# Multifamily Residential Parking Study



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# Why Study Parking?

- Parking availability and pricing affects travel behavior

- Up to 30% of local congestion in urban cores attributed to searching for (on-street) parking

- Parking construction costs impact affordability – affects our ability to invest in activity centers and meet equity goals

# Research Need

- Residential parking demand is changing rapidly
- Lack of quantifiable parking demand data results in ambiguity about the "right" level of parking
- ITE *Parking Generation* rates are unreliable in urban areas
- Parking demand is extremely sensitive to local context and building characteristics
- Ambiguity leads to uncertainty in many aspects of the development process

# Project Overview

**Goal: To develop an interactive web-based tool based on real, defensible data to help determine expected parking demand in the District.**

- Easy-to-use, public facing, and transparent
- Built on analysis of context variables and actual parking utilization rates from existing buildings
- Provide customized predictions of off-street parking demand for multi-family projects based on a variety of building and location characteristics

# Project History

- TPB TLC grant for data collection in 2014

- Leveraged additional funding from DDOT for:
  - More data
  - Analysis and model development
  - Web tool development
  - Paper for publication

# Precedent: King County
# Right Size Parking Tool

# ParkRightDC

- Modeled on King County's project

- Customized for the District's local context

- Improvements include:
  - Enhanced effort to consider off-site parking availability in the analysis of parking demand
  - Provide a range for expected parking demand
  - Walkability and job accessibility measures added

# Site Screening and Data Collection

- Multifamily properties with 10+ units
- Considered potential to generate spill-over (on-street) parking demand
- Timed collection of newer properties to account for lease-up
- Counts conducted 12:00 – 5:00 am, Tue-Thur
- Building characteristics captured via property manager interviews
- Total sample: 115 properties (including 13 without parking)

