

# THE UNIVERSITY OF KENTUCKY

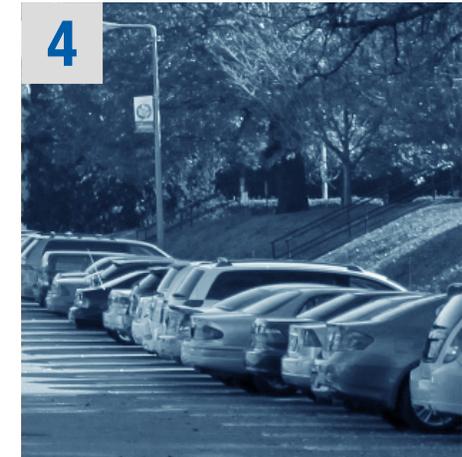
**TRANSPORTATION MASTER PLAN:**  
A STRATEGY FOR MOBILITY AND CHOICE

NOVEMBER 2015





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# EXECUTIVE SUMMARY

## PROJECT OVERVIEW

In October 2014, the University of Kentucky embarked on a process of transportation planning, to address all aspects of the systems by which people move to, from and around the campus. The scope of the University of Kentucky Transportation Master Plan encompasses all modes of vehicular travel – private vehicles; transit; service, delivery and maintenance vehicles; emergency vehicles – as well as the means by which people travel under their own power, particularly walking and bicycling. The experience of persons with disabilities in traveling by these modes is also addressed.

Parking is a critical element of the Transportation Master Plan, since it affects the campus and campus life in so many ways. Commuter students and employees, resident students, visitors, vendors and alumni rely on parking. Parking facilities are necessarily situated in locations that require drivers to walk or take transit to their campus destinations; therefore even those who do not have cars on campus are affected by the parking facilities and the traffic, vehicular and pedestrian, that they generate.

Issues of mobility, access and parking have been of concern at UK for decades. A sample of clippings from the Kentucky Kernel demonstrates that challenges with parking, in particular, are not new. These comments, made over a period of almost fifty years, indicate not only the intractability of the problem but the frustration it engenders.

*“The Problems of Parking - ...the often difficult, sometimes hopeless, search for spaces to park...concerns us...”*

-Letter to the editor from concerned employees, February **1967**

*“UK Should Address Parking - The University’s parking situation is something at which we could all laugh if it wasn’t such a disaster!”*

-Letter to the editor from concerned employees, February **1988**

*“Parking: UK’s Hell on Earth – With relief nowhere in sight, students lament the lack of spaces around campus.”*

-Kernel article, October **1999**

*“Parking Nightmare Plagues Community – ...one of the most stressful situations to deal with at UK is parking.”*

-Kernel article, February **2002**

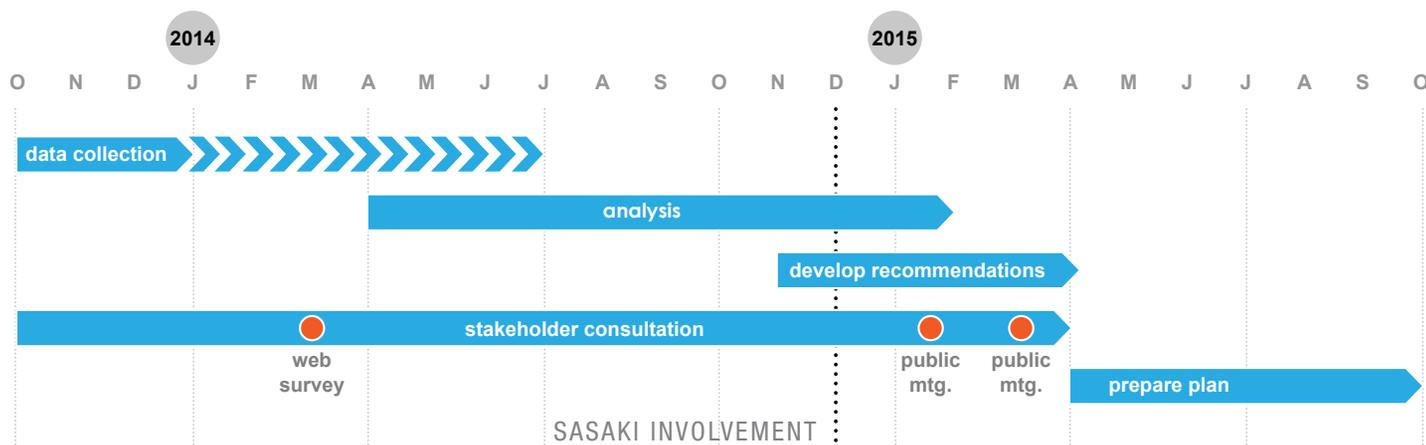
More recently, in connection with the preparation of the Transportation Master Plan, the impact of transportation and parking on the lives and daily routines of the UK community have been documented in surveys, public forums and interviews throughout the campus. The Analysis section of the Plan summarizes the public input that informs the Plan's Recommendations.

The current transportation planning process is a response to the concerns voiced by students, staff, faculty and others about parking problems, but it goes much further, to deal with all aspects of mobility in the context of the University's campus, its surroundings and its role in the larger Lexington community. The Transportation Master Plan is intended as a complement to the Campus Master Plan which the University adopted in 2013, and the Landscape Master Plan, adopted in 2015. As such, it is concerned with how traffic – vehicular, bicycle and pedestrian – and parking affect the quality of the campus and the course of its future development. The Transportation Master Plan is thus based on a comprehensive, holistic and strategic assessment of the campus transportation system as an integral element

of the University's physical and institutional character. It is designed to make the transportation system more efficient by making it more responsive, and to maximize the range of mobility choices offered to students, faculty, and staff.

The plan represents a new commitment to mobilizing the powers of the administration, students, the wider campus community, Lextran and the City of Lexington to modernizing the campus transportation system and making it work better for its users. As the plan has taken shape it has become clear that the greatest improvements in one system or another are to be made by cooperation between systems. As more parking is built at the periphery of campus, the shuttle bus system will serve it more efficiently. As parking permit fees are restructured to make parking in the academic campus relatively more expensive than at the stadium, the University has offered free transit service to all students, faculty, and staff. The strengthened relationships that were forged during the planning process have already resulted in the many plan recommendations that have been immediately implemented, and that are designated as an "Early Win."

## PROJECT SCHEDULE



## GUIDING PRINCIPLES

The Guiding Principles were drafted by the University administration, based on consultation with the campus community, to provide direction in the preparation of this Transportation Master Plan. They reflect a concern for remedying as many as possible of the barriers to mobility and access to and within the campus. They also reflect the reality that UK's campus is an urban one, bordered by neighborhoods and limited in land area. This means addressing identified issues, such as those brought forward by the UK community in the extensive outreach process. It also means setting priorities and dealing with the realities of space, time and money.

Safety is of paramount concern. Every action recommended in the Transportation Master Plan has been considered in light of safety, and many of them will make the campus a safer place to walk, drive, bicycle and use a wheelchair.

The need for environmental sustainability and financial self-sufficiency places some constraints on the transportation system, but also creates opportunities to refine efficiencies, forge partnerships across the University and the region, and create more integrated, multi-purpose facilities.

This Transportation Master Plan is one of a set of documents that will shape the future of the UK campus, the others being the Campus Master Plan and the Campus Landscape Plan. As the campus and the University grow and change, decisions about building placement and investments in outdoor spaces will greatly influence the campus' general accessibility and navigability. By adopting a Transportation Master Plan, the University makes a commitment to think holistically and strategically about all aspects of the land-use/transportation connection.

## GUIDING PRINCIPLES

The University of Kentucky exists to improve people's lives through excellence in education, research and creative work, service and health care. In support of its mission, and in alignment with the University Master Plan, the University will manage and maintain reasonable access to, from and around campus for all members of the University community, including students, faculty, staff, visitors and patients.

### 1. Enhance Campus Mobility and Access

- Promote safe, efficient and effective mobility options to, from, and around campus that reasonably accommodate various user groups with priorities focused on enhancing student success and facilitating professional obligations.
- Support a pedestrian focus in the campus core.
- Enhance bicycle access around campus.
- Provide robust, efficient, and effective transit options on campus that eliminate mobility barriers and ease the use of remote parking locations.
- Evaluate opportunities to partner with the city to strengthen bicycle, pedestrian, and transit connections that improve access to and from campus.
- Incorporate health and wellness opportunities with campus mobility.

### 2. Promote and Support Safety

- Promote safe use of all mobility options offered to, from and around campus
- Design, build, retrofit, and maintain transportation infrastructure that enhances safety, such as lighting, way finding, transit shelters, crosswalks, traffic calming, and walking and biking paths.

### 3. Foster Environmental Sustainability

- Reduce environmental impact of campus transportation by encouraging reduced dependency on single occupancy vehicles for all University of Kentucky constituents.
- Maximize the utilization of existing parking and transit infrastructure.

### 4. Right-Size Parking Supply & Allocation

- Achieve a balance between parking supply and parking demand. Campus access demand not accommodated through parking capacity will be adequately and sufficiently accommodated through transportation demand management.
- Implement a parking rate structure that encourages a balance between parking supply and demand and reflects a market-based value of the service provided.

### 5. Accommodate Campus Growth and Transformation

- Manage future transportation, mobility, and parking efforts with creativity and innovation that recognizes increased enrollment and staffing within campus physical constraints.
- Ensure that transportation and mobility considerations are included in all planning endeavors.
- Address campus access needs so as not to create undue hardship on adjacent neighborhoods, the city, and region.

### 6. Assure Financial Self-Sufficiency

- Develop a financially self-sufficient mobility system that is centered on a fee-based service for users. Control operational expenses while promoting safe, efficient, well-maintained and operated facilities and programs.

## STAKEHOLDER INPUT

One of the over-arching themes of the Transportation Master Plan process has been the role of the participants in the transportation system: students, faculty, staff, alumni, patients and visitors. The success of the system depends on the active cooperation of all. By the same token, the system must be responsive to the needs of all. Those who regularly travel to and across the UK campus, who live with the transportation system and experience it daily, have valuable insights and ideas about how to make it work better. For these reasons, the transportation planning process has relied heavily on public participation and feedback. From the beginning, the administration has sought out and provided multiple forums for comment and advice, through written comment, survey response and public meetings. The resulting plan, though it cannot reconcile conflicting demands or please everyone, is grounded in careful consideration of the expressed needs of the campus community.

Extensive effort was made not only to solicit ideas but to measure the attitudes of the campus population. The Analysis section discusses the surveys administered and their results.

Some of the most beneficial outcomes of the Transportation Master Plan have already been achieved: the planning process itself has brought together representatives of the entire campus community in a discussion about how to improve the transportation system. The public meetings, media coverage, surveys, and comments around the Transportation Master Plan are the beginning of a sustained, cooperative effort which in itself will make implementation of the recommendations easier.

## MAJOR RECOMMENDATIONS

### MITIGATE PARKING NEED AND MODERATE TRAFFIC THROUGH TRANSPORTATION DEMAND MANAGEMENT

The University should:

- adopt a comprehensive array of Transportation Demand Management (TDM) measures, designed to provide a wide range of mobility choices and opportunities;
- expand the initiatives offered to encourage transit use, walking and bicycling; and
- organize its TDM efforts into a coordinated program of mutually supportive elements that can be marketed as a whole.

Parking and Transportation Services division (PTS) should serve as a clearinghouse for information and services that enable students and employees to find and use alternatives to single-occupant vehicles, making it more convenient, economical, and pleasant to leave the car at home than to drive alone to campus.

As part of the TDM program, and as an early-action item that will make parking demand reduction measures possible, a revised campus transit route system has been implemented as of Fall 2015. The new Campus Shuttle routes concentrate a higher level of service in the corridors of greatest demand. The simplified pattern and two-way loop operation reduces travel times in both directions, and shorter headways reduce wait times. These improvements will make it easier and more efficient to park near the stadium, increasing the attractiveness of peripheral parking and amplifying the effectiveness of the zone permit system. The new bus routes will transform the Campus Shuttle. Whereas the CATS system focused on parking at the stadium and riding to the core, the new Campus Shuttle will be a true campus transit system, providing better mobility between all points.

### RESTRUCTURE THE PARKING PERMIT SYSTEM

An important aspect of Transportation Demand Management is a parking pricing structure that values parking accurately, charging more for parking near the campus core and less for parking located at the campus edge. The Transportation Master Plan recommends changing the existing permit system, which makes no distinction between locations, to a zone system which provides users with choices and financial incentives to use parking in the Stadium area. In concert with the expansion of parking supply, a tiered permit price structure will offer commuters and residents price reductions for using parking in this peripheral zone. Calibrating price according to demand will also enable the University to modulate the occupancy of core campus parking, ensuring its availability and eliminating the traffic associated with hunting for spaces.

### MAXIMIZE ON-CAMPUS PARKING RESOURCES

By any measure, the University needs more parking, to accommodate existing users and future growth in the campus population. Constructing parking is expensive, and new parking facilities must not impinge on the open spaces of the campus core or generate additional vehicular traffic in pedestrian-oriented areas. Nonetheless, there are opportunities to achieve moderate increases in parking supply, by enlarging existing facilities and converting paved areas to functional parking.

## **ENHANCE USER EXPERIENCE THROUGH COMMUNICATION AND TECHNOLOGY**

Communication should be a watchword, both among divisions and with the broader campus population, to consistently convey information about policies and transportation options. Communication can be enriched through adoption of advanced technologies, such as app-enabled announcements of parking availability and bus arrival times. The University should brand its TDM programs as a comprehensive and coordinated structure for mobility, one that accommodates but that is not dependent on private automobiles. PTS, as the UK community's portal to the University's transportation system, should serve as a one-stop shop for multimodality, and should brand itself as being about helping people get where they need to go. PTS should continue to place emphasis on customer service and user experience.





# RECOMMENDATIONS

## PLANNING BRIEF: TRANSPORTATION DEMAND MANAGEMENT

Based on analysis of past, current and projected conditions, the goals of the UK Transportation Master Plan are to:

- Reduce the number of vehicles driven to campus, which will decrease parking demand, cross-campus driving and congestion in and around the campus;
- Provide safe, convenient and viable alternative travel mode options to the campus community, to increase the use of modes other than the single-occupant vehicle;
- Increase the number of parking spaces available on the periphery of campus and at off-campus remote locations, served by direct bus service to the campus core;
- Best manage the available parking supply;
- Offer a range of parking prices and choices that reflects the relative desirability of parking in different locations;
- Better assure permit holders that parking will be predictably available;
- Ensure that PTS is financially stable and able to generate funding for the services and facilities that are recommended in this Transportation Master Plan; and
- Align the university's transportation operations with regional planning efforts, so as to better develop transportation options and improve the convenience of commuting to UK.

As the Guiding Principles state, the goal is a stable, flexible and predictable system offering viable choices for moving people within and beyond the University campus. As such it requires cooperation and sharing of corridors and parking, as well as the allocation of resources according to a plan that creates as many options as possible about how to get around and where to park. The rules, facilities, and services that make up the transportation system must also constantly push toward reducing the need for and number of automobiles on campus, both as a matter of environmental sustainability and to relieve pressure on the University's finite resources.

One of the most beneficial outcomes of the Transportation Master Plan has already been achieved: the planning process itself has brought together representatives of the entire campus community in a discussion about how to improve the transportation system. The public meetings, media coverage, surveys, and comments around the Transportation Master Plan are the beginning of a sustained, cooperative effort which in itself will make implementation of the recommendations easier. It is hoped that this dialogue, and the enthusiasm for active engagement in making the system work, will become a powerful tool for its continual improvement.

The Transportation Master Plan is an integral element of the University's Campus Master Plan, and both plans recognize the relationship between transportation and land use. The Transportation Master Plan endorses and adopts the Campus Master Plan's initiative of providing more on-campus housing, which may not reduce parking demand but does reduce traffic on campus by taking commuter students off the road. The Campus Master Plan also helps moderate traffic while enhancing access through thoughtful co-location of facilities and concern for high-quality, walkable open spaces. These documents, together with the Landscape Master Plan, define the framework and the mechanisms for mobility on the UK campus.

### TRANSPORTATION DEMAND MANAGEMENT

Some people at UK are absolutely dependent on their cars. Others are truly car-free. Most people are in between, and many would like to have the option of being more independent. An important premise of the Transportation Master Plan is that for those who are in between car-free and car-dependent, the actions taken by the University, its people and its partners make a difference in whether they are able to leave their cars at home more often.

Transportation Demand Management (TDM) is the term for administrative measures and positive incentives, potentially with capital implications, designed to make the transportation system more sustainable by reducing single-occupant vehicle driving and parking on campus. TDM includes low-cost transit, cash-back allowances for reduced auto use, bicycle and pedestrian improvements, car share, bike share and ride share accommodations. As such, TDM is an integral part of the University's transportation strategy. Whatever can be done to reduce the volume of auto traffic on campus and city streets helps everyone, whether they drive or not. TDM is therefore about both encouraging people not to drive and helping those who do.

Not every action in the Transportation Master Plan is motivated by TDM and alternatives to driving alone. Others are recommended because they respond to the practical needs of the UK community, such as the need for predictably available parking as well as efficient Campus Shuttle service to complete the commuting trip. For those who need to drive, the Transportation Master Plan provides a framework for their commuting patterns that will improve vehicular access and confidence in trip planning.

## MARKETING, BRANDING, & COMMUNICATION

A persistent theme in the meetings and public comments around the Transportation Master Plan was communication: the ways the administration communicates information about transit and parking operations, the way divisions do or don't coordinate. The plan marks a re-energized commitment to raise the level of communication in many ways and along many channels.

- The University and Lextran have entered into agreements that betoken a shared vision and common interests in making the city bus attractive to UK students and employees.
- The CATS campus shuttle system will be re-branded. (This plan refers to the Campus Shuttle in place of CATS.)

- Branding and advertising, in themselves, can elevate the look and feel of the transit system with streamlined graphics and a unified style.
- Key recommendations call for greater utilization of technology and social media to better convey to users information about parking availability, bus arrival and travel times, system changes, etc.
- The plan's focus on Transportation Demand Management, symbolized by the recommendation that the University start a UK Commute Club, points to the need for Parking and Transportation Services to rebrand itself as a one-stop office for all those looking for mobility solutions.

As the University broadens its efforts to build alliances within and beyond the campus bounds, communication on many platforms will be critical. The University should continue to seek ways to use the internet and social media, as well as traditional forms of communication, to reach more people with more useful information.

It is important that TDM be publicized as a unified and multi-pronged effort to encourage auto-independence. The University's TDM efforts should be aggressive and multi-layered, sending a message to everyone who needs transportation that there are alternatives to driving, and that the University supports those alternatives through a coordinated program of incentives and services. This message is most effectively delivered by Parking and Transportation Services, which should re-brand itself to emphasize that its role is not just to provide parking and ancillary transit services, but also to assist people in their travels by any mode. TDM should be the hallmark of the University's transportation system, and should be packaged as a set of options and opportunities to enhance mobility generally.

## COOPERATION

The University's transportation system is more than a set of services and facilities provided by the administration. The users of the system are instrumental to its function. Movement around the campus is a cooperative process, in which people act as a team. The team works in part by staying out of each other's way, which is harder than it sounds, and which involves paying attention to each other and following rules of the road and public interaction. Working as a team also means making more coordinated plays, such as sharing rides, yielding to pedestrians and parking in mutually agreed-upon locations. The success of the Transportation Master Plan depends on the cooperation and active participation of the campus community, not just in avoiding conflict but also in acting positively to make the system work. The Plan therefore includes recommendations regarding the ways that the University can communicate with its constituents and how it should use the tools of communication, including marketing and branding or image definition.

The recommendations which follow constitute a comprehensive and multifaceted strategy. They cover a wide range of measures in the realms of physical facilities, program activities and administrative priorities. They are mutually supportive, and many of the recommendations will accomplish multiple objectives. The recommendations work together to achieve a transportation system that is sustainable, efficient, technologically advanced and implementable. To help clarify how the Transportation Master Plan incorporates the ideas of sustainability, embracing new technology, and early implementation, the recommendations are highlighted with icons that identify these features.

# ICONS

The recommendations that follow—for pedestrians and walkways, persons with disabilities, parking, transportation demand management, transit, bicycles and other policies—make up a program for incremental, long-term improvements in mobility for the UK community. The recommended measures are in keeping with the Guiding Principles to which the University has subscribed. They are forward-looking and endorse adoption of new technologies. They bend toward sustainability, both environmental and financial. Distinctively, many of them will have been implemented by the time this plan is completed, a sign of the success of the planning process in bringing people and ideas together.

To highlight these characteristics of the Transportation Master Plan, and to help clarify how the recommendations of the plan work together, icons have been placed throughout, indicating how a particular recommendation addresses the Guiding Principles; is particularly intended to further the objectives of embracing technology or promoting sustainability; or signifies an ‘Early Win’, a recommendation that has already been implemented.



## SUPPORTS GUIDING PRINCIPLES

To demonstrate the strong relationship between the Transportation Master Plan’s Guiding Principles and its recommendations, each recommendation is marked with numbers corresponding to the particular principles which it embodies.



## SUSTAINABILITY

TDM measures are embedded in the Transportation Master Plan and appear throughout this document. Measures relating to TDM and sustainability generally are identified individually and located in the recommendation section to which they most directly pertain. Recommended measures which have a sustainability aspect are denoted with an icon.



## NEW USES OF TECHNOLOGY

Particularly in the area of transit service, but also in parking management, the University endorses and supports the adoption of emerging technologies, from real-time bus arrival information to web-accessible parking availability updates.



## EARLY WINS

The search for a comprehensive strategy for mobility has led to creative exchanges with other providers of transportation services and facilities. These meetings have quickly revealed shared priorities as well as opportunities for important improvements to be made without waiting for the Transportation Master Plan to be formally enacted. Some of these improvements will be accomplished, in fact, even as the Plan is being finalized. In this report, these actions are called out as ‘early wins’.

## PEDESTRIANS

Everyone is a pedestrian. The primary mode of movement within the UK campus will always be walking. This fundamental fact makes it easy to forget that walking is one mode of travel among many, and that pedestrian traffic is every bit as important as vehicular traffic, bicycle traffic or other elements of the transportation system. Many different administrative divisions in the University take some responsibility for or interest in the conditions of pedestrian movement on campus: Parking and Transportation Services, Finance and Administration, Health Affairs, Student Affairs, Facilities Management, University Police and Environmental Health and Safety. No one division has the primary responsibility for ensuring pedestrian safety, assessing the quality of the pedestrian experience and promoting the beauty of the pedestrian environment.

The campus is, by definition, a pedestrian environment, and pedestrians take precedence over other modes within the campus core. The existing campus framework is generally hospitable to walking, with a complete set of sidewalks and walkways connecting all points. There are, however, areas where pedestrian safety and comfort is compromised by conflicts with vehicular traffic. These locations should be attended to when improvements are made to the circulation system.



- Rose St., especially between Columbia Ave. and Huguelet Dr., is a barrier to the major pedestrian flows between the campus core and the library/residence hall area to the south. Restrictions on vehicular traffic along Rose are advisable. The Landscape Master Plan's preferred option is to close the street to general traffic, allowing only service/delivery/emergency vehicles, buses and those with valid disabled parking permits. In the absence of these recommended traffic restrictions, the existing traffic-calming features of Rose St. should be heightened by creating narrow travel lanes with mixed vehicular/bicycle traffic and prominent crosswalks, an improved median, and plantings that make crosswalks visible and emphasize the pedestrian-oriented nature of the street. The Landscape Master Plan also identifies an option in which the median is removed, allowing the street to be narrowed.

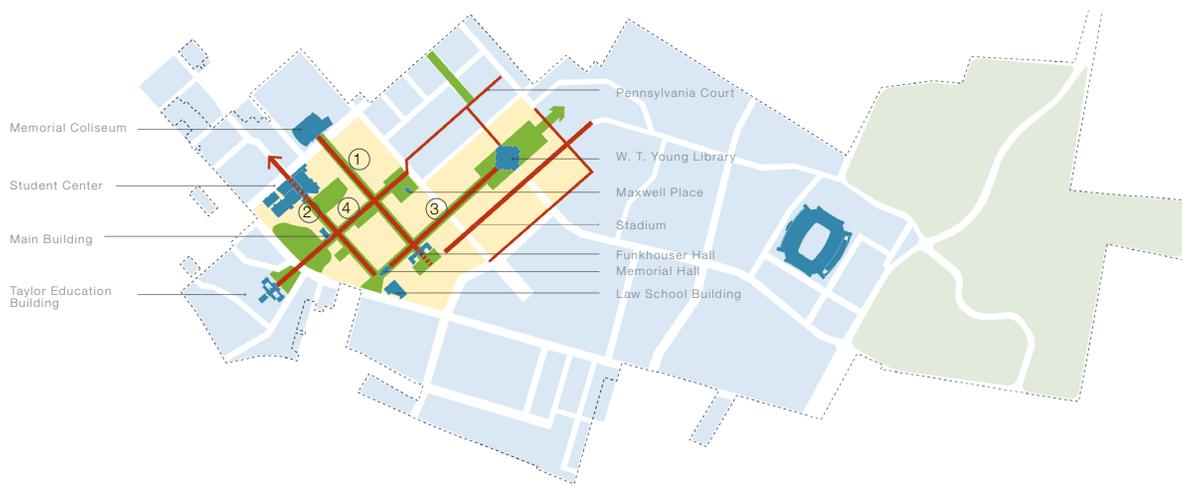
- Hilltop Ave. and Woodland Ave. run across particularly important and busy pedestrian corridors, between the Kirwan-Blanding/Woodland Glen residence hall areas and the campus core, via the library lawn. As with Rose St., the solution may lie in restricting general traffic: on Woodland Ave. between Hilltop Ave. and Columbia Ave., and on Hilltop Ave. between Woodland Ave. and University Dr. Thru-campus auto traffic would be diverted to the new Sports Center Dr. extension behind Woodland Glen. These segments of Hilltop and Woodland Aves. should be designed and managed as part of campus' pedestrian core; general vehicular traffic should be limited as necessary to create safe conditions for pedestrians. These streets should be maintained as a corridor for transit and service/emergency vehicles. Coordination between bus and pedestrian traffic can be enhanced by implementing pavement patterns that emphasize the streets' function as a transit mall and limiting access to professional drivers (bus, service, delivery, and emergency vehicles) to ensure safe driving. Access to the Rose St. garage (PS2) would be preserved via University Dr. and the western end of Hilltop Ave.



- An early win in this regard is the significant safety improvements on Woodland Ave. The crosswalk at the entrance to Woodland Glen has been enhanced, and speed tables have been installed, which, along with a lowered speed limit, will slow traffic, prioritize pedestrians and serve as an unofficial gateway to the campus' residential district. Improved bicycle lanes have also been installed on Woodland Ave. and Hilltop Ave., and crosswalks have been upgraded at the intersections of Woodland Ave. and Columbia Aves., Woodland Ave. and Hilltop Ave. (the '90'), and Hilltop Ave. and University Drive.

- Pedestrian crossings of Avenue of Champions is a constant concern, especially with the construction of new student housing to the north. The Landscape Master Plan identifies a major crossing point at Martin Luther King Blvd. Landscape design should reinforce MLK as the preferred crossing.
- The path from Kirwan-Blanding to the stadium, running between the tennis center and the student recreation center, crosses Cooper Dr. The crossing has been improved recently through collaboration between UK and the Lexington-Fayette Urban County Government (LFUCG). UK should continue to monitor conditions there and assess whether additional safety measures are warranted.

### PEDESTRIAN SPINES



- S. Limestone presents challenges all along its frontage of the campus, particularly at the medical center and at the confluence with Scott St. and S. Upper St. Continued efforts must be made to resolve these issues in cooperation with the City of Lexington. Long-term plans for the Newtown Pike extension should be taken into account, as it would significantly increase the volume of traffic on Scott St.

- Memorial Coliseum to Funkhouser Hall
- Law School building to Student Center and Martin Luther King Boulevard (includes a new green between Gillis and Miller Halls)
- Memorial Hall to William T. Young Library
- Taylor Education building to Maxwell Place, and Pennsylvania Court beyond

### PEDESTRIAN CORRIDORS



Pedestrian corridors are important elements of the overall open space framework. They are intensively used and should be well-designed with trees to provide shade for pedestrians, reduce the heat island effect, and improve the overall spatial order of the campus. Pedestrian scale and unified spatial definition are important concerns.



The open space framework also defines the system of secondary pedestrian routes that connect with the primary routes and facilitate pedestrian movement to all other areas of the campus. Of particular importance is paths to and through larger parking lots and those on the periphery of campus. Special care should be taken in providing signage, sidewalks, crosswalks, lighting and thoughtful landscape. Features of sustainable parking lots include trees, bioswales, and stormwater runoff filtration.

The Campus Master Plan's open space framework defines several primary pedestrian corridors through the campus, which include the following:

## PEDESTRIAN ADVISORY COMMITTEE



To elevate the importance of pedestrians and pedestrian facilities, it is recommended that the University create a new Pedestrian Advisory Committee (PAC). The purpose of the PAC would be:

1. to bring together diverse administrators to discuss and address issues related to pedestrian conditions on campus; and
2. to provide a forum for interested members of the campus community to raise, through designated representatives, issues related to pedestrians and have them addressed by appropriate officials.
3. to establish a dedicated funding source, which might be leveraged through strategic cooperation between UK and regional affiliates, for needed education and infrastructure improvements.

The structure and operations of the PAC could be modeled on the Bicycle Advisory Committee, with cross-departmental membership and funding. It could be jointly funded between the Executive Vice President for Finance and Administration, the Vice President for Facilities Management, and Parking and Transportation Services. Regularly scheduled meetings would allow continual focus on pedestrian issues as well as an opportunity to track progress on them. Any capital funding allocated as a result of PAC deliberations should be exclusively dedicated to enhancing and improving conditions for walking on and around campus.

