Parking Isn't Free – So Why Not Charge What It Costs?

from Page 17

of three to five minutes in the car searching for an on-street space. "It adds to pollution, gas shortages and traffic," he says.

As shown in the box nearby, Shoup says three major issues have caused the parking problems and major urban design flaws since the advent of the automobile.

The main issue is that the cities require developers to provide a certain number of spaces for parking. The urban planners, he notes, have no clue as to the number of spaces needed for a particular project; they simply factor in a formula (so many per 1,000 square feet) and that is that.

"The developers know far more about how much parking they will need," Shoup says. "Most parking facilities are never filled, and that empty parking space adds to the cost of the development, and to the problems of the inner city."

Another problem is that parkers don't think they get anything for it. If the money collected for on-street parking went, for instance, to clean and safe streets, urban renewal, and good lighting and "streetscapes," the parkers would see their money making a difference.

Pasadena, CA, is a good example of this. The Old Pasadena section of the community was a run-down skid row area. The city installed parking meters and took the money and reinvested it in the area. Now Old Pasadena is a destination location, with tony shops and restaurants.

"It's a classic example of where parking money can be used to renovate the streets, sidewalks, security, lighting and alleys," Shoup says. "The businesses came right along. All the money for urban renewal in Old Pasadena comes from parking. It's a great success story."

Los Angeles collects more than $100 million a year in parking fees. What would happen if all that money were put back into the streets and infrastructure? Potholes would be a thing of the past.

One of Shoup's concerns is that so much open land is used for parking. "If parking were charged at what it cost, people would find other means of transportation," he says, "and more land would be available for parks, schools and development.

"Take a school, for example. Much of the land is used for teacher parking because the neighborhoods don't want them parking in front of the houses. If, however, the teachers (or the school) paid the homeowners for the parking rights, the school would have more land for playgrounds and classrooms. The homeowners would benefit as their streets and other infrastructure would be enhanced. Everyone is a winner."

After all, Shoup says, the money collected from parking is from visitors from outside the area. They end up paying for the infrastructure they are using.

Interested parties can purchase Shoup's book through the American Planning Association (www.planning.org).

PT

Three Reasons Parking is Causing Problems In Cities:

1. Cities require developers to have a certain number of spaces available for parking.
2. Curb parking is free or less expensive than off-street parking
3. Parking revenues go to the general fund, not to the local neighborhood.

AVI – A Case Study

Eastman Kodak Co.

Kodak Headquarters in Rochester, NY.

Eastman Kodak Co. is the world leader in helping people take, share, enhance, preserve, print and enjoy pictures -- for memories, for information, for entertainment. With sales of $13.3 billion in 2003, the company comprises several businesses:

• Health, supplying the healthcare industry with traditional and digital image capture and output products and services.

• Graphic Communications Group, offering on-demand color printing and networking publishing systems, consisting of three wholly owned subsidiaries: Encad Inc., NexPress Solutions and Kodak Versamark.

• Commercial Imaging, offering image capture, output and storage products and services to businesses and government.

• Display and Components, which designs and manufactures state-of-the-art organic light-emitting diode displays, as well as other specialty materials, and delivers imaging sensors to original equipment manufacturers.

• Digital and Film Imaging Systems, providing consumers, professionals and cinematographers with digital and traditional products and services.

Perimeter Security Challenges

Kodak had a growing need to identify vehicles at long distances to secure its security perimeter and to control access to parking facilities and loading dock areas within its Rochester, NY, corporate campus.

Deployment of an automatic vehicle identification (AVI) system was the latest step in an ongoing implementation of state-of-the-art security measures at Kodak. An additional requirement to this phase of the project was compatibility with the company's new employee access control cards from HID.

Finding a Solution

Thomas Rohr, Kodak's Manager of Protective Services for worldwide corporate security, was aware of a new system incorporating HID Prox card-compatible in-vehicle readers and transmitter devices. Because part of the Kodak systems upgrade had included the deployment of Duo-Prox cards for all company employees, the ability to use the card in the NEDAP device to identify employee drivers at distances of up to 33 feet at high speeds (more than 100 miles per hour), while also receiving a vehicle ID was very compelling.

