Presentation Outline

- The Survey
  - Objectives
  - Instrument
  - Sample
- Results of the Survey
  - Current commuting and parking patterns
  - Commuting and parking preferences
  - Commuter fringe benefit
- Commuter Fringe Benefit Market Estimates
- Recommendations
Dartmouth Employee Parking Survey 2001: Results and Recommendations

The Survey
Objectives of Parking Survey

- Gather information on current commute/parking patterns
- Determine perceptions of current parking system
- Estimate the market for proposed commuter fringe benefit program alternatives
Survey Conducted Via Internet

- Password-controlled web instrument
- Questionnaire customized based on responses
- Data collected over 2 weeks in October 2001
Response Rate

- Over 1,500 respondents; 40% of all listed
- Response rate varied by employment classification

![Bar Chart](chart.png)
Survey sample compares closely with parking registration data:
- Commuting route
- Parking location
- Town/city of residence
- Work location
Sample Comparison – Commuting

- Route 10 South (from Lyme)
- Route 10 North (from West Lebanon)
- Ledyard Bridge (From I-91 and Norwich)
- East Wheelock Street (From Etna)
- Route 120 north (From I-89 and Lebanon)

Sample is representative for all
Sample Comparison – Parking

- Northern part of campus (north of Maynard St)
- DCAD Complex
- Tuck Business School/Thayer Engineering School
- Downtown (south of Wheelock St, e.g. Hopkins Center)
- Central campus around the green

Sample low on downtown, higher for and central campus
Survey sample slightly low for Hanover, Norwich, Lyme; high for Canaan, Lebanon, Wilder, and others
Sample Demographics – Age

- Median age is about 45 years

![Bar Chart](chart.png)

- Over 64 years: 2%
- 55-64 years: 14%
- 45-54 years: 34%
- 35-44 years: 29%
- 25-34 years: 19%
- 18-24 years: 2%
Sample Demographics – Household

- Median number of persons per household is 2

- 2 people: 39%
- 3 people: 18%
- 4 people: 17%
- 1 person: 19%
- 5 or more people: 7%
Sample Demographics – Salary

- Median annual salary is about $40,000
- About 6% of sample declined to answer
Commute Method

- Most respondents work on campus
- Almost 95% of Dartmouth employees get to and from work by car

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Drive alone</td>
<td>75%</td>
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<tr>
<td>Drive with others (including children)</td>
<td>14%</td>
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<tr>
<td>Get dropped off</td>
<td>3%</td>
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<tr>
<td>Walk</td>
<td>3%</td>
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<tr>
<td>Bus from home to work</td>
<td>2%</td>
</tr>
<tr>
<td>Bike</td>
<td>1%</td>
</tr>
<tr>
<td>Carpool (3+ Dartmouth employees)</td>
<td>1%</td>
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<tr>
<td>Vanpool</td>
<td>0%</td>
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</table>
Commuting Mode Share

- **Highest drive-alone share (78%):** AP II/Non-exempt
- **Lowest drive-alone share (71%):** Faculty

![Commuting Mode Share Chart]

- **Bus or carpool**
- **Walk or bike**
- **Get dropped off**
- **Drive with others**
- **Drive alone**

Faculty: 71%
AP I/Exempt: 74%
AP II/Non-Exempt: 78%
Service/Union: 77%
Commuting Route

- The two most used routes are Ledyard Bridge & Rt.120; both have moderate to heavy congestion.

- Bar chart showing the percentage of commuters using different routes:
  - Ledyard Bridge (From I-91 and Norwich): 37%
  - Route 120 north (From I-89 and Lebanon): 26%
  - Route 10 South (from Lyme): 14%
  - Route 10 North (from West Lebanon): 11%
  - East Wheelock Street (From Etna): 8%
  - Other: 3%
Time of Day of Travel

- 80% arrive at work at 7-9 AM and leave at 4-7
- 26% choose work hours to get a parking spot
- 21% choose work hours to avoid traffic
Travel Time

- Median total time driving or riding is about 25 min.
- Slightly longer than the national average of 20 min.

![Bar chart showing mean driving or riding time (minutes) for different groups:
- Service/Union: 32 minutes
- AP II/ Non-Exempt: 28 minutes
- AP I/ Exempt: 22 minutes
- Faculty: 19 minutes]
Travel Time by Commuting Mode

- Carpoolers live farther away and have a longer ride
- Those who walk or bike live close to Dartmouth

![Bar chart showing mean driving or riding time for different commuting modes: Drive alone, Get dropped off, Carpool (3+ employees), Drive with others, Ride bus, Walk, Bike, Shuttle. Mean times range from 10 minutes (Shuttle) to 46 minutes (Carpool).]
Bus Use Incentives

- Of those who used car, 23% said it was possible to use bus
- For more than half of respondents, service improvements help induce bus use

Multiple responses were possible
Reasons for Not Carpooling

Of those who use car but don’t carpool, changes and stops made to and from work are common reasons.

