



## On-Street Pricing and Time Limits (Part 1)

### BACKGROUND

PBOT uses time limits and pricing strategies to manage the public parking system, with the primary goal of supporting economic vitality. A well-managed parking system uses a variety of strategies to encourage frequent turnover of the most desirable parking spaces, thus ensuring that visitors to an area will be able to quickly and easily find convenient parking without the need to spend time circling the area searching for an open space. When visitors know they will be always be able to find parking, either at a premium directly adjacent to their destination or at a lower rate a reasonably short walk away, businesses are likely to benefit from this user-focused management approach. Maintaining one to two open parking spaces per block requires pricing and time limit strategies that reflect actual demands in order to provide users with a variety of parking options, with periodic adjustments necessary to adapt to constantly changing conditions.

Since parking meters were first installed in downtown Portland in the late 1930s, rates have been adjusted within the downtown meter district nine times. Each rate adjustment was based on the results of an occupancy and turnover analysis, and required the formation of a stakeholder committee and the approval of City Council. **Figure 1** shows each of these changes, along with the rate adjustments implemented in each of the four meter districts outside of Downtown. Prior to 2005, separate hourly rates were used for short and long-term meters, but currently all meters in each meter district use the same hourly rate for each hour charged, regardless of time limit (though the hourly rate can be different depending on the meter district).

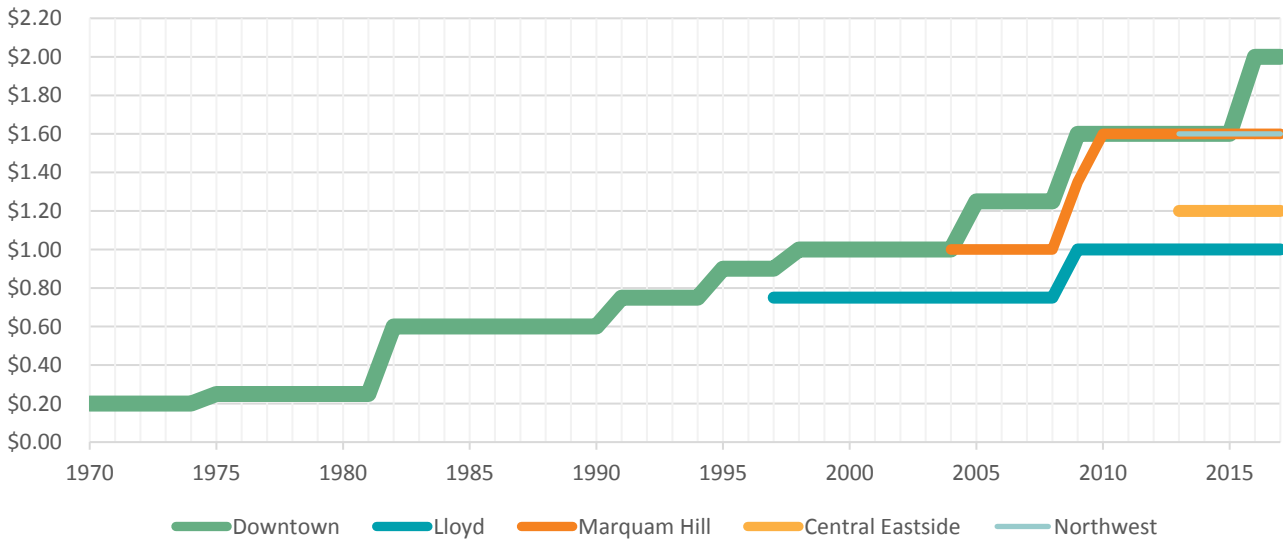


Figure 1: Meter Rate Adjustments

In 2016, the Portland City Council directed PBOT to develop a performance-based parking management program that uses data, performance targets, and defined program parameters. This performance-based process will replace the current process that requires City Council approval.



This document summarizes the proposed performance-based approach to adjusting meter rates moving forward, as well as guidelines for setting and modifying time limits.

## PERFORMANCE-BASED PRICING APPROACH

Performance-based pricing refers to the process of modifying parking pricing based on an established set of metrics. Typical best practice suggests incrementally modifying parking pricing to achieve a specified target occupancy level, often no more than 85%. Blocks that peak at 85% occupancy will typically have at least one to two parking stalls available per block face throughout the day, which allows visitors the option to easily find a parking space near their destination. Those who are willing to park further from their destination may save on parking costs by seeking off-street parking facilities or lower-cost on-street parking in areas of lower demand.

