Energy Use and Travel by Austin Area Households

UT Austin Internal Review Board # 2008-08-0049

Dear Resident,

Graduate students at the University of Texas at Austin are conducting a research study to explore Central Texans' energy consumption and preferences for future energy policy and vehicle technologies. In today's world of rising energy prices and climate concerns, energy use is an important topic. The responses will be analyzed all together, providing full anonymity for all respondents, and the results will be of interest to many at the Department of Energy, local utilities like Austin Energy, state departments of transportation, and other institutions with opportunity for policymaking in the energy and transportation arenas.

- > The survey will take approximately 20 minutes to complete.
- The survey will ask questions about you, your travel, and your household's energy use. Note that it will be useful to have recent energy bills handy.
- > No names or other identifying information will be used in preparing the data for analysis.
- > There are no risks involved in participation in this study and no direct benefits.
- > You are not obligated to participate in the survey and you can stop at anytime.
- However, your input and opinions are VERY IMPORTANT, since it is critical that all perspectives and types of residents be represented in this survey.

If you have any questions or comments about this study, please feel free to contact me personally at (512) 471-0210. If you have any questions or concerns about your rights as a research participant, please contact Jody Jensen, Ph.D., Chair of UT Austin's Institutional Review Board for the Protection of Human Subjects, (512) 471-8871.

Please feel free to keep this cover letter. Your completion of the survey indicates your willingness to participate in the study.

Thank you very much for your time and cooperation.

Sincerely,

Dr. Kara Kockelman Associate Professor of Transportation Engineering & Faculty Sponsor

Please continue on the next page. ►

Section 1 – Transportation

1. Which of the following is your **primary means of travel** for the following activities? (Please select one for each activity type.)

	Walk	Bicycle	Drive ALONE	Drive WITH OTHERS (Carpool)	Bus	Not Applicable
Work						
School						
Food Shopping						
Non-food Shopping						
(example: clothing & home						
items)						
Errands/Personal Business						
(example: banking or doctor's						
appointment)						
Social & Recreational						
Activities						

2. When traveling **from home**, **HOW LONG** does it typically take you to travel **ONE-WAY** for the following purposes?

	Less than 5 minutes	5-14 minutes	15-29 minutes	30-44 minutes	45-59 minutes	60-89 minutes	90 or more minutes	Not Applicable
Work								
School								
Food Shopping								
Non-food								
Shopping								
Errands/Personal								
Business								
Social &								
Recreational								
Activities								

3. How many **ROUND TRIPS** did you make for the following purposes over the **LAST SEVEN (7) DAYS** (for example, to and from work would be one round trip)?

	0	1-2	3-4	5-6	7 or more
Work					
School					
Food/grocery Shopping					
Non-food Shopping					
Errands/Personal Business					
Social & Recreational Activities					

4. Please answer the following questions about LONG DISTANCE TRAVEL (where your destination was more than 100 miles away from your starting location) over the PAST TWELVE (12) MONTHS.

	Airplane	Train or Bus (for example, Amtrak or Greyhound)	Automobile
How many ROUND TRIPS did you make using this form of transport?	round trips	round trips	round trips
How many MILES	0-1000 miles	0-300 miles	0-500 miles
(TOTAL) did you	1001-2000	301-600	501-1000
travel using this form	2001-3000	601-900	1001-1500
of transport for	3001-4000	901-1200	1501-2000
LONG distance	More than 4000 miles	More than 1200 miles	More than 2000 miles
travel?	Don't know	Don't know	Don't know

5. Please answer the following questions about round trips you made of 5 MILES OR LESS in the LAST SEVEN (7) DAYS.

	Drive ALONE	Drive WITH OTHERS (carpool)	Bus (Capital Metro)	Bicycle	Walk
How many ROUND TRIPS did you make using this form of transport?	round trips	round trips	round trips	round trips	round trips

6. Over the last **30 DAYS**, how many times did you travel for a **business meeting**?

- □ Zero (0) \Box Three (3) □ One (1)
 - □ Four (4)

 \Box Five or more (5+) □ Two (2)

7. Over the last 30 DAYS, how many times did you engage in a business teleconference (versus traveling for a meeting)?

□ Zero (0)	□ Three (3)
□ One (1)	□ Four (4)
□ Two (2)	□ Five or more (5+)

8. If your answer to question 7 was one or more (1+), why did you choose to teleconference? (Check all that apply)

□ Save *personal* money on transport costs.

