ULI Round Table
Parking Perils and Potential

Gordon Dash, CAPP – City of Raleigh

H. Dean Penny, PE and Fred Burchett, PE – Kimley-Horn and Associates, Inc.

April 26th 2017

ULI Round Table - Parking Presenters

Gordon Dash, CAPP – gordon.dash@raleighnc.gov

Parking Administrator, Department of Transportation

at City of Raleigh

Dean Penny, P.E. – dean.penny@kimley-horn.com
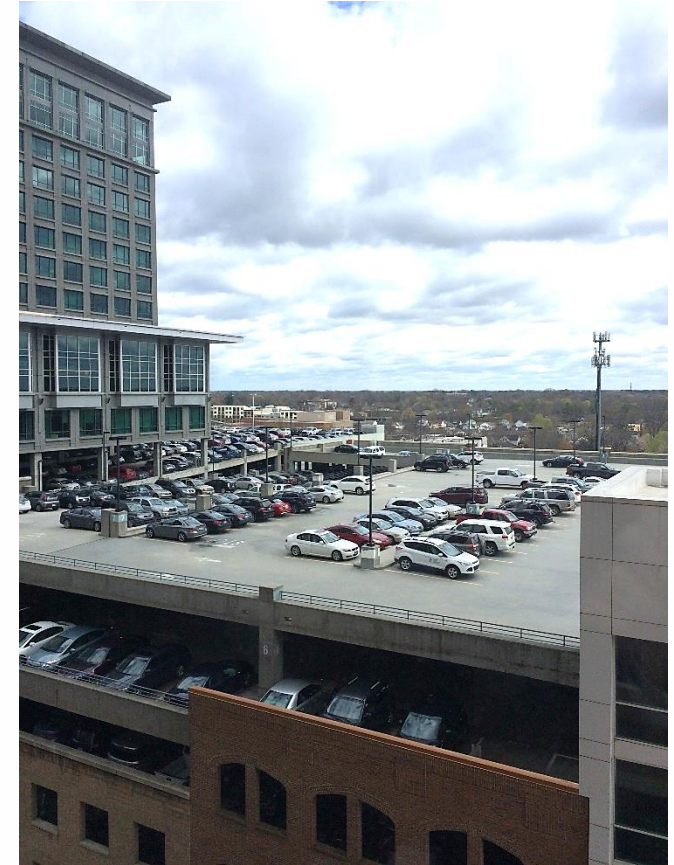
Principal with Kimley-Horn and Associates, Inc

Fred Burchett, P.E.- fred.Burchett@kimley-horn.com

Principal with Kimley-Horn and Associaates, Inc.

Agenda

- **State of Parking - Overall**
  - Parking Matters
  - Park+ - New Parking Planning Tools
  - Technology Trends – future impacts to parking
- **State of Parking – Raleigh, NC**
  - 2016/17 City Parking Study
  - City Objectives and Next Steps

Parking Matters

- Impacts the look and feel of a city and its neighborhoods

- Multiple levels of policy, regulation and administration

- Important component of the overall land use and transportation system

- Dynamic and varies based on the surrounding land use and time of day

Parking often drives everything

- Employers - concern for recruiting and retaining employees

- Municipalities- concern for recruiting new businesses

- Restaurants / Retail – concern for attracting customers

- Developers – need to be able to finance / lease / sell

Everyone pays for parking

- Parking is never free - it is either paid for directly or indirectly

- Parking costs include both physical and opportunity costs
  - 300- 400sf/space - when compared to the 200 – 250sf / person in an office building
  - Parking Structure costs range from $18,000 - $30,000 and up per space.

PARK+   A New Approach to Parking Planning

- Geo-spatial modeling approach
- Fundamentals of parking demand and gravity modeling married together
- Parking demand analysis based on actual community characteristics
- Ability to change and monitor demands based on a variety of conditions

PARK+   A New Approach to Parking Planning

- Geo-spatial modeling approach
- Fundamental... ...her
- Parking d...
- Ability to ...ons
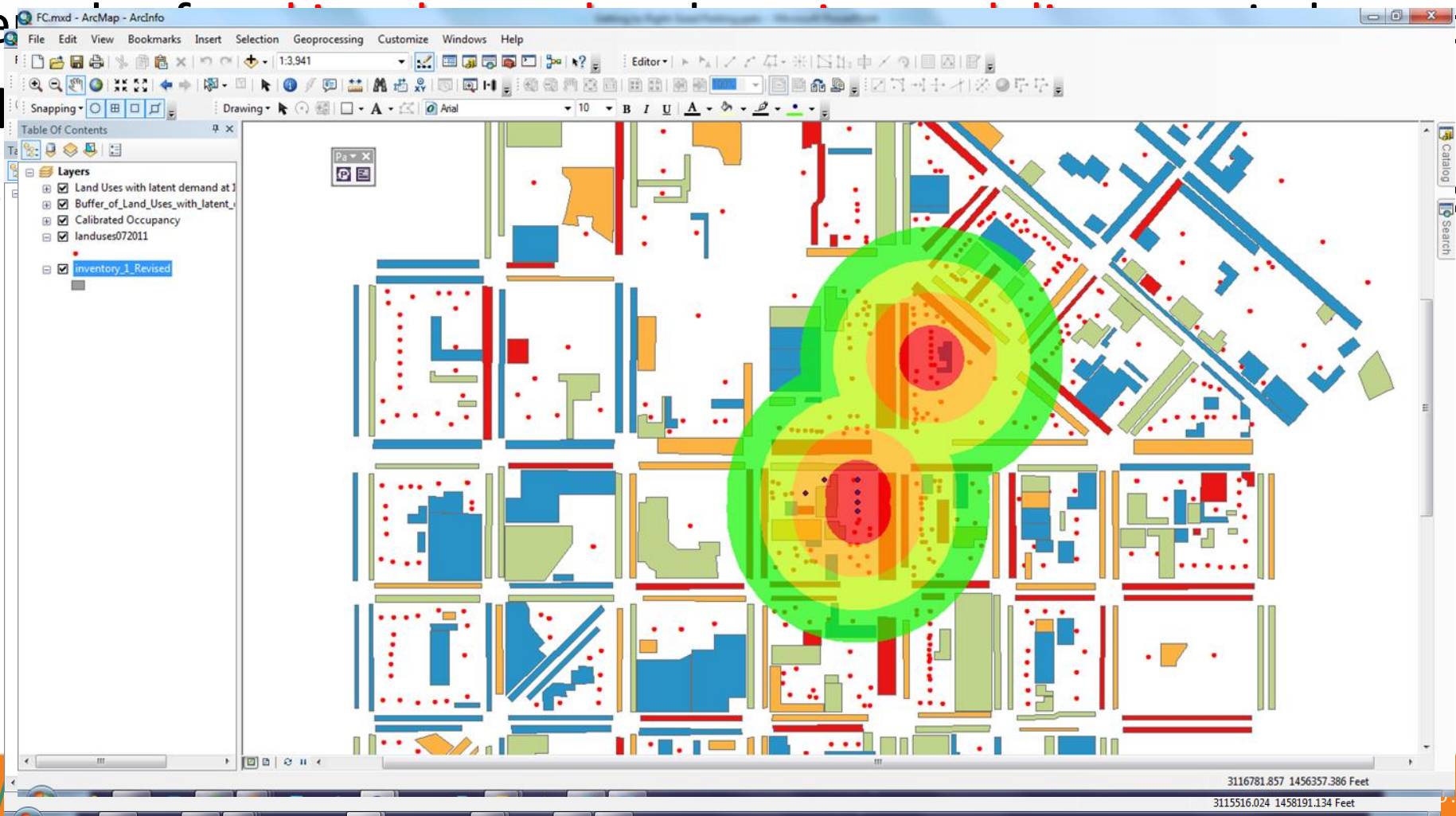
Let's Look At An Example

- 300 room hotel
- 30,000 sf retail
- 20,000 sf restaurant

How much parking do we need?

