



Transit System

An efficient and seamless transit system is essential to supporting a car-free campus and reducing reliance on the personal vehicle, integrating the three campuses, and fully utilizing all existing parking facilities.





Transit System - Goals

- Provide convenient, timely, and comfortable transportation options to eliminate vehicle dependence in the core of campus and provide access to all existing parking facilities.
- Optimize bus routes and utilize fuel efficient fleet vehicles to create a healthier, cleaner, and more sustainable campus environment.
- Implement significant improvements and promote transit system usage by expanding the Lehigh transit and shuttle service, including the implementation of new routes, buses, shelters, wayfinding signage.
- Provide consistent, attractive, weather-protected bus shelters with clear signs, bus route information, consistent branding, and protection from the elements.





Transit Study Objective

EFFICIENCY, RIDERSHIP, RELIABILITY, HEADWAY, AND EASE OF USE.

- Provides service to the City of Bethlehem's SouthSide.
- Attracts ridership to enhance the parking system.
- Maintains or improves the headway from existing conditions to the Mountaintop campus.
- Provides a more cost-effective and efficient system.
- Allows for platooning (or gap) between vehicles at bus stops.



Transit System: 2017-2018 Schedule

More routes
+
More changes
throughout the
day
=
More confusion

Route	Monday through Friday Hours of Operation	Saturday Hours of Operation	Sunday Hours of Operation
Packer Express	8:24 AM to 6:50 PM (1 bus)	-	-
Mountaintop Express	7:30 AM to 5:50 PM (1 bus)	-	-
Campus Connector- Regular Service	8:24 AM to 6:50 PM (2 buses)	10:50 PM to 6:02 PM (1 bus)	12:10 PM to 7:22 PM (1 bus)
Campus Connector – Extended Service	7:30 AM to 8:24 AM 6:50 PM to 10:50 PM (2 buses)		
TRACS	10:45 PM to 2:15 AM (2 vans)	10:45 PM to 2:15 AM (2 vans)	10:45 PM to 2:15 AM (2 vans)
Summer Service	7:30 AM to 10:22 PM (2 buses)	10:50 AM to 6:02 PM (1 bus)	12:10 PM to 7:22 PM (1 bus)





Transit System: Proposed Schedule

Route	# of Buses at Peak Hours	Monday through Friday Hours of Operation	Weekend Hours of Operation
Packer Express	1	7 AM to 8 PM	-
Campus Connector	5	5 Buses: 7 AM to 8 PM 2 Buses: 8 PM to 2:30 AM	2 Buses: 10 AM to 2:00 AM
AccessLU (Accessibility Bus)	1	7 AM to 10 PM	10 AM to 10 PM

What has changed:

- The “Campus Connector” will run late night hours to all campuses and replaces the “T.R.A.C.S” route.
- The old “Campus Connector” and “Mountaintop Express” have been replaced with the new “Campus Connector” which will run 5 buses on the route during peak hour. This increases the number of buses running during peak hour between Asa Packer Campus and Mountaintop from 3 buses to 5 buses.
- The AccessLU is a new service that will provide on-demand service for those with accessibility limitations.



What is headway?

It is the primary goal when studying a transit system to reduce headway. *Headway* is a measurement of the distance or time between vehicles in a transit system moving in the same direction on the same route. Headway for the purposes of this transit study is measured as the distance from the tip of one vehicle to the tip of the next one behind it, expressed as the time it will take for the trailing vehicle to cover that distance. A "shorter" headway signifies a more frequent service. Headways have an enormous impact on ridership levels. Reduction in headway decreases average rider wait time and overall trip time, resulting in a more desirable transportation alternative.





Existing versus Proposed Transit System

Existing Lehigh University Transit System

Route	Number of Buses on Route	Route Headway (minutes)
Packer Express	1	12
Mountaintop Express	1	20
Campus Connector	2	20
Total buses operating at peak	4	

Proposed Lehigh University Transit System

Route	Number of Buses on Route	Route Headway (minutes)
Packer Express	1	14
Campus Connector	5	10
Total buses operating at peak	6	





Transit System Expansion

- Facilitate the closure of Packer Avenue by replacing the existing Packer Avenue Bus Stop with east side and west side Packer Avenue bus stops.
- The addition of a bus servicing SouthSide which connects to the overall system.
- The expansion of the existing system to attract ridership, decrease wait time, and connect the campuses.
- Maintain overall trip time (includes wait time plus travel time) to Mountaintop Campus.
- Plan for future growth resulting from the Path to Prominence.
- Allows for time between buses at bus stops along overlapping routes.



