## **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

## **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 <b>ALONE</b>	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 more than 100 m									ı was
		Aiı	plane		Train or Bus (for example, Amtrak or Greyhound)			utomobil	e
transport?		round trips	trips round trips		round trips		ind trips		
How many MILE (TOTAL) did you travel using this of transport for LONG distance travel?	J	0-1000 m 1001-200 2001-300 3001-400 More tha Don't kno	00 00 00 n 4000 miles	0-300 301-60 601-90 901-12 More t Don't I	00 00 200 :han 1200 n	0-500 miles 501-1000 1001-1500 1501-2000 More than 2000 Don't know		) miles	
5. Please answer SEVEN (7) DAYS		llowing ques	tions about <b>rour</b>	nd trips yo	ou made of	5 MILES	S OR LES	<b>S</b> in the	LAST
	Driv	e <b>ALONE</b>	Drive WITH OTHERS (carpool)		Bus tal Metro)	Bi	icycle	W	/alk
How many ROUND TRIPS did you make using this form of transport?	trips	round	round trips	trips	_ round	trips	_ round	trips	_ round
6. Over the last <b>30</b> travel for a <b>busine</b>			times did you	did y	ver the last ou <b>WORK</b> lar work bu	AT HO	ME (versus		
☐ Zero (0) ☐ One (1) ☐ Two (2)  7. Over the last <b>30</b>	DAYS		times did you	□ Z( □ O □ T\	ero (0) ne (1) wo (2) am not emp		7 Three (3) Four (4) Five or m		l
engage in a <b>business teleconference</b> (versus traveling for a meeting)?		10. If your answer to question 9 was one or more (1+), why did you choose to <b>work at home</b> ? (Che all that apply)							
☐ One (1) ☐ Two (2)				□ Sa □ Sa	☐ Save <i>personal</i> money on transport costs. ☐ Save <i>company</i> money on transport costs.				
8. If your answer to question 7 was one or more (1+), why did you choose to <b>teleconference</b> ? (Check all that apply)			□ It	<ul> <li>□ I save valuable time by not traveling.</li> <li>□ It is more enjoyable.</li> <li>□ I am more productive when working from home.</li> </ul>					

☐ Save *personal* money on transport costs. ☐ Save *company* money on transport costs.

manner.

☐ It saves me time to communicate in this manner. ☐ It is more *enjoyable* to communicate in this

☐ Other:

☐ 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	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 <b>RANK</b> the <b>THREE (3)</b>
a) The bus pass was offered to you for only HALF the regular cost?	most important improvements according to their priority level (with 1 being the most important to you and 3 being third most important).
<ul> <li>Yes, I would use the bus as my primary means of transportation.</li> <li>Yes, I would use the bus more often, but still rely on my automobile as well.</li> <li>No, I would not ride the bus more often.</li> <li>b) The bus pass was offered to you FREE OF CHARGE?</li> </ul>	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:
<ul> <li>☐ Yes, I would use the bus as my primary means of transportation.</li> <li>☐ Yes, I would use the bus more often, but still rely on my automobile as well.</li> <li>☐ No, I would not ride the bus more often.</li> </ul>	<ul> <li>None of the above. I would not use the car less regardless of how Austin transit service is provided.</li> <li>I don't know.</li> </ul>
12. Imagine that <b>GAS PRICES RISE</b> to <b>\$6 TO \$7</b> per gallon and stay there.	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
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	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.
Make fewer trips Cut spending elsewhere	
b) How would you be most likely to respond in the <b>LONG</b> term (the next 1 to 3 years)? Again, please <b>RANK</b> the following options (1 being the <b>most</b> likely and 7 being the <b>least</b> 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	

## 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><b>2006</b></u>	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		Miles traveled per year
Make	Model	Year	Miles traveled per year
Make	Model	Year	Miles traveled per year
pickup truc Amenities CD/DVD p Safety  17. U.S. fuel eco makers to meet co economy of vehic met, the vehicle n and light trucks ar	pe/class (e.g. compact car ck, etc) (sunroof, power windows, player, etc.) nomy standards require vertain limits on the average les they sell. If the standar naker pays a fine. Current re held to the standard of 2	rehicle 18. Role fuel harmfurd is not what we emissi select	
passed that increa 2020, and current In your opinion, w standards should  Maintain currer  I agree with the Increase stand Increase stand	nt standards (25 mpg). The increase to 35 mpg by 20 ard to 40 mpg by 2020. The increase to 35 mpg by 2020. The increase to 50 mpg or more by 2020. The increase to 50 mpg or more by 2020.	pg by □ Car 45 mpg. □ Intro omy □ Onl □ Cre □ Pro thr 020. □ Offe □ I do □ Oth	bon emissions do not need to be reduced. oduce restrictions to the use of autos. y allow the sale of less polluting vehicles. ate travel options to lessen auto dependence. mote the purchase of fuel-efficient vehicles ough tax incentives. er cash incentives for less automobile use. n't know. er:

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 ☐ I strongly oppose this policy. per gallon) Fee (-) More than 40 mpg +\$6,000 ☐ I somewhat oppose this policy. 40 mpg +\$4.000 ☐ I am neutral regarding such policy. 35 mpg +\$2,000 30 mpg \$0 ☐ I somewhat support this policy. -\$2,000 25 mpg 20 mpg -\$4,000 ☐ I strongly support this policy. 15 mpa -\$6.000 -\$10,000 Less than 15 mpg 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**? 24. Which of the following best describes the exterior material of your residential unit? ☐ 2005 to present □ 1965 to 1974 □ 1995 to 2004 □ 1955 to 1964 ☐ Brick/Stone □ 1985 to 1994 ☐ Before 1955 □ Vinyl/Aluminum siding □ 1975 to 1984 ☐ Wood ☐ I don't know. ☐ Brick/Stone & Other material ☐ Other: \_\_\_\_\_ (please specify) 21. What is the **SIZE** of your residential unit in square feet (sf)? 25. Which of the following best describes your □ 2.000-2.499 sf residential unit? ☐ Less than 500 sf □ 2,500-2,999 sf □ 500-749 sf ☐ 750-999 sf ☐ 3,000-3,999 sf ☐ 1,000-1,249 sf ☐ 4,000-4,999 sf ☐ One-story house detached ☐ Two-story house detached ☐ Three-story house detached (includes more than □ 1,250-1,499 sf ☐ 5,000 or more sf □ 1,500-1,999 sf 3 stories) ☐ Townhouse, duplex, triplex, or fourplex 22. How many **ROOMS** does your residential unit ☐ Apartment/Condominium (1 to 3 stories) have? (Only include areas used as living space. Do ☐ Apartment/Condominium (4 or more stories) **NOT** include bathrooms and hallways.) ☐ Mobile home/trailer ☐ Dormitory/group quarters ☐ 1-2 rooms ☐ 7-8 rooms ☐ Other: \_\_\_\_\_ ☐ 3-4 rooms □ 9-10 rooms □ 5-6 rooms ☐ 11-12 rooms 26. Does your residential unit have a **SWIMMING** ☐ More than 12:\_\_\_\_\_ (please specify actual POOL? number) □ No ☐ Yes 23. Do you **OWN or RENT** your home? ☐ Own (includes paying off a mortgage) ☐ Rent/Lease

☐ My home is provided by my employer.

27. This past <b>SUMMER</b> (June, July, or August of 2008), how many <b>UNITS of electricity</b> did you use <b>PER MONTH</b> , and how much was the electricity	32. What type of <b>air conditioning</b> does your residential unit use? (Please check all that apply)
portion of your monthly bill?	<ul><li>□ Central air conditioning</li><li>□ No air conditioning</li></ul>
kWh, \$, or	☐ Window units (Please indicate the number of units at your home:)
☐ I did not live at my current residence last summer.	, <u>——</u> ,
28. Last <b>WINTER</b> (December of 2007, or January or February of 2008), how many <b>UNITS of electricity</b> did you use <b>PER MONTH</b> , and how much was the	33. Do you ever use any of the following <b>INSTEAD</b> of turning on the <b>air conditioner</b> ? (Check all that apply.)
electricity portion of your monthly bill?	□ Portable Fan
	☐ Ceiling Fan
kWh, \$, or	☐ Other:
kWh, \$, or  ☐ I don't pay my own electric bill.  ☐ I did not live at my current residence last winter.	☐ No, I use none of these instead of the air conditioner.
29. This past <b>SUMMER</b> (June, July, or August of 2008), how many <b>UNITS of natural gas/propane</b> did you use <b>PER MONTH</b> , and how much was your monthly bill?	34. Do you have <b>space heaters</b> , and <b>how often are they used</b> in place of central heating during the cooler months of the year?
(/ II	☐ Yes, and they are <i>used frequently</i> instead of
ccf/gallons, \$, or  ☐ My home does not use gas or propane.	central heat.  ☐ Yes, and they are <i>used sometimes</i> instead of
☐ I don't pay my own gas bill.	central heat.
☐ I did not live at my current residence last summer.	☐ Yes, and they are <i>used rarely</i> instead of central heat.
30. Last <b>WINTER</b> (December of 2007, or January or February of 2008), how many <b>UNITS of natural gas/propane</b> did you use <b>PER MONTH</b> , and how	<ul><li>☐ Yes, but they are <i>not used</i>.</li><li>☐ No.</li></ul>
much was your monthly bill?	35. Do you have a clothes washer that you
	regularly use in your home and what water
ccf/gallons, \$, or	temperature setting do you normally set it at?
☐ My home does not use gas or propane.	□ No. I don't have a weaher
<ul><li>☐ I don't pay my own gas bill.</li><li>☐ I did not live at my current residence last winter.</li></ul>	<ul><li>□ No, I don't have a washer.</li><li>□ Yes, usually set on hot wash.</li></ul>
and not live at my current residence last winter.	☐ Yes, usually set on warm wash.
31. Do you have <b>more than one (1)</b> full-size refrigerator/freezer unit <b>plugged in?</b> (Please	☐ Yes, usually set on cold wash.
consider all full-size units as well as any full-size stand-alone refrigerator and/or freezer units you may have in your home.)	36. If you have a <b>dishwasher</b> , how many times per week do you run it?
	□ 0 times per week □ 5 to 6
□ No, I have only one (1).	□ 1 to 2 times/week □ 7 to 8
☐ No, I have zero (0) full-size refrigerators.	□ 3 to 4 □ 9 to 10
☐ Yes, I have two or more (2+): (please specify number)	☐ More than 10 times per week: (please specify)
	☐ I do not have a dishwasher.