In subsequent design discussions, a plan to use a selection of inter-compatible AVI tags was formulated. The two tags to be deployed would be the HID dual-ID Combi Booster and the single-ID Window Button. Each device would serve a specific requirement.

The Combi Booster would be used anywhere that a vehicle would be required to pass through a secure perimeter. In this case, it was decided that the unit's ability to identify both the driver by his or her Kodak-issued Prox Card and the vehicle by its embedded vehicle ID in the Combi Booster itself was of paramount importance.

In areas such as Kodak parking facilities, it was determined that the convenience of a long-distance read afforded by all the AVI tags was beneficial from a throughput perspective while still providing electronic controlled access. As a result, the single-ID Window Button was chosen.

All tags are compatible with the same reader, and as a result, the back-end system could be programmed to grant access to either type of tag.

After extensive experimentation with various kinds of AVI equipment, Kodak determined that the NEDAP equipment with its HID card compatibility and consistent long-range detection provided an optimum solution for a complete rollout in all areas requiring automated vehicle ID. The system was an extension of the company's goal to automate presence-sensing to quickly identify exceptions and aberrations related to vehicle access.

Another important factor in the decision was the ability to seamlessly integrate all the new employee ID badges with the vehicle-mounted reader transmitter device. That several different but compatible AVI tags were available to address different requirements within the operation also became an important part in ensuring that the system would offer enough flexibility for future interoperability, implementation and expansion.

With a solid long-range vehicle-detection system in place, Kodak continues to enhance traditional access control methods with state-of-the-art electronic technology.

With the new AVI system's ability to seamlessly integrate with its Matrix Frontier Integrated Security System, data and access privileges can now be reliably controlled from Kodak's central security system. The AVI dual-ID system was easily integrated into the security back-end system by assigning a two-badge rule to every Combi Booster access event.

Kodak is so pleased with the new implementation that it is actively pursuing additional applications of this product as a global solution.

System Implementation Benefits

The implementation of the new system provided several additional benefits to Kodak, according to Tom Rohr:

"The new AVI system allows vehicles to activate gates and doors far enough in advance to eliminate the need to stop. This reduces a critical and potential security choke point at the company's vehicle entrances.

"Safety is being improved by eliminating the need for drivers to reach out a vehicle window for a stationary reader, typically associated with card-only vehicle access."

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Accept the Challenge ... Experience the Rewards: The

The International Parking Institute has issued an invitation to "Challenge 2005" on May 22-25 in Fort Lauderdale.

"Challenge 2005" is the largest, most comprehensive meeting of parking professionals held in the United States, and is a key opportunity for parking professionals to coordinate and gather information, as well as share important strategies with colleagues.

Parking professionals are facing greater challenges than ever. Technology has revolutionized the industry, while public demand and expectations are increasing almost daily.

The IPI invites you to accept the challenge and experience the rewards of building a profession through networking with peers, while enhancing your professional education, personal growth and commitment.

The powerhouse of programming will take place at the Greater Fort Lauderdale/Broward County Convention Center, and the IPI is dedicated to providing the leadership, education, technical resources and information to meet these ever growing expectations and challenges.

Exhibit Schedule

So Many Companies -- So Little Time

Sunday, May 22 – noon to 3:30 p.m.

Monday, May 23 – 9:30 a.m. to 12:30 p.m.
– 3:30 to 6:30 p.m.

Tuesday, May 24 – 10 a.m. to 2 p.m.

For electronic floor plans, go to the IPI web site:
www.parking.org

You will experience four full days of intensive educational programming, "early-bird" programs, ShopTalk discussion groups and guided parking tours. Plus, more than 200 exhibiting companies will be displaying the latest industry technology.

