

No Decal?

No Problem





Campus parking issues go beyond tickets and hangtags. Institutions are now adopting high-tech, cost-effective solutions to offer students and visitors convenience and ease of use, while achieving sustainability goals.

By Margo Vanover Porter

These days, when students and visitors pull up to a parking meter on a campus, they expect multiple payment options, whether they stay five minutes or five hours. What they don't expect is to hunt for change by digging in the seats of their cars, says Casey Jones, spokesperson and past board chair for

the International Parking Institute (IPI), Alexandria, Va.

"Consumers today want mobile applications and solutions," he says. "They want convenience. They want options with real-time information. We're seeing a huge advancement and explosion of applications, whether students want to find parking, make a reservation, and start or conclude a parking session. All of those are available through mobile applications that allow us to offer a level of convenience, reliability, and security that we haven't had in our industry's history."

According to IPI's *2015 Emerging Trends in Parking* survey, technology continues to reshape and revolutionize an industry previously best known for issuing tickets and demanding that drivers "stay between the lines." In "Top 10 Emerging Trends in Parking," on page 20, the survey notes that a "move toward innovative technologies to improve access control and payment automation" and the "prevalence of mobile applications" are the top two industry trends identified by parking professionals.

Another trend noticed by Jones is a decrease in what has been the typical model for parking on campus: the annual permit. "We've come to realize that people don't need to drive every day, and they don't want to drive every day. We're moving away from the all-you-can-eat permitting to something that is much more aligned with how people are actually commuting to campus."

This variation in transportation offers numerous benefits, he says. "Spaces on campus can be used much more efficiently, consumers don't have to pay for a year's worth of parking when they don't need it, and goals in sustainability and alternative transportation can be addressed."

To tap into the technological trends occurring on campus parking lots, *Business Officer* recently interviewed representatives of four types of institutions.



Understanding Visitor Demand

Athletic, arts, and cultural events attract well over one million visitors a year to the University of California (UC), Irvine, says Ron Fleming, director of transportation and distribution services. “We don’t just have faculty, staff, and students,” he says. “We also have visitors, who create a demand that needs to be managed.”

To that end, the institution several years ago implemented a guest reservation system that puts control of parking into the hands of departments for their guests and events. “They can register users coming in for a whole year or every Tuesday, Wednesday, Thursday; and we’ll recoup the cost once these people come to our information booth, pick up their permit, and park.”

University of California, Irvine

Students: 30,000
Faculty: 5,700
Staff: 5,300
Parking revenue: \$12 million
Parking expense: \$10.8 million
Permits: 12,000
Spaces: 14,000
Surface lots: 43
Garages: 4

A major advantage of the system, Fleming says, is the ability to understand visitor demand. “Through this technology, not only can we serve the customer and make it seamless for the visitor, but we also

use the data for planning. We know where there is growth, where there are spikes, and where there is fluctuating demand that we need to address. When the campus planners come in and say, ‘We’re adding this type of building. What would that mean for our visitor environment?’ I usually can use data from a similar type of building and extrapolate potential future visitor demand.”

Because all visitors need a permit, UC has another option as well: People who are attending an athletic or cultural event can go to the university website and pre-purchase parking. “They can put in their license plate number and buy the permit,” he says. “They don’t need a paper parking pass. They just come in and park. Our enforcement staff drives around with

Keep Customers Happy—and Gather Data for Future Decisions

Parking and access management for universities is as critical as quality instruction, an inspired physical plant, and an engaged student body, says Casey Jones, spokesperson and past board chair for the International Parking Institute, Alexandria, Va.

“We need to be willing to jettison old ideas and practices that no longer serve the university and campus community,” he says. “Universities can’t build themselves out of their parking challenges. We’ve got to figure out ways to make the spaces on campus as efficient as we can and move more people from driving alone to using other alternatives. Access management is not just about parking cars. People are riding bicycles, taking public transportation, using car share, carpooling, and vanpooling. Access management encapsulates all those things and is the very best way to address campus needs.”

While acknowledging that access management options carry financial considerations, Jones insists that the latest improvements “by and large result in a positive return on investment and a happier customer group, which is a qualitative component that is incredibly important.”

Mike Blackwell, director of parking and transportation, Northern Virginia Community College, agrees. “Sometimes we get hung up on the affordability of parking, but we don’t think about the customer experience and ease of use. A lot of students are first-timers. They’re nervous about a thousand other things that are not parking related. Why not make their first impression of secondary education great? We can use technology to make it easier for them and as seamless as possible. We

need to continue exploring innovative ideas not only to solve current parking challenges, but also to prevent future ones.”

