

# Residential Energy Consumption Survey:

## **Consumption Patterns of Household Vehicles, June to August 1979**

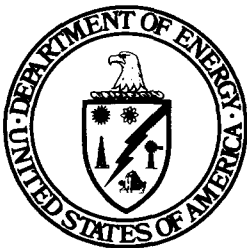
June 1980

### **U.S. Department of Energy**

Energy Information Administration

Assistant Administrator for Program Development

Office of the Consumption Data System



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Energy Information Administration  
Assistant Administrator for Program Development  
Office of the Consumption Data System  
Washington, D.C. 20585



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## PREFACE

This is the first in a series of quarterly reports presenting data from the Household Transportation Panel. This report contains data for June, July, and August 1979 on the use of household vehicles. The tables include both average and aggregate transportation statistics cross-classified by vehicle characteristics (size, age, fuel typically used), and household characteristics (urban/rural, income, one- versus multi-vehicle, number of drivers, household size). Data on the fuel purchasing situation motorists encountered in these months are also provided. Included in the report are: a summary of findings; a description of how the survey was conducted; a copy of the fuel purchase log, the background questionnaire, and the gas lines questionnaire; an explanation of the relative standard errors for total sample estimates; and a glossary.

This report was prepared by the Office of the Consumption Data System, Office of Program Development, Energy Information Administration. The following staff members contributed to this project: Kenneth Vagts--Director, Office of the Consumption Data System; Lynda Carlson--Acting Director of the Residential and Commercial Data Systems Division; Wendel Thompson--manager of the residential energy consumption surveys; Bruce Egan--transportation panel manager; Les Whitaker and Mike Maloney--computer programmers; Jay Beder and Kathy Perez-Lopez--statisticians; Julie Withers--editor; Diane Whited and Dotty Tate--secretarial support. The survey fieldwork was conducted by Response Analysis Corporation under the direction of Reuben Cohen and Dawn Day, with programming consultation by Richard Cann. Statistical design support was provided by Joseph Steinberg of Survey Design, Inc.

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## CONSUMPTION PATTERNS OF HOUSEHOLD VEHICLES

This is the first report of an ongoing statistical series that will provide quarterly data on the residential sector concerning fuel consumption, miles per gallon, and miles driven. This report provides survey data for the June, July, and August 1979 Household Transportation Panels (see "How the Survey was Conducted") for the 48 contiguous States and the District of Columbia.

The statistical precision of the data is described in the section on Relative Standard Errors (see page 19). In general, statistical estimates from month to month do not vary significantly. Therefore, unless specifically noted, all data in this summary are for June only.

### Fuel Consumption

An estimated 6.4 billion gallons of gasoline and diesel vehicle fuel (5.1 million barrels per day) were purchased by households nationwide in June. For the average vehicle, approximately 53 gallons of fuel were purchased in that month.

### Miles Per Gallon

Household vehicles showed an estimated average efficiency of approximately 15 miles per gallon in June.

### Miles Driven

The nation's households drove an estimated 91.5 billion miles in June, or 759 miles per household vehicle. This represents 71 percent of the estimated 128.9 billion miles traveled by all vehicles in the United States as reported by the Federal Highway Administration (FHWA) in Table 3 of the December 1979 Traffic Volume Trends report.<sup>1</sup>

### Fuel Expenditures

Overall expenditures for household vehicles were \$5.6 billion in June, and the national average expenditure was approximately \$46 per vehicle.

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<sup>1</sup>Although a comparison between the FHWA data base on total miles traveled and the DOE data base on household vehicle miles traveled is inevitable, caution must be exercised when doing so since the two data bases are not strictly comparable.

## Price

Nationwide, the price of fuel averaged 87.5 cents in June, 92.4 cents in July, and 96.1 cents in August (their relative standard errors are, respectively, .5 cents, .4 cents, and .4 cents). Thus, the increase of 8.6 cents from June to August is significantly different from zero. (As shown in the Relative Standard Errors section, the increase has a standard error of no more than .8 cents).

Data from the Bureau of Labor Statistics shows comparable prices of 88.0 cents, 93.0 cents, and 96.7 cents for June, July, and August, respectively.

Data from the September 1980 issue of the Energy Information Administration publication, Monthly Energy Review, (DOE/EIA-0035), also shows similar prices of 87.9 cents for June, 92.6 cents for July, and 96.7 cents for August.

## Inventory

The average tank was kept approximately 63 percent full during June. A monthly average of 1.5 billion gallons of fuel was stored in vehicle tanks during June. (This figure will be used as a basis for comparison with future months of data to determine fluctuations in the inventory of fuel stored in vehicle tanks.)

## Averages Per Households

Average consumption per vehicle statistics can be converted into averages per household by using the number of vehicles per household as a multiplication factor. For example, 52.9 gallons were purchased on the average for a household vehicle in June 1979. This figure can be converted to 95.2 gallons purchased for the average household, by multiplying the average number of vehicles per household (1.8) by the average number of gallons purchased per vehicle (52.9)<sup>2</sup>.

## Gasoline Lines

In June 1979, 40 percent of the households surveyed had waited in gasoline lines; the average longest wait was 49 minutes. In July, this declined to 25 percent of the households sampled, and the average longest waiting time had decreased to 27 minutes. In August, only 10 percent of the panel households waited in line, and the average longest wait was down to 20 minutes.

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<sup>2</sup>Approximately 88 percent of the households in the United States have the use of one or more vehicles.

TABLE 1. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES

	MONTH											
	JUN '79	JUL '79	AUG '79	SEP '79	OCT '79	NOV '79	DEC '79	JAN '80	FEB '80	MAR '80	APR '80	MAY '80
<b>AVERAGES PER VEHICLE</b>												
GALLONS PURCHASED.....	52.9	52.4	52.3	52.1 <i>ms</i>	-	-	-	-	-	-	-	-
GALLONS CONSUMED.....	51.1	53.3	51.9	-	-	-	-	-	-	-	-	-
MILES DRIVEN.....	758.8	798.8	760.4	-	-	-	-	-	-	-	-	-
EXPENDITURES (DOLLARS).....	46.3	48.4	50.2	-	-	-	-	-	-	-	-	-
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	63.1	62.8	61.4	-	-	-	-	-	-	-	-	-
FUEL TANK CAPACITY (GALLONS).....	19.4	19.5	19.9	-	-	-	-	-	-	-	-	-
<b>AVERAGES PER GALLON</b>												
PRICE (CENTS PER GALLON)												
ALL FUELS.....	87.5	92.4	96.1	-	-	-	-	-	-	-	-	-
LEADED FUEL.....	85.2	90.3	94.1	-	-	-	-	-	-	-	-	-
PREMIUM.....	90.9	96.1	101.1	-	-	-	-	-	-	-	-	-
REGULAR.....	84.5	89.7	93.2	-	-	-	-	-	-	-	-	-
UNLEADED FUEL.....	89.7	94.7	98.4	-	-	-	-	-	-	-	-	-
MILES PER GALLON.....	14.8	15.0	14.6	-	-	-	-	-	-	-	-	-
NUMBER OF VEHICLES PER HOUSEHOLD.....	1.8	1.8	1.8	-	-	-	-	-	-	-	-	-
BILLIONS OF GALLONS IN TANKS.....	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 2. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR JUNE 1979 BY VEHICLE CHARACTERISTICS

	TOTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN

AVERAGES PER VEHICLE

GALLONS PURCHASED.....	52.9	59.4	42.9	63.4	44.2	47.5	59.4	56.9
GALLONS CONSUMED.....	51.1	57.0	41.8	61.8	42.2	45.7	57.2	55.7
MILES DRIVEN.....	758.8	758.6	780.3	971.0	581.8	636.2	907.9	841.5
EXPENDITURES (DOLLARS).....	46.3	51.9	38.0	56.2	38.1	40.7	53.0	50.1
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	63.1	64.2	61.8	64.9	61.2	62.2	66.4	59.2
FUEL TANK CAPACITY (GALLONS).....	19.4	22.2	15.4	19.5	19.3	19.3	19.5	19.7

AVERAGES PER GALLON

PRICE (CENTS PER GALLON)								
ALL FUELS.....	87.5	87.4	88.5	88.6	86.1			
LEADED FUEL.....	85.2	84.9	86.6	84.2	85.4			
PREMIUM.....	90.9	90.5	92.0	92.9	90.8			
REGULAR.....	84.5	84.2	85.6	83.7	84.7			
UNLEADED FUEL.....	89.7	89.4	90.4	89.6	91.5			
MILES PER GALLON.....	14.8	13.3	18.7	15.7	13.8	13.9	15.9	15.1
BILLIONS OF GALLONS IN TANKS.....	1.5	.9	.4	.7	.8	.7	.5	.2

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 3. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR JULY 1979 BY VEHICLE CHARACTERISTICS

	TOTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN
AVERAGES PER VEHICLE								
GALLONS PURCHASED.....	52.4	59.7	42.4	63.8	42.8	45.7	60.7	56.1
GALLONS CONSUMED.....	53.3	60.9	42.8	64.8	43.5	46.2	62.0	57.1
MILES DRIVEN.....	798.8	806.0	837.1	1029.2	599.1	650.7	969.2	900.7
EXPENDITURES (DOLLARS).....	48.4	55.0	39.6	59.7	38.8	41.5	57.5	51.5
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	62.8	63.1	62.8	64.6	61.2	62.2	64.4	61.4
FUEL TANK CAPACITY (GALLONS).....	19.5	22.3	15.3	19.5	19.6	19.5	19.9	18.8
AVERAGES PER GALLON								
PRICE (CENTS PER GALLON)								
ALL FUELS.....	92.4	92.2	93.5	93.7	90.7			
LEADED FUEL.....	90.3	90.0	91.3	90.1	90.4			
PREMIUM.....	96.1	95.8	96.8	94.1	96.6			
REGULAR.....	89.7	89.2	90.7	89.8	89.6			
UNLEADED FUEL.....	94.7	94.3	95.5	94.8	93.5			
MILES PER GALLON.....	15.0	13.2	19.6	15.9	13.8	14.1	15.6	15.8
BILLIONS OF GALLONS IN TANKS.....	1.5	.9	.4	.7	.8	.7	.5	.3

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 4. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR AUGUST 1979 BY VEHICLE CHARACTERISTICS

	TOTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED			
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN	
AVERAGES PER VEHICLE									
GALLONS PURCHASED.....	52.2	58.8	40.8	63.8	42.5	45.1	61.3	57.8	
GALLONS CONSUMED.....	51.9	58.2	40.5	63.6	42.1	44.8	60.5	58.2	
MILES DRIVEN.....	760.4	739.6	808.6	978.3	573.9	631.9	893.7	906.5	
EXPENDITURES (DOLLARS).....	50.2	56.6	39.3	62.2	40.1	42.7	60.2	55.3	
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	61.4	61.2	63.1	61.9	60.9	61.7	62.4	58.5	
FUEL TANK CAPACITY (GALLONS).....	19.9	22.7	15.0	20.1	19.9	20.2	20.4	18.4	
AVERAGES PER GALLON									
PRICE (CENTS PER GALLON)									
ALL FUELS.....	96.1	96.2	96.3	97.5	94.3				
LEADED FUEL.....	94.1	94.2	94.5	94.2	94.1				
PREMIUM.....	101.1	100.2	102.0	102.6	100.8				
REGULAR.....	93.2	93.4	93.4	93.6	93.0				
UNLEADED FUEL.....	98.4	98.4	98.0	98.7	94.5				
MILES PER GALLON.....	14.6	12.7	20.0	15.4	13.6	14.1	14.8	15.6	
BILLIONS OF GALLONS IN TANKS.....	1.5	.9	.4	.7	.8	.8	.5	.2	