The exhibits will be held in the newly expanded 600,000-square-foot state-of-the-art Convention Center. Located in Port Everglades, the world's premier cruise port, it is just five minutes from Fort Lauderdale/Hollywood International Airport. Within walking distance of the Marriott Marina and the Embassy Suites, the Convention Center is a short ride to Fort Lauderdale's palm tree-fringed, brick-lined beachfront promenade with numerous sidewalk café type of restaurants, including the world famous "Elbo Room," shops and "Beach Place."

The IPI looks forward to seeing you in Fort Lauderdale. So do your colleagues. For detailed information on "Challenge 2005," including the full program, visit www.parking.org/conference.

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IPI Meets in Fort Lauderdale

Exhibitors List

Booth	Company	Booth	Company	Booth	Company
1313	Abloy Security, Inc.	1028	Eberle Design, Inc. (EDI)	425	POM Incorporated
201	AIMS (EDC Corporation)	405	Electronic Software Solutions	726	Porta-King Building Systems
407	Alliance Data Systems	803	Emseal Joint Systems	202	Radix Corp.
800	Allsafe Technologies, Inc.	314	EZtag Corporation	711	Reino Parking Systems, Inc.
724	Alpha Technologies	1025	Federal APD	738	Reno A&E
1138	Alpine Systems Inc.	615	Finfrock D-M-C, Inc.	904	Rich and Associates, Inc.
903	Amano Cincinnati, Inc.	705	FutureLogic, Inc.	900	Ring Communications Inc.
317	American Honda Motor Co., Inc.	629	GKD-USA, Inc.	1106	Rotary Lift
1016	American Institute of Steel Construction	929	GMG Systems, Inc.	1516	Rydin Decal
1513	American Parking Equipment Inc.	701	Hamilton Manufacturing Corp.	235	Rytec Corporation
917	American Printing Converters Inc.	1010	High Concrete Structures, Inc.	1013	Scheidt & Bachmann
433	ArcaTech Systems	736	InnovaPark LLC	1505	Secom Interntational
723	Ascom Transport Systems	1009	IntegraPark	229	Signal-Park USA
841	ASE USA, Inc.	502	Intellenergy	318	Signal-Tech
1026	Austin Mohawk and Company, Inc.	728	International Parking Design	627	Silica Fume Association
206	Automated Valet Parking Manager,LLC	513	iParq, LLC	403	SIRIT Inc.
804	Autovu Technologies	1527	I-TO-I GmbH	1211	Skidata
712	AWID, Inc.	716	Jeron Electronic Systems, Inc.	500	Skyline Steel LLC
1501	B.I.G. Enterprises, Inc.	224	Johnston Madvac Inc.	1104	Southland Printing Company
1030	Balco, Inc.	1225	Kimley-Horn and Associates, Inc.	400	Structural Group
637	BemroseBooth USA	1140	Kings III of America	641	Surtreat
1504	BlackRock Software, LLC	730	Law Enforcement Systems, Inc.	925	SysParc
328	Borden Decal/East Bay Sign	215	Lithonia Lighting	1037	T.I.B.A. R & D (1986) Ltd.
602	Brasco International, Inc.	330	Logical Devices/Forchip	825	T2 Systems
311	Cale Parking Systems	1521	Login Lock	404	Tagmaster, Inc.
718	Canada Ticket Inc.	625	LymTal International, Inc.	1419	Talk-A-Phone Co.
617	Cardinal Tracking, Inc.	125	MacKay Meters, Inc.	1519	Tannery Creek Systems Inc.
624	Carl Walker, Inc.	1317	Magnetic Autocontrol	612	TCS International Inc.
801	CashCode Company Inc.	1115	McGANN	613	Tech Testing & Restoration
1500	Chamberlain	919	Medeco High Security Locks	208	TEMPARK - American Parking Solutions
935	Citation Management	501	MEI	717	THP Limited
707	Clancy Systems International Inc.	127	Meter Products Co. Inc.	819	Timothy Haahs & Associates, Inc.
1131	Code Blue Corporation	525	Metric Parking	807	Toledo Ticket Company
1506	Cognisa Security, Inc.	240	MITI Manufacturing Co., Inc.	227	Trafex LLC
1407	CoinGuard, Inc.	517	MM Systems Corp	1127	TransCore
931	Commend, Inc.	714	Multiseal Corporation	301	U.S. Energy Conservation Corp.
913	Complus Data Innovations, Inc.	1405	Nagels North America, LLC	531	Universal Boot Inc.
630	Construction Specialties Inc.	805	National Ready Mixed Concrete Assoc.	1511	VenTek International
1105	CTR Systems	631	Neogard	305	Verrus Mobile Technologies Inc.
1301	Cubic Parking Systems	238	Nexpole Systems	316	VideoSave
401	DaimlerChrysler Commercial Buses, NC	325	Nilfisk-Advance, Inc.	219	VPSI, Inc.
1005	Daktronics Inc	1335	Nova Bus, A Division of Prevost Car	326	W.S. Tyler
906	Data Ticket, Inc.	600	O'Neil Printer Supplies Group	1012	Walker Parking Consultants
902	Degussa Building Systems	719	Pacific Cascade Corporation	1108	Walter P Moore
503	Degussa Chem-Trete	1135	Parcxmart Technologies Inc.	911	Watry Design Inc.
324	Deister Electronics USA, Inc	406	Park Plus Inc.	927	Weldon, Williams & Lick
1425	DESIGNA Access Corporation	1203	Parkeon	533	Westward Industries Ltd.
816	Desman Associates	639	Parking Today	740	Williams & Fudge, Inc.
1401	Digimatics Inc.	1136	ParkTrak	1125	WorldWide Parking, Inc.
601	Digital Payment Technologies Corp.	1417	Par-Kut International, Inc.	833	WPS North America
1018	Digital Printing Systems	411	Paylock, Inc.	1325	Zeag North America Inc.
504	Discover Network	1311	PIPS Technology, Inc.	818	Zenitel USA
1403	Dunbar Armored, Inc.	225	PMG/Astro Optics		
507	Duncan Parking Tech	217	Polycon Systems, Inc.		