37. On weekdays, at what to	emperature is the <b>thermostat</b> in your home	set during the <b>SUMMER</b> 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 to	emperature is the <b>thermostat</b> 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
household's energy consump	(or have recently done), or plan to do with ption? (Check all that apply.)	hin the <b>next 12 months</b> to reduce your
Doing now / Have done  Will do soon  UUU UUU UUU UUU UUU UUU UUU UUU UUU	Hang-drying your clothes (not using a gastiving in/moving to a smaller home/unit Replacing household appliances with mo Purchasing solar panels for your home Upgrading your home's insulation Eating 25% less meat (If you are a vegeta Turning off electronics (television, comput Buying more locally produced products (for Being sure to turn off lights when not in ususing energy efficient light bulbs in place Turning up/down your thermostat by 2 during hot/cold months Other: Other:	rian, choose "Have done") rier, etc.) when not in use rood and/or other goods) se e of incandescent ones legrees (from its typical setting)
Section 4 – Energy P 40. In your opinion, what she	olicy ould the U.S. do about global climate chang	ge? (Please <b>check all that apply</b> .)
☐ Lifestyle changes are necederal Regulations should be imposed ☐ We will have to adapt to a	warmer climate. lything about global warming.	problem soon.

41. The U.S. could invest in a variety of policies and technologies to combat climate change. <b>Which</b> of the following <b>policies and technologies would you support</b> and which would you <b>oppose</b> ?						
Policy/Technology		Strongly Support	Somewhat Support	Neutral	Somewha Oppose	t Strongly Oppose
Carbon capture & seq greenhouse gas emis rather than allowed to atmosphere).	sions are stored, enter the	0				
Build 5+ nuclear powe						
Triple nation's production Impose a limit on green emissions & allow traemission credits.	nhouse gas					
Energy taxes (example greenhouse gases progeneration and motor	oduced by electricity					
Increase motor fuel ta						
Stricter vehicle <b>fuel ec</b> (example: 40 mpg).						
Offer rebates to consurvery fuel efficient ve plug-in hybrid vehicles	<b>hicles</b> (like hybrid & s).					
Require <b>Energy Star</b> s household appliances	S.					
Require strict energy e on virtually ALL new						
42. Do you or do you no	ot agree with the follow	ring statemer	nts related to	energy polic	y and climate	e change?
		ring statemer Strongly Agree		energy polic		e change?  No Opinion / Don't Know
Our current level of enthe climate rapidly.	ergy use is changing	Strongly			Strongly	No Opinion /
Our current level of enthe climate rapidly.  The U.S. government more action to reduce	ergy use is changing needs to take much e energy use.	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion / Don't Know
Our current level of enthe climate rapidly.  The U.S. government is more action to reduce I feel it is everyone's duse and protect the enthe ent	ergy use is changing needs to take much e energy use. uty to reduce energy environment.	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion / Don't Know
Our current level of enthe climate rapidly. The U.S. government is more action to reduce I feel it is everyone's duse and protect the each of the should be a limit energy use.	ergy use is changing needs to take much e energy use. uty to reduce energy environment. t on all households'	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion / Don't Know
Our current level of enthe climate rapidly.  The U.S. government is more action to reduce I feel it is everyone's duse and protect the enthere should be a limit	ergy use is changing needs to take much e energy use. uty to reduce energy environment. t on all households' ved to use more	Strongly Agree	Agree	Disagree  □ □	Strongly Disagree	No Opinion / Don't Know
Our current level of enthe climate rapidly. The U.S. government is more action to reduce. I feel it is everyone's duse and protect the enthe energy use. People should be allowed.	ergy use is changing needs to take much e energy use. uty to reduce energy environment. t on all households' wed to use more ling to pay for it. nat places a TARGET In d over the course of a y th the number of peopl pay a fine. Household taxes or upstream cap ment, sets a clear cap,	Strongly Agree	Agree	Disagree  Disagree  Disagree  Disagree	Strongly Disagree  Disagree  Duse gas emume that this colds using rum would recompolicy generables nothing.	No Opinion / Don't Know