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 5. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR JUNE 1979 BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

## AVERAGES PER VEHICLE

GALLONS PURCHASED.....	52.9	52.4	54.2	45.1	57.1	55.0	52.3	52.5	55.1	47.8	56.6
GALLONS CONSUMED.....	51.1	50.5	52.3	43.6	55.1	52.4	50.7	50.7	53.3	45.8	54.9
MILES DRIVEN.....	758.8	737.5	803.4	618.1	832.4	825.4	736.3	744.3	818.6	706.3	796.3
EXPENDITURES (DOLLARS).....	46.3	46.2	46.4	39.3	50.0	48.6	45.5	46.0	47.8	41.9	49.4
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	63.1	63.6	61.8	62.3	63.4	65.6	62.2	63.2	62.6	65.4	61.5
FUEL TANK CAPACITY (GALLONS).....	19.4	19.2	19.8	19.9	19.1	19.3	19.4	19.4	19.3	19.0	19.7

## AVERAGES PER GALLON

PRICE (CENTS PER GALLON)											
ALL FUELS.....	87.5	88.3	85.7	87.1	87.6	88.4	87.1	87.7	86.7	87.7	87.3
LEADED FUEL.....	85.2	86.0	83.6	85.2	85.1	85.9	84.9	85.3	84.6	85.1	85.2
PREMIUM.....	90.9	91.5	88.4	90.9	91.0	89.7	91.3	91.2	89.8	92.6	90.3
REGULAR.....	84.5	85.1	83.4	84.5	84.4	85.5	84.1	84.6	84.1	84.4	84.5
UNLEADED FUEL.....	89.7	90.4	88.2	88.7	90.0	90.3	89.5	90.0	88.9	90.0	89.6
MILES PER GALLON.....	14.8	14.6	15.3	14.2	15.1	15.7	14.5	14.7	15.4	15.4	14.5
BILLIONS OF GALLONS IN TANKS.....	1.5	1.0	.5	.5	.9	.4	1.1	1.1	.3	.6	.8

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 6. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR JULY 1979 BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS		
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS	
AVERAGES PER VEHICLE												
GALLONS PURCHASED.....	52.4	50.7	56.4	44.8	56.5	51.2	52.9	51.7	55.7	46.3	57.1	
GALLONS CONSUMED.....	53.3	51.3	57.9	45.1	57.6	52.0	53.7	52.4	56.9	46.7	58.3	
MILES DRIVEN.....	798.8	759.9	887.0	655.9	873.7	794.6	800.1	787.6	847.0	716.4	861.9	
EXPENDITURES (DOLLARS).....	48.4	47.2	51.4	41.1	52.3	47.8	48.7	47.9	50.7	43.1	52.5	
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	62.8	63.6	61.0	63.5	62.5	65.8	61.8	62.8	62.9	65.8	60.5	
FUEL TANK CAPACITY (GALLONS).....	19.5	19.3	20.0	19.7	19.4	19.7	19.4	19.4	19.7	19.5	19.5	
AVERAGES PER GALLON												
PRICE (CENTS PER GALLON)												
ALL FUELS.....	92.4	93.0	91.1	91.7	92.7	93.3	92.1	92.7	91.2	93.0	92.0	
LEADED FUEL.....	90.3	91.1	89.0	90.2	90.4	91.0	90.1	90.7	89.1	90.7	90.1	
PREMIUM.....	96.1	97.3	93.3	97.1	95.7	96.1	96.2	96.7	93.9	96.5	95.9	
REGULAR.....	89.7	90.3	88.6	89.3	89.8	90.3	89.5	90.0	88.7	89.9	89.5	
UNLEADED FUEL.....	94.7	94.9	94.0	93.8	95.0	95.1	94.5	94.9	93.7	95.1	94.4	
MILES PER GALLON.....	15.0	14.8	15.3	14.5	15.2	15.3	14.9	15.0	14.9	15.3	14.8	
BILLIONS OF GALLONS IN TANKS.....	1.5	1.0	.4	.5	1.0	.4	1.1	1.2	.3	.7	.8	

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.



**TABLE 7. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - AVERAGES FOR AUGUST 1979 BY HOUSEHOLD CHARACTERISTICS**

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

**AVERAGES PER VEHICLE**

GALLONS PURCHASED.....	52.3	50.8	55.8	48.9	54.1	46.4	54.2	49.1	63.6	45.8	57.4
GALLONS CONSUMED.....	51.9	50.7	54.9	47.7	54.2	45.3	54.1	48.7	63.6	45.1	57.3
MILES DRIVEN.....	760.4	739.6	812.0	715.3	784.9	662.3	790.1	722.9	896.4	654.2	844.1
EXPENDITURES (DOLLARS).....	50.2	49.0	53.2	46.5	52.2	44.6	52.1	47.4	60.6	44.1	55.0
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	61.4	62.5	58.8	61.8	61.2	65.3	60.3	62.1	58.6	65.4	58.3
FUEL TANK CAPACITY (GALLONS).....	19.9	19.9	20.2	19.6	20.1	19.7	20.1	19.9	20.0	20.0	19.9

**AVERAGES PER GALLON**

6

**PRICE (CENTS PER GALLON)**

ALL FUELS.....	96.1	96.4	95.3	95.1	96.6	96.2	96.1	96.4	95.2	96.3	95.9
LEADED FUEL.....	94.1	94.3	93.8	93.7	94.3	93.7	94.2	94.6	92.9	94.5	93.9
PREMIUM.....	101.1	100.3	102.9	100.5	101.2	98.7	101.6	101.1	101.1	102.6	100.2
REGULAR.....	93.2	93.4	92.8	93.2	93.2	93.2	93.7	93.6	92.1	93.4	93.0
UNLEADED FUEL.....	98.4	98.7	97.4	97.8	98.6	98.3	98.4	98.4	98.3	98.7	98.1
MILES PER GALLON.....	14.6	14.6	14.8	15.0	14.5	14.6	14.6	14.8	14.1	14.5	14.7
BILLIONS OF GALLONS IN TANKS.....	1.5	1.1	.4	.5	1.0	.4	1.1	1.2	.3	.7	.8

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 10. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - TOTALS FOR JULY 1979 BY VEHICLE CHARACTERISTICS

	TOTAL	VEHICLE SIZE			MODEL YEAR			FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	UNKNOWN	1975 TO 1979	1974 AND EARLIER	UNKNOWN	LEADED	UNLEADED	OTHER AND UNKNOWN
U.S. TOTALS BY MONTH										
MILES DRIVEN (BILLIONS).....	96.5	49.9	35.4	11.2	57.5	38.5	0.6	39.0	37.5	20.0
EXPENDITURES (BILLIONS OF DOLLARS)										
ALL FUELS.....	5.9	3.4	1.7	.8	3.3	2.5	.0	2.5	2.2	1.1
LEADED FUELS.....	2.7	1.4	.7	.6	.6	2.1	.0	2.1	.2	.5
UNLEADED FUELS.....	2.8	1.8	.9	.2	2.6	.2	.0	.2	2.0	.6
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.0	.1	.2	-	.2	.0	.1
GALLONS PURCHASED (BILLIONS)										
ALL FUELS.....	6.3	3.7	1.8	.9	3.6	2.8	.0			
LEADED FUELS.....	3.0	1.6	.8	.6	.7	2.3	.0			
UNLEADED FUELS.....	3.0	1.9	.9	.2	2.7	.2	.0			
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.0	.1	.2	-			
NUMBER OF VEHICLES (MILLIONS).....	120.8	62.0	42.2	16.6	55.8	63.7	1.3	59.9	38.7	22.2

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 11. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - TOTALS FOR AUGUST 1979 BY VEHICLE CHARACTERISTICS

	TOTAL	VEHICLE SIZE			MODEL YEAR			FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	UNKNOWN	1975 TO 1979	1974 AND EARLIER	UNKNOWN	LEADED	UNLEADED	OTHER AND UNKNOWN
U.S. TOTALS BY MONTH										
MILES DRIVEN (BILLIONS).....	92.0	46.0	33.7	12.4	54.8	36.8	0.4	39.6	32.2	20.2
EXPENDITURES (BILLIONS OF DOLLARS)										
ALL FUELS.....	6.1	3.5	1.6	.9	3.5	2.6	.0	2.7	2.2	1.2
LEADED FUELS.....	2.9	1.6	.8	.5	.8	2.1	.0	2.1	.2	.6
UNLEADED FUELS.....	2.7	1.6	.8	.2	2.5	.2	.0	.2	1.9	.5
FUEL, UNKNOWN & DIESEL.....	.6	.3	.0	.2	.3	.3	-	.4	.1	.1
GALLONS PURCHASED (BILLIONS)										
ALL FUELS.....	6.3	3.7	1.7	1.0	3.6	2.7	.0			
LEADED FUELS.....	3.0	1.7	.8	.5	.8	2.2	.0			
UNLEADED FUELS.....	2.7	1.6	.8	.2	2.5	.2	.0			
FUEL, UNKNOWN & DIESEL.....	.6	.3	.0	.2	.3	.3	-			
NUMBER OF VEHICLES (MILLIONS).....	121.0	62.2	41.6	17.2	56.1	64.0	.9	62.7	36.0	22.3

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 12. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - TOTALS FOR JUNE 1979 BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS
U.S. TOTALS BY MONTH											
MILES DRIVEN (BILLIONS).....	91.5	60.1	31.4	25.6	65.9	25.2	66.3	68.5	22.9	35.5	56.1
EXPENDITURES (BILLIONS OF DOLLARS)											
ALL FUELS.....	5.6	3.8	1.8	1.6	4.0	1.5	4.1	4.2	1.3	2.1	3.5
LEADED FUELS.....	2.7	1.8	.9	.9	1.8	.6	2.1	2.0	.6	.9	1.7
UNLEADED FUELS.....	2.6	1.8	.8	.6	2.1	.8	1.8	2.0	.6	1.1	1.6
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.1	.1	.1	.2	.2	.1	.1	.2
GALLONS PURCHASED (BILLIONS)											
ALL FUELS.....	6.4	4.3	2.1	1.9	4.5	1.7	4.7	4.8	1.5	2.4	4.0
LEADED FUELS.....	3.1	2.0	1.1	1.1	2.1	.7	2.4	2.4	.8	1.1	2.0
UNLEADED FUELS.....	2.9	2.0	.9	.7	2.3	.9	2.0	2.2	.7	1.2	1.7
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.2	.1	.1	.2	.2	.1	.1	.2
NUMBER OF VEHICLES (MILLIONS).....	120.6	81.6	39.1	41.4	79.2	30.5	90.1	92.0	28.0	50.2	70.4

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 13. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - TOTALS FOR JULY 1979 BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

## U.S. TOTALS BY MONTH

MILES DRIVEN (BILLIONS).....	96.5	63.8	32.8	27.3	69.2	24.0	72.6	74.7	21.7	37.6	59.0
EXPENDITURES (BILLIONS OF DOLLARS)											
ALL FUELS.....	5.9	4.0	1.9	1.7	4.1	1.4	4.4	4.5	1.3	2.3	3.6
LEADED FUELS.....	2.7	1.8	1.0	.8	1.9	.6	2.2	2.1	.7	1.0	1.8
UNLEADED FUELS.....	2.8	2.0	.8	.7	2.1	.8	2.0	2.2	.6	1.2	1.6
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.1	.2	.1	.2	.2	.0	.1	.2
GALLONS PURCHASED (BILLIONS)											
ALL FUELS.....	6.3	4.3	2.1	1.9	4.5	1.5	4.8	4.9	1.4	2.4	3.9
LEADED FUELS.....	3.0	1.9	1.1	.9	2.1	.6	2.4	2.3	.7	1.1	2.0
UNLEADED FUELS.....	3.0	2.1	.9	.8	2.2	.8	2.1	2.3	.6	1.2	1.7
FUEL, UNKNOWN & DIESEL.....	.3	.2	.1	.1	.2	.1	.2	.3	.1	.1	.2
NUMBER OF VEHICLES (MILLIONS).....	120.8	83.9	36.9	41.6	79.3	30.2	90.7	94.9	25.6	52.4	68.4

