**PARKING SENSE**

When your facility primarily serves the sick, injured and disabled, both patient experience and service efficiency require that people be able to find convenient, accessible parking as easily as possible.

# Business Impact

⛰ Cost Optimization

📈 Operational Efficiency

🌐 Sustainability

# Business Description

Project Manager, Engineering/Contracting Firm

"At many of the other parking facilities [on the property], the parking systems are turned off. The gate arms are up, they don't operate because they might be closed when they ought to be open, so they just turn them off and leave the gates up. Or they're on, and everybody knows that the car counts are wrong."

This vast medical campus is home to one of the country's largest and most respected military medical centers. A consolidation of three area military medical centers, this enormous complex now spreads across 243 acres. The center has more than 2.4 million square feet of clinical space where some 7,100 people serve more than one million active duty and retired military personnel and family members.

The campus is as technologically advanced as it is large. Two buildings have been awarded LEED Gold certification (for Leadership in Energy and Environmental Design) – the second highest rating. LEED-certified buildings promote health and reduce costs by saving energy, water and resources and generating less waste.

In addition, facilities boast some of the most advanced healthcare technology available for the full spectrum of care from surgery and rehabilitation to cancer treatment and long-term care. For as large and technologically advanced as the campus is, it lacks adequate staff parking. And, this has created a problem for employees and patients alike.

While the campus is served by Washington's METRO subway system, most employees and patients arrive by car. Staff parking facilities were designed on a 1:3 ratio (one spot for every three employees), but even at that ratio, parking shortages have caused employees to waste valuable time driving around staff garages looking for spots.

In some cases, out of desperation, they end up parking in designated visitor garages and lots in order to report to work on time. At least on

one occasion, this resulted in a patient missing his appointment because he simply couldn't find a place to park. Administrators realized this problem had to be solved.

Patient satisfaction and the center's reputation were going to suffer if it continued. And reimbursements could be affected as a result. The Centers for Medicare & Medicaid Services (CMS) are moving toward a pay-for-performance program that is based in part on patient satisfaction (2% of payment can be withheld if quality care is lacking). So, the center couldn't risk the possibility of more delayed and missed appointments due to the unavailability of parking.

Because land is scarce in this heavily developed metropolitan area, it wasn't feasible to buy a lot and develop a large garage to expand capacity. Instead, the new employee parking facility would have to be built in an existing space. This meant the new garage would need a system to optimize use of the limited space.

A better, more accurate system was needed for the new garage than the camera-based technologies used in existing garages. Those systems provided inaccurate counts about the number of spots available. In fact, it was common knowledge amongst employees that the available spot count couldn't be trusted. The count was so unreliable that the decision was made to simply disable the systems and leave the gates up permanently – leading to more circling of garages looking for spots.

The administrators couldn't afford to waste money on a parking system that wouldn't work reliably in the long run. They needed a sophisticated system that would enable employees to quickly and reliably find a parking spot so they could start work on time and leave visitor spots for patients. They also needed a system that would be cost-effective to maintain. And, they needed a long-term solution that would evolve as parking technology changes.

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Project Manager, Engineering/Contracting Firm

"If you're driving through the parking garage, there are red and green lights that tell you whether there's a spot available. With the floor devices (sensors), every thing's internal – the battery, the transmitter. It's all in the device. You don't have any wiring or conduit or stuff that you can damage."

Engineering/Contracting Firm

"There's less physical structure installation - less conduit, less communication wiring because it's doing it electronically. It gives you some very detailed information like if you're on the street, there's two handicapped spots available on the fifth floor."

[3]

- **Solve staff parking shortage problem, eliminating the need for employees to use patient parking**
- **Improve the patient experience by reducing the number of appointments missed or delayed due to parking shortages (because staff take visitor parking spots)**
- **Ensure highest possible Medicare reimbursement for healthcare services (not losing 2% of payment because patient satisfaction is low) HCAHPS (the Hospital Consumer Assessment of Healthcare Providers and Systems) is a patient satisfaction survey required by CMS (the Centers for Medicare and Medicaid Services) for all hospitals in the United States.**
- **Bring efficiency to parking while working within the constraints imposed by lack of available land**
- **Gain operational efficiencies over older systems that failed to deliver**
- **Purchase a solution that could solve the "lack of trust issue" associated with the present dysfunctional parking systems, and eventually replace them**
- **Implement a cost-effective solution that works reliably in the long-run, is reasonable to maintain and keeps up with – or stays ahead of - evolving parking technology**
- **Employ a "green" solution that reflects the institution's commitment to sustainability**

Project Manager, Engineering/Contracting Firm

"This system is more accurate. The other systems are not telling you the truth. If you see a sign out there that says there are 22 spaces available, there might only be two spaces available. They don't count the cars in and out as accurately as this one does partially because this system is more wireless and is available to monitor better because you don't have to have as much physical infrastructure."