The Traditional Approach

Use	Size	Rate	Peak Hour Factor	Spaces Required
Hotel	300	1.15	0.9	311
Retail	30,000	3.6	0.8	87
Restaurant	20,000	18	1.0	360

The total parking demand is:

758 spaces

The Park+ Approach

- Same principles, but…
  - Using actual calibrated data
  - Assessing the development within the context of the surrounding system
  - Applying discrete choice for users related to parking decisions

The Park+ Approach

| Use	Size	Peak Hour Rate	Spaces Factor	Required
Hotel	300	0.5	-	150
Retail	30,000	0.8	-	24
Restaurant	20,000	6.4	-	128

The total parking demand is:

302 spaces

Savings of 456 spaces
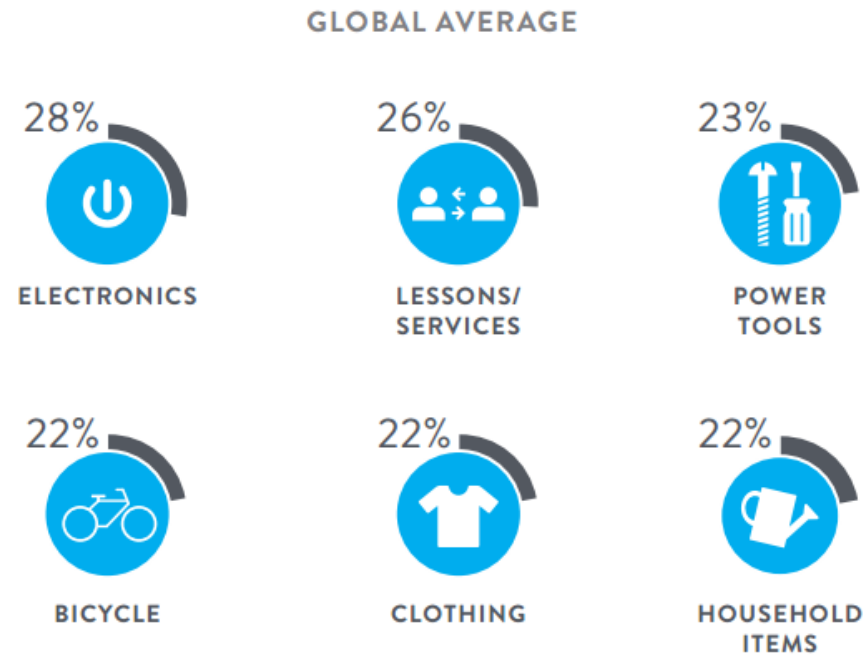
New Technology trends

The World is Increasingly Connected

- Wayfinding guidance
- Self-parking garage robots
- Predictive algorithms
- "The Connected Traveler"
- Variable messaging signage
- Smart meters
- Mobile app integration
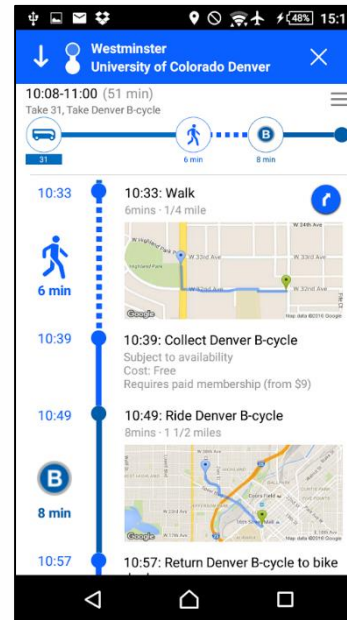
The Sharing Economy is Gaining Traction

- Peer to peer market: $26B

- Globally, 68% are willing to join a shared community

- Car sharing up 20%

GLOBAL AVERAGE

28% ELECTRONICS

26% LESSONS/ SERVICES

23% POWER TOOLS

22% BICYCLE

22% CLOTHING

22% HOUSEHOLD ITEMS

Source: Nielsen

Transportation Systems are Getting Smarter

Individual Ownership   **Shared Ownership**

Robotic Driving

Human Driving

Current Status of Automated Vehicles

- Tesla (Level 2)
- Uber is actively testing (Level 2)
- GM – Cadillac 2017 Super Cruise (Level 2)
- Volvo – testing in Sweden (Level 3)
- Urban Autonomous – 2022 (Level 4)
- Fully Autonomous – 2025 Mercedes planned rollout (Level 4...5?)

*Far away...but not far away...*

Advances in Technologies – Impacts to Parking?

- Connected Vehicles

- Automated Vehicles

- Ride Share -   Lyft, Uber, etc.

- What impact does this have on the future of parking?

How do Autonomous/Connected Vehicles change Parking usage?

Integrate the garage into transportation options:

- Scenario 1: Customer searches for parking while driving to destination

- Scenario 2: Customer uses ride /car share service

- Scenario 3: Customer is dropped off at destination and car parks itself
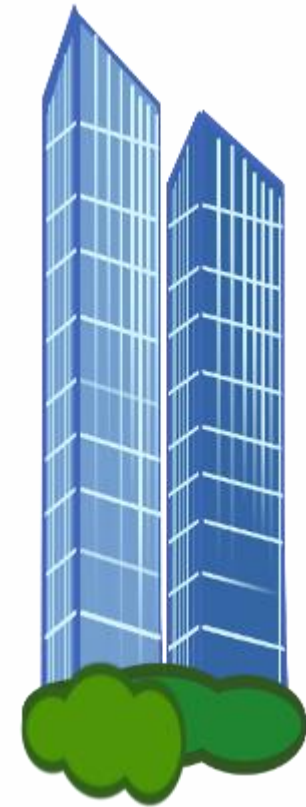
Reconfigure spaces and flow

- Reconfigure with tighter spaces for autonomous vehicles

Reconfigure spaces and flow
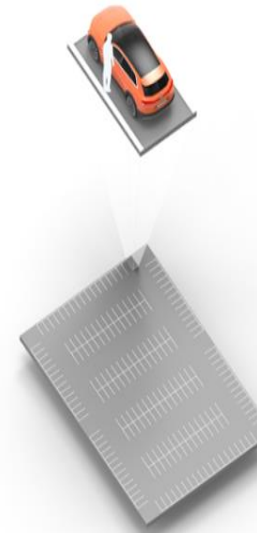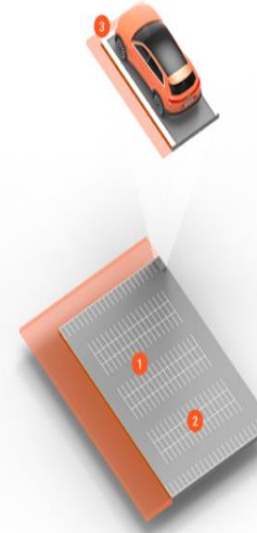
- Reconfigure with tighter spaces
- Separate pedestrian from vehicle traffic with walkways

