

University of North Texas
Department of Linguistics and Technical Communication
Auditorium Building
Denton, TX 76203

December 8th, 2010

Mr. Briseno
TECM 2700 Professor

Subject: Report on Most Effective Transportation Option for Commuting Students

Dear Mr. Briseno:

We present you with the following feasibility report, "Report on Transportation Efficiency". This report discusses the transportation options available and which of these options is the most efficient for UNT students who commute to the main campus.

We conducted a survey of the general population of UNT to determine the effectiveness of each transportation option available for commuting UNT students. We also researched the pros, cons, permit prices, and gas prices of each commuting option. Our overall research concludes that the most efficient transportation option is driving or riding to school. From this conclusion, we recommend the university implement a carpooling program for commuting students living in the Metroplex area.

If you have any further questions regarding our feasibility report or inquiries about our research, please contact us at any of the email addresses listed below.

Thank you for your time,

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Report on Transportation Efficiency



December 6, 2010

University of North Texas Transportation Feasibility Report

Prepared for

University of North Texas Parking & Transportation

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Introduction:

This report discusses the transportation options available to students who commute to the University of North Texas main campus. The UNT Institutional Research and Accreditation surveyed UNT students and faculty in 2003 and found that about 19,000 students and faculty were commuting from outside Denton at least once a week. Commuting students need transportation that is efficient in cost, time, and availability. If transportation to UNT campus is effective, prospective students are more likely to enroll. This generates more revenue for university and thus the university can improve transportation accommodations for commuting students. In this report we examine which commuting option is the most efficient option for students living within the Metroplex area.

This report considers the commuting options of taking the bus, walking, driving, biking, or riding a motor vehicle. We researched each option and considered how effective the cost is for each option and which option is most preferred by students. We give our recommendation on which transportation option is most effective for commuting students to UNT main campus based on the results of our research.

Methods:

To conduct our research of commuting options available to UNT students, we created a survey for current UNT students to fill out. We surveyed 50 students. Our study's criteria were limited to the following:

- Students living within the Metroplex area
- Students who commute to the UNT main campus
- Students who commute by walking, taking the bus, driving a car, riding a motorized vehicle, or biking to campus
- Students who do not have a commute time that is greater than 55 minutes

The survey consisted of five questions with multiple choice options for answers. The surveys were handed out to random students and the names of these students were kept anonymous. The questions on the survey inquire the following:

- Method of transportation the student uses
- Closest city within the Metroplex from where the student commutes
- Method of transportation the student would prefer to use
- Travel time of the commute

We made the survey brief so that it did not interrupt student's class time or make students late to their next class.

We also personally researched the weekly costs that students spend on each method of transportation. We consider the permit prices and gas prices of each transportation method. We do not consider vehicle accessories or routine maintenance costs because these costs can not be accurately estimated as weekly costs. Finally, we also discuss the general pros and cons of each transportation option.

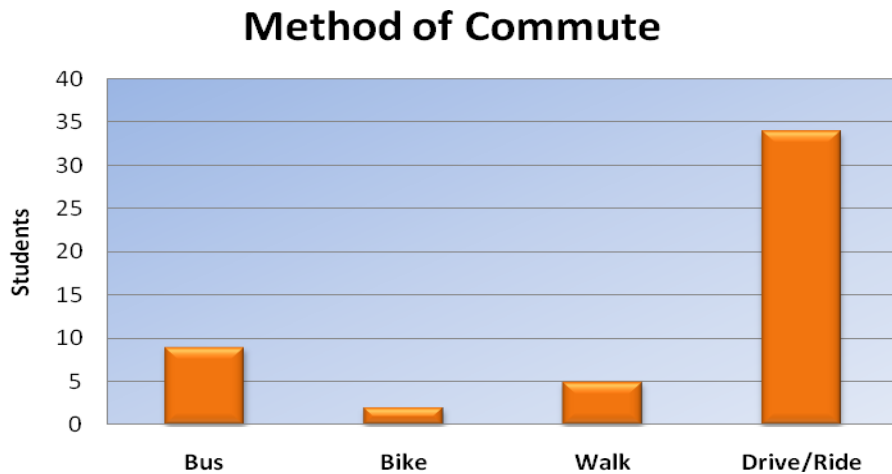
Results:

In order to determine what method of transportation is the most efficient for students, we surveyed a sample of the student body to see how they commute, how long it takes them to commute, the closest city in the Metroplex area from which students commute, the

traffic flow during their commute, and how they prefer to commute. See Appendix A for a copy of our survey. We also conducted our own outside research to determine the weekly cost of each method of transportation.

