



Connections

Each of Lehigh's three campuses—Asa Packer, Mountaintop, and Goodman—will be strengthened and transformed over the next ten years by the catalytic projects and wider academic strategies that are the foundation of the Campus Master Plan. While each campus has its own strengths and characteristics, each are a part of a greater whole that is the University. The Campus Master Plan recommends a series of strategies, under the umbrella of "Connections," that will improve how those within the campus community and its visitors travel within, and among, the three campuses.



Gateways

Many Lehigh visitors arriving by car are currently directed through Goodman Campus and over South Mountain to approach the admissions office. However, new approaches through South Bethlehem from Interstate 78 and North Bethlehem have the potential to showcase a revitalized urban neighborhood. The South Bethlehem Eastern Gateway, the subject of a recent study, envisions an enlivened and redesigned entry to the area through streetscape improvements and retail revitalization. These enhancements can be extended to other parts of South Bethlehem creating a sense of arrival for visitors to both campus and community.

Connections Framework

Pedestrian Experience

Transportation

Landscape

Building on a decade's worth of improvements to the landscape and path networks on the Asa Packer Campus, the Campus Master Plan focuses on prioritizing the **PEDESTRIAN EXPERIENCE** by expanding the zones in which walking is paramount, and driving and parking are secondary, or, in certain cases, not allowed. Areas which transform roadways and prioritize pedestrians fall within the car-free zone on Asa Packer Campus, and build upon past successful public realm improvements. Acknowledging the campus topography and the need to create seamless connections between the three campuses, the Plan recommends improvements to the roadway network and **TRANSIT SYSTEM**. With the projected growth of the campus population and the development of sites that are now parking lots, the Campus Master Plan also describes a **PARKING STRATEGY** to accommodate demand in a rational and sustainable way. In tandem with catalytic projects, a series of **LANDSCAPE** recommendations seek to create comfortable and interesting open spaces, safe and walkable routes around the campuses, welcoming edges where campus meets community, and enhance the natural ecology of South Mountain.

These strategies adhere to the seven Guiding Principles of the Campus Master Plan. Building upon the University's late 19th century emphasis on the "University Park," improvements to the public realm will preserve and enhance the character of the historic campus, and propose a new, yet equally "Lehigh" atmosphere at the Mountaintop Campus. All the strategies seek to improve access to and within the three campuses, to improve usage of the Goodman Campus and to minimize the unsustainable reliance on vehicles. Finally, a coherent and connected University campus will inspire community interaction beyond the classroom and the dormitory to the spaces that, in the end, are as much the fabric of the University campus as its buildings.



Sayre Walk in the car-free zone



Sayre Drive existing conditions

Prioritizing the pedestrian experience includes further development of the pedestrian path system, the conversion of Upper and Lower Sayre Park Roads into a one-way multimodal loop, and expanding the car-free zone on Asa Packer Campus. The transformation of Sayre Drive into Sayre Walk as depicted above serves as an example of public realm improvements in the car-free zone. Further description of other pedestrian experience improvements are found in the following pages.