# Modeled Parking Utilization
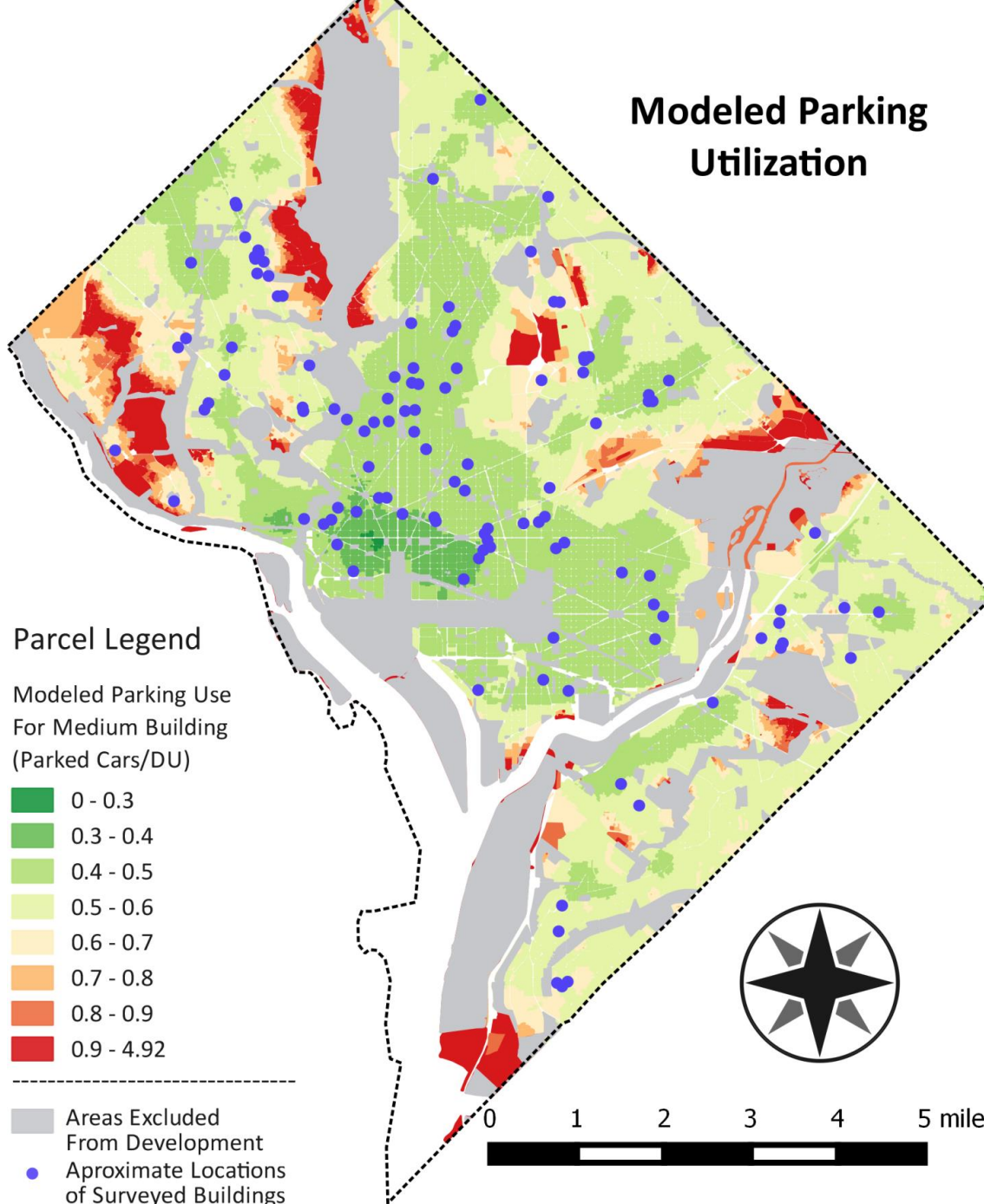
## Parcel Legend

Modeled Parking Use
For Medium Building
(Parked Cars/DU)

- 0 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 4.92

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- Areas Excluded From Development
- Aproximate Locations of Surveyed Buildings
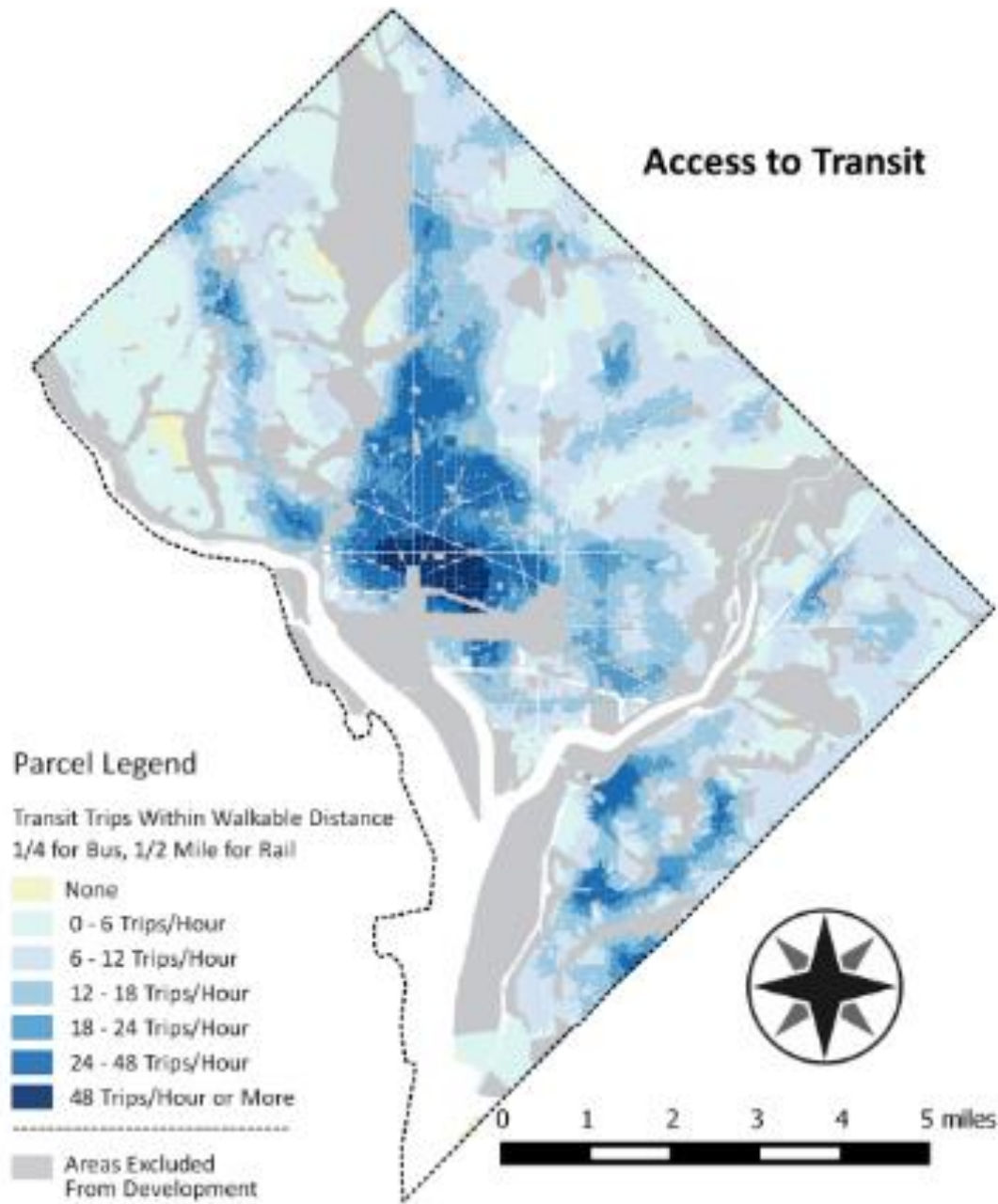
0   1   2   3   4   5 miles

