

ON ABOLISHING PARKING CITATIONS

Two transportation scholars and researchers argue that the parking ticket has outlived its useful life.

By Anam Ardeshiri and Mansoureh Jeihani

Parking management is an essential part of transportation studies. The provision of sufficient parking spaces is vital to sustaining urban activities; parking shortages affect streets' level of service and reduce mobility and safety. As parking professionals know, a noticeable percentage of cars need to cruise looking for street parking during rush hours, leading to increased travel time and frustration. Planning, community, and parking industry operators are quite aware of parking demand variations during the day, but the street parking supply system is not generally smart enough to fully respond to demand fluctuations. This imbalance can be one of the reasons behind the need for parking citations.

Street parking can be effectively managed by pricing policies that are similar to those used in commercial off-street parking. However, fees are traditionally collected by meters, which are not necessarily set for dynamic pricing.

What Is the Issue?

Parking violations are not foreseen in travel demand models and therefore counteract travel demand management strategies. Violations trigger such enforcement efforts as ticketing, towing, and/or booting. Parking citation statistics show that drivers of all types are exposed to and continue to receive parking citations indiscriminately, and that those citations may be perceived as unfair in some cases. A driver may stay only a few minutes past the pre-paid meter time and incur a \$32 ticket.

It is likely that a user, on parking in a time-limited zone, is not aware of the required time to perform an activity. Motorists may be subject to luck as to whether or not they receive a ticket. The current system to collect parking fees appears imperfect and unfair, and it costs people either by forcing them to pay more for additional time to avoid a ticket, or with tickets when they return even a few minutes late.

Some parking meters operate in similar ways to their first predecessors, which were installed in Oklahoma City in 1935, and only accept coins, which worsens the dilemma. In the 21st century, the idea of using coins is passing, and it is predicted that paper money will be displaced by various types of electronic payments in future commerce. Technology should help solve parking problems for drivers and still raise revenue for cities.

Glancing through Baltimore City parking citation data magnifies the issue vividly: In 2011, nearly 130,000 tickets were issued at expired parking meters, grossing revenue of more than \$3.5 million (data.baltimorecity.gov) in a city with approximately 620,000 residents. The parking citation issue is more critical in larger cities.

Proposed Plan

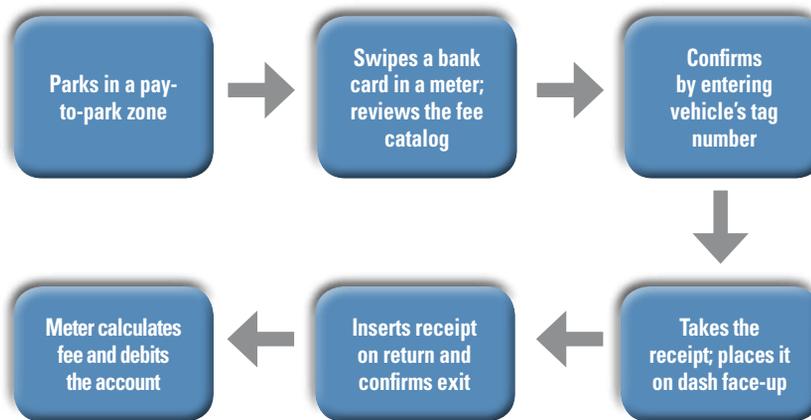
We propose that parking meters be programmed to accept bank cards and calculate fees based on the exact parking period used. This process differs from the current system, which charges for an estimated time at the beginning of the parking period. Meters that only take coins should be upgraded to electronic fee collector machines. A minimum fee would be assigned for every vehicle that desires to park, for instance, \$1 as a ground fee. Beyond this minimum fee, the driver would be charged for his or her exact usage time. The fee is calculated by applying a progressive hourly rate and is debited from the account associated with a card that was swiped earlier. The account remains open during the parking period, and concludes by confirming an exit command in a fashion much like that used in some parking garages. The fee is fair because it is based on the exact amount of time a driver uses the facility. In this method, there is no point of concern about the parking expiration time at the beginning of one's time parked. Based on the current parking assets, the basic steps of proposed plan are framed here:



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Proposed procedure for parking fee collection

To ensure that turnover is not compromised and spots are not occupied for too long, the hourly rate is designed to rise progressively. The longer a vehicle is parked in a high-demand area, the higher the rate will be as time progresses. Our pricing scheme depends on the demand pattern, time of day, and potential special events. If the rate is \$2 per hour in an existing two-hour limited zone, \$4 per hour (for instance) can be set for the second two-hour period, and so on for the hours that follow. A fee catalog may be available to users on the meter's screen.