Williams Drive existing conditions



Williams Drive in the car-free zone

Connections Pedestrian Experience

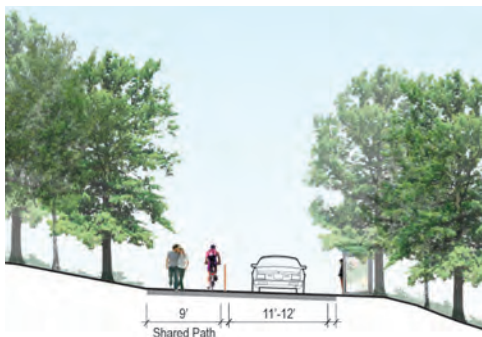
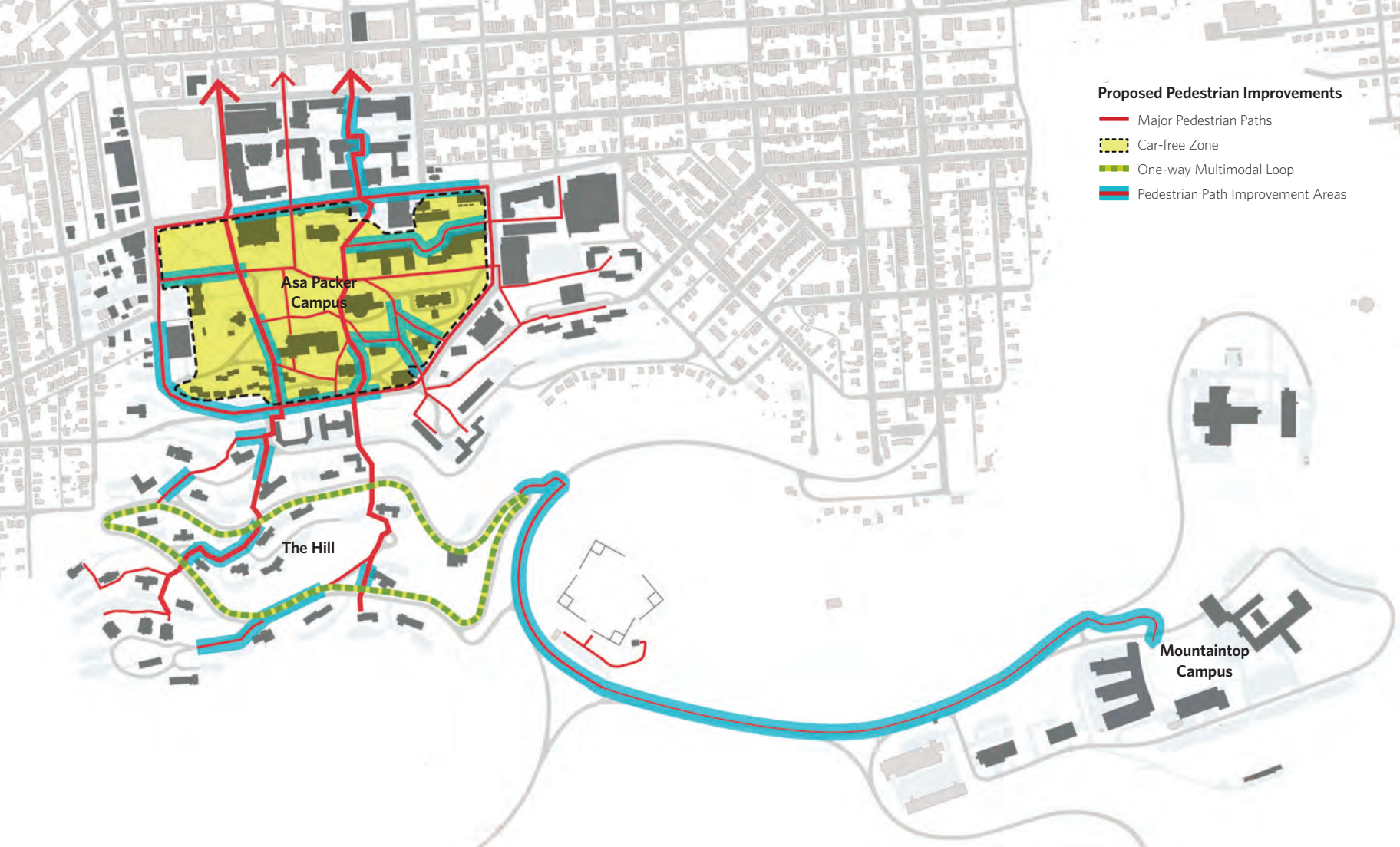
Supports Goals of the Sustainability Plan:

- Design and construct safe and eco-friendly pedestrian pathways and bicycle paths around campus that connect to South Bethlehem Greenway
- Increase access to and availability of campus green spaces and buildings to serve as living laboratories for curricular and co-curricular activities

The pedestrian experience on university campuses is an important part of the physical character of a campus. A safe and attractive pathway network is imperative to an integrated physical environment.

Building off of the past successes in the public realm on Asa Packer Campus, the Campus Master Plan proposes a **CAR-FREE ZONE** that limits vehicular access and parking within the core campus. Much like improvements to Library Drive removed parking, limited cars and service trucks from driving through the heart of the campus, and gave priority to pedestrians, the car-free zone will expand on that concept to include the entire academic core of Asa Packer Campus. This area is nearly 39 acres, bounded by Packer Avenue, Taylor Street, University Drive, and Brodhead Avenue. The shared paths within the car-free zone will accommodate vehicles needed for service and emergency access, but will be redesigned to be more attractive and pedestrian friendly with pavers, narrowed width, and the absence of an excessive amount of parked cars. Handicapped-accessible and medical parking spaces will remain for those in need and service routes will be maintained to ensure service to all buildings. Roadways that are not required for accessibility or service will be returned to the pedestrian entirely through the transformation into thoughtful landscapes and curbless paths. The car-free zone can be implemented over time as the campus evolves. The transformation of some roadways can be independent public realm improvements much as Library Drive and Memorial Walkway were implemented, or can be done in conjunction with building projects on campus, such as the illustrated improvements surrounding Williams Hall, as shown above.