Other advice from parking professionals includes:

Base your decisions on data. “Break down your expenses and revenue by parking space,” advises Dan Hofmann, director, parking and transportation services, Clemson University, Clemson, S.C. “What are the metrics? What is your cost to build parking spaces versus the alternative of putting commuter choice or transportation demand management in place, such as carpool or car share? What can you do to reduce demand? If you’re not using data, you’re just another person with an opinion.”

Ron Fleming recommends putting together a tight business case analysis prior to any construction. “Before you build, your analysis should examine the cost of providing alternative transportation or sustainable modes in lieu of that per-stall cost of \$25,000 or \$50,000, depending on what you’re building and where you’re building it,” says the director of transportation and distribution services, University of California (UC), Irvine.

Currently, UC trends indicate a drop in students interested in obtaining driver’s licenses. “We’re seeing a lot of freshmen and sophomores who don’t have driver’s licenses. They are becoming reliant on other modes, such as Uber, Lyft, and the bus system. In our resident, undergraduate housing, we sell permits to 11 percent of the students based on the current bed count. You want to make sure that planning takes into account any new patterns.”

license plate readers. If the people who park are on the list, they're fine."

For visitors, the normal daily event rate for parking is \$10. "We've had that rate for about eight years, which is pretty reasonable for our area. We try to keep it affordable. We don't want to price it so high that people question whether the event is worth coming to."

UC also relies on license plate recognition for residential and employee parking, although Fleming points out that the vast majority of faculty either walk or bike to work because "they have the luxury of pretty much living on campus in really nice local housing."



The technology that operates the various parking systems was developed in-house by university IT teams. "We don't normally look for vendor-supplied solutions," says Fleming, who has a full-time parking staff of 40-plus. "We might look for vendor tools, like the license plate readers. We buy the cameras but not necessarily the software."

Because some of the existing surface parking is being taken over by new

Northern Virginia Community College

Campuses: 6
Students: 50,000 (per semester)
Faculty/staff: 2,600
Parking revenue: \$6 million
Parking expense: \$2.5 million
Permits: 13,000 (fall)
Spaces: 11,000
Surface lots: 17
Garages: 4

buildings, UC is looking at constructing another structure, which Fleming hopes will go online by 2020. "We have about \$12 million in reserves right now for

Work with students, faculty, and staff. Find out what they love—and hate—about parking on your campus. "Once you know what their issues are, you can see if there are ways to straighten them out," Hofmann says.

For example, after giving a presentation to the IT student advisory board on an application giving students real-time availability of 42,000 spaces in 10 lots, Hofmann walked away with a \$90,000 contribution toward a \$350,000 five-year contract. "We got student buy-in," he says. "They were excited to hear about technologies that benefit students and take the hunt away."

Consider demand pricing. To keep parking spaces open in high-traffic areas, such as the bookstore or library, UC employs demand pricing. For example, to park in stalls in the structure close to the bookstore, the rate is higher than average—up to \$3 per hour—depending on the stream of cars. "We want to keep those stalls moving so that people don't park there all day and prevent others from using the bookstore," Fleming says. "The rate fluctuates depending on the time of year and the day of the week. We can escalate pricing, depending on demand. If demand drops, so does the price."

Talk parking to your peers. "When you've seen one parking operation, you've seen one parking operation," Hofmann says. "Every institution is a little different, but you can always take something and use it to your benefit. Look at what's out there."

Be prepared to respond. The supply and demand for parking spaces varies based on growth in enrollment, staffing, and facilities.

"As the university plans for construction projects, parking must be adjusted when lots are closed temporarily or spaces are lost permanently due to new buildings," says Jacklyn Dudley, vice president of finance and administrative services, Murray State University, Murray, Ky. She also encourages business officers to consider both the initial and recurring costs in their decisions.

Offer shared parking. Don't overregulate parking, Fleming advises. "If you define this area as faculty/staff, this one for students who are sophomores, and this one for graduate students, you end up with a land-use problem. You can never create enough stalls because you're looking at a one-to-one ratio."

Campuses need to understand, adds Fleming, the differing needs of their populations and accommodate that through shared parking.

Price it right. To keep everybody happy, business officers and parking professionals sometimes underprice parking, Fleming says, which ends up creating more demand. "People think, 'Well, I don't need to carpool. My monthly permit rate is pretty low.' If you really want people to move into sustainable transportation modes, you have to make your parking pricing a part of the equation."

parking. We're not state funded so our users have to pay for lighting, asphalt work, the debt to construct the facilities, and operations. Our debt per year is about \$5.8 million. We have about \$60 million in debt for structures from bond-financed loans that the campus system groups together with other infrastructure improvements to sell the bonds."

He points out that construction costs average \$25,000 to \$35,000 per stall for parking within a structure above ground, and below-ground cost can accelerate to \$55,000 per stall, depending on site issues. "Surface parking can be \$7,500 to \$9,500 per stall, if you're not counting the cost of the land," he says, "but ownership of real estate can be an issue."