# Findings

- Only 60% of parking stalls used on average.
- Parking supply correlates most with parking utilization, accounting for 66% of the variation.
- Other significant building variables include:
  - parking price
  - average rent
  -  unit size
- The most significant neighborhood variable was a combination of walkability (measured by block size) and frequency of transit service within walking distance. As walkability and transit frequency increased, parking utilization decreased.
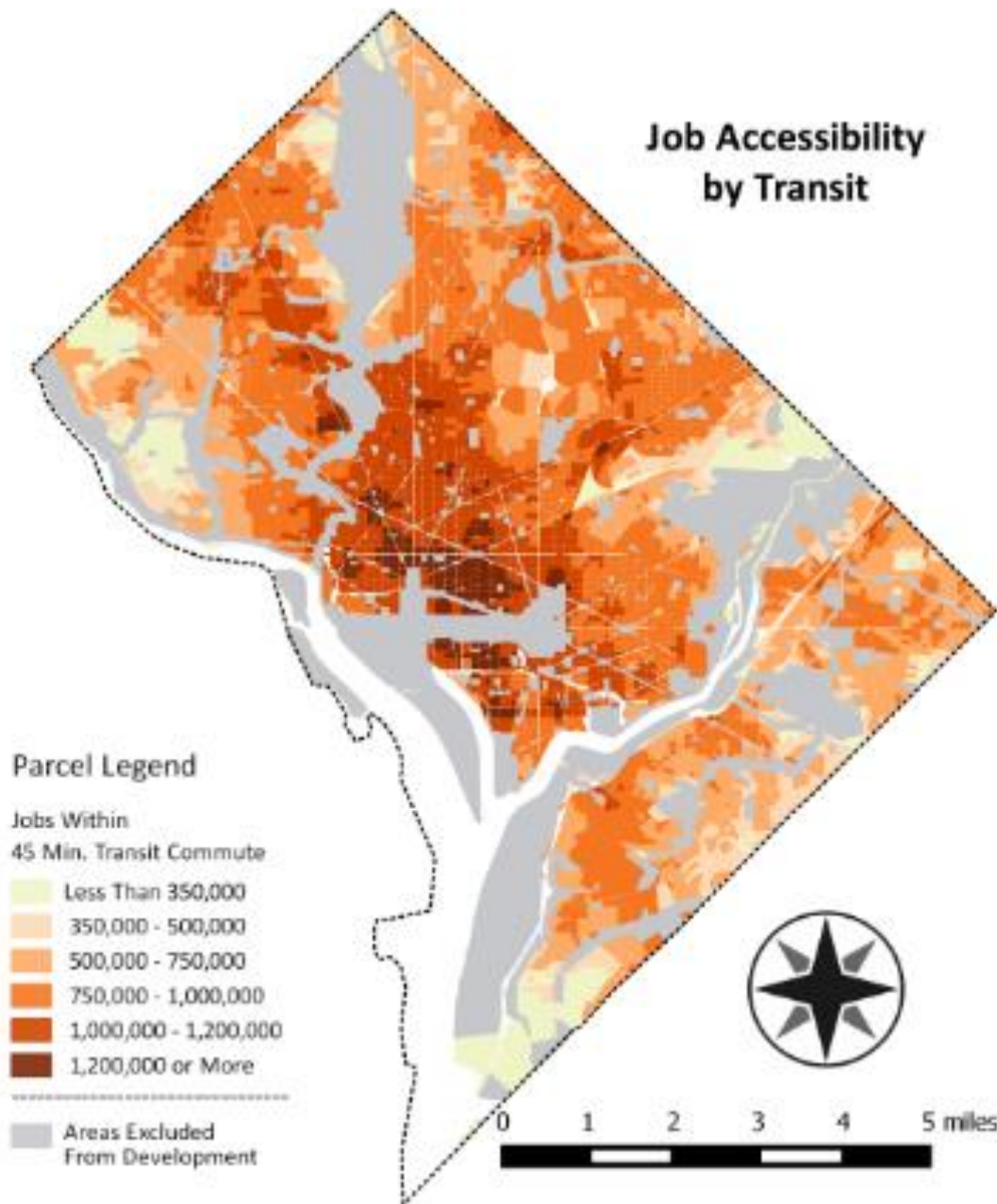
# Findings