The central core of Asa Packer Campus is a successful pedestrian environment; the open space of the University Center lawn is connected to buildings by a series of pathways. However, as one moves south (up the hill) to the middle tier of landscape that surrounds Coppee, Drown, and Johnson Halls, pedestrian paths are bisected by roadways, characterized by dead ends, and often



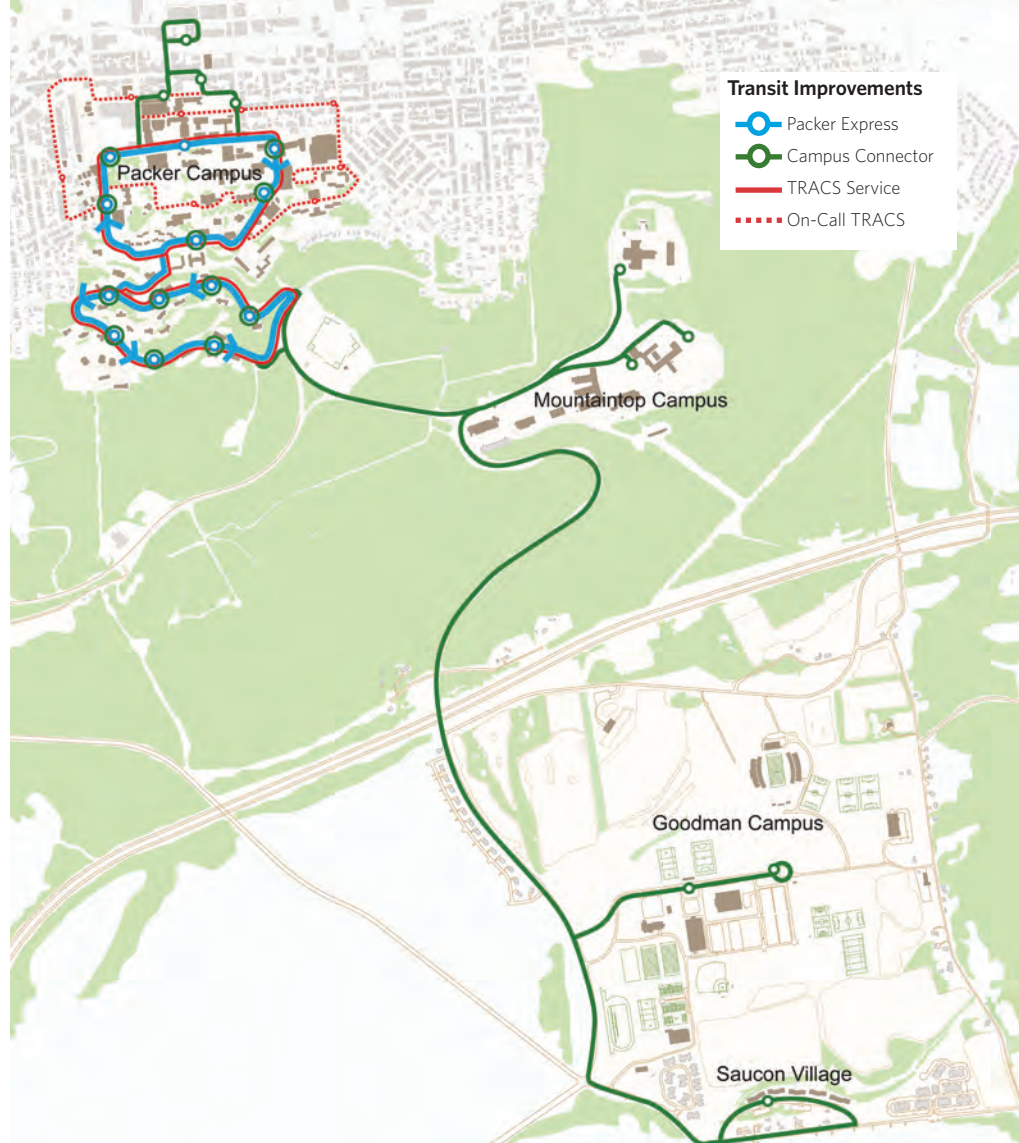
Proposed one-way multimodal loop

do not include safe pedestrian crossings. The pathway network becomes even more disjointed on its way up the hill beyond University Drive. Recognizing the broken network and natural flow of students up and down the hill between classes and residences, the Campus Master Plan proposes a more seamless, **CONTINUOUS PATH SYSTEM** that safely navigates both topography and roadways, and connects all pedestrians among residences on the hill and to the academic core campus. During early campus analysis, times for the various methods of travelling from the core of Asa Packer Campus to Iacocca Hall were studied, including walking (31 minutes), driving (7 minutes), riding the existing shuttle service (11 minutes), and riding a hypothetical aerial tram (4 minutes). The walking route between the two campuses is a challenge, and the Campus Master Plan recommends an improved, safe, and continuous pedestrian path to connect Mountaintop Campus.

Within the hill neighborhood, portions of Upper and Lower Sayre Park Roads have been identified as conflict areas for vehicles, with sharp curves especially hazardous in inclement weather. The transformation of these roads into a **ONE-WAY MULTIMODAL LOOP** has the potential to alleviate these safety concerns and provide a recreational loop in an area where hundreds of students reside. The proposed one-way multimodal loop will direct vehicular traffic in a counter-clockwise direction and include a dedicated shared path on the right-of-way for walking and biking. Traffic will be separated from the shared path by stanchions, a safe separation yet allowing for plowing during inclement weather. The one-way multimodal loop, approximately one mile in distance, will provide the residents of the hill with a recreational asset as well as connect disjointed pathways in the area.

Recommended transit improvements are feasible with the current fleet of vehicles owned by Lehigh. However, the fleet serving the campuses has dated accessibility mechanisms, does not provide a pleasant efficient ride, and operates on diesel fuel. It is the recommendation of the Campus Master Plan to upgrade the **campus fleet** to low-floor transit buses with ramps, improving accessibility, providing a smoother ride and longer design life, and operating on cleaner energy. Improvements should be implemented regardless, but any and all future purchases of vehicles should take accessibility and sustainability into consideration. In addition, branding and improved amenities to the transit system such as wireless access, attractive vehicles, comfortable seating and standing accommodations, and easily accessible bike racks will popularize use.

