parking regulatory signs
- Encourage turnover in high-demand areas
- Encourage use of low-demand areas for employee parking
- Promote shared parking arrangements
- Encourage use of alternative transportation modes
- Reduce future parking demand

# Implementation

## ■ Long-Term (5-10 years)

- Redevelopment opportunities with stakeholders
- Identify potential sites for structured parking
- Discuss Public-Private Partnerships
  - Potential land swap arrangements
- Seek the parking compromise for visitors, employees, and businesses
- Preliminary Engineering Report (PER) for structured parking