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 14. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - TOTALS FOR AUGUST 1979 BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS		
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS	
U.S. TOTALS BY MONTH												
MILES DRIVEN (BILLIONS).....	92.0	63.8	28.3	30.4	61.6	20.6	70.7	68.6	23.4	34.9	57.1	
EXPENDITURES (BILLIONS OF DOLLARS)												
ALL FUELS.....	6.1	4.2	1.9	2.0	4.1	1.4	4.7	4.5	1.6	2.4	3.7	
LEADED FUELS.....	2.9	1.8	1.0	1.0	1.9	.6	2.3	2.0	.8	1.1	1.8	
UNLEADED FUELS.....	2.7	2.0	.6	.7	1.9	.7	2.0	2.0	.7	1.0	1.6	
FUEL, UNKNOWN & DIESEL.....	.6	.3	.2	.2	.3	.1	.4	.5	.1	.2	.3	
GALLONS PURCHASED (BILLIONS)												
ALL FUELS.....	6.3	4.4	1.9	2.1	4.2	1.4	4.9	4.7	1.7	2.4	3.9	
LEADED FUELS.....	3.0	2.0	1.1	1.1	2.0	.6	2.4	2.2	.9	1.1	1.9	
UNLEADED FUELS.....	2.7	2.1	.6	.8	1.9	.7	2.0	2.0	.7	1.0	1.7	
FUEL, UNKNOWN & DIESEL.....	.6	.4	.2	.3	.3	.1	.4	.5	.1	.3	.3	
NUMBER OF VEHICLES (MILLIONS).....	121.0	86.2	34.8	42.5	78.5	31.1	89.5	94.9	26.2	53.3	67.7	

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 15. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - GASOLINE LINES

	PURCHASE MONTH											
	JUN '79	JUL '79	AUG '79	SEP '79	OCT '79	NOV '79	DEC '79	JAN '80	FEB '80	MAR '80	APR '80	MAY '80
TOTAL HOUSEHOLDS .....	100%	100%	100%	-	-	-	-	-	-	-	-	-
WAITED IN A GAS LINE												
YES.....	40%	25%	10%	-	-	-	-	-	-	-	-	-
AVERAGE LONGEST WAIT (MINUTES).....	49	27	20	-	-	-	-	-	-	-	-	-
NO.....	59%	75%	90%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	-%	-%	-%	-	-	-	-	-	-	-	-	-
FORCED TO BUY ALTERNATE FUEL												
YES.....	19%	12%	9%	-	-	-	-	-	-	-	-	-
NO.....	80%	88%	90%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	1%	1%	1%	-	-	-	-	-	-	-	-	-
FORCED TO BUY ALTERNATE AMOUNT												
YES.....	23%	16%	9%	-	-	-	-	-	-	-	-	-
NO.....	77%	84%	90%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	-%	1%	1%	-	-	-	-	-	-	-	-	-
SIZE OF ALTERNATE AMOUNTS VERSUS DESIRED AMOUNTS 1/												
SMALLER .....	23%	13%	7%	-	-	-	-	-	-	-	-	-
LARGER .....	-%	2%	2%	-	-	-	-	-	-	-	-	-
SMALLER AND LARGER....	-%	-%	-%	-	-	-	-	-	-	-	-	-
NOT APPLICABLE.....	77%	85%	91%	-	-	-	-	-	-	-	-	-
ODD/EVEN SYSTEM IN EFFECT												
YES.....	34%	31%	29%	-	-	-	-	-	-	-	-	-
NO.....	64%	67%	70%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	2%	1%	1%	-	-	-	-	-	-	-	-	-

SEE FOOTNOTES AT END OF TABLE.

TABLE 15. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA - GASOLINE LINES - CONTINUED

	PURCHASE MONTH											
	JUN *79	JUL *79	AUG *79	SEP *79	OCT *79	NOV *79	DEC *79	JAN *80	FEB *80	MAR *80	APR *80	MAY *80
<b>UNABLE TO BUY FUEL</b>												
YES.....	34%	26%	15%	-	-	-	-	-	-	-	-	-
REASON: 2/												
STATION CLOSED												
ON WEEKENDS.....	14%	9%	6%	-	-	-	-	-	-	-	-	-
STATION CLOSED												
OR OUT OF GAS 3/.	21%	17%	10%	-	-	-	-	-	-	-	-	-
LINES TOO LONG.....	8%	3%	-%	-	-	-	-	-	-	-	-	-
OTHER REASON.....	3%	2%	-%	-	-	-	-	-	-	-	-	-
NO.....	60%	54%	73%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	7%	20%	12%	-	-	-	-	-	-	-	-	-
<b>ANALYSIS OF FUEL</b>												
<b>SITUATION</b>												
NO PROBLEM.....	36%	55%	75%	-	-	-	-	-	-	-	-	-
SMALL PROBLEM.....	46%	40%	23%	-	-	-	-	-	-	-	-	-
BIG PROBLEM.....	12%	4%	-%	-	-	-	-	-	-	-	-	-
SERIOUS PROBLEM.....	5%	1%	1%	-	-	-	-	-	-	-	-	-
NOT REPORTED.....	2%	-%	1%	-	-	-	-	-	-	-	-	-

- DATA NOT AVAILABLE.

1/ MAY REFER TO MORE THAN ONE PURCHASE.

2/ MORE THAN ONE REASON MAY BE SELECTED BY A HOUSEHOLD.

3/ EXCLUDES STATIONS CLOSED ON WEEKENDS.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL SURVEY,

OFFICE OF THE CONSUMPTION DATA SYSTEM,

OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.



## RELATIVE STANDARD ERRORS

The estimates in this report are subject to two types of variability. The first is sampling error, which occurs because not all elements of the universe are interviewed. The second type consists of random nonsampling errors and systematic bias that are not measured by the standard error. Sources of nonsampling error and bias include respondent error, interviewer error, data processing error, and inaccurate coverage of the target population by the survey design. The survey was designed and conducted in order to minimize the effect of these sources of error.

One common measure of sampling error is the standard error, which represents the average difference between an estimate from a particular sample and the average estimate (or expected value) over all samples of the same size based on the same survey design. Generally, one may say that 95 percent of all estimates will be within two standard errors of the expected value. The estimate plus or minus two standard errors is called a 95 percent confidence interval for the expected value. (As calculated for this report, the standard error also partially measures the effect of certain nonsampling error but does not measure any systematic biases in the data.)

Another measure of sampling error, the one used in Tables 16 through 29, is the relative standard error of an estimate--the standard error expressed as a percentage of the estimate. For example:

$$\text{relative standard error} = (\text{standard error} / \text{estimate}) \times 100 \text{ percent}$$

If the relative standard error of an estimate is 5 percent, for example, we may say with 95 percent confidence that the "true" population value is within 10 percent (within 2 standard errors) of the estimate. Clearly, given an estimate and its relative standard error, the formula above allows one to calculate the standard error itself. This is necessary for certain applications, such as the following important one, where we need the standard error of estimates.

Suppose one needs to determine the standard error for the difference of two estimates (for example, estimated prices per gallon in two different months), given the standard errors of both. It is not hard to show that the standard error being sought cannot be greater than the sum nor less than the absolute difference of the two standard errors. (This is the so-called triangle inequality in analysis.) If the estimates are uncorrelated, the standard error being sought is the sum of the two standard errors.

TABLE 16. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA -  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE, JULY, AND AUGUST AVERAGES

	MONTH											
	JUN '79	JUL '79	AUG '79	SEP '79	OCT '79	NOV '79	DEC '79	JAN '80	FEB '80	MAR '80	APR '80	MAY '80
<b>AVERAGES PER VEHICLE</b>												
GALLONS PURCHASED.....	3.7	2.6	3.3	-	-	-	-	-	-	-	-	-
GALLONS CONSUMED.....	3.9	2.6	3.1	-	-	-	-	-	-	-	-	-
MILES DRIVEN.....	3.9	3.6	3.6	-	-	-	-	-	-	-	-	-
EXPENDITURES (DOLLARS).....	3.8	2.8	3.3	-	-	-	-	-	-	-	-	-
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	2.3	1.0	.9	-	-	-	-	-	-	-	-	-
FUEL TANK CAPACITY (GALLONS).....	2.0	1.4	1.7	-	-	-	-	-	-	-	-	-
<b>AVERAGES PER GALLON</b>												
PRICE (CENTS PER GALLON)												
ALL FUELS.....	.5	.4	.4	-	-	-	-	-	-	-	-	-
LEADED FUEL.....	.5	.5	.6	-	-	-	-	-	-	-	-	-
PREMIUM.....	1.2	.7	1.0	-	-	-	-	-	-	-	-	-
REGULAR.....	.5	.5	.4	-	-	-	-	-	-	-	-	-
UNLEADED FUEL.....	.5	.4	.4	-	-	-	-	-	-	-	-	-
MILES PER GALLON.....	2.5	2.1	2.5	-	-	-	-	-	-	-	-	-
NUMBER OF VEHICLES PER HOUSEHOLD.....	3.0	2.4	2.0	-	-	-	-	-	-	-	-	-
BILLIONS OF GALLONS IN TANKS.....	6.2	5.4	6.2	-	-	-	-	-	-	-	-	-

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 17. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE 1979, AVERAGES BY VEHICLE CHARACTERISTICS**

	TOTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN

**AVERAGES PER VEHICLE**

GALLONS PURCHASED.....	3.7	5.5	4.0	3.0	6.9	6.8	4.1	9.2
GALLONS CONSUMED.....	3.9	5.7	4.1	2.9	7.4	7.1	4.2	10.1
MILES DRIVEN.....	3.9	5.6	5.1	3.8	5.8	5.6	5.4	9.9
EXPENDITURES (DOLLARS).....	3.8	5.7	4.1	3.0	7.0	7.0	4.2	9.4
FUEL INVENTORY AS A PERCENT								
OF TANK CAPACITY.....	2.3	2.5	2.5	2.0	3.4	2.5	1.6	5.1
FUEL TANK CAPACITY (GALLONS).....	2.0	1.9	1.8	2.7	2.3	2.1	2.6	4.9

**AVERAGES PER GALLON**

PRICE (CENTS PER GALLON)								
ALL FUELS.....	.5	.6	.5	.6	.5			
LEADED FUEL.....	.5	.5	.9	1.1	.5			
PREMIUM.....	1.2	1.6	2.5	-	1.4			
REGULAR.....	.5	.5	.6	1.1	.5			
UNLEADED FUEL.....	.5	.7	.5	.6	.6			
MILES PER GALLON.....	2.5	2.8	2.8	2.8	3.9	3.7	3.1	4.8
BILLIONS OF GALLONS IN TANKS.....	6.2	9.3	7.6	6.7	8.1	7.9	6.8	9.8

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 18. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JULY 1979, AVERAGES BY VEHICLE CHARACTERISTICS**

	TCTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN
AVERAGES PER VEHICLE								
GALLONS PURCHASED.....	2.6	3.5	2.8	3.0	5.2	4.9	3.9	8.2
GALLONS CONSUMED.....	2.6	3.5	2.9	3.0	5.3	4.8	3.8	8.1
MILES DRIVEN.....	3.6	4.3	4.3	3.7	5.2	4.6	5.6	7.7
EXPENDITURES (DOLLARS).....	2.7	3.5	3.1	3.0	5.3	5.0	4.0	8.1
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	1.0	1.3	1.2	.9	1.7	1.7	1.1	2.8
FUEL TANK CAPACITY (GALLONS).....	1.4	1.1	1.7	1.8	1.8	2.0	1.8	2.8
AVERAGES PER GALLON								
PRICE (CENTS PER GALLON)								
ALL FUELS.....	.4	.4	.5	.4	.5			
LEADED FUEL.....	.5	.5	.6	.6	.5			
PREMIUM.....	.7	1.1	1.2	1.2	.8			
REGULAR.....	.5	.5	.6	.8	.5			
UNLEADED FUEL.....	.4	.4	.6	.4	1.0			
MILES PER GALLON.....	2.1	1.9	2.6	2.3	2.9	2.8	2.9	2.7
BILLIONS OF GALLONS IN TANKS.....	5.4	6.1	8.2	6.8	6.3	6.2	7.7	8.9

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 19. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR AUGUST 1979, AVERAGES BY VEHICLE CHARACTERISTICS**

	TOTAL	VEHICLE SIZE		MODEL YEAR		FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	1975 TO 1979	1974 AND EARLIER	LEADED	UNLEADED	OTHER AND UNKNOWN
AVERAGES PER VEHICLE								
GALLONS PURCHASED.....	3.3	4.5	4.6	4.4	3.8	4.5	6.3	8.3
GALLONS CONSUMED.....	3.1	4.6	4.6	4.2	4.0	4.5	6.1	8.0
MILES DRIVEN.....	3.6	4.8	5.5	4.3	4.0	4.5	5.6	7.6
EXPENDITURES (DOLLARS).....	3.3	4.4	4.4	4.5	3.8	4.5	6.4	8.1
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	.9	1.2	1.3	1.2	1.6	1.7	1.5	3.1
FUEL TANK CAPACITY (GALLONS).....	1.7	1.0	1.9	2.5	1.9	2.3	1.5	4.2
AVERAGES PER GALLON								
PRICE (CENTS PER GALLON)								
ALL FUELS.....	.4	.4	.7	.4	.6			
LEADED FUEL.....	.6	.6	.8	.7	.7			
PREMIUM.....	1.0	1.6	1.8	1.8	1.3			
REGULAR.....	.4	.5	.7	.7	.6			
UNLEADED FUEL.....	.4	.5	.8	.4	2.2			
MILES PER GALLON.....	2.5	1.7	3.7	3.2	2.8	3.5	3.4	3.7
BILLIONS OF GALLONS IN TANKS.....	6.2	5.3	10.6	7.7	6.7	8.5	8.7	13.2

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 20. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE 1979, AVERAGES BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS
AVERAGES PER VEHICLE											
GALLONS PURCHASED.....	3.7	5.3	6.5	7.6	4.0	7.9	4.4	5.2	5.9	6.2	4.8
GALLONS CONSUMED.....	3.9	5.7	6.8	8.3	4.2	7.9	4.5	5.3	5.5	6.5	5.1
MILES DRIVEN.....	3.9	5.5	8.1	7.0	4.3	9.1	4.3	4.9	5.8	7.3	5.0
EXPENDITURES (DOLLARS).....	3.8	5.3	6.9	7.9	3.9	8.1	4.3	5.3	5.5	6.4	4.9
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	2.3	3.1	1.8	5.0	1.5	3.0	2.5	2.8	1.5	3.9	1.8
FUEL TANK CAPACITY (GALLONS).....	2.0	2.9	1.6	3.1	2.4	2.4	2.2	2.6	2.5	2.5	2.0
AVERAGES PER GALLON											
PRICE (CENTS PER GALLON)											
ALL FUELS.....	.5	.5	1.1	.6	.6	.7	.5	.5	.9	.5	.6
LEADED FUEL.....	.5	.6	1.3	.7	.7	1.0	.7	.6	.9	.8	.6
PREMIUM.....	1.2	1.4	2.9	1.8	2.0	3.3	1.4	1.3	3.1	2.9	1.1
REGULAR.....	.5	.5	1.4	.8	.7	1.0	.7	.5	1.0	.5	.6
UNLEADED FUEL.....	.5	.5	1.4	.7	.7	.6	.6	.5	1.4	.5	.8
MILES PER GALLON.....	2.5	3.6	2.0	4.7	3.0	5.3	2.6	3.2	3.1	3.4	3.2
BILLIONS OF GALLONS IN TANKS.....	6.2	7.2	15.3	11.1	8.1	10.3	7.8	7.4	10.1	8.0	7.3

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 21. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JULY 1979, AVERAGES BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

AVERAGES PER VEHICLE

GALLONS PURCHASED.....	2.6	3.2	4.6	4.3	2.7	4.2	3.5	3.1	6.2	3.3	4.1
GALLONS CONSUMED.....	2.6	3.1	4.5	4.2	2.7	4.6	3.4	3.0	5.9	3.4	4.0
MILES DRIVEN.....	3.6	4.5	5.9	4.9	4.1	6.5	3.9	3.8	7.6	4.9	4.3
EXPENDITURES (DOLLARS).....	2.8	3.1	5.3	4.4	2.8	4.4	3.6	3.3	6.2	3.4	4.2
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	1.0	1.1	2.4	2.2	1.2	1.6	1.4	1.3	1.4	1.6	1.4
FUEL TANK CAPACITY (GALLONS).....	1.4	2.0	1.8	1.5	1.9	1.7	1.5	1.6	1.7	1.8	1.4

AVERAGES PER GALLON

25	PRICE (CENTS PER GALLON)										
	ALL FUELS.....	.4	.4	1.1	.5	.5	.5	.4	.6	.4	.5
	LEADED FUEL.....	.5	.3	1.3	.8	.5	.8	.5	.6	.6	.5
	PREMIUM.....	.7	.9	1.3	1.2	.9	1.9	.8	.8	1.4	.8
	REGULAR.....	.5	.4	1.4	.8	.5	.8	.5	.6	.6	.5
	UNLEADED FUEL.....	.4	.5	.9	.7	.4	.6	.4	.7	.6	.5
	MILES PER GALLON.....	2.1	3.1	2.1	2.0	2.7	3.9	2.4	3.3	2.8	2.3
	BILLIONS OF GALLONS IN TANKS.....	5.4	5.5	14.0	8.3	7.4	10.2	6.6	5.8	10.4	6.3

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 22. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR AUGUST 1979, AVERAGES BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

AVERAGES PER VEHICLE

GALLONS PURCHASED.....	3.3	4.2	4.1	6.1	3.8	6.0	3.6	3.7	7.1	5.0	4.4
GALLONS CONSUMED.....	3.1	4.0	3.6	5.9	3.7	5.6	3.3	3.5	6.4	4.8	3.9
MILES DRIVEN.....	3.6	4.6	3.0	6.8	4.4	5.8	4.1	3.3	7.9	4.1	4.9
EXPENDITURES (DOLLARS).....	3.3	4.1	4.3	6.0	3.7	6.0	3.6	3.8	6.9	5.0	4.5
FUEL INVENTORY AS A PERCENT OF TANK CAPACITY.....	.9	1.7	2.4	1.9	1.3	1.4	1.2	.9	3.2	1.1	2.0
FUEL TANK CAPACITY (GALLONS).....	1.7	2.1	2.5	2.0	2.1	2.7	2.0	1.5	4.2	1.9	2.3

AVERAGES PER GALLON

PRICE (CENTS PER GALLON)											
ALL FUELS.....	.4	.5	.8	.5	.5	.8	.4	.4	.7	.6	.5
LEADED FUEL.....	.6	.7	1.0	.5	.8	.8	.7	.6	.9	.9	.6
PREMIUM.....	1.0	1.1	2.1	2.1	1.2	1.4	1.1	1.1	1.5	1.0	1.2
REGULAR.....	.4	.6	.6	.4	.6	.8	.5	.4	.8	.5	.6
UNLEADED FUEL.....	.4	.5	.7	.9	.5	1.3	.5	.5	.9	.8	.5
MILES PER GALLON.....	2.5	3.0	2.7	4.4	3.0	4.1	2.6	2.5	5.1	3.4	2.7
BILLIONS OF GALLONS IN TANKS.....	6.2	7.1	14.9	9.0	8.4	12.1	6.3	6.1	15.0	7.6	8.6

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.



**TABLE 23. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA -  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE, JULY, AND AUGUST TOTALS**

	MONTH											
	JUN '79	JUL '79	AUG '79	SEP '79	OCT '79	NOV '79	DEC '79	JAN '80	FEB '80	MAR '80	APR '80	MAY '80
<b>U.S. TOTALS BY MONTH</b>												
MILES DRIVEN (BILLIONS).....	6.0	8.1	8.7	-	-	-	-	-	-	-	-	-
EXPENDITURES (BILLIONS OF DOLLARS)												
ALL FUELS.....	6.1	7.4	7.9	-	-	-	-	-	-	-	-	-
LEADED FUELS.....	7.9	8.7	8.4	-	-	-	-	-	-	-	-	-
UNLEADED FUELS.....	8.3	8.7	12.6	-	-	-	-	-	-	-	-	-
FUEL, UNKNOWN & DIESEL.....	28.4	13.0	29.5	-	-	-	-	-	-	-	-	-
GALLONS PURCHASED (BILLIONS)												
ALL FUELS.....	6.1	7.3	7.8	-	-	-	-	-	-	-	-	-
LEADED FUELS.....	7.7	8.6	8.4	-	-	-	-	-	-	-	-	-
UNLEADED FUELS.....	8.2	8.5	12.6	-	-	-	-	-	-	-	-	-
FUEL, UNKNOWN & DIESEL.....	27.1	13.0	28.9	-	-	-	-	-	-	-	-	-
NUMBER OF VEHICLES (MILLIONS).....	5.3	5.9	6.8	-	-	-	-	-	-	-	-	-

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 24. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE 1979, TOTALS BY VEHICLE CHARACTERISTICS**

	TOTAL	VEHICLE SIZE			MODEL YEAR			FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	UNKNOWN	1975 TO 1979	1974 AND EARLIER	UNKNOWN	LEADED	UNLEADED	OTHER AND UNKNOWN
U.S. TOTALS BY MONTH										
MILES DRIVEN (BILLIONS).....	6.0	6.7	8.5	14.0	7.6	8.4	79.3	7.5	8.9	9.4
EXPENDITURES (BILLIONS OF DOLLARS)										
ALL FUELS.....	6.1	7.0	7.8	14.0	7.7	8.5	-	8.4	8.3	9.2
LEADED FUELS.....	7.9	9.8	11.5	17.8	16.1	8.9	-	9.5	26.1	9.6
UNLEADED FUELS.....	8.3	8.8	15.0	24.6	8.6	33.6	-	31.2	9.0	16.4
FUEL, UNKNOWN & DIESEL.....	28.4	34.8	28.7	51.8	45.4	24.3	-	33.0	35.4	35.1
GALLONS PURCHASED (BILLIONS)										
ALL FUELS.....	6.1	7.0	7.7	13.8	7.7	8.4	-			
LEADED FUELS.....	7.7	9.8	11.3	17.4	16.0	8.9	-			
UNLEADED FUELS.....	8.2	8.8	14.8	24.2	8.5	33.7	-			
FUEL, UNKNOWN & DIESEL.....	27.1	33.5	28.9	51.8	43.9	23.8	-			
NUMBER OF VEHICLES (MILLIONS).....	5.3	8.0	8.1	10.9	6.0	7.3	57.9	6.7	6.6	8.6

