

Commuter Behavior and Greenhouse
Gas Emissions at the University of Rhode Island

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Abstract:

The purpose of this research was to study commuter habits and to measure commuter greenhouse emissions at the University of Rhode Island (URI) Kingston campus. In April 2006, an online survey was e-mailed to students, faculty, and staff to collect data regarding travel habits. Visual surveys were conducted in student and faculty/staff campus parking lots and on Upper College Road. Results showed that URI student commuters currently drive an estimated 30 million miles per year and consume over one million gallons of gasoline at a total cost of about \$3.5 million dollars. All URI commuters (students, faculty and staff) collectively emit over 45 million pounds of carbon dioxide per year, almost 4,000 pounds of CO₂ per commuter.

Eighty percent of students and 69% of faculty and staff drive cars; the rest drive SUV's, trucks, and vans. Average reported student fuel efficiency was 26.32 miles per gallon, and average faculty/staff fuel efficiency was 26.74 miles per gallon. Observations from URI parking lots showed that 89% of students and 90% of faculty and staff drive alone.

Collected data were also entered into the Clean Air-Cool Planet emissions calculator and incorporated into a comprehensive campus greenhouse gas inventory. In addition to presenting URI commuter and emissions data, this study makes some preliminary recommendations for reducing commuter greenhouse emissions (and fuel use) at URI.

Introduction:

As energy becomes increasingly more expensive in the United States, many universities and colleges are conducting energy audits with plans to reduce their energy bills. Some schools are also measuring their greenhouse gas emissions to determine how much they are contributing to global climate change. The University of Rhode Island (URI) has hired NORESKO, a performance contractor, to measure campus energy usage and identify areas in which URI could potentially save money with energy efficient renovations. However, this audit does not measure greenhouse gas emissions; nor does it include transportation, which is likely to be one of the main sources of emissions at any given university (Dautremont-Smith 2002).

In particular, emissions from commuter transportation need to be considered at URI, because about 63% of undergraduate students commute from off-campus (Institutional Research 2005). The number of commuters is particularly high at URI because the majority of off-campus housing is located in Narragansett, several miles away from campus. Many students also commute from towns across Rhode Island and even from out of state on a daily basis. Additionally, most URI faculty and staff commute to campus. In order to determine how these factors contribute to URI's total emissions, research was conducted to study URI commuter behavior and to quantify the total amount of greenhouse gases being produced by its commuters.

Schools who conduct emissions inventories generally use a calculator developed specifically for universities, such as the Clean Air-Cool Planet (CA-CP) Greenhouse Gas Inventory Calculator (CA-CP 2005). Consisting of a linked series of Microsoft Excel spreadsheets, the CA-CP calculator is designed to guide the user through the complex measurement of greenhouse gases at a university. The CA-CP calculator has been used by over 150 schools in the U.S., including Harvard University, Tufts University, University of Vermont, and University of New Hampshire (UNH). UNH partnered with CA-CP to design the calculator.

This project studied commuter habits at URI's Kingston campus and estimated total greenhouse gas emissions produced by commuters. The results of this study were included in a more comprehensive greenhouse gas inventory for the University. If presented to the administration, this study could create an impetus to institutionalize a more environmentally sustainable transportation system. Additionally, the results of this study could be used as a benchmark to measure future emissions reductions from commuter traffic.

Methods:

Reports of greenhouse gas emissions inventories conducted at other universities and colleges were reviewed in order to develop effective research methods for URI. Greenhouse gas emissions were estimated using the commuter portion of the CA-CP calculator, which is based on emissions inventory guidelines set by the Intergovernmental Panel on Climate Change (CA-CP 2005). The calculator and its accompanying user's guide were downloaded gratis from the CA-CP website.

Data Needed for CA-CP Calculator:

- percent of commuters who drive alone
- percent of commuters who carpool
- trips per day
- days per year
- miles per trip
- vehicle type
- miles per gallon

These data and others were then collected from a combination of sources including university records, personal surveys, and visual surveys. Efforts were made to produce the most accurate results possible. For example, the CA-CP calculator automatically inserts the current national fuel efficiency average from the U.S. Environmental Protection Agency, which is the value that most schools use. However, in an effort to improve accuracy, the average fuel efficiency was determined specifically for URI commuters using their reported fuel efficiency average.

To search for relevant university records, a variety of offices were contacted including Parking Services, Commuter Housing, Enrollment Services, Student Life, Facilities Management, the Transportation Center, and the Office of Institutional Research. Since URI does not monitor commuter habits, information obtained from university records was limited to total number of undergraduate commuters, faculty, and staff.

A commuter behavior survey was created to collect the data needed for the calculator as well as other information (Appendix A). Consisting of 13 questions with multiple choice answers, the survey was designed to sample the travels habits of URI commuters. Because the results of the survey were to be available to the public, it was necessary to obtain approval from the URI Institutional Review Board (IRB). An application, including explanation of the project, proof of the subjects' anonymity, and department chair signatures, was submitted for review by the IRB. The application process also required the principle investigators complete an online training course on human subjects research. The approved survey was posted on the URI Energy Efficiency Committee Website. The URI News Bureau e-mailed a request to complete the survey and a link to the website to all URI students, faculty, and staff through the URI Newslines listserv. Data from the survey were stored on an online database. This method of distributing

the survey was an effective way to reach a large number of people in a short period of time. It was also a simple way to obtain a relatively representative sample.