### Data Collection

Performance-based pricing relies on regular data collection efforts to inform rate adjustments. Many cities have used a variety of techniques to collect the necessary data, however, most cities rely on regular field counts.

Meter districts within Portland have established processes for collecting occupancy and turnover data. Moving forward, to ensure consistency across districts, the following metrics should be collected within each meter district as inputs into the performance-based meter rate adjustment process:

- **Hourly occupancy by block**, collected over at least two weekdays during hours when meters are enforced
- **Average duration of stay by block and posted time limit**, collected over at least two weekdays during hours when meters are enforced
- **Violation rates**, calculated based on observed duration of stay data and posted time limits
- **Annual on-street meter and SmartPark pay station transactions** as a check to review the total number and redistribution of transactions between public parking areas within the meter district
- **Citation rates** as a check to confirm levels of enforcement

This data should be collected **once every 12 months** using consistent processes to allow for year-to-year comparisons.

### Sampling

Some meter districts are too large to allow for cost-effective data collection across all parking spaces within the district. Large meter districts should sample using a statistically-valid representation of the larger district. Data collection efforts for the Central City in 2008 and 2014, for example, divided the Central City into nine subareas with approximately 30 to 40 block faces each to inform meter rate adjustments for the larger downtown meter district.

### Rate Adjustment Guidelines

The intended effect of rate adjustments is primarily to *redistribute* parking between areas of higher and lower demands within a district based on data, supporting economic vitality by providing visitors with a variety of tiered parking pricing options within each meter district. By collecting annual paid parking data for both the on-street system and the SmartPark garages, a check may be performed to identify if rate changes resulted in a shift in parking demand or an overall reduction in parking demand within the district.



Parking meters in Portland allow users to pay in 15-minute increments. As such, all hourly rates are set in multiples of \$0.20 per hour, or \$0.05 per 15-minutes. To maintain this, rates should be adjusted up or down by \$0.20, \$0.40, or \$0.60 per hour as needed. **A maximum annual adjustment of +/- \$0.60 is recommended** to allow for a performance-based approach while ensuring that prices will not rapidly increase or decrease each year without additional Council review and approval.

Currently, hourly rates in Portland vary between \$1.00 and \$2.00 per hour depending on meter district. To allow for a performance-based pricing approach, **an hourly rate range of \$1.00 to \$5.00 per hour is recommended** for approval by Council. It is further recommended that the PBOT Director have the authority to make meter rate adjustments that remain within this range. The PBOT Director's decision would be informed by the data metrics described in preceding section.

Measuring the relationship between pricing and parking demand is referred to as price elasticity of demand. A rate increase would be expected to reduce peak observed occupancies, but there are too many interrelated factors to accurately predict the anticipated change. Based on the results from several studies, *Parking Management for Smart Growth* (Willson, 2015) reports that parking elasticity values typically range from -0.1 to -0.4, with -0.30 being the most common value. That is, a 10% price increase would be expected to reduce demands by 3% for an elasticity factor of -0.30. Ultimately, routine price adjustments will be used to achieve target occupancies within each district and a precisely calibrated elasticity factor is not necessary. However, this -0.30 elasticity factor serves as a useful starting point to help inform the *magnitude of adjustment*, which is capped at +/- \$0.60 per year.

Using these assumptions, including \$0.20 incremental changes, a maximum rate change of \$0.60 per hour, a minimum hourly rate of \$1.00, a maximum hourly rate of \$5.00, an assumed elasticity factor of -0.30 to inform the magnitude of adjustment, and a **target peak occupancy range of 65% to 85%**, the following data-driven rate adjustment process will be used to inform rate adjustment recommendations for the PBOT Director's review:

- Meter rates should be **reduced** according to **Figure 2**:
  - If the observed peak occupancy for a district is less than 65%
- Meter rates should be **increased** according to **Figure 2**:
  - If the observed average peak occupancy for the district exceeds 85%, AND
  - Average occupancy reaches or exceeds 85% during 3 or more hours during the day, AND
  - Average occupancy reaches or exceeds 70% during 5 or more hours during the day, AND
  - Annual on-street meter and SmartPark pay station transactions have not decreased since the last meter rate increase