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 25. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JULY 1979, TOTALS BY VEHICLE CHARACTERISTICS**

	TOTAL	VEHICLE SIZE			MODEL YEAR			FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	UNKNOWN	1975 TO 1979	1974 AND EARLIER	UNKNOWN	LEADED	UNLEADED	OTHER AND UNKNOWN
U.S. TOTALS BY MONTH										
MILES DRIVEN (BILLIONS).....	8.1	8.1	11.5	12.6	9.5	9.2	-	8.5	11.3	11.3
EXPENDITURES (BILLIONS OF DOLLARS)										
ALL FUELS.....	7.4	7.6	10.6	12.7	8.9	9.4	-	9.0	10.1	10.9
LEADED FUELS.....	8.7	10.7	12.2	14.5	14.8	10.2	-	10.0	19.4	15.5
UNLEADED FUELS.....	9.7	9.1	14.3	20.5	9.1	15.0	-	13.7	10.5	13.3
FUEL, UNKNOWN & DIESEL.....	13.0	22.6	23.2	62.3	27.3	20.3	-	14.8	20.3	24.1
GALLONS PURCHASED (BILLIONS)										
ALL FUELS.....	7.3	7.6	10.4	12.5	8.8	9.3	-			
LEADED FUELS.....	8.6	10.7	12.0	14.3	14.6	10.2	-			
UNLEADED FUELS.....	8.5	9.1	14.1	20.0	8.9	14.8	-			
FUEL, UNKNOWN & DIESEL.....	13.0	23.0	23.2	62.7	27.7	20.9	-			
NUMBER OF VEHICLES (MILLIONS).....	5.9	6.1	9.0	10.2	7.7	6.2	40.8	6.3	8.4	8.8

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 26. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR AUGUST 1979, TOTALS BY VEHICLE CHARACTERISTICS**

	TOTAL	VEHICLE SIZE			MODEL YEAR			FUEL USED		
		INTERMEDIATE AND FULL SIZE	COMPACT AND SUBCOMPACT	UNKNOWN	1975 TO 1979	1974 AND EARLIER	UNKNOWN	LEADED	UNLEADED	OTHER AND UNKNOWN
U.S. TOTALS BY MONTH										
MILES DRIVEN (BILLIONS).....	8.7	7.2	14.8	17.9	11.3	7.2	-	8.9	12.3	15.7
EXPENDITURES (BILLIONS OF DOLLARS)										
ALL FUELS.....	7.9	6.7	14.2	18.5	10.9	6.5	-	9.0	12.6	15.4
LEADED FUELS.....	8.4	9.0	13.2	17.2	15.4	7.6	-	6.8	26.3	22.0
UNLEADED FUELS.....	12.6	12.1	17.3	41.6	12.8	28.0	-	28.2	14.5	20.4
FUEL, UNKNOWN & DIESEL.....	29.5	22.9	40.9	51.6	45.6	22.2	-	42.6	45.2	-
GALLONS PURCHASED (BILLIONS)										
ALL FUELS.....	7.8	6.7	14.3	17.9	10.7	6.4	-			
LEADED FUELS.....	9.4	8.9	13.4	16.8	15.6	7.5	-			
UNLEADED FUELS.....	12.6	12.0	17.5	41.9	12.7	28.9	-			
FUEL, UNKNOWN & DIESEL.....	28.9	23.3	40.7	50.2	44.4	22.1	-			
NUMBER OF VEHICLES (MILLIONS).....	6.8	5.2	12.2	11.3	8.7	6.9	41.8	7.8	9.3	12.7

- DATA NOT AVAILABLE.

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 27. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JUNE 1979, TOTALS BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS	
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS

U.S. TOTALS BY MONTH

MILES DRIVEN (BILLIONS).....	6.0	7.2	16.1	11.9	8.7	15.1	8.4	7.2	12.5	9.9	7.1
EXPENDITURES (BILLIONS OF DOLLARS)											
ALL FUELS.....	6.1	7.6	16.1	12.5	8.7	14.3	8.2	7.7	12.2	9.5	7.1
LEADED FUELS.....	7.9	9.5	18.1	13.8	13.0	24.8	12.0	9.9	15.6	12.1	9.2
UNLEADED FUELS.....	8.3	12.4	19.5	16.9	9.7	19.3	9.9	10.0	20.1	11.6	9.8
FUEL, UNKNOWN & DIESEL.....	28.4	42.8	31.6	44.2	27.2	38.6	38.6	35.8	39.4	37.2	30.3
GALLONS PURCHASED (BILLIONS)											
ALL FUELS.....	6.1	7.6	15.7	12.3	8.8	14.2	8.2	7.6	12.5	9.3	7.2
LEADED FUELS.....	7.7	9.6	17.5	13.4	12.9	24.5	11.8	9.8	15.7	11.8	9.2
UNLEADED FUELS.....	8.2	12.3	19.4	16.7	9.7	19.1	10.0	9.7	20.7	11.5	10.0
FUEL, UNKNOWN & DIESEL.....	27.1	41.1	31.0	42.3	27.8	38.3	36.7	34.4	39.2	37.9	28.3
NUMBER OF VEHICLES (MILLIONS).....	5.3	5.1	15.8	11.3	7.2	10.4	7.0	6.2	10.9	7.3	6.5

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 28. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR JULY 1979, TOTALS BY HOUSEHOLD CHARACTERISTICS**

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS		
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS	
U.S. TOTALS BY MONTH												
MILES DRIVEN (BILLIONS).....	9.1	8.7	15.7	10.7	10.3	13.1	9.8	8.7	16.1	10.3	8.5	
EXPENDITURES (BILLIONS OF DOLLARS)												
ALL FUELS.....	7.4	7.6	15.8	9.9	9.5	12.1	9.2	8.3	14.4	9.1	8.2	
LEADED FUELS.....	8.7	7.8	18.6	14.6	11.5	15.7	10.6	10.5	15.7	11.3	9.6	
UNLEADED FUELS.....	8.7	10.0	18.2	10.6	10.3	15.0	10.4	9.3	16.6	9.9	10.1	
FUEL, UNKNOWN & DIESEL.....	13.0	22.7	24.6	24.4	19.3	23.2	14.9	18.7	53.0	27.3	14.0	
GALLONS PURCHASED (BILLIONS)												
ALL FUELS.....	7.3	7.6	15.3	9.9	9.4	11.9	9.0	8.1	14.5	9.0	8.1	
LEADED FUELS.....	8.6	7.9	18.1	14.4	11.4	15.8	10.6	10.3	15.8	11.2	9.6	
UNLEADED FUELS.....	8.5	9.8	17.7	10.5	10.2	14.8	10.2	9.2	16.6	9.8	10.0	
FUEL, UNKNOWN & DIESEL.....	13.0	23.4	24.7	25.0	19.4	23.3	14.7	19.2	53.8	27.5	14.2	
NUMBER OF VEHICLES (MILLIONS).....	5.9	5.7	14.4	8.9	7.9	9.6	7.0	6.4	11.1	7.3	6.8	

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 29. MONTHLY U.S. HOUSEHOLD TRANSPORTATION DATA  
RELATIVE STANDARD ERRORS (PERCENTS) FOR AUGUST 1979, TOTALS BY HOUSEHOLD CHARACTERISTICS

	TOTAL	HOUSEHOLD LOCATION		FAMILY INCOME		NUMBER OF VEHICLES USED BY HOUSEHOLD		NUMBER OF DRIVERS IN HOUSEHOLD		NUMBER OF HOUSEHOLD MEMBERS		
		URBAN AREAS	RURAL AREAS	LESS THAN \$15,000	ABOVE \$15,000	ONE VEHICLE	TWO OR MORE VEHICLES	1 TO 2 DRIVERS	3 OR MORE DRIVERS	1 TO 2 MEMBERS	3 OR MORE MEMBERS	
U.S. TOTALS BY MONTH												
MILES DRIVEN (BILLIONS).....	8.7	10.7	15.7	13.0	10.3	14.0	9.4	8.1	17.2	8.6	11.0	
EXPENDITURES (BILLIONS OF DOLLARS)												
ALL FUELS.....	7.9	9.3	16.6	12.7	9.7	12.3	8.5	7.8	16.0	7.5	10.4	
LEADED FUELS.....	8.4	9.7	21.1	14.9	11.9	13.7	9.2	8.2	16.3	8.2	11.7	
UNLEADED FUELS.....	12.6	14.3	18.3	20.0	13.1	20.9	13.4	12.0	23.8	14.0	14.2	
FUEL, UNKNOWN & DIESEL.....	29.5	23.0	68.8	24.4	45.7	33.5	37.4	33.0	35.4	28.1	49.2	
GALLONS PURCHASED (BILLIONS)												
ALL FUELS.....	7.8	9.3	16.5	12.7	9.6	12.3	8.4	7.7	16.0	7.6	10.3	
LEADED FUELS.....	8.4	9.8	20.9	14.9	11.8	13.9	9.1	8.1	16.5	8.4	11.8	
UNLEADED FUELS.....	12.6	14.3	18.6	20.1	13.1	21.1	13.3	11.9	23.9	14.0	14.2	
FUEL, UNKNOWN & DIESEL.....	28.9	22.9	67.5	24.9	45.0	33.9	36.4	32.3	35.5	28.1	48.1	
NUMBER OF VEHICLES (MILLIONS).....	6.8	8.3	14.6	9.8	8.8	13.1	6.7	6.7	14.8	8.6	8.5	

SOURCE: HOUSEHOLD TRANSPORTATION PANEL, RESIDENTIAL ENERGY CONSUMPTION SURVEY,  
OFFICE OF THE CONSUMPTION DATA SYSTEM,  
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

## HOW THE SURVEY WAS CONDUCTED

### Introduction

The Household Transportation Panel (EIA-141)<sup>1</sup> was designed by the Energy Information Administration (EIA) to provide data on energy consumption for motor vehicle transportation within the residential sector. This survey is one of several studies that together will provide data on energy consumption in the residential, commercial, industrial, and transportation sectors.

The purpose of the Household Transportation Panel is to provide monthly and annual estimates of fuel consumed and miles driven by household-used vehicles. Data are recorded in fuel purchase logs by monthly panels of respondents. ("Household vehicles" includes all motor vehicles used by the household except motorcycles, mopeds, large trucks, and large buses.) The panels of households are generally asked to report for two months initially, and then to report for another two months after a four-month interval of nonparticipation. Each month's panel is a representative national sample selected from the 48 contiguous States and the District of Columbia.

### Sample Selection

The Transportation Panel is comprised of households that are subsampled from two national surveys. The first survey used for subsampling is the set of 3,842 respondents to the National Interim Energy Consumption Survey (NIECS). Response Analysis Corporation (RAC) of Princeton, New Jersey, contacted 4,507 households for the NIECS in November and December 1978. They inquired about fuels used by the households, appliances used, conservation activities, and characteristics of the households' vehicles. These households had been selected according to a complex, multi-stage sample design; probability techniques were used throughout all stages.<sup>2</sup> Respondents in 69 of the 103 Primary Sampling Units (PSU's)<sup>3</sup> who had at least one vehicle were randomly assigned to

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<sup>1</sup>Office of Management and Budget (OMB) Clearance No. 38-R0392.

<sup>2</sup>For more information on how the NIECS survey was conducted, see Residential Energy Consumption Survey: Characteristics of the Housing Stock and Households, February 1980, DOE/EIA-0207/2, GPO Stock No. 061-003-0093-2.

<sup>3</sup>Respondents in the other 34 PSU's from the NIECS were used in pretests to select an optimum design for the Panel.



6 groups. Starting in June 1979, and continuing through November 1979, one group was brought into the sample each month for a two-month reporting period. (There was some experimentation in July with one- and three-month reporting periods.) Starting in December 1979, these groups were returned to the sample, one each month, for another two-month reporting period.