Visual surveys were conducted in 3 student and 10 faculty/staff parking lots between 12:00 PM and 4:00 PM on 6 separate days in April 2006. The largest student parking lots (Plains Road, Keaney Road, and Fine Arts) were surveyed for a total of 2,003 observed cars. Faculty and staff lots surveyed included Chafee, Tyler, Gilbreth, Alumni, Bliss, Library, Woodward, Coastal Institute, University Club, and Roosevelt for a total of 702 observed cars. Parking lot survey methods included an initial tally of parked vehicle types: car, sport utility vehicle (SUV), truck, van, hybrid, or motorcycle, followed by a count of number of people per car for all vehicles entering or leaving the lot. Data were also collected from the moving traffic on Upper College Road between 10:00 AM and 3:00 PM on 5 different days in April 2006. Data collected through visual surveys were used to determine the average number of people per car and vehicle ratios. Visual surveys have also provided an alternative method to the online surveys for obtaining car type and carpool information. Interesting comparisons can be made between the results of the two methods.

In 2005-2006, URI had 11,142 commuters including 7,978 students, 710 faculty, and 2,454 staff (Institutional Research 2005). A total of 341 commuters completed the online survey between April 27 and May 1, 2006. Of those, 39% were undergraduate students, 11% were graduate students, 20% were faculty members, and 28% were staff members. A total of 2,705 vehicles were sampled during visual surveys of parking lots.

After the data were collected, they were compiled and analyzed in Excel spreadsheets. The necessary inputs were entered into the emissions calculator, which produced annual amounts of distance traveled and total gallons of gasoline consumed. To obtain total pounds of carbon

dioxide (CO₂) emissions, gallons of gasoline was multiplied by a conversion factor of 19.54 pounds CO₂/gallon (Energy Information Administration 2005).

Results

The total emissions of 11,142 URI commuters is an estimated 41.2 million pounds of CO₂ per year (Table 1). Students account for 54% of CO₂ emissions, faculty members account for 8%, and staff account for 38% (Figure 1). Traveling about 55.7 million miles per year, URI students, faculty, and staff consume about 2.1 million gallons of gasoline. At the current \$3.00 per gallon, that amounts to \$6.2 million spent by URI commuters each year. Each individual commuter emits almost 4,000 pounds of CO₂ and spends about \$568 each year on commuting. Information gathered from the online surveys was compiled into a table displaying all student commuter data (Appendix B).

URI Commuters (millions/year)

| Millions/Year | Student | Faculty | Staff | Total |
|---------------------|---------|---------|-------|-------|
| Lbs CO ₂ | 22.2 | 3.4 | 15.6 | 41.2 |
| Miles | 29.9 | 4.8 | 21.0 | 55.7 |
| Gallons Gas | 1.1 | 0.2 | 0.8 | 2.1 |
| Dollars | \$3.3 | \$0.5 | \$2.4 | \$6.2 |

Table 1. Estimates of emissions produced, miles traveled, gallons of gas consumed, and dollars spent (in million units/year) by students, faculty, and staff on commuting to and from URI in 2006.

Commuters that completed the survey commute from 50 towns in Rhode Island, Connecticut, and Massachusetts (Appendix B). From those, it is estimated that approximately 30% of commuting students, faculty, and staff travel from Narragansett, which was the largest percentage by far. After that, the highest percentages come from Wakefield (9%), Kingston (7%), Providence (6%), and Warwick (5%). The other 45 towns were less than 5% each.

The Upper College Road data, which was a combination of students, faculty, staff, and others in moving vehicles, showed similar results to the parking lot surveys (Figure 5). Out of the 227 sampled vehicles traveling on Upper College Road, 82% were single occupancy vehicles. 15% were carpooling with 2 people per car, 1% with 3 people, and 2% with 4 people. The average number of people per car was 1.23, which was slightly higher than counts from parking lots.

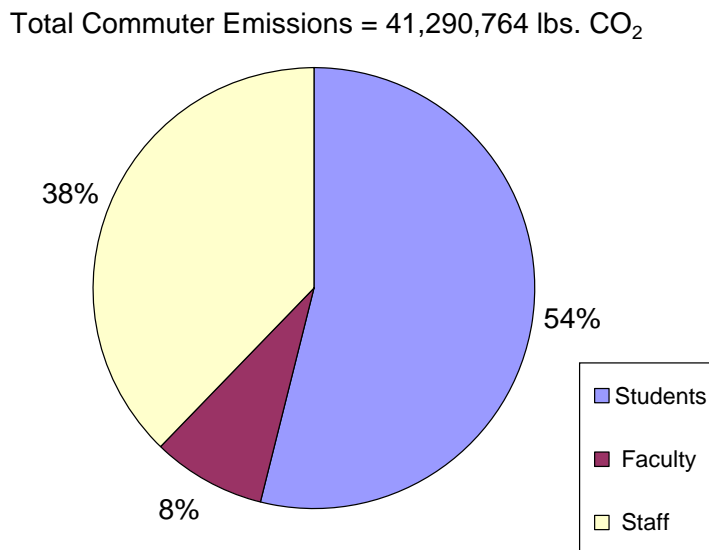


Figure 1. Percentages of students, faculty, and staff that comprise total URI CO₂ emissions from commuters in 2006.