A preliminary list of the divisions and stakeholders that could be represented on the PAC would include:

- Parking and Transportation Services
- University Police
- Executive Vice President for Finance and Administration
- Vice President for Facilities Management
- UK Kentucky Transportation Center



- Disability Resource Center
- Office of Sustainability
- Environmental Health and Safety
- Physical Plant
- Capital Projects Management
- Student Affairs
- Representatives of students, faculty, staff and visitors/alumni

# DISABILITY ACCESS



The University is committed to ensuring that persons with disabilities have equal access to campus facilities. Campus paths are generally adequate for use by those with mobility impairments. In discussions with representatives of the Office for Disability Services and the community of persons with disabilities, the overriding issue is accessible parking. The recent closure of the Gillis lot, which contained 16 accessible parking spaces, has reduced the amount of core parking for persons with disabilities. Potential elements of a solution include both the enhancement of accessible parking opportunities and the expansion of park & ride options, linking peripheral parking to the core via efficient, accessible shuttle service.



Remedies for this situation should be explored. Among the elements of a solution that have already been implemented are:

- As part of BluPass, all UK students, faculty and staff have free access to the Wheels On Demand paratransit service.
- A PTS pilot program for on-demand paratransit is currently being tested.
- All Lextran buses are 100% lift-equipped.
- The parking lot at the corner of Huguelet Dr. and Rose St. has been converted from reserved to accessible spaces.

Other potential measures include:

- The number of accessible spaces in the Funkhouser/Library Dr. area should be maximized.
- PTS should also explore low-floor buses to best accommodate passengers with disabilities

Other issues of concern regarding disability access include:

- Some accessible spaces in the Library area are on the east (Columbia Ave.) side, and others on the west side. This is intentional as the two lots serve different user groups (employee and visitor). Signage should clearly indicate where appropriate accessible parking can be found.
- Campus Shuttle buses, even those with wheelchair lifts, are not easily accessible by those with walking disabilities that do not involve wheelchairs.
- The procedures for issuing disability versus temporary disability parking permits, though clear and carefully administered, are not always well understood. These procedures should be better communicated to the public.



- PTS is currently working with the Human Development Institute to update mapping of the campus' accessible routes

## PARKING

In analyzing the parking system, as well as listening to the campus community through writings, surveys, public meetings, and written comments, it is clear that there are two main issues with parking at UK.

- The current supply of parking does not meet the current need.
- The current permit system, under which all people are charged the same amount regardless of where the parking is located, is inefficient and does not allow users any choice regarding convenience and price. Finding available parking is unpredictable and leads to a constant hunt for a space. The pricing structure does not reflect the differential in the actual, practical value of parking spaces.

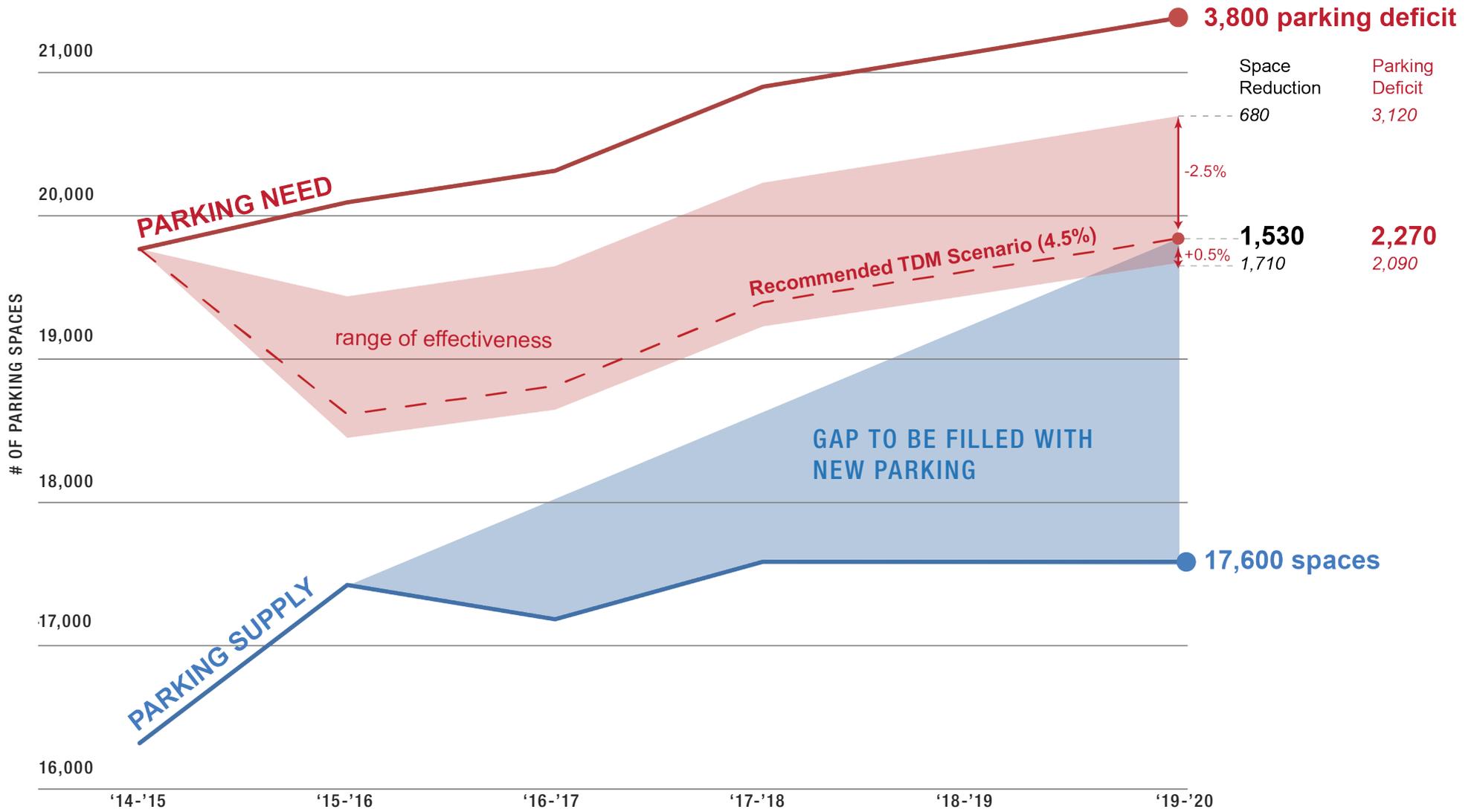
These two conditions indicate the need for three broad categories of response. Parking supply must be increased; parking demand must be decreased; and the system which allocates access to parking must be restructured.

In the Parking Supply/Demand Scenarios graph at the right, the campus parking supply is shown, year by year, against the theoretical demand for spaces. Parking demand will increase, primarily as a function of enrollment growth. Theoretical demand is not the same as actual need or peak occupancy: it represents a calculated ideal amount of parking that would provide adequate levels of service and availability to all. As noted in the analysis, most parking facilities are at or over practical capacity. The current deficit is an indication that parking is in short supply on the UK campus, reflecting recent reductions in supply as new campus projects have displaced parking lots.

The Parking Supply/Demand Scenarios graph, opposite, shows how the University's parking deficits will change between now and 2020, under different outcomes of the effectiveness of TDM measures in moderating parking demand. Absent implementation of a concerted TDM program, parking demand will grow as the campus population grows. On the supply side, there are specific supply enhancements in the short term, and in the longer term a set of potential projects from which to choose.

*Parking supply must be increased; parking demand must be decreased; and the system which allocates access to parking must be restructured.*

# PARKING SUPPLY/DEMAND SCENARIOS



## REDUCING PARKING DEMAND - TDM



As noted, reducing the number of single-occupant vehicles on campus is in everyone's interest. Accordingly, many aspects of the Transportation Master Plan address this under the umbrella of Transportation Demand Management (TDM).

To demonstrate the potential effectiveness of TDM in mitigating the need for parking, a Recommended TDM Scenario was developed and compared to the 'business-as-usual' projection (represented, in the Parking Supply/Demand Scenarios chart shown on page 21, by the Theoretical Demand curve). In this scenario, the effectiveness of which is shown as a range, the parking demand generated by employees, staff and students was reduced to reflect mode shift behavior due to adoption of TDM measures. The graph shows the promise of TDM to reduce parking demand and bring the supply and demand curves together. If the University realizes significant reductions in parking demand, on the order of the 1,710 spaces shown as the high end of the Space Reduction range, the need for new parking above and beyond the 17,600 spaces shown as the 2017-2020 base will be approximately 2,000 spaces. On the other hand, if TDM is less successful, achieving a space need reduction of less than a thousand spaces, the deficit will be over 3,000 spaces by 2020.

## RECOMMENDED TDM MEASURES

The TDM measures recommended below have been shown to be effective at universities across the country that have made a concerted effort to manage parking need, through the provision of services and incentives to make transit use, bicycling and walking more attractive and practical. Some are already in use at UK; others will be new.

- UK Commute Club
- Parking cash out
- Carpooling
- Car sharing
- Occasional parking
- Remote parking / Park & Ride
- Remote car sharing
- Parking permit structure

## UK COMMUTE CLUB



The signature feature of the recommended TDM program is the consolidation of individual incentives under the umbrella of a UK Commute Club. A UK Commute Club, such as the one in operation at Stanford University which is profiled in the Analysis section, is a package of benefits which are offered to employees and students who demonstrate their interest in using alternative transportation modes for commuting by not purchasing parking permits.



Since the implementation of the Stanford Commute Club in 2002, Stanford University has reduced the percentage of employees driving alone from 72% to 46% in 2011.

At UK, some of the elements of a commute club are in place, including a bicycle voucher program, guaranteed ride home and available scratch-off tickets for occasional parking. The proposed UK Commute Club, however, would go further both by offering more benefits and by consolidating them into a package that, taken together, constitutes a powerful incentive to give up a parking permit.

As detailed below under Bicycles, the UK bicycle voucher benefit is an early win, introducing to commuters alternatives to driving alone that are economical, not to mention healthy and fun. The UK Commute Club can extend the concept of offering appealing alternatives, beyond the circle of potential cyclists to potential transit users and walkers as well. UK Commute Club members could choose between a bicycle voucher and a parking cash-out package that would pay people not to bring cars to campus. Under a parking cash-out program, instead of purchasing a parking permit, students and employees receive a cash payment.

The table below shows a proposed structure for the UK Commute Club benefits, and is followed by a description of recommended TDM measures, including remote parking facilities.

## UK COMMUTE CLUB: POTENTIAL INCENTIVES AND CONDITIONS

UK COMMUTE CLUB OPTION (CHOOSE ONE)	CASH VALUE	CONDITIONS
Parking Cash Out (available each year)	\$100 / year	Must forgo parking permit for one year
Bicycle Voucher (available once only)	\$400 / participant	Must forgo parking permit for two years

UK faculty, staff and students (except for students living on campus) are eligible. Participants must have held a parking permit for the past year or more. If new to campus or have not purchased a permit, participants must be eligible to purchase a permit (example: students must live at least one mile from campus to be eligible)

Students/faculty/staff who live in the same household as another eligible faculty/staff/student are subject to additional restrictions to prevent abuse of program. Carpoolers are automatically enrolled in the UK Commute Club, but are not eligible for the parking cash out or the bicycle voucher. Each carpooler must register with PTS, in order to prevent them from qualifying for the parking cash out or bicycle voucher.

GENERAL FEATURES AVAILABLE TO ALL UK COMMUTE CLUB	
Driving Credit for Car Sharing Service	\$100 / year
Ten occasional parking vouchers	\$35 / year
Emergency Ride Home	\$40 / ride
Referral bonus	\$50 / referral
UK Commute Club TShirt/Mug	\$15 / person

## PARKING CASH OUT



Cash out programs vary across institutions; variables include the appropriate reward amount, payment method, and eligibility rules. Under a parking cash out program, the University would give students and employees a choice to purchase a parking permit or to accept a cash payment instead.



## CAR SHARING

Car-sharing, or hourly rentals, provide a low-cost, short-term car rental option. UK's car sharing program is valuable for giving the campus population a feeling of having access to a vehicle when they need one. The program costs the university only the parking spaces used to store the vehicles. As the program is restructured and relaunched with the expiration of the current contract in Spring 2016, it will be important to have strong UK branding and marketing support for the program as part of a robust, comprehensive TDM strategy.



## OCCASIONAL PARKING



UK offers single-use “scratch-off” permits to employees and students who do not have a regular permit pass. This provides those who typically use alternative modes of transportation with a low-cost parking option when driving is necessary. A one-day pass costs \$3.50, which means the program is cost-effective for those who drive to campus fewer than three days a week.



The physical nature of the “scratch-off” pass prevents the permit from being valid in gated lots and structures (where a ticket is required to get in and out). In order to increase interest in the program, UK should consider expanding the parking options to gated parking by implementing a more sophisticated system that is flexible enough to accommodate all types of parking. Vendor systems are available through which patrons can purchase prepaid cards giving access to gated facilities. Cards can be sold on either a decrementing or declining basis – by the hour or by the visit – making them usable by visitors as well as occasional parkers.

## CARPOOLING



The University of Kentucky Carpool program offers the following incentives:

- Reserved Parking Area (within designated permit lots)
- Guaranteed Ride Home (maximum of three times per year)
- Motorist Assistance

The program is available to employees and students who live outside a one-mile radius from campus. A carpool consists of at least three participants, who must share a ride at least three times a week. To make the program more attractive, UK should consider reducing the carpool permit price; reducing the required number of

participants to two; and allowing participants to park in any reserved parking area regardless of permit type (E, C, or K). This would ensure that participants can park in the more conveniently located parking.

If participation in carpools remains minimal, as has been the experience to date, it may be advisable to reduce the requirement to two participants. This would significantly increase the utility of carpooling, for example by couples or housemates who both commute to campus and would respond to a financial inducement to use only one car.

Carpoolers should also be given the benefit of the general features of the UK Commute Club (other than the parking cashout).

## REMOTE PARKING / PARK & RIDE



Park & Ride lots provide employees and students the option to park off-campus at minimal or no cost. Remote parking has proved to be a very effective means of reducing congestion on campus at other universities.

The University of Kentucky currently does not provide official Park & Ride options, but several unofficial lots exist at shopping centers or other free public parking lots along Lextran routes that service the surrounding community with access to UK.

PTS is beginning to identify several potential locations, including 200 spaces at Coldstream. To develop other remote parking opportunities, UK could seek existing parking lots along key commuting corridors that are underutilized and for which owners would be willing to make an agreement for university use of the spaces. If not located along existing Lextran routes, the University may consider providing a shuttle service between the off-campus lots and the campus core. The shuttle should run frequently for the majority of the day and provide night service in order to create a reliable and efficient option for the campus community.

## REMOTE CAR STORAGE



Another potential application of remote lots would be to service residential students who use their cars only for going home on the weekends. This type of remote car storage could be serviced by a shuttle that runs on Fridays and Sundays only. Survey data shows demand for at least a few hundred spaces of this type. Since peripheral, on-campus lots will be very affordable, remote car storage would need to be free or very low cost to be attractive to users. The benefit to the campus community will be a reduction in demand for parking on campus.

In the application of either option, PTS should prioritize robust mapping and publicity of Park and Ride and remote car storage lots locations as well as adequate branding and wayfinding signage.

Remote lots for residential students who use their cars only for going home on the weekends could be accessed by shuttle service running much less frequently than would be needed at Park & Ride lots; perhaps on Fridays and Sundays only. Within commuter Park & Ride lots, some portion could also be designated for remote car storage and serviced by the Park & Ride shuttle.

## PARKING PERMIT STRUCTURE



The Analysis section of this plan documents the multiple pressures on the parking system. A shortage of parking, even at the stadium, results in facilities all over campus operating at near-capacity levels of occupancy. Parkers, unless they arrive early, have little assurance that the parking facility they choose, whether conveniently located or not, will have a space for them. This leads to widespread uncertainty and unnecessary traffic congestion, as commuters hunt for the best available space.

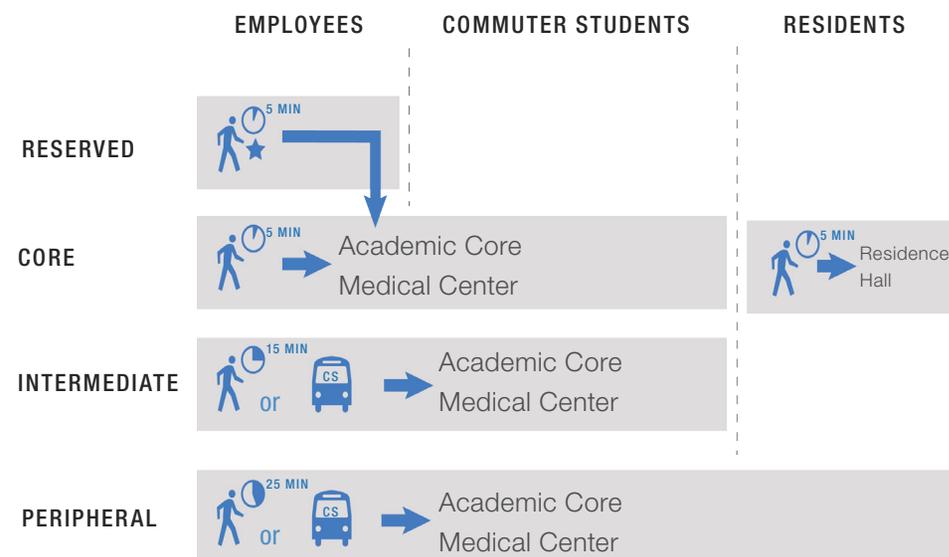
The problem, as noted, is threefold: there is not enough parking; dependence on automobiles forces people to consume parking and traffic capacity; and the system by which parking is allocated provides neither choice nor certainty. Increasing parking supply and decreasing demand have been addressed above. To address the last issue, it is recommended that the parking permit structure be revised to incorporate zone-based permits as well as existing classifications of student and employee. Allocating parking by campus zone will, in tandem with the creation of new parking, allow PTS to more reliably ensure that there will be vacant spaces in the parking facilities for those who are permitted to use them.

The principles behind the proposed zone parking system are simple.

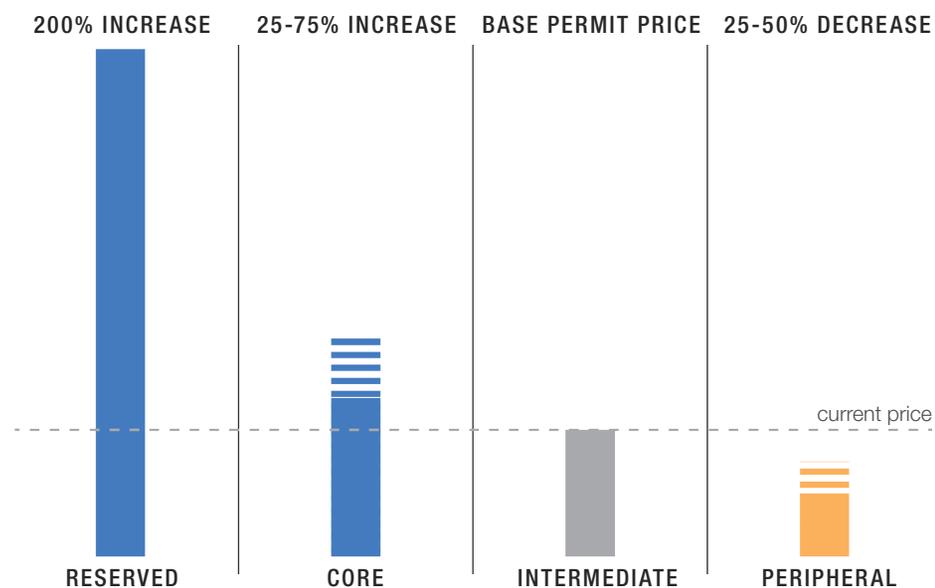
- When people know where to park, and are confident that a space is waiting for them, they will go there directly, finding parking efficiently and driving as little as possible on campus streets.

The price of parking should bear some relation to its value. It is indisputable that some parking spaces on the UK campus are more valuable than others, from the point of view of both the user and the owner. Permit pricing and allocation should reflect those differences, and parking users should be empowered to make their own choices.

## ZONE PRICING GROUPS



## MONTHLY PERMIT PRICES



Three zones are proposed that will be priced according to proximity to the campus core. This will provide a monetary incentive to park in more remote spaces. Conversely, the new system will allow those who value proximity more highly to purchase a permit that will provide more reliable access to parking in the campus core than is currently available under the first-come, first-served policy.

The pricing scheme will also be simple. Permits for the Peripheral zone will cost approximately half of those for the Core zone, and the intermediate zone will be priced in the middle. A version of 'reserved' spaces will still be available, though their number should be more closely calibrated with use in order to reduce the number of empty reserved spaces. The new version could be called 'guaranteed' parking, and the number of spaces could be set to ensure availability without leaving many empty.

Allocation of spaces into zones will be an ongoing process, phased in over time. As shown on Proposed Zone Parking (p. 30), the Peripheral zone comprises primarily parking facilities to the south of Cooper Dr. Implementing parking supply enhancements such as those identified for the Motor Pool & Facilities, PS2, south of Alumni or Pieratt Field sites, the University can create a parking resource that will be sufficient to comfortably satisfy the demand for more economical parking, supplemented with convenient and efficient Campus Shuttle service.

Zone parking systems are common on large university campuses, due to their flexibility of administration and ability to be adjusted to meet the demonstrated need of users. Comparable university with zone parking systems include: the University of Michigan, the Ohio State University, North Carolina State University, the University of Georgia, and the University of Louisville.

Individual parking users have different needs, that are not completely defined by whether they are student, faculty or staff. Creating a permit system that distinguishes between parking locations as well as the status of their users will create choices, which individuals can make based on their own values and needs.

The old parking allocation system provided a distinct advantage to one group of people: those who arrive early in the day. The recommended system will not disadvantage those people, who will still be able to arrive early. But it will make parking easier for everyone else as well. Those who arrive later will find parking facilities more full, but zone allocation and the assignment of a controlled number of permits for given parking areas will ensure more widespread predictability of available spaces.

In any parking permit system, rules are made which affect people's access to parking. On a campus-wide basis, a zone system will result in more vacant spaces – the result of ensuring parking availability – and thus slightly less efficiency in terms of parking space utilization. Therefore it may be necessary to first achieve some increases in parking supply and reductions in demand before the zone system is fully implemented. The long-term result will be a more rational allocation of parking, in which users will be able to choose which parking best fits their needs. For example, different students have different needs: some have weekday jobs off campus and therefore need midday transportation, while others only need their cars on weekends to go home or run a few errands. Similarly, some employees park in the morning and leave their cars until they go home in the evening, while others for professional or personal reasons need to come and go during the day. Under a zone permit system, these and other types will find a permit and a parking place that will suit their situations.

A zone system is not perfect. Some of the most desirable parking spaces will cost more than they do today. However, just as core parking becomes more expensive, peripheral parking will become less expensive; and, as detailed below, the Campus Shuttle will be improved in both service coverage and frequency, providing more convenient parking opportunities all across campus.

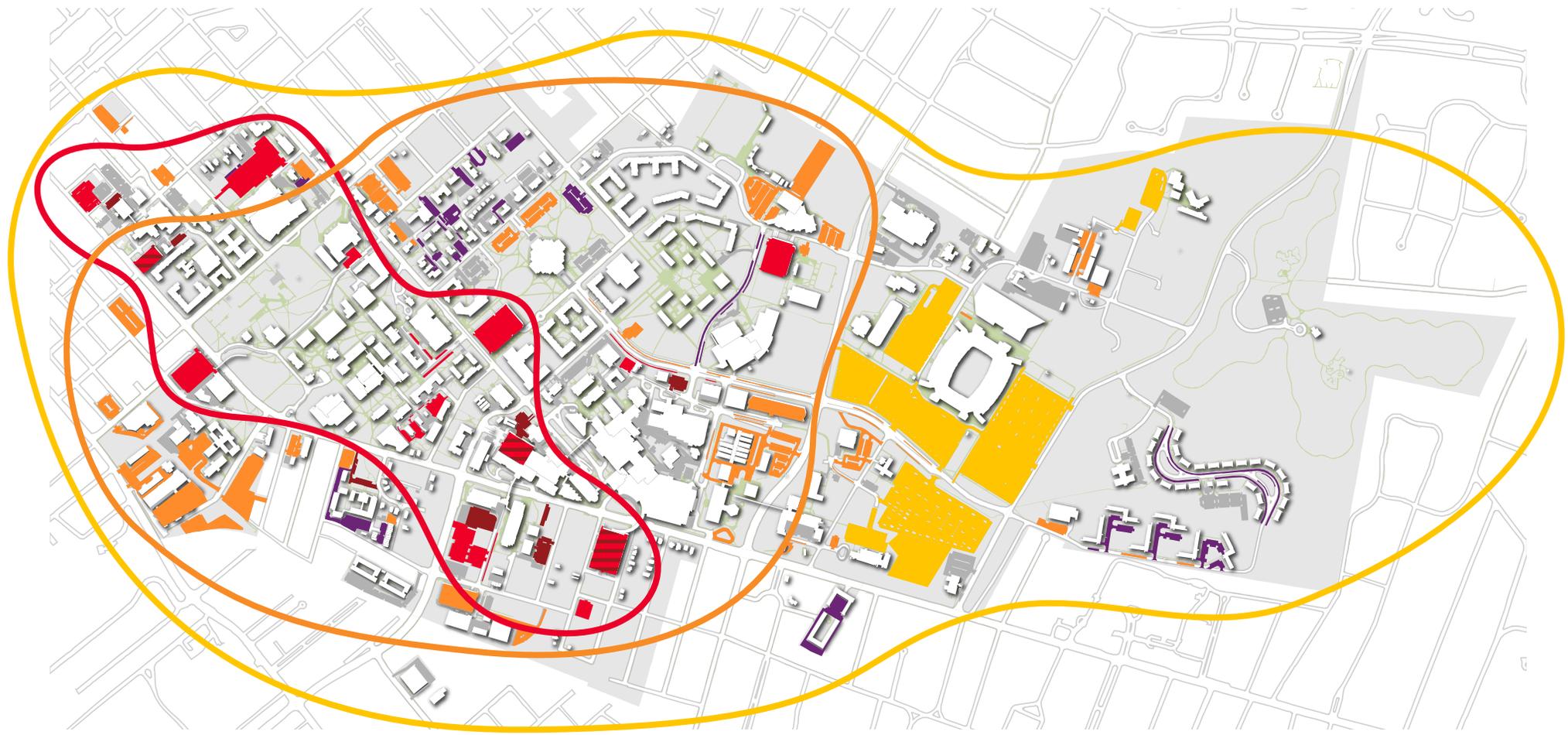
The Transportation Choices chart, on page 40, summarizes the features, advantages and trade-offs inherent in the proposed zone parking system and associated TDM services.

The precise designations of parking facilities into zones, particularly between Core and Intermediate, will be refined in practice on an annual basis. Prices and price differentials will affect demand, as will the popularity of particular locations. Both pricing and space assignments will be tested and adjusted over time in order to find the right balance between supply and demand.

The flexibility of the proposed system is demonstrated in the figure opposite, Geography of Zone Parking. The figure shows two things:

- In diagrammatic shapes, the relationship between Core, Intermediate and Peripheral parking on the UK campus. The Peripheral spaces are largely in south campus near the stadium, and will be intensively served by the Campus Shuttle as described under Transit. The diagram also illustrates, by the overlap between the Core and Intermediate shapes, that many parking areas could be designated as either. Accordingly, the variable elements of the zone parking model – designation of spaces, numbers of spaces in each zone, pricing and allocation of zone permits among parking users – should be subject to annual review and adjustment.
- The figure also shows, as one example of how parking could be assigned between zones and user groups, a scenario in which specific parking facilities are designated as Reserved, Core, Intermediate or Peripheral. In this example, resident spaces are shown as being in the Core zone. The precise balance between the numbers of Core and Intermediate parking spaces, and the price points that accompany them, will be calibrated over time.