The second survey was necessary to screen households for participation in the Transportation Panel beyond November 1979. This national "Screener Sample" was selected from the same block listings of housing units in 103 PSU's that had been used for the NIECS, but excluding those households that had been selected for the NIECS. The Screener Sample was interviewed in November and December 1979 and resulted in 4,044 successful contacts for a completion rate of 90 percent. Households that used vehicles for personal transportation were divided into 12 groups of 250 each, and starting in December 1979, are being brought into the sample in the same 2-4-2 pattern as described for the NIECS households. Since January 1980, this general 2-4-2 reporting pattern has yielded a combined sample size of about 1,000 households for each month's panel from the NIECS and the Screener Sample.

### Survey Operations

The basic instrument used for data collection in the Transportation Panel is the Vehicle Fuel Purchase Log (see Appendix). Sample households are requested to complete monthly logs for each of their vehicles. The information requested on the log for each purchase is the:

- odometer reading
- fuel gauge reading after the purchase
- number of gallons purchased
- total cost of the purchase
- price per gallon
- type of fuel purchased.

In addition, odometer and fuel gauge readings are requested for the first and last days of each month.

Selected households are first contacted by a letter briefly describing the task of completing the purchase log and conveying a gift of \$2 per vehicle.<sup>4</sup> A follow-up telephone call is made to verify information pertinent to the Transportation Panel, such as, address, household size, and vehicle inventory. The interviewer obtains the name of the main

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<sup>4</sup>Field experiments were carried out from February through June 1980 to determine the effectiveness of other dollar amounts, the appropriate timing for conveying the incentive, and one- versus two-month reporting periods.

driver for each household vehicle so that the fuel purchase log can be mailed to that person. In addition, RAC secures the name and address of a neighbor who would know the forwarding address should a move occur between panel rotations.

Shortly before the first day of the reporting month, a fuel purchase log and instructions are sent to each household. A telephone call is made several days later to check on the arrival of these materials and to answer any questions the respondent may have. Panelists are requested to use the logs from the first day of the month until the last day.

A mid-month telephone call is made to answer any new questions and to encourage the respondent to continue with the panel. Finally, within four or five days after the end of the month, a telephone call is made to collect the data recorded on the fuel purchase log. The respondent who reads the log data to the interviewer also answers a short list of topical questions. For instance, during the first several months of the panel, respondents were asked about waiting in lines at gas stations.

#### Data Processing

Data from the final telephone interviews are coded and manually edited. Whenever it appears that fuel purchases have been skipped or that other mistakes have been made, calls are made to the households to try to obtain the correct information. The coding forms are keypunched and 100 percent key-verified. A series of computer edits is made using the interrelationships among the data elements to check for reasonable values.

#### Estimation

A series of weights are applied to the reported data in order to expand them to population levels. These weights account for sampling and nonresponse, and incorporate ratio estimation techniques. A fuel purchase log was considered to be complete if the first and last purchases were at least 15 days apart. Where purchase logs are complete but for one purchase, the missing purchase is estimated from those reported. If a household completed purchase logs for some but not all of its vehicles, the completed logs are weighted up to represent the missing logs in that household. Sampled households that provided no complete purchase logs were accounted for by weighting up reported data at various sub-national levels.

The sampling weight applied to the data is the product of the following weights:

- The household weight from the NIECS or the Screener Sample
- The inverse of the chance of selecting the household to be in a particular month's panel.

Ratio estimates by the type of community within four Census regions and for selected household characteristics were used as a final adjustment to the weights.

#### Response Rates

The percentage of vehicles for which purchase logs were completed is shown below.

	<u>June 1979</u>	<u>July 1979</u>	<u>August 1979</u>
Completed Logs	66%	58%	53%
Number of Eligible Vehicles	1,052	2,125	1,319
Vehicles w/Completed Logs	690	1,235	696

To be eligible, the vehicle must meet the qualifications described in the glossary and be available for the household to use. It need not have been driven.

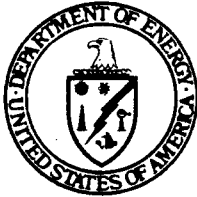
The total number of weighted vehicles in any month is the result of an estimate based on the average number of vehicles per household determined on a straight line basis from November 1978 to November 1979 (the NIECS and Screener surveys). This estimate is then adjusted for the number of households in the population taken from the Current Population Survey estimates as reported by the Bureau of the Census.

## APPENDIXES

- A. Fuel Purchase Survey Log
- B. Fuel Purchase Survey Instructions
- C. Background Questionnaire
- D. Gas Lines Questionnaire

A. FUEL PURCHASE SURVEY LOG

Information on fuel purchases is confidential and will be used only in statistical summaries. This survey is being done under the Federal Energy Administration Act of 1974. Your participation is voluntary.



# **U.S. DEPARTMENT OF ENERGY**

## **National Survey of Fuel Purchases for Vehicles**

**MAY 1980**


**Conducted by  
Response Analysis Corporation  
P.O. Box 158  
Princeton, New Jersey**

File No. \_\_\_\_\_

# VEHICLE FUEL PURCHASE LOG

PLEASE KEEP THIS LOG IN YOUR VEHICLE AND WRITE DOWN EVERY GASOLINE OR DIESEL FUEL PURCHASE BETWEEN MAY 1, 1980, AND MAY 31, 1980.

MAKE THESE ENTRIES  
BEFORE FIRST USE  
OF VEHICLE ON  
MAY 1, 1980

Total Vehicle Mileage	Complete the line showing how full the tank is before first use on <u>May 1, 1980</u>
	





Vehicle Make: \_\_\_\_\_

Vehicle Year: \_\_\_\_\_

Vehicle Model: \_\_\_\_\_


About how many gallons does the  
tank of this vehicle hold? \_\_\_\_\_ GALLONS

☐ DON'T KNOW

FUEL PURCHASES										
Purchase Number..	Fuel Purchase Date	Total Vehicle Mileage	Complete the line showing how full the tank is <u>after</u> fuel purchase	Number of Gallons Purchased	Total Cost of Fuel	Price per Gallon	Was the tank filled?	Type of Fuel Purchased		Please note any problem related to this purchase
1							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
2							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
3							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
4							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	




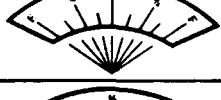






PLEASE CONTINUE RECORDING PURCHASES UNTIL MAY 31, 1980 ON SECOND PAGE OF THIS LOG.

MAKE THESE ENTRIES  
AFTER LAST USE  
OF VEHICLE ON  
MAY 31, 1980











Total Vehicle Mileage	Complete the line showing how full the tank is <u>after</u> last use on May 31, 1980
	

After the last use on May 31, 1980, please keep this log near your telephone. We will be calling to obtain the information. Or, if you will be difficult to reach by telephone, call collect to Pat Gambino at (609) 921-3333.

THANK YOU VERY MUCH FOR YOUR HELP!

Purchase Number..	Fuel Purchase Date	Total Vehicle Mileage	Complete the line showing how full the tank is <u>after</u> fuel purchase	Number of Gallons Purchased	Total Cost of Fuel	Price per Gallon	Was the tank filled?	Type of Fuel Purchased		Please note any problem related to this purchase
5							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
6							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
7							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
8							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
9							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
10							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
11							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
12							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
13							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
14							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED	<input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	

AFTER THE LAST USE OF THIS VEHICLE ON MAY 31, 1980, PLEASE  
COMPLETE ENTRIES AT THE BOTTOM OF THE FIRST PAGE OF THIS LOG.

Purchase Number..	Fuel Purchase Date	Total Vehicle Mileage	Complete the line showing how full the tank is <u>after</u> fuel purchase	Number of Gallons Purchased	Total Cost of Fuel	Price per Gallon	Was the tank filled?	Type of Fuel Purchased	Please note any problem related to this purchase
15							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
16							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
17							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
18							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
19							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
20							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
21							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
22							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
23							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	
24							<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> LEADED <input type="checkbox"/> UNLEADED <input type="checkbox"/> REGULAR <input type="checkbox"/> PREMIUM <input type="checkbox"/> DIESEL	

AFTER THE LAST USE OF THIS VEHICLE ON MAY 31, 1980, PLEASE  
COMPLETE ENTRIES AT THE BOTTOM OF THE FIRST PAGE OF THIS LOG.



May

Please keep the Fuel Purchase Log in your vehicle.

Fill in now:

The vehicle make, model year, and model name.

If you know the (approximate) number of gallons that the fuel tank of the vehicle holds, please fill in that number.

On Thursday, May 1, or the first time  
you use the vehicle after that date:

Put the number of miles shown on the total mileage meter (odometer) of the vehicle.

After you start the engine for the first time, complete the line showing (approximately) the level of fuel in the tank of the vehicle.

Starting on May 1 and continuing  
until May 31:

Use your vehicle and purchase fuel as you normally would during this period.

Fill in entries for each purchase of fuel (see reverse side of these instructions).

On Saturday, May 31:

After your last use of the vehicle on May 31, complete the entries showing the number of miles on the total mileage meter (odometer), and the approximate level of fuel in the tank of the vehicle.

After your last use of the vehicle on May 31, please keep the Log near your telephone. We will be calling you within a few days after May 31 to obtain the information on fuel purchases from you.

We will be sending you an additional Log for your fuel purchases during the month of June.

If you have a question about your Fuel Purchase Log, please call collect to (609) 921-3333 any weekday between 9 a.m. and 4 p.m., eastern time. Ask to speak to Patricia Gambino.

Turn page for additional instructions

Please make the following entries for each fuel purchase for your vehicle:

<u>Fuel purchase date</u>	Show the month and day each time gasoline or diesel fuel is added to the vehicle.
<u>Total vehicle mileage</u>	This is the number of miles shown on the <u>total</u> mileage meter (odometer) of the vehicle at the time you stop for fuel.
<u>Line showing how full tank is after fuel purchase</u>	Most vehicles have a meter showing the (approximate) level of fuel in the fuel tank. <u>After</u> fuel has been added to the tank, and you have started your engine again, draw in the line showing the approximate level of fuel.
<u>Number of gallons purchased</u>	Make this entry to the nearest tenth of a gallon (for example: 3.4 or 11.8).
<u>Total cost of fuel</u>	Show total cost of the gasoline or diesel fuel. Do <u>not</u> include cost of oil or other items, if any, purchased at the same time.
<u>Price per gallon</u>	This is the price per gallon for the type of gasoline or diesel fuel you purchase, to the nearest tenth of a cent.
<u>Was the tank filled?</u>	Generally, this answer should be marked "YES" if you had asked to have the tank filled (and the amount of the purchase was not limited by the service station). The answer would usually be "NO" if you have asked for a certain number of gallons or for a dollar amount, or the amount of the purchase was limited by the service station.
<u>Type of fuel purchased</u>	Mark an answer in <u>each</u> column that applies.
<u>Any problem related to purchase?</u>	Note any problems or difficulties in obtaining fuel when you wanted it, or in the amount or type of fuel that you wanted.

IMPORTANT: Please keep the purchase log in your vehicle. The entries should be made for each purchase of fuel, even when someone other than the main driver of the vehicle makes the purchase.