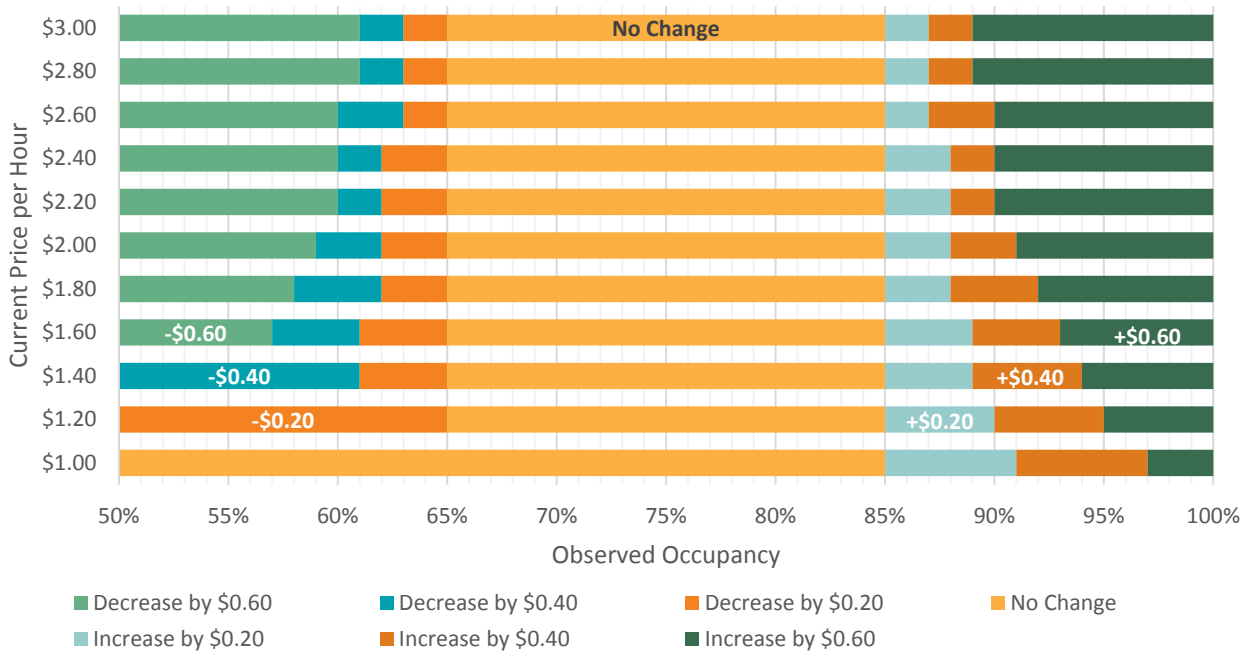


Figure 2: Recommended Hourly Rate Adjustments for Meter Districts

This process is consistent with the 2016 meter rate adjustment within the downtown meter district. In 2014, average peak occupancies were observed to be 90%. The meter rate at that time was \$1.60. Using these factors, **Figure 2** would suggest a rate increase of \$0.40 would achieve desired occupancies, which is what was implemented at the time.

In some cases, known land use changes, low citation rates, or any number of other local factors could lead the SAC or TMA to recommend a delayed or modified rate adjustment compared to the outcome of the data-driven process. These recommendations should be documented and submitted to the PBOT Director within 90 days of the submission of the completed data collection report for consideration.



## APPENDIX

Table 1: Estimated Change in Demand, Assuming Price Elasticity of -0.30, Standard Pricing

Estimated Demand Increase			Starting Price	Estimated Demand Reduction		
-\$0.60	-\$0.40	-\$0.20		+\$0.20	+\$0.40	+\$0.60
-	-	-	\$1.00	-6%	-12%	-18%
-	-	5%	\$1.20	-5%	-10%	-15%
-	9%	4%	\$1.40	-4%	-9%	-13%
11%	8%	4%	\$1.60	-4%	-8%	-11%
10%	7%	3%	\$1.80	-3%	-7%	-10%
9%	6%	3%	\$2.00	-3%	-6%	-9%
8%	5%	3%	\$2.20	-3%	-5%	-8%
8%	5%	3%	\$2.40	-3%	-5%	-8%
7%	5%	2%	\$2.60	-2%	-5%	-7%
6%	4%	2%	\$2.80	-2%	-4%	-6%
6%	4%	2%	\$3.00	-2%	-4%	-6%
6%	4%	2%	\$3.20	-2%	-4%	-6%
5%	4%	2%	\$3.40	-2%	-4%	-5%
5%	3%	2%	\$3.60	-2%	-3%	-5%
5%	3%	2%	\$3.80	-2%	-3%	-5%
5%	3%	2%	\$4.00	-2%	-3%	-5%
4%	3%	1%	\$4.20	-1%	-3%	-4%
4%	3%	1%	\$4.40	-1%	-3%	-4%
4%	3%	1%	\$4.60	-1%	-3%	-
4%	3%	1%	\$4.80	-1%	-	-
4%	2%	1%	\$5.00	-	-	-