City and Airport – One Operation Helps Another

By John Van Horn

It's a "Tale of Two Cities" or, rather, of two parking operations in one city. And Dickens' opening line about the "best of times, the worst of times" doesn't really fit. Two senior managers seem to have created the best of parking times in their respective "communities."

Dan Brame is in charge of parking at Portland International Airport (PDX), and Ellis McCoy runs parking for the city of Portland, OR. Two different venues, two different applications, but in an oblique way one has helped the other in bringing new ways to park to the "City of Roses."

Brame has overseen installation of a pay-on-foot system at the airport. It went "live" in January, and by any measure, it has been a grand success. After only three months in operation, nearly 85% of the airport's patrons are using the POF system (rather than paying on exit).

"It is the attention to details," says Brame. "We planned everything right down to the type size on the signage, the bollards to protect folks when they are paying, to the way our staff can provide help to parking customers who are having difficulty."

Dan Brame at his desk at PDX.

You can't have enough customer service during this type of changeover.

Brame worked for consultant Kimley Horn for about 15 years, and was involved in POF installations in Seattle and at other airports around the country.

"I believe in data, rather than opinion," he says. "We looked at the successes and issues with other airport operations when they converted to POF. We took surveys from existing customers. When we made the change, we had the information to make good decisions."

The major problem with many other installations, Brame says, is that they take away the customer service staff too soon. "We put one or two of our staff in front of the POF machines to help people through the initial learning curve. And they are still there after three months. It gives patrons a good feeling and gives us great PR. Our staff does a good job, just in being there and being friendly.

"We let the patron take a stab at it themselves, but if they seem to have problems, we offer assistance. When we don't have someone at the payment area, our office staff can keep tabs on it through CCTV. Every POF machine is monitored, and if someone presses the "help" button, a camera comes online and an intercom opens. The staffer in the office not only can hear the patron, but can see them and help walk them through their problem. You can't have enough customer service during this type of changeover."

