MAKING *the* MOST

Optimizing meter placement is key to parking success.

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There's been a shift in parking technology adoption in recent years. Where single-space meters and gated systems once monopolized the parking landscape, both public and private parking operators are now realizing the benefits of multi-space parking pay stations. This technology offers the flexibility to meet the needs of both on- and off-street parking implementations and includes a variety of features that streamline parking operations, increase consumer convenience, and encourage compliance. Additionally, advanced communication enables operators to integrate new technologies, remotely configure and monitor pay stations, and analyze revenue and operational data in real time.

While these benefits are significant, they can all be undone if pay stations are incorrectly placed. Correct meter placement is vital to the success of a multi-space parking implementation.

Here, you'll learn how to achieve maximum performance, customer satisfaction, and revenue from your multi-space pay station deployment through proper placement of the meters. This includes a critically important but often-overlooked element of placement: pedestrian traffic flow. Other key elements include optimizing placement based on mode of operation, power supply, mounting surface, and disability access.

Pedestrian Flow

Choosing the number and placement of meters is a careful balancing act, and a key variable in this equation is pedestrian flow—understanding which direction consumers are going once they have parked. For example, if too many meters are placed in areas of low volume or too few meters are installed in areas of high volume, the deployment will not reach its optimal performance. Regardless, if it's on- or off-street, operators should conduct a pedestrian flow study to ensure both the number of meters and their locations meet pedestrians' needs.

In addition to evaluating the proximity of pay stations, operators should determine whether the majority of pedestrian flow is headed in a single direction or in multiple directions. In the case of off-street parking especially, one must determine whether the majority of pedestrian flow is through a single entry/exit point or if there is an even flow across multiple points.

Ideally, meters should be placed within pedestrians' natural path. Avoid placing meters in locations that require pedestrians to deviate from their natural path to pay for parking. This increases both consumer satisfaction and compliance.

The volume of pedestrian flow is another key consideration. Is the flow of traffic low or high? Does it spike at specific times of the day? More meters may be required where a commuter bus or train station is close, for example. These locations tend to see a high number of transactions in a short period of time. In cases such as these, placing several meters close together can reduce line-ups and installation costs and prevent consumers from choosing to risk a citation because they don't want to miss their train or bus.

Pedestrian Flow and Modes of Operation

The operational mode often dictates the number of meters to deploy, and pedestrian flow weighs heavily on where to place them. Selecting the right operational mode for both your parking system and pedestrian flow will enhance consumer convenience and maximize your revenue potential.

For both on- and off-street parking operations, there are three primary modes: pay-and-display (PND), pay-by-space (PBS), and pay-by-license plate (PBL).

In a PND environment, the consumer must walk to the meter, purchase a permit, and then return to the vehicle to display the permit for enforcement purposes. When planning a PND installation, be mindful of the distance the consumer must walk to and from the meter. Also consider the seasonal weather variation in your area—inclement weather or extreme temperatures can deter consumers from compliance if the walking distance to a meter is too great.

In an on-street PND application with parallel parking, multi-space meters configured to support PND will cover approximately eight to 12 spaces. This means two to three multi-space meters per block face within a large city block. With angled or head-in parking spaces, up to 18 spaces may be covered by a single meter because the spaces are adjacent to each other and require a comparable distance to walk. For an on-street implementation, meters should be no more than 75 feet away from any parking space. For an off-street implementation, meters should be no more than 100 feet away from any parking space.

In a PBS or PBL deployment, the consumer is not required to return to the vehicle to display a permit. Instead, he must walk to the

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meter and key in the parking space number for PBS or the vehicle's license plate number for PBL. This means there's greater flexibility in the number and location of meters required—usually fewer and more aligned with pedestrian traffic flow in comparison with PND operations. In an on-street application, one or two meters can cover a large city block face. For parallel parking, this adds up to approximately 20 spaces; for angled/head-in parking spaces, a single multi-space meter can cover up to 25 spaces. For an on-street implementation, meters should be no more than 100 feet away from any parking space.

In off-street deployments, multi-space meters are capable of managing hundreds of spaces with one meter, but considerations such as the size and layout of the facility, direction of foot traffic, and volume of traffic flow all play a role in the consumer experience beyond the meter's sheer capabilities. In addition, implementing too few meters can make the transition from another parking model, such as single-space meters, much more difficult for the consumer, especially if meters are located too far from where the consumer is used to having to walk.

Case Study: Redondo Beach, Calif.

The City of Redondo Beach, Calif., recently installed PBS parking meters in two garages. Because this was a PBS deployment, the proximity of the pay stations to the parking spaces wasn't as much of an issue as placing the pay stations in an area that was convenient to the consumer's eventual destination.

Also, because these garages serve two popular tourist destinations (the marina and the pier), the ease of finding and using the pay stations was critical to out-of-town users who may not be familiar with the area and the garage layout. In this case, because the majority of consumers use the exits closest to the marina, the city installed more pay stations at those locations and fewer at the other exit points in each garage.

Other Considerations

Power Supply

Power supply is another consideration when determining the placement of meters, as this can dramatically affect the cost of the installation as well as ongoing expenses. Two primary options exist today: AC and solar power.

With AC-powered meters, the cost of routing power is usually the largest determining factor of meter placement. If replacing an existing AC-powered meter, you must determine whether the existing electrical meets the requirements of the new meter or if new conduit needs to be run.

If you plan to route AC power to your new meters, follow all local regulations and codes. Check with your vendor on the power requirements of the new meters. The ideal location for the placement of a meter isn't always an ideal location to run power. In these situations, you will need to decide if the desired meter location outweighs the cost of routing AC. In some cases, sidewalks already have power source locations, which decreases the cost of routing power.

Solar is an alternative to AC power and is much more flexible in terms of placement. No routing is required, and both the install and operating costs are lower. However, environmental considerations must be taken into account. Will the meter receive enough sunlight, or do trees, signs, buildings, or seasonal considerations impede this? For the average meter operating with real-time services, such as credit card processing, to sustain itself on a solar charge, it is often recommended that the meter receive approximately two hours of direct sunlight per day.

If you are purchasing a meter with a solar panel that can be rotated or moved, you will have some additional flexibility in the placement of the meter, as the panel can be adjusted according to environmental conditions.

Mounting Surface

The surface on which meters are mounted is another important consideration from a theft, vandalism, and safety perspective. The proper mounting surface also has implications on the meter's longevity and maintenance needs. Concrete is the standard material used for meter mounting pads.

While asphalt and brick may appear to be viable alternatives to concrete, they are typically not stable enough to securely support a meter. Check with local regulations and survey requirements before pouring new pads. Most meter vendors will provide detailed information on how to prepare the mounting surface.

Disability Access

In addition to the physical environment in which meters are installed, it is also imperative that all consumers, including disabled persons, have access to the meters. Be sure to review local and federal ADA (Americans with Disabilities Act) requirements concerning meter height, access, and space around the meter, as well as placement of ramps.

The ultimate driver of meter placement planning—and the success of your multi-space parking implementation—lies in optimizing for pedestrian flow. If you do this, along with selecting the best operational mode, power source, mounting surface, and accessibility factors, you will gain the most ROI from your investment in multi-space pay stations and have satisfied parking consumers.

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