□ Save *company* money on transport costs.

□ It saves me time to communicate in this manner.

□ It is more *enjoyable* to communicate in this manner. □ Other:

9. Over the last SEVEN (7) DAYS, how many days did you WORK AT HOME (versus traveling to a regular work building/location)?

Zero (0)	
One (1)	

- \Box Three (3)
- □ Four (4) □ Two (2)
 - \Box Five or more (5+)

 \Box I am not employed.

10. If your answer to question 9 was one or more (1+), why did you choose to work at home? (Check all that apply)

□ Save *personal* money on transport costs.

□ Save *company* money on transport costs.

 \Box I save valuable time by not traveling.

 \Box It is more enjoyable.

□ I am more productive when working from home.

□ I don't have a work building/location.

Other: _____

11. Currently, a monthly bus pass for Capital Metro costs \$17. Would you ride the bus more often if...

- a) ... The bus pass was offered to you for only **HALF** the regular cost?
- □ Yes, I would use the bus as my primary means of transportation.
- □ Yes, I would use the bus more often, but still rely on my automobile as well.
- \Box No, I would not ride the bus more often.
- b) ... The bus pass was offered to you **FREE OF CHARGE**?
- □ Yes, I would use the bus as my primary means of transportation.
- □ Yes, I would use the bus more often, but still rely on my automobile as well.
- \Box No, I would not ride the bus more often.

12. Imagine that **GAS PRICES RISE** to **\$6 TO \$7** per gallon and stay there.

a) How would you be most likely to respond in the **SHORT** term (the next six months)? Please **RANK** from 1 to 9 the following options (1 being the **most** likely and 9 being the **least** likely).

- _____ Do Nothing
- _____ Ride the bus more often
- Walk or bike more often
- _____ Carpool more often
- Choose closer destinations
- Use different (more fuel efficient) automobile more often
- _____ Drive more slowly to conserve fuel
- _____ Make fewer trips
- _____ Cut spending elsewhere

b) How would you be most likely to respond in the **LONG** term (the next 1 to 3 years)? Again, please **RANK** the following options (1 being the **most** likely and 7 being the **least** likely).

- _____ Do Nothing
- Purchase a more fuel efficient vehicle
- _____ Use other means of transport more often
- _____ Begin telecommuting
- _____ Seek four-day work week
- _____ Change place of employment
- _____ Move closer to work or another common destination

13. In your opinion, what would be the best ways to improve public transit, in order to encourage you to use your car less? Please **RANK** the **THREE (3) most important** improvements according to their priority level (with 1 being the **most** important to you and 3 being **third most** important).

- Improve the safety of public transit
- Improve reliability of public transit
- _____ Add stops closer to where you live
- _____ Make better connection to my regular destinations
- _____ Add more frequent service
 - ____ Reduce costs
- _____ Other: _____
- None of the above. I would not use the car less regardless of how Austin transit service is provided.
- □ I don't know.

14. If you do or were to commute to work by driving alone, at what gasoline price would you likely seek other means of travel to work? (Please select only **ONE** option.)

- □ \$5 per gallon
- □ \$6 per gallon
- □ \$7 per gallon
- □ \$8 per gallon
- □ I would not seek other means of transport to work even at \$8 per gallon.
- □ I do not work.

Section 2 – Vehicles

15. Please indicate the **MAKE**, **MODEL**, **YEAR** of manufacture, and approximate **MILES traveled per year** for **EACH** passenger vehicle that is owned, leased, or otherwise available for use by people who currently live in your home.

Example: Make <u>Toyota</u>	Model <u>Camry</u>	Year <u>2006</u>	Miles traveled per year <u>15,000</u>
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	_ Model	Year	Miles traveled per year

16. If you were to **consider purchasing a new vehicle today**, please **RANK the** *five* (5) *most important* **characteristics** according to their priority level (with 1 being **most** important to you, and 5 being the **fifth most** important to you).