Equally important is the provision of consistent, attractive, weather-protected **bus shelters**. Shelters should have clear signs, bus route information, consistent branding, and protection from the elements.



Connections Transportation: Transit and Parking

An efficient transit system servicing the three campuses is imperative to the success of the Campus Master Plan. In response to the real and perceived issues with the current campus transit system, and in anticipation of campus improvements on all three campuses, the Campus Master Plan recommends three key improvements to transit: the “Packer Express,” the “Campus Connector” transit, and a reconfigured TRACS service for after-hours.

Supports Goals of the Sustainability Plan:

- Lehigh will optimize the fuel efficiency of our fleet vehicles and bus services by optimizing bus routes, developing a plan for vehicle and bus replacement, and utilizing 20% biodiesel in our buses by 2013
- Lehigh will consider phasing parking adjustments that will reduce the number of vehicle permits issued by 15%, propose to eliminate cars for sophomores, and improve use of a car sharing service

The **PACKER EXPRESS**, a loop that will serve Asa Packer Campus and the residences on the hill in a continuous loop with a bus every ten minutes, will allow students to easily and conveniently travel to and from classes, or return home between classes at lunchtime without being late for their next class. The **CAMPUS CONNECTOR** route will provide efficient service to all three campuses, as well as Saucon Village and South Bethlehem. Service to Goodman Campus will allow students to utilize the athletic facilities via campus transit, currently offered only for large sporting events. Frequent service could operate to support the afternoon/early evening sports calendar. The Campus Connector scheduled service will pick up students every 20 minutes on the weekdays from all stops and every 40 minutes on the weekends. Responding to student feedback on the evening **TRACS** service, this system will be reconfigured to provide more frequent service to Packer Campus, South Bethlehem and the hill residences. To reduce nighttime waiting, the new TRACS system will pick up students every five minutes and operate on a similar route to the Packer Express, utilizing the formalized sheltered stops. On-call service to other stops within the South Bethlehem neighborhood may be needed and could be provided every ten



minutes. Further ridership analysis could better determine the demand, number of passengers, and frequency of transit needed for all routes as the campuses grow.