Reconfigure spaces and flow

- Reconfigure with tighter spaces
- Separate pedestrian from vehicle traffic with walkways
- Use of signs and paint to help cars navigate internally

Audi Parking Garage of the Future

Will Autonomous/Connected Cars Eliminate Parking?
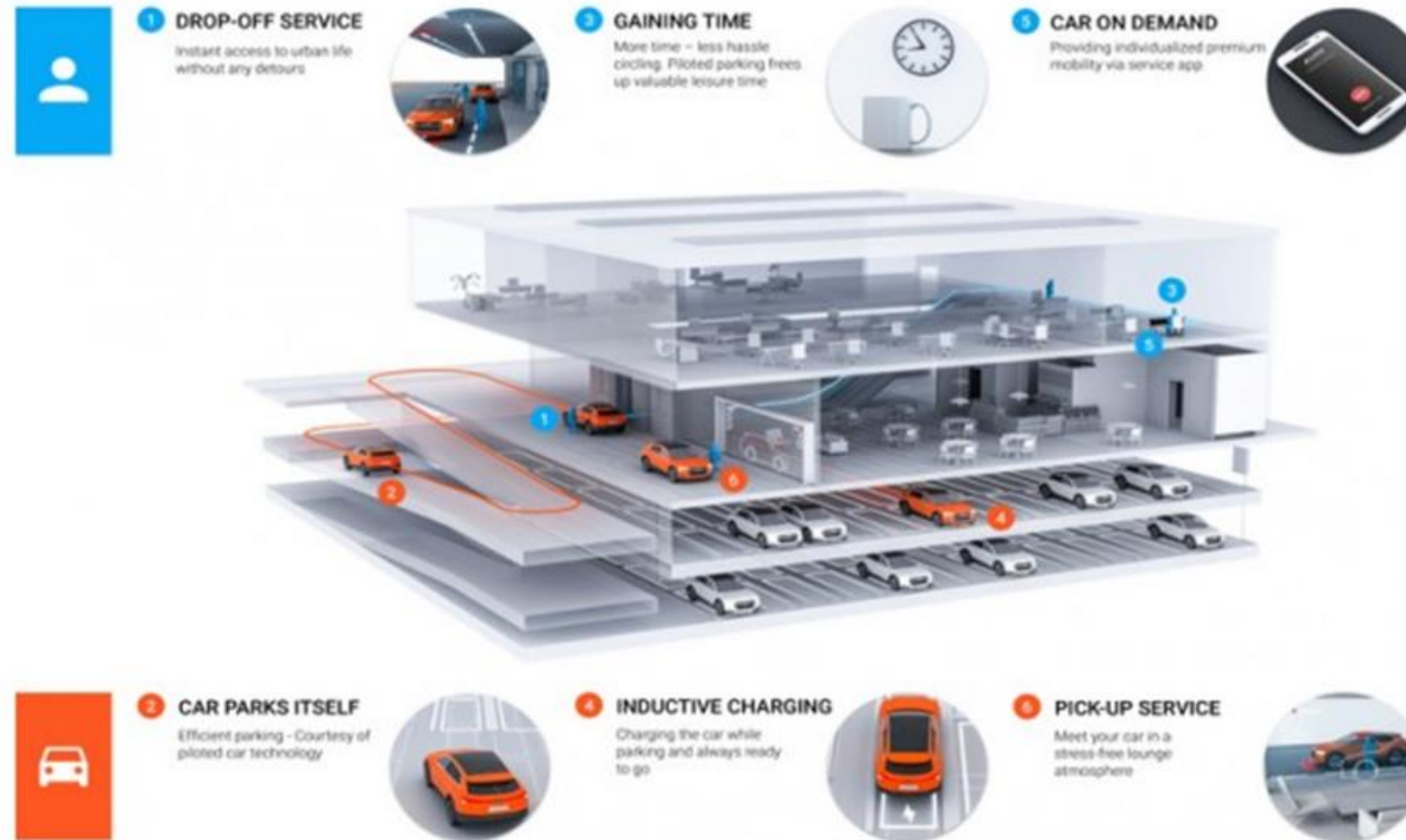
Not likely in the near future

PERSONAL CARS ARE NOT GOING AWAY BUT...

- Will be supplemented with mobility as a service
- Vehicles in mobility services need a place to park
  - When waiting to pick up rides
  - When having simple maintenance performed
  - When the demand is low
  - When not being used (car sharing)
  - Garages are great places to allow customers to transition between modes. Think of mini hubs for mobility services in the city.

So – Will Parking Garages Become a "thing of the past"?

- Short answer – in our opinion – NO.
- Parking Demand rates may decline, but populations in city centers will continue to climb.   Thus, actual parking demand may continue to increase.
- Existing Parking Supply to be redeveloped to other uses may follow this order:
  1. On-street – for drop-off / pick-up zones
  2. Surface Lots – easier/ more cost effective to re-develop
  3. Ground floor of garages – easier to re-purpose than upper floors for street level retail and drop-off/pick-up zones

Questions?

STATE OF PARKING IN DOWNTOWN RALEIGH

City of Raleigh History

2010	• Strong resurgence in population growth after the economic recession
	• Renewed interest by developers and companies
	• Increasing number of new developments and construction projects
	• Increasing demand for residential, business and office parking
2014	• Strategic Plan – Economic Development Initiative 4.2: **"Develop Downtown Parking Strategies to Adequately Support Economic Development"**
2016	• RFP for Downtown Development & Future Needs Parking Study
	• Parking Study commenced in September and completed in December

Objectives For
The Parking Study

- **Assessment of Current and Future Parking Demand**

- **Curb Lane Management**

- **Urban Access Policy**

- **Parking Policies to Support Economic Development**

SCOPE OF STUDY

- **Assessment of Current and Future Parking Demand**

- **Curb Lane Management**

- **Urban Access Policy**

- **Parking Policies to Support Economic Development**

DOWNTOWN DEVELOPMENT
and Future Parking Needs Study

PRESENTED TO:

PRESENTED BY: **Kimley»Horn**

MARCH 2017

Study Area

Downtown Raleigh Parking Study

Legend

Parking Lots — Streets

Building Footprints — Study Area

N

0   0.05 0.1   0.2   0.3   0.4
Miles

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Assessment of Current Parking Demand