Students

Students produce about 22.2 million pounds of CO₂ each year, or about 60,822 pounds per day, on their daily commutes to and from campus (Table 1). Their gasoline consumption is about 1.1 million gallons total, or 138 gallons per student each year. At \$3.00 per gallon, students spend an estimated \$3.3 million total, or about \$414 per person, commuting each year.

Of 1,392 vehicles observed during visual surveys of student parking lots 80% were cars, 13% were SUV's, 5% were trucks, and 2% were vans (Figure 2). No hybrid vehicles or

motorcycles were observed in the student parking lots; however, more surveys would probably reveal a few. Motorcycles are often parked in areas closer to academic buildings, which were not sampled in this study. Compared to national averages for vehicle types, URI students' vehicles are much more energy efficient. About 58% of Americans drive cars, while another 40% drive SUV's, trucks, and vans (USDOT 2004). A total of 155 students completed the online survey, 115 undergraduate and 36 graduates. Of those, 6% ride the bus, 3% walk, and 2% bike to campus (Figure 3).

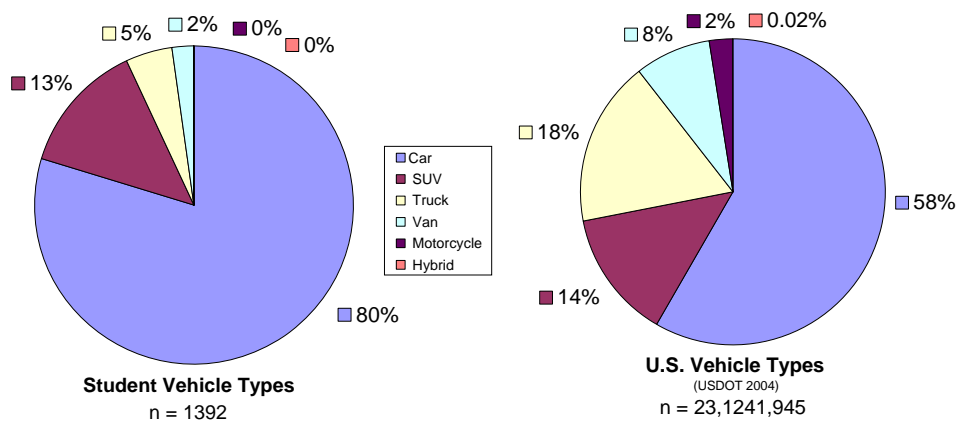


Figure 2. Percentages of URI student vehicle types observed in student parking lots (2006) compared to those of the United States (2004).

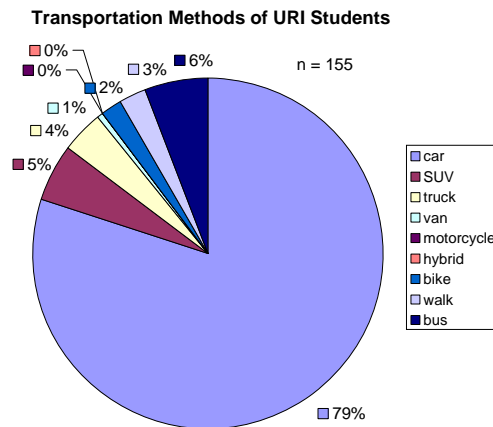


Figure 3. Percentages of student transportation methods reported by 155 undergraduate and graduate students in a 2006 commuter survey.

Average reported fuel efficiency for students was 26.32 miles per gallon. Average one-way distance traveled was 13 miles, for a yearly round trip distance of 30 million miles. Observations from URI parking lots showed that 89% of students drive alone, which came to an average of 1.12 people per car (Figure 4). About 48% of students (57% of undergraduates) commute from Narragansett, 6% from Warwick, 6% from Providence, 5% from Kingston, and 5% from Wakefield. The other 27 reported towns each had less than 3% (Appendix B).