- The model achieved an R-square of 0.835 – indicating that the variables used in the model on average predict about 83.5 percent of the variance in parking utilization.
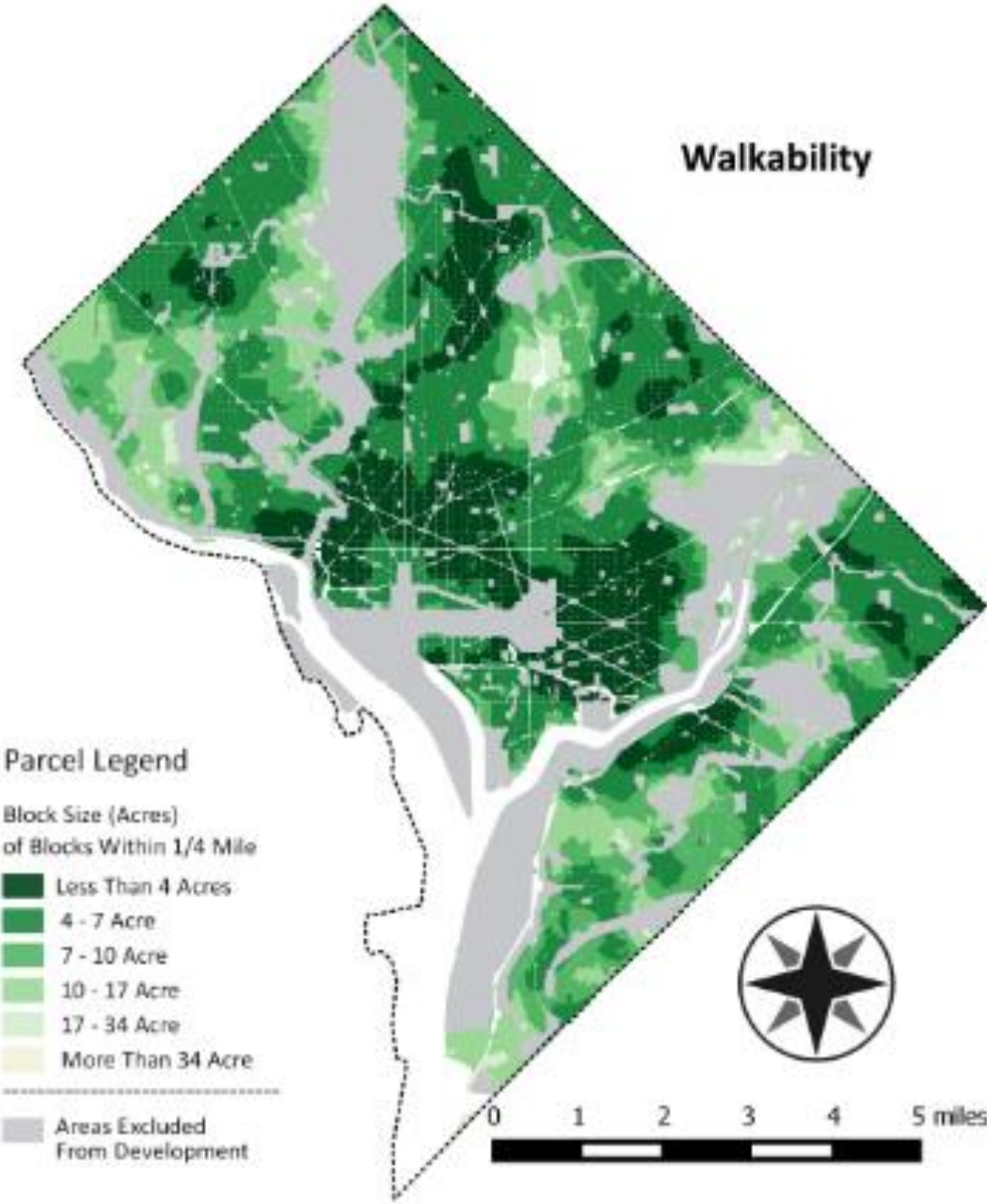
# Access to Transit