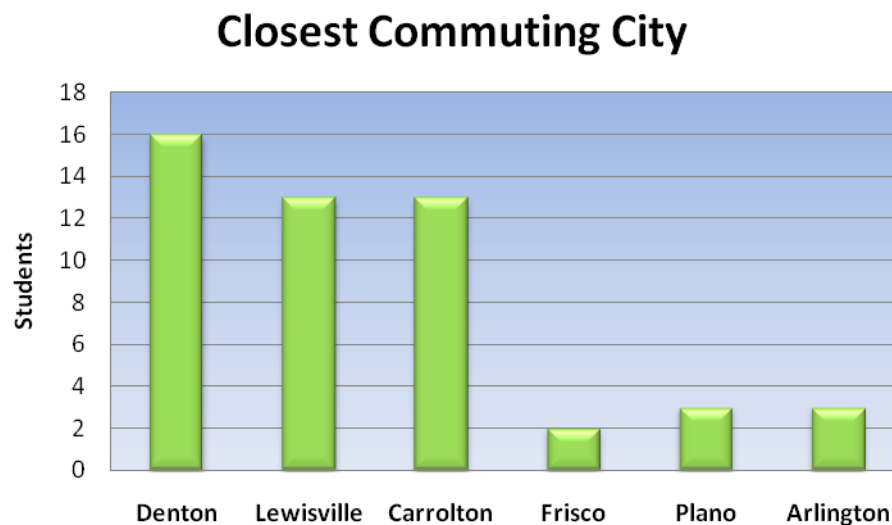
Method of Commute

We surveyed 50 students living within the Metroplex area of UNT to see how they commute to school. Our criteria included the transportation methods of taking the bus, riding a bike, walking, driving a car, or riding a motorized vehicle.



Distance of Commute

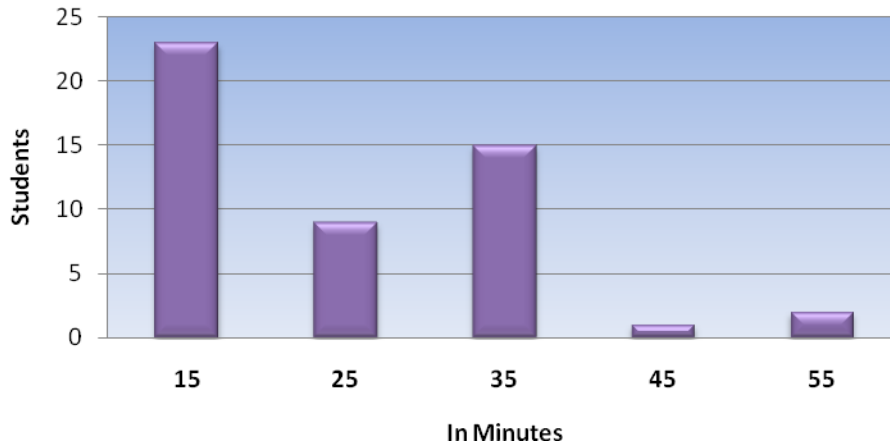
We selected five cities to define the Metroplex area of UNT. We asked students to select which of the five cities is closest to where they commute. The options for the students to pick from are Denton, Lewisville, Carrollton, Frisco, Plano, and Arlington. This allowed us to develop a wide radius around the school to include a major portion of commuting students.



Time Length of Commute

The survey asked students to approximate how many minutes their commute to school takes. The time choices given were 15 minutes, 25 minutes, 35 minutes, 45 minutes, or 55 minutes. We also verbally directed students to select 15 minutes if their commute was less than 15 minutes. By the students' approximation, we were able to get overall averages of commute time.