## Results

This premier military medical center is committed to providing outstanding care to the military personnel and families it serves. Yet, it was being stymied by something as simple as parking. With inadequate facilities for the 7,100 employees who work at the facilities, the

Project Manager,
Engineering/Contracting
Firm

"Because of how the other systems physically operated, they were more inclined to miscount. A person walking by the sensor could count as a car where Parking Sense is much less likely to do that. That's why the other systems are giving inaccurate car counts because they sometimes read pedestrians as a car."

question wasn't whether additional parking was needed but rather how to provide it in an area that was already fully developed.

The institution would have to make the most out of the limited space available. A sophisticated technological solution would be required. The institution found that solution in Parking Sense. The system has been installed in the new 600-spot garage, and in the coming years, it will replace the older, dysfunctional systems in other garages.

In the new garage outfitted with the Parking Sense system, employees don't waste time circling around looking for spots. They quickly see if spots are available and where they are located so they can report to work on time without robbing patients of spots in the patient parking facilities.

This has helped reduce delays in patient appointments (which average up to 20 minutes at US healthcare facilities according to the Consumer Assessment of Healthcare Providers and System Survey). Appointment delays affect an entire day's schedule and have negative consequences for both patients and staff.

As staff fall behind, their stress increases and the patient experience suffers.  Because Parking Sense eliminates parking-related delays, it stands to significantly help address this problem. This will be especially true as the system is installed in other parking facilities at the center, replacing older, non-functioning systems.

By solving the *staff* parking shortage problem, the system is ensuring that adequate *patient* parking is available, helping to eliminate appointment delays caused by patient-related parking problems as well. This improves the patient experience, which in turn, helps ensure the center receives the fullest possible Medicare reimbursement for services it provides, improving revenue.

Because the Parking Sense system uses the latest technology (infrared sensors, lights and software) rather than cameras, it reliably reports information on parking availability. This stands in contrast to the camera-based systems that were disabled in other lots because they too

[5]

often mistook pedestrians for cars and provided inaccurate information about parking availability, leading drivers to waste time looking for phantom spots.

In addition to being more accurate, the technology used in the Parking Sense solution is cost-effective. LED lights are energy-efficient and long-lasting, lowering monthly utility bills and maintenance costs. The battery-powered sensors are inexpensive to maintain and don't draw electricity. And the software that operates the system is cloud-based, so there is no infrastructure cost for the center to bear. Further, the Parking Sense solution does not require staffed gates or "ticket-dispensers," furthering lowering costs. For a center that relies on government funding, all these operational efficiencies are critical.

In addition, the solution is "future-proof." It is scalable and expandable, and with the data plan and service maintenance contract, it can be upgraded at a fraction of the cost of a new system. This means the useful life can be extended indefinitely, reducing total cost of ownership.

Finally, the system provides an environmentally responsible solution that reflects the values of this huge medical complex. By shortening the amount of time drivers spend looking for parking, the carbon footprint of this garage is reduced (and will be in others as the system is implemented in older parking facilities). In addition, the exhaust fan doesn't have to run as frequently, reducing electricity usage. And the technology itself is "green." This is exactly what this complex with two LEED-certified buildings was looking for in a solution.

## Metrics

- **Cost avoidance associated with building a larger more expensive facility saving $1.62m (600 x 10% (overbuild required for older technology to do the same job as a PS solution) x $27k per**

[6]

- Optimizes parking in new 600-spot employee parking garage, helping to solve problem of staff having to use patient parking facilities

- Helps eliminate parking-related appointment delays and schedule disruption (doctors, PA's and other expensive personal)

- Improves patient experience by reducing stress caused by delays/problems in finding parking

- Helps increase revenue through improved customer satisfaction – avoiding 2% non-reimbursement Medicare "penalty" under new value-based CMS reimbursement program. HCAHPS (the Hospital Consumer Assessment of Healthcare Providers and Systems) is a patient satisfaction survey required by CMS (the Centers for Medicare and Medicaid Services) for all hospitals in the United States.

- Provides reliable, accurate information on parking availability for operational efficiencies (unlike old systems which were so unreliable that they were disabled)

- Provides cost-effective solution that promises long-term savings on energy bills and maintenance

- Provides a "future-proof" system whose useful life can be extended indefinitely, reducing total cost of ownership

- Reflects values of environmentally conscious organization

- For this government hospital facility, the Parking Sense Automated Parking Solution is more an investment than a cost

[7]