taxes rise with the ame	ative policy to the one in que ount of electricity, gas, and ga n energy consumption. <b>How</b>	asoline	consumed. Howeve	er, <b>no limits</b> are	
Strongly	Somewhat	Neutr		ewhat	Strongly
Oppose □	Oppose □			pport □	Support
Section 5 - Demo	ographics				
	If, HOW MANY PEOPLE live Please do <i>not</i> include anyone		50. Are you <b>male</b> or	female?	
	ewhere else or is just visiting,		☐ Male	☐ Female	
☐ One (1) ☐ Three (3)	☐ Two (2) ☐ Four (4)		51. Which of the foll <b>ETHNICITY</b> ?	owing best desc	ribes your
☐ Five or more (5+):_	(please specify)		☐ Hispanic ☐ African American	☐ Caucasia	
years usually live in you	s UNDER the age of 16 our home?		☐ Other:52. Do you have a v		. ,,
☐ Zero (0) ☐ Two (2) ☐ Four or more (4+):_			☐ Yes		ICENSE!
47. Including yourself,	how many <b>WORKERS</b> me? (Please include part-time	)	53. Are you currently  ☐ No, I am not a stu ☐ Yes, I am enrolled	udent. d full-time (12 or	
☐ Zero (0) ☐ Two (2) ☐ Four or more (4+):_	□ One (1) □ Three (3) (please specify)		hours this semestrated Yes, I am enrolled hours).	d part-time (less	
48. What is your curre	nt <b>AGE</b> ?		54. Which of the foll <b>EMPLOYMENT STA</b>		ribes your
☐ Less than 25 years ☐ 25 to 34 years ☐ 35 to 44	☐ 45 to 54 ☐ 55 to 64 ☐ 65 or older		☐ I work full-time (3 ☐ I work part-time (I ☐ I am a homemake ☐ I am self-employe	ess than 35 hou er.	
household's TOTAL II	ving best describes your NCOME from all sources, nembers of your household		☐ I am unemployed ☐ I am unemployed employment. ☐ I am retired.	, but looking for	
☐ Less than \$10,000 ☐ \$10,000-19,999 ☐ \$30,000-30,000	□ \$60,000-74,999 □ \$75,000-99,999 □ \$100,000,134,000		55. What is the high have <b>completed</b> ?	est level of <b>EDU</b>	CATION you
□ \$20,000-29,999 □ \$30,000-39,000 □ \$40,000-49,999 □ \$50,000-59,999	□ \$100,000-124,999 □ \$125,000-149,999 □ \$150,000-199,999 □ \$200,000 or more		☐ Did not complete ☐ High school (or ed) ☐ Associate's or ted ☐ Bachelor's degree ☐ Master's degree	quivalent) chnical degree (o e	or equivalent)

the last two digit instead of 1234	ur HOME ADDRESS here in Austin? (For privacy reasons, you are welcome to use XX to represent s of the street number. Also, please include your zip code. Example: 12XX E. Dean Keeton St., 78722, E. Dean Keeton St., 78722.) Location data is very important for the planning process. Please note that ill be kept highly confidential.
student, please the street numbe Dean Keeton St reference. (For	e address of your primary WORKPLACE or SCHOOL? If you do not work and you are not a skip this question. (For privacy reasons, you are welcome to use XX to represent the last two digits of er. Also, please include your zip code. Example: 12XX E. Dean Keeton St., 78722, instead of 1234 E., 78722.) If you do not know the exact address of your workplace or school, you may use a key point of example, writing "UT Campus" is fine for those employed and/or studying on the campus.) Location data for the planning process. Please note that all information will be kept highly confidential.
	U FOR COMPLETING OUR SURVEY!  It you with follow-up questions at a later date? (This is especially helpful if we need to clarify an ed here.)
□ Yes	□ No
If so, please pr	ovide an <b>email address</b> , a phone number, or both:
We would be o	elighted to send you an electronic copy of the report via email. Please let us know where to
Email address	
We also would months?	be delighted to include you in a vehicle-choice survey. May we contact you again in a few
□ Yes	□ No
	comments, or any other information you would like to share with us, please write these in the below. <i>Thank you again</i> for your kind attention to this important survey.