Right Sizing Parking for Sustainable Suburbs

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WHAT’S THE PROBLEM?

- Smart Growth requires density and continuity
- Suburban parking policies undermine those goals
MULTI-UNIT RENTAL

- Gives more housing options to residents
- Increases diversity, economic activity, land intensity
- Advances affordable housing objectives

Proposed Multi-Unit Residential Development for Village of Hempstead on Long Island
STAKEHOLDER CONCERNS

- Developers want to minimize off-street parking
- Neighbors want to minimize parking spillovers
- Planners want to adjudicate this tension

Off-Street Parking Requirements
PARKING MINIMUMS

- Add construction cost
- Reduce density
- Reduce value

- When minimums result in excess parking supply
SHIFT IN THINKING

- FROM: Parking minimums are inherently bad
- TO: Our ability to predict parking demand is bad
ITE GUIDE

- 7 Buildings
- 2 Cities
- 3 Years
- No Suburban
- 1 Predictor

Study Sites/Years
Chicago, IL (1969); Chicago, IL (1978); San Diego, CA (1996)
KING COUNTY

RIGHT SIZE PARKING PROJECT

- King County, FHWA, ULI, WSDOT, CNT

Right Size Parking

Tools to balance supply.
RESEARCH OBJECTIVES

- Develop a robust database on parking demand
- Collect data for possible predictor variables
- Estimate regression model
- Develop a website tool for stakeholders
DATA SET: RENTAL UNITS

218 surveyed facilities
- 32,760 rental units
- 10 to 735 rental units per facility (118 median)
- 37% of the facilities had low income units
- 3% had senior units
- 95% occupancy rate

Unit breakdown
- 13% studio apartments
- 43% one-bedroom apartments
- 38% two-bedroom apartments
- 6% three-bedroom apartments
DATA SET: PARKING SPOTS

All spots designated for building residents
- On-site and off-street
- Reserved on-street spots
- Off-street, off-site satellite locations

Parking availability
- 4 to 939 parking spots per facility
- 164 parking spots per facility was the median
FINDINGS

- Parking lots were substantially overbuilt
NEW REGRESSION MODEL

- Predicts absolute spots rather than ratios
- Designed to better address projects discussions
- Good for unit variation, bad for overall attributes
- Requires scaling variable (i.e. facility bedrooms)
NEW REGRESSION MODEL
## MODEL COEFFICIENTS

| Dependent Variable: Parking Spots Filled                          | Estimate | Std. Error | t value | Pr(>|t|) |
|------------------------------------------------------------------|----------|------------|---------|----------|
| Studio Apartments                                                | 0.852    | 0.089      | 9.599   | 0.000    |
| One Bedrooms                                                     | 0.848    | 0.055      | 15.495  | 0.000    |
| Two Bedrooms                                                     | 1.340    | 0.096      | 13.970  | 0.000    |
| Three Bedrooms                                                   | 1.593    | 0.172      | 9.279   | 0.000    |
| Affordable Units                                                 | -0.258   | 0.048      | -5.345  | 0.000    |
| Senior Units                                                     | -0.366   | 0.177      | -2.071  | 0.040    |
| [Square Footage per Rent Dollar] * Bedrooms                       | 0.080    | 0.034      | 2.342   | 0.020    |
| [Monthly Parking Price per Spot] * Bedrooms/10^3                 | -0.764   | 0.000      | -4.587  | 0.000    |
| [Jobs in 30min Transit Commute] * Bedrooms/10^6                  | -0.141   | 0.000      | -2.676  | 0.008    |
| [Average Block Size Squared] * Bedrooms/10^3                     | 0.536    | 0.000      | 4.629   | 0.000    |

Multiple R-squared: 0.979, Adjusted R-squared: 0.978
F-statistic: 948.9 on 10 and 200 DF, p-value: 0.000
FUTURE ENHANCEMENTS

- Travel Demand Management Variables
- Availability of Car/Bike Sharing
- Consideration of Parking Supply

TRANSFORM
GreenTrip modernizes planning by eliminating excessive parking and focusing on giving people more and better transportation choices.

MONTGOMERY COUNTY

- Long history of planning innovation
- 4 Parking Lot Districts (PLD)
- Recently revamped the zoning code

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<th>Within a PLD</th>
<th>Outside PLD</th>
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<td></td>
<td>Min</td>
<td>Max</td>
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<td>Studio</td>
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<td>3 Bed</td>
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PARKING POLICY IN PLDs

ADJUSTMENTS

- 50% adjustment factors for restricted housing
- Reduced minimums for unbundling parking

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CONCLUSIONS

- New zoning code very promising
- Difficult to expressly include pricing levels, transit supply, and urban form in zoning
- Hope it encourages more multi-use rental
FUTURE RESEARCH

- Compare predicted demand for proposed buildings, using our model, to new zoning code to test appropriateness of ranges
- Expand data set to other cities
- Assess model transferability
THANK YOU

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