Improvements to the campus shuttle system will allow the campus community to move among the three campuses efficiently and fully utilize all **PARKING** facilities. Recognizing that potential new buildings and public realm improvements in the core campus would reduce the number of parking spaces, a comprehensive parking survey was performed as part of the Campus Master Plan to establish a baseline of current conditions. The survey revealed that there is currently an excess of more than 1,000 spaces than are needed by the current population on Asa Packer Campus and the hill. Projections for future parking demand and supply also indicates a surplus of parking spaces.

To meet future demand without the construction of additional parking garages the Campus Master Plan recommends an **INCREASE IN EFFICIENCY** of existing, underutilized spaces. The parking survey showed that Zoellner Garage is underutilized and not popular due to access restrictions, such as long lines to pay at an automated machine prior to entry. A change to the controls system may be an economical way to increase demand at this location. In addition, several residential lots close to the academic core are underutilized such as: Centennial I, Sayre Park Village, Richards and Dravo parking lots. Zoned parking for faculty, staff, and commuting students with graduated parking permits and fees will increase the utilization of all parking lots and garages on campus. If needed, parking demand can also be addressed through park-and-ride programs using lots on Mountaintop Campus or Goodman Campus where excess parking exists. Incorporating **TRANSPORTATION DEMAND MANAGEMENT** strategies, such as reserved preferential parking for carpools, enhancement of bike facilities, or further limitations on student parking, could reduce parking demand by up to fifteen percent.

Transportation Demand Management (TDM) is the application of strategies to reduce travel and parking demand, and in many cases is a cost-effective alternative to increasing capacity by the construction of lots and garages. While not widely utilized, some strategies are already launched at the University such as the online forum for car-pooling, offering WeCar rental cars on campus and prohibiting first year students from keeping cars on campus. Each TDM strategy in itself may not be the sole solution to a supply-demand gap, but when taken together, these strategies can make a significant and sustainable difference.

1

Reinforce Existing Woodlands

- erosion control, stream rejuvenation
 - clarity of circulation
 - forest entry for campus



Garden On Turtle Creek in Dallas, TX

2

Strengthen the Academic Core

- sightlines
- "heart" reinforced

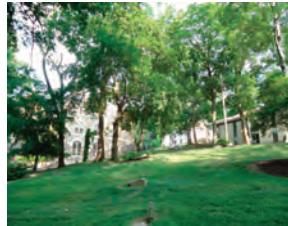


Harvard Yard Restoration

3

Establish a Hierarchy of Open Spaces

- academic open spaces
 - residential community spaces
- meaningful program for secondary spaces



Scott Outdoor Amphitheater at Swarthmore College

4

Establish Connection to South Bethlehem

- gateways to campus
- community and University interaction



North Terrace Redevelopment at the University of Adelaide

Connections Landscape

Supports Goals of the Sustainability Plan:

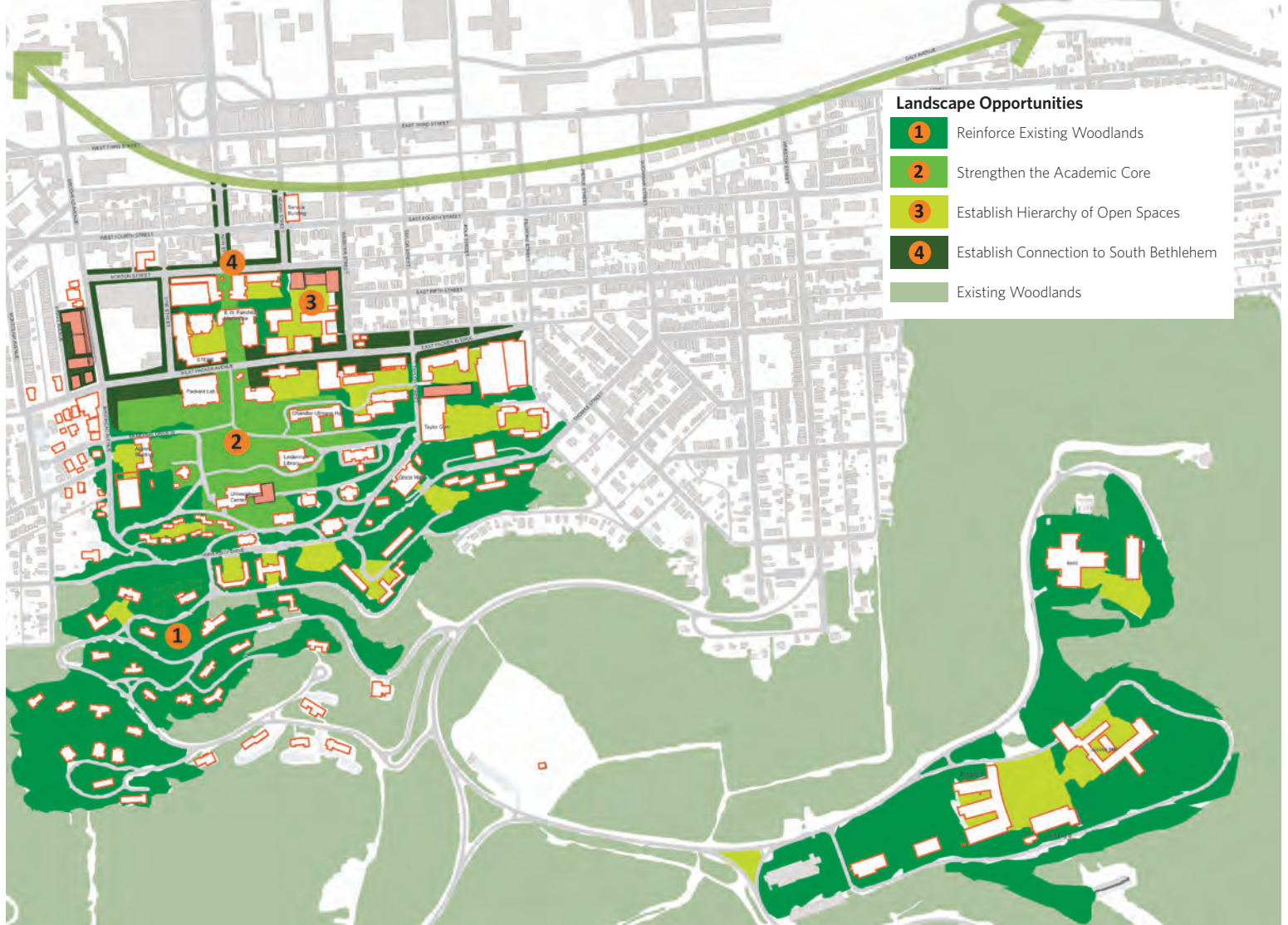
- Use of native and drought tolerant plant species in landscaping
- Utilize best practices for location, design, and material selection for new and replacement installations of external hardscapes

A Comprehensive Landscape Strategy

Landscape strategies of the Campus Master Plan strive to preserve the essential character of the existing landscape while further accommodating a sustainable evolution of the contemporary institution. Strategies propose a new organization of open spaces within the present pattern of the built campus by translating topography into defined usable campus open spaces. The Campus Master Plan locates the areas of landscape improvements while recognizing that the campus landscape relies on various built and natural systems like ecology, topography, programming, land management, and maintenance practices.

Four landscape strategies have been suggested as a guiding framework for improving the present as well as future development of the campus landscape:

Reinforce Existing Woodlands: Use the existing South Mountain ecology systems as a driver to tackle issues of erosion and storm water management, frame campus entrances, and define campus open spaces and pedestrian circulation.



Challenging topography on Asa Packer Campus has made the amenity of flat **open spaces** valuable, scarce, and a Campus Master Planning challenge. Several areas on Asa Packer Campus have been identified as places to provide green space, transforming impervious pavement or underutilized spaces.

Strengthen the Academic Core: Strengthen the existing classical academic core by allowing for clear sightlines; define the core with bold lower storey planting and strategic editing of existing planting and physical construct of present day landscape.

Establish Hierarchy of Open Spaces: Reorganize or establish a new social landscape by defining or providing a variety of open spaces within the academic core and residential zones. Create open spaces for quiet study, small gatherings, or interdisciplinary interactive outdoor spaces.

Establish Connection to South Bethlehem: Maximize the use of the existing South Bethlehem fabric to better integrate the University with the community and enhance the gateway to the University.

Landscape strategies of the Campus Master Plan will create a strong voice for the campus public realm and frame new development within an understanding of the campus and its boundaries. The fundamental role of connecting the campus through integrated landscapes that express the goals and values of the institution is critical in the Campus Master Plan. The campus will be distinguished by a landscape approach that fully engages the experience and function of the public realm while integrating its distinctive overlapping systems. Implementation of landscape strategies will need to prioritize preservation and strengthening of the existing campus character while also allowing it to develop in new ways.