Prefer to drive alone: 15%
Don’t have the same schedule every day: 60%
Need to make stops on the way to/from work: 59%
Need car during the day: 42%
Don’t know two others willing to carpool: 33%

Multiple responses were possible.
Existing Parking System

- Mixed ratings of the existing parking system
- Location and safety scored highest

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<th>Category</th>
<th>Rating</th>
<th>Percentages</th>
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<td>Good (4)</td>
<td>15%</td>
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<td>Excellent (5)</td>
<td>5%</td>
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<td>Availability</td>
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<td>Good (4)</td>
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<td>Fair (2)</td>
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<td>Good (4)</td>
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<td></td>
<td>Excellent (5)</td>
<td>5%</td>
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Overall, 48% of the sample prefer a flat fee for parking, while 52% prefer a fee based on a percentage of salary. Preferences differ by income level.
Commuter Fringe Benefit Market Estimates
Dartmouth College is considering making changes in its parking and transportation system to offer more options for the future. Some changes may have already occurred by the time you read this survey. Changes include:

▲ Improved shuttle and bus service:
   - Increased shuttle service to and from existing parking lots
   - Free use of Advance Transit bus service for all employees
   - New shuttle service that circulates through nearby neighborhoods
     New Express Bus service for outlying communities that runs to and from
     conveniently located Park & Ride lots with shelter and phones

▲ Increased registration fees for parking on campus (to reflect increased costs)

Benefits to employees who register to get to and from work by walking,
▲ bicycling, taking public transit, or carpooling (with a total of at least 3 employees per car):
   - Guaranteed ride home in an emergency (by taxi)
   - "Voluntary Commuter Fringe Benefit", a cash payment in your paycheck
     Passes that allow carpoolers or bus riders to drive alone and park on campus
     a limited number of days per month
Attributes Tested

In the next section you will be presented with a variety of possible future situations. For each situation you will have information about:

- Voluntary Commuter Fringe Benefits amount (amount you would get in your paycheck if you don't park on campus)
- Number of daily parking passes per month you would get if you don't park on campus
- How often free shuttle bus service through your neighborhood would run
- Monthly parking fee (amount it would cost you to register to park), which will be based on your annual salary. Please select the category below that represents your annual salary to find out what your parking fee might be in the future:
  - Under $20,000
  - $20,000–$39,999
  - $40,000–$69,999
  - $70,000–$99,999
  - $100,000 OR MORE
  - DECLINE TO PROVIDE SALARY (Note: Salary information will be used only to show you possible situations you might face in the future. If you decline to provide your salary, a default value will be used that may not accurately reflect the costs and benefits that would apply to you in the future.)
Example trade-off question

How would you get to work?

Option 1: REGISTER TO PARK
- Parking fee is $21 per month

I would:
- continue to DRIVE

Option 2: REGISTER FOR VOLUNTARY COMMUTER FRINGE BENEFIT
- You get 2 parking passes per month
- Commuter fringe benefit is $65 per month
- Free bus service includes shuttle service that circulates through your neighborhood every 30 minutes

I would:
- get DROPPED OFF
- CARPOOL (in a carpool of 3 or more people)
- VANPOOL
- WALK
- BIKE
- take FREE BUS

Situation 1 of 9
15% to 45% could be persuaded to enroll, program details

Enrollment level is particularly sensitive to parking levels

Less sensitivity to benefit dollar amount or number parking day passes:

- Doubling parking fee doubles the enrollment
- Doubling benefit dollar amount increases enrollment by one-third
- Increasing number of day passes from 2 to 6 increases enrollment by one-third
Commuter Fringe Benefit Debrief

Of those who never chose the commuter fringe benefit, over half need a car during the day or too varied a schedule.

- Need to coordinate with childcare or spouse: 35%
- Need car during the day: 56%
- Don't have the same schedule every day: 56%
- Convenience/not worth it: 38%
- Other: 42%

Multiple responses were possible.
Commuter Fringe Benefit ("CFB") Scenarios

- Tested different options using statistical CFB choice model from survey data
- On-campus parking space reductions from 230 to

<table>
<thead>
<tr>
<th>Parking Scenario Description</th>
<th>Parking Fee (0.1% salary)</th>
<th># Parking Passes/mo</th>
<th>Benefit Amt ($/mo)</th>
<th>Bus Headway (min.)</th>
<th># CFB Enrollments</th>
<th>Net Reduction in Demand</th>
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<tbody>
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<td>Base CFB, New Buses</td>
<td>2</td>
<td>2</td>
<td>30</td>
<td>60</td>
<td>560</td>
<td>320</td>
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<td>CFB w/ 4 passes, New Buses, 0.3% Fee</td>
<td>3</td>
<td>4</td>
<td>30</td>
<td>60</td>
<td>760</td>
<td>450</td>
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<tr>
<td>Base CFB, No New Buses, 0.3% Fee</td>
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<td>2</td>
<td>30</td>
<td>60</td>
<td>450</td>
<td>230</td>
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<tr>
<td>Aggressive CFB, New Buses, 0.3% Fee</td>
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<td>4</td>
<td>45</td>
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<td>1,000</td>
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<td>Base CFB, New Buses, 0.4% Fee</td>
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<td>2</td>
<td>30</td>
<td>60</td>
<td>840</td>
<td>580</td>
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</table>
Dartmouth Employee Parking Survey 2001: Results and Recommendations

Recommendations
Parking Program Recommendations

- Test market commuter fringe benefit program, if possible
- Develop initial CFB program for 2002/2003 year
  - $30/month cash buyout
  - 2-4 parking passes/month
  - Provide limited new bus service
  - Increase parking fees to encourage enrollment and offset CFB
  - Cap enrollment, develop measures to deter scofflaws
- Restructure parking fees to reflect locational value
- Plan for new parking structures
- Coordinate with other area employers
- Extend commuter fringe benefit program as necessary
Parking Program Benefits

- Facilitate campus master plan
  - Reduce the amount of core campus space devoted to parking
  - Reduce the costs of providing parking to meet needs
  - Provide basis for positive findings on traffic and parking in permitting process

- Improve regional traffic conditions and environment
  - Reduce peak traffic on key commuting routes
  - Support better regional transit
  - Set example for other major employers

- Provide better alternatives for employees
  - Improve parking availability for those who choose to purchase permit
  - Give participating employees additional cash that would be spent on building new parking spaces
Questions