## Parcel Legend

Transit Trips Within Walkable Distance
1/4 for Bus, 1/2 Mile for Rail

- None
- 0 - 6 Trips/Hour
- 6 - 12 Trips/Hour
- 12 - 18 Trips/Hour
- 18 - 24 Trips/Hour
- 24 - 48 Trips/Hour
- 48 Trips/Hour or More

Areas Excluded
From Development

0   1   2   3   4   5 miles

**Job Accessibility by Transit**

Parcel Legend

Jobs Within
45 Min. Transit Commute

Less Than 350,000
350,000 - 500,000
500,000 - 750,000
750,000 - 1,000,000
1,000,000 - 1,200,000
1,200,000 or More

Areas Excluded
From Development

0   1   2   3   4   5 miles

**Walkability**

Parcel Legend

Block Size (Acres)
of Blocks Within 1/4 Mile

Less Than 4 Acres
4 - 7 Acre
7 - 10 Acre
10 - 17 Acre
17 - 34 Acre
More Than 34 Acre

Areas Excluded
From Development

0    1    2    3    4    5 miles

# Model Application: ParkRight DC Tool

Given the complexity of the model, the web tool allows end-users to view the model results in a simpler, easier to understand form. The tool allows users to

- View estimated parking utilization for multifamily developments
- Develop a building scenario based on building characteristics
- Optimize the building supply for optimal supply and parking price
- Explore effects of altering location characteristics

# Project Application

- Facilitate understanding of parking amongst all players involved in development projects
  - Zoning boards
  - District agencies
  - Community stakeholders
  - Development and real estate finance professionals
- Provide more transparency and predictability
- Inform DDOT and OP's review of parking variances
- Inform efforts to update the zoning regulations
- Contribute to developers' parking provision decision-making

# Limitations

- A decision-support tool, not a decision-making tool
- Not a substitute for detailed building, site, and market analysis
- Unable to fully account for off-site (including on-street) parking supply
- Property marketing and management practices can significantly vary results

# Implications

- Parking utilization is <u>highly</u> context-dependent

- Underscores difficulty of finding the "right" number for parking supply

- Argues for a more flexible approach to parking regulation

- On-site and on-street parking need to be considered as an interrelated system (but rarely regulated as such)

[www.parkrightdc.org](www.parkrightdc.org)