- _____ Purchase cost
- _____ Overall visual appeal
- _____ Cabin size
- _____ Vehicle type/class (e.g. compact car, SUV, pickup truck, etc)
- _____ Amenities (sunroof, power windows, GPS, CD/DVD player, etc.)
- _____ Safety

17. U.S. **fuel economy standards** require vehicle makers to meet certain limits on the average fuel economy of vehicles they sell. If the standard **is not** met, the vehicle maker **pays a fine**. Currently, cars and light trucks are held to the standard of **25 miles per gallon (mpg)**. Federal legislation recently passed that increases the standard to **35 mpg by 2020**, and current European standards are 45 mpg. In your opinion, what do you think fuel economy standards **should be** in 2020?

□ Maintain current standards (25 mpg).

- \Box I agree with the increase to 35 mpg by 2020.
- □ Increase standard to 40 mpg by 2020.
- \Box Increase standard to 45 mpg by 2020.
- \Box Increase standard to 50 mpg or more by 2020.
- \Box I don't know.
- Other: ______

- _____ Acceleration and handling
- _____ Cargo/towing capacity
- _____ Reliability
- _____ Fuel economy
- _____ Resale value
- _____ Vehicle warranty
- _____ Maintenance cost
- _____ Other: _____

18. Road transport generates **29%** of Austin's harmful greenhouse gas emissions. In your opinion, what would be the best way to reduce carbon emissions generated by road transport? (Please select only **ONE** option.)

- □ Carbon emissions do not need to be reduced.
- \Box Introduce restrictions to the use of autos.
- \Box Only allow the sale of less polluting vehicles.
- □ Create travel options to lessen auto dependence.
- □ Promote the purchase of fuel-efficient vehicles through tax incentives.
- □ Offer cash incentives for less automobile use.
- □ I don't know.
- □ Other: _____

19. Consider a new vehicle purchase policy, where **rebates** are given to those purchasing relatively fuel efficient vehicles and fees are assessed on the purchase of relatively inefficient vehicles. Assume the amounts vary with fuel economy, as shown in the chart below, where a (+) indicates a rebate and a (-) indicates a fee. How do you feel about such a policy?

Fuel Economy (in miles	Rebate (+) or
per gallon)	Fee (-)
More than 40 mpg	+\$6,000
40 mpg	+\$4,000
35 mpg	+\$2,000
30 mpg	\$0
25 mpg	-\$2,000
20 mpg	-\$4,000
15 mpg	-\$6,000
Less than 15 mpg	-\$10,000

 \Box I strongly oppose this policy.

□ I somewhat oppose this policy.

□ I am neutral regarding such policy.

□ I somewhat support this policy.

 \Box I strongly support this policy.

Section 3 – Home Design & Energy Use

The following questions are about your home or apartment, also known as a residential unit.

20. In what **YEAR** was your residential unit **built**?

□ 2005 to present	□ 1965 to 1974
□ 1995 to 2004	□ 1955 to 1964
□ 1985 to 1994	Before 1955
□ 1975 to 1984	I don't know.

21. What is the **SIZE** of your residential unit in square feet (sf)?

□ Less than 500 sf	□ 2,000-2,499 sf
□ 500-749 sf	□ 2,500-2,999 sf
□ 750-999 sf	□ 3,000-3,999 sf
□ 1,000-1,249 sf	□ 4,000-4,999 sf
□ 1,250-1,499 sf	□ 5,000 or more sf
□ 1,500-1,999 sf	

22. How many **ROOMS** does your residential unit have? (Only include areas used as living space. Do **NOT** include bathrooms and hallways.)

□ 1-2 rooms	🗆 7-8 rooms
□ 3-4 rooms	🗆 9-10 rooms
□ 5-6 rooms	11-12 rooms
□ More than 12 [.]	(nlease specify ac

- □ 11-12 rooms
- □ More than 12:_____ (please specify actual
- number)
- 23. Do you OWN or RENT your home?
- □ Own (includes paying off a mortgage)
- □ Rent/Lease
- □ My home is provided by my employer.