### GEOGRAPHY OF ZONE PARKING



EXAMPLE ZONE PRICING GROUPS	RESERVED	CORE	INTERMEDIATE	PERIPHERAL	
Employee	750				750
Employee & Commuter		5,076	3,984		9,060
Employee, Commuter & Resident				6,619	6,619
Resident		1,245			1,245
	750	6,321	3,984	6,619	17,674



## INCREASING PARKING SUPPLY



In the Spring and Summer of 2015, Transportation and Parking Services began expanding the campus' existing parking supply, adding spaces at the following locations:

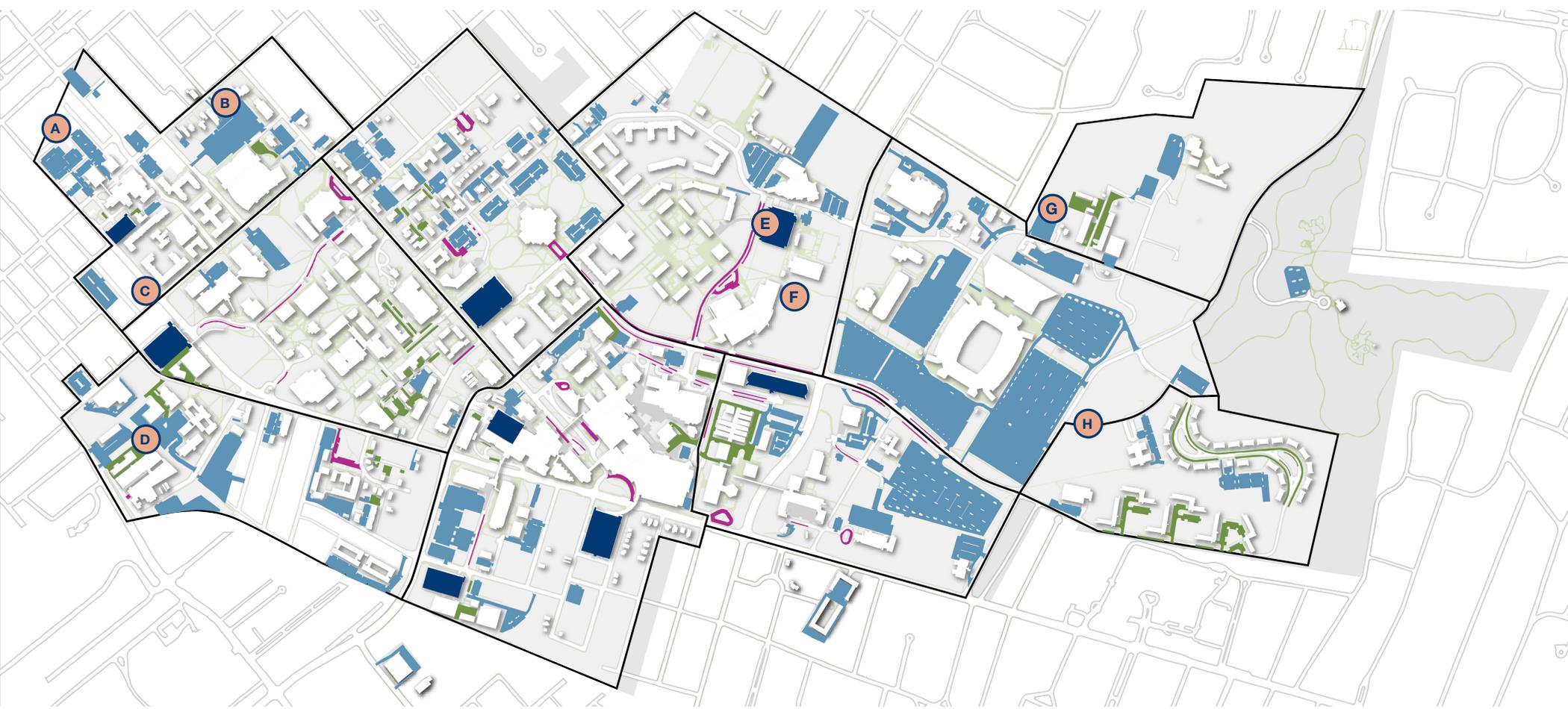
- Commonwealth Stadium Orange Lot (expansion, approx. 500 spaces)
- Reynolds Lot at the northwest end of Scott Street (new lot, approx. 230 spaces)
- Commonwealth Stadium (added spaces through design efficiencies, approx. 200+ spaces)
- Linden Walk Lot (expansion, approx. 36 spaces)
- Greek Park Lot at the southeast end of Rose Lane (new lot, approx. 35 spaces)

In the Parking Supply/Demand Scenario shown at right, these new parking projects are shown as completed by 2015-2016. Beyond that year, no definite plans have been made for the creation of new parking supply. An array of potential parking facility sites merit consideration. These potential sites, whose capacities total between 6,475 and 7,975 spaces, are described in the pages that follow. No ranking or priority has been ascribed to the sites, but they have been evaluated in terms of the challenges and opportunities they present, including cost, strategic location and impact on green open space.

To recognize the potential to create over 5,000 new parking spaces on campus is not to recommend their construction. As shown in the Financial Plan, TDM is in general a more cost-effective means of bringing supply and demand into balance than is the construction of new parking spaces, even without taking into account the impact of auto traffic and the opportunity cost of campus land, which is always at a premium. However, it is clear that increasing parking supply will be necessary, even if the University's TDM program is highly successful.

The resolution of the University's parking availability problem lies in both adding supply and reducing demand. The Transportation Master Plan's recommendations for parking management, transit service, and TDM efforts of all sorts are designed to close the gap.

POTENTIAL NEW PARKING LOCATIONS



- Parking lot
- Garage
- Parking Area
- On-street Parking

## COMPARISON OF LONG-TERM PARKING OPPORTUNITY SITES

	LOCATION	NET NEW SPACES	OPPORTUNITIES & OBJECTIVES	CHALLENGES
A	Warren/Limestone Structured Parking (3 levels + Ground-floor Retail)	320	<ul style="list-style-type: none"> <li>• Master Plan proposes mixed use or hotel with structured parking.</li> <li>• Structured parking would enhance Good Sam site</li> </ul>	<ul style="list-style-type: none"> <li>• Limestone is an important corridor that should have active uses on the ground level—strengthening the connection between UK and downtown</li> </ul>
B	Behind Memorial Coliseum Structured Parking (4 levels)	740	<ul style="list-style-type: none"> <li>• 2013 Master Plan proposed structured parking</li> <li>• Provides parking for arts events at Coliseum, Singletary Center, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic impact</li> <li>• Parking may not be highest and best use of land</li> </ul>
C	PS5 Expansion Structured Parking (4 levels + Ground-floor Retail)	665	<ul style="list-style-type: none"> <li>• 2013 Master Plan didn't show garage expansion, but it could work well if garage integrated active ground floor uses to face Winslow St. and Upper St.</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic impact</li> <li>• Land acquisition</li> <li>• Must include ground level retail to enhance Town/Gown experience</li> </ul>
D	Reynolds Surface Parking	335	<ul style="list-style-type: none"> <li>• Good land banking strategy</li> <li>• Positions parking on the campus periphery</li> <li>• 2013 Master Plan shows structured parking: feasible if/when Newtown Pike extension is built</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of Reynolds I and II</li> <li>• Traffic impacts</li> </ul>

	LOCATION	NET NEW SPACES	OPPORTUNITIES & OBJECTIVES	CHALLENGES
E	PS7 Expansion Structured Parking (4 levels)	655	<ul style="list-style-type: none"> <li>• 2013 Master Plan kept tennis, but explored a parking garage expansion</li> <li>• If parking structure expands, design walkway to accommodate access from housing to rec fields</li> <li>• Improvements to Sports Center Drive make site amenable to parking</li> </ul>	<ul style="list-style-type: none"> <li>• Could separate student housing from recreational fields</li> </ul>
F	Pieratt Field Underground Parking (2 levels)	1,320	<ul style="list-style-type: none"> <li>• Closer to central campus</li> <li>• Preserves green open spaces</li> <li>• Alternative: southeast corner of Cooper/University (400 to 500 net new spaces)</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive (\$50K+/space)</li> <li>• Traffic impact</li> <li>• 2013 Master Plan kept existing field and showed garage across Cooper Dr. ‘</li> <li>• Master Plan recommendation would put parking closer to stadium and would be more efficiently served by Campus Shuttle</li> </ul>
G	Motor Pool & Facilities Surface Parking	1,940	<ul style="list-style-type: none"> <li>• Parking can be integrated with 2013 Master Plan proposal for realigned College Way and new baseball stadium as well as potential soccer fields, softball, rec fields. Service facilities are relocated behind Baptist Health on south campus.</li> <li>• Construction of surface parking is faster and less expensive than structure</li> </ul>	<ul style="list-style-type: none"> <li>• Need to relocate service facilities and service parking</li> <li>• Parking needs to be coordinated with the future development of the athletics and recreation district</li> </ul>
H	South of Alumni Dr.	500 – 2,000	<ul style="list-style-type: none"> <li>• 2013 Master Plan considers uses such as rec/ athletic facilities and fields as well as service facilities</li> <li>• Parking could be integrated into the proposed uses</li> <li>• Surface parking would be good land banking use</li> <li>• Serviceable by campus transit</li> <li>• Construction of surface parking faster and less expensive than structure</li> </ul>	<ul style="list-style-type: none"> <li>• Stormwater management would need to be integrated with new Alumni Drive/Nicholasville Road system</li> </ul>

## A. WARREN/ LIMESTONE (STRUCTURED PARKING)



EXISTING

Surface Area: 37,800 ft<sup>2</sup>  
Garage Footprint: 180 ft x210 ft



CAMPUS MASTER PLAN

## B. BEHIND MEMORIAL COLISEUM (STRUCTURE PARKING)



EXISTING

Surface Area: 64,800 ft<sup>2</sup>  
Garage Footprint: 180 ft x360 ft



CAMPUS MASTER PLAN

C. PS5 EXPANSION (STRUCTURED PARKING)



EXISTING

Surface Area: 58,500 ft<sup>2</sup>  
Garage Footprint: 180 ft x325 ft

D. REYNOLDS (SURFACE PARKING)



EXISTING

Surface Area: 197,500 ft<sup>2</sup>

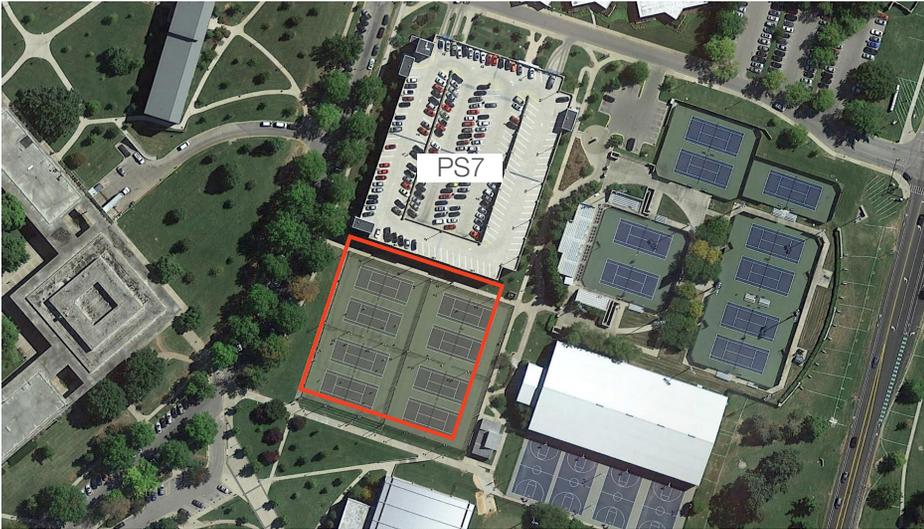


CAMPUS MASTER PLAN



CAMPUS MASTER PLAN

## E. PS7 EXPANSION (STRUCTURE PARKING)



EXISTING

Surface Area: 57,600 ft<sup>2</sup>  
Garage Footprint: 240 ft x 240 ft



CAMPUS MASTER PLAN

## F. PIERATT FIELD (UNDERGROUND PARKING)



EXISTING

Surface Area: 231,000 ft<sup>2</sup>



CAMPUS MASTER PLAN

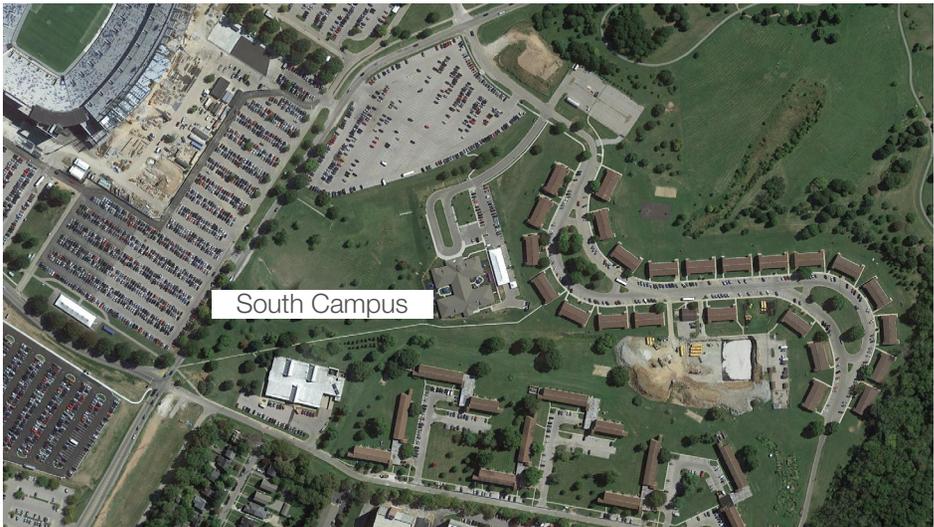
G. MOTOR POOL & FACILITIES (SURFACE PARKING)



EXISTING

Surface Area: 678,700 ft<sup>2</sup>

H. SOUTH OF ALUMNI DR. (SURFACE PARKING)



EXISTING



CAMPUS MASTER PLAN



CAMPUS MASTER PLAN

## TRANSPORTATION CHOICES



## OPTIONS & INCENTIVES

The diagram above summarizes the transportation choices that will be available. Commuters to campus, as well as residential students, will be offered financial incentives to forego parking permits, which will add to the attractions (health, enjoyment, reduced carbon footprint) of walking, bicycling and transit use. For those who choose to drive and park, a range of choices will be available, with the cost reflecting the value and convenience of the parking location. Those who prefer

the existing arrangement may choose the intermediate zone, which preserves the current balance of cost and convenience; but new options will allow users to select lower-cost permits in exchange for parking peripherally and walking, biking, or taking the campus shuttle to their destinations, or to purchase permits providing predictable access to proximate core spaces.

# TRANSIT

The transit system is essential to the University's function. Tens of thousands of students, faculty, staff, visitors, alumni, and others use transit to get to, from, and around campus. In fact, the transit system makes the campus possible: without it, the open spaces and the beautiful, walkable places that define a campus and distinguish it from the rest of the urban landscape would be consumed by parking. Transit, including Lextran services, is more than an option; it is the indispensable complement to parking, and the connection between car and campus core.

The main impacts of transit at UK are:

- Approximately 7% of the university community use it to commute, and do not bring cars to campus.
- Transit moves people between peripheral parking, mostly at the stadium, and their campus destination. It also can create more parking opportunities by putting off-campus, remote parking within convenient reach.
- For resident students, Campus Shuttles can be the exclusive choice for on-campus motorized transport. The constant availability of shuttle access to peripheral parking also enables students and employees not to park adjacent to their campus destinations. Campus transit offers the option of parking on land that is less important and valuable to the University, and therefore costs less than core parking.

Although it provides these services, the existing transit system is the result of many incremental measures and decisions which have over time diffused the effectiveness of transit services. The Transportation Master Plan recommends focusing the development of the transit system on serving three core groups:

- Commuters who use transit to get to and from campus
- Commuters who drive to campus and park
- All users who need to move across campus

With these needs in mind, the following recommendations address proposed modifications to the routes of Campus Shuttle buses, coordination between Campus Shuttle and Lextran routes, administrative cooperation and mutual support between the University and Lextran, and Bus Stop Guidelines.

## CAMPUS SHUTTLE ROUTES



The existing CATS route system relies heavily on one-way loops serving different areas of campus. To resolve the problem of too many buses carrying too few people, the Transportation Master Plan recommends simplifying the campus route structure, which has been implemented as of Fall 2015. A single, two-way loop replaces the Blue, Red and Lextran 14 Routes, providing equal or better transit access by offering direct travel in both directions, at shorter intervals.

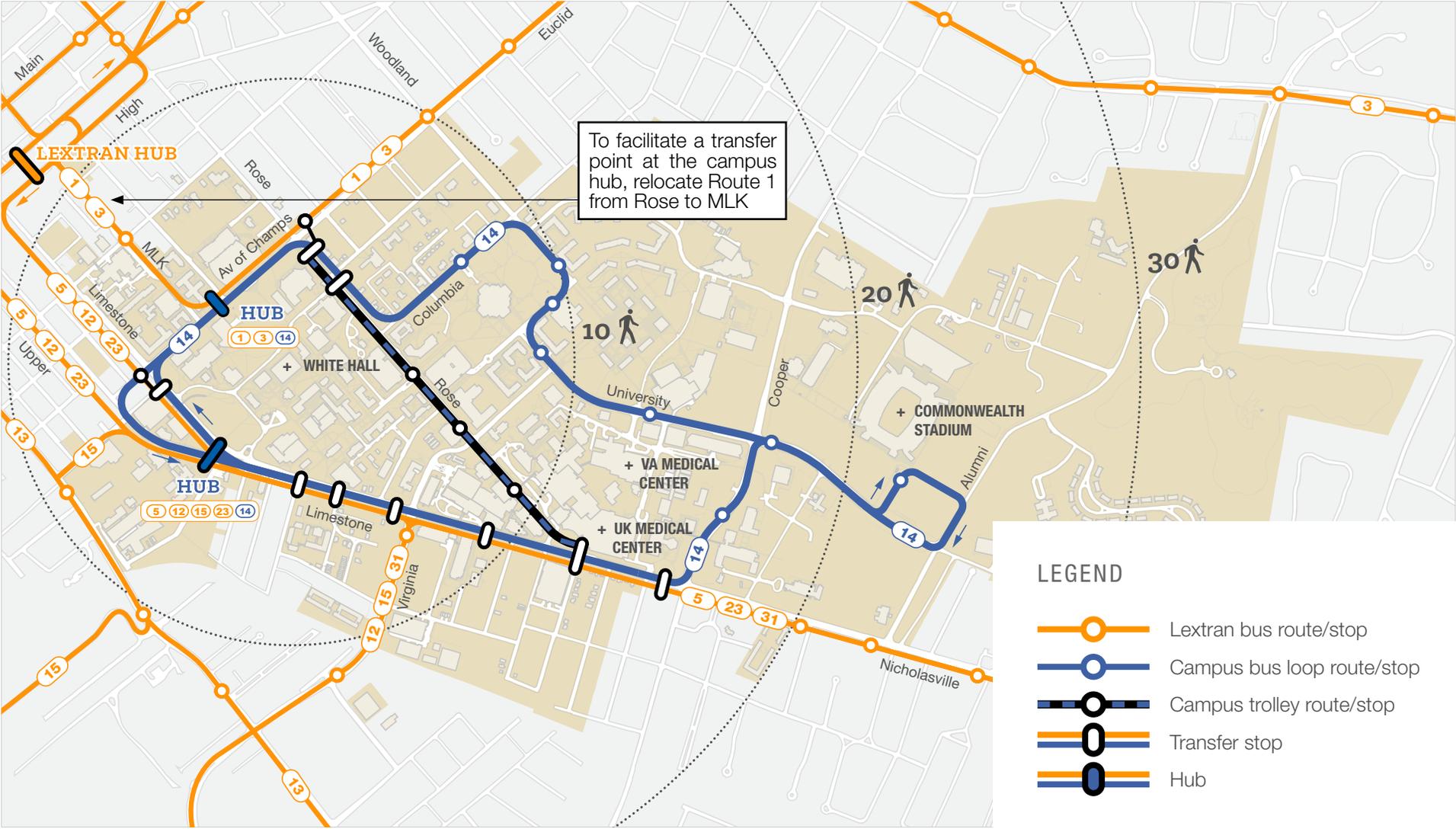


The main transit loop is also intended to support the parking recommendations of the Transportation Master Plan by focusing on making the most direct connections between the stadium parking area and all points on campus – the core, medical center, and residential complexes.

The proposed two-way loop will provide a larger number of people fast access across the UK campus. While it will be the campus' primary bus route, others may be valuable to serve particular needs. In conjunction with the establishment of Park and Ride lots at off-campus locations, UK transit service may provide more efficient connections than Lextran can. On-campus, the basic two-way loop may be supplemented, depending on need, with more targeted service such as within the Medical Center.

The simplification of the campus shuttle route structure improves intra-campus access for all, benefiting both those who need quick transportation across the campus as well as those who need to get to and from parking at the stadium. As such, it addresses the needs of two of the identified constituencies of transit. The third, commuters who rely on transit and do not drive, need more: Lextran service that brings them conveniently to campus, as well as efficient connections to both

# NEW CAMPUS SHUTTLE SYSTEM



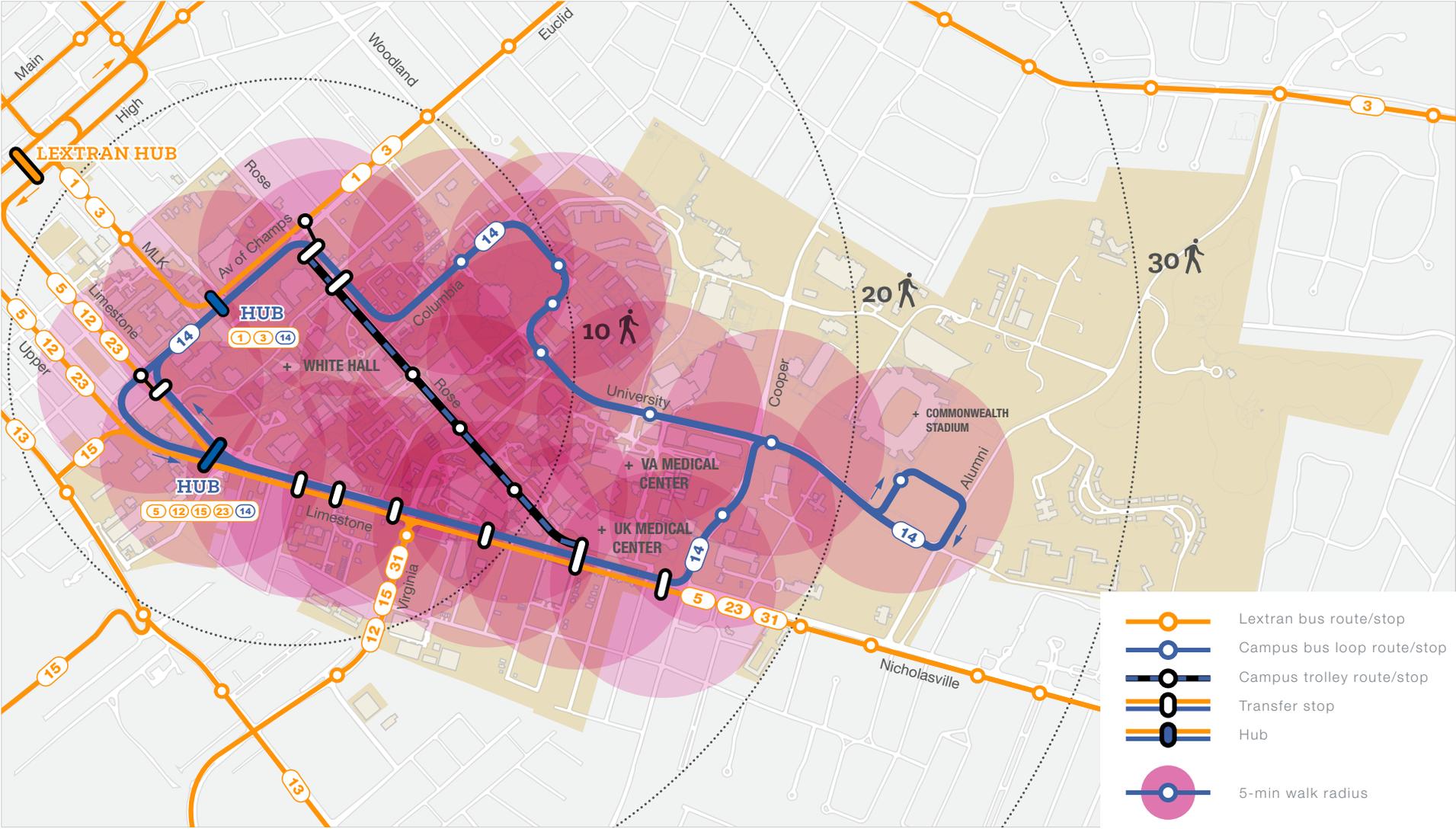
their campus destinations and campus shuttle routes. The recommended transit route system therefore includes modest modifications to a number of Lextran routes to better align them with campus shuttle routes and create new, coordinated bus stops that can serve as transfer points. In particular, the 1, 3, 5, 12, and 23 Lextran routes could be run down Avenue of Champions and/or Limestone, so that they would converge with the main campus route at one of the new Hubs (see map, right).

## ROSE STREET TROLLEY



To better connect highly populated destinations within the core campus, it is recommended that the Campus Shuttle be supplemented with a 'trolley' route, comprising smaller transit vehicles (15-20 rider capacity) running on short headways (10-15 minute frequency). The trolley would run on Rose St., between the Singletary Center and the Medical Center. Given the short length of the route, a single vehicle will be sufficient. The trolley could have flexible stops, allowing boarding and alighting along the entire route. A trolley of this sort would not only provide convenient short-distance transportation within the core of campus, but would also be a visible and cheerful expression of campus identity.

SYSTEM COVERAGE



- Lextran bus route/stop
- Campus bus loop route/stop
- Campus trolley route/stop
- Transfer stop
- Hub
- 5-min walk radius

## BUS STOP GUIDELINES



Bus stops should be arranged strategically according to two principles:

- Except where space considerations prevent it, stops should serve all routes that pass them to facilitate transfers, avoid proliferation, and minimize pre-emption of curb space.
- Stops should be placed so that no place on campus is more than a five-minute walk to a bus stop.

The Proposed System Coverage map on page 45 shows a pattern of stops along the recommended bus routes which meets these criteria.

The design, dimensions and amenities of bus stops are important elements of a transit system. The quality of bus stops is an indication of the University's degree of commitment to making transit an integral feature of campus life. As the Campus Shuttle route system is restructured and new bus stops are created, each stop should have a consistent character both visually and in terms of quality:

- All bus stops should have adequate standing room and, if possible, seating.
- Signage should be clear and uniform.
- Major stops should be sheltered, with an attractive and consistent branding.
- Stops should connect directly and safely to the walkway system.



In the longer term, the University and Lextran should explore more advanced amenities and should take full advantage of emerging smartphone technologies.



Standard bus stop

## POINT OF DEPARTURE



In 2014-2015, students at the Center for Applied Energy Research, within UK's College of Design, undertook a semester project called Point of Departure, a study of the potential for bus stops to be more – shelters, full-service transit amenities, landscape features and outdoor art. It was a highly technical exercise, engaging electrical engineers in the project of measuring how much solar power the stops could harvest and feed into the utility grid. At the same time, architects explored the concept of multi-purpose public structures that could be positive landmarks and campus assets, both publicizing transit and improving it while demonstrating how economically they can be built and operated.

The potential locations for such experimental transit improvements depend on who is funding them and how they would be administered, as well as urban/campus design considerations. One or both of the proposed bus hubs are an obvious possibility, but the interior of campus may be better as the University has more flexibility within its borders than on the edges. The class project looked at the Singletary Center's porte-cochere, at the northwest corner of Rose St. and Avenue of Champions. The intersection is a meeting point between Lextran, University Shuttle and the proposed Rose St. trolley route. However it is not proposed as a transit hub because it will not be a stop for Lextran routes running down Euclid/ Ave. of Champions, and therefore is not ideal.

The most prominent and easily developed location for a Point of Departure might be at the College of Pharmacy. In the context of new parking supply and the upgrading of University Shuttle service, bus stops should be upgraded generally, but an architecturally adventurous and technologically advanced example could be a showpiece of the new system and a significant statement of transportation vision.



*"The project evolved into an interdisciplinary collaboration where architecture and engineering students addressed issues of sustainability to impact the lives of the student body and to produce engaging shelters as an outward expression of research on campus. The idea gained traction in the fall of 2014 when the team was awarded one of the inaugural University of Kentucky Sustainability Challenge Grants.*

*The goal of the studio was to leverage architectural thinking to address issues on campus where new ideas could make a significant impact. With the recent campus reconstruction, it was clear that there was an opportunity to engage the conversation of design on a 21st century campus through a strategic acupuncture, while improving the riders experience of the transportation network. The nature of the transportation network, and by extension the shelter as its physical manifestation, places each of the sites at an edge or threshold to campus. This is a significant moment conceptually, where someone's experience of arriving is now an educational opportunity that adds value to the overall campus."*

-UK CoD Studio Feature

## TRANSIT HUBS



One of the objectives of the new campus shuttle route pattern is to simplify connections between Lextran and campus shuttle service by making transfers easier. This is accomplished through the establishment of two hubs or transit gateways, which would be distinguished by having greater capacity, both for vehicles and waiting riders; a high level of amenity including shelter, seating and real-time bus arrival indicators; and a general higher level of visibility, both for the convenience of users

and to broadly symbolize coordination and cooperation between the University and the city of Lexington. The recommended locations of the transit hubs are shown on page 43 on Avenue of Champions between Lexington St. and Martin Luther King Blvd., and at the confluence of Limestone and Upper St.

The two central transit hubs will serve as focal points for transfers, but also as symbolic campus gateways, with marquee features that would advertise the partnership between town and gown. The two hubs serve as major locations at which to switch to and from Lextran routes servicing the greater area. Efficiency is maximized when riders can transfer to the central campus shuttle loop as quickly as possible to reach their destinations. The hubs will also create a sense of arrival to the campus and a transit identity that signifies the University's ongoing commitment to improving rider experience.

## TRANSIT HUBS



## TRANSIT HUB CASE STUDY



"CC Little," the main bus hub at the University of Michigan Ann Arbor

## ADMINISTRATIVE COOPERATION WITH LEXTRAN



Beyond coordinating bus routes to provide more direct and efficient service, there are many ways that the University and Lextran cooperate to make transit an attractive alternative to single-occupant vehicle commuting. The Transportation Master Plan outlines an ongoing strategic partnership between UK and Lextran to ensure that students, employees, and other members of the UK community have maximum access to the services and resources that Lextran provides.

The University and Lextran will collaborate on many fronts, including the joint promotion of transit services, cooperation in seeking and securing federal transportation funding, agreements regarding advertising on buses, and the creation of initiatives and incentives for transit use.



An initial achievement in this regard is a partnership that will allow University of Kentucky students, faculty, and staff to ride any Lextran bus route free of charge simply by showing valid identification. Effective July 1, 2015, the new BluPass program is valid on all Lextran routes, both on and off campus, allowing UK students, faculty, and staff to travel to, from, and around campus while also accessing the city. The program, which is established on an annual basis, is funded by a \$160,000 usage fee paid by the University to Lextran. That fee could increase in future years.

Another area of cooperation with Lextran is technology. The possibilities for increased transit efficiencies through emerging technologies are endless. Two broad areas that are partially implemented and will continue to be developed are: real-time bus arrival displays at stops/stations and bus locator apps for smartphones. Transloc, a real time bus tracking system that was already in place for Campus Shuttle routes, has been added to Lextran buses.



Another product of the invigorated collaboration between the University and Lextran is the arrangement for UK advertising to be displayed on Lextran buses running on campus. The administrative agreement by which Lextran will ‘wrap’ buses exclusively in a UK-branded concept will not only promote the University and its partnership with Lextran, but will also give those buses a more attractive and modern appearance, increasing their market appeal.