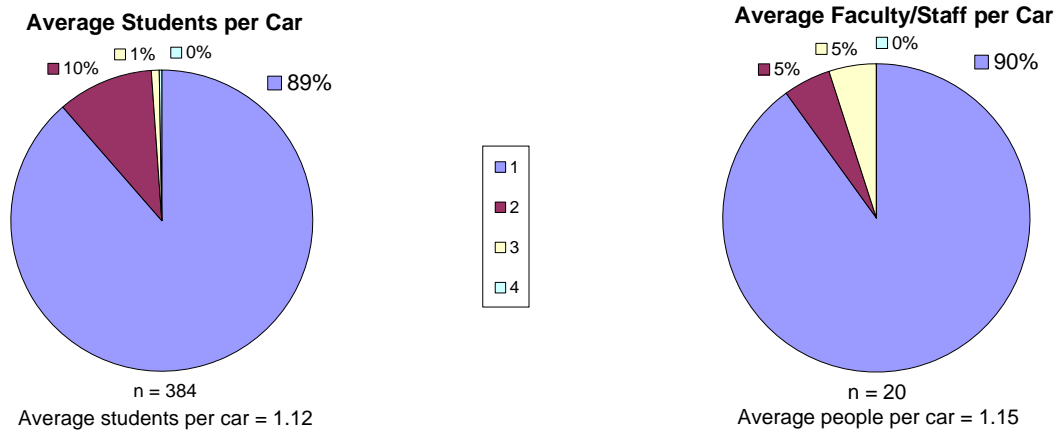


Figure 4. Percentages of students per car compared to percentages of faculty/staff per car as observed in URI parking lots in 2006 visual surveys.

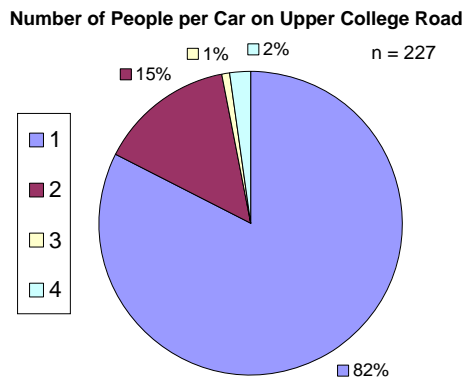


Figure 5. Percentages of students, faculty, and staff per car as observed on Upper College Road in 2006 visual surveys. Average number of people per car = 1.23.

Faculty and Staff

Commuting faculty, at 710 individuals, account for approximately 3.4 million pounds of CO₂ emissions per year (Table 1). Commuting staff, at 2,454 individuals, produce about 15.6 million pounds of CO₂ per year. Faculty members consume about 200,000 gallons of gasoline each year, while staff members use about 800,000 gallons. This translates to about \$845 per faculty member and \$978 per staff member each year in gasoline costs.

According to personal surveys, about 90% of faculty and 96% of staff commute to campus alone, with an average occupancy of 1.24 and 1.08 people per car, respectively. Visual surveys of faculty staff parking lots support these results with a combined average of 1.15 people per car (Figure 4). In personal surveys, only 12% of faculty members and 17% of staff reported that they drive SUV's, trucks, and vans as opposed to cars (Figure 7). However, according to visual surveys, 31% of faculty and staff drive SUV's, trucks, and vans (Figure 6). These percentages are closer to the national averages of 50% cars to 40% SUV's, trucks, and vans (USDOT 2004).

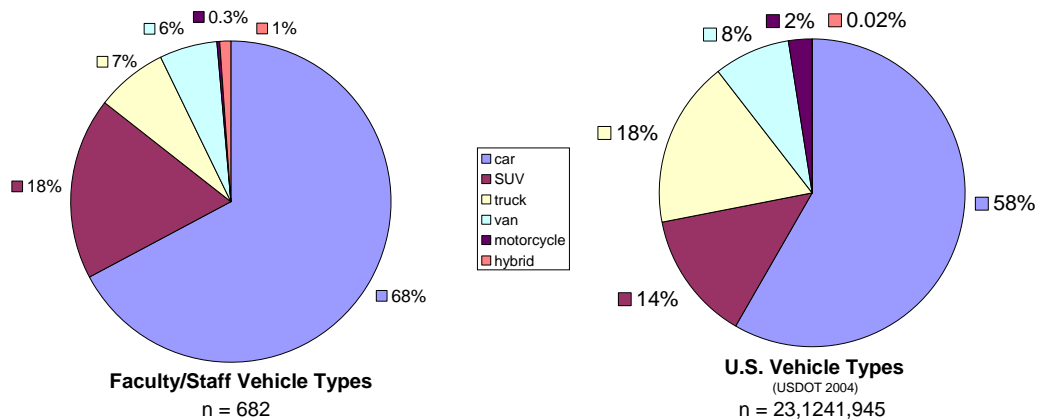


Figure 6. Percentages of combined URI faculty and staff vehicle types observed during visual surveys of faculty/staff parking lots (2006) compared to percentages of U.S. vehicle types (2004).