Allocation of City-owned Parking Spaces - February 2017

- Monthly Parkers Spaces Rented — 54%
- Daily/Transient Spaces — 19%
- Tier/Other Sold — 10%
- City Accounts — 5%
- Other Committed — 5%
- Monthly Spaces Available — 7%
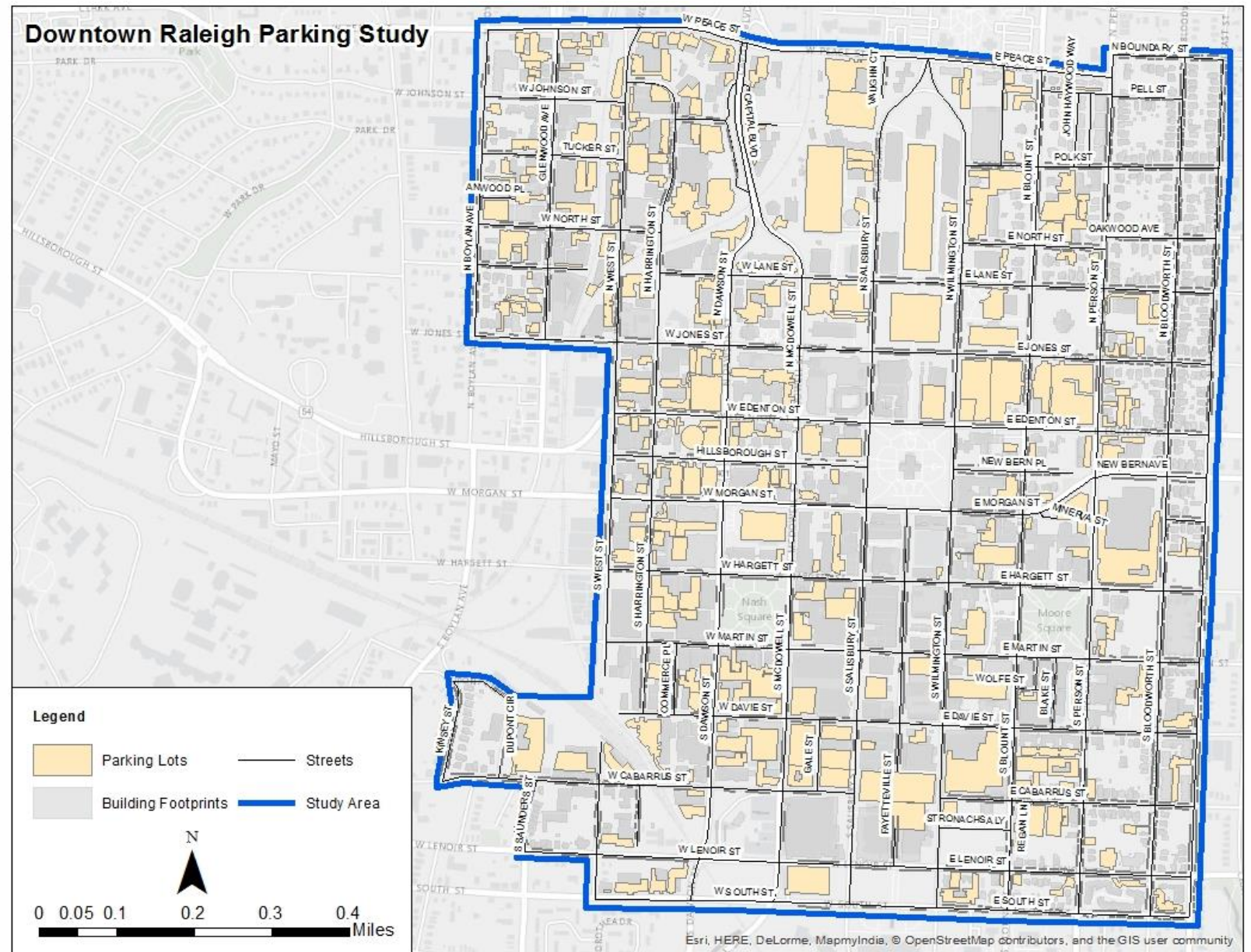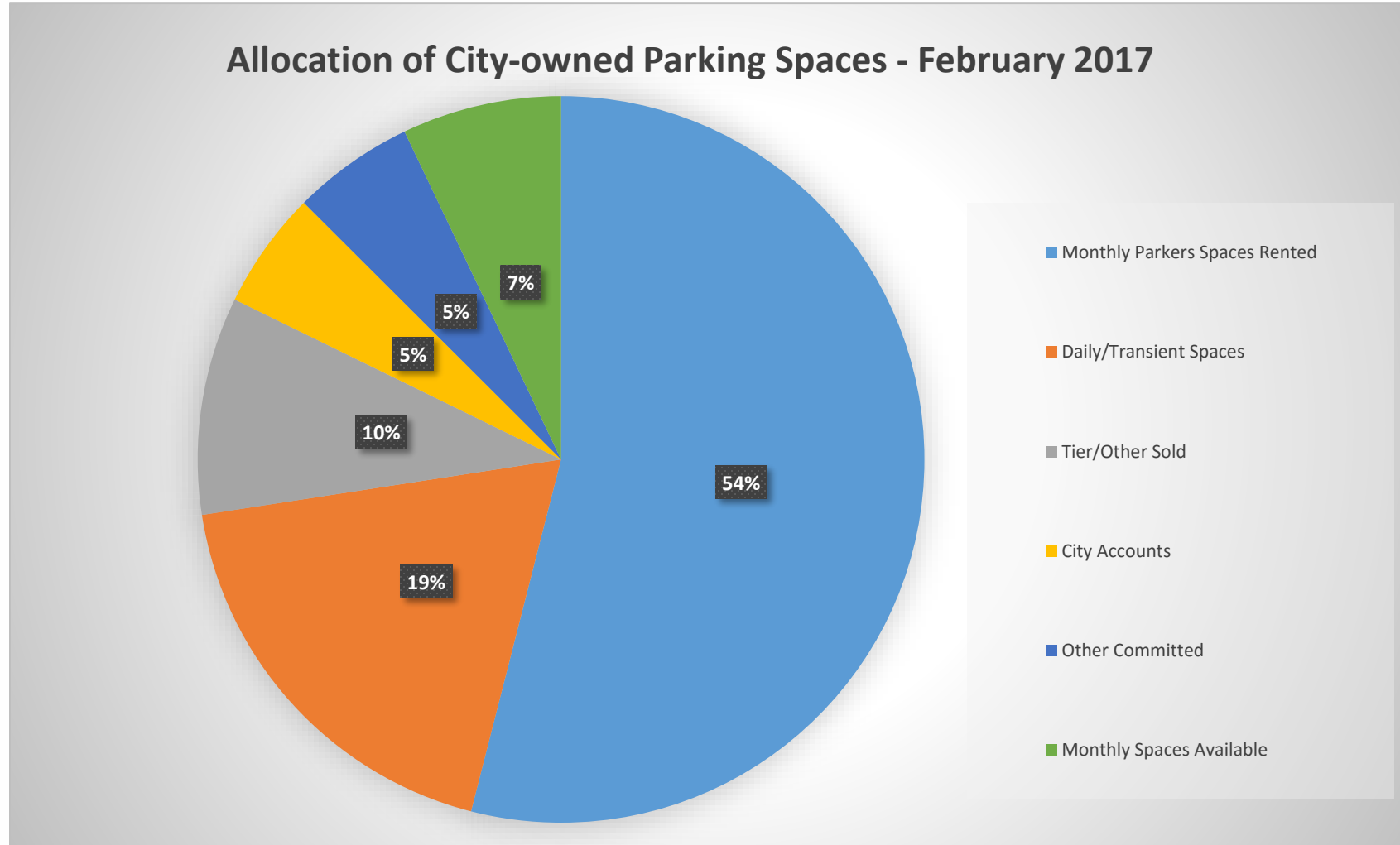
Assessment of Current Parking Demand