24. Which of the following best describes the exterior material of your residential unit?

- □ Vinyl/Aluminum siding
- □ Wood
- □ Brick/Stone & Other material
- □ Other: _____ (please specify)

25. Which of the following best describes your residential unit?

- □ One-story house detached
- □ Two-story house detached
- □ Three-story house detached (includes more than 3 stories)
- □ Townhouse, duplex, triplex, or fourplex
- □ Apartment/Condominium (1 to 3 stories)
- □ Apartment/Condominium (4 or more stories)
- □ Mobile home/trailer
- □ Dormitory/group quarters
- □ Other:_____

26. Does your residential unit have a **SWIMMING** POOL?

□ Yes

□ No

27. This past **SUMMER** (June, July, or August of 2008), how many UNITS of electricity did you use **PER MONTH**, and how much was the electricity portion of your monthly bill?

__kWh, \$_____, or ...

□ I don't pay my own electric bill.

□ I did not live at my current residence last summer.

28. Last WINTER (December of 2007, or January or February of 2008), how many UNITS of electricity did you use PER MONTH, and how much was the electricity portion of your monthly bill?

____kWh, \$____, or … □ I don't pay my own electric bill.

□ I did not live at my current residence last winter.

29. This past SUMMER (June, July, or August of 2008), how many UNITS of natural gas/propane did you use PER MONTH, and how much was your monthly bill?

_____ccf/gallons, \$_____, or ...

 \Box I don't pay my own gas bill.

□ I did not live at my current residence last summer.

30. Last WINTER (December of 2007, or January or February of 2008), how many UNITS of natural gas/propane did you use PER MONTH, and how much was your monthly bill?

_____ccf/gallons, \$_____, or … □ My home does not use gas or propane.

□ I don't pay my own gas bill.

□ I did not live at my current residence last winter.

31. Do you have more than one (1) full-size refrigerator/freezer unit plugged in? (Please consider all full-size units as well as any full-size stand-alone refrigerator and/or freezer units you may have in your home.)

- \Box No, I have only one (1).
- \Box No, I have zero (0) full-size refrigerators.
- □ Yes, I have two or more (2+): _____ (please specify number)

32. What type of **air conditioning** does your residential unit use? (Please check all that apply)

□ Central air conditioning

- □ No air conditioning
- □ Window units (Please indicate the number of units at your home: _____)

33. Do you ever use any of the following INSTEAD of turning on the air conditioner? (Check all that apply.)

□ Portable Fan

□ Ceiling Fan

Other: _____

 \Box No. I use none of these instead of the air conditioner.

34. Do you have space heaters, and how often are they used in place of central heating during the cooler months of the year?

- □ Yes, and they are used frequently instead of central heat.
- □ Yes, and they are used sometimes instead of central heat.
- □ Yes, and they are *used rarely* instead of central heat.
- □ Yes, but they are *not used*.
- □ No.

35. Do you have a clothes washer that you regularly use in your home and what water temperature setting do you normally set it at?

□ No, I don't have a washer.

- □ Yes, usually set on hot wash.
- \Box Yes, usually set on warm wash.
- □ Yes, usually set on cold wash.

36. If you have a dishwasher, how many times per week do you run it?

- □ 0 times per week □ 5 to 6
- □ 1 to 2 times/week □ 7 to 8
- □ 3 to 4 □ 9 to 10
- □ More than 10 times per week: _____ (please specify)
- □ I do not have a dishwasher.

37. On weekdays, at what temperature is the thermostat in your home set during the SUMMER months?

- Daytime (8 am to 5 pm): □ Turned off □ 65 °F or below □ 66 to 70 °F □ 71 to 75 °F □ 76 to 80 °F □ Above 80 °F
- Evening (5 pm to 10 pm): □ Turned off □ 65 °F or below □ 66 to 70 °F □ 71 to 75 °F □ 76 to 80 °F □ Above 80 °F
- Nighttime (10 pm to 8 am):

 □ Turned off

 □ 65 °F or below

 □ 66 to 70 °F

 □ 71 to 75 °F

 □ 76 to 80 °F

 □ Above 80 °F

38. On weekdays, at what temperature is the thermostat in your home set during the WINTER months?

 Daytime (8 am to 5 pm):