Brame installed signage everywhere -- at the entrance, on pillars, on the ramps -- to remind people to take their parking tickets with them. But it still wasn't enough.

"Our surveys told us that 15% of all parkers didn't see the signage. So we added a little twist. [During peak traffic hours] we put one of our staff at the entry lane with a hand held sign to remind [parkers] to take their tickets. It has worked well. I expect we will be over 90% usage by summer."

Brame's attention to detail also goes to future planning. "See that plate on the floor? It's a location for a future machine. I call it the 'in case Brame made a mistake' conduit." There are items like that throughout the garage. Brame is focused on his current installation, but concerned about the future.

To sell the project to the airport senior management, Brame took them to Schipol in Amsterdam. It took only a few minutes to convince them. "Once they saw how well POF worked there, we were ready to proceed."

The Portland airport immediately reduced its number of exit cashiers to two (and at most times to only one, says Brame). Patrons can pay at the POF using cash or credit card, or if they forget, they can use credit cards to pay at exit, unattended. At the exit reader, they put in the ticket, then the credit card, and receive the card and a receipt back and are on their way. Credit card usage is more than 60% and climbing after only 90 days in operation.

Dan Brame gives some of the credit for the success

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City and Airport – One Operation Helps Another

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at PDX to the city's Parking Operations Manager. Ellis McCoy has been actively changing the way people pay for parking in the city by installing nearly 1,200 pay-and-display machines throughout the city. Brame thinks this process enabled people to get used to automated fee collection so the transition at PDX became smoother. McCoy can only agree.

Over the past three years, McCoy has phased in P and D equipment throughout the city. "It's a process, like any other. When you take on a project to change people's habits, it takes time, and you learn as you go."

The initial installation of 1,100 meters was a success and is working well, McCoy says. However, that didn't stop him from looking to a different brand for the second phase of the installation. Sixty new machines have been installed in other areas. "I think it's a good move to have multiple vendors in a project of this size," McCoy says. "We can experience the benefits of each type of machine, and the vendors themselves can learn what works and what doesn't."

About 60% of the revenue collected at the P and D machines comes from credit card transactions. "About 30% of our transactions are by credit card," he says. "Unlike the airport, most of our transactions are small. People seem reluctant to use a credit card for small transactions, although that is changing."

Ellis McCoy tests a smart card in a recently installed POF in Portland.

A staff member stands by as patron pays fee at PDX.

The P and F machines make it easy for parkers to comply with regulations, McCoy notes. "They can select the amount of time they need, and because they can read right on the ticket the time they must return, compliance is higher than with standard single-space meters."

In Portland, parkers must display the ticket on the curbside of the vehicle. A sticker comes with the ticket to attach it to inside of the window. Portland's enforcement officers walk through the areas, checking for violators.

"The system greatly reduces arguments between enforcement officers both on the street and in court," McCoy says. "The ticket says what time the vehicle has to be moved, and the ticket has the time and date it was purchased written right on it. Abuse of our enforcement officers has been greatly reduced."

McCoy is also proud of the city's new SmartMeter Parking Card. "The program has been in place for over two years and its great for the city and for our parking customers. We will soon be using the same smart card for our six garages and surface lots too. We are also exploring the business case for using one smart card, "City Card" that would include buses and light rail. It's convenient for the parkers and serves as a great marketing tool for us."

Portland seems to be a great example where one type of parking program built on another -- P and D in the city, POF at the airport. McCoy and Brame don't discuss whether they planned it that way in the beginning.

Industry wags say that the success the city of Portland has seen with its multi-space on-street meters may be partly due to City Center Parking converting all its off-street facilities to pay and display years ago, thus training parkers in Portland on the advantages of multi-space meters.

It is certainly true that one process does build on another, in this tale of two parking operations.

Scheidt and Bachmann POF equipment was installed at the airport, Parkeon and Cale P and D machines in the city.

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Obtrusive Lighting: When Too Much Light Is Annoying

By Donald R. Monahan, P.E.