City of Raleigh Monthly Parking Accounts Available Jan. 15 - Jan. 17
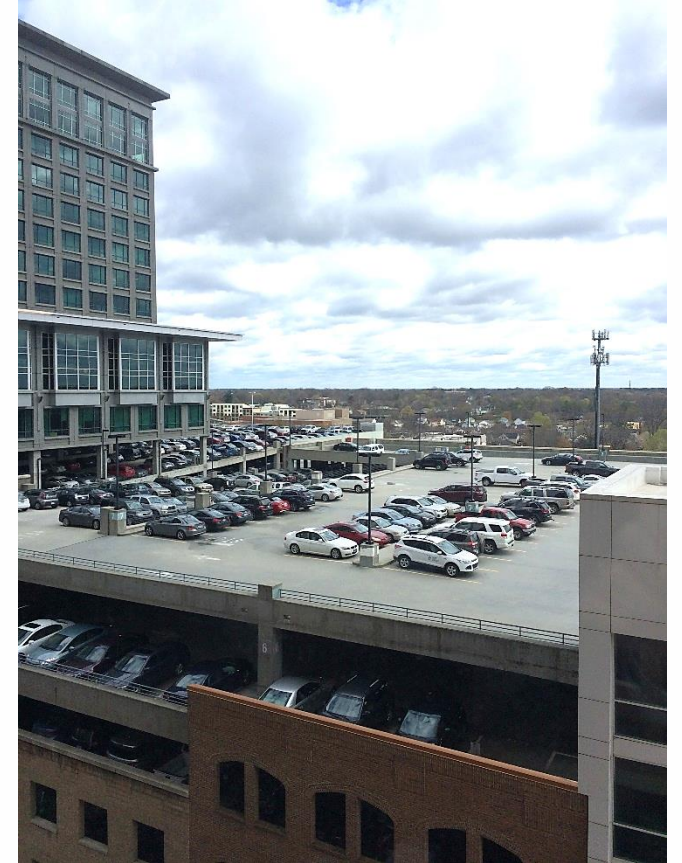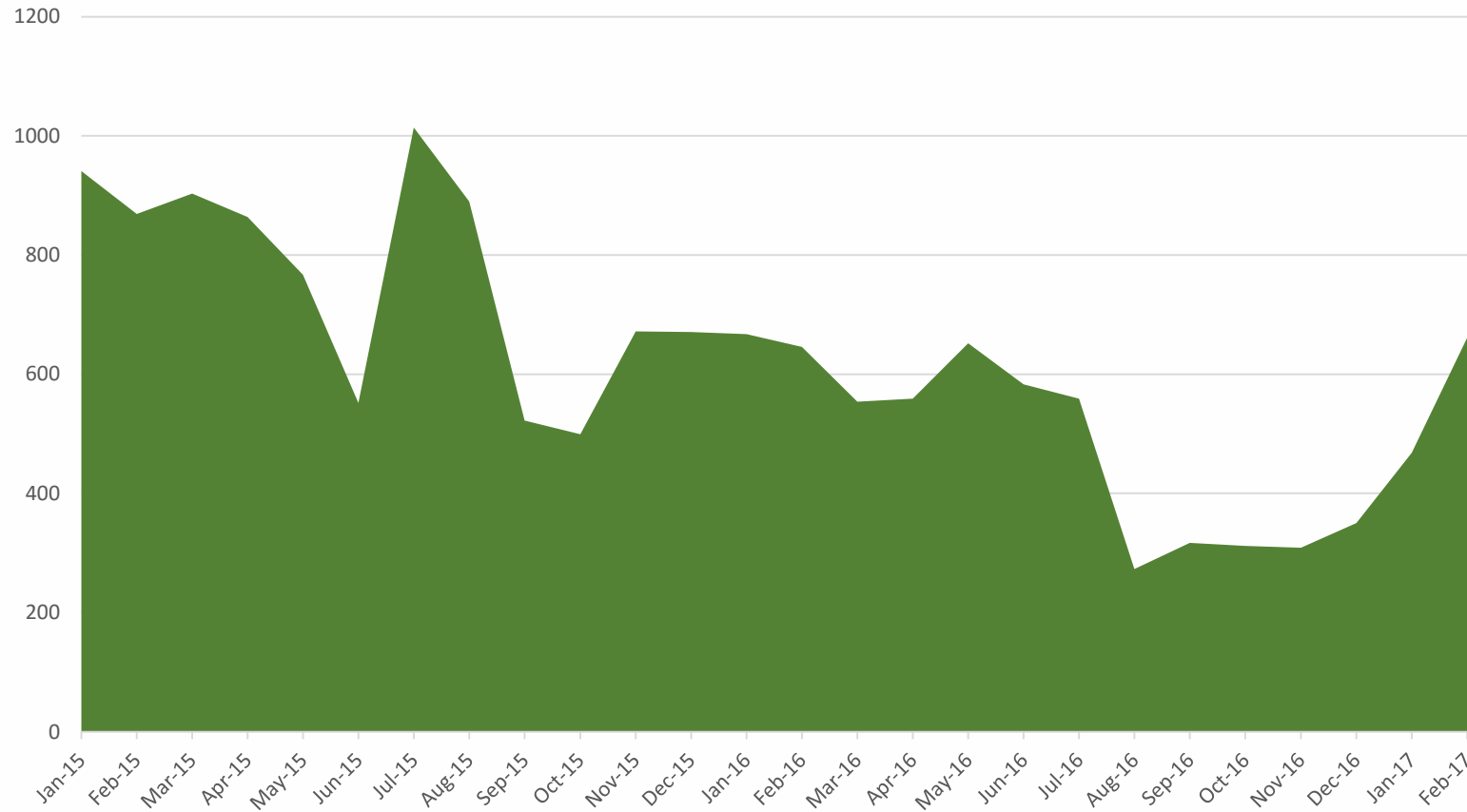
Park+ Model Output Screen – Existing Conditions