Transit System: Changes

Add

- 3 Buses (5 total) servicing Campus Connector route
- AccessLU
- SouthSide Bus Stop
- Farrington Square Bus Stop
- Packer East and Packer West Bus Stop

Modify

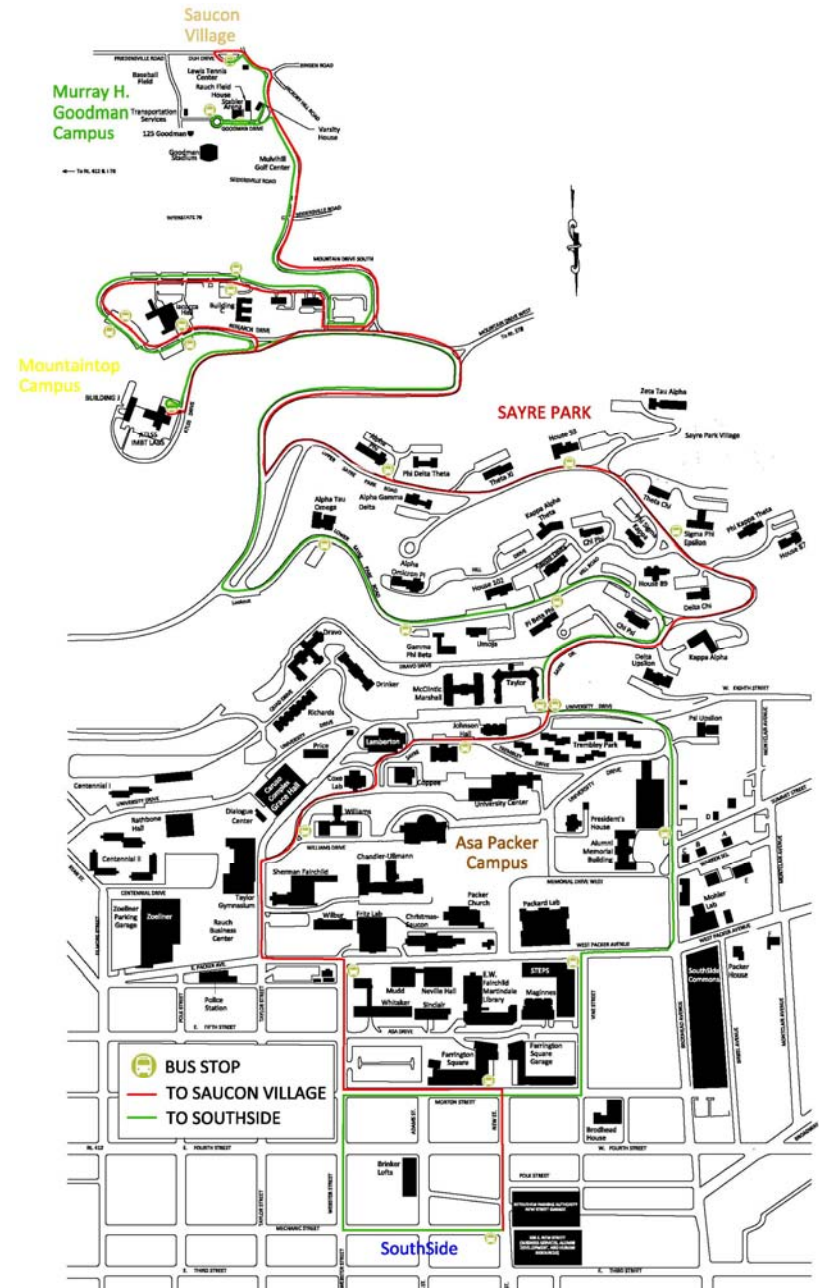
- Sync Bus Stops from Packer Express Route and Campus Connector Routes on Asa Packer Campus
- Extend Hours of Campus Connector Route
- Modify Packer Express Route to include Farrington Square.

Remove/Consolidate Resources

- Mountaintop Express
- TRACS
- Packer Avenue Central Bus Stop



The New “Campus Connector”





Typical Travel Time for Campus Connector

- Whitaker Lab to Iacocca Hall
 - Approximately 10 minutes
- Goodman to Taylor College
 - Approximately 14 minutes
- Iacocca Hall to Alumni Memorial Building
 - Approximately 8 minutes
- *Longest trip on route:* SouthSide to Saucon Village
 - Approximately 27 minutes (23 minutes reverse)