Increased awareness of the importance of safety and security in parking facilities has resulted in more and brighter lighting. However, when does an excessively bright lighting system become a nuisance to neighbors surrounding the site or impact other sensitive environmental issues? This article is intended to assist the reader in understanding these issues and how to design a system to prevent obtrusive lighting.

Light trespassing from this garage turns night into day in the surrounding area.

Obtrusive lighting may consist of unwanted light falling onto an adjacent property, often called light trespass. It may also consist of excessive glare from a light source or group of light sources viewed from outside the boundaries of the parking facility site. Another form is "sky glow" caused by direct or reflected light emitted into the atmosphere. Sky glow, often called light pollution, is objectionable to astronomers and aircraft pilots. It also wastes energy and consumes nonrenewable energy resources.

Inappropriate Lighting Regulations

Municipalities and other government entities are increasingly developing regulations regarding outdoor lighting practice to control obtrusive lighting. The next revision to California Title 24, for example, will have regulations to control obtrusive lighting. ASHRAE 90.1 has limitations on the power consumption of parking facility lighting systems of 0.3 watts per square foot. This energy limitation effectively caps the maximum illumination in a parking structure at 10 to 12 average maintained foot-candles, depending on the efficiency of the lighting system. The energy limitations of the ASHRAE 90.1 publication have been adopted by the federal government and many states.

Many municipalities adopt ordinances to minimize obtrusive lighting, often without expert advice from lighting designers, that have unintended consequences as follows:

Mandating the use of full cutoff luminaires (i.e., no direct light emitted above a horizontal line through the center of the luminaire) will reduce light emitted directly into the night sky, but can increase sky glow from light reflected off ground surfaces. Full cutoff luminaires usually require a horizontal orientation of the lamp, which creates a hot spot below the luminaire that often results in poor lighting uniformity versus a lamp with a vertical orientation.

Pole height limitations often result in poor lighting uniformity, increased costs, greater sky glow and possibly higher energy consumption. On a recent parking structure roof lighting project, the requirement for a 12-foot pole height resulted in 24 light poles with two dozen 200-watt light fixtures at an installed cost of $60,000 versus six light poles with one dozen 400-watt light fixtures at a 25-foot mounting height at an installed cost of $27,000. The energy consumption of both designs was approximately equivalent. The average maintained illuminance of the 12-foot design was 3.4 foot-candles and 3.2 foot-candles for the 25-foot design. However, the maximum/minimum uniformity ratio for the 12-foot design was 9.7 versus 6.7 for the 25-foot design. Therefore, the higher pole height resulted in a better design at less than half the cost.

Some ordinances specify that the light source cannot be visible from anywhere off the property. The fixture housing will typically shield the light source at an angle of approximately 16 degrees below a horizontal line through the fixture. (The center of the light source is approximately 3.5 inches above the bottom of the housing, and the opening at the bottom of the housing is approximately 24 inches in diameter.) A 12-foot mounting height then requires that the light fixture must be 42 feet from the property line in order to completely shield the light source from view. A 25-foot mounting height requires that the light fixture must be 87 feet from the property line in order not to see the light source.

Continued on Page 28

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Obtrusive Lighting: When Too Much Light Is Annoying

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A rule-of-thumb indicates that the light fixture will provide adequate minimum illuminance at a distance equivalent to approximately two times the mounting height. Therefore, the interior light poles at 42 feet from the perimeter for a 12-foot mounting height -- or 87 feet from the perimeter for a 25-foot mounting height -- will not achieve adequate minimum illuminance at the perimeter of the parking area. Perimeter light poles are required. A pole-mounted light fixture located on or near the property line then must have a supplemental shield that hangs down below the fixture approximately 12 to 24 inches to shield the light source. Shielded light fixtures are not recommended for interior locations as the shield will block the light distribution toward the perimeter and have an adverse impact on the minimum illuminance.

Adjustments made to lighting keeps the garage bright but the surrounding area in shadow.

Low-pressure sodium lighting is often specified in areas surrounding astronomic observatories, because the monochromatic characteristics of that light source can be easily filtered. However, it has poor color rendering characteristics and reduces contrast. This type of light source may cause color identification problems and reduce nighttime visibility.

