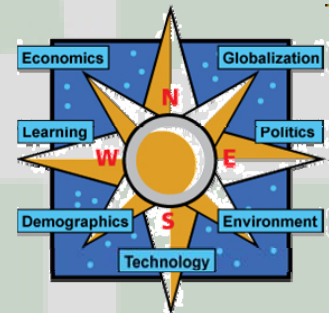


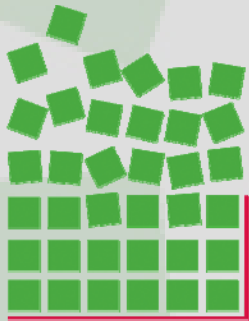
# Park and Go Green on a University Campus



## *Navigating the Future*

2009 Mid-Atlantic Regional Conference





**CHANCE**  
MANAGEMENT ADVISORS, INC.



**PRINCETON**  
**UNIVERSITY**

**Barbara J. Chance, Ph.D.**

*President and CEO*

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# The Princeton Master Plan

- The campus is over 260 years old
- Last Master Plan in 1995
- This master plan was begun in 2005, in large part to cope with diminishing land on the core campus and the need to construct new buildings and facilities (2M SF)



# Five Guiding Principles

- Maintain a pedestrian-oriented campus
- Preserve the park-like character of the campus
- Maintain campus neighborhoods while promoting a sense of community
- Build in an environmentally responsible manner
- Sustain strong community relations



# Sustainability Principles

- Reduce campus greenhouse gas emissions
- Improve natural resource conservation
- Foster civic engagement



# Parking & Transportation Issues

- Parking displaced by building construction
- Amount, type, and sites for new parking
- Upgrade of parking management systems: staff, PARCS, allocation system, permits
- Need for improved campus transportation to reduce use of personal vehicles
- Need for better responses to ADA, TDM, and sustainability issues
- Need for better town/gown relationships

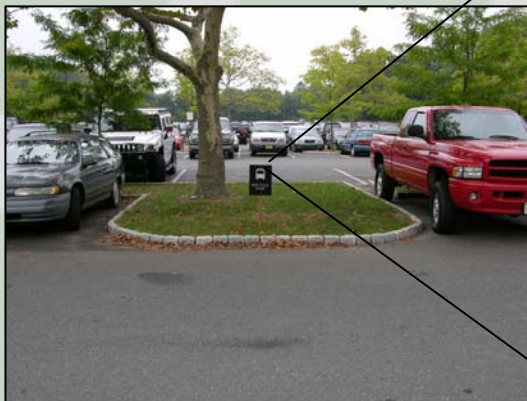
# Existing Campus Shuttles

- Shuttle service titled “P-Rides”
- 3 routes operating Monday-Friday only
- Each route developed and operated independently for differing reasons
- 700,000 trips in 2007
- No route and schedule integration
- Limited passenger information
- No on-site professional management



# Existing Campus Shuttles

- Not clearly branded as Princeton system
- Few basics and no real amenities



- 10 year old buses
- Lack of response to daily changes and complaints

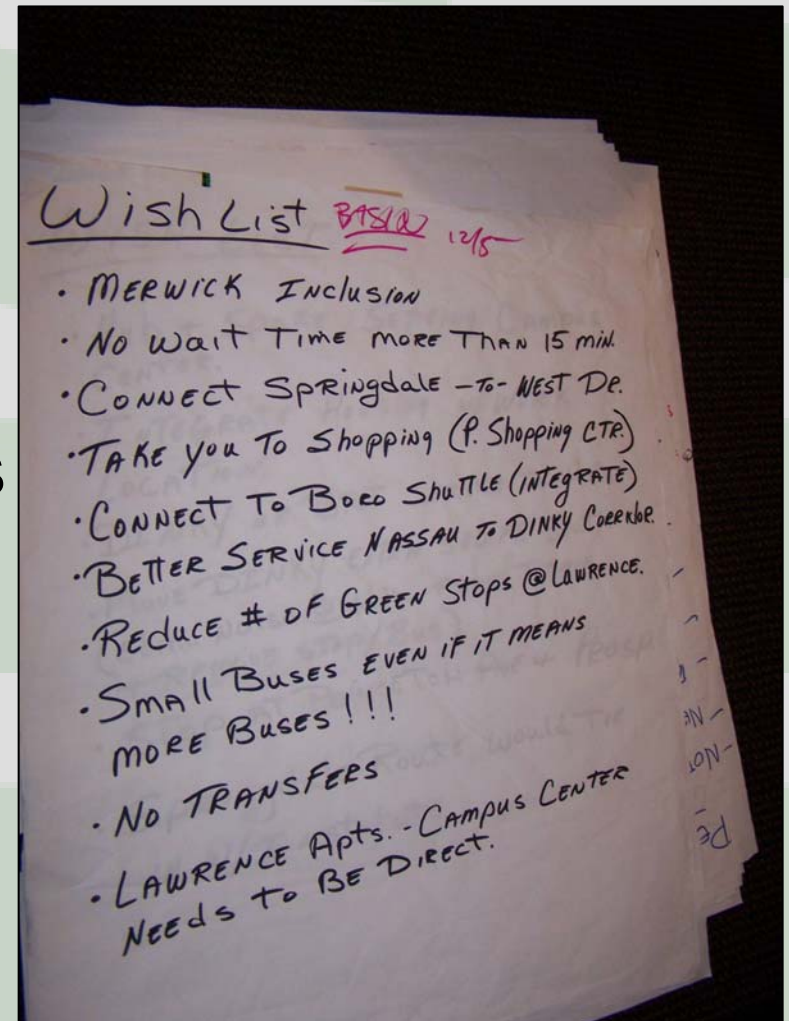
# P&T Concepts for Master Plan

- New parking and transit required to serve new campus areas of activity
- Reduction of traffic and congestion related to parking displacement
- Evolution of a TRANSIT system (not SHUTLE system) as the campus master plan is implemented
- Service, sustainability and image to match Princeton's reputation
- Solutions that will satisfy the campus population and the community
- Financial feasibility

**“Go green – but stay in the black”™**

# Obtaining Campus Input

- Focus groups for
  - ◆ Faculty
  - ◆ Staff
  - ◆ Graduate Students
  - ◆ Undergraduate Students
  - ◆ Neighbors
- Observation of all routes, service, vehicles, stops



# What Individuals Wanted

- Faculty/Staff: better service to parking lots, improvement of the bus image and convenience
- Students: passenger information technology, better service, longer hours, environmental commitment
- Neighbors: keep buses and traffic off residential streets close to campus
- All: “Princeton can do better.”

**Different concepts of sustainability  
were important to all groups.**



# Key Needs Identified

- Transit service to new parking that will replace parking lost to construction
- Improvement of transit image: vehicles, passenger information, public information, bus stops, supervision of drivers
- Improvement of accessibility (ADA)
- Improvement of sustainable aspects of parking and transportation
- System flexibility to serve a changing campus
- Professional management of transit

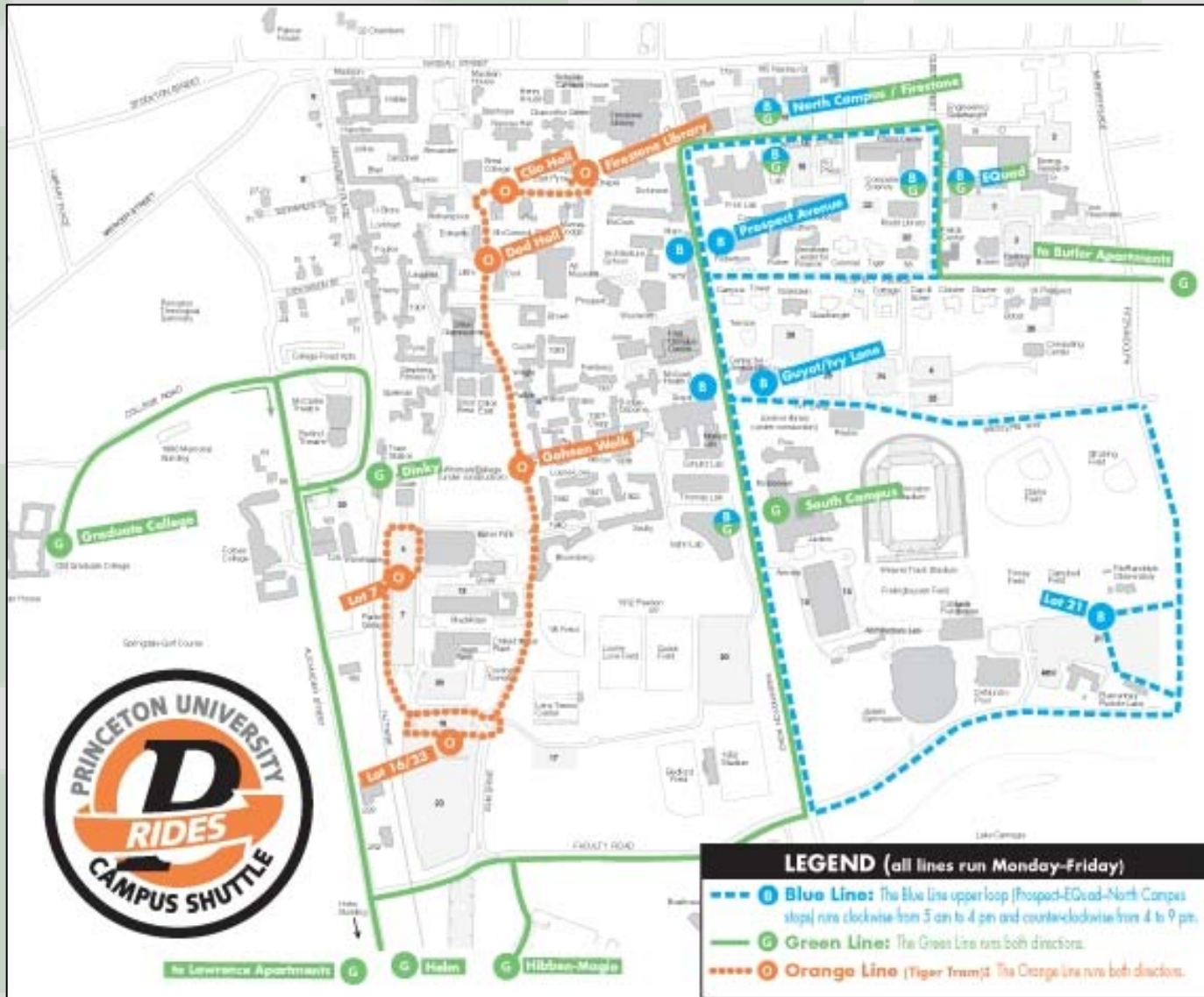
# Improving Transit: Image



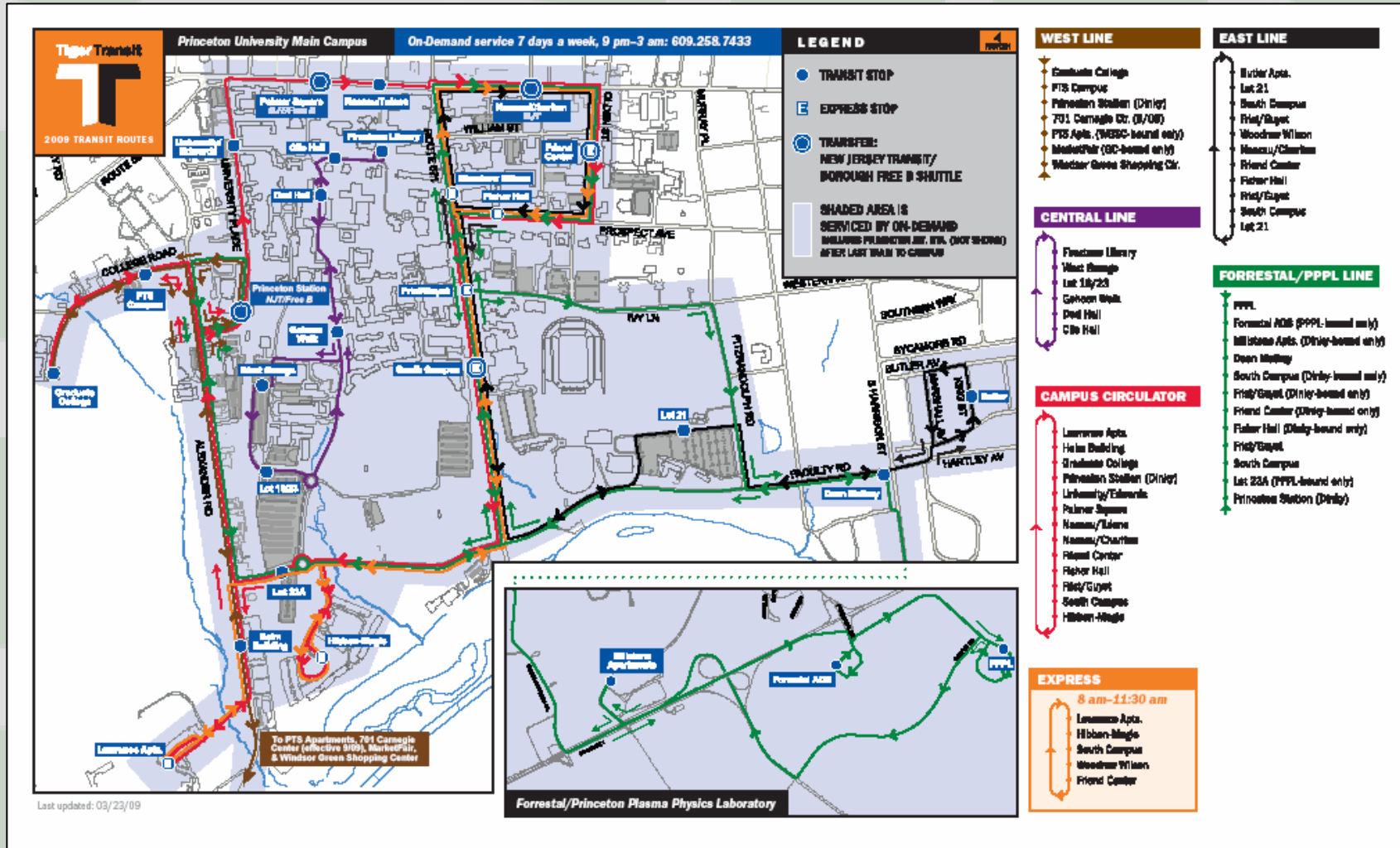
**Princeton Tiger Transit**



# Improving Transit: Routes

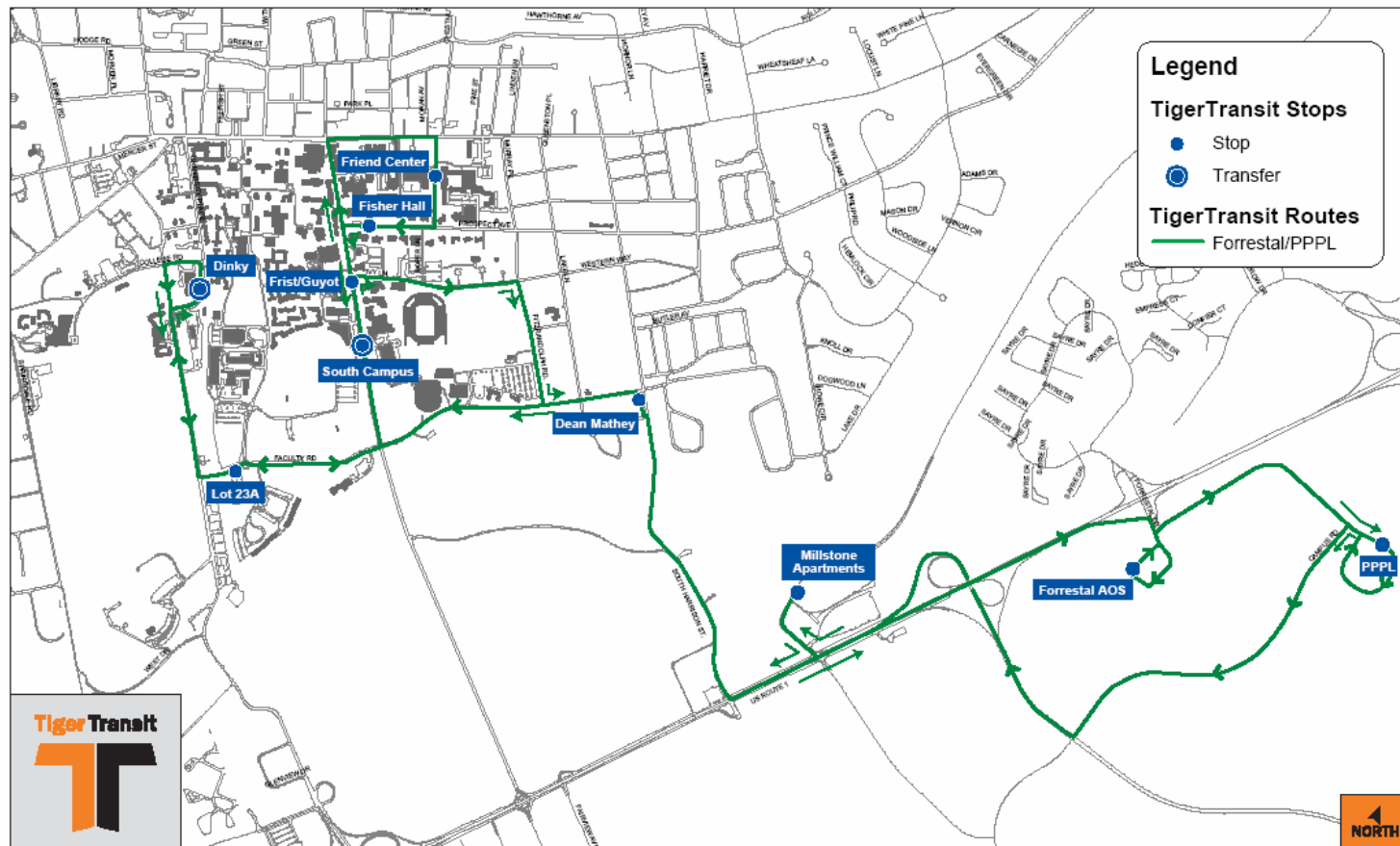


# Improving Transit: Routes

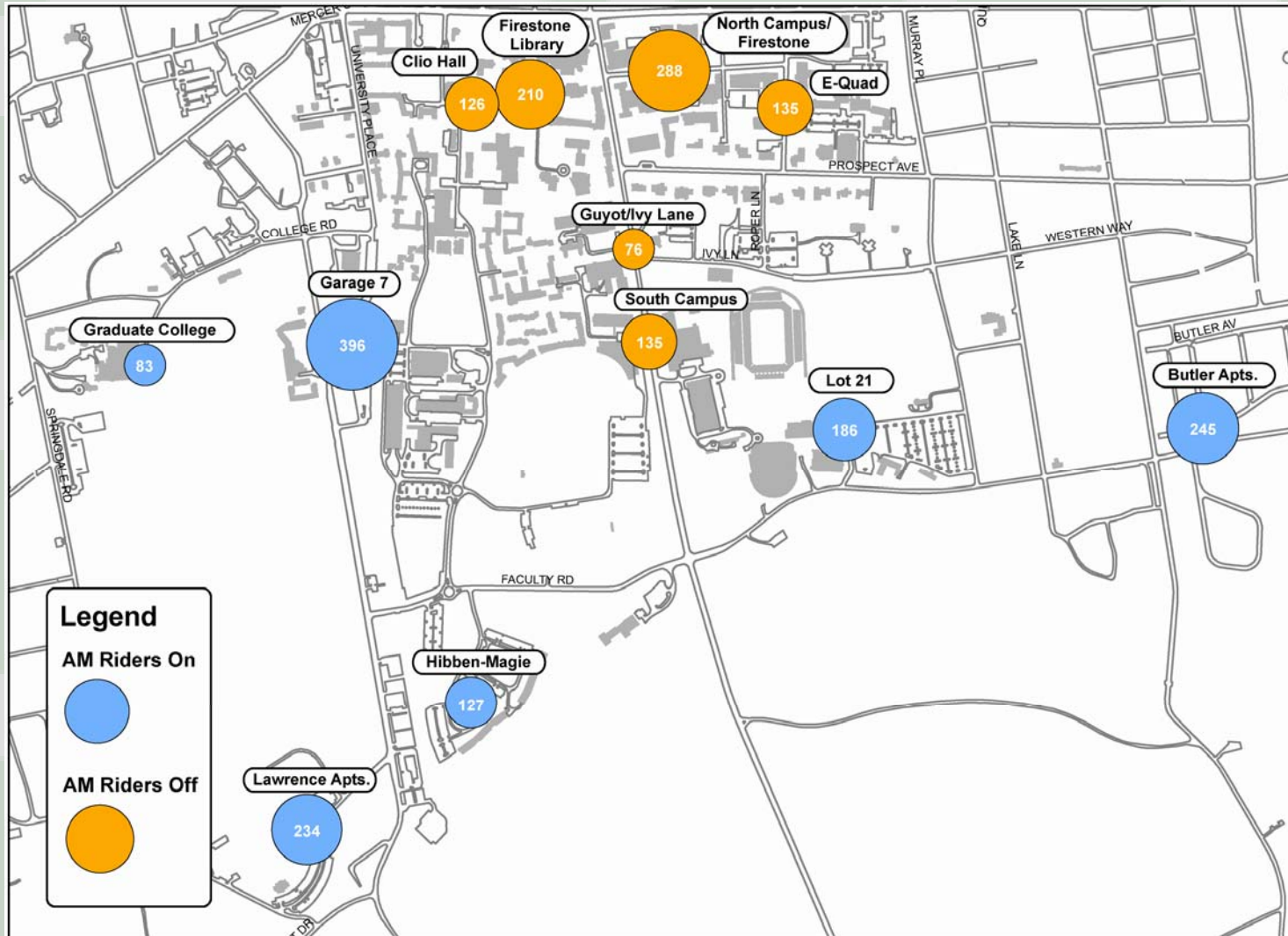


# Improving Transit: Routes

## Princeton TigerTransit Routes: Forrestal/PPPL



# Improving Transit: O/D Flows



# Improving Transit: Service

- Intermodal Connections: NJ Transit bus and rail
- Campus Circulator
- Bus “wait times” less than “travel times”
- Access to remote campus:  
Forrestal/PPPL
- Shoppers’ Shuttle



# Improving Transit: Technology

- Low floor transit bus: ADA/standees
- GPS vehicle locator in real time



- Low emissions diesels/alternative fuels
- Ability to upgrade as technology changes

# Improving Transit: Sustainability

<b><i>Park and Go Green Solutions</i></b>	<b><i>Sustainability Impact</i></b>
Integrate transit routes with parking locations	Consolidate land used for parking; enhance campus setting; reduce traffic
Use buses with green technology	Tangible campus commitment to reduce noise and pollution
GPS “next ride” passenger information	Encourages use of park and ride lots; park once and travel on transit
Use parking facility “dead space” for bicycle parking	Supports bicycle commuting; encourages park and bike options
Shopping Shuttles	Reduces auto trips for students; park and ride
Considering Preferred Parking Passes for transit users	Encourages the use of buses most of the time

# Princeton University Support

- Financial commitment for an integrated system
- Sustainability supported by Trustees
- Student support and input on changes



Line	Components	Costs	Recommended Components	Ridership
<b>Line A: GC - Dinky</b>	2,618 service hours	\$261,800		
	Eliminate Service	\$261,800	\$261,800	Graduate Students; Grad College to Dinky
<b>Line B: Campus Circulator</b>	14,436 service hours	\$1,436,800		All Populations, East-West campus connectivity
	Monday - Sunday (Academic Year Only)	\$1,038,277		
	Monday through Friday (Academic Year Only)	\$739,200		
	Monday through Friday (Summer and Winter Breaks Only)	\$349,800		
	Weekend Service	\$349,800		
	Reduced Frequency (10 and 20 minute headways on peak and off-peak rather than 5 and 10 minutes respectively) Monday through Friday including Breaks, with Reduced Service Hours (matching current schedule)	\$520,700	\$520,700	
<b>Line C: Core Campus</b>	11,008 service hours	\$1,100,800		Faculty and Staff from Garage 7 and Hohen-Magee; Operates weekday schedule 226 days due to serving parking lots
	Cut service (7.5 and 15 minute headways on peak and off-peak rather than 5 and 7.5 minutes respectively)	\$678,400		
	Reduced Frequency (7.5 and 15 minute headways on peak and off-peak rather than 5 and 7.5 minutes respectively) Monday through Friday including Breaks, with Reduced Service Hours (matching current schedule)	\$528,700	\$528,700	
<b>Line D: Butler - Lot 21 - Equad</b>	9,728 service hours	\$972,800		Faculty and Staff from Lot 21, Graduate Students from Butler
	Monday through Friday (Academic Year Only)	\$585,200		
	Monday through Friday (Summer and Winter Breaks Only)	\$387,600		
	Reduced Frequency (10 and 20 minute headways on peak and off-peak rather than 10 and 10 minutes respectively) Monday through Friday including Breaks, with Reduced Service Hours (matching current schedule)	\$631,100	\$631,100	
<b>Line E: Butler - PT</b>	2,618 service hours	\$261,800		Graduate Students from Butler to Transfer Center
	Eliminate Service	\$184,800		Foresetal and Plasma Lab Captive populations
	Eliminate Service	\$261,800		
	Monday through Friday (Summer and Winter Breaks Only, Not Part of Optimum or Reduced Service) (2)	\$181,900		
<b>Line F: GC - PTS - West Campus</b>	2,078 service hours	\$207,800		Seminary Students
	Eliminate Service	\$207,800		
<b>Shopper Service Sa - Su Only</b>	1,924 service hours	\$192,400		
	8 Hours of Service On Weekends (4 hrs. on Saturday and Sunday)	\$41,600		All Populations
	Eliminate Service	\$192,400		
<b>Tiger Transit - Optimum Service</b>		\$4,436,300		
<b>Tiger Transit - Reduced Service</b>			\$1,940,300	
<b>TOTAL COST OF 2008 "TURN-KEY" SYSTEM</b>		<b>\$4,436,300</b>	<b>\$1,940,300</b>	
<b>TOTAL COST OF 2008 PRINCETON LEASED FLEET SYSTEM (3)</b>		<b>\$4,272,880</b>	<b>\$1,878,507</b>	
<b>TOTAL COST OF 2008 PRINCETON MIXED (New and Old) FLEET SYSTEM (4)</b>		<b>\$3,756,860</b>	<b>\$1,834,960</b>	

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(1) All same color line items (system components) function as a system. Un-shaded components function well as either additions or subtractions to the Optimum or Reduced Service Levels

(2) The Tiger Transit System component is not included in either the Optimum or Reduced Service Levels

(3) Savings totaling \$4 per vehicle hour

(4) Two (2) New Buses on Line C are replaced by three (3) (2) used, Princeton owned buses

# Community Support

- Integrated service with Princeton Borough “Jitney” and NJ Transit bus and rail
- Town/gown relationship: ID not needed
- Reduced parking demand and traffic
- Removal of buses from residential streets
- University upgrading of pedestrian and bike paths
- Lighting for transit/parking access
- Princeton’s sustainability goals

# RESULTS!

## ■ Passengers love

- ◆ the buses – easy on/off, comfort, size
- ◆ the professionalism of the drivers
- ◆ reliability of the service
- ◆ the flexibility to be responsive to needs

■ “Tiger Tracker” is the GPS system providing real time information on-line or via mobile phone/PDA about bus locations



TigerTracker  
Real-Time Bus Locations

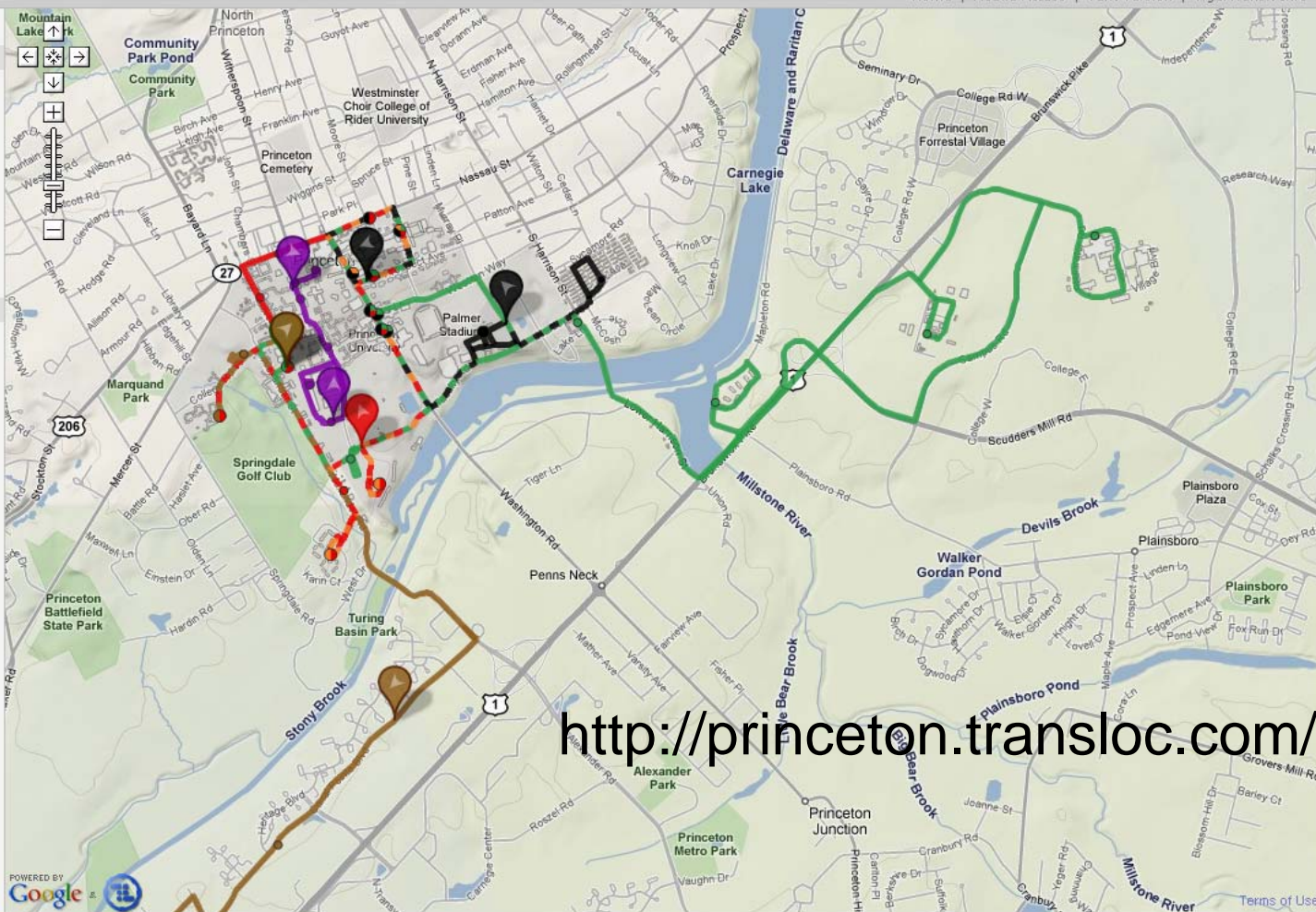


Routes

- Campus Circulator
- Central
- East Commuter
- Express Line
- Forrestal/PPPL
- West

Announcements

There are currently no announcements.



<http://princeton.transloc.com/>

# RESULTS!

- Main campus is now linked via transit to the Forrestal campus, promoting better use of that campus, interaction with on-campus departments, and reduction in the use of personal vehicles
- The Campus Circulator can take nearly everyone to Nassau Street – the commercial/entertainment/business street adjacent to campus

# RESULTS!

- Annual budget is \$3.2 million for the integrated system, improved vehicles and service, and effective management
- Administration comments: “Kim, your buses are everywhere!”
  - ◆ Transit is finally identifiable
  - ◆ Silence means the system is running well!

# University Benefits of Park and Go Green

- Support for the implementation of sustainability goals
- Improved transit and pedestrian mobility
- Improved safety for riders and parking patrons
- Successful implementation of the Campus Master Plan



# Next Steps and Future Milestones

- Reduce campus parking by 500 vehicles by 2020 using Transit/TDM programs
- Decrease impervious surfaces on campus
- Use alternative fuels in new buses
- Improve ADA accessibility
- Increase transit ridership



# Lessons Learned

- Transit is a university's most visible commitment to sustainability
- Parking and transit are important tools for implementing campus master plans
- Green parking and transit can be an asset to attract faculty, staff and students
- Green programs reduce traffic, congestion, pollution and impervious surfaces on campus
- Planning for parking and transportation needs to be done simultaneously with the planning for buildings and other uses

# Lessons Learned

## Listening to the campus community

- ✚ detailed planning of routes, service, vehicles, operations
- ✚ thoughtful and tailored contract specifications
- ✚ an administration willing to commit the resources
- ✚ an experienced and effective Transportation and Parking Manager
- ✚ a flexible approach to tweaking the system for demonstrated needs



a successful



Princeton Tiger Transit



**QUESTIONS  
AND  
ANSWERS**