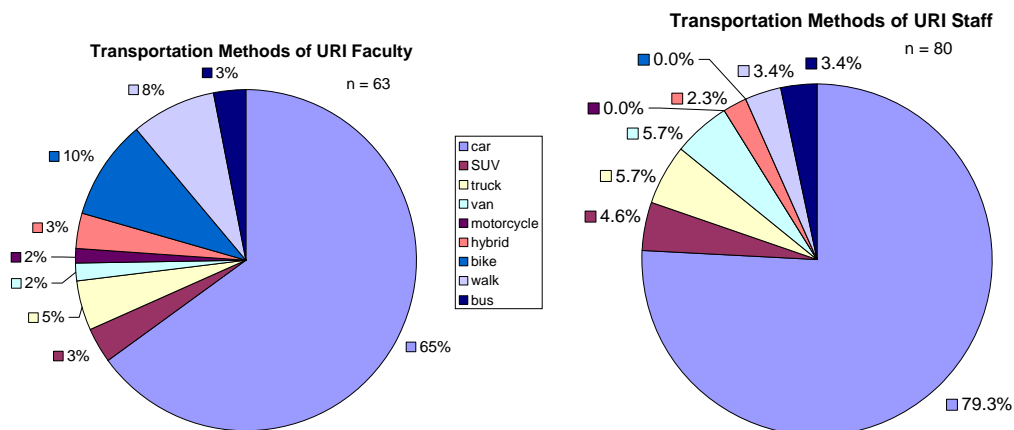


Figure 7. Percentages of transportation methods reported by faculty and staff.

Average fuel efficiency reported on surveys was 27.2 miles per gallon for faculty and 26.3 miles per gallon for staff. Online surveys reported that 15% of faculty members live in Kingston, 13% in Narragansett, 13% in Wakefield, and 11% in Providence. About 17% of staff members commute from Wakefield, 12% from Narragansett, 10% from Charlestown, and 7% from North Kingstown (Appendix).

Discussion

In general, there is a lot of uncertainty associated with emissions estimates, especially because of inadequate, or lack of, record-keeping by the administration. In “Guidelines for College-Level Greenhouse Gas Emissions Inventories,” the author warns that assumptions will have to be made when records are unreliable or unavailable (Dautremont-Smith 2002). Although this study attempted to collect precise information, estimates and assumptions had to be made for some data inputs due to time constraints or lack of information. For instance, all faculty and staff were assumed to commute 52 weeks per year, which may not be the case for many of them.

It was also assumed that since 63% of undergraduates are commuters, the percentage of graduate commuters was similar, which may or may not be accurate.

Despite these estimations, this inventory is a relatively thorough and precise compared to other university commuter emissions inventories. Because most inventories are conducted as comprehensive studies that include all sources of emissions on campus, commuter behavior related to greenhouse gas emissions is not generally studied in depth. Most of the reports I reviewed contained emissions for all transportation sources combined, but did not separate commuters. Inventories that studied commuter behavior had different methods with varying degrees of reliability and only reported select data.

Schools across the U.S. have used a variety of methods to conduct commuter emissions inventories. Many university greenhouse gas inventories are conducted by the administrations or environmental program coordinators and involve interdepartmental cooperation in collecting and submitting information. Instead of conducting commuter surveys, many schools use records and estimates to determine inputs like average miles per trip, trips per day, and days per week.

For instance, the University of New Hampshire (UNH) used results from the 2001 UNH Transportation Survey (UNH 2004) to approximate inputs. Similarly, Tufts used data collected from a 1991 transportation study (Gloria 2001). Harvard University used maps to estimate average commuting distance, and obtained information from their RideShare Program Update Reports as well as their Commuter Choice Program (Green 2006) about other commuter habits. Duke University completely omitted data collection on student commuters (Hummel & Barkley, 2004). Although comparisons with other schools are difficult due to widely varying methods and depth of analysis, this data will be helpful as a benchmark to measure future emissions reductions at URI. As more schools continue to complete GHG inventories, methods will become more standardized, making comparisons among schools easier and more significant.

More research of URI commuter behavior is necessary to collect additional data that would improve the accuracy and usefulness of the estimates. This study was limited by time and data availability, so not all sources of emissions were considered. For example, summer school students were not included because no information was available on their numbers or commuting habits. To include summer school students, surveys should be conducted during summer sessions. Additionally, future surveys should obtain qualitative data, which would be useful in understanding public opinion on issues like commuting, carpooling, and climate change in general. Inventories should also be conducted for URI's three other campuses: Narragansett Bay Campus, W. Alton Jones Campus, and the Feinstein Providence Campus.

Other schools have used their results to develop plans for emissions reductions either through energy efficiency or the purchase of renewable energy. Harvard University has implemented the Campus Sustainability Principles and reduced their emissions by 5% of the 2003 total (Green 2006). Lewis & Clark College became the first school in the United States to meet the Kyoto Protocol standards for greenhouse gas emissions (Erickson 2006). Cornell students have convinced their administration to meet the Kyoto standards as well (Cornell 2001).

Recommendations

General results show that most URI commuters drive alone in cars that get about 26 miles to the gallon. Many of them come from Narragansett and other towns surrounding campus, some commute from towns across the state, and some travel from states that border Rhode Island. Few people use alternative transportation methods like buses, bikes, and walking. These circumstances produce large amounts of greenhouse gas emissions. However, climate changing emissions are probably not as important to most people as are the traffic and parking problems created by excessive numbers of commuters.

In the past, URI has had designated carpool lots that were closer to academic buildings. Unfortunately, there was not enough use to continue the program. More recently, URI Parking Services has been trying to alleviate car problems on campus by charging for parking passes and constructing more parking lots. Additionally, the Rhode Island Public Transit Authority (RIPTA) has been offering their bus tickets and monthly passes at half-price to URI students. Despite these efforts the traffic problem persists.