A curfew is often established late at night (e.g., 10 to 11 p.m.), after which the lighting must be reduced or turned off. This requirement is problematic for hospitals, casinos and other 24-hour operations, because it compromises safety and security in the parking facility.

Appropriate Lighting Regulations

The Illuminating Engineering Society of North America (IESNA) and the International Commission on Illumination (Commission Internationale de L'Eclairage, or CIE) have conducted extensive research regarding the thresholds that result in obtrusive lighting. These studies have found that the background lighting conditions (ambient lighting) affect the brightness level of the light source that is objectionable. Therefore, a series of lighting classifications, or lighting zones, were defined based on ambient lighting conditions, and the limitations on light source brightness were determined for each lighting zone.

Establishment of curfews is a logical method to provide partial control of obtrusive light. For instance, it may not be possible to design sports lighting that provides adequate lighting for the sporting activity and is not objectionable to the neighbors. Specifying a time at night when the lighting must be reduced or extinguished is then a compromise between the desire to provide for that outdoor activity balanced with the neighbors' desire to minimize obtrusive light late at night. Where a curfew is established, the local ordinance for pre-curfew hours can allow higher limitations for light trespass. During post-curfew hours, lighting that is nonessential, such as sports lighting, building floodlighting and outdoor advertising, could be extinguished and lower limitations on light trespass specified. However, the IESNA-recommended practice for safety and security should be met even when the curfew is in effect.

(Note: The position of the observer is generally taken at the property line of the site on which the outdoor lighting is installed. However, where the site is surrounded by a street right of way, the writer recommends that the position of the observer be taken at the property line across the public right of way or at the closest adjoining private property line.)

Summary

There are right and wrong ways to control obtrusive lighting. Governing authorities should engage lighting professionals to assist with developing ordinance requirements that are reasonable and not unduly restrictive. The research and recommendations of the IESNA and CIE represent the best available information to date.

Don Monahan is a Vice President of Walker Parking Consultants in Denver. He is Chairman of the Off-Roadway Lighting Committee of the Illuminating Engineering Society of North America, and is a member of the obtrusive lighting task force responsible for the TM-11 publication. Contact him for specific tables on light trespass. He can be reached via email at don.monahan@walkerparking.com.

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What's it Cost To Run Your

The projected expenses for a new parking structure can have a significant impact on the financial feasibility of a project. Operational and maintenance expenses can vary from one location to another, even within the same city.

The amount of money spent on garage expenses will depend on several variables, including the method of operation, staffing needs, hours of operation, facility utilization, taxes, maintenance needs and financing costs.

To make matters more confusing, some parking systems must cover all of the necessary expenses for a parking garage, while others are required to cover only a portion.

These variances make it difficult to quote average garage operating costs on a per-space, per-year basis. Therefore, it is more reasonable to estimate parking operational and maintenance expenses on a garage-by-garage basis, using the following criteria:

Method Of Operation

Parking garages are operated in many different ways. A parking garage could provide any combination of valet parking, self-parking (transient parking), monthly parking (card or decal access), and/or special event parking. The first step in estimating parking facility expenses is to determine how the garage will be operated. That will impact facility expenses in three ways:

Number of staff required. A hotel garage offering valet parking will spend far more in staffing costs than an office building garage offering only monthly parking with card-controlled access. Staffing costs can be reduced, but not eliminated, through the use of an automated parking access and revenue control system.

Insurance costs. For example, a garage providing valet parking will incur higher insurance expenses, as the liability of the parking operation is higher.

Cleaning. Because it is used more frequently, a garage that provides transient parking will require additional cleaning and sweeping as opposed to one that provides monthly parking. Also,

Garage?

By Matt Inman

equipment and garage system maintenance costs can be higher.