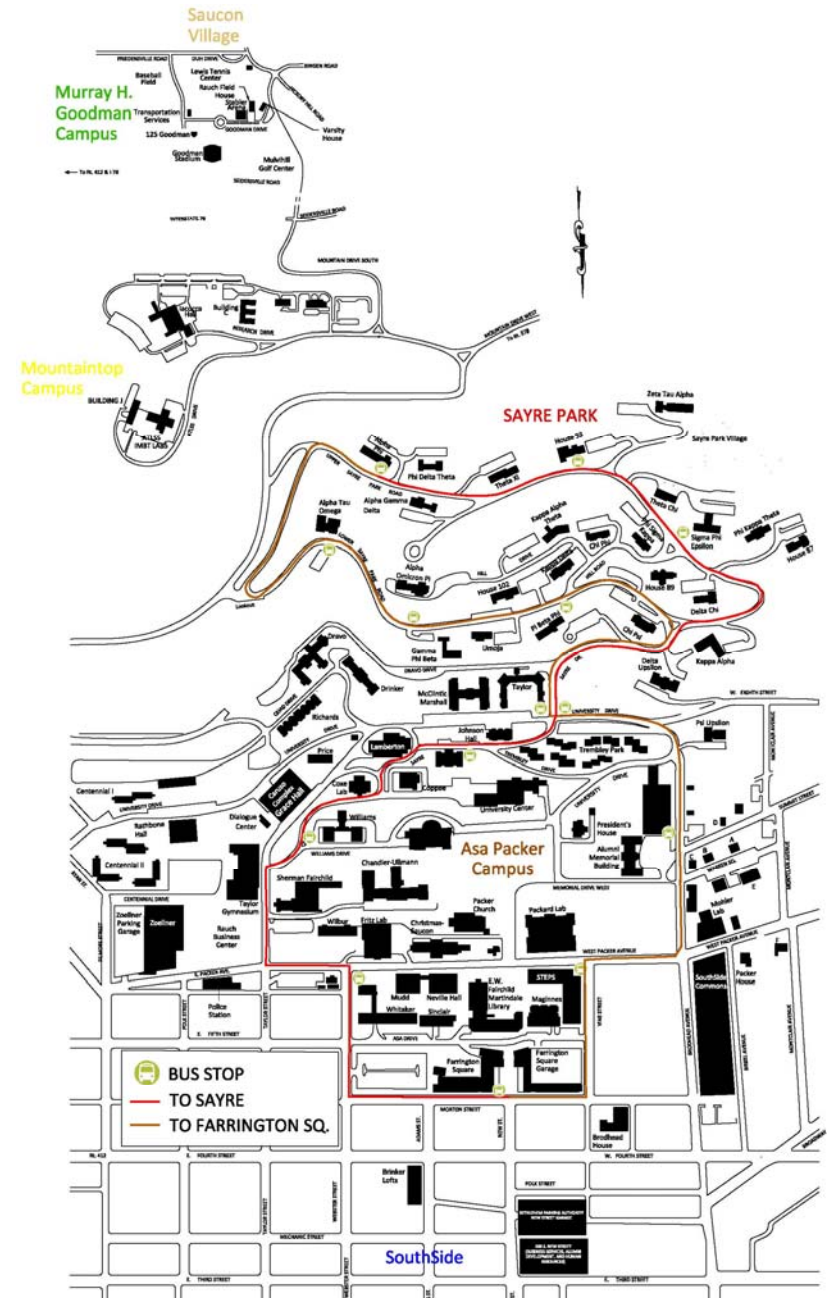
Transit System Benefits Over Driving Personal Vehicle

- Parking is often not available in close proximity locations. Finding a parking space and walking to your class, meeting, or office will most times take longer.
- The approximate time between buses at all bus stops will be 10 minutes. If you use the bus.lehigh.edu tracking website, this could be 0 minutes to 5 minutes.
- The transit system is designed to surround the interior ‘car-free’ area proposed. This allows bus stops within easy and closer walking distance than most parking facilities. It allows you the option to get off at stops and walk down the hill, instead of up.
- Parking facilities within the interior of campus are being eliminated for the Car-Free Zone. Consider the distance you will need to walk to your car from your office and then consider the distance from your office to the nearest bus stop. Which one takes less time?
- How long does it take for you to drive from the 5th floor to the entrance of parking garage?
- Consider the safety impact for pedestrians and environmental benefits of using transit.





Expanding the “Packer Express”





AccessLU

- Those with a valid Lehigh University ID with a state-issued American's with Disability (ADA) Plate or hangtag or a Lehigh issued hangtag may utilize AccessLU. The ADA Access Shuttle is being piloted as an on-demand system on a first-come first-serve basis. The ADA Access Shuttle will provide pick-up/drop-off at university parking facilities and buildings as requested.
- AccessLU will provide:
 - Service to car-free areas of campus
 - Service to inaccessible locations such as Rathbone and Centennial I residential facilities.
 - Service from between any Lehigh University campus building or parking facility
 - Wheelchair lift
 - Service for those with injuries, permanent disabilities, or other accessibility limitations
 - Daily repeat service as scheduled with the LU Lyft Dispatcher
 - On-Demand Service (on a first-come first-serve basis)