The agreement also stipulates, under the heading of System Integration, that the University and Lextran will work together to identify joint marketing opportunities to increase ridership among UK students and employees. Lextran also promises to participate in promotional events on campus to raise interest and awareness about public transportation.

The central issue in developing transit markets is how to make the experience of riding a bus so effortless and enjoyable that it is clearly preferable to driving alone. To the degree that Lextran and the University continue to work together to improve service, and city/campus transit is seen as one seamless system, ridership will grow and parking need will shrink. This can be done in many ways: coordination of marketing campaigns; cross-marketing; improved, amenitized and shared bus stops; and BluPass.



UK-branded bus

## BICYCLES

Bicycles are the most efficient means of transportation yet devised. They consume the least resources in terms of both energy and road congestion. Taking into account its value in promoting fitness, bicycle use is a pure good, at least in principle. Nonetheless, not all people can or should ride bicycles. The first impediment is that bicycles cannot carry much freight, or any passengers. Another issue is weather and seasonal changes. A third is that some people are not healthy or fit enough to bicycle.

Still, the potential of bicycling to decrease parking needs, traffic congestion, and air pollution justify the University's continued efforts to encourage cycling and invest in making it an attractive transportation option. The UK campus is an ideal scale for cyclists: the trip from the Kirwan-Blanding residence halls to the Classroom Building takes about five minutes by bike, including parking and walking. The Lexington climate, despite periods of hot and cold, is as good as any for cycling with its long shoulder seasons.

But bicycling can only flourish in a well-planned traffic system that protects bicyclists from vehicles and pedestrians from bicycles. Adequate bike parking must also be provided. Just as important, bicycling must be supported socially, through education and encouragement by the University, student groups, or advocacy groups. The Transportation Master Plan recommends practical steps that the University can take to elevate the profile of bicycling on and around campus through modest investments in infrastructure and cooperative planning with other public and private agencies.

### BICYCLE VOUCHERS



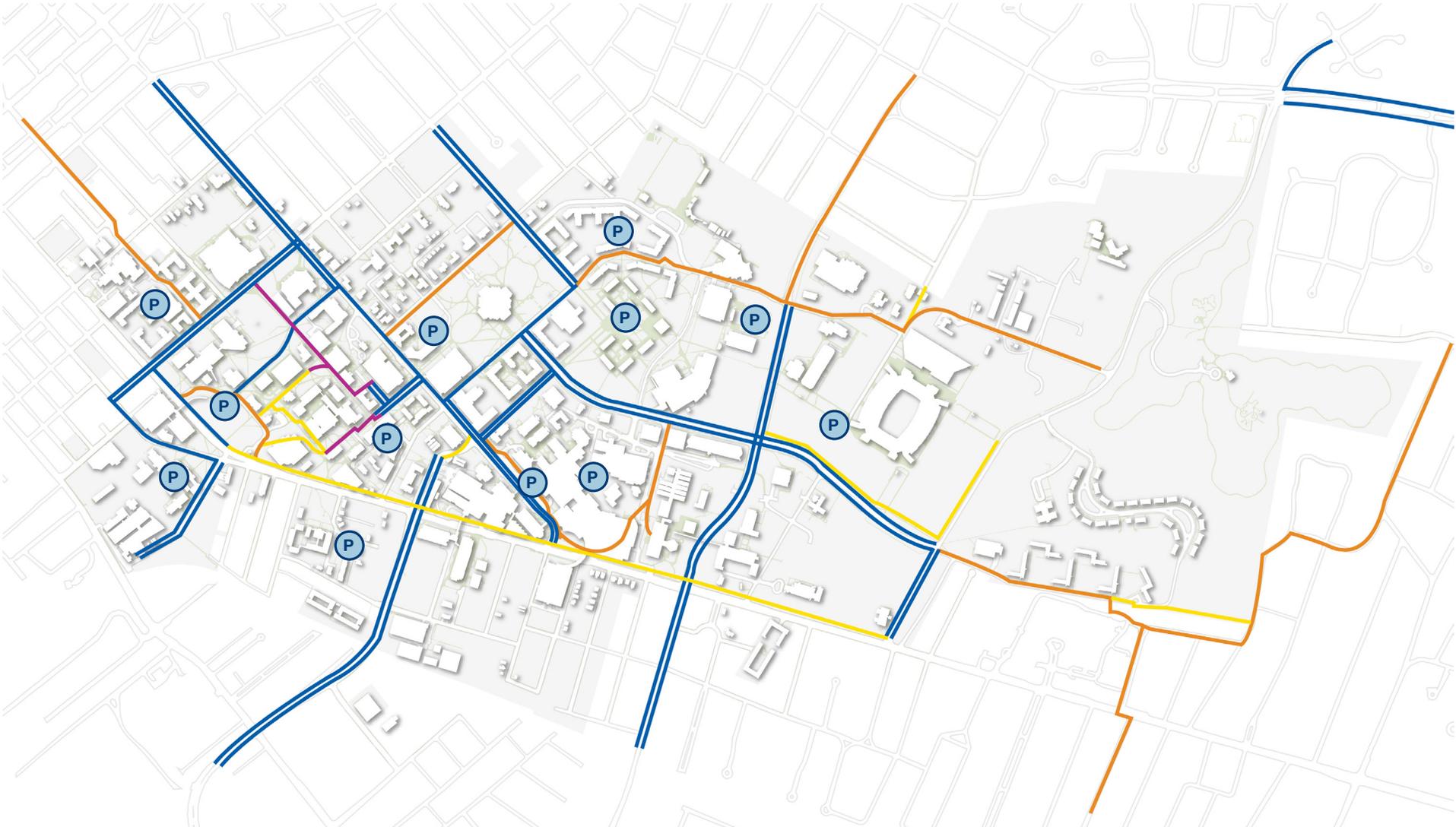
Bicycle vouchers are mentioned above in the context of the proposed UK Commute Club. In fact the voucher benefit is already available, offering commuters \$400 worth of bicycle merchandise from a participating merchant in exchange for relinquishment of a parking permit for two years. Program participants do receive ten scratch-off parking passes, one-day permits that may be used when they need to drive. As of the beginning of the Fall 2015 semester, 75 vouchers have been awarded, pending the recipients' attending an orientation session. These new bicyclists represent 75 fewer cars on campus. They include at least one dual-voucher household and one commuter who carools from Harrodsburg to the Leestown Rd. VA Hospital, whence he cycles to the UK campus.

### WILDCAT WHEELS



The Wildcat Wheels Bikeshop provides important support for the bicycling population on campus and makes use of abandoned bicycles that would otherwise blight campus bike racks. The short term rental program provides a great reuse for abandoned bikes and provides access to bicycles at no cost to users.

# PROPOSED BICYCLE NETWORK



- Proposed bike lane or "sharrow"
- Proposed bike path (off-road)
- Proposed bike route
- Proposed shared use
- Proposed bicycle parking

## BIG BLUE CYCLES



Big Blue Cycles (run as a program under Wildcat Wheels) is a fleet of 160 bicycles available to students living in campus housing who sign a commitment not to bring a car to Lexington. The bicycles for this program are commuter-style, 8-speeds equipped with fenders, a lock, a helmet and a bell. Participating students are guaranteed the bicycle for the entire academic year. Long term bike rental programs provide a durable transportation solution and remove the cost of purchasing a bike, helmet, and lock, which can be a barrier to entry for cycling. This program will also serve to begin to create a critical mass of people who use cycling as a primary way to get around and start to integrate it into the culture and social life of the campus.



This Transportation Master Plan endorses and does not supersede the details of the 2005 UK Bicycle Plan.

## ALUMNI DRIVE



As an important road both for motorists and bicyclists, Alumni Rd. has recently been a focus of planning and design. Bicyclists have been among the largest beneficiaries of these efforts. Significant improvements have recently been accomplished, resulting in the completion of a continuous mixed path along the length of Alumni Dr. as it passes through campus. This is an important link in the regional bike system, and also eases passage between the campus and areas to the southeast and southwest. The Alumni Dr. improvements also include the installation of bicycle-and-pedestrian-friendly roundabouts at Alumni Dr.'s intersections with University Dr. and College Way, the realignment of the road to better manage stormwater, and a new ADA-accessible path to the Arboretum.

## OTHER POLICIES

The ultimate goal of the Transportation Master Plan is to enhance access for all members of the University community. The Plan is therefore not about transportation for its own sake, but rather about making it easier for people to be where they need to be. Some solutions have to do with reducing the need for people to travel at all, by locating origins and destinations closer together; or by providing goods and services on-campus that would otherwise require people to travel off-campus. Other solutions will allow travelers to schedule their trips at quieter times of the day or week, or to reduce how frequently they need to make a particular trip. Also, the University may be able to reduce the impact of auto traffic on the campus and on the environment, by more carefully monitoring the size and usage of its vehicle fleets. The following recommendations pertain to measures that are not strictly in the realm of transportation, but that support the Guiding Principles and the goals of the Transportation Master Plan.



- Continue to increase on-campus student housing. While many students who live on campus do bring cars with them, they do not need to drive them as often as if they were commuting to class from off-campus. Resident students are therefore more amenable to using peripheral or remote parking, freeing up spaces for commuters and visitors.



- Increase student jobs on campus. Among the many benefits of student jobs on campus, to both the student and to the University, is that it decreases the need for students to leave campus for work. On-campus jobs therefore have the effect of reducing the number of auto trips on and around campus. They may in fact enable students who otherwise would have needed cars to either go without them altogether or to park them remotely and use them infrequently. Increasing jobs on campus can thus reduce both traffic volumes and parking need on campus.



- Encourage graduate-student housing close to shopping and recreation. Graduate students, whether they live on- or off-campus, have more need than undergraduates for access to retail and other amenities. Married students and those with children will be less dependent on their cars, and will have less need to drive and park them on campus, if their housing is within walking or bicycling distance from grocery stores, other retail and services, and open space/parks.



- Flexible schedules and shifts. For those with 'typical' work schedules, commuting during morning and evening rush hour conditions is an additional burden. The University should examine its work schedules to determine whether some could be adjusted, both to better fit the lifestyles of employees and to spread and lower the peak of travel demand and vehicle traffic volumes.



- Fleet management / reduction. The University has large fleets of vehicles, which themselves contribute to campus traffic and carbon emissions. It is recommended that procedures for procurement, assignment and use of University vehicles for maintenance, service, groundskeeping and other fleets take into account the goal of reducing their impact on campus streets and off-street paths, air quality and parking resources.



- Provide enhanced incentives to live near campus. UK can build on its current Employee Assisted Housing Program.





# FINANCIAL & IMPLEMENTATION PLAN



The Financial Plan summarizes the financial impacts of the strategies outlined in the Recommendations section of this report. The summary relates the costs of the recommendations to their likely effectiveness in helping achieve the purposes of the Guiding Principles, and clarifies the financial choices between reducing auto traffic through various transit TDM policies and accommodating it by building additional parking spaces on campus. The Financial Plan assesses costs and anticipated impacts on total permit sales, and helps to define which policies will be most effective.

Perhaps the most urgent issue facing the University's transportation system is the imbalance between the supply and demand for parking. In these circumstances, the relevant question is how to most cost-effectively relieve the need for a parking space, either by reducing demand or increasing supply. The Financial Plan compares the options for meeting parking needs and shows that, in terms of dollars spent per space-need relieved, funding and promoting alternative modes of transportation costs significantly less than constructing new spaces. This is true even before taking into account the impact of parking facilities on the campus, its quality and its environment.

## MANAGING TRANSPORTATION AS A SYSTEM

Freedom of movement for all at UK depends on a planned effort on the part of the administration and the campus population. The Administration is responsible for providing the physical infrastructure as well as a framework of regulations, programs and incentives that will positively motivate people to choose less driving whenever possible. Whenever a policy calls for a restriction or inconvenience to be imposed, an effort has been made to offer compensatory options.

Two types of strategies will help contribute to the fulfillment of the Transportation Master Plan, infrastructure investments and ongoing policies and programs.

Infrastructure investments are capital investments in the physical infrastructure of the campus contributing to more efficiency across all modes of travel. Infrastructure investments are expensive, but also the most obviously effective means of providing for effective travel to and around campus. For example, better crosswalks and other physical features that create a friendlier pedestrian environment promote walking. Safer bike lanes and better bike storage affect what percentage of the population is willing to bike.

Policies and programs are administrative interventions that seek to promote behavior changes. Restructuring the parking permit system, for example, is an example of a policy shift that will orchestrate a shift in behavior. Policies and programs are more flexibly implemented than infrastructure investments; changes generally come at a low cost. Programs like the bike voucher program offer incentives for behavior changes and can be tailored to target specific user groups and again can be adjusted or scaled up or down based on popularity or effectiveness.

## COSTS AND BENEFITS

Anticipated costs for various strategies are estimated in several ways. If possible, they are based on PTS data from past infrastructure investments or established future budget allocations, otherwise they are based on comparable costs for similar programs at other universities and other primary and secondary research. Exact permit impacts are challenging to quantify, but estimated impacts are based on participation in existing TDM programs at UK and documented permit impacts following transportation changes at other universities. In order to logically compare costs of various programs and investments, capital investment costs are annualized based on assumed 20 year financing payments.

## STRATEGIES

The table on the right outlines proposed strategies, their costs and estimated impact on parking permit sales. It shows the results of a spreadsheet-based modeling effort, which associated the University's costs with the benefits to users and, in turn, the effect of those benefits on mode choice.

The Estimated Permit Reduction column represents research, analysis and planning judgment about the likely effectiveness of the various programs, services, incentives, regulations and capital investment that are discussed here as providing alternatives to driving alone to campus. It reflects the experience of other major universities that have undertaken systematic Transportation Demand Management, have succeeded and have documented their efforts. Estimates of the price/convenience/time elasticity of demand for parking permits are based on this research as well as consideration of UK's unique conditions.

The interaction between capital investments and the introduction or expansion of policies and programs makes quantifying the individual impact on permit sales of any given strategy difficult. Similarly, the role of marketing efforts is to amplify the impacts of the other strategies. Therefore, the totals shown below represent estimates of the combined permit impacts according to the recommended strategy scenario, distributed by individual strategy.

## COSTS AND EFFECTIVENESS OF TDM

MODE	STRATEGY	COST	ANNUALIZED COST - NET NEW	ESTIMATED PERMIT REDUCTION	
Marketing	Ongoing marketing strategy and TDM outreach	\$50,000 per year	\$50,000	259	
Transit	BluPass Lextran Partnership	\$200,000/yr	\$200,000	408	
	Lextran Branding - Reskinned Buses/Tracking	\$100,000	\$7,700	82	
	Route Efficiencies- Lextran contract renew	\$920,000	\$0 (existing cost)	117	
	Central UK Transit Hubs	\$500,000 total	\$38,400	67	
Cycling	Ongoing Bike Infrastructure Improvements	\$400,000/yr	\$200,000 (new)	130	
	Expanded Bike Share	\$15,000/yr for 3 yrs	\$3,500	181	
Pedestrian	Ongoing Pedestrian Improvements	\$50,000/yr	\$50,000	65	
Car/carpools	Expanded Carshare Program	Zero Cost to UK	\$0	143	
	UK Commute Club (Carpool, Bike & Parking Cash Out)	\$180,000/yr	\$180,000	518	
Parking	Permit Restructuring	\$0	\$0	65	
<b>Total</b>				<b>2,035 fewer permits demanded (1,530 fewer parking spaces demanded)</b>	
Space Costs	Structured Parking (Per Space)	\$37,500	\$3,380		
Space Costs	Surface Parking (Per Space)	\$9,000	\$990		

# UNIVERSITY CONTEXT FOR TRANSPORTATION FUNDING

## REVENUE STRATEGY AND ALTERNATIVE REVENUE STREAMS

The financial goal for the Transportation Master Plan, as stated in the Guiding Principles) is to assure PTS' financial self-sufficiency. Parking permit sales are currently the largest single source of revenue for PTS (between 60% and 70% of total annual revenues) and can be expected to remain so even as the recommended system restructuring and various TDM strategies are implemented. PTS revenue will be leveraged in important infrastructure and program investments to maintain and improve the campus transportation and parking systems, including:

- much needed additional parking supply;
- capital and program investments for campus transit and all types of transportation around campus;
- investments in parking and transportation technology aimed at enhancing user experience and more effective management of infrastructure/assets
- coordinated TDM measures that will increase parking availability by reducing demand.

As the implementation of the TMP progresses, the University will assess various financial scenarios and/or revenue generation models, such as are used at many peer institutions, to both support identified investments and equitably distribute costs. Large investments in parking/transportation infrastructure will likely necessitate new financing scenarios and partnerships. The University is encouraged to explore options.

- Transportation fee charged to fund various transportation services. A generalized fee to fund multimodal transportation improvements spreads their costs more broadly across the campus community than do parking permits alone.
- Augmented funding from the University, in the form of subsidy from the General Fund via the annual budgeting process.
- PTS's financial stability could be further ensured by establishing protocols for contributions to PTS by campus construction projects, to cover the costs of displaced parking, meeting increased parking demand and ancillary transportation services.
- Require official University vehicles to pay for parking permits. This financial disincentive would encourage departments to carefully consider their needs and uses for official vehicles.
- Continue to fully implement a revenue sharing program by which PTS is compensated for Athletics use of parking infrastructure.
- Examine and revise as appropriate revenue collection on healthcare visitor parking.

## FINDINGS

1. As a way to bring parking supply and demand together, TDM is more economical than constructing new spaces. The estimated average annualized cost of TDM measures is \$360 per permit reduced per year, or \$480 per parking space. This compares with \$990 per year to amortize the construction cost and pay for maintenance of a single surface parking space, or \$3,380 for a structured space, *exclusive* of land cost and value to the campus. The key conclusion of this financial plan is that TDM programs and policies that reduce the need for building additional parking are highly economical when compared with constructing new parking.
2. As stated in the Recommendations section, the solution to UK's parking shortage should be multi-faceted. More spaces will be built; and at the same time the TDM program and services such as the UK Commute Club will create many opportunities for commuters and others to reduce their car and parking usage. Taking into account the analysis of the costs and potential benefits of TDM measures, the University should press forward with aggressive efforts to reduce car traffic on campus and avoid construction of new lots to meet growing demand.
3. A corollary finding is that the needed new parking should be provided at the periphery of campus and in remote locations where land costs are lowest, avoiding the effects of parking and traffic in the pedestrian core. Financial analysis thus dovetails with the key objectives of the Campus Master Plan and of all planning for the quality of the campus environment. Construction of parking at the campus periphery saves money; but it also relieves traffic on streets in the center of campus, such as Rose, Hilltop, and Huguelet, making life easier and safer for driver and pedestrian alike.
4. Remote park & ride lots can provide an important supplement to on-campus parking, even taking into account the cost of Campus Shuttle service. However, the cost of providing daily, frequent service to commuter park & ride lots makes them cost-effective compared with structured parking only at a minimum size of approximately 360 spaces.
5. Long-term storage lots, at which residential students park their cars instead of taking on-campus permits, could be highly economical since they would not need daily frequent Campus Shuttle service. Shuttle service could be limited to a few times a week.

## PARKING DEMAND AND FEE RESTRUCTURING

This Financial Plan outlines the potential costs and impacts of proposed strategies. It is not to be considered a budgeting document and does not encompass any of the existing day to day operating, debt service, and staff expenses.

### IMPACT

The Parking Supply/Demand Scenarios chart on page 21 shows the range of potential effect of TDM measures on parking need. The table below shows estimates of the financial effect, by combining the costs of building new parking and funding TDM measures. It shows that the more effective the TDM program is in reducing parking demand, the less the total cost to the University.

### PARKING DEMAND SCENARIOS - 2020

IMPACT SCENARIO <sup>1</sup> :	% FEWER SPACES DEMANDED	PARKING DEFICIT <sup>2</sup> (#)	PARKING SPACES <sup>3</sup> (\$)	TDM COSTS (\$)	TOTAL COST (\$)
No TDM	0%	3,800	\$109.3 M	\$0	\$109.3 M
Downside Effect	3.4%	3,120	\$103.2 M	\$730k	\$103.9 M
Expected TDM Effect	5.9%	2,270	\$95.5 M	\$730k	\$96.3 M
Upside Effect	6.4%	2,090	\$93.9 M	\$730k	\$94.6 M

<sup>1</sup> Recommended scenario represents best estimate for maximum demand reduction based on currently outlined strategies. Given uncertainty in predicting exact permit reduction response to TDM by the campus community, downside (TDM measures are less effective than anticipated) and upside (TDM measures exceed permit reduction expectations) scenarios and associated costs are also shown.

<sup>2</sup> Remaining parking deficit after TDM demand impacts

<sup>3</sup> Parking deficit assumed to be made up through 1,600 structured spaces and the remainder through expansion of surface parking on campus periphery.

### COST OF NEW PARKING SPACES

Construction costs are approximately \$6,000 per surface space and \$25,000 for structured spaces. Those costs, however, do not include land value or the cost of site preparation and the relocation of programs, which are currently on potential future parking sites. For the purpose of this analysis, a 50% contingency was assumed for such additional costs, making the total cost \$9,000 per surface space and \$37,500 per structured space. Within the campus, land value is defined more in qualitative than economic terms, reflecting the unique qualities of each potential parking site – its location, relation to other buildings and open spaces, etc. The other unquantifiable cost of new parking spaces is the detracting from the quality of the campus environment. Large swaths of paved land create urban heat islands and runoff issues, and diminish the overall campus sense of place. In development of new parking spaces, the University must carefully choose design that does not undermine the quality of place on the campus, including providing for high quality landscaping and sidewalks. Adequate screening and plantings in surface lots, as described in the Landscape Master Plan, and sensitively designed facades on structured parking may also drive the cost of new parking upward.

In the highly built-up area surrounding UK's campus, land values are constantly changing. Neighborhood relations must also be considered in planning off-campus acquisitions. New parking additions beyond the near term (2-3 year) horizon can be expected to cost progressively more per space.

## REMOTE PARKING

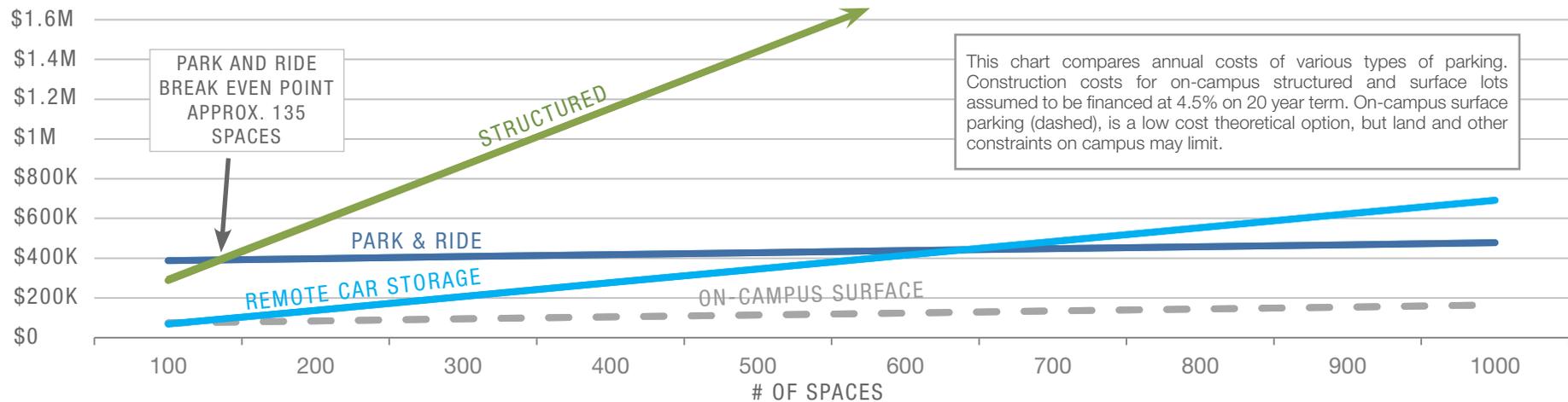
	<b>COST</b>	<b># PERMITS REDUCED*</b>	<b>COST/PERMIT REDUCED</b>
Park and Ride	\$400,000/yr	331	\$1,207
Remote Car Storage	\$65,000/yr	331	\$196

\*calculations not included in TDM totals, exact program needs additional research & planning

New remote parking spaces can be expected to have lower total land and construction costs because land in outlying areas is cheaper. Ideally, remote parking lots could be accommodated at existing locations such as shopping centers with low parking occupancy rates. While the physical spaces themselves cost less to create, supplying access to those lots is the primary cost driver unless lots are able to be located on existing transit access lines.

As outlined in the recommendations section of this plan, permit restructuring alone will not significantly impact parking demand on campus if the base intermediate permit price remains the same. The primary purpose of permit restructuring is to create an incentive to park outside the campus core.

## ANNUAL COST OF PARKING BY TYPE



## DIMINISHING RETURNS

TDM strategies are also subject to a law of diminishing returns. While aggressive application of TDM measures is recommended, after a certain point, additional investment in TDM produces less reduction in demand for parking. It is for this reason that the Parking Supply/Demand Scenarios chart shows a larger “downside” than “upside” range in potential TDM effectiveness.

## AGGRESSIVE DEMAND REDUCTION STRATEGIES

The exact impact of TDM strategies outlined in this report is impossible to predict; there may be a scenario in which a) strategies are not able to be enacted due to political climate or funding shortages, or b) strategies are enacted but prove to be less effective than anticipated because of the strongly automobile focused culture of the area or other factors outside of the University’s control. If, for whatever reason, TDM measures fail to achieve the necessary reduction in parking demand, PTS and the UK administration may need to consider more aggressive strategies. These might include:

- User group parking limitations
- Significant permit price increases, bringing UK from the fourth quartile to the first or second quartile among peer institutions. Among comparable universities, a 10% increase in parking fees generally reduces demand between one and two percent.

# TRANSIT

Transit system BluPass access and new campus shuttle route efficiencies can be expected to have the single largest impact on parking demand of any of the strategies outlined by this plan and implemented by Parking and Transportation Services and Lextran. Early indications are that this is the case: between August 2014 and August 2015, Campus Shuttle ridership has increased by over 50%. The partnership between UK and Lextran is a landmark investment in the future of the campus as a place that offers easy and efficient transit access. BluPass agreement for 2015 cost the University \$160,000, in future years is anticipated to rise to \$200,000.

## CAMPUS SHUTTLE EFFICIENCIES

The recommended changes to the campus shuttle will improve the efficiency of getting from a peripheral lot to the campus core and therefore (along with discounted pricing in peripheral lots) will help distribute demand toward those lots. Thus, a small reduction in the total number of permits purchased is projected based on convenience of transferring from other Lextran routes to the campus core. The changes in the routes do not significantly impact the cost of contracting for the campus shuttle route with Lextran compared to prior years, so the \$920,000 cost

### LEXTRAN PARTNERSHIP COMPONENTS (ROUNDED)

	NEW COST	ANNUALIZED NEW COST	# PERMITS REDUCED	ANNUAL COST/PERMIT REDUCED
BluPass	\$200,000/yr	\$200,000	408	\$490
Rebranding & TransLoc	\$100,000 capital	\$7,700	82	\$94
Campus Shuttle Efficiencies	\$920,000/yr	\$0	117	n/a (existing cost)
Central Transit Hubs (2)	\$500,000 capital	\$38,400	67	\$570
	<b>Total/Wtd. Avg.</b>	<b>\$246,100</b>	<b>674</b>	<b>\$365</b>

is not considered a new cost associated with the strategies in this plan.

## TRANSIT BRANDING EFFORTS

The rebranding of the campus shuttle buses, operated by Lextran and equipped with real time bus tracking through TransLoc, will improve user experience and help signify to the university population and the community at large the robust nature of the campus transit system.

While financial impacts of changes to the transit system are measurable, it is also important to remember the qualitative benefits of reduced traffic congestion in campus core.

## BUS SHELTERS

Design and build process for the stadium lot shelters will essentially serve as a pilot project for understanding costs and design best practices for the future central hub stations.

## TDM STRATEGIES

### CAR SHARE PROGRAM

In a typical privately run car share program, the cost to UK is the parking spaces for the cars, which should be located in convenient areas close to the campus core and to residence halls.

### UK COMMUTE CLUB

Exact UK Commute Club costs will depend on participation rates. Costs will vary, but the total includes the cost of bike vouchers, cash outs, the guaranteed ride home program and other membership benefits outlined in recommendations chapter.

### COMMUTER PEDESTRIAN EXPERIENCE

As discussed in recommendations section, a key target for the University focus is consideration of pedestrian experience for the commuter population, including peripheral areas of the campus and in and around the campus parking lots. Parking lot user experience and pedestrian safety can be dramatically improved with adequate signage, sidewalks, and crosswalks. General campus pedestrian improvements are expected to have a modest impact on permit sales; improvements to parking lot pedestrian accommodations will not impact permit sales.

### TDM STRATEGIES

	NEW COST	ANNUALIZED NEW COST	# PERMITS REDUCED	ANNUAL COST/PERMIT REDUCED
Expanded Carshare	Zero cost to UK	\$0	143	\$0
UK Commute Club (Carpool, Bike, Cash Out)	\$180,000/yr	\$180,000	389	\$453
Expanded Bike Share	\$15,000/yr for 3 yrs	\$3,500	181	\$19
Bike Infrastructure	\$200,000/yr	\$200,000	130	\$1,543
Pedestrian Infrastructure	\$50,000/yr	\$50,000	65	\$772
TDM Marketing Strategy	\$50,000/yr	\$50,000	259	\$193
Parking Permit Restructuring	\$0	\$0	65	\$0
<b>Total</b>		<b>\$483,500</b>	<b>1,361</b>	<b>\$355</b>

## CYCLING

Since 2005 the University has made significant investments in bicycle infrastructure and programs. PTS has a dedicated funding stream for bicycle initiatives of \$200,000 per year, allocated based on recommendations of the Bicycle Advisory Committee. However, recently PTS has been investing at a much higher rate, especially with installation and planning for bike racks and other bicycle infrastructure at UK's new residence halls. The actual investment has been roughly \$400,000 per year. PTS should maintain this level of commitment, to push the campus towards a gold level of bike friendliness, that will merit recognition with Gold status by the League of American Bicyclists.