Commuters Seek Flexibility

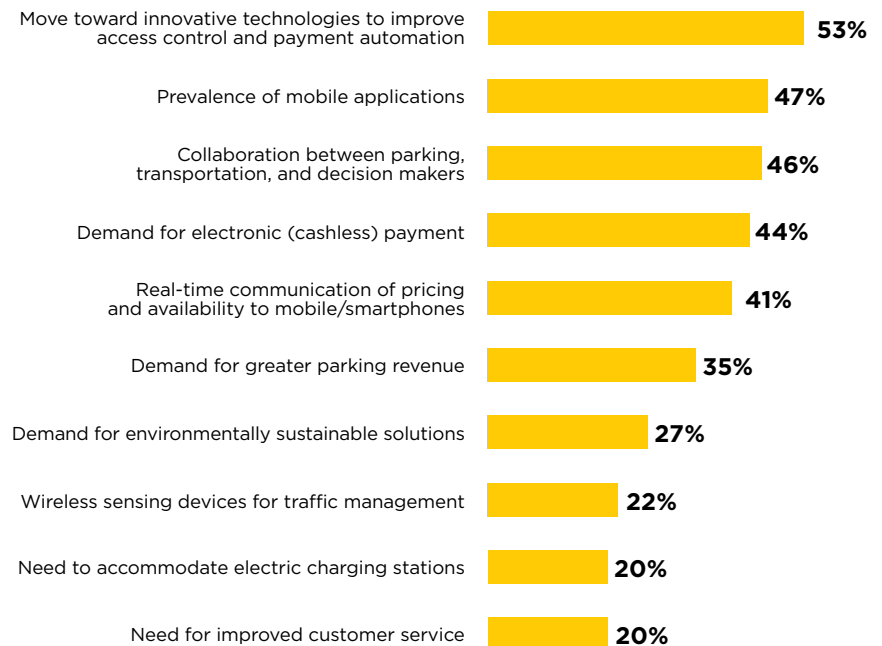
Parking transactions with mobile payments, which started in the fall of 2015 at Northern Virginia Community College (NOVA), are easily topping 6,000 a semester, says Mike Blackwell, director of parking and transportation.

"Students are now being provided with many flexible options to fit their needs," he says. "Operations were at one point a manual process, from permitting, paying, and tracking. Now, with the seamless technology from online services, we are able to provide more efficient options to our students. At the same time, we are able to track all the data, which allows us to continue in the right direction with our parking solutions."

Since all NOVA students are commuters but many are not full time, some of them find it convenient and economical to purchase hourly bundles of parking through the Passport Parking app. "They've done the math. The number of hours they will be on campus throughout the semester doesn't require a permit," Blackwell explains.

They can choose 60 hours for \$70 (a \$120 value) or 30 hours for \$40 (a \$60 value). After creating a Passport account, students can then park by the hour at a reduced rate in any B lot or metered space. The college pays the vendor 25 cents per transaction.

Top 10 Emerging Trends in Parking



Source: 2015 *Emerging Trends in Parking*, International Parking Institute

Clemson University

Students: 22,700
Employees: 5,063
Parking revenue: \$5.5 million
Parking expense \$3.9 million
Permits: 24,000
Spaces: 12,500
Surface lots: 34
Garages: None

"Our third-party app allows students to go online, put in their license plate numbers, and pay like they would on a meter," Blackwell says. "This allows us to utilize more parking because hourly parkers are not restricted to just the number of meters we have. It also allows students to add time if they get stuck in class or they need to go to the library. They don't need to worry about coming back out to the parking lot to put time on their meters."

NOVA uses another company, T2 Systems, for the rest of its parking

operations, including the permit system, enforcement, online sales, citations, appeals, and financial reconciliation. Parking, considered to be an auxiliary service, contributes revenues to locally funded programs, shuttle and other transportation services, facility maintenance, institutional support, and capital reserves.

After a study of the Annandale campus, NOVA last fall implemented free parking after 4 p.m. to encourage students to take night classes. "We were getting close to capacity during the day," Blackwell explains, "and we had issues with students parking on streets. We wanted to encourage students to take more night classes, which would help with the academics by spreading out the enrollment."

Blackwell estimates that NOVA has 8.2 students for every parking space. Annandale, the largest campus, has 4,000 spaces, of which 360 are hourly spaces in a garage.

The number of permits sold varies by semester. Fall is the busiest with 13,000, spring averages 11,500, and summer drops to 6,000. "That doesn't mean we're at half

Murray State University

Faculty: 640
Staff: 1,100
Students: 10,998
Parking revenue: \$711,000
Parking expense: \$607,000
Permits: 7,882
Spaces: 7,042
Surface lots: 42
Garages: None

capacity,” he says. “We have found that, especially this summer, we just have more hourly parkers or parkers using flexible options. We’ve seen a boost in those sales.”