C. BACKGROUND QUESTIONNAIRE

**U.S. DEPARTMENT OF ENERGY**

**National Survey of  
Fuel Purchases for Vehicles**

BACKGROUND QUESTIONNAIRE

1. At the time of our interview in \_\_\_\_\_, the members of your household included  
(READ LIST BELOW). (MONTH/YEAR)

HOUSEHOLD MEMBER #	RELATIONSHIP	SEX		AGE
		FEMALE	MALE	
1		1[]	2[]	
2		1[]	2[]	
3		1[]	2[]	
4		1[]	2[]	
5		1[]	2[]	
6		1[]	2[]	
7		1[]	2[]	
8		1[]	2[]	
9		1[]	2[]	
10		1[]	2[]	
11		1[]	2[]	
12		1[]	2[]	

2. Is there anyone living in your household now who was not a member of your household in (MONTH/YEAR)?  
1[] YES -- Who is that? (ADD TO LIST)  
0[] NO
3. Was there anyone living in your household in (MONTH/YEAR) who is not a member of your household now?  
1[] YES -- Who is that?

HOUSEHOLD MEMBER #(S) FROM TABLE ABOVE

0[] NO

4. At the time we spoke with your household in (MONTH/YEAR) you had a (READ LIST BELOW).

	1	2	3	4
VEHICLE TYPE				
MAKE				
MODEL YEAR				
MODEL NAME				
FUEL USED (READ ONLY IF NECESSARY TO VERIFY)	1 <input type="checkbox"/> GASOLINE 2 <input type="checkbox"/> DIESEL 3 <input type="checkbox"/> ELECTRICITY	1 <input type="checkbox"/> GASOLINE 2 <input type="checkbox"/> DIESEL 3 <input type="checkbox"/> ELECTRICITY	1 <input type="checkbox"/> GASOLINE 2 <input type="checkbox"/> DIESEL 3 <input type="checkbox"/> ELECTRICITY	1 <input type="checkbox"/> GASOLINE 2 <input type="checkbox"/> DIESEL 3 <input type="checkbox"/> ELECTRICITY

4a. Do you still have  
(VEHICLE LISTED  
ABOVE)?

	1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO
IF YES:				
4b. What is the name of the main driver?				
4c. FILL IN HOUSE- HOLD MEMBER # FROM Q. 1				

INTERVIEWER:

IF HOUSEHOLD STILL HAS ONE OR MORE VEHICLES LISTED IN Q. 4, ASK Q. 5a ON FOLLOWING PAGE.

IF HOUSEHOLD NO LONGER HAS (ANY) VEHICLE LISTED IN Q. 4, ASK Q. 6a ON FOLLOWING PAGE.

## IF HOUSEHOLD STILL HAS ONE OR MORE VEHICLES LISTED IN Q. 4, ASK:

- 5a. Do you or other members of your household own or have the regular use of any cars, trucks, vans, or similar vehicles, in addition to (MAKE AND MODEL YEAR FROM Q. 4)?
- 1 ☐ YES  
0 ☐ NO -- SKIP TO Q. 23
- 5b. How many additional vehicles do you have?
- 1 ☐ ONE  
2 ☐ TWO  
3 ☐ THREE  
4 ☐ FOUR OR MORE
- } SKIP TO Q. 7

## IF HOUSEHOLD NO LONGER HAS ANY VEHICLE LISTED IN Q. 4, ASK:

- 6a. Do you or other members of your household now own or have the regular use of any cars, trucks, vans, or similar vehicles?
- 1 ☐ YES  
0 ☐ NO -- SKIP TO Q. 23
- 6b. How many vehicles do you have?
- 1 ☐ ONE  
2 ☐ TWO  
3 ☐ THREE  
4 ☐ FOUR OR MORE
- } ASK Q. 7

## ASK QUESTIONS 7 - 21 ABOUT EACH VEHICLE NOT LISTED IN Q. 4

7. Which type(s) is it (are they)?

	A1	A2	A3	A4
STATION WAGON	01 <input type="checkbox"/>	01 <input type="checkbox"/>	01 <input type="checkbox"/>	01 <input type="checkbox"/>
AUTOMOBILE	02 <input type="checkbox"/>	02 <input type="checkbox"/>	02 <input type="checkbox"/>	02 <input type="checkbox"/>
JEEP OR SIMILAR VEHICLE	03 <input type="checkbox"/>	03 <input type="checkbox"/>	03 <input type="checkbox"/>	03 <input type="checkbox"/>
PASSENGER VAN OR MINIBUS	04 <input type="checkbox"/>	04 <input type="checkbox"/>	04 <input type="checkbox"/>	04 <input type="checkbox"/>
CARGO VAN	05 <input type="checkbox"/>	05 <input type="checkbox"/>	05 <input type="checkbox"/>	05 <input type="checkbox"/>
PICKUP TRUCK	06 <input type="checkbox"/>	06 <input type="checkbox"/>	06 <input type="checkbox"/>	06 <input type="checkbox"/>
OTHER TRUCK	07 <input type="checkbox"/>	07 <input type="checkbox"/>	07 <input type="checkbox"/>	07 <input type="checkbox"/>
MOTOR HOME	08 <input type="checkbox"/>	08 <input type="checkbox"/>	08 <input type="checkbox"/>	08 <input type="checkbox"/>
OTHER (SPECIFY):	21 <input type="checkbox"/>	21 <input type="checkbox"/>	21 <input type="checkbox"/>	21 <input type="checkbox"/>

8. Please tell me the make and model year (of each one). (ENTER LAST TWO DIGITS OF MODEL YEAR.)

MAKE

MODEL YEAR

9. What is the model name (of each one)?

MODEL NAME

	A1	A2	A3	A4
MAKE				
MODEL YEAR	19 ____	19 ____	19 ____	19 ____
MODEL NAME				

## ALL HOUSEHOLDS WITH ONE OR MORE ADDITIONAL VEHICLES ON QS. 5 - 6

		A1	A2	A3	A4
10. In what month and year did you get it?	MONTH				
	YEAR	19 ____	19 ____	19 ____	19 ____
11. How many miles has it been driven since you have had it?	MILES				
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
12. About how many miles were driven on a highway (that is, with relatively little "stop and go" driving)?	MILES				
	NOT USED ON HIGHWAY	[ ]	[ ]	[ ]	[ ]
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
13. Is it used on-the-job, that is, for any reason other than for going to or from work, by anyone in your household?	YES	1[ ]	1[ ]	1[ ]	1[ ]
	NO	0[ ]	0[ ]	0[ ]	0[ ]
IF "YES," ASK:					
14. About how many miles were driven on-the-job since you have had it?	MILES				
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
IF USED FOR HIGHWAY DRIVING ON Q. 12, ASK:					
15. How many miles per gallon does it get in highway driving, just approximately?	MILES PER GALLON				
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
16. How many miles per gallon does it get in local driving, just approximately?	MILES PER GALLON				
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
IF MILES PER GALLON GIVEN, ASK:					
17. Has someone actually figured out the miles per gallon, or is it more a general impression?	ACTUAL IMPRESSION	1[ ] 2[ ]	1[ ] 2[ ]	1[ ] 2[ ]	1[ ] 2[ ]
IF NOT USED FOR HIGHWAY DRIVING ON Q. 12, ASK:					
18. For the kind of driving for which it is used, how many miles per gallon does it get, just approximately?	MILES PER GALLON				
	DON'T KNOW	[ ]	[ ]	[ ]	[ ]
IF MILES PER GALLON GIVEN, ASK:					
19. Has someone actually figured out the miles per gallon, or is it more a general impression?	ACTUAL IMPRESSION	1[ ] 2[ ]	1[ ] 2[ ]	1[ ] 2[ ]	1[ ] 2[ ]

## ALL HOUSEHOLDS WITH ONE OR MORE ADDITIONAL VEHICLES ON QS. 5-6

20. What kind of fuel is used most frequently?

	A1	A2	A3	A4
UNLEADED REGULAR GASOLINE	01[]	01[]	01[]	01[]
UNLEADED PREMIUM GASOLINE	02[]	02[]	02[]	02[]
REGULAR GASOLINE	03[]	03[]	03[]	03[]
PREMIUM OR HIGH TEST GASOLINE	04[]	04[]	04[]	04[]
DIESEL	05[]	05[]	05[]	05[]
ELECTRICITY	06[]	06[]	06[]	06[]
OTHER (SPECIFY):	21[]	21[]	21[]	21[]
DON'T KNOW	96[]	96[]	96[]	96[]

21. What type of engine does it have?

1-CYLINDER	01[]	01[]	01[]	01[]
2-CYLINDER	02[]	02[]	02[]	02[]
3-CYLINDER	03[]	03[]	03[]	03[]
4-CYLINDER	04[]	04[]	04[]	04[]
5-CYLINDER	05[]	05[]	05[]	05[]
6-CYLINDER	06[]	06[]	06[]	06[]
7-CYLINDER	07[]	07[]	07[]	07[]
8-CYLINDER	08[]	08[]	08[]	08[]
ROTARY	11[]	11[]	11[]	11[]
ELECTRIC	12[]	12[]	12[]	12[]
OTHER (SPECIFY):	21[]	21[]	21[]	21[]
DON'T KNOW	96[]	96[]	96[]	96[]

22. What is the name of the main driver? (ASK ABOUT EACH ADDITIONAL VEHICLE)

VEHICLE NUMBER	MAIN DRIVER'S NAME	HOUSEHOLD MEMBER # (FROM Q. 1)
A1		
A2		
A3		
A4		

ASK EVERYONE

23. Are you planning to move any time between now and the end of June 1979?

1 ☐ YES  
 2 ☐ NO → SEE INSTRUCTION IN BOX  
 AT BOTTOM OF PAGE

IF "YES" ON Q. 23, ASK:

24. Would you please give me the name, address, and telephone number of two friends or relatives who will know where you can be reached after you move?

NAME:	_____
STREET:	_____
CITY AND STATE:	_____
PHONE: (    )	_____
RELATIONSHIP TO RESPONDENT:	_____

NAME:	_____
STREET:	_____
CITY AND STATE:	_____
PHONE: (    )	_____
RELATIONSHIP TO RESPONDENT:	_____

EXPLAIN PROCEDURE FOR FUEL PURCHASE LOG TO RESPONDENT AND/OR TO EACH MAIN DRIVER WHO IS AT HOME AT THE TIME OF THIS VISIT.

\_\_\_\_\_  
 (Interviewer)

\_\_\_\_\_  
 (Date Completed)

\_\_\_\_\_  
 (Time Completed)



## D. GAS LINES QUESTIONNAIRE

RAC 3993  
073079

HOUSEHOLD # \_\_\_\_\_

We are interested in finding out about any problems that you have had buying gasoline (diesel fuel) for your household vehicles within the past two weeks.

(You have already mentioned that . . . )

Please tell me whether any of the following happened to you (or other members of your household)?

P1. Did you wait in line at a service station for more than a few minutes?	1[] YES	0[] NO → SKIP TO P3.	51
<hr/>			
IF YES: P2. About what was the longest that you had to wait?	_____ MINUTES OR _____ HOURS		52-54
<hr/>			
P3. Did you have to buy a type of fuel other than the type you wanted?	1[] YES	0[] NO → SKIP TO P5.	55
IF YES: P4a. What type did you want?	_____ TYPE WANTED		56-57
P4b. And what type did you get instead?	_____ TYPE OBTAINED		58-59
<hr/>			
P5. Did you have to accept an amount that was different from the amount you wanted?	1[] YES	0[] NO → SKIP TO P8.	60
IF YES: P6. Was the amount smaller than you wanted, or larger than you wanted?	[] SMALLER      [] LARGER      [] BOTH HAPPENED (DIFFERENT PURCHASES)		61
P7. What was the amount that you had to take?	NUMBER OF DOLLARS: _____		62-63
	OR NUMBER OF GALLONS: _____		64-65
<hr/>			
P8. Do you have an "odd/even day" system for gasoline purchases in your area?	1[] YES	0[] NO      6[] DON'T KNOW	66
P9. (Other than the odd/even system) Were you unable to buy fuel on a day or at a time when you wanted it?	1[] YES	0[] NO → SKIP TO P11.	67
IF YES: P10. What was the reason? (MARK ALL THAT APPLY)	[] STATIONS CLOSED ON WEEKENDS [] STATIONS CLOSED (WEEKENDS NOT MENTIONED) OR OUT OF GAS [] LINES TOO LONG/COULDN'T WAIT IN LINE [] OTHER (SPECIFY): _____		68 69 70 71
<hr/>			
P11. All in all, which of the following would you say best describes buying fuel for your household vehicle(s) in your area? (READ ANSWER ALTERNATIVES)	0[] NO PROBLEM AT ALL 1[] A SMALL PROBLEM 2[] A BIG PROBLEM 3[] A REALLY SERIOUS PROBLEM		72

NOTE ANY ADDITIONAL COMMENTS BELOW

73-74

DATE OF INTERVIEW: \_\_\_\_\_



## GLOSSARY

Drivers refers to household members who can drive a car, truck, or motorcycle. Persons who can drive but do not ordinarily do so are also included.