Bike share expansion for the Big Blue Cycle Program includes the estimated cost of new bikes, helmets, and locks for the program as well as bike maintenance and program administration.

## ASSUMPTIONS

### FINANCING (FOR ANNUALIZED CAPITAL COSTS)

4.5%, 20 year

### PARK AND RIDE/REMOTE CAR STORAGE

Shuttle Services assumes Lextran contract hourly rate of \$75 per service hour per 2015 contract. Five days per week during school year for park and ride, two days per week during school year for remote car storage.

Assumed lease payment of \$100/space/year to owner of parking lot

### PARKING

Construction Costs:

- Surface Spaces \$6,000 per space (with 50% contingency, \$9,000)
- Structured Spaces \$25,000 per space (with 50% contingency, \$37,500)
- Plus 50% for demolition, clearance, abatement and preparation

### CARSHARE

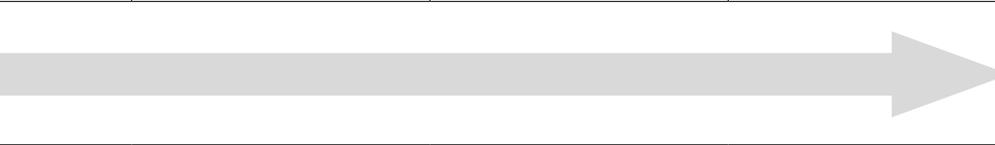
Assumes relaunched program will include twenty vehicles and each carshare vehicle reduces permit demand by six.

### PERMITS TO PARKING SPACES CONVERSION

1.33 permits per parking space

## PHASING AND IMPLEMENTATION

	FALL 2015	SPRING 2016	FALL 2016	SPRING 2017	FALL 2017	SPRING
<b>MARKETING</b>	 Transportation Master Plan launch Fall 2015		 UK Commute Club launch		 Ongoing: Marketing	
<b>CARS/CARPOOLS</b>		 Carshare relaunch	 Park and Ride Lots		 Ongoing: Parking tech upgrades	
<b>PEDESTRIAN</b>	 Establish Pedestrian Advisory Committee		 Ongoing: Improvements to pedestrian environment in conjunction w/Facilities			
<b>CYCLING</b>	 Bike Voucher Program		 Ongoing: investments in bicycle infrastructure, education & initiatives			
<b>TRANSIT</b>	 <ul style="list-style-type: none"> <li>• Lextran partnership launched</li> <li>• BluPass</li> <li>• Rerouted campus shuttle</li> <li>• Real time bus tracking</li> <li>• Transit rebanding</li> </ul>		 Stadium bus shelter		 Transit hub shelters	
<b>PARKING PERMIT RESTRUCTURING</b>			 Transition to zone system			
<b>ON CAMPUS POTENTIAL PARKING CONSTRUCTION SCHEDULE</b>	1,485 spaces		TBD spaces		TBD spaces	

2018	FALL 2018	SPRING 2019	FALL 2019
Ongoing: Marketing & Promotion of TDM programs 			
Ongoing: Commute Club Carpool Incentives 			
			
			
			
	TBD spaces	TBD spaces	

The table to the left outlines proposed phasing and implementation for the 2015 transportation master plan.

It is important that these strategies are cohesively branded and marketed to maximize participation in TDM programs. Strong marketing will enhance the impacts of each strategy and the strength of UK's message of commitment to sustainability.

The launch of the Lextran partnership (BluPass and the restructured campus shuttle route) is a major achievement for transportation planning on campus. The partnership and shuttle service should continue to be evaluated and adjusted each year. The alternate campus shuttle routes that are still run by PTS (Heathcare Shuttle, Greg Page) should also be evaluated throughout the year to understand how to best integrate those routes efficiently into the central campus loop.





# SUPPORTING ANALYSIS

## UK IN THE REGION

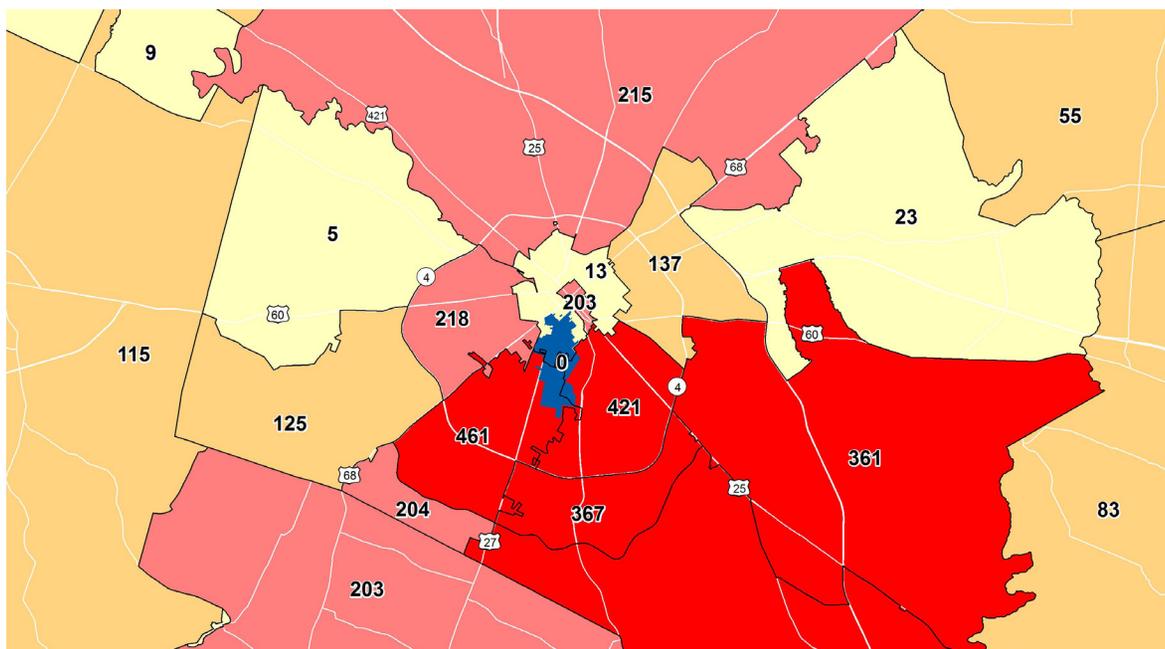
The University of Kentucky lies within Fayette County and near the center of Lexington. Main Building is less than a mile from downtown, a 20-minute walk.

In the immediate vicinity of campus are two significant retail zones, along Limestone Avenue and Euclid Avenue, providing a variety of goods, food and services. There are established residential zones on all sides of the campus, neighborhoods which are sensitive to the University's traffic and parking impacts, and are also sources of off-campus housing within walking distance of campus.

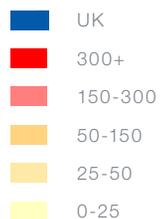
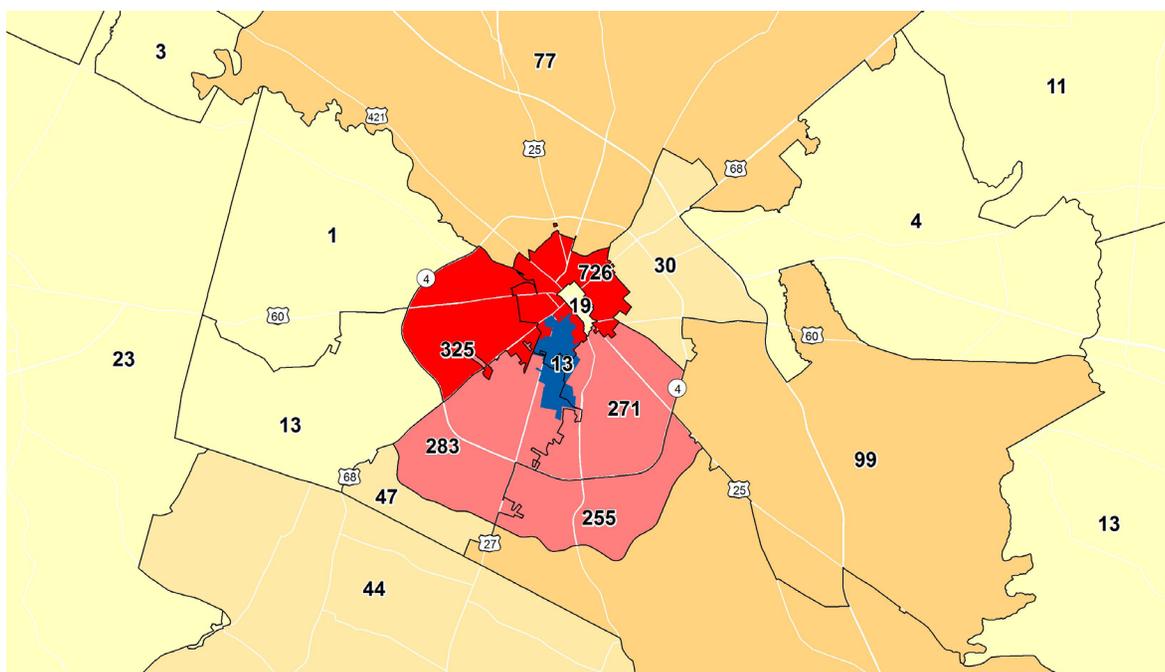
Employees commuting to campus come from all points of the compass, with a larger volume coming from the south and approaching campus via Nicholasville Rd., Bates Creek Rd. and Richmond Rd. Many employees live outside the county.

Off-campus student residences are clustered more tightly around the campus, mostly within New Circle Rd. and Man o' War Blvd. A large proportion are in the neighborhoods west, north and east of the campus.

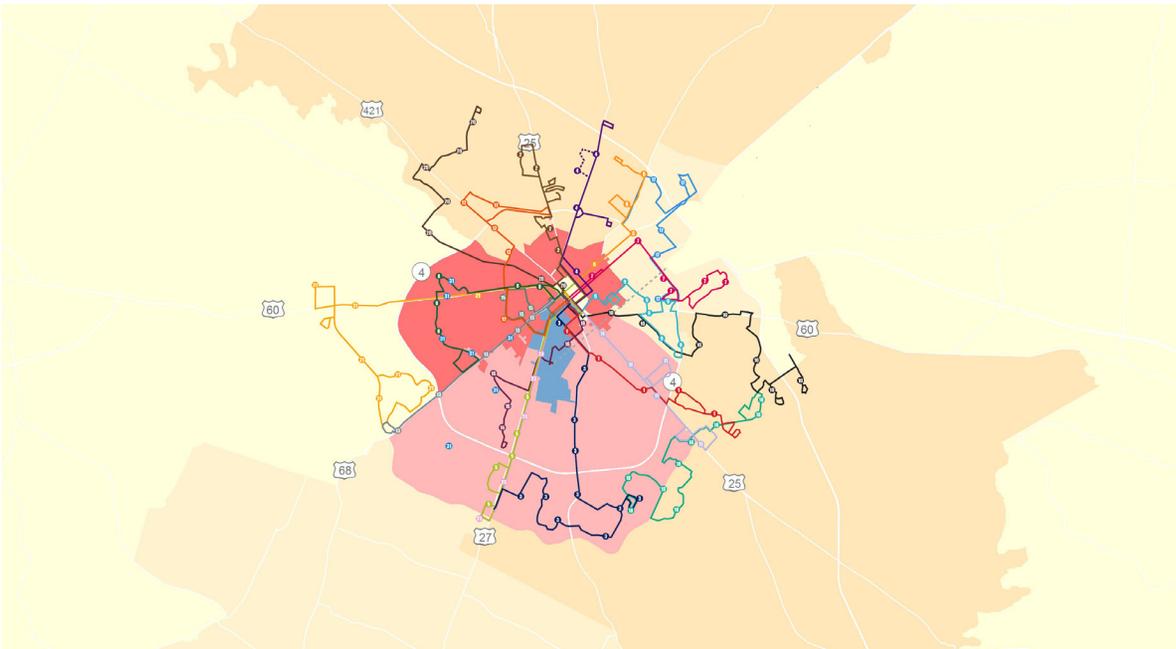
### EMPLOYEE RESIDENCES PER ZIPCODE



### STUDENT RESIDENCES PER ZIPCODE



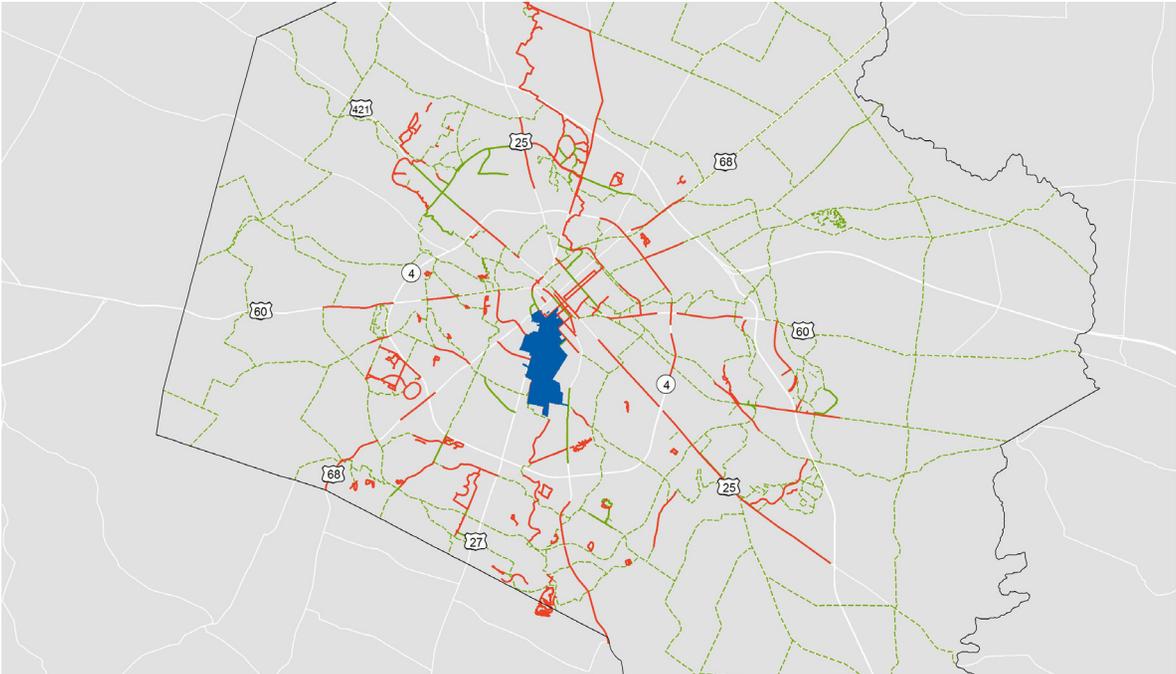
### LEXTRAN BUS SYSTEM



The campus and the region are served by a network of Lextran bus routes. Lextran’s route structure provides service to most of the neighborhoods where students live. However, some of the routes are circuitous and do not serve the campus directly enough to make them attractive as alternative means of travel to campus, particularly during the mid-day when buses are not as frequent.

Given the broader distribution of their residences across the county and beyond, Lextran service is less useful to employees than to students. For those employees living closer to campus, however, there are a number of routes providing convenient access to campus.

### METRO LEXINGTON BICYCLE NETWORK



Lexington’s bicycle route system is extensive but not yet continuous. The City of Lexington has greatly extended the system of bike lanes and paths in recent years, and continues to work toward connecting segments of bicycle facilities, in order to provide a comprehensive network of bicycle-friendly routes.

- UK
- 300+
- 150-300
- 50-150
- 25-50
- 0-25

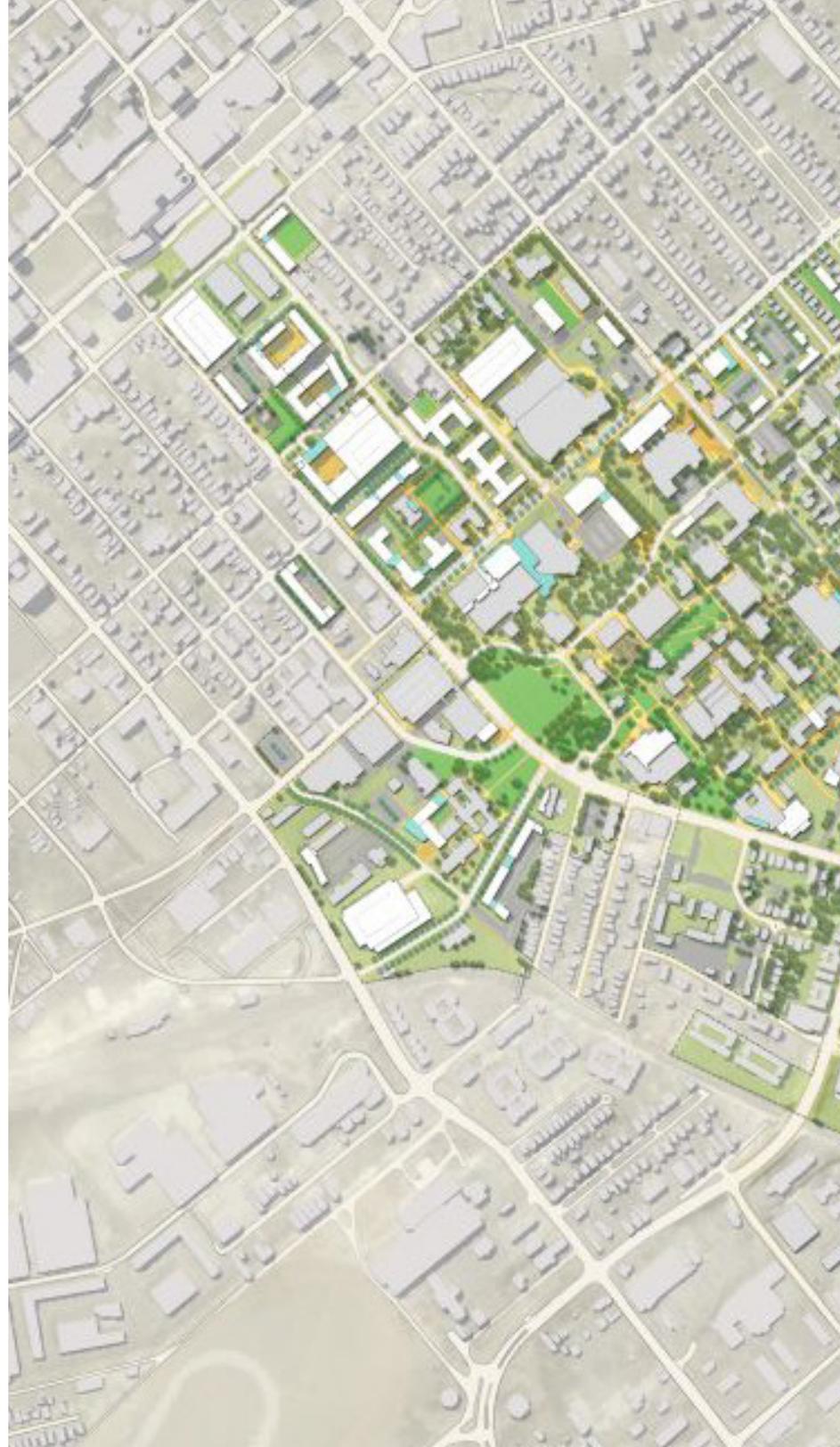
## THE CAMPUS

The University of Kentucky campus is a classic example of the American state university flagship, with a 19th-century core of stately buildings, regularly arrayed. Newer buildings in the core conform in their orientation with the original campus grid, while in the outer districts the buildings are more widely spaced.

A distinctive feature of the campus is that its buildings are aligned with streets – Euclid Ave. (Avenue of Champions) and S. Limestone St. – that meet at an acute angle. As a result, the campus is arranged in two grids that do not relate to each other, and the campus' internal street system is somewhat complex.

In 2013, the University adopted a Campus Master Plan. This Transportation Master Plan is based on the vision, priorities and strategies laid out in the Campus Master Plan. Key features of the Master Plan are:

- Revitalizing the campus core
- A significant increase in the on-campus housing capacity
- Redevelopment at the Student Center, Greek Park, the Law School, the Business School and the new science building
- A new thru street, Sports Center Drive Extension, around the southeast side of the new Woodland Glen residence halls

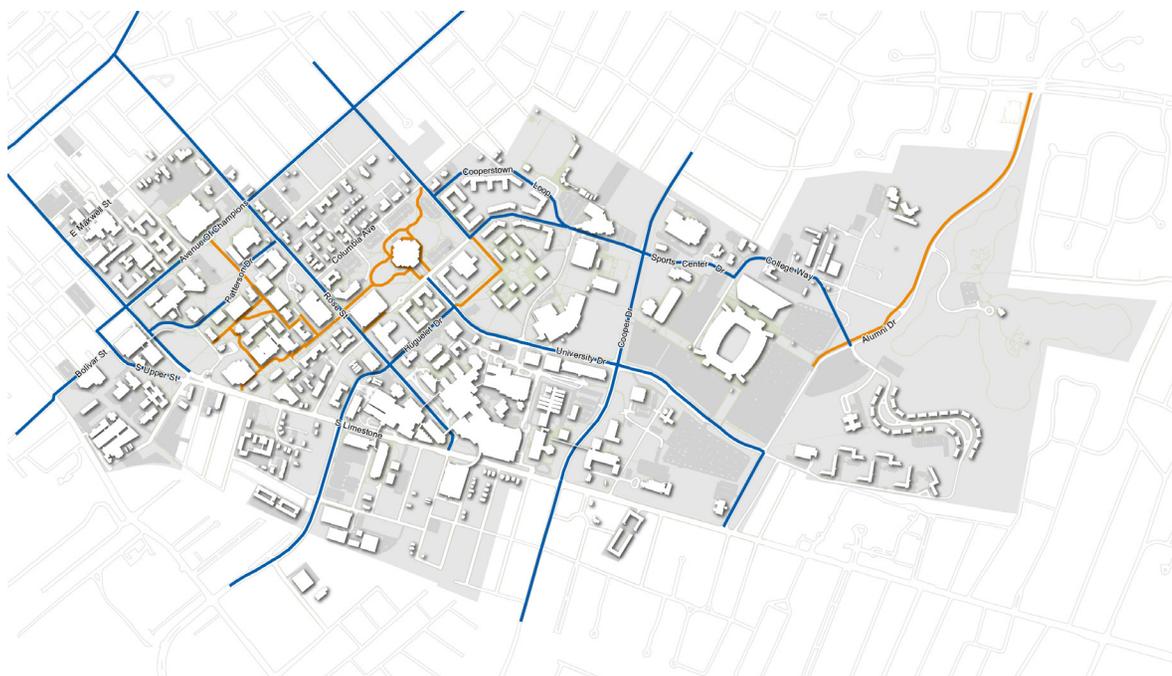




## PEDESTRIAN NETWORK



## BICYCLE NETWORK



## TRAFFIC

The campus' physical transportation system is the arrangement of paths, informal corridors, and streets by which people and things move, either on foot or using various vehicles: wheelchairs, bicycles, cars, trucks, motorcycles, golf carts, and buses.

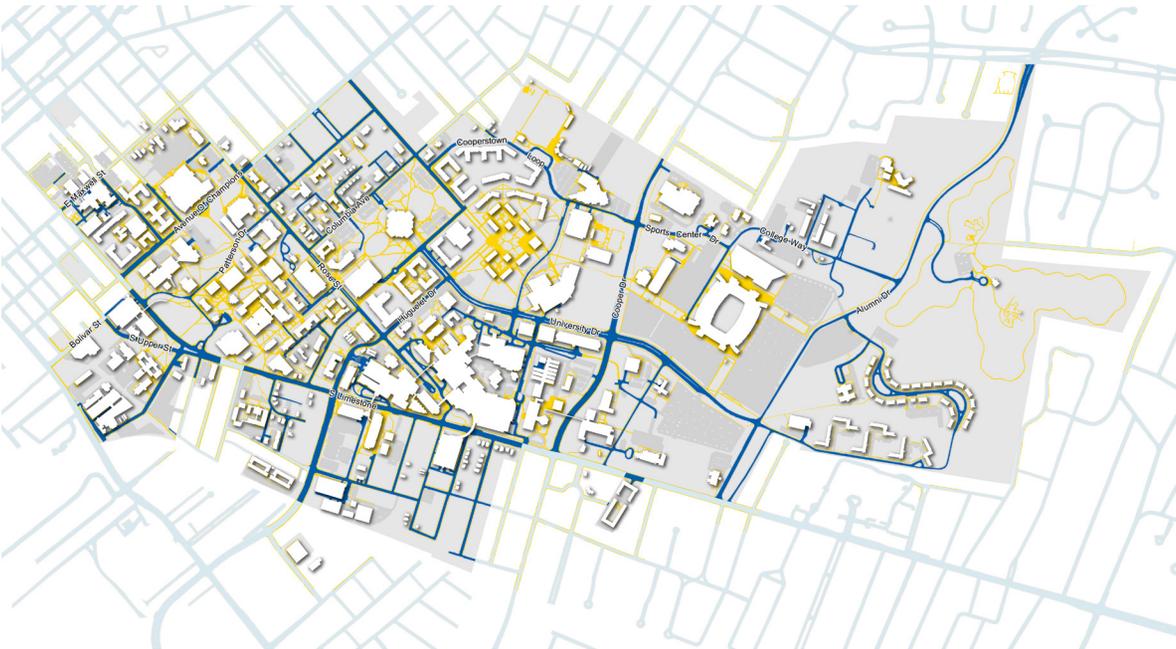
All these modes share the transportation system as they move through the public realm. All of the campus' streets feature sidewalks. Some paths are primarily for pedestrians; many of these, however, must accommodate some level of vehicular traffic for purposes of service, delivery, emergency and disability access. Despite this overlap, however, it is useful to distinguish between the pedestrian, bicycle and vehicular networks.

The pedestrian network is the defining feature of the campus. At UK, pedestrian paths are generally clear, attractive and wide enough for class change and other times of day.

The bicycle network consists of on-street striped bicycle lanes and designated multi-use paths. The University has made significant improvements in conditions for bicycling. Gaps in the on-campus system are being addressed, including a new off-street shared-use path along Alumni Dr. UK is working regionally to improve bicycle connectivity by tying in with the City's system. UK was recently recognized for these efforts by the League of American Bicyclists, which designated it a Bike-Friendly University with Silver status.

The vehicular network reflects the history of the area's development and regional street system. The streets of the

### ROAD NETWORK



### PEDESTRIAN-VEHICULAR CONFLICTS



main campus – Rose, Woodland, Hilltop, Patterson - are laid out as part of the downtown Lexington street grid, but Limestone St. cuts off its southwest corner, and the streets perpendicular to Limestone meet the others at odd angles. University and Huguelet Ave. negotiate the difference by bending.

The combination of the street system’s structure and the campus’ land use pattern results in some traffic problems. Particular areas and corridors are stressed in different ways.

Rose Street is a barrier across the middle of the academic campus, which poses issues of safety as well as noise, aesthetics and convenience.

- On Woodland Ave., thru traffic separates Woodland Glen from the library lawn, and speeding is a serious concern. The mid-block crosswalk is only moderately effective.
- Likewise, on Hilltop Ave. between Woodland and University Ave., vehicular traffic conflicts with high volumes of pedestrians, who cross the street diagonally. Cars turning right at the ‘90’ tend to accelerate just as they enter the stream of pedestrians.
- The University and Huguelet Ave. intersection is an unsignalized confluence of vehicular, pedestrian and bike traffic. Mid-afternoon conditions can be congested for all modes.
- At the hospital garage on Huguelet Ave., irregular geometrics and the wide mouth of the entryway hinder the street’s capacity and ability to accommodate buses.

Respondents to the campus survey identified other locations as conflict points and indicated concerns with the safety of pedestrians and drivers.

## POPULATION AND MOBILITY

In the broadest categories, the University community comprises students and employees. In terms of mobility and access, resident student and commuter students are very different: commuter students, like employees, must get to and from campus.

Employees and commuter students, however, have distinctly different travel patterns. Commuter students are much more likely than employees to walk, use transit or bicycle to campus. They also come and go throughout the day, while employees tend to follow a more traditional workers' eight-hour schedule.

The volumes and directions of people's movement on campus are a function of a many variables, many related to the location of classrooms, student housing and employment. The following diagrams illustrate how these uses are distributed.

On-campus student housing is located mainly in three zones: North Campus, Library/Greek Park and Woodland Glen. These students have ready access to their academic destinations. Students living in Greg Page/Shawneetown have a farther distance to walk, and are served with Campus Shuttle bus.

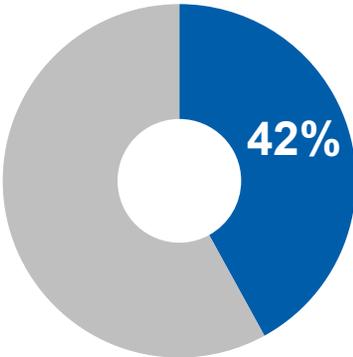
Classrooms and classroom attendance are concentrated in the academic core, with significant activity also in the medical complex, the Taylor education building and the Agriculture campus.

Employment is distributed around the campus, but the academic core and the medical complex are the sites of over three-quarters of the campus' jobs.

The other main determinant of campus mobility patterns is parking, which is treated on the next page.