Data Drive Decisions

When he arrived at Clemson University, Clemson, S.C., five years ago, Dan Hofmann found that the institution was not using any parking technology. As a result, his biggest challenge was determining the answer to two questions posed by students, employees, and visitors alike: “When is the bus coming?” and “Where can I find a parking space?”

He is now able to answer both questions through the use of the my.Clemson phone app, which allows users to track daytime bus routes on campus, along with estimated arrival times. “We use a product called RideCell for the bus routes that the university runs,” says Hofmann, director of parking and transportation services. It uses information from Clemson’s Tiger Transit bus fleet and the city of Clemson’s TransLoc. “Both systems have been integrated into our university-owned app.”

Users can also find out the current availability of space in surface parking lots designated as accessible, apartment, carpool, commuter, electric vehicle charging, employee, motorcycle, permit, visitor meter parking, and more.

Once they decide which lot to choose, users can—with a quick click—turn their phones into a GPS and get voice-guided directions.

“By listening to and working with students, faculty, and staff, we’ve gone to real-time availability of parking at 10 parking lots with more than 4,200 spaces,” says Hofmann. The campus receives information regarding real-time availability of parking spaces from two companies, Streetline and T2 Systems.

Hofmann first installed radio-frequency identification (RFID) sensor technology three years ago in almost 400 metered spaces so that visitors could find their way around campus. The sensors communicate data to gateways and repeaters around campus. The information then goes up into the cloud, is pulled back through Streetline’s app, and then pushed through the my.Clemson app.

Next, Hofmann looked at ways to pick up real-time availability for students, selecting T2 Systems’ AutoCount, which relies on loops running across the entrances and exits to count cars in and out of lots. He estimates that the two cloud-based systems, along with 27 multispace meters, cost about \$500,000 annually.

Hofmann emphasizes that every parking decision is based on facts and figures, leaving nothing to guesswork. “We’re using data for every decision that we make. For example, we used data to bring our transit fees into line. We have GPS technology on buses, and we take ridership information by time of day to determine appropriate levels of service. At certain times, we were paying the city to run too many buses. We’ve scaled back to free up money to provide additional services to our students.”

Those extra services include student shuttles to and from the airport, as well as Tiger Transit, a safe-ride program for students that operates from 6 p.m. to 6 a.m.



Flashback... 5 Years Ago

In a January 2011 *Business Officer* article, “Flag Transportation Fixes” on parking challenges ...

“Traffic congestion and gridlock existed long before the Internet. With Web-based communications have come new ways of addressing those old problems—sometimes by encouraging people not to use their cars at all but rather to rent a bike, reserve a car-share vehicle, or take a shuttle bus.”

A Temporary Permit, Please

The recent launch of a module that allows faculty, staff, and students, as well as visitors, vendors, and construction workers, to request temporary permits online has been a hit with users, reports Francie Ray, parking supervisor, Murray State University, Murray, Ky.

“Our customers love the ability to request a permit at their convenience 24/7, allowing our customers the flexibility to meet their own schedule,” she says. “In the past, they would have to allow time to complete a handwritten application upon arrival to campus. Now, they only need enough time to walk into our office with a picture ID to pick up the permit that has already been printed and is ready for their arrival.”

Users can access the app, which was introduced in January 2016, through a direct URL from any computer, tablet, or smart phone. Departments and students can submit requests on their guests’ behalf, which means that the permit is ready and waiting at the public safety office for their guests.

"Our faculty, staff, and students have a direct link on the parking channel via our myGate system," Ray says. "This service provides our parking customers the capability of requesting a temporary parking permit 24/7. Both our parking office and 911 dispatch center process the temporary permits, which may be picked up at either our office during regular business hours or at our 911

dispatch center before or after hours and on weekends."

The temporary permit module supplements the BOSSCARS parking management system implemented in 2011 to reduce

data entry errors, and streamline permit and citation processes. "Any citation written on a registered vehicle in our system is automatically downloaded to the proper individual's account," Ray says. "This system generates an automated e-mail to the individuals receiving parking citations each day."

Jacklyn Dudley, vice president of finance and administrative services, says that the initial investment in the parking management system was about \$122,000, with an annual average maintenance cost



of \$15,800 over the past five years. New hand-held scanners for parking enforcement employees cost \$23,000.

"The parking management system has saved the university more than \$5,000 in overtime costs per year," Dudley says.

"Other savings have been accrued in the timely entry and assessment of charges to faculty, staff, and student accounts. In addition, the parking management system and internal parking procedures ensure a more accurate and timely reconciliation of accounts."

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READ AN ONLINE EXTRA

Read "Permit? What's That?" in *Business Officer Plus* at www.nacubo.org to learn about parking enforcement and regulations.