Park+ Calibration Run showing Parking Occupancy at the Peak Hour

Legend

Parcels

Parking Occupancy at 10:00
- 0 - 50 %
- 50 - 75 %
- 75 - 90 %
- 90+ %

0 0.05 0.1 0.2 Miles

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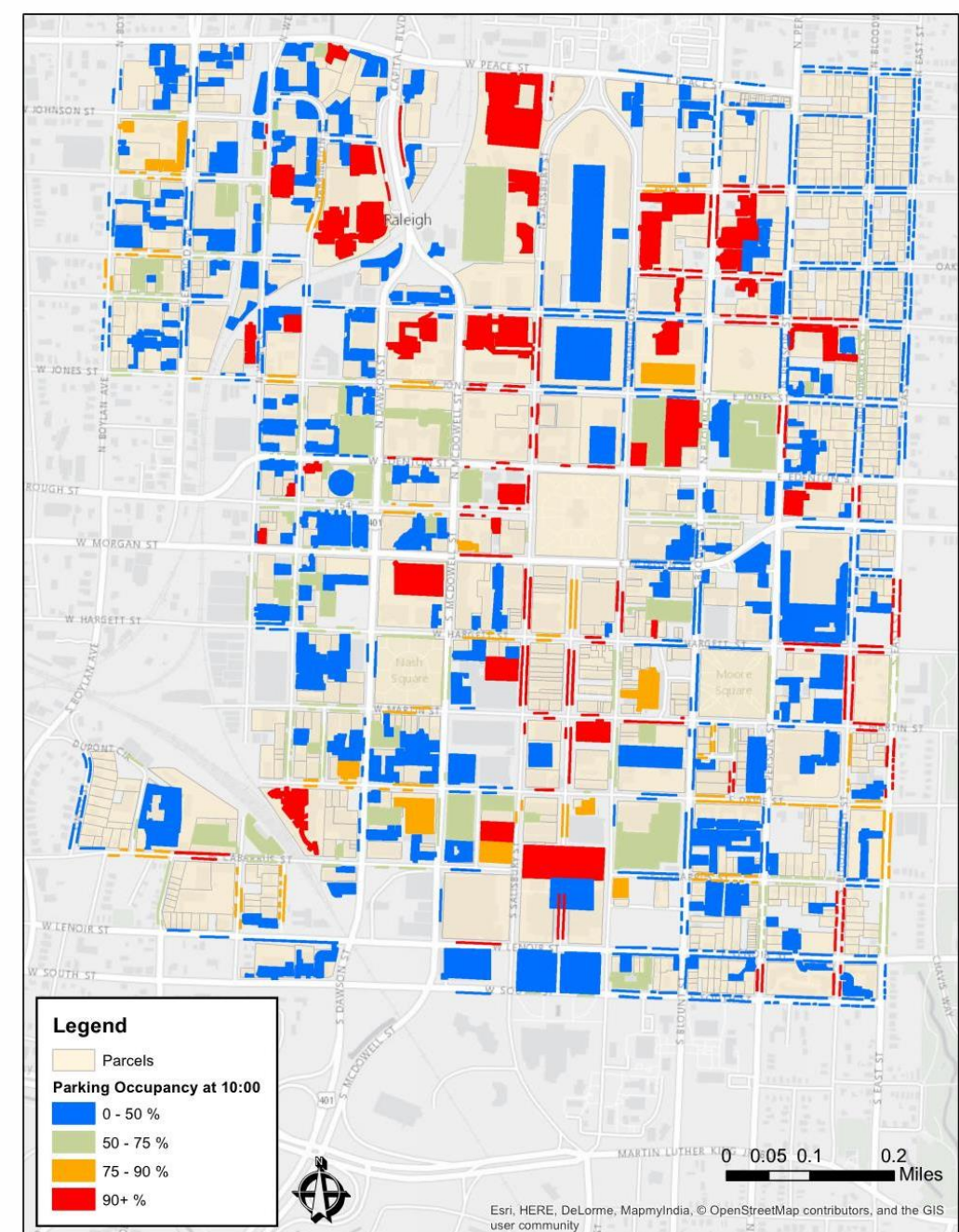
Projected Future Parking Demand

Existing Conditions Demand			
Demand	13,373 spaces	Demand	13,373 spaces
Supply	26,936 spaces	Met Demand	13,371 spaces
Surplus/Deficit	13,563 spaces	Latent Demand	2 spaces
Traditional Demand Calculation (Municipal) 69,070 spaces			
City on- and off-street supply - 12,300 spaces			

Curbside Management Program

- On-street parking inventory

- Observed parking demand

- Recommendations

Downtown Raleigh Parking Study:
On-Street Parking

Peak Hour
10/25/2016: Run 3: 14:00-16:00

— <50%   — Study Area
— 50-75%
— 75-90%
— >90%

N

0   0.05 0.1   0.2   0.3   0.4
Miles

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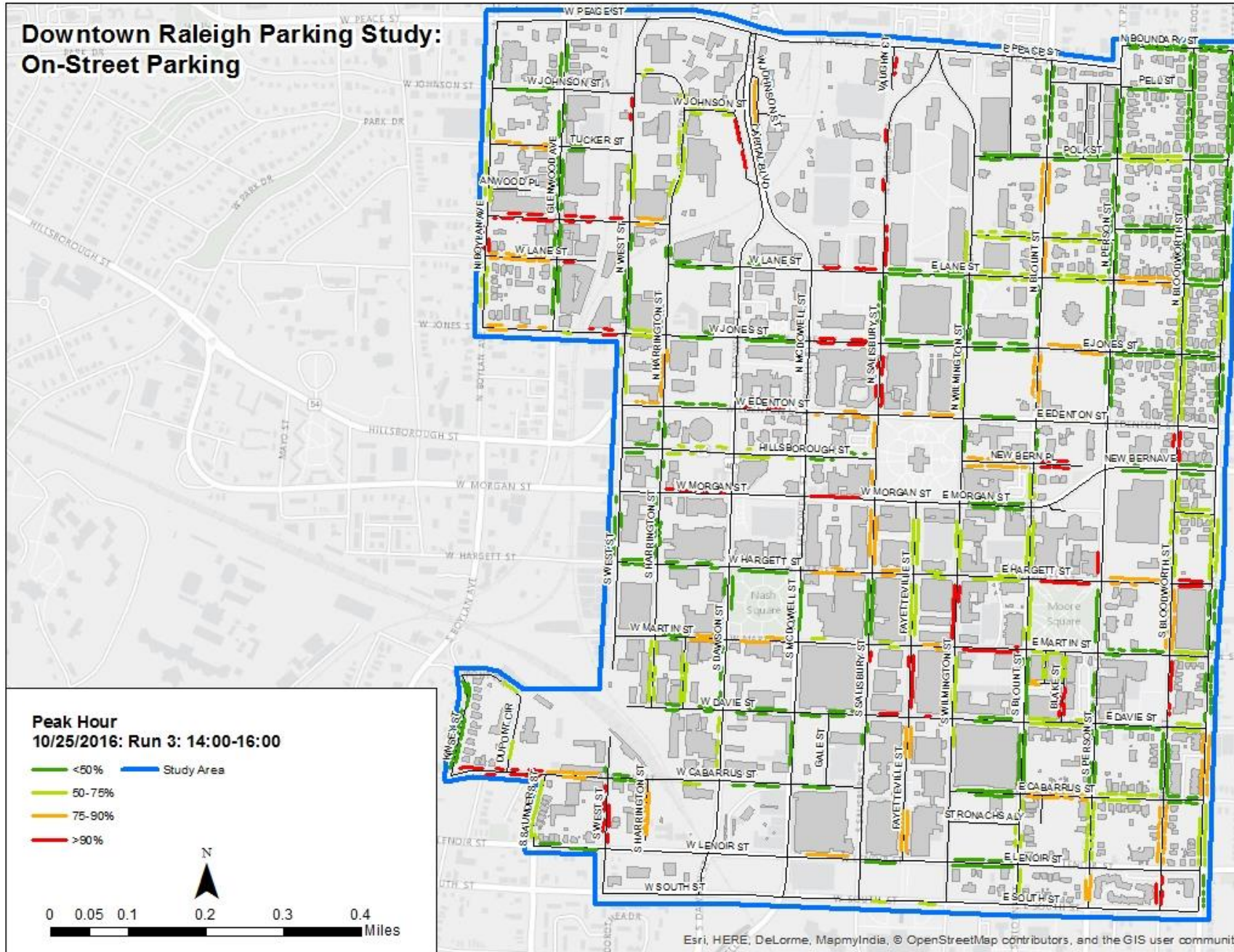
TABLE 1: PARKING RATES

PARKING RATES	
LOCATION	**HOURLY ON-STREET RATE**
Asheville, NC	$1.25
Chapel Hill, NC	$1.50
Charlotte, NC	$1.00
Raleigh, NC	**$1.00 - $1.25**
Norfolk, VA	$1.00 - $1.80
Alexandria, VA	$1.25 - $1.75
Columbia, SC	$0.75
Nashville, TN	$1.00 - $1.50
Atlanta, GA	$2.00
Austin, TX	$1.00
San Antonio, TX	$1.50
Houston, TX	$0.10 - $5.00
Phoenix, AZ	$1.50
Salt Lake City, UT	$1.00
Denver, CO	$1.00
Portland, OR	$1.60