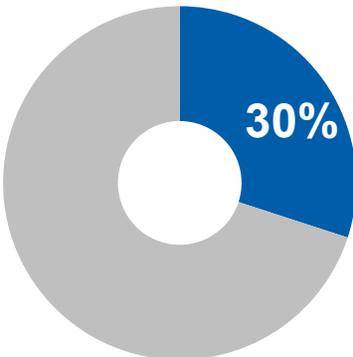
## 2014-2015 ENROLLMENT/EMPLOYMENT

**RESIDENT STUDENTS**  
Undergraduate, Greek, Graduate



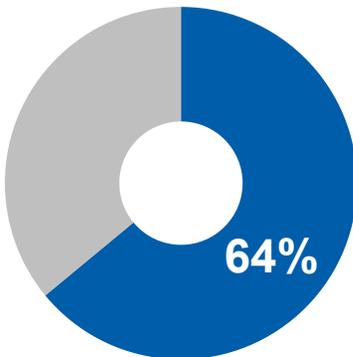
7,374 STUDENTS  
3,097 PERMITS

**COMMUTER STUDENTS**  
UK Undergraduate, UK Graduate & BCTC



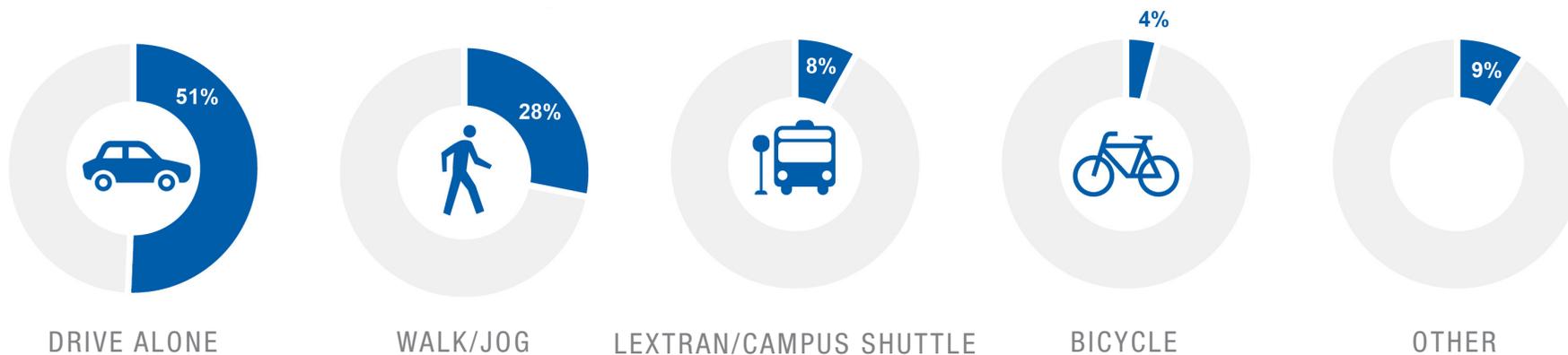
25,988 STUDENTS  
7,796 PERMITS

**FACULTY & STAFF**  
UK & BCTC Full Time

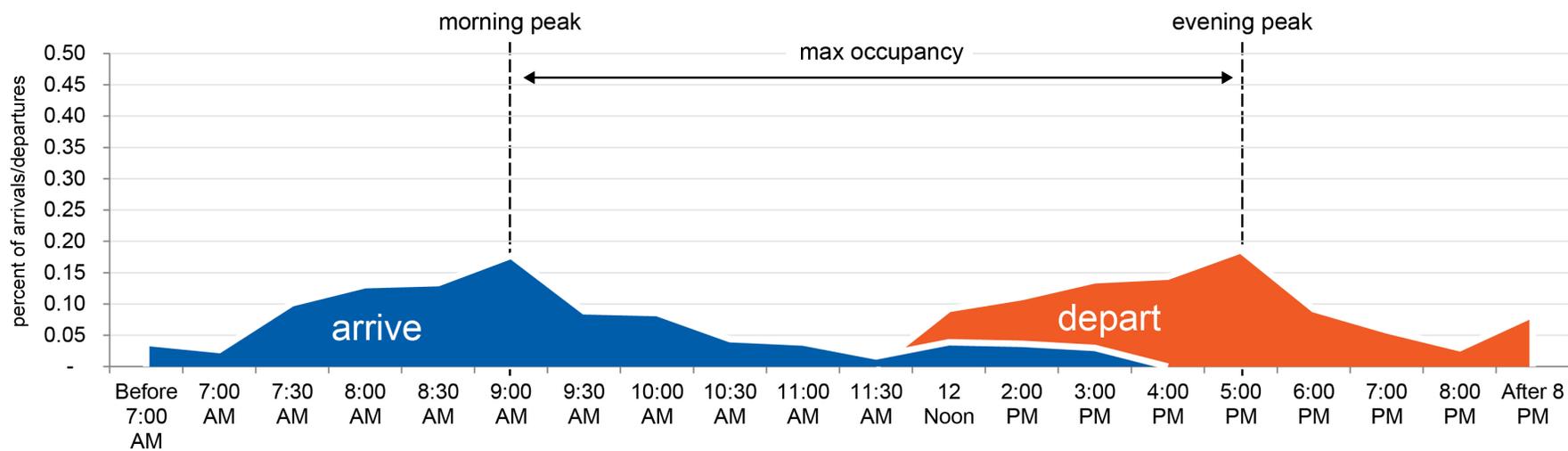


13,082 EMPLOYEES  
8,372 PERMITS

## HOW COMMUTER STUDENTS GET TO CAMPUS:



## WHEN COMMUTER STUDENTS COME AND GO:

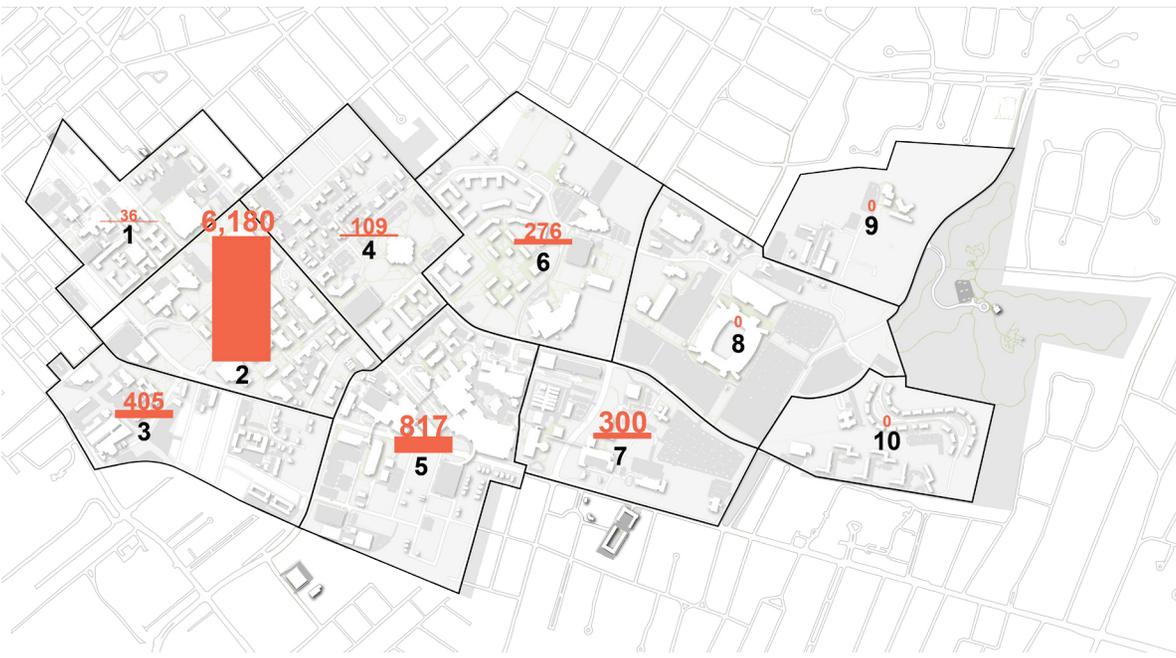


### RESIDENTIAL STUDENT POPULATION, 2014-2015

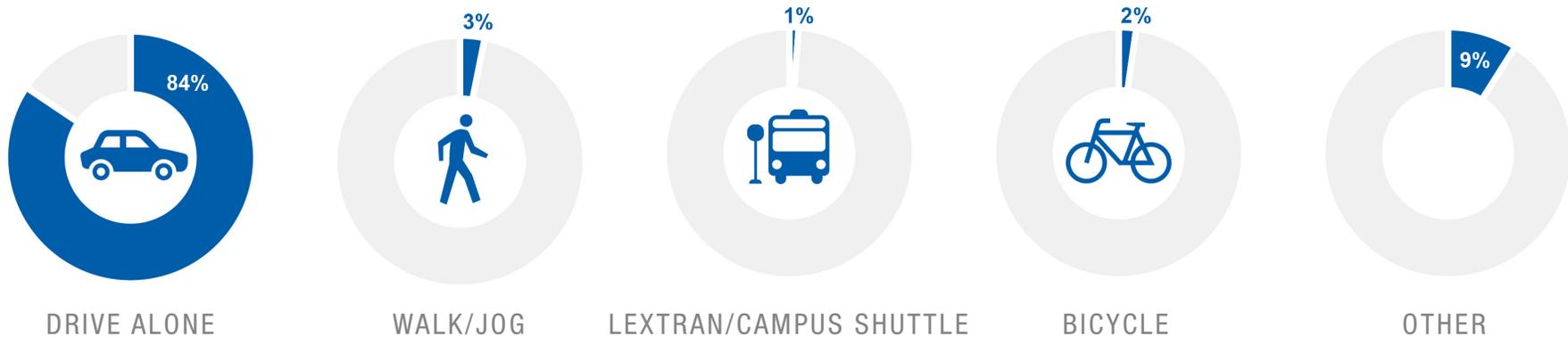


- Existing Beds
- Future Beds

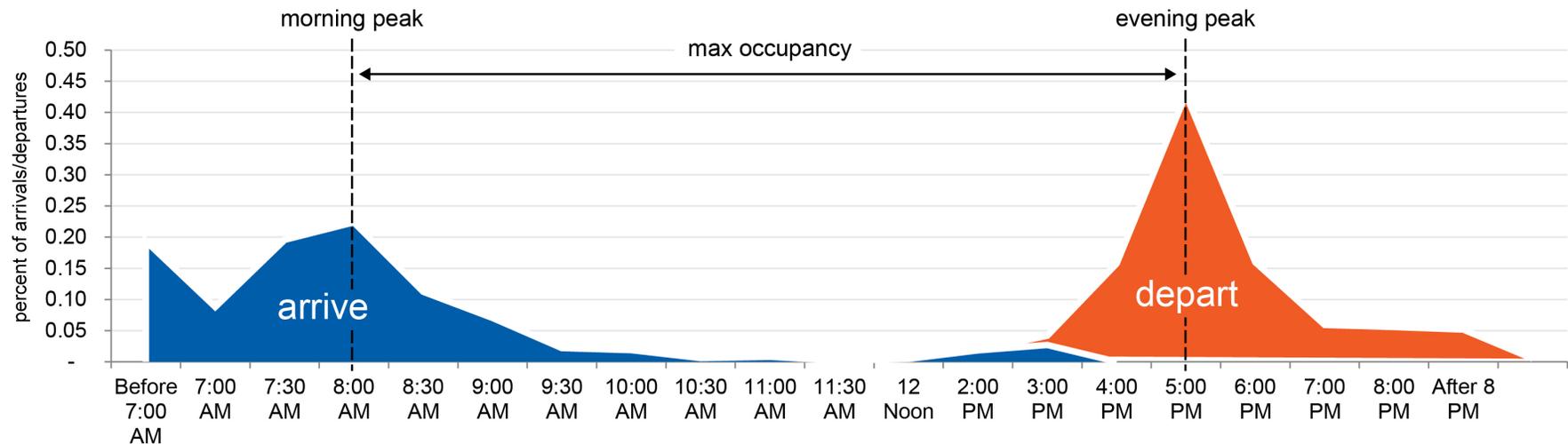
### STUDENTS IN CLASSROOMS (PEAK HOUR), 2014-2015



## HOW EMPLOYEES GET TO CAMPUS:



## WHEN EMPLOYEES COME AND GO:



EMPLOYEE POPULATION, 2014-2015



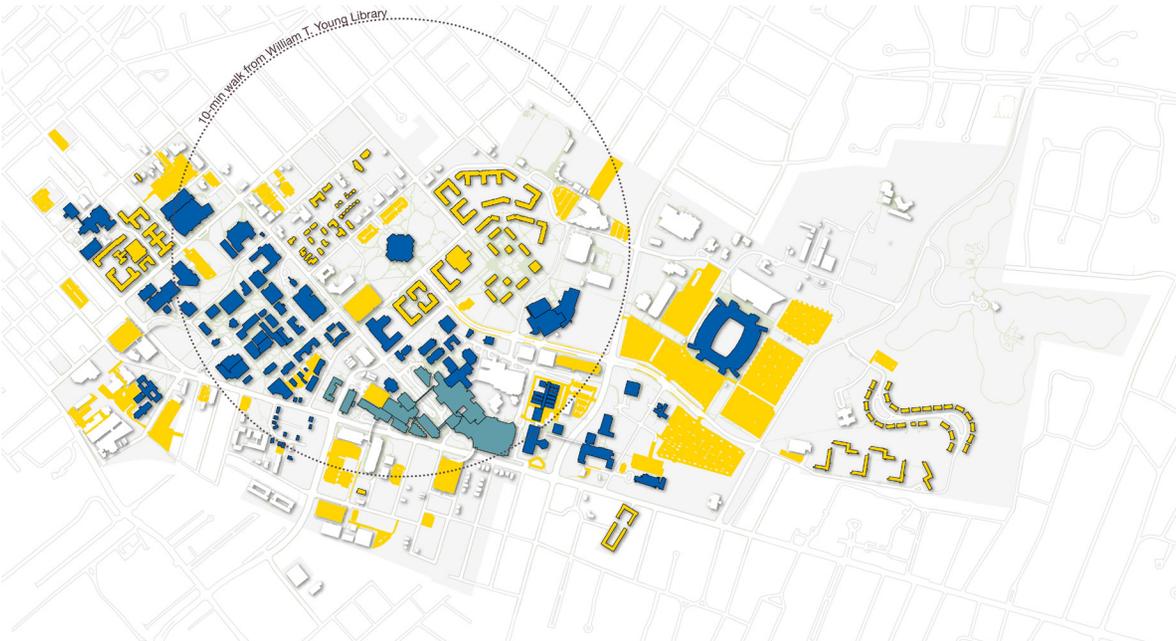
## TRIP ORIGIN AND DESTINATION

Resident students move about campus in accordance with the location of their residence hall and the demands of their academic schedule. They travel, often more than once daily, between the residence halls generally located on the periphery of campus and the classroom buildings in the core and the medical complex.

### PRIMARY ORIGINS

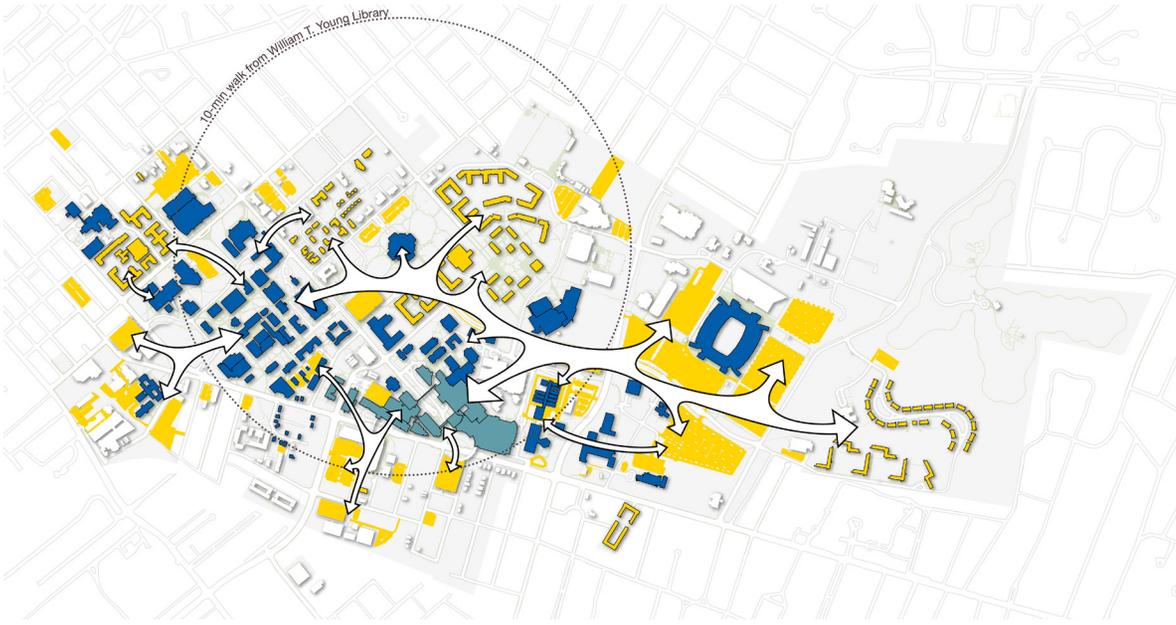


### PRIMARY DESTINATIONS



- Primary origin (active use)
- Primary origin (parking)
- Primary destination
- Primary destination (med center)

### PRIMARY DESIRE LINES



- Primary origin (active use)
- Primary origin (parking)
- Primary destination
- Primary destination (med center)

## UNIVERSAL ACCESSIBILITY

The University, through its Disability Resource Center, provides a variety of services to ease problems related to mobility and access for members of the campus community who have disabilities. In the context of the Transportation Master Plan, disability access issues include the number and location of accessible parking spaces; accessibility of Campus Shuttle buses; and the general navigability of the campus for wheelchair users, the blind and others with conditions that impair mobility.

The Disability Resource Center participated in the Transportation Master Plan process to ensure that the needs of the disabled are addressed. The campus survey (discussed below) also provided an opportunity to raise issues affecting disability access. The most frequently voiced concern related to campus transportation for disabled persons was a shortage of accessible parking spaces, particularly in the academic core and the medical center. Commenters noted the closure of the Gillis lot, which contained accessible parking spaces, and called for those spaces to be replaced. Campus Shuttle services are an important resource for disabled persons, but it was noted that regular Campus Shuttle routes do not provide adequate transportation for all persons, conditions and needs. Wayfinding is also an issue particularly for the disabled, who need direct and efficient routes across campus.

An ongoing issue is the status of the temporarily disabled. Accommodating pregnant women and those whose disabilities are temporary is important. At the same time, the process of obtaining disability parking permits, and for surrendering them when the disability is cured, is problematic.

One survey comment expressed well the importance of planning for universal accessibility on the UK campus: “As the ‘flagship’ educational institution in Kentucky, UK should strive to surpass the minimum requirements of the ADA while developing its [Transportation Master Plan] through innovation so that its students with disabilities will be given every opportunity to participate in inclusive academic and social settings while attending this university.”

EXISTING DISABLED PARKING LOCATIONS



## TRANSIT PRIOR TO FALL 2015

The University of Kentucky has a strong and well-supported transit system of its own, Campus Shuttle, as well as benefiting from the services provided by Lextran. The Campus Shuttle system carries 7,000 passengers per day, fulfilling a critical function in connecting parking to destinations and helping people get from point to point on UK's large campus. Campus Shuttle service is supplemented by the Lextran #14 route, which circulates within the campus.

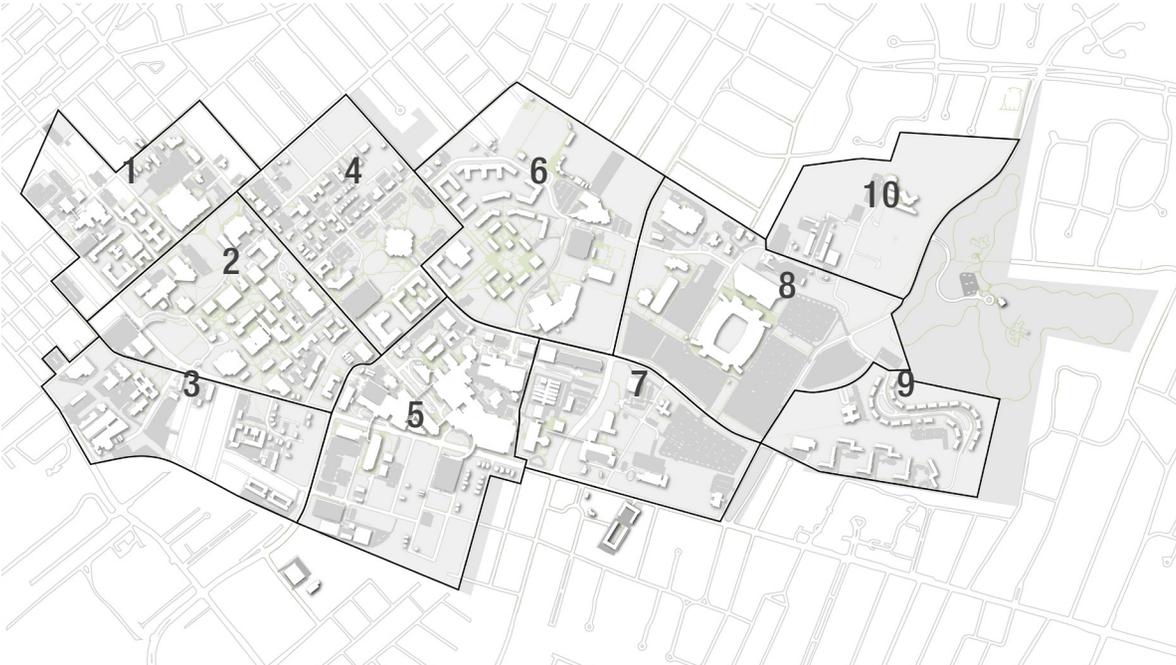
Of the five basic Campus Shuttle routes, the routes carrying the highest ridership are Red Route, serving the campus core; the Medical Center shuttle; and Lextran's Route 14, which runs between parking lots at the stadium and the campus gateway at Limestone St. and Avenue of Champions. The Yellow and Blue routes are not as productive, as they run through areas of campus where the need for transit is not as great.

The Blue Route runs clockwise around the entire campus, as does the Yellow Route in the evening. The Campus Shuttle KY Clinic Night Route runs a tight loop on the west side of Limestone Ave. The Red Route runs between Commonwealth Village and the campus core, with loops on either end. Only the Campus Shuttle Med Center Route does a direct back-and-forth run.

The Lextran 14 Stadium Route runs directly between the Stadium and the campus gateway at the intersection at Limestone and Avenue of Champions, looping only onto S. Upper St. where Limestone is one-way. Not coincidentally, the 14 Route has by far the highest ridership of all campus routes. The great weakness of one-way loop routes is that they do not work equally well in both directions. In one direction or the other, passengers are forced to ride the whole loop, wherever it may take them. This explains why the Blue and Yellow Routes, despite covering the entire campus, have ridership levels less than one-quarter that of the 14 Route.

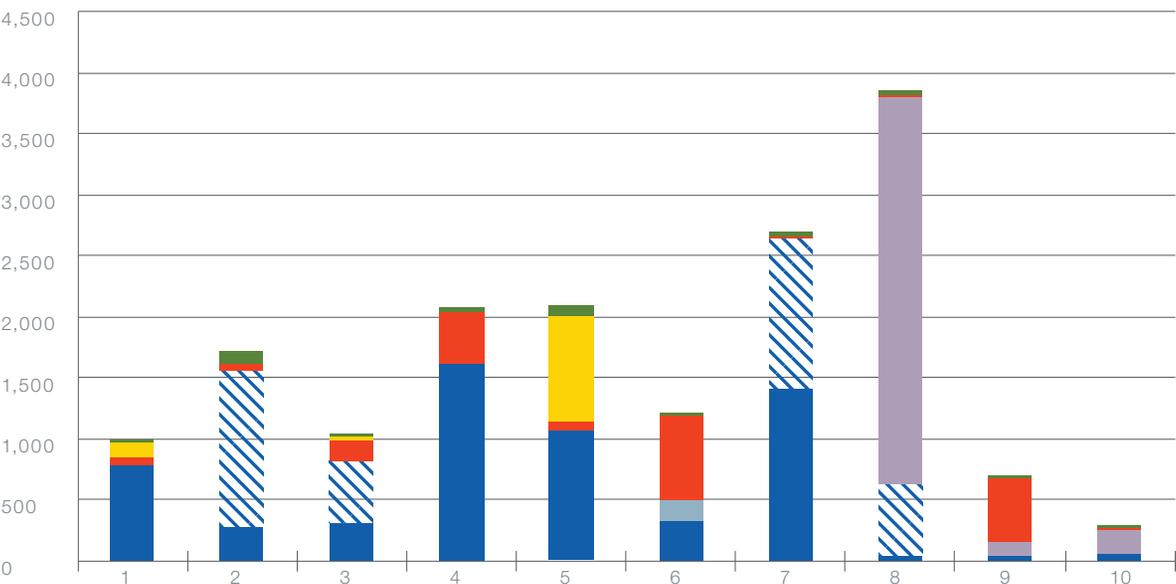
ROUTE	SPAN OF SERVICE	SERVICE DAYS	PEAK HOUR SERVICE FREQUENCY	TYPICAL DAILY RIDERSHIP	AVERAGE PASSENGERS PER SERVICE HOUR
Red	7:00 AM - 6:00 PM	Mon - Fri	15 minutes	459	21
Blue	7:00 AM - 6:00 PM	Mon - Fri	15 minutes	225	10
Yellow	7:00 AM - 12:00 aM	Mon - Fri	15 minutes / 30 minutes	103	10
Med. Center: Day	5:00 AM - 9:00 PM	Mon - Fri	3-5 minutes	1,426	25
Med. Center: Night	9:00 pM - 5:00 aM	Mon - Fri	On-call		
Lextran Route 14	7:00 AM - 6:25 PM	Mon - Fri	5-8 minutes	2,565	43

EXISTING PARKING SUPPLY



# PARKING

The University currently has an inventory of 16,643 parking spaces. The Stadium area is the largest reservoir of parking, but the Ag. School, medical center and Library/Greek Village areas each contain over 2,000 spaces. In the Medical Center approximately half the spaces are reserved.



- Employee
- ▨ Employee/Commuter
- Commuter
- Stadium
- Resident + RD
- Reserved
- Disabled

## DAYTIME PARKING DESIGNATIONS



During daytime hours, most parking in the academic core is designated for use by employees. Across Limestone and at the stadium, major parking facilities are available to commuter students as well. Resident student parking is located in the residential parts of campus. In the north campus, however, where over 1,000 new beds will be located in the Limestone I and II developments, there is almost no resident student parking.

- Employee
- Employee/Commuter
- Commuter
- Resident
- Stadium
- Reserved
- Disabled
- Visitor

Source: Carl Walker Assoc.

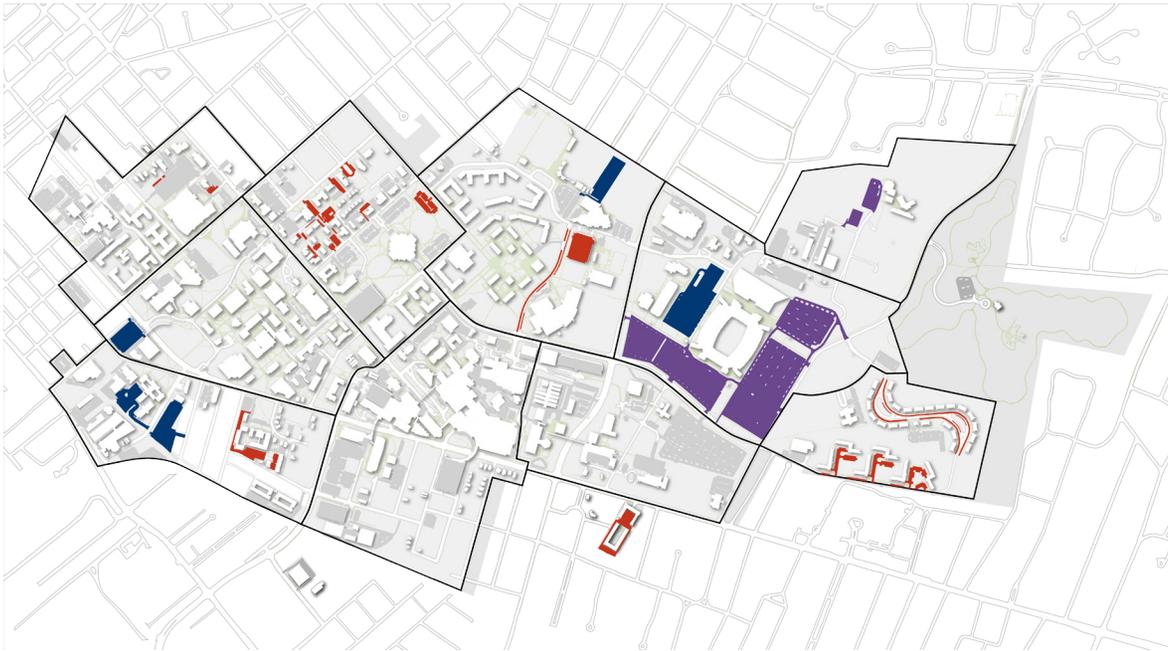
## EVENING PARKING DESIGNATIONS



- Employee
- Employee/Commuter
- Commuter
- Resident
- Stadium
- Reserved
- Disabled
- Visitor

Source: Carl Walker Assoc.

