



Energy Efficient Transportation for Florida¹

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ENERGY CHOICES FOR THE ROAD

Nearly 30% of energy used in Florida is consumed by our 13 million personal automobiles. Florida has more registered cars per capita than any other state in the U.S. — nearly one car for each person. The average Florida automobile is driven over 10,000 miles a year burning about 550 gallons of gasoline and costing its owner about \$650 in fuel costs alone (not to mention payments, insurance, service, repairs, tires, tags, license etc.). Based on a comprehensive analysis, total automobile operating costs average over \$300 for each thousand miles driven. Beyond that is the fact that the more gasoline we use, the more pollution we create. For instance, the average car that travels 10,000 miles produces 650 pounds of carbon monoxide, 105 pounds of hydrocarbons, 50 pounds of nitrogen oxides and 12 pounds of particulates. Besides saving on fuel costs and reducing pollutants, lowering automobile fuel consumption also reduces our state's dependence on unreliable foreign oil supplies.

CONSIDER ALTERNATIVES

Park your car: walking, riding your bicycle or using mass transit (when available) saves energy, especially on short trips. Our test car (*At FSEC, we tested many of the tips associated with improving automobile efficiency to*

verify the savings potential. We used a 1986 Volkswagen GTI which has an on-board computer to track instantaneous and trip mileage. This automobile has a nominal EPA mileage rating of 28 miles per gallon in the city and 32 on the highway.), which gets 32 miles per gallon (mpg) on the highway, achieved only 17.1 mpg when driven on a 1.8 mile round trip to the grocery store.

- Increase ridership: car-pooling always saves dollars and makes sense.
- Combine several errands and auto trips into one longer trip. Share errands with other household drivers.
- Use the phone to avoid wasted trips.
- Consider a bus or train for a long-distance vacation. Relax and let someone else do the driving.
- When contemplating a move, carefully consider how the location will affect your commuting distance to work, school and other weekly errands.

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CHOOSE AN EFFICIENT AUTOMOBILE

For most Floridians, a car is essential. Consequently, the most important single decision you can make is to choose a fuel-efficient automobile. Use Table 1 to select the most efficient cars produced over the last ten years. New cars are not always more efficient than used ones. The guide gives the Environmental Protection Agency (EPA) rated mileage, both for city and highway driving. The guide also indicates the relative safety of each vehicle from the *National Highway Traffic Safety Administration* 35 mph crash test results. The reported value is the head injury criteria, or HIC. The higher the numbers, the greater the likelihood of serious head injury.

- Choosing an energy efficient car doesn't mean just buying a small car. For instance, the average fuel economy of a new car sold in the U.S. is now 27.8 miles per gallon. However, if you simply bought the most efficient car in the weight class considered, the average fuel economy would immediately rise to 34.4 mpg.
- Avoid fuel thirsty options. These include:
 - heavier automobiles
 - larger engines ("performance package")
 - automatic transmissions
 - four wheel drive
 - power steering
- A cruise control can improve fuel efficiency if you do a lot of highway driving.
- Drive the efficient car. In households with two or more automobiles, choose the more efficient model for longer trips and more extensive driving.
- Be aware of fraud! Avoid advertised devices claiming miraculous improvements to fuel economy. The U.S. EPA has investigated more than 100 so called gas-saving devices and products. None of these were found to significantly improve mileage. However, independent tests of oil additives containing teflon (PTFE) show modest improvements in mileage of 2-3% by reducing engine friction.

MAINTAIN YOUR CAR

A car in top running condition will achieve up to 20% better gas mileage than one that has not been maintained. Periodic maintenance will improve fuel

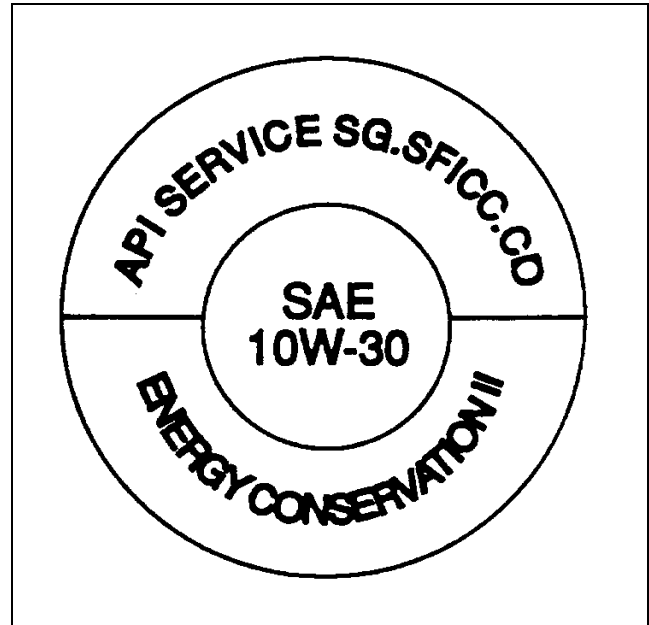


Figure 1. Look for oil labels with the words "Energy Conservation" when purchasing oil for your car.

efficiency and performance.