Expenditures refers to the total cost of the gasoline or diesel fuel added to the vehicle's tank including taxes. Expenditures do not include the cost of oil or other items that may have been purchased at the same time as the fuel.

Family Income is the total combined income in 1977 for the NIECS households (1978 for Screener households) from all sources before taxes and deductions. It includes wages, salaries, tips, commissions, and income from social security, pensions, interest, dividends, rent, public assistance, and unemployment insurance. Family income includes the total income for all family members who lived in the household, regardless of whether they were living there at the time of the interview. Income of nonfamily members of the household is not included. Family includes the following types of relationship: mother, father, sister, brother, son, daughter, father-in-law, uncle, aunt, niece, grandchild and similar relationships.

Fill-up. A fuel purchase was recorded as a fill-up when the attendant was asked to fill the tank. (When the attendant was asked for a certain number of gallons or for a dollar amount of fuel, the instructions to the respondent called for usually not recording this as a fill-up.)

Fuel Inventory as a Percent of Tank Capacity is an average over all vehicles of their average percents full during a month (see Percent Full During a Month).

It is given by:

$$\bar{p} = \frac{\sum_i w_i c_i \bar{p}_i}{\sum_i w_i c_i}$$

where

$w_i$  = the weight for the  $i$ -th vehicle in the sample;

$c_i$  = the tank capacity (in gallons) for the  $i$ -th vehicle;

and  $\bar{p}_i$  = the average percent full for the month for the i-th vehicle.

Fuel Used is the respondent's report of the fuel that is typically put in the fuel tank.

Fuel Tank Capacity is the size of the vehicle's fuel tank in U.S. gallons. Data for automobiles was taken from Automotive News which provides fuel tank size for foreign and U.S. automobiles. Data for trucks and vans were the figures provided by the respondent on the fuel purchase log.

Gallons Consumed refers to the number of gallons of fuel used by the vehicle during the month. Gallons consumed is equal to gallons purchased minus the difference in the fuel tank levels at the beginning of the month and at the end of the month. For example, consider a vehicle with a 20-gallon tank that was half full at the beginning of the month and three quarters full at the end of the month. Gallons consumed in this case would equal the gallons purchased minus one-fourth of the tank capacity or five gallons. For vehicles missing fuel meter readings, the gallons consumed is the same as gallons purchased.

Gallons Purchased refers to the total number of gallons of fuel added to the household vehicle's tank.

Gallons in Tanks refers to the amount of fuel stored in vehicle tanks. Gallons in tanks for a vehicle is derived from the average percent of tank full for the month and the vehicle tank size.

Gasoline Lines Data. In June 1979, Response Analysis Corporation (RAC) began collecting data for the CDS on the fuel-purchasing situation faced by motorists in the United States (48 contiguous States and the District of Columbia). The data are obtained from a subsample of the residential energy consumption surveys being conducted. Households participating in the monthly transportation interviews are asked a series of questions concerning the fuel-purchasing situation in their area during the two weeks preceding the interviews which are performed at the end of each month.

Household includes up to 12 persons who occupy a housing unit. "Occupy" means the housing unit was the person's usual or permanent place of residence at the time of the first field contact. The household includes babies, lodgers, boarders, employed persons who live in the housing unit, and persons who usually live in the household but are away traveling or in the hospital. The household does not include persons who are normally members of the household but who were living away from home such as college students or members of the armed forces at the time of the interview. By definition, the count of households is the same as the count of occupied housing units.

A "housing unit" is a structure or part of a structure where a household (family or individual) lives or could live. It has a separate entrance from the outside or from a common hall or lobby, or it has cooking facilities for the exclusive use of the occupants. Housing units do not include group quarters such as prisons, hospitals, dormitories, nursing homes, fraternity houses, or convents. Hotel or motel rooms, mobile homes, boats, tents or trailers are considered housing units if occupied.

"Occupied housing unit" means that someone was living in it as his/her usual or permanent place of residence at the time of the first field contact.

Metropolitan refers to households located within Standard Metropolitan Statistical Areas (SMSA's) as defined in the 1970 Census. Except in New England, an SMSA is a county or group of contiguous counties that contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. The contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties. "Nonmetropolitan" refers to households not located within SMSA's as defined in the 1970 Census.

Miles Driven refers to the total number of miles the household vehicle was driven during the reporting month. Miles driven is computed by subtracting the vehicle's odometer reading at the first of the month from its odometer reading at the end of the month.

Percent of Tank Full refers to the proportion of the vehicle's tank that is filled with fuel. The percent of tank full is derived from the fuel meter reading showing the level of fuel in the tank. The respondent recorded the fuel meter reading on a pictorial representation of the fuel meter after starting the engine at each of the following times:

- Beginning of the month (before the first use of the vehicle on the first day of the month)
- End of the month (after the last use of the vehicle on the last day of the month)
- After each purchase.

Percent of Tank Full Before Purchase refers to the level of fuel in the tank before fuel was added at the time of purchase. The percent of tank full before purchase was calculated by subtracting the proportion of the tank filled with newly purchased fuel (gallons purchased divided by the tank capacity in gallons) from the proportion of the tank full after purchase.

Percent Full Between Purchases is the average of the percent of tank full after the earlier purchase and the percent full before the next purchase. It is given by:

$$\bar{p} = (p_a + p_b)/2,$$

where

$p_a$  = the percent full after the earlier purchase;

and

$p_b$  = the percent full before the next purchase.

One may consider the beginning of a month as "after a purchase" and the end as "before a purchase".

Percent Full During a Month represents the average position of the vehicle's fuel guage during the month of recordkeeping and is derived for each vehicle from its average percents full between purchases. Suppose there are  $m$  purchases during a month, numbered 1 to  $m$ . Call the beginning of the month purchase number 0, and the end of the month purchase  $m + 1$ . Then the average percent full during the month is given by:

$$\bar{p} = \frac{\sum_{j=0}^m \bar{p}_j d_j}{\sum_{j=0}^m d_j},$$

where

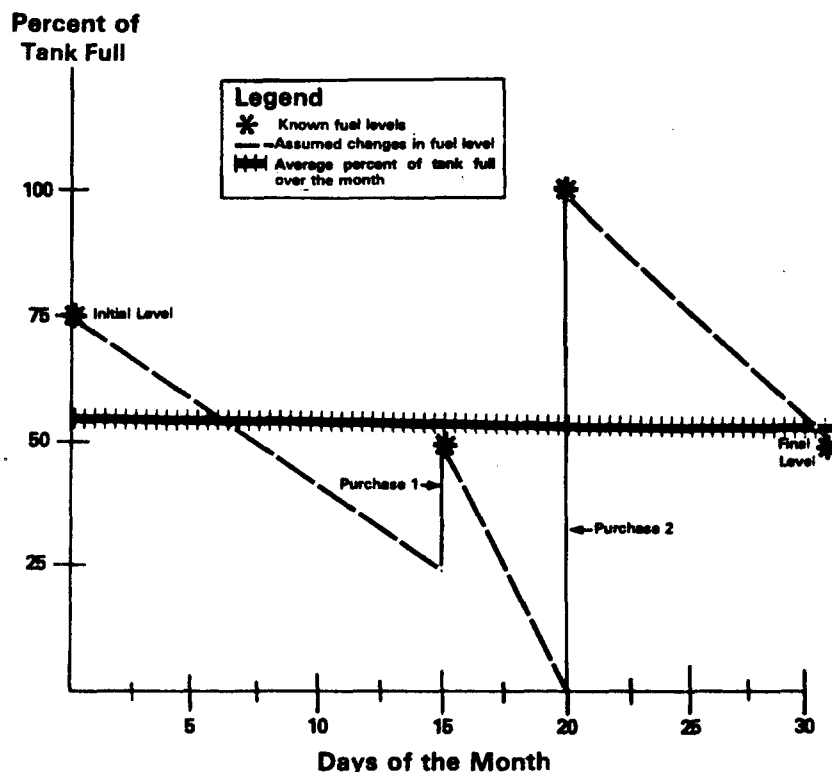
$\bar{p}_j$  = the average percent full between purchases  $j$  and  $j+1$

and

$d_j$  = the number of days between purchases  $j$  and  $j+1$

The following diagram describes the fuel purchases and use for a vehicle for one 30-day month. Initially, the tank was three-quarters full. The first purchase, on the 15th day of the month, filled the tank halfway; the second purchase, on the 20th day, filled the tank completely. On the last day of the month the tank was half full.

The average percent of tank full for the first 15 days was  $(75+25)/2$  or 50; for the five days between the first and second purchases it was  $(50+0)/2$  or 25; and for the last 10 days it was  $(100+50)/2$  or 75. Averaging these values using the number of days between purchases as weights, we get  $\bar{p} = [(15 \times 50 + 5 \times 25 + 10 \times 75)/30] = 54.2$ , approximately, as the average percent of the tank full for the month.



Purchase refers to the occasion when fuel is added to the vehicle's tank whether cash, check, or credit is used.

Rural refers to nonurban areas.

Size of Vehicle refers to industry-defined categories based generally on the vehicle's intended market, body size, and body configuration. Vehicles are grouped into the following categories based on the year, make, and model of the vehicle: subcompact (for example, Vega, Pinto), compact (Nova, Maverick), intermediate (Malibu, Torino), full size (Impala, LTD), pickup (C10, F100), and van (Maxivan, Econoline). Pickups and vans are included with full size and intermediate-size vehicles in the tables.

Urban includes housing in areas of 2,500 or more inhabitants as defined in the 1970 Census.

Used on the Job means the vehicle was used on the job other than commuting to or from work.

Vehicles are all motorized vehicles used by U.S. households for personal transportation excluding motorcycles, mopeds, large trucks, and buses. They include automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, jeeps, or similar vehicles owned (being bought) by one or more members of the households. Vehicles also include company cars, pickup trucks, taxicabs, and other motorized vehicles that are not owned by household members but which are regularly available to household members for their personal use and are ordinarily kept at home. Cars rented or leased for one month or more are included.

Not included are motorized vehicles used solely for business purposes, such as police cars or other Government-owned vehicles. Dismantled or dilapidated vehicles in an early stage of being junked or immobile vehicles used only as a source of power for some piece of machinery are not included. Vehicles used primarily for competition or display purposes such as racing cars, stock cars, or antique cars not used as passenger automobiles are not included. Vehicles kept by students who live away at school or kept by persons who reside on military bases or similar institutional settings are not included.

Note: In the NIECS interview, vehicles were defined to include motorcycles, mopeds, and motorized bicycles, large trucks, and buses, but these vehicles have been excluded from the Transportation Panel, and therefore do not appear in the definition of vehicles above.



# B

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