### NINE MONTH BASIS

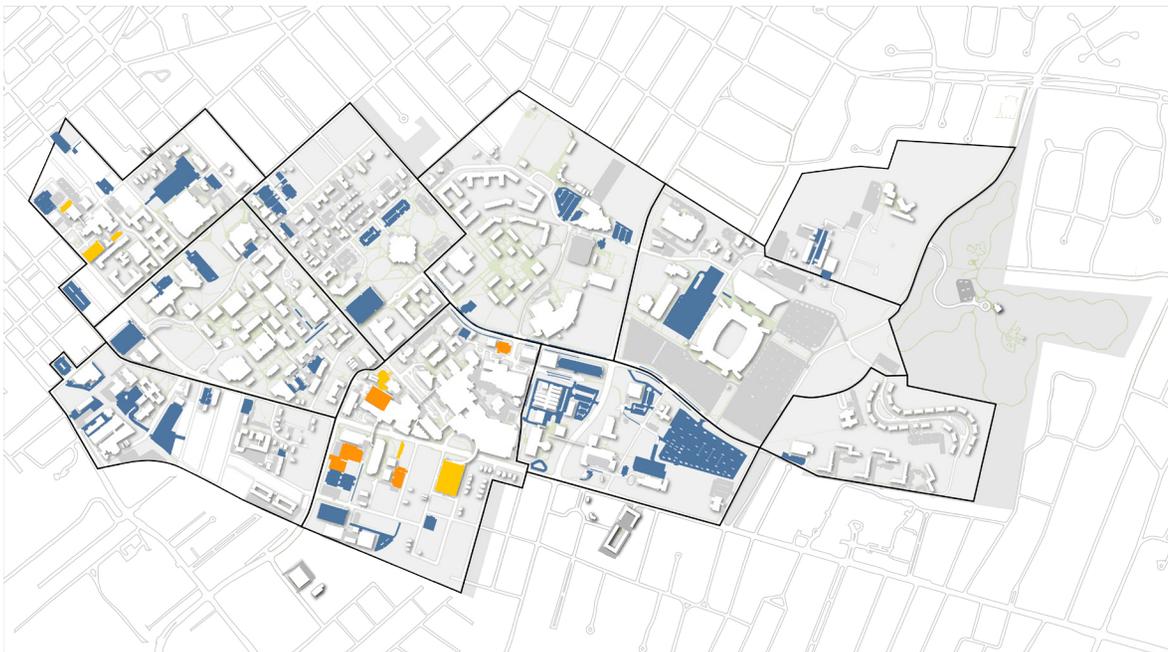


### PERMIT FEES & OPTIONS

The distinctive feature of the UK parking permit fee structure is that all permits cost the same on a monthly basis. Students and employees all pay a monthly rate of \$34, regardless of where they park. The only exception is for reserved parking spaces for physicians and medical personnel.

	Commuter Permit Parking	\$264/year	Must live at least 1 mile from campus and have at least 60 earned credits
	Resident Permit Parking	\$264/year	Must have a UK residence hall housing contract
	Stadium Permit Parking	\$264/year	Students not eligible for other permits

### TWELVE MONTH BASIS



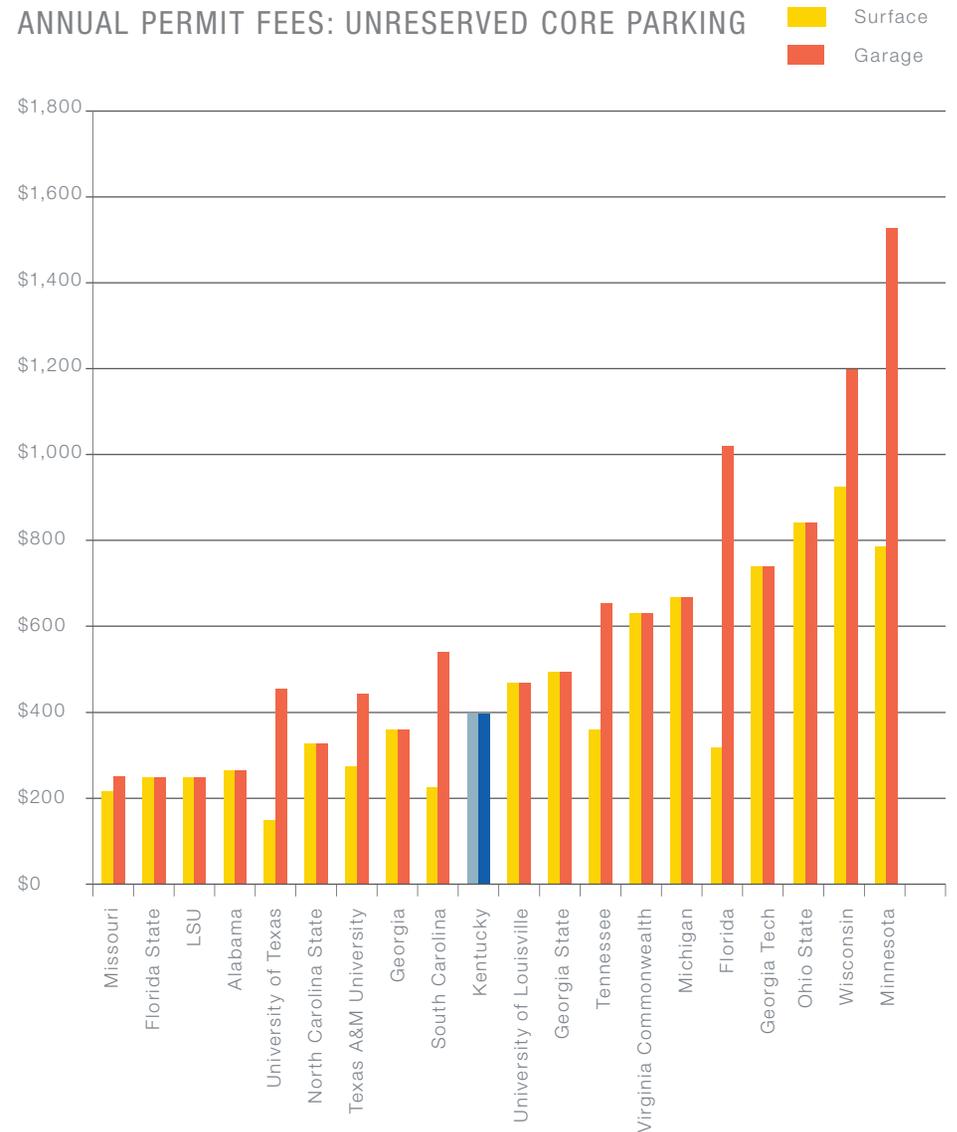
	Employee Permit Parking	\$396/year	Academic & VA Hospital
	Reserved Permit Parking	\$990/year	Priority given to physicians and medical personnel
	Premium Reserved Permit Parking	\$1,188/year	Priority given to physicians and medical personnel

## PEER PRACTICES

To provide perspective on UK's parking situation, a survey was done of parking permit fees at a number of Universities that are peers or comparable to UK. The results show that UK currently charges less than most for parking for employees, resident students or commuter students.

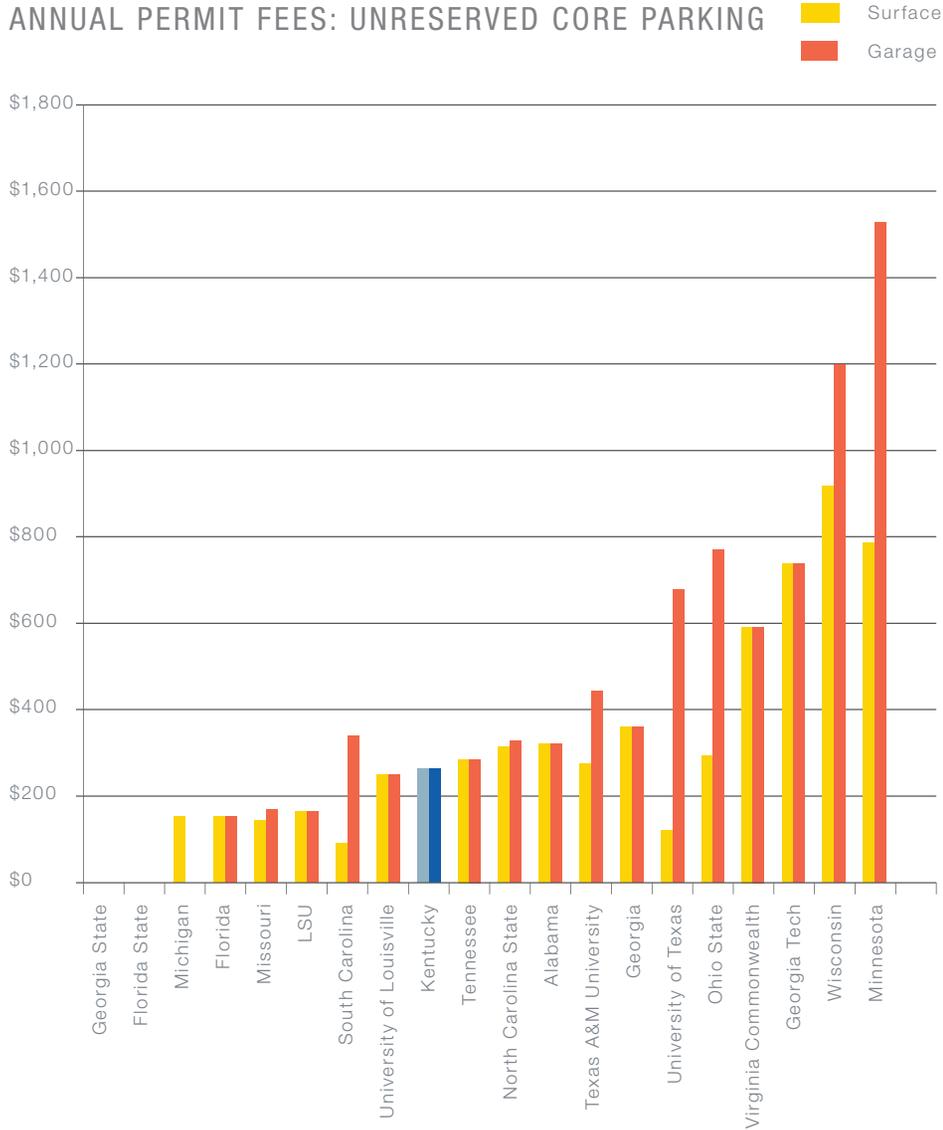
### EMPLOYEES

#### ANNUAL PERMIT FEES: UNRESERVED CORE PARKING



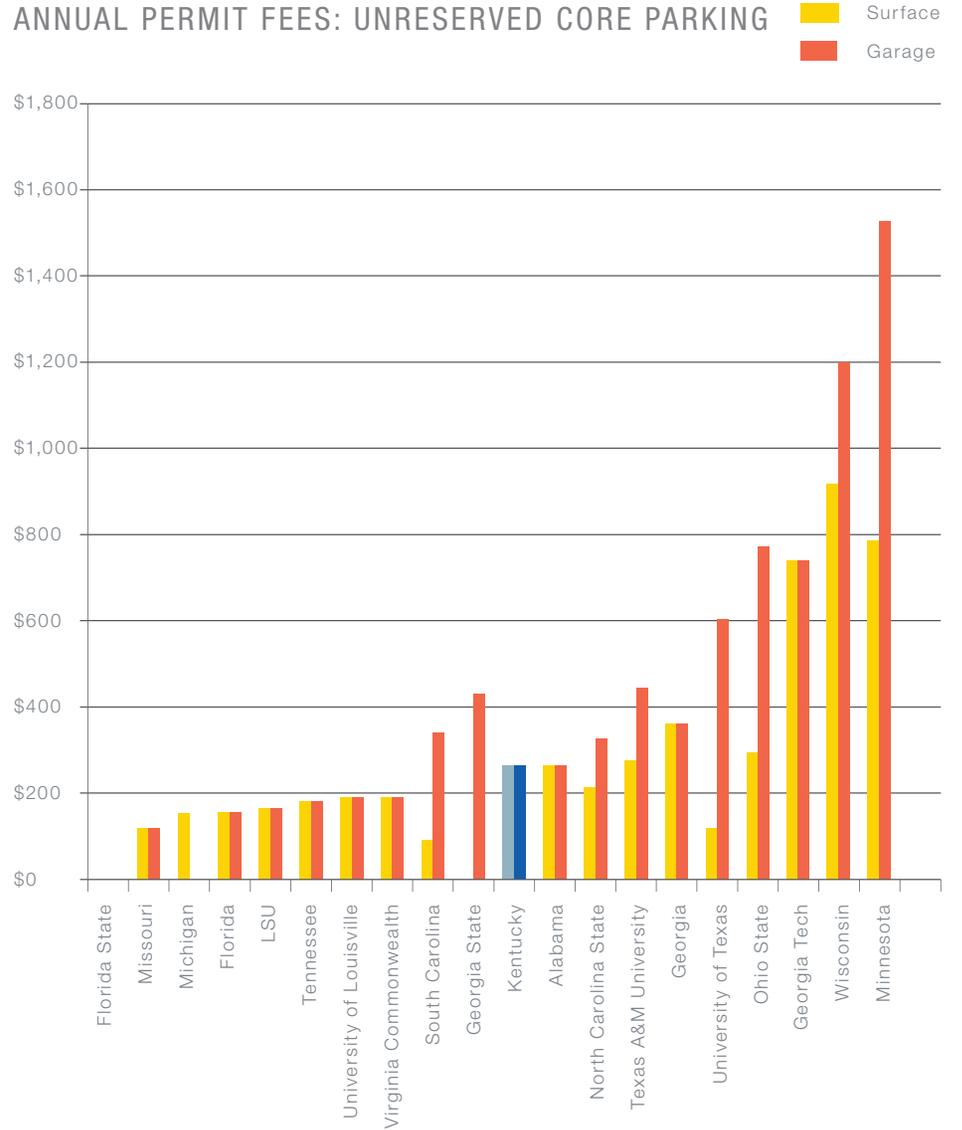
## RESIDENT STUDENTS

ANNUAL PERMIT FEES: UNRESERVED CORE PARKING



## COMMUTER STUDENTS

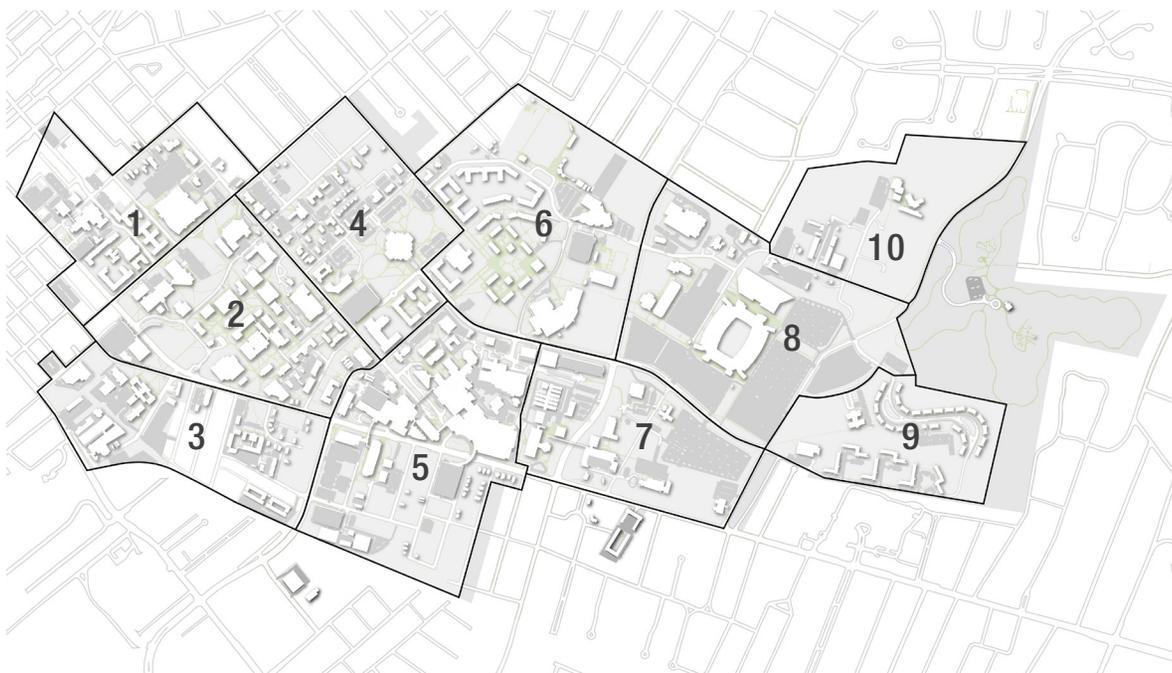
ANNUAL PERMIT FEES: UNRESERVED CORE PARKING



## PERMITS VS. PARKING INVENTORY

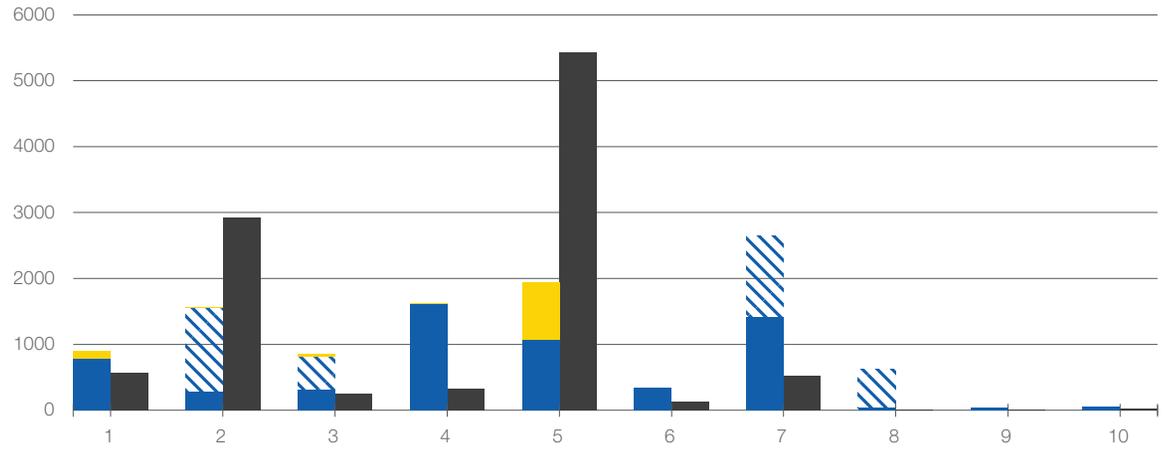
The following diagrams summarize current patterns of parking location and assignment, that indicate the availability of parking in different areas of campus.

In north campus, there is already a shortage of parking for resident students, but there is a surplus of parking for employees. However, these spaces are also available to the large population of employees who work in the academic core, where demand far exceeds supply. At the medical center, there are many more employees with parking permits than there are available spaces, a situation which both leads to and is exacerbated by the establishment of a large number of reserved spaces. The only location where there is a true surplus of parking on a local basis is the stadium, which serves as the campus' peripheral parking area.



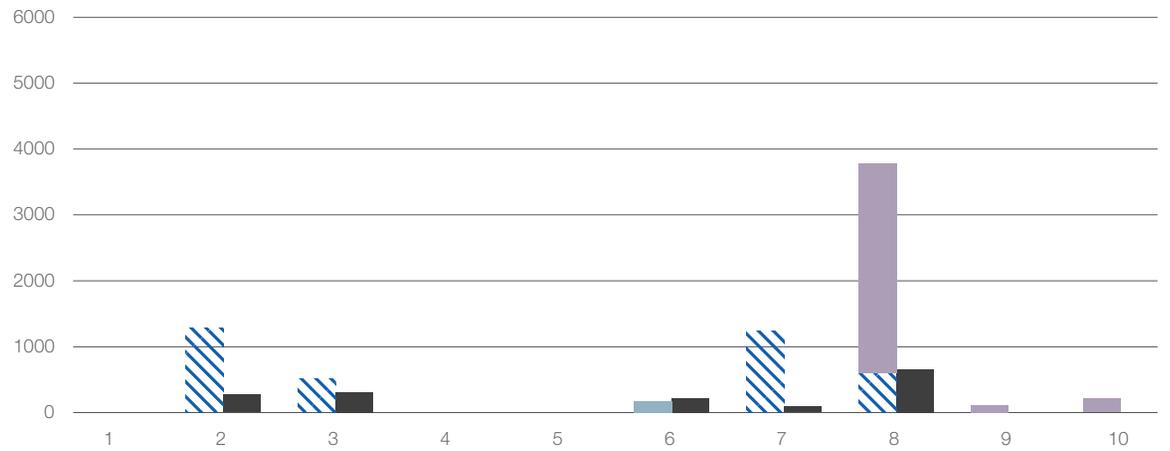
### EMPLOYEE PARKING

- Employee
- Employee/Commuter
- Reserved
- Permits



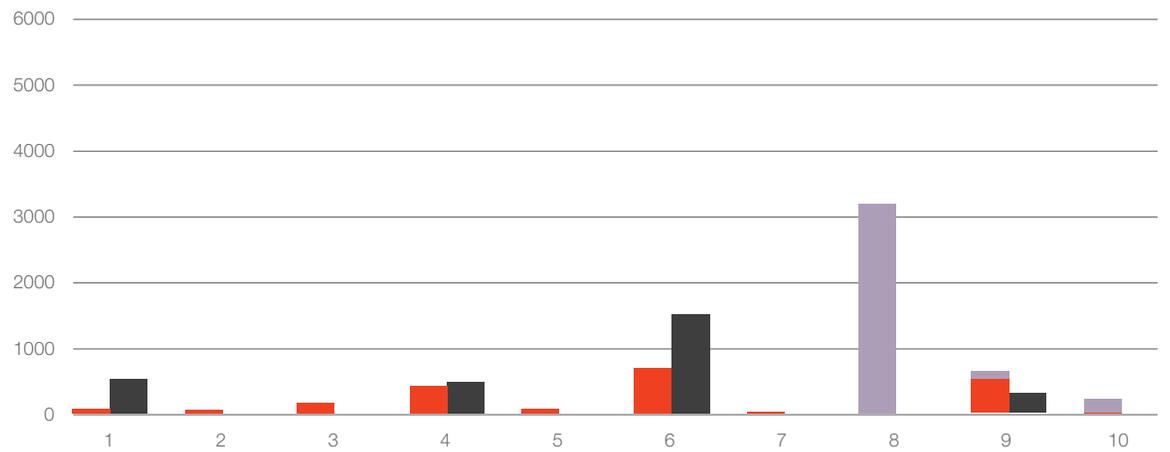
### COMMUTER STUDENT PARKING

- Commuter
- Employee/Commuter
- Stadium
- Permits



### RESIDENTIAL STUDENT PARKING

- Resident
- Stadium
- Permits



## PARKING OCCUPANCY

Campus-wide, parking is fully subscribed. Occupancy counts taken in 2014 indicate that even at the stadium, parking occupancy exceeds 90%. The only exception, the eastern K lot, is slated for closure.

Most large and state university campuses have a reserve of peripheral or remote parking that is lightly used and generally available, and serves as a safety valve for high parking demand in the campus core. Without such a reserve, it is not possible to relieve the pressure for core parking.

Trends at UK indicate that the demand for parking will grow in coming years. Enrollment is projected to increase by approximately 14% between 2013 and 2020, with a concomitant addition of over 1,000 employees. The resident-student population will grow by over 2,700. The medical center continues to grow.

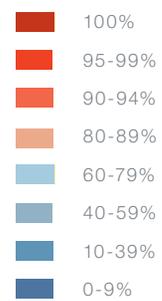
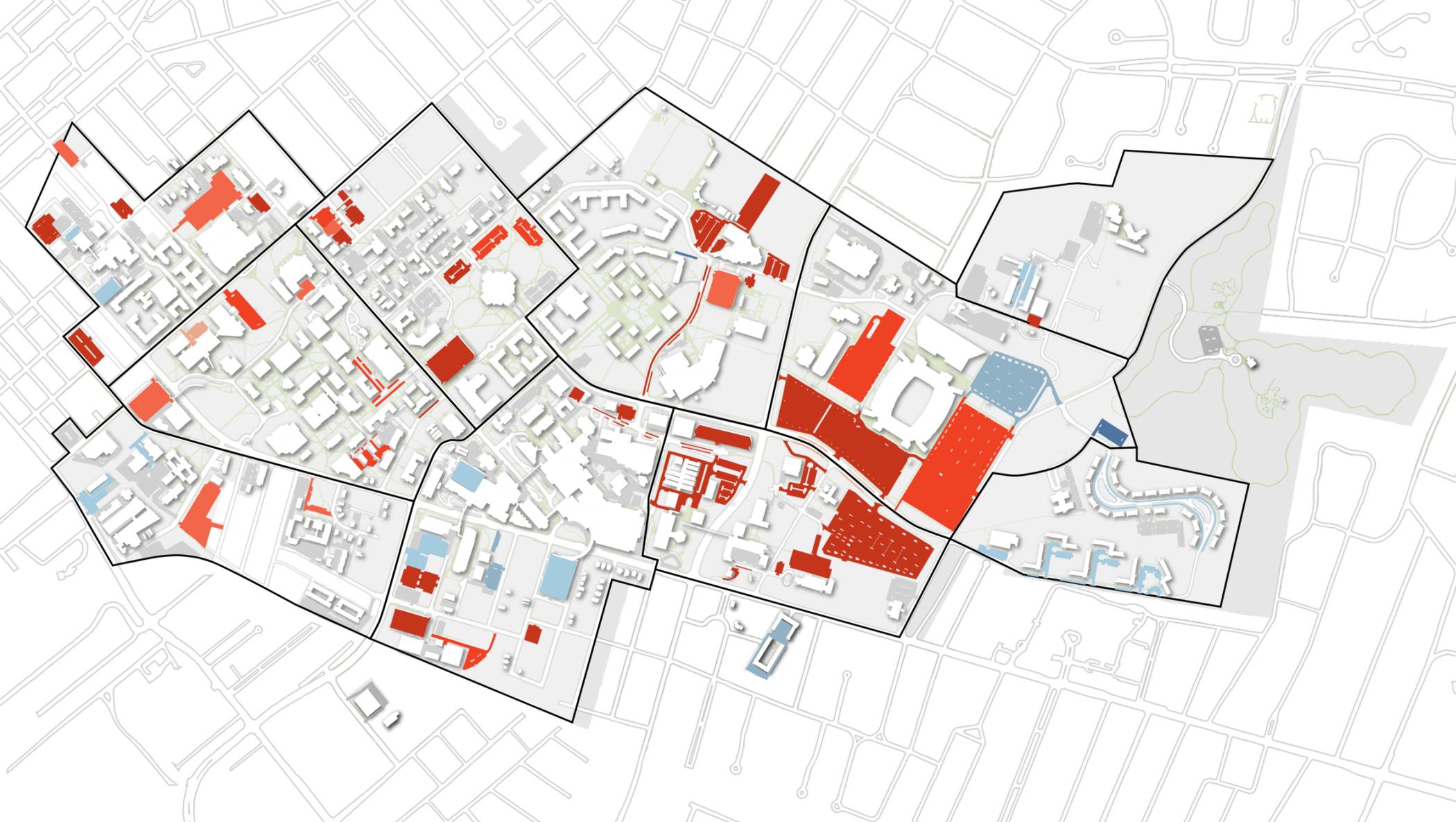
Against these trends, parking demand can be decreased by concerted efforts to better manage the transportation system and reduce the need for cars on campus. Transportation Demand Management must be employed on many fronts.