 □ Turned off

 □ 60 °F or below

 □ 61 to 65 °F

 □ 66 to 70 °F

 □ 71 to 75 °F

 □ Above 75 °F

Evening (5 pm to 10 pm): □ Turned off □ 60 °F or below □ 61 to 65 °F □ 66 to 70 °F □ 71 to 75 °F □ Above 75 °F Nighttime (10 pm to 8 am): □ Turned off □ 60 °F or below □ 61 to 65 °F □ 66 to 70 °F □ 71 to 75 °F □ Above 75 °F

39. What are you **doing now (or have recently done)**, or plan to do within the **next 12 months** to reduce your household's energy consumption? (Check all that apply.)

Doing now / Have done	Will do soon	
		Hang-drying your clothes (not using a gas or electric dryer)
		Living in/moving to a smaller home/unit
		Replacing household appliances with more energy efficient equivalents
		Purchasing solar panels for your home
		Upgrading your home's insulation
		Eating 25% less meat (If you are a vegetarian, choose "Have done")
		Turning off electronics (television, computer, etc.) when not in use
		Buying more locally produced products (food and/or other goods)
		Being sure to turn off lights when not in use
		Using energy efficient light bulbs in place of incandescent ones
		Turning up/down your thermostat by 2 degrees (from its typical setting) during hot/cold months
		Other:
		Other:

Section 4 – Energy Policy

40. In your opinion, what should the U.S. do about global climate change? (Please check all that apply.)

□ Research & development will provide new technologies that solve the problem soon.

□ Lifestyle changes are necessary to reduce energy consumption.

□ Regulations should be imposed.

□ We will have to adapt to a warmer climate.

□ The U.S. should not do anything about global warming.

□ Global warming is not a problem.

Other:

41. The U.S. could invest in a variety of policies and technologies to combat climate change. **Which** of the following **policies and technologies would you support** and which would you **oppose**?

Policy/Technology	Strongly Support	Somewhat Support	Neutral	Somewhat Oppose	Strongly Oppose
Carbon capture & sequestration, (where greenhouse gas emissions are stored, rather than allowed to enter the atmosphere).					
Build 5+ nuclear power plants.					
Triple nation's production of biofuels .					
Impose a limit on greenhouse gas emissions & allow trading of purchased emission credits.					
Energy taxes (example: \$50 per ton of greenhouse gases produced by electricity generation and motor fuel use).					
Increase motor fuel taxes by \$1 per gallon.					
Stricter vehicle fuel economy standards (example: 40 mpg).					
Offer rebates to consumers for purchasing very fuel efficient vehicles (like hybrid & plug-in hybrid vehicles).					
Require Energy Star standards on ALL household appliances.					
Require strict energy efficiency standards on virtually ALL new buildings.					

42. Do you or do you not agree with the following statements related to energy policy and climate change?

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion / Don't Know
Our current level of energy use is changing the climate rapidly.					
The U.S. government needs to take much more action to reduce energy use.					
I feel it is everyone's duty to reduce energy use and protect the environment.					
There should be a limit on all households' energy use.					
People should be allowed to use more energy if they are willing to pay for it.					

43. Consider a policy that places a **TARGET MAXIMUM** on the **amount of greenhouse gas emissions** that households are allowed over the course of a year for home utilities and travel. Assume that this target is per person, and so rises with the number of people living in the household, and **households using more energy** than their target would **pay a fine**. Households **using less energy** than the maximum would receive **tax credits**. Unlike energy taxes or upstream caps on greenhouse gas production, this policy generates no new revenue for the government, sets a clear cap, and will cost energy-efficient households nothing. **How would you feel** about this policy?

Strongly	Somewhat	Neutral	Somewhat	Strongly
Oppose	Oppose		Support	Support

Please continue on the next page. ►

44. Consider an alternative policy to the one in question 43, where the **ALL ENERGY USE IS TAXED** and taxes rise with the amount of electricity, gas, and gasoline consumed. However, **no limits** are set on a household's maximum energy consumption. **How would you feel** about this policy?