In order to reduce the amount of greenhouse gas emissions that URI commuters produce, the number of cars coming to campus needs to decrease significantly. This will only happen if a comprehensive transportation plan is put into effect. This plan should include the development more efficient transportation alternatives for commuters by increasing bus service and convenience for the many commuters living Narragansett, creating carpooling incentives, and educating the campus about transportation and climate change.

Currently, bus service to Narragansett, where 30% of commuters live, is extremely limited and inconvenient. It is possible to ride the 64 bus to Bonnet Shores, but there is no service further south to Scarborough, Eastward Look, and Point Judith. If commuters are going to be persuaded to ride the bus to campus, the schedules must be frequent and convenient. One possibility is to create a park-and-ride at beach parking lots like Scarborough or Roger Wheeler Beaches. Commuters could drive their cars a short distance from their home to the lot and then catch a bus to campus.

Increased bus service should be supplemented with carpool incentives for students as well as faculty and staff. I would argue that carpool parking lots should be attempted again, because circumstances are different now than they were in the past. For instance, gas prices are rapidly increasing and parking spaces are rapidly decreasing. Commuters could purchase carpool parking passes at a discounted rate.

Buses and carpool incentives alone will not solve problem. An important part of a comprehensive transportation plan is an education and marketing component. URI community members must be informed about alternative transportation methods (buses, carpooling, and biking) and the benefits of utilizing these, both economic and environmental. In my experience, most people are not aware that they might have the option of taking a bus if they live in Bonnet Shores or Wakefield. Widespread promotion efforts, combined with convenient bus schedules and discounted passes, could persuade many commuters to try riding the bus. Also, past attempts at designating carpooler parking lots may have failed because of inadequate promotion and education.

Most of the campuses who have conducted greenhouse gas emissions have environmental programs run by staff and administrators. Brown University has the “Brown is Green” program, Harvard University has the “Green Campus Initiative,” and University New Hampshire has the “Climate Education Initiative” and an Office of Sustainability Programs. URI should follow this precedent and establish its own campus-wide sustainability program to address campus environmental issues, particularly those relating to energy conservation. A URI sustainability program could continue these commuter studies as well as educate commuters about climate change and alternative transportation options. URI has the potential to become an environmental leader among universities in the northeast, and this study is an important step to achieving that status.

Acknowledgements

I would like to thank Dr. Fred Meyerson for his guidance, enthusiasm, and dedication to this project; Peter Landry for creating the online survey, managing the data, and helping me with the math; Jhodi Redlich and the URI News Bureau for distributing the survey; Gary Boden and the Office of Institutional Research for providing some useful numbers; and the Institutional Review Board for teaching me everything I know about surveying human subjects.

Appendix A: Commuter Survey

University of Rhode Island Commuter Greenhouse Gas Emissions Inventory

Department of Natural Resource Sciences

This survey is designed to understand the general commuting habits of students, faculty and staff at the University of Rhode Island Kingston campus. These data will also be used to calculate the total amount of greenhouse gases being emitted by University of Rhode Island commuters. Please answer the following questions as accurately as possible.

The completion of this survey implies your consent to participate. You must be 18 years of age or older to participate in this survey. This survey has been approved by the URI Institutional Review Board.

1. Are you a URI student, faculty, or staff member?
2. If you are a URI undergraduate student, what year are you?
3. Do you commute from off-campus?
4. What URI campus do you commute to most often?
5. How many days a week do you commute to campus?
6. Which form of transportation do you use most often?
7. Normally, how many times each day do you commute to campus?
8. On average, how many days a week do you carpool (ride with at least one other person)?
9. If you carpool, how many people (total) are in the car?
10. Where do you commute from?
11. About how many miles is it from your home to URI?
12. How long does it take?
13. Approximately how many miles to the gallon does your car get?

Note: The complete commuter survey, including drop-down questions/answers, is located at http://nuvolab.com/eec/?page_id=16

Appendix B: Data Tables

Table 1. Data collected from online personal surveys.

| | STUDENTS | FACULTY | STAFF |
|-----------------|------------|-----------|------------|
| Total at URI | 15,095 | 710 | 2,454 |
| Total Commuters | 7,978 | 710 | 2,454 |
| Total Sampled | 155 | 63 | 87 |
| undergrad | 119 | | |
| grad | 36 | | |
| % Drive Alone | 86% | 90% | 96 |
| % Carpool | 14% | 10% | 4 |
| people/car | 1.12 | 1.24 | 1.08 |
| trips/day | 1.22 | 1.16 | 1.17 |
| miles/trip | 13 | 13 | 15 |
| % cars | 80% | 65% | 79% |
| % SUV | 5% | 3% | 5% |
| % truck | 4% | 5% | 6% |
| % van | 1% | 2% | 6% |
| % motorcycle | 0% | 2% | 0% |
| % hybrid | 0% | 3% | 2% |
| %bike | 2% | 10% | 0% |
| % walk | 3% | 8% | 3% |
| % bus | 6% | 3% | 3% |
| mpg | 26.3 | 27.2 | 26.3 |
| total gallons | 1,100,000 | 200,000 | 800,000 |
| gallons/person | 138 | 282 | 326 |
| total \$ | 3,300,000 | 600,000 | 2,400,000 |
| \$/person | 414 | 845 | 978 |
| total CO2 (lbs) | 22,200,000 | 3,400,000 | 15,600,000 |
| CO2/person | 2,783 | 4,789 | 6,357 |