Operational Recommendations

- Operate on-street and off-street parking systems to complement each other
- Expand existing on-street tiered parking rate structure
- Identify areas of high demand and implement a fee for parking
- Increase on-street parking rates $1.25 standard; $1.50 in areas of high demand
- Implement a fee for on-street parking on Saturdays in areas of high demand
- Extend hours of on-street parking enforcement:-- start enforcing to 7 PM
- Charge for parking in garages 24/7

North Carolina Cities that Charge for Garage Parking 24/7

- Durham
- Wilmington
- Greensboro
- Asheville
- Charlotte (some garages)

Operational Recommendations

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- Extend hours of on-street parking enforcement- start enforcing to 7 PM
- Charge for parking in garages 24/7
- Enforce and collect data using vehicle equipped with Automated License Plate Reader (LPR)

Example of LPR Equipment on a Vehicle

Operational Recommendations

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- Extend hours of on-street parking enforcement- start enforcing to 7 PM
- Charge for parking in garages 24/7
- Enforce and collect data using vehicle equipped with Automated License Plate Reader (LPR)
- Consider automating enforcement of unmetered time-limited parking spaces and the Residential Permit Parking Program with LPR technology.

Parking Support For Economic Development

- One of the main objectives of this study is the development of a strategic parking policy as it relates to the use of parking as a potential catalyst element in support of Downtown development.

- This includes policy guidance related to parking investment and the use of parking as a potential development incentive.

Parking Systems as Tools to Provide Economic Development Support

- Parking structures can serve as important catalysts in the preservation or redevelopment of downtown centers.

Parking Structures as Development Catalysts

- A parking structure may be the first and last experience associated with a visit to a downtown area.

- Successful urban parking structures address movement in a way that makes people wish to return.

- As towns and cities grow denser and efforts are made to create pedestrian-friendly, thriving downtowns, these once utilitarian structures are playing a more significant and integrated role in new developments.

Best Practice Research

- These advances in planning and management are being combined with another important trend—a philosophy that aims at making parking, and therefore the overall downtown experience, more visitor friendly.

- It is important to note that "friendly" does not mean "free."
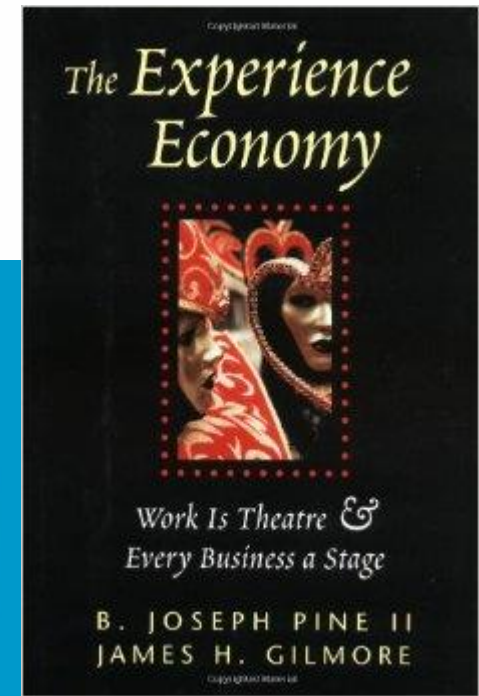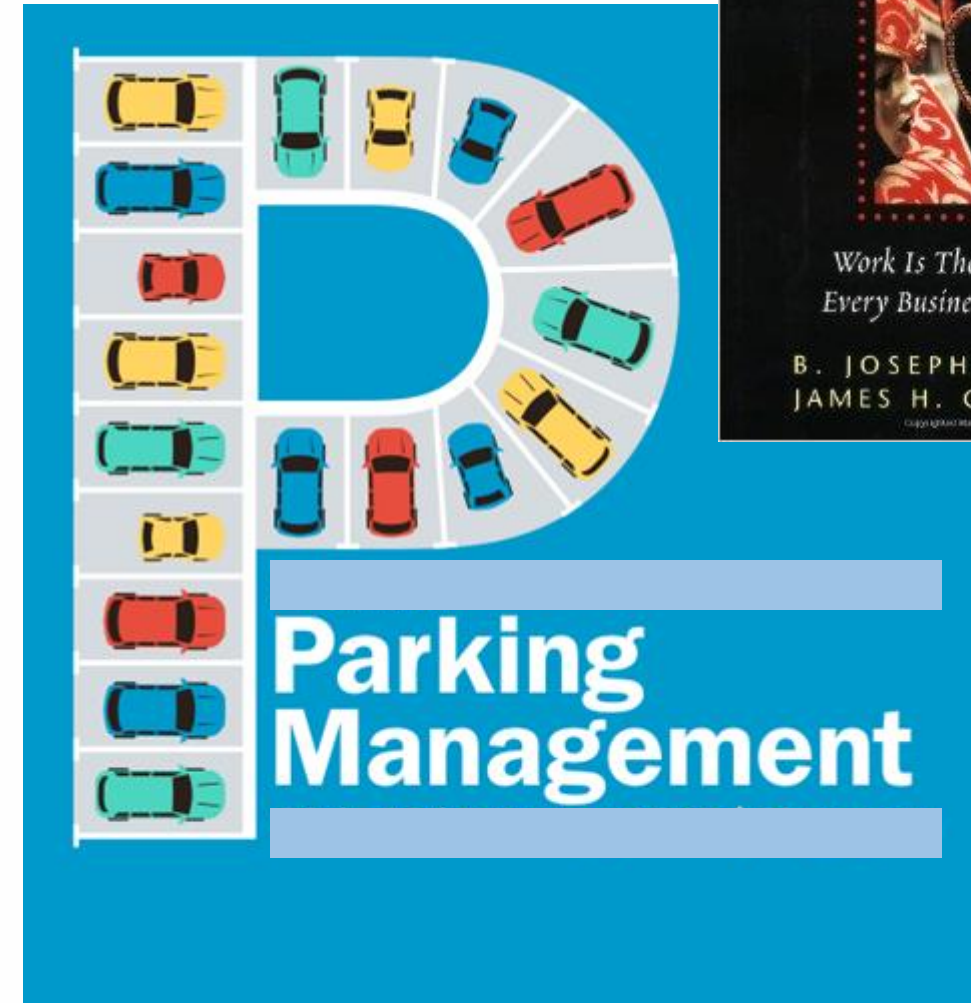
Parking Policy Framework and Purpose

- Recommended approach for developing future City parking supply:

"Add additional parking supply Downtown using public/private partnerships at strategically located developments that are mutually beneficial to the City and the development community."

Parking Policy Framework and Purpose

- By developing parking jointly, the costs of major parking development elements (foundations, stair towers, elevators, mechanical systems, etc.) can be shared, creating significant cost-saving benefits for both parties compared to separate developments, thus providing an additional incentive for the development to occur.

- Beyond incentivizing quality developments that support the development vision of Downtown, the development of public parking with the new development is designed to provide additional public parking to support anticipated adaptive reuse and in-fill projects that are likely to occur in the immediate area of the new development.

