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Learning From San Francisco and Seattle: How to Implement Demand-Responsive Curb Pricing in New York City

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Issue

Ninety-seven percent of New York City's on-street parking is unmetered. Where curb parking is metered, most spaces have a two-hour limit, yet parking is notoriously difficult to find in certain parts of the city, causing drivers to cruise to find parking at unmetered curbs, park illegally, or overstay parking meter time limits due to poor enforcement.

NYC Department of Transportation (NYC DOT) is considering implementing demand-responsive pricing for its passenger metered parking spaces, which is a pricing mechanism whereby the price of curb parking fluctuates by location and time of day based on expected or actual demand. Such pricing generally leads to shorter parking durations and greater parking availability, reducing many of the negative externalities associated with driving and parking. The city first tried demand-responsive pricing in 2008, but the pilot never became permanent due to community contention and political pressure surrounding rate setting. To identify methods that can guide NYC DOT and other city transportation agencies in their efforts to increase parking availability, the researcher evaluated demand-responsive curb pricing in San Francisco and Seattle, two cities that have successful permanent citywide implementations of this pricing strategy.

Study Approach

The researcher reviewed the former pilot curb pricing implementation in New York City, along with the pilot and current curb pricing programs in San Francisco and Seattle, with a focus on how the cities set their parking rates (Figure 1). For details on the procedures and challenges of implementation, she referenced publicly available city reports and met with employees of NYC DOT, San Francisco Municipal Transportation Agency, and Seattle DOT to discuss these programs.

Findings

The most effective strategies that NYC DOT can draw upon to implement demand-responsive pricing for the city's on-street passenger metered spaces are:

- Using meter transaction data and historical occupancy data to estimate current parking occupancy. This reduces the need for long-term maintenance of camera or sensor technology to collect accurate occupancy data. Areas that have high rates of parking placard use should be removed from the dataset before using transaction data to determine rate adjustments so that they do not bias the estimate.

Figure 1. Comparison of major cities' initial demand-responsive curb pricing implementations.

	New York, NY	San Francisco, CA	Seattle, WA
Name	PARK Smart	SFpark	Performance Pricing Program
Type	Progressive and peak pricing	Peak and performance pricing	Performance pricing
Year	2008	2011	2011
Area or scope	Neighborhoods or streets with identifiable demand constraints	6,000 spaces in 7 pilot areas, with 2 control areas	Citywide
Rate zones	Neighborhood level	Blockface level	Neighborhood level
Data sources	• Camera imagery • Parking occupancy • Parking durations • Parking surveys	• Sensor occupancy • Meter transactions • In-person occupancy counts	• Meter transactions • Historical occupancy • In-person occupancy counts
Model and rate adjustment	Initial rates set based on curb occupancy surveys and community input, adjusted based on data and feedback	Estimate parking occupancy from transaction data, rates adjusted using 60-80% occupancy target	Predict parking activity from transaction data and citywide counts, rates adjusted using 70-85% occupancy target
Frequency of adjustment	Varied	Around four times a year	Three times a year (spring, summer, and fall)
Current status of program and other city parking-related policies	• Replaced with citywide rate structure in 2018 • Central Business District tolling program to take effect soon • City Council bill for demand-responsive pricing is in committee	• Demand-responsive pricing program went citywide in December 2017 • Testing license plate recognition technologies • Extending meter hours starting July 2023	• Collaborating to develop Curb Data Specification • Exploring "cousin blocks" to reduce data collection efforts

- Testing vehicle-mounted license plate recognition technology for a pay-by-plate payment system, the collection of occupancy data, and automated enforcement. These technologies can make data collection and enforcement easier and more accurate, while simultaneously covering greater areas.
- Adjusting parking rates three times a year — in the spring, summer, and fall. This ensures that the relationship drawn between parking occupancy and meter revenue remains valid.
- A two-tier system for disability placards to reduce placard abuse, according to which metered parking costs will continue to be waived for drivers with serious mobility impairments, whereas those with less serious disabilities will have to pay at meters. A portion of meter revenue will be dedicated to programs and policies that improve accessibility.
- Increased meter revenue going toward public services on metered blocks, as opposed to the revenue simply contributing to the city's general fund.

Conclusions

Several of the anticipated challenges in implementing demand-responsive pricing will not be unique to New York City and may be better targeted through policy changes. To help make demand-responsive pricing more efficient and politically viable, the city should consider additional parking programs and policies that have been successful in other states and cities, such as:

A more data-driven, demand-responsive curb pricing program that follows a set model for rate adjustments, supplemented by technology and legislation changes to increase support for the program and reduce parking violations, can effectively increase parking availability in New York City.

Kapshikar, P. (2023). PARK smarter: Lessons in curb pricing for New York City (Master's Capstone, UCLA). Retrieved from: https://escholarship.org/uc/item/58819232

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