Typical Operational Costs

Although operating costs will vary from one facility to another, they can typically be broken down into five major categories:

Staffing. Staffing costs should include all staff assigned to the facility, including cashiers, maintenance, supervisors, manager(s), and bookkeeping and security personnel. In a typical cashiered facility, staffing costs can account for 50% to 70% of overall expenses. Based on the selected method of operation and anticipated operating hours, staffing costs are projected by making a preliminary work schedule. Staffing costs can be reduced by using available technologies, such as automated cashiering equipment and passive security systems.

Facility maintenance. Regular maintenance ensures that the service life of the facility is maximized. This includes routine maintenance/cleaning, equipment maintenance, elevator/escalator maintenance, wash-downs, sweeping, snow removal, painting and structural maintenance. Facility maintenance expenses can account for 10% to 20% of total facility expenses. A maintenance reserve fund of approximately $50 per space, per year is recommended to fund future large-scale maintenance projects.

Facility utilities. This expense category can include electricity, telephone service, high-speed Internet, water and sewer. Typical utility expenses account for 10% to 15% of a facility's total expenses. They can be reduced by limiting daytime facility lighting and by bundling services with a single provider (e.g., bundling mobile phones, telephones and Internet services).

Other expenses. Additional

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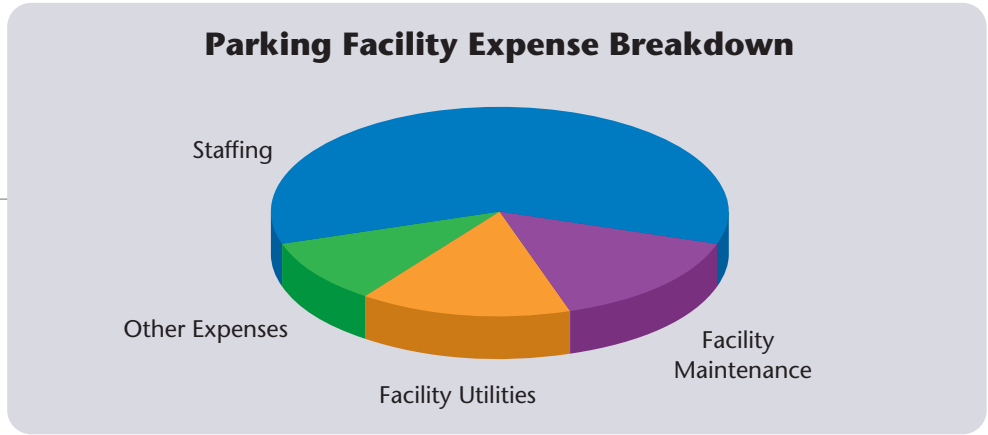

What's it cost to run your garage?

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expenses can include taxes, insurance, operational and office supplies, uniforms, and marketing and advertising, and postage. These can account for approximately 8% to 12% of a facility's total expenses.

Management fees. If the services of a professional parking operator will be utilized, there may be a management fee. This cost could be calculated as a monthly flat fixed fee, as a percentage of the gross revenues, or through a lease or contract agreement.

Financing Costs

While not an operating expense, bond debt will obviously impact net facility income. The amount of bond debt will depend on total project costs, interest rates, credit ratings and bond items. Regardless of whether bond debt must be covered by parking revenues, including bond debt in determining net income will help illustrate the true cost of providing parking.

In summary, when projecting potential expenses, less importance should be placed on national averages or cost comparisons with other facilities. The more logical approach is to determine projected facility expenses based on specific operating conditions.

Matt Inman is with Carl Walker Inc. He can be reached at mInman@carlwalker.com

Sample Parking Facility Operating Expenses - Cashiered Facilities

Location:	Fort Collins, CO	Phoenix, AZ	Boise, ID	Portland, OR
Method of Operation:	Standard Cashier	Standard Cashier	Standard Cashier	Standard Cashier
Number of Parking Spaces:	903	744	495	413
Total Operating Costs:	$416,400	$519,100	$361,800	$349,400
Cost per Space	$461	$698	$731	$846

Note: Standard cashier refers to traditional exit cashiering, with no automated equipment.

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