Table 2. Data collected from visual surveys.

| STUDENTS | | | | | | | |
|-----------------|-------------|-----------|-----|----|---|---|--------|
| # people/car | Day of Week | Time | 1 | 2 | 3 | 4 | TOTALS |
| Keaney Rd. Lot | | | | | | | |
| 04/19/2006 | Wednesday | 2:15-3:15 | 110 | 16 | 3 | 1 | 130 |
| Plains Rd. Lot | | | | | | | |
| 04/12/2006 | Wednesday | 2:12-3:15 | 73 | 10 | 0 | 0 | 83 |
| Fine Arts Lot | | | | | | | |
| 04/17/2006 | Monday | 3:00-4:05 | 157 | 14 | 0 | 0 | 171 |
| TOTALS | | | 340 | 40 | 3 | 1 | 384 |
| avg people/car | 1.12 | | | | | | |

| FACULTY/STAFF | | | | | | | |
|----------------------|-------------|------------|----|---|---|---|--------|
| # people/car | Day of Week | Time | 1 | 2 | 3 | 4 | TOTALS |
| 04/25/2006 | Tuesday | 12:00-1:00 | | | | | |
| Coastal Institute | | | 1 | 0 | 0 | 0 | 1 |
| Tyler | | | 4 | 0 | 1 | 0 | 5 |
| Woodward | | | 2 | 0 | 0 | 0 | 2 |
| Gilbreth | | | 0 | 0 | 0 | 0 | 0 |
| Chafee | | | 11 | 1 | 0 | 0 | 12 |
| 04/26/2006 | Wednesday | 12:00-1:00 | | | | | |
| Library | | | 0 | 0 | 0 | 0 | 0 |
| Roosevelt | | | 0 | 0 | 0 | 0 | 0 |
| 4/27/2006 | Thursday | 12:30-1:30 | | | | | |
| Alumni | | | 0 | 0 | 0 | 0 | 0 |
| Univ. Club | | | 0 | 0 | 0 | 0 | 0 |
| Bliss/Crawford | | | 0 | 0 | 0 | 0 | 0 |
| TOTALS | | | 18 | 1 | 1 | 0 | 20 |
| avg people/car | 1.15 | | | | | | |

| Upper College Rd. | Day of Week | Time | 1 | 2 | 3 | 4 | TOTALS |
|-------------------|-------------|-----------|-----|----|---|---|--------|
| 04/11/2006 | Tuesday | morning | 42 | 4 | 1 | 2 | 49 |
| 04/11/2006 | Tuesday | afternoon | 26 | 3 | 0 | 2 | 31 |
| 04/12/2006 | Wednesday | 1:45pm | 25 | 3 | 0 | 0 | 28 |
| 04/14/2006 | Friday | 2:00pm | 31 | 12 | 1 | 0 | 44 |
| 04/20/2006 | Thursday | 2:30pm | 28 | 5 | 0 | 1 | 34 |
| 04/21/2006 | Friday | 10:45am | 35 | 6 | 0 | 0 | 41 |
| TOTALS | | | 187 | 33 | 2 | 5 | 227 |
| avg people/car | 1.23 | | | | | | |

Table 3. Percentages of students, faculty, and staff commuting from off-campus locations.

| | | | | | |
|-----------------|----|--------|------------------|---|-------|
| Narragansett | 92 | 29.87% | Scarborough | 1 | 0.32% |
| Wakefield | 28 | 9.09% | Point Judith | 1 | 0.32% |
| Kingston | 21 | 6.82% | N. Providence | 1 | 0.32% |
| Providence | 17 | 5.52% | Matunuck | 1 | 0.32% |
| Warwick | 16 | 5.19% | Griswold | 1 | 0.32% |
| Charlestown | 12 | 3.90% | Harrisville | 1 | 0.32% |
| N. Kingstown | 10 | 3.25% | Attleboro MA | 1 | 0.32% |
| W. Warwick | 9 | 2.92% | Mansfield MA | 1 | 0.32% |
| W. Kingston | 8 | 2.60% | Danielson | 1 | 0.32% |
| Richmond | 7 | 2.27% | Guilford | 1 | 0.32% |
| Coventry | 6 | 1.95% | South County | 1 | 0.32% |
| Newport | 6 | 1.95% | Stonington | 1 | 0.32% |
| South Kingstown | 6 | 1.95% | Johnston | 1 | 0.32% |
| Saunderstown | 5 | 1.62% | Lincoln | 1 | 0.32% |
| Cranston | 4 | 1.30% | Wickford | 1 | 0.32% |
| Hope Valley | 4 | 1.30% | Burrillville | 1 | 0.32% |
| Jamestown | 4 | 1.30% | Cumberland | 1 | 0.32% |
| Peace Dale | 4 | 1.30% | Foster | 1 | 0.32% |
| E. Providence | 3 | 0.97% | Green Hill | 1 | 0.32% |
| W. Greenwich | 3 | 0.97% | Groton | 1 | 0.32% |
| Exeter | 3 | 0.97% | mystic | 1 | 0.32% |
| Westerly | 3 | 0.97% | North Smithfield | 1 | 0.32% |
| N. Kingston | 2 | 0.65% | Portsmouth | 1 | 0.32% |
| Ashaway | 2 | 0.65% | Worcester | 1 | 0.32% |
| East Greenwich | 2 | 0.65% | | | |
| Hopkinton | 2 | 0.65% | | | |

Table 4. Percentages of students commuting from off-campus locations.

| undergraduates | | | graduates | | |
|-----------------------|-----|-----|------------------|----|-----|
| Narragansett | 66 | 57% | Narragansett | 9 | 26% |
| Scarborough | 1 | | Providence | 5 | 14% |
| Point Judith | 1 | | Warwick | 3 | 9% |
| Kingston | 5 | 4% | Kingston | 2 | 6% |
| W. Kingston | 4 | 3% | Newport | 2 | 6% |
| N. Kingston | 2 | 2% | Wakefield | 2 | 6% |
| N. Kingstown | 2 | 2% | Westerly | 2 | 6% |
| Providence | 4 | 5% | Ashaway | 1 | 3% |
| E. Providence | 1 | | Cranston | 1 | 3% |
| N. Providence | 1 | | East Providence | 1 | 3% |
| Warwick | 6 | 5% | Exeter | 1 | 3% |
| W. Warwick | 4 | 3% | Hopkinton | 1 | 3% |
| Wakefield | 5 | 4% | Johnston | 1 | 3% |
| Charlestown | 4 | 3% | Lincoln | 1 | 3% |
| Cranston | 1 | 1% | North Kingstown | 1 | 3% |
| Coventry | 2 | 2% | West Warwick | 1 | 3% |
| Matunuck | 1 | 1% | Wickford | 1 | 3% |
| Griswold | 1 | 1% | | 35 | |
| Saunderstown | 3 | 3% | | | |
| W. Greenwich | 1 | 1% | | | |
| Hope Valley | 1 | 1% | | | |
| Harrisville | 1 | 1% | | | |
| Ashaway | 1 | 1% | | | |
| Attleboro MA | 1 | 1% | | | |
| Mansfield MA | 1 | 1% | | | |
| | 120 | | | | |

Table 5. Percentages of faculty commuting from off-campus locations.

| staff | | | faculty | | |
|------------------|----|-----|-----------------|----|-----|
| Burrillville | 1 | 1% | Coventry | 2 | 3% |
| Charlestown | 8 | 9% | Cranston | 1 | 2% |
| Coventry | 2 | 2% | Danielson | 1 | 2% |
| Cranston | 1 | 1% | East Greenwich | 1 | 2% |
| Cumberland | 1 | 1% | Guilford | 1 | 2% |
| East Greenwich | 1 | 1% | Hope Valley | 2 | 3% |
| East Providence | 1 | 1% | Jamestown | 1 | 2% |
| Exeter | 2 | 2% | Kingston | 11 | 17% |
| Foster | 1 | 1% | West Kingston | 1 | 2% |
| Green Hill | 1 | 1% | Narragansett | 8 | 13% |
| Groton | 1 | 1% | Newport | 1 | 2% |
| Hope Valley | 1 | 1% | North Kingstown | 2 | 3% |
| Hopkinton | 1 | 1% | Peace Dale | 2 | 3% |
| Jamestown | 3 | 3% | Providence | 7 | 11% |
| Kingston | 3 | 3% | Richmond | 3 | 5% |
| mystic | 1 | 1% | Saunderstown | 1 | 2% |
| Narragansett | 9 | 10% | Shannock | 1 | 2% |
| Newport | 3 | 3% | South County | 1 | 2% |
| North Kingstown | 5 | 6% | south kingstown | 5 | 8% |
| North Smithfield | 1 | 1% | Stonington | 1 | 2% |
| Peace Dale | 2 | 2% | Wakefield | 8 | 13% |
| Portsmouth | 1 | 1% | Warwick | 1 | 2% |
| Providence | 1 | 1% | West Warwick | 1 | 2% |
| Richmond | 4 | 5% | Total | 63 | |
| Saunderstown, | 1 | 1% | | | |
| South Kingstown | 1 | 1% | | | |
| Wakefield | 13 | 15% | | | |
| Warwick | 6 | 7% | | | |
| West Greenwich | 2 | 2% | | | |
| West Kingston | 3 | 3% | | | |
| West Warwick | 3 | 3% | | | |
| Westerly | 1 | 1% | | | |
| Worcester | 1 | 1% | | | |
| Total | 86 | | | | |

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