### FACTORS THAT INCREASE PARKING DEMAND:

1. Increase in student, faculty, and staff populations
2. Increase in number of students living on campus
3. growth of the medical center

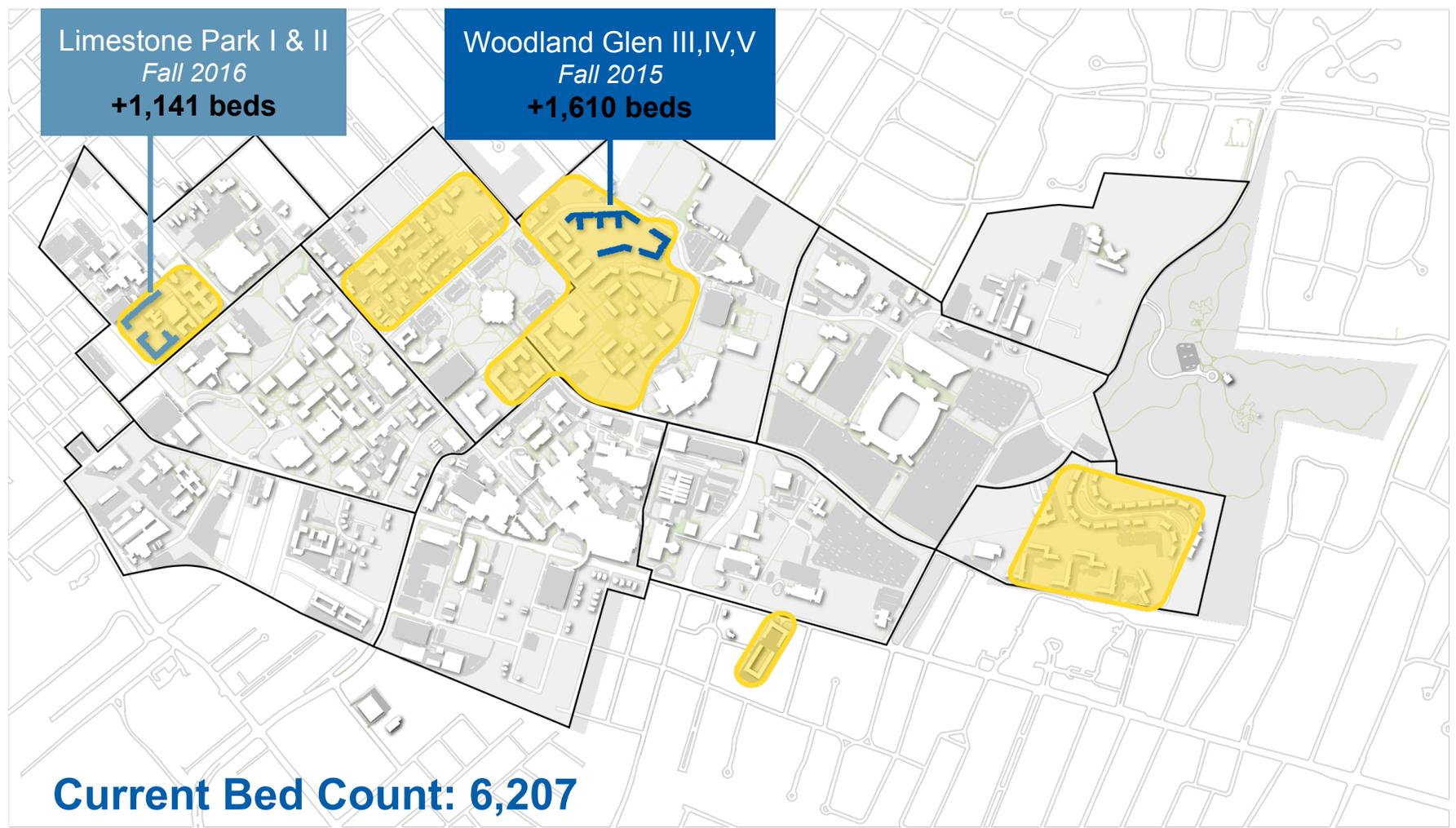
### FACTORS THAT DECREASE PARKING DEMAND:

1. Increase in transit use
2. increase in walking
3. increase in cycling
4. increase in car-sharing and ridesharing
5. increase in off-hours parking behavior



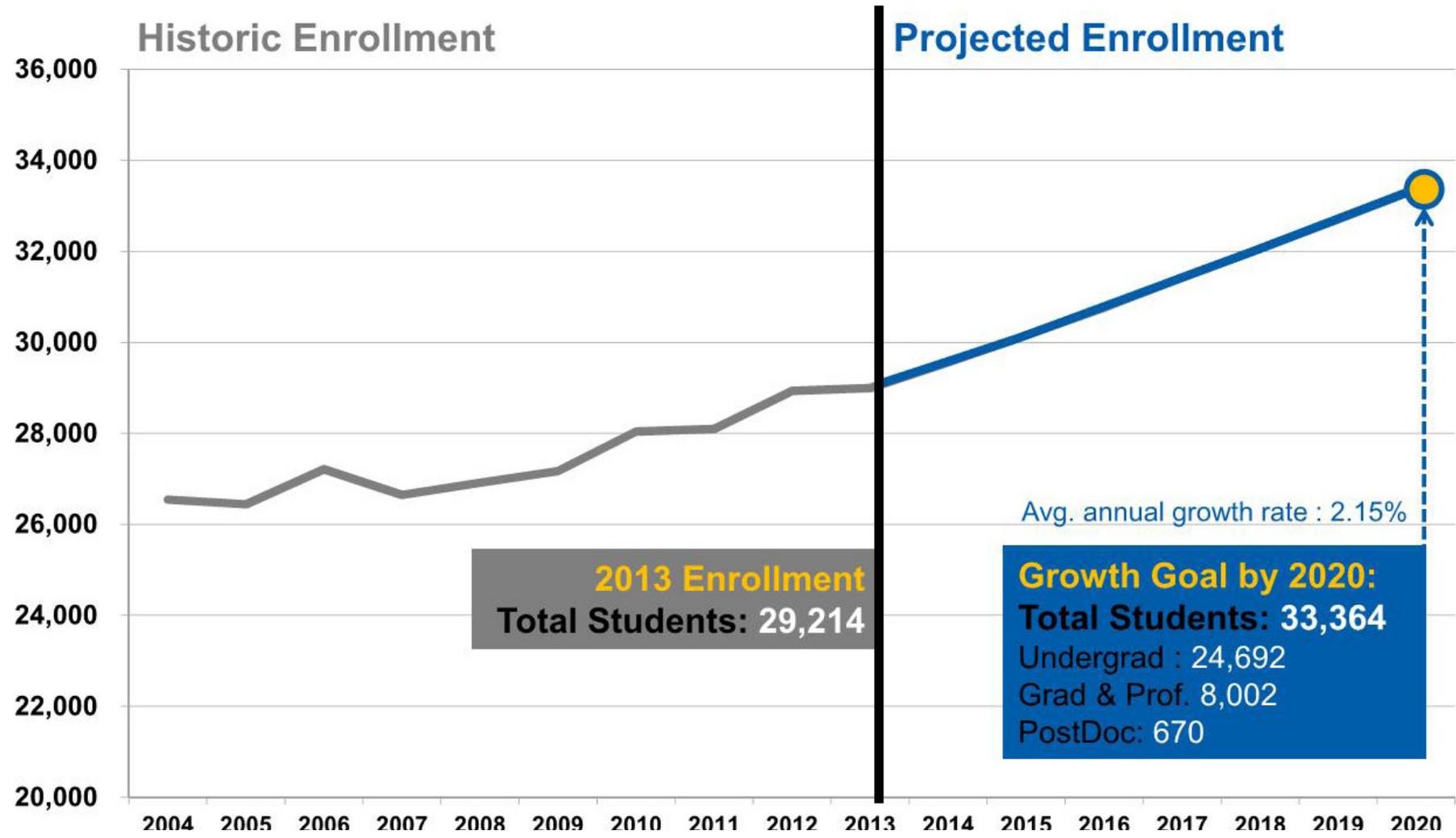
Source: Carl walker

# POPULATION GROWTH



- Housing Zones
- Housing Phase II-B (Fall 2015)
- Housing Phase II-C (Fall 2016)

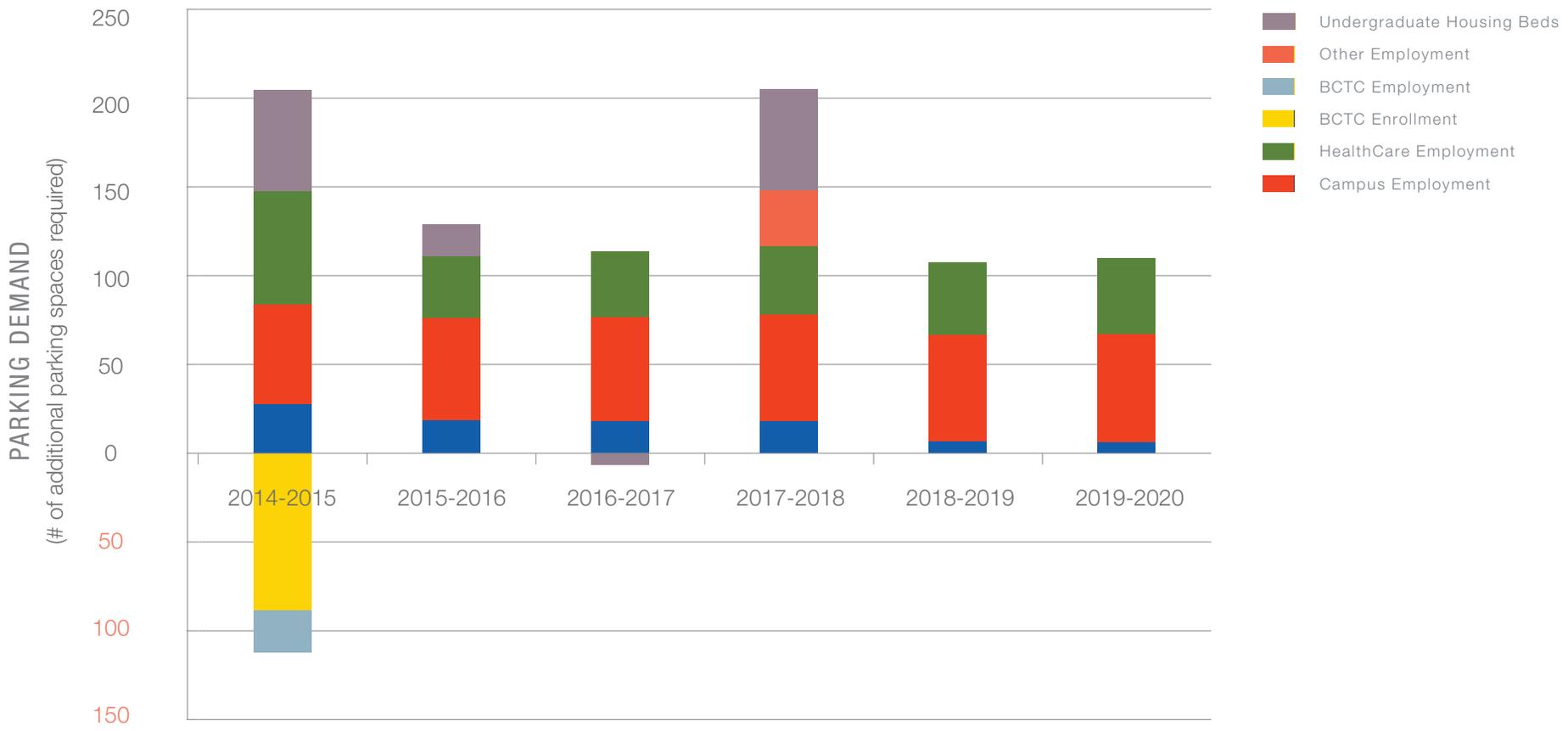
### PROJECTED CHANGE IN STUDENT ENROLLMENT



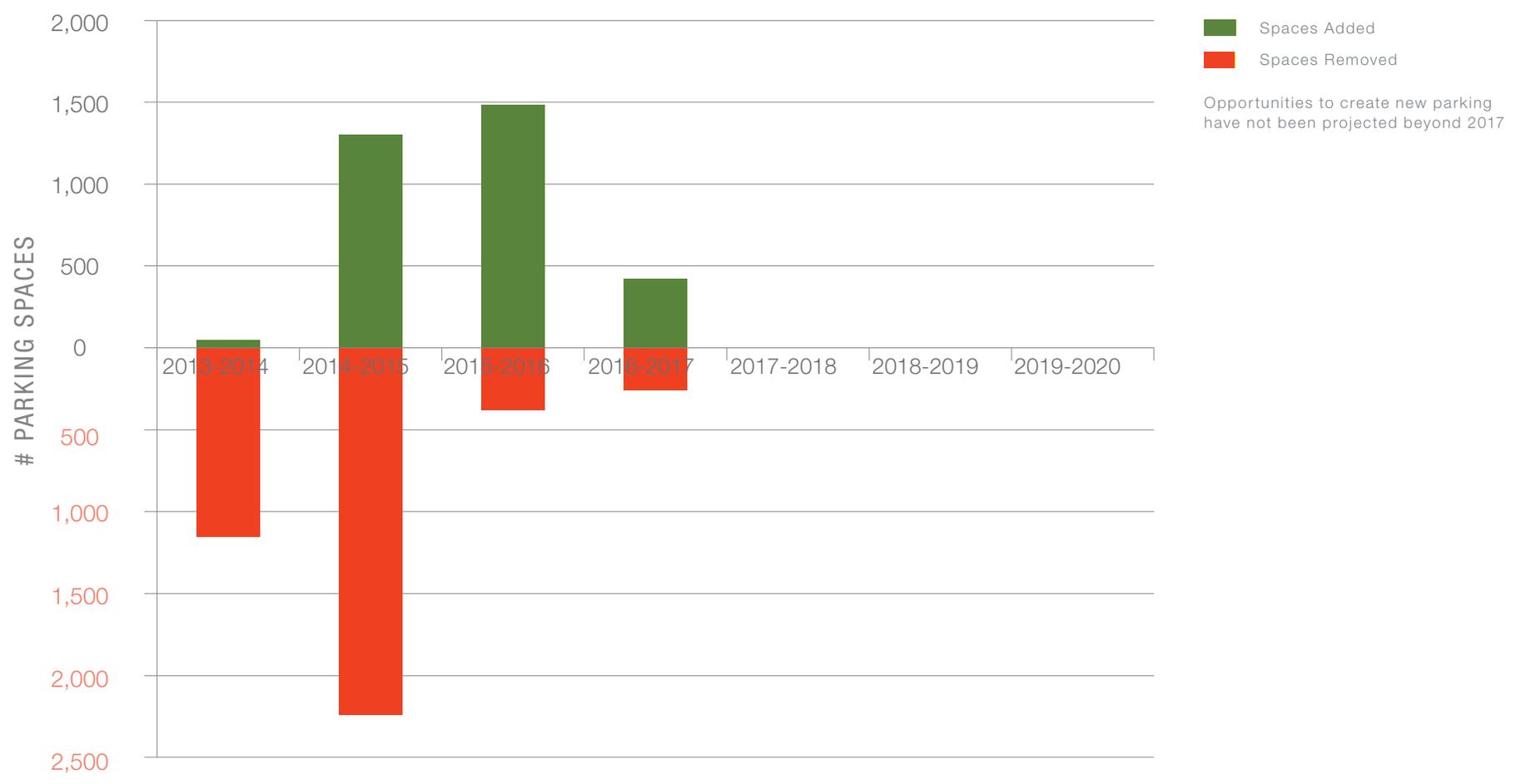
■ Total Student Enrollment (Undergrad, Grad & Prof., Postdoc)

# PARKING DEMAND AND SUPPLY

## ANNUAL CHANGE IN PARKING DEMAND



## ANNUAL CHANGE IN PARKING SUPPLY



## TRANSPORTATION DEMAND MANAGEMENT

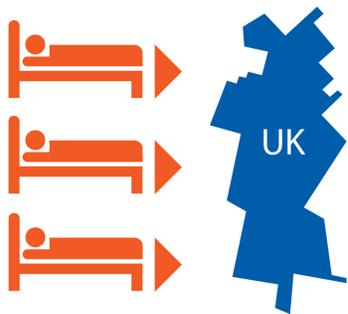
The University engages in a variety of program measures and incentives to encourage and facilitate auto-independence, including:

- Supporting bicycling through the provision of free bicycles in exchange for a promise not to bring a car to Lexington (the Big Blue Bicycles program); the Wildcat Wheels Bicycle Library, through which students, employees and departments can borrow a bicycle for short- or long-term use; and an on-campus bicycle repair shop.
- The comprehensive services of CATS, the campus shuttle system, which offers a variety of fixed-route bus services, evening on-demand shuttles and discounted taxis, the CAT Tracker GPS-based bus locating system, seasonal off-campus shuttles, and low-cost University-coordinated charter bus service offering connections to many cities during academic breaks.
- Creative arrangements with Lextran, allowing discounted boarding with student ID as well as access to the Colt Trolley, a free downtown circulator bus.
- PTS Car Sharing, a short-term, low-cost car rental option.
- SAFECATS, a free safety escort service available to all UK students and their guests.

While these efforts are valuable and effective on their own terms, they have not been coordinated into a comprehensive Transportation Demand Management

(TDM) strategy. Many universities have designated and staffed TDM offices, whose purpose is to ensure that alternatives to single-occupant vehicle use are available for all transportation needs.

TDM also goes beyond the provision of alternative transportation; it can involve land-use, housing policy and campus design. Measures to encourage local living, within easily walkable or bicycle-able distance from campus, can also reduce the impact of auto use and parking. These measures can include incentives for both students and employees. Landscape improvements, such as shaded and generous walkways, can greatly reduce the perceived inconvenience and discomfort of walking. Thoughtful location of buildings with relation to each other can reduce the distances between destinations and the need for vehicle travel across campus.



### RESIDENTIAL POLICY

- On-campus/near campus living
- Catchment zones
- Local living incentives for employees



### ENHANCED TRANSIT SYSTEM

- Frequent headways 7 days/week
- Efficient routes
- High-quality bus tracking app
- Enhanced bus shelters
- Park-and-ride



### ENHANCED WALKING AND CYCLING INFRASTRUCTURE

- Pleasant, safe, shaded walks
- Minimal street crossings
- Protected bike lanes
- Ample bike parking
- Bike share program



### VOUCHERS AND INCENTIVES

- Free/discounted transit passes
- Pre-tax transit deduction
- Pay not to park rebates/vouchers
- Peak spreading



### RIDE SHARING

- Car sharing/short-term rental
- Carpooling incentives
- On-demand vanpool



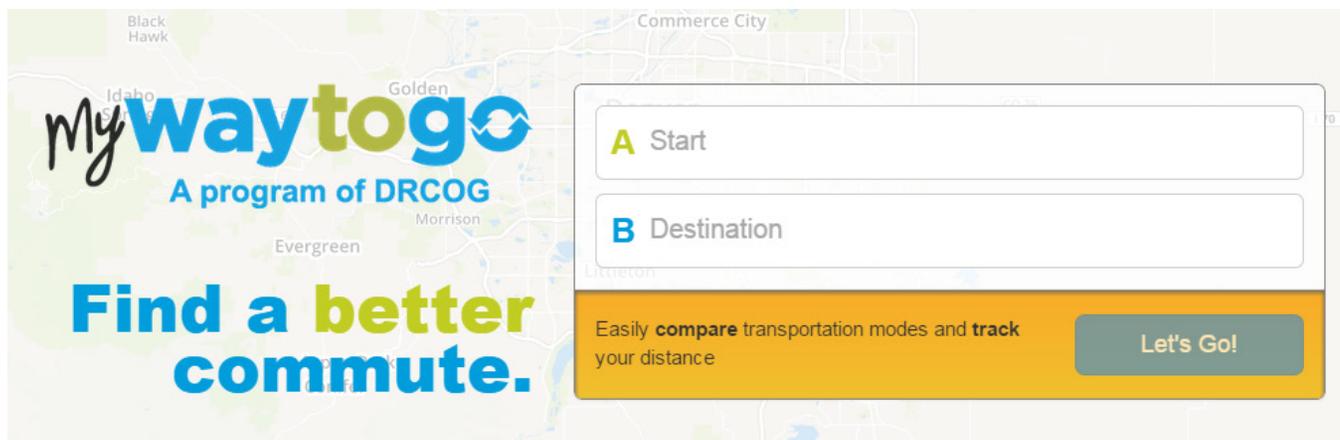
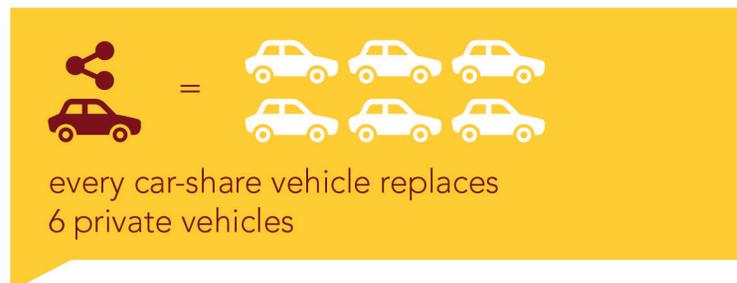
### PRICING POLICY

- Tiered permit pricing
- Peripheral parking incentives
- Cash-back incentives

## TRANSPORTATION DEMAND MANAGEMENT (CONT.)



CAR SHARING



SOCIAL NETWORK PLATFORM FOR ALTERNATE MODES OF TRANSPORTATION (CU BOULDER)

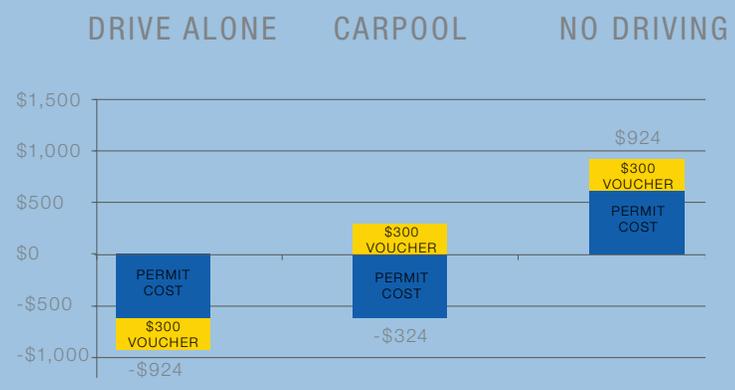
# CASE STUDY: STANFORD UNIVERSITY



## TDM PROGRAM: COMMUTE CLUB

Employees and students choosing to commute to campus by alternate modes of transportation or by carpooling receive the following rewards:

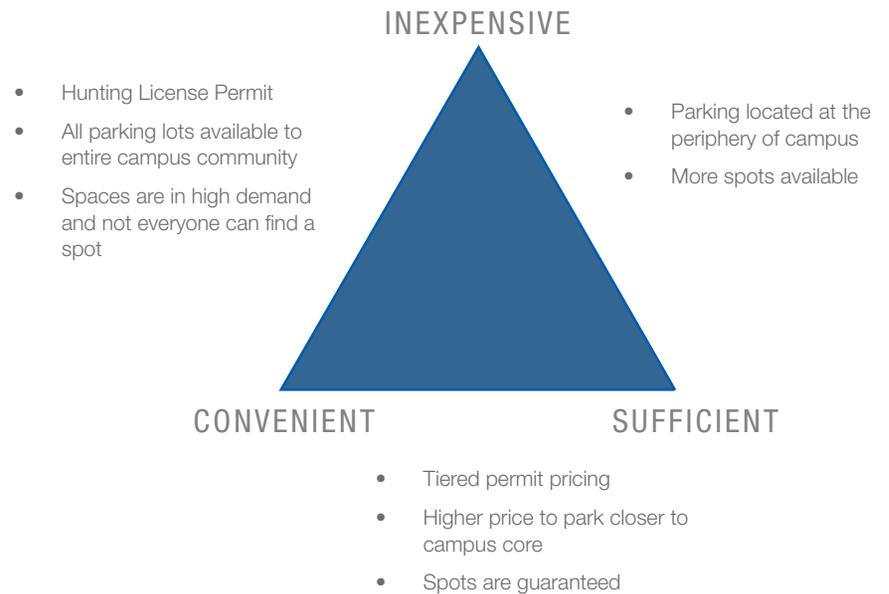
- Up to \$300/year in cash
- Carpools and Vanpools receive reserved spaces
- Access to Stanford's Ridematching Services
- Emergency Ride Home Program
- Up to \$102/year in Zipcar driving credit
- Enterprise Rent-A-Car vouchers
- 8 daily parking permits available for purchase
- Receive \$50 for each referral
- Eligible for additional prizes



## PERMIT SYSTEM TYPES

Parking policy can also be part of a considered TDM strategy, if it is used to reduce the need to drive. At present, the University charges the same price for parking regardless of location. The unintended consequence of the 'hunting license', which gives permission to park anywhere but does not guarantee the availability of parking anywhere, is that drivers cruise around the campus looking for the most convenient parking.

Most large universities employ some sort of parking assignment, under which parkers can be confident of where they can find available parking. With permits that are valid for specific zones or facilities, users have more choice regarding the trade-off between price, location and availability of parking. Differential pricing of permits allows reliable access to parking of different levels of convenience, reducing or eliminating the hunt for parking spaces and the volume of traffic on campus streets.



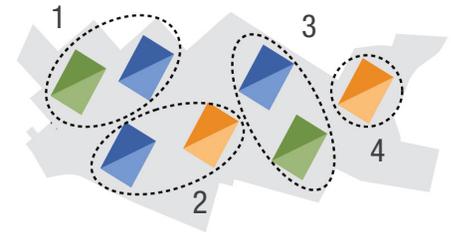
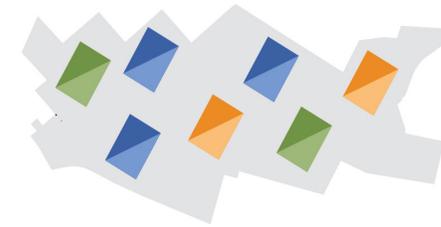
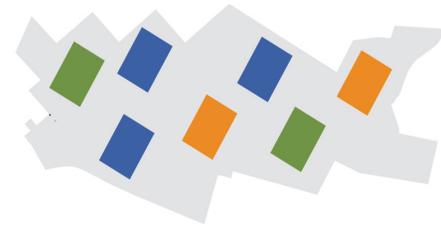
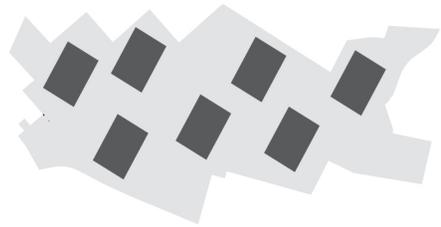


Every lot and space available to anyone part of campus community. Parking is available on a first-come, first served basis and is not guaranteed if supply is limited.

Lots designated for specific groups of people (eg. students, faculty)

Lots designated for specific groups of people with reserved spaces offered at a premium

Parking assigned by zone, providing choice with regard to price and convenience. Reserved spaces also available.



**HUNTING PERMIT**

**GROUP PERMIT**

**RESERVED PERMIT**

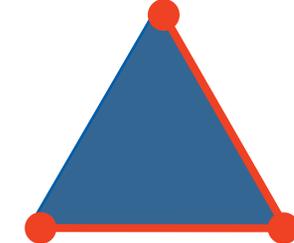
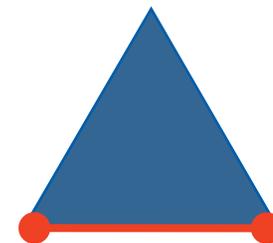
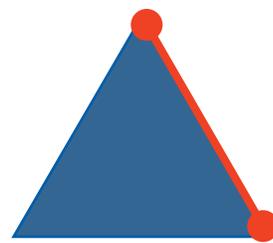
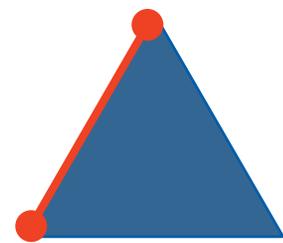
**ZONE PERMIT**

INEXPENSIVE

INEXPENSIVE

INEXPENSIVE

INEXPENSIVE



CONVENIENT SUFFICIENT

CONVENIENT SUFFICIENT

CONVENIENT SUFFICIENT

CONVENIENT SUFFICIENT

## STAKEHOLDER INPUT

The management of the University's transportation system is of concern to all who study, work and visit the campus. In order to ensure that the Transportation Master Plan reflects and benefits from the experience and ideas of students, faculty, staff, visitors, alumni and neighbors, multiple channels were opened to allow input from all. The office of the Executive Vice President for Finance and Administration invited comment through its website; meetings were held with stakeholders; and a survey was distributed to the entire campus community.

*"UK [should] do a better job planning how/where UK deliveries will be made to a building, so there is sufficient UK vehicle parking available for those servicing the building"*

*"Hold individuals who bike to a safe standard"*

*"Minimal safe parking for faculty and staff at the Johnson Center"*

*"Other universities offer an on demand shuttle-type service for handicapped students"*



*“Signs indicat[ing] pedestrians have the right of way in crosswalks are largely ignored”*

*“Please create a right-turn only egress from E lot on Univ and Alumni, onto Alumni to help with traffic heading off campus”*

*“Do not remove parking on Funkhouser Drive. Make an access road on Funkhouser/Chem/Phys or at least handicap spots. How will Chem/Phys building receive their chemical deliveries? What about deliveries to Pence Hall with architecture?”*

*“It sometimes takes me 45-55 minutes to GET OUT OF the KY clinic parking structure”*

*“Avenue of Champions should be one-way between Rose & Upper, going toward Upper”*



## STAKEHOLDER INPUT (CONT.)

The 2014 web survey tested attitudes about parking, transit, the campus' walking environment, and driving. Respondents were asked to identify the measures and policies that they thought would do most to improve their experience of commuting to and moving around campus. The survey also asked people to identify ways that the administration can better communicate and interact with the public.

Some of the most important questions in the survey dealt with the parking permit system: how it serves peoples' needs and how it can be improved. People were asked what is most important to them when it comes to parking: Availability, Cost or Convenience. One question presented a number of statements about the cost of parking and asked whether people agreed or disagreed.

When asked which two of the three basic elements of parking service – cost, convenience and availability – were most important to them, Less than half of respondents put cost in their top two priorities.

A strong majority across all elements of the campus community – 84% of students, 76% of medical staff and 67% of other employees agreed or strongly agreed with the statement “There should be more permit categories to give users options with regard to price and location”.

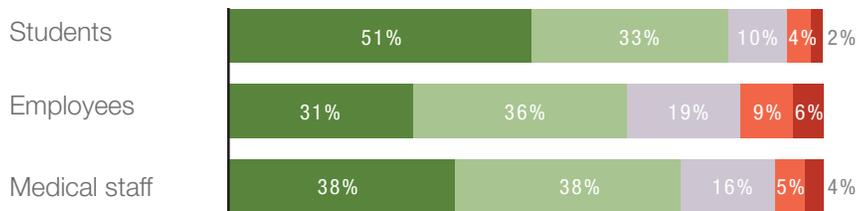
From the survey responses, a few conclusions can be drawn.

- Vehicular/pedestrian conflicts are seen as a significant problem
- Better dissemination of information about the availability of parking in garages and the arrival of buses would be appreciated
- Park-and-ride options deserve investigation
- Opportunities exist to improve both service and affordability of Lextran buses
- A parking permit system that allowed people to choose from a variety of options regarding the price and location of their parking, while providing better assurance that a space will be available for them, would be generally popular
- Conveniently located accessible parking is in short supply

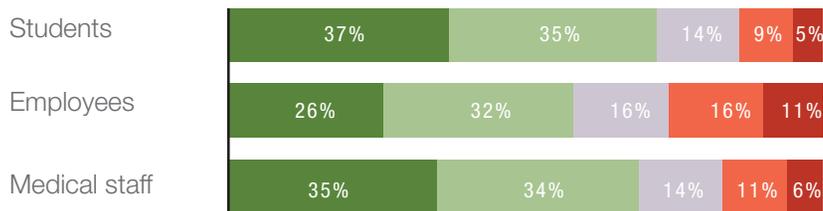
### QUESTION 13:

Below are some different ideas that have been expressed about the cost of and access to parking permits. Please indicate your level of agreement in each.

#### 1. "THERE SHOULD BE MORE PERMIT CATEGORIES TO GIVE USERS OPTIONS WITH REGARD TO PRICE AND LOCATION"



#### 2. "PRICE OF PERMITS SHOULD REFLECT THE CONVENIENCE AND DESIRABILITY OF THE PARKING LOCATION"



#### 3. "PRICE OF PERMITS SHOULD TAKE INTO ACCOUNT ABILITY TO PAY (E.G. SALARY)."



### QUESTION 9:

The quality of parking is defined by Cost, Convenience, and Supply. This requires trade-offs between the three. Select the ones you feel are the most important. (Choose up to 2)