Public sector

Common interest

Private sector
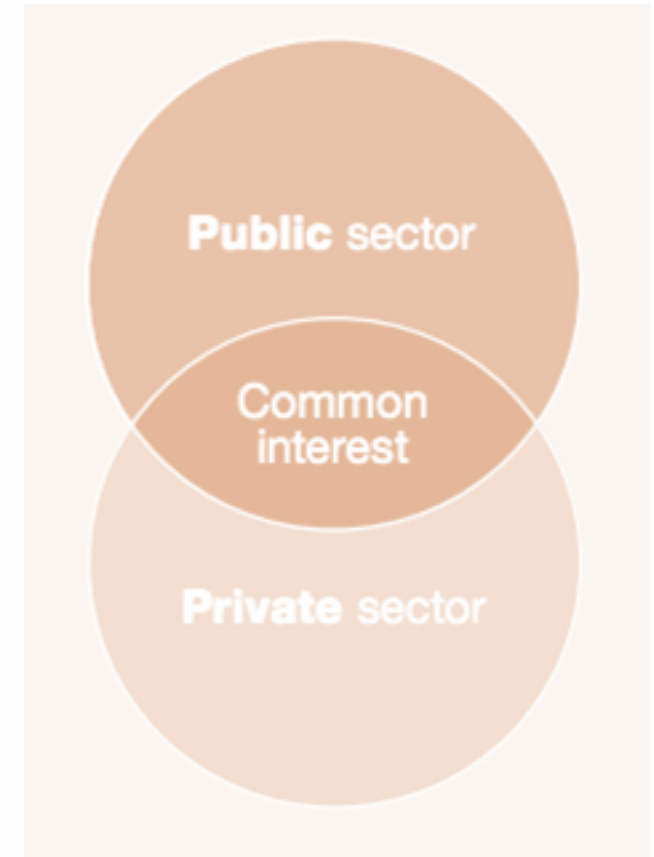
Parking Policy Framework and Purpose

- The joint development of shared parking assets provides the following benefits:
  - Reduces development costs for the City and the developer.
  - Encourages the use of shared parking and reduces the overall amount of parking required Downtown.
  - Gives the City the ability manage the jointly developed parking facility ensuring consistent, high-quality parking management and promoting the use of parking access and revenue control systems that the community is already familiar with.
  - The jointly developed parking facility will be designed in accordance with City parking design guidelines to ensure high quality design standards reflecting industry best practices. (Appendix C)
  - Provides a better distributed public parking supply throughout Downtown by providing a supply of public parking in conjunction with the new development to support additional in-fill development and adaptive reuse of other adjacent properties.

Recommended Parking Policies

Policy #1 → Maintain ownership of parking assets and grow the system.

Purpose

- To better leverage parking infrastructure investment as a key element of community and economic development and to develop a more effective downtown development support system, over time the City should maintain public parking assets to be approximately 40% of the total parking supply. To achieve this long-term goal, it is critical that ownership of public parking assets be maintained. The City of Raleigh presently owns more than 40% of the total parking supply downtown.

Key Issues

- Manage public parking resources to ensure optimum utilization.
- The ultimate goal of this plan element is to take parking off the backs of the taxpayers.
- Implicit in this goal is the need to maintain ownership and control of public parking assets.

Recommended Parking Policies

Policy #2 → Leverage parking investment to support new development opportunities.

Purpose

- City parking investments should be used to support new development opportunities, but City parking assets should be leased (with limited restrictions), not given away or sold.

Key Issues

- When evaluating parking as a potential development incentive, ask the following questions:
  - Does this arrangement give away or sell City owned assets?
  - Does this arrangement restrict the shared use of City parking assets?
  - Prior to offering parking assets as an incentive, has an assessment been developed to quantify the value of the parking assets in both current and future dollars? Have future parking revenues been factored into the assessment? Have costs to replace the parking assets in the future been factored into the assessment?
  - If parking is offered as a development incentive, does the value of the development project elements at least equal the value of the parking assets relinquished (if applicable)?
  - Are there other economic development incentives that would be equally as effective in moving the deal forward without negatively impacting the development of a strong public parking system?

RECOMMENDED PARKING POLICIES

Policy #3 — Strongly support the concept of shared parking.

Purpose

- To achieve the desired return on investment (Policy 2), the City policy should strongly support the concept of shared parking.

- Projects that provide the benefits of shared parking should be strongly encouraged and even incentivized as they help the City achieve the desired parking investment goal. However; it should be noted that deals that allow excessive restrictions on the use of shared spaces reduce the value and effectiveness of this policy and should be avoided.

Key Issues

- Maximize returns on public parking investment.

- Optimize use of existing parking resources.

- Extend reach of existing parking resources.

- Promote more sustainable parking and transportation strategies.

Recommended Parking Policies

Policy #4

Support a consolidated parking management organization to promote effective and customer friendly parking management.

Purpose

- The City should ensure effective management of existing public parking resources. There are several strategies for achieving this multidimensional goal, among them is supporting and strengthening the consolidated parking management organization under the City, stabilizing the public parking supply over time to be approximately 40% of total parking, and establishing a long-term goal of creating a self-supporting parking enterprise.

Key Issues

- Have a defined focus on parking management and a comprehensive parking management strategy.

- Create well-defined parking management policies and procedures.

- Create a parking planning program element with defined parking planning and management criteria, metrics and benchmarks.

Recommended Parking Policies

Policy #5 — Develop a robust parking planning function.

Purpose

- In general, municipal planning programs are primarily focused on land-use planning and often do not have a great deal of experience or specialized expertise in the specialized realm that is parking planning. City Parking departments have a special interest in parking planning but often are not trained planning professionals. This common set of circumstances is an issue for many communities and one in which a more collaborative relationship between parking and planning professionals can greatly benefit both groups.

Key Issues

- Understand parking needs/issues and ongoing monitoring.

- Document and assess the localized parking demand issues (parking hot-spots).

- Stay ahead of the curve relative to parking needs.

- Use the Park+ model to provide more effective parking analysis related to new development projects.

Recommended Parking Policies

Policy #6 → Create a balanced and sustainable community access strategy.

Purpose

- An important philosophical shift that is recommended is to stop thinking about parking as a separate function and begin to shift to an access or mobility management perspective in which parking is an important component of the larger community transportation equation. This perspective, places more focus on providing a broader range of access management strategies, including a greater emphasis on transportation demand management, transportation alternatives, shared mobility strategies, shared parking, and transit supportive parking policies, including parking rate adjustments.

Key Issues

- Define key elements of a comprehensive and integrated transportation/access management strategy.

- Define key metrics and access management strategy goals.

- Develop measurement strategies and tools.

- Conduct measurements and establish the current baseline in primary access categories such as parking, transit, light rail, bikes, walking, carpools/vanpools, etc.

Recommended Parking Policies

Policy #7 → Promote a "park once/pedestrians first" approach and integrate good urban design principles relative to parking facility design.

Purpose

- The City should actively promote the integration of good urban design principles relative to parking facility design to better integrate parking infrastructure into the urban fabric, including criteria such as requiring street-level activation, preferences for mixed-use parking development, or LEED or Green Garage certification for all future mixed-use parking facilities.

Key Issues

- Community education of transportation options.

- Special event parking information.

- Evaluate creative alternative transportation options.

NEXT STEPS

- **Staff Evaluation of Consultant Recommendations**
  - o Break into sub-elements
  - o Assign staff leads
  - o Meetings with departments to vet recommendations
- **Staff Report to Council**
- **Stakeholder Outreach / Feedback**
  - o Business Owners
  - o Merchants
  - o Companies

NEXT STEPS

- **Citizen Outreach**
  - o Good communication through media, city website and on-line surveys
- **Final Report and Recommendations to Council**
- **Implementation**

Questions?

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