This approach dismisses current parking time limits and manages turnover with efficient pricing. The progressive pricing scheme can do away with parking tickets due to expired meter time and recoup citation revenue. It may be prudent to program each receipt to expire at midnight. Also, there should be a minimum card balance (e.g. \$50) for a cardholder to be permitted to park in the zone. A 10-minute delay now may cost only \$1 and not \$32.

Plan's Benefits

- The proposed meter pricing system eliminates parking citations, facilitates traffic that keeps moving, promotes businesses, and finances suppliers.
- There is no need to invest in a specific device or additional features (e.g. camera or sensor) with this method.
- The inexpensive technology to resolve this issue does not need to be invented. It is available and in use around the world to streamline fee collections of all kinds.
- The idea is implementable and can be extended to most medium and large cities that have a high demand for downtown street parking.

Envisioned Limitations

Practical requirements of the plan should be addressed to ensure implementation that will mitigate the prompt need for law enforcement. A typical violation that should be controlled by ticketing is terminating the meter session prior to the user's exit. A barcode on the receipt can verify the termination of a parking session more securely than swiping the card a second time.

Inserting the receipt into the meter at the end of the parking session confirms the vehicle's tag and account information. Therefore, every time there is no receipt on the dash, the vehicle can be subject to enforcement. Parking attendants simply check for a valid receipt, including date, tag number, and barcode, on the parked vehicle's dash to ensure that the

vehicle is in the loop. Neglecting to insert the receipt at exit time could lead to charging the account for the rest of the day. However, there are still some limitations in applying the proposed procedure. The requirement of a bank card is the major one; paper bills and coins are impractical in the proposed system. The plan still necessitates enforcement and requires patrolling by parking attendants.

A Preliminary Economic Analysis

One of the important factors in parking demand analysis is users' willingness to pay parking fees when the rate is not static. Economic evaluation is based on the net social welfare, which is the difference between the social benefit and cost of a policy. According to the economic efficiency rule, to socially justify a transportation policy, the net social welfare should not decrease. In the case of static pricing for street parking in congested high-demand areas, if those users who benefit more do not have to pay more for it, demand for fixed facilities will increase. Equalizing the on-street meter fee to the off-street price

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has proved to minimize the socially wasteful parking search cost. Introducing variable parking rates due to demand fluctuations is both fair and economically efficient.

A preliminary economic evaluation of investment for the proposed method is not based on profitability, but on social welfare.

The key proposition of the proposed method is that the price increases with additional parking time. The rate is hourly but charges are minute-based. Considering that consumers are exempt from paying meter violation fees, consumers' surplus will not reduce by charging a variable rate.

It may be argued that a city's revenue will decrease because of the loss of fees from citations. However, the city can benefit from escalating rates. Nevertheless, with solely social welfare improvement, it is legitimate to advance this kind of fee collection system. If the current

charges for each limit double incrementally, the new meter revenue will equal current total revenue (meter plus citation), assuming reasonable parking durations. Citizens would be more satisfied with the fair amount for using urban facilities.

Demand for parking, turnover, and parking duration are controlled by efficient pricing in the proposed model rather than by enforcement. It would be very costly for consumers to stay in a parking spot for a long time. It also features subsidy-free pricing, in which a group of users (the ones who are ticketed) do not pay for all other users and each user pays a fair parking fee. Although the implementation of such pricing policies may appear challenging to cities, similar to the remarkable precedent example of E-ZPass, this novel idea can efficiently qualify for the urban street parking fee collection. 



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