Strongly	Somewhat	Neutral	Somewhat	Strongly
Oppose	Oppose		Support	Support

Section 5 - Demographics

45. **Including yourself**, **HOW MANY PEOPLE** live in your household? (Please do *not* include anyone who usually lives somewhere else or is just visiting, such as a college student away at school.)

□ One (1) □ Two (2) □ Three (3) □ Four (4) □ Five or more (5+):____ (please specify)

46. How many persons **UNDER the age of 16** years usually live in your home?

□ Zero (0)	□ One (1)
🗆 Two (2)	□ Three (3)
\Box Four or more (4+):	(please specify)

47. Including yourself, how many **WORKERS** usually live in your home? (Please include part-time workers.)

□ Zero (0)	□ One (1)
🗆 Two (2)	□ Three (3)
□ Four or more (4+):_	(please specify)

48. What is your current AGE?

□ Less than 25 years	□ 45 to 54
□ 25 to 34 years	□ 55 to 64
□ 35 to 44	🗆 65 or older

49. Which of the following best describes your household's **TOTAL INCOME** from all sources, before taxes, **for all members of your household** in 2007?

□ Less than \$10,000	□ \$60,000-74,999
□ \$10,000-19,999	□ \$75,000-99,999
□ \$20,000-29,999	□ \$100,000-124,999
□ \$30,000-39,000	□ \$125,000-149,999
□ \$40,000-49,999	□ \$150,000-199,999
□ \$50,000-59,999	□ \$200,000 or more

50. Are you male or female?

□ Male □ Female

51. Which of the following best describes your **ETHNICITY**?

□ Hispanic □ Asian

□ African American □ Caucasian/White □ Other: ______ (please specify)

52. Do you have a valid **DRIVER'S LICENSE**?

□ Yes □ No

53. Are you currently enrolled as a STUDENT?

- \Box No, I am not a student.
- □ Yes, I am enrolled full-time (12 or more credit hours this semester).
- □ Yes, I am enrolled part-time (less than 12 credit hours).

54. Which of the following best describes your **EMPLOYMENT STATUS**?

- □ I work full-time (35 hours or more per week).
- □ I work part-time (less than 35 hours per week).
- \Box I am a homemaker.
- \Box I am self-employed.
- □ I am unemployed, but looking for employment.
- □ I am unemployed, and not looking for employment.
- □ I am retired.

55. What is the highest level of **EDUCATION** you have **completed**?

□ Did not complete high school

- □ High school (or equivalent)
- □ Associate's or technical degree (or equivalent)

□ Bachelor's degree

□ Master's degree or higher

Please continue on the next page. ►

56. What is **your HOME ADDRESS** here in Austin? (For privacy reasons, you are welcome to use XX to represent the last two digits of the street number. Also, please include your zip code. Example: 12XX E. Dean Keeton St., 78722, instead of 1234 E. Dean Keeton St., 78722.) Location data is very important for the planning process. Please note that all information will be kept highly confidential.

57. What is the **address** of your **primary WORKPLACE or SCHOOL**? If you do not work and you are not a student, please skip this question. (For privacy reasons, you are welcome to use XX to represent the last two digits of the street number. Also, please include your zip code. Example: 12XX E. Dean Keeton St., 78722, instead of 1234 E. Dean Keeton St., 78722.) If you do not know the exact address of your workplace or school, you may use a key point of reference. (For example, writing "UT Campus" is fine for those employed and/or studying on the campus.) Location data is very important for the planning process. Please note that all information will be kept highly confidential.

THANK YOU FOR COMPLETING OUR SURVEY!

May we contact you with follow-up questions at a later date? (This is especially helpful if we need to clarify an answer provided here.)

□ Yes □ No

If so, please provide an email address, a phone number, or both:

We would be delighted to send you **an electronic copy of the report** via email. Please let us know where to send that:

Email address: _____

We also would be delighted to include you in a **vehicle-choice survey**. **May we contact you again** in a few months?

□ Yes

🗆 No

Comments

If you have any comments, or any other information you would like to share with us, please write these in the space provided below. *Thank you again* for your kind attention to this important survey.