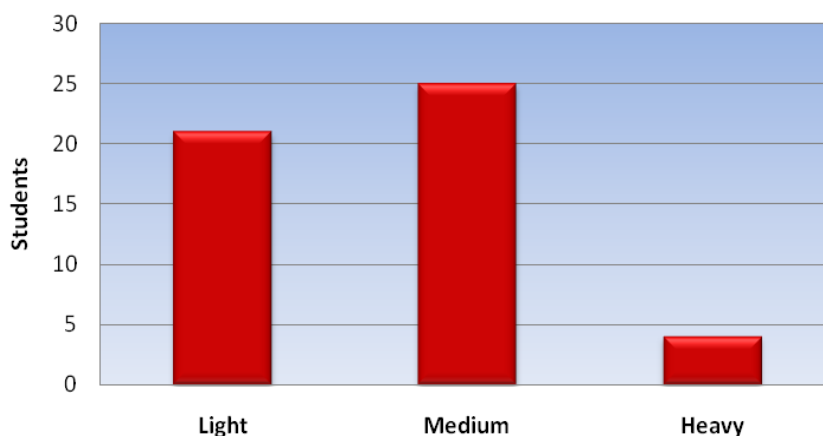
Time Length of Commute



Traffic Flow of Commute

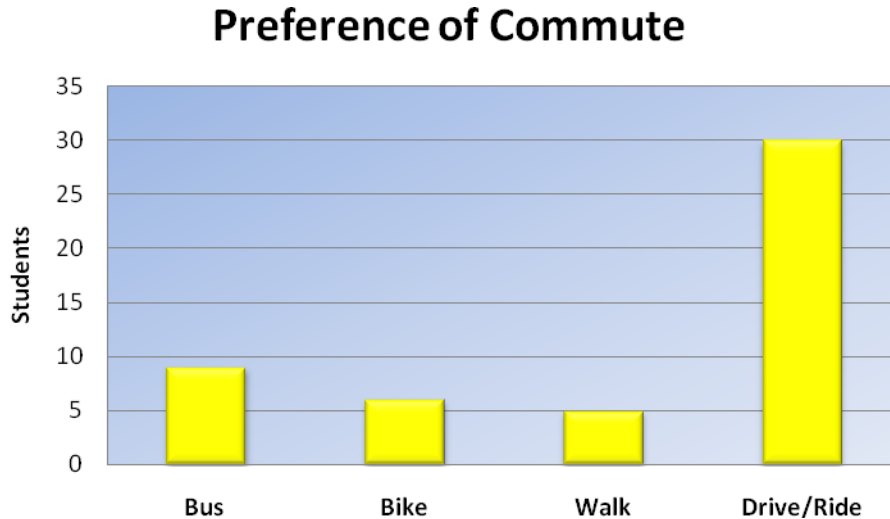
Students approximated the average traffic flow of their commutes and our criteria specified the flow as being light, medium, or heavy. Traffic flow depends on the distance of the commute and the time in which students commute. Students were not asked to specify the time they leave to commute to school because many students make multiple trips to the school and their traffic flow estimate varied for each trip. Thus, students were verbally asked to approximate the overall average flow of traffic rather than the flow of traffic for each individual trip they make to school.

Traffic Flow



Preference of Commute

We asked students what method of transportation they would prefer to use to commute to school if given the means and opportunity to either take the bus, walk, drive, or ride a motorized vehicle.



Weekly Cost of Commute

We personally conducted research on each of the transportation options to determine what the average weekly cost is for each. We considered permit prices and gas prices.

Bike

Permit Prices

Students must obtain a bicycle permit in order to ride and park their bikes at UNT campus. These permits are free of charge. Students must also register their bikes and have a valid UNT decal before they can operate their bikes on UNT property.

Gas Prices

Gas prices do not apply for bicycles.

Pros and Cons

UNT promotes students commuting to school on bikes because it is a cheap method of transportation and because biking doesn't harm the environment. However, students do not have the diverse parking options available since they can only park their bikes at designated bike racks. Also, biking to school takes considerably longer than other transportation methods. It is not conducive for bad weather conditions either.

Motorized Vehicles

Permit Prices

Students must obtain a Motorcycle Permit and register their motorized vehicle in order to operate and park the vehicle at the UNT campus. Motorcycle Permits cost \$93 per year.

There are approximately 15 weeks in a semester so students pay about \$3.10 per week for their motorcycle permit.

Gas Prices

We estimated that the average commuting student will need to completely fill up a 6 gallon gas tank of a motorcycle once a week. According to GasBuddy.com, the average price for regular unleaded gas in the Denton area is \$2.76. Thus, students will spend approximately \$17 per week on gas for a motorcycle. For a scooter with a 2 to 4 gallon tank, students will have to fill up twice a week and thus will spend about \$23 per week on gas.

Pros and Cons

Motorized vehicles are efficient in cost and gallons per mile. However, motorized vehicles can be less safe than driving to school in a car or taking the bus. Motorized vehicles also have less parking available to them than cars.