- Make sure that your tires are properly inflated. Wheel alignment can also be important. Tires should be inflated to the tire manufacturer's maximum recommended pressure. FSEC's test car realized a 4% improvement in fuel economy (1.3 mpg) when the tires were inflated from 27 to 34 pounds per square inch.
- Keep your car tuned. A well-tuned engine can improve mileage by 3-9%. Fuel economy in our FSEC test car improved by 6% after a comprehensive 60,000 mile tune-up. Dirty spark plugs, air filters, pollution control valves and motor oil can cut your gas mileage.
- Reduce wind resistance. Promptly remove luggage or boat racks that will reduce fuel economy. An unused luggage rack decreased the mileage of FSEC's test car by about 0.7 mpg (2%) in city driving; the reduction in efficiency at freeway speeds was nearly two miles per gallon. Closed windows at freeway speeds will improve mileage by about one mile per gallon.
- Put your car on a diet! Golf clubs, bowling balls and other heavy items belong in the garage, not your trunk. A lighter car gets slightly better mileage; for

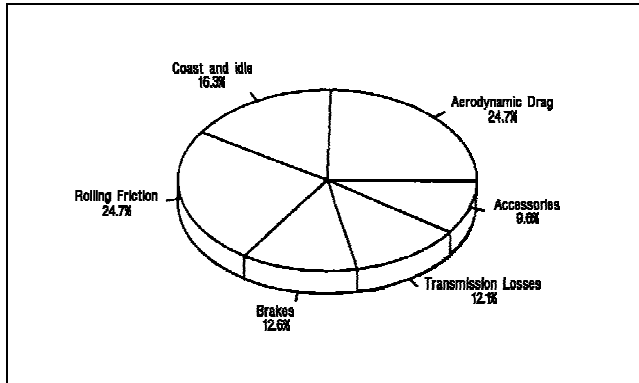


Figure 2. Breakdown of automobile fuel consumption for various activities.

every 100 pounds of extra weight in your car, your mileage will drop by about 3%.

- Choose energy conserving oils. The oil you use in your car should have a label which says "Energy Conserving." Such oils reduce engine friction and increase fuel efficiency by about 2.7% over a single-grade oil (see Figure 1).
- Don't use fuel with an octane rating greater than your car specifies. Higher octane fuel will not improve fuel efficiency. Premium gasoline is also more expensive and requires more crude petroleum for each gallon refined.

DRIVE EFFICIENTLY

"High efficiency driving" can substantially improve your gas mileage. Tests conducted at FSEC showed mileage improvements of approximately 14% by using the following habits versus "average driving." The improvement was nearly 21% when compared to "bad driving habits", which were defined as consistently driving contrary to the recommendations below:

- Don't warm up the engine. Start it up, and drive away normally.
- Avoid sudden acceleration. Drive as though there is an egg on the top of the gas pedal. This will make an automatic transmission shift to a higher gear sooner.
- With a manual transmission, shift to higher gears as soon as practical without lugging the engine. Sometimes it is possible to skip fourth gear with a five-speed manual transmission. Many new cars

have an indicator light showing when to shift. Use the indicator to move quickly and smoothly through the lower gears.

- With a manual transmission, downshift only when needed to make the car accelerate properly. Use the brakes rather than the transmission to slow the car, since using the engine wastes fuel.
- When traveling over flat rural highways, use cruise control set at a moderate speed. Most cars get their best mileage at about 45 mph. The Figure 2 shows how the mileage of the average car falls off at faster speeds.
- Don't speed. Although perhaps the least popular saving tactic, observing the speed limit will improve your safety and increase your gas mileage. FSEC's test car gave 4% better gas mileage at 55 mph than at 65 mph.
- Drive smart! When you see a red light ahead, brake gradually or let the car coast up to it, trying to time your arrival for the green. Alternately accelerating and braking lowers fuel economy.
- