

# Park and Go Green on a University Campus

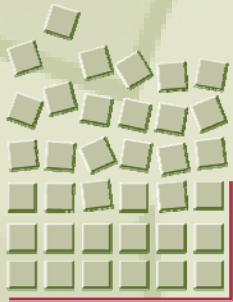


becominggreener

creating a sustainable future

IPI Dallas 2008





**CHANCE**  
MANAGEMENT ADVISORS, INC.



**PRINCETON**  
**UNIVERSITY**

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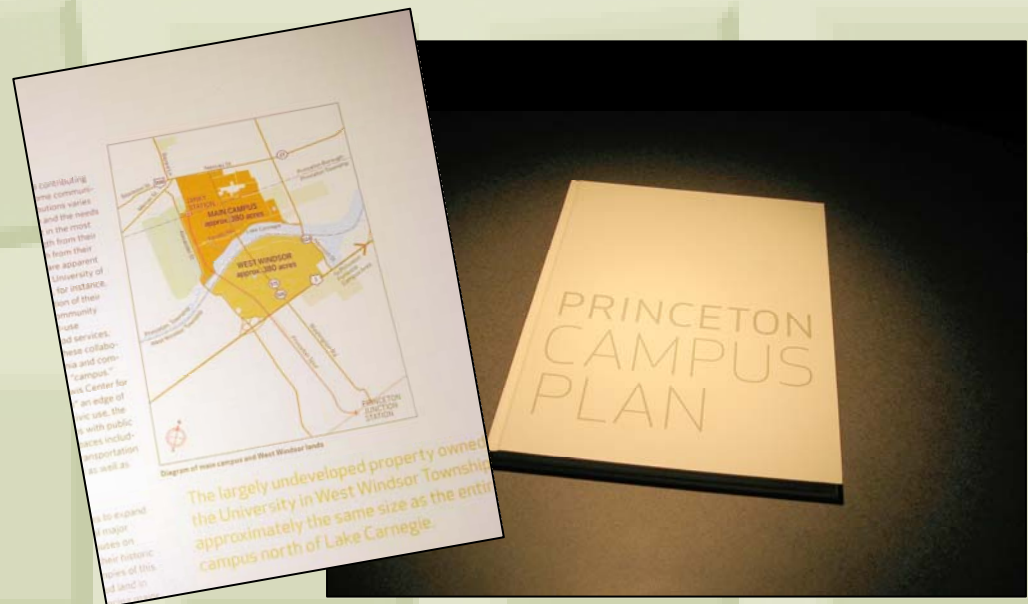
**Kim E. Jackson, CAPP**

*Director*

*Parking and Transportation Services*

# 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



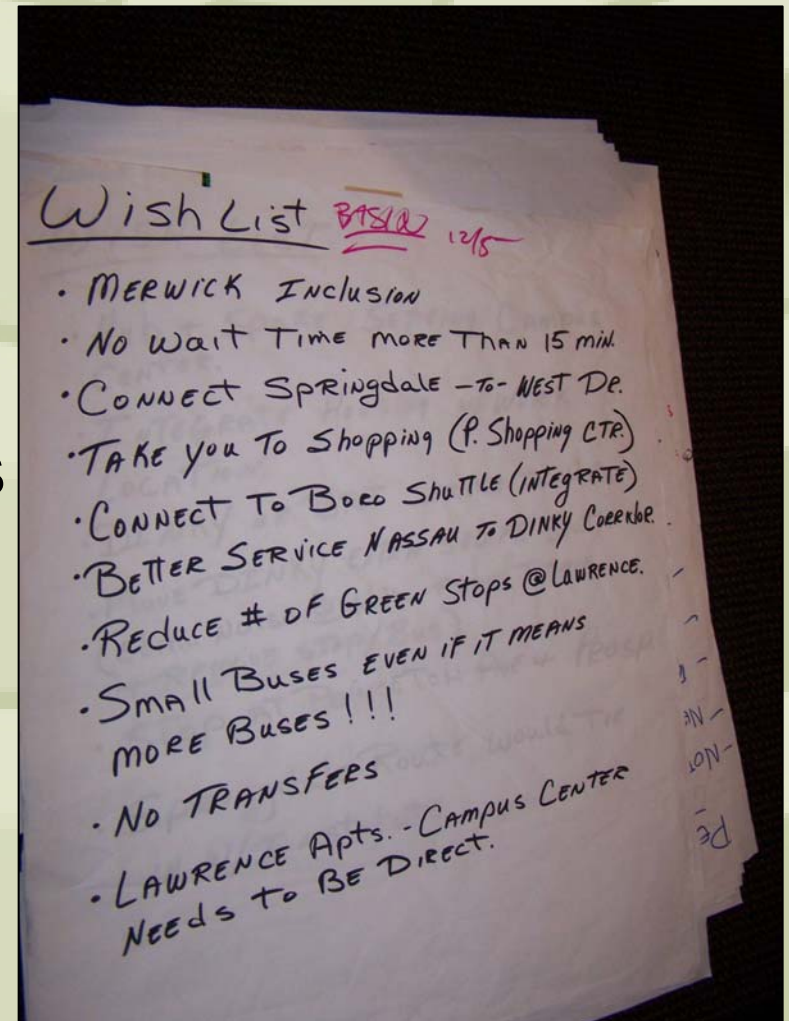
- 10 year old buses
- Lack of response to daily changes and complaints

# 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 SHUTTLE 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

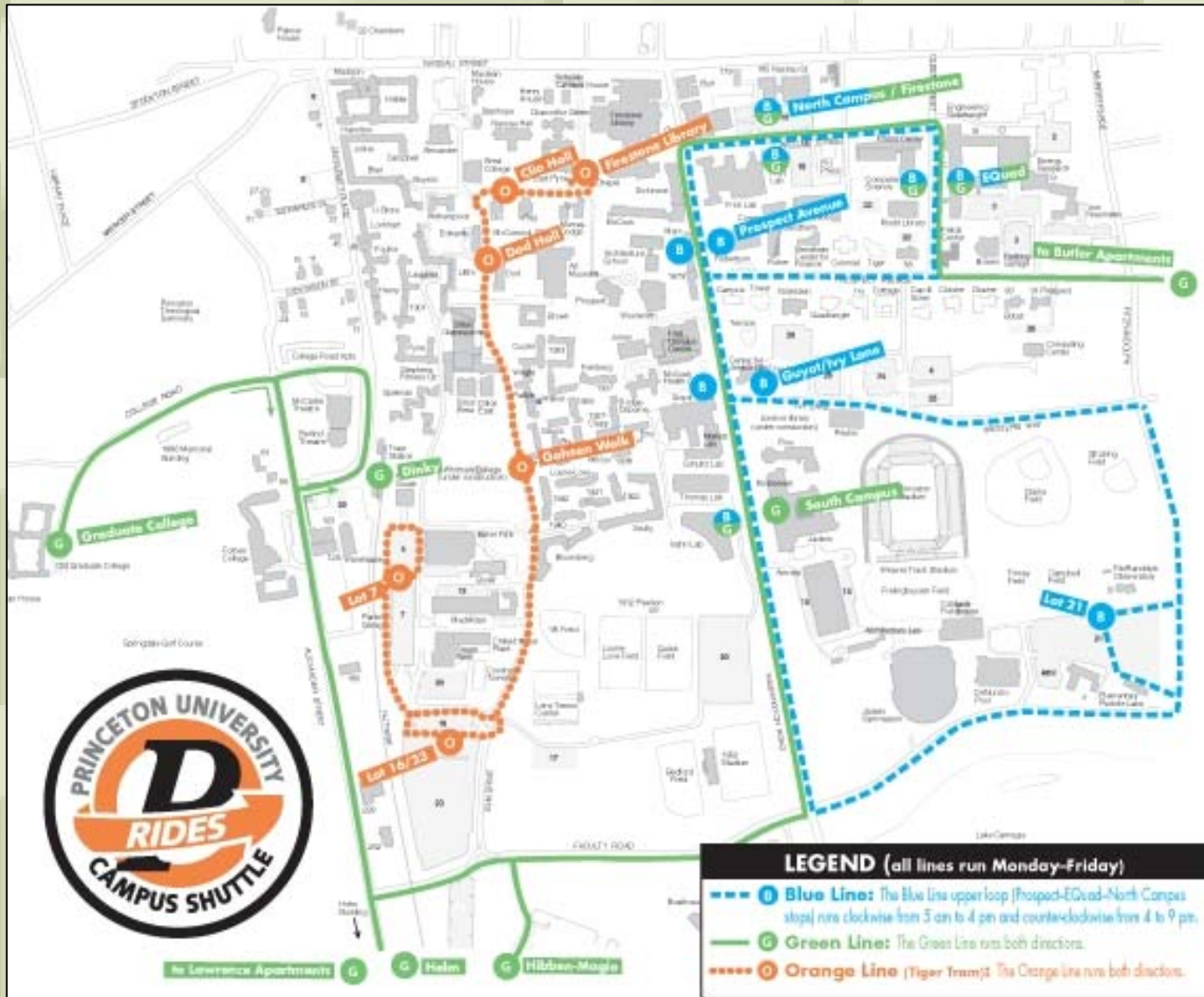
# Improving Transit: Image



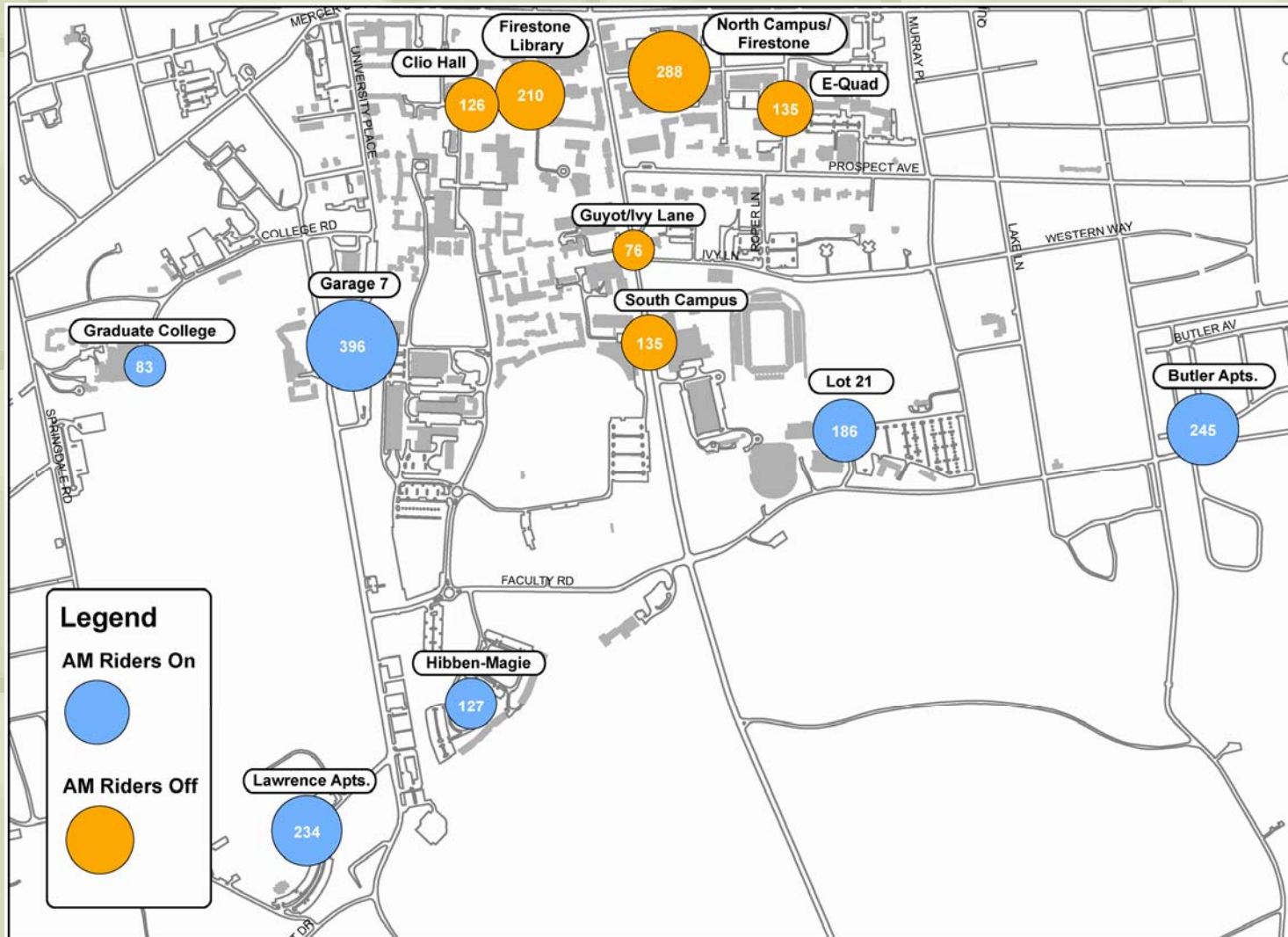
**Princeton** Tiger Transit



# Improving Transit: Routes

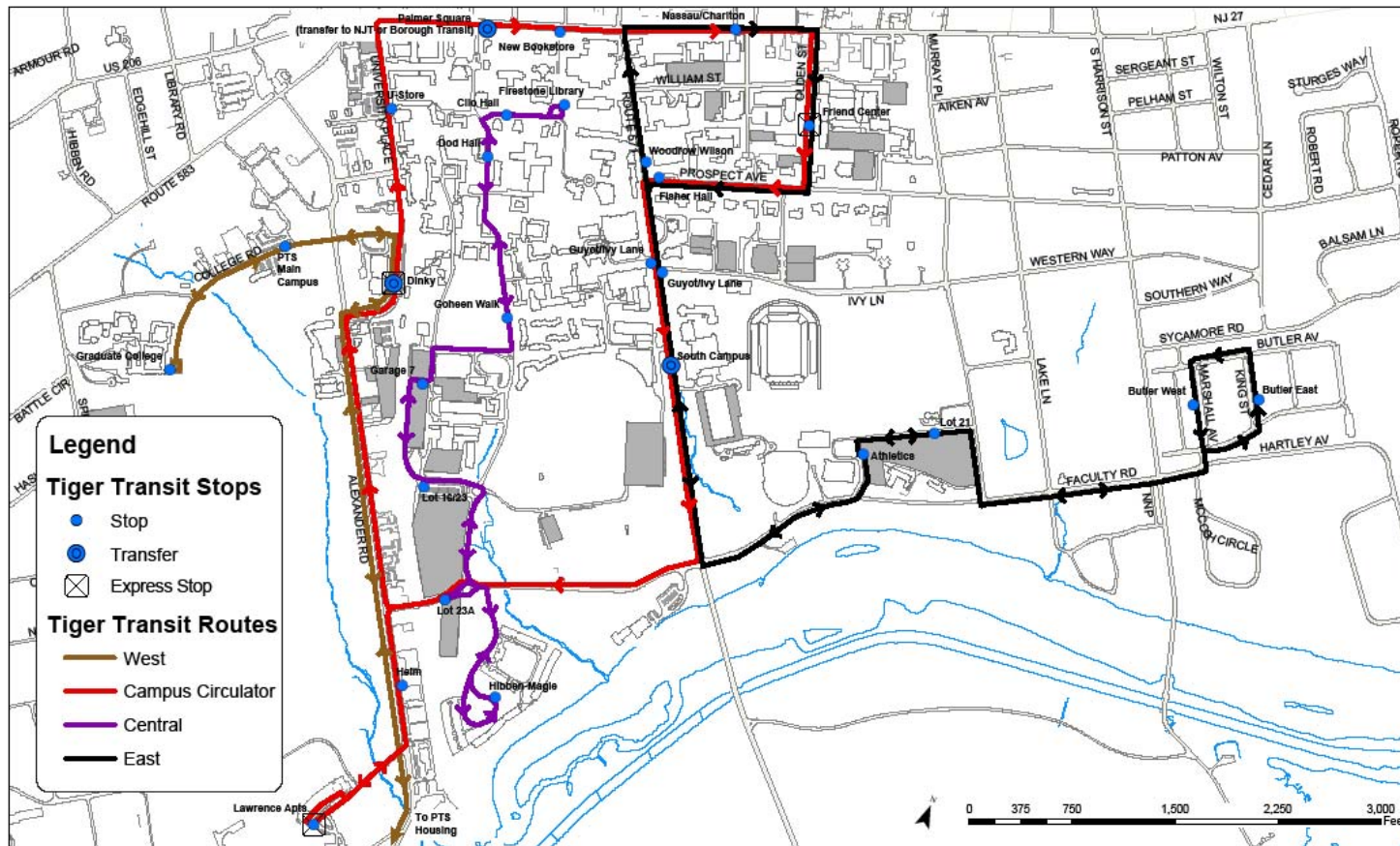


# Improving Transit: O/D Flows



# Improving Transit: Routes

Princeton Tiger Transit Routes



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 Revised 29 April 2008

# Improving Transit: Service

- Intermodal Connections: routes and Dinky
- Campus Circulator
- Bus “wait times” less than “travel times”
- Access to remote campus: Forrestal/PPL
- Shoppers’ Shuttle



# Improving Transit: Technology

- Low floor transit bus: ADA/standees
- GPS “next bus” passenger information



- 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 bus” 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



Service Options for Princeton Tiger Transit [1]		Recommended	
Line	Components	Costs	Ridership
Line A: GC - Dinky	2,618 service hours	\$261,800	
	Eliminate Service	\$261,800	\$261,800
Line B: Campus Circulator	14,438 service hours	\$1,438,800	
	Monday - Sunday (Academic Year Only)	\$1,008,277	
	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
Line C: Core Campus	11,008 service hours	\$1,100,800	
	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
Line D: Butler - Lot 21 - Equad	9,728 service hours	\$972,800	
	Monday through Friday (Academic Year Only)	\$588,200	
	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
Line E: Butler - PT	2,618 service hours	\$261,800	
	Forenoon (PT), Mid-Day and Late Service	\$184,800	
	Eliminate Service	\$261,800	
	Monday through Friday (Summer and Winter Breaks Only, Not Part of Optimum or Reduced Service) [2]	\$181,900	
Line F: GC - PTS - West Campus	2,078 service hours	\$207,800	
	Eliminate Service	\$207,800	
Shopper Service Sa - Su Only	1,924 service hours	\$192,400	
	8 Hours of Service On Weekends (4 hrs. on Saturday and Sunday)	\$41,600	
	Eliminate Service	\$150,800	
Tiger Transit - Optimum Service		\$4,436,300	
Tiger Transit - Reduced Service			\$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) (22 seat, 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

# 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