Bus

Permit Prices

UNT students can ride any commuter bus of the Denton County Transportation Authority for free with a valid ID and can also ride the on-campus commuter express for free.

Gas Prices

Students will not have the expense of gas when taking the bus. However, buses overall use a considerably greater amount of gas than other gas-powered vehicles. They also are less efficient in gas mileage and emissions.

Pros and Cons

Taking the bus to school is free of charge and faster than riding a bike to school. Students do not have to worry about finding a parking space or purchasing a parking permit. The biggest problem of bus travel is that students are at the mercy of the bus; if it is late then the student is late. This can affect students' scholarly performance.

Car

Permit Prices

The permit prices for students who commute to school by car vary between \$115 and \$180, depending on what type of permit a particular student wishes to purchase. However, students can park in designated off-campus parking for free.

Gas Prices

According to GasBuddy.com, the average price for regular gas in the Denton area is \$2.76. We estimated that students who drive cars with a standard 14 gallon tank will have to fill up their car once a week. Thus, commuting students will spend \$39 per week on gas.

Pros and Cons

Car travel is the most common means of travel and many people choose to travel on their own rather than in groups. The biggest problem with car travel is the cost of gas; when

gas cost increases the cost to travel increases. Students also have to find an available parking spot near their classes or else they may have to walk a long distance.

Conclusions:

We surveyed 50 students at the University of North Texas campus to determine which method of transportation is the most efficient commuting option available to them. The data we collected yields that most students commute from Denton, Lewisville, and Carrollton. The data also shows that the closer commuters were to Denton, the less time they spent commuting to the school. Students said that the average traffic flow coming from Denton is light.

We deduced that biking is not an efficient means of commuting to school for students. Since our research showed that most students commute from Denton, Lewisville, and Carrollton, biking would require a much longer commute time and is not conducive for bad weather conditions. We found that very few students bike to school and few prefer this method of transportation.

Taking the bus is not the most efficient transportation method for commuting students because the buses are not always on time and students may not live within walking distance of a bus stop. More students prefer to take the bus over biking to school, however, more students prefer to drive or ride to school rather than taking the bus. Thus, driving or riding would be the most efficient way for students to commute to school. The majority of students surveyed prefer this method of transportation because driving is more readily available to students living outside of Denton, they do not have to wait for the bus, and the average commute time is around 15 minutes for most students who live near Denton.

Recommendations:

We recommend that the University of North Texas implement a carpooling program to meet the demands of commuting students. This program will offer more local job opportunities for students and bypass the need to outsource more transportation services. Also, the community will benefit from the reduced amount of vehicles on the roads during peak driving times. This will also help reduce emissions and pollutants in the local atmosphere.

Operations

UNT Parking and Transportation services will hire up to 20 drivers. Students will be chosen before the beginning of the semester, contingent on all cleared background checks. Drivers will only be required to pick up people who live on the driver's way to main campus. Also, the driver will not be required to deviate from their original route to the main campus by more than 7 miles in any direction to complete a pick-up.

Students who wish to participate in the carpooling program will elect to sign up during the previous semester's enrollment period. UNT will create a carpool section under the school's transportation website so that students can sign up to be riders in a carpool.

Riders will only be picked up from the address on file with the university and no other exceptions will be allowed. Riders will also have to submit their class schedules so that carpooling pick up times can be arranged. Carpooling pick up times must be at least 35 minutes before the riders' earliest class begins.

Financing

By adding a fee of \$3.50 to student semester tuition and with Fall 2010 student enrollment of 36,118, the UNT Parking and Transportation service will receive \$126,413 to help build its program.

UNT should create a parking survey to determine if more parking spaces will be required for future students. The money the school receives from the carpooling fee should fund future parking spaces or a new parking garage.

UNT will hire 20 drivers per semester. Each driver will be paid \$100 per week and will be responsible for gas costs. \$30,000 will be the total semester payroll, which leaves over \$90,000 each semester to be put towards funding for more parking spaces or a new parking garage.

Appendix A

1. How do you commute to school?

- a. Bus b. Bike c. Walk d. Drive/Ride

2. What is the closest city from where you commute?

- a. Denton b. Lewisville c. Carrollton d. Frisco e. Plano f. Arlington

3. How many minutes does it take to commute to school?

- a. <15 b. 25 c. 35 d. 45 e. 55

4. How would you rate the traffic flow to school?

- a. Light b. Medium c. Heavy

5. What is your preferred means of transportation to school?

- a. Bus b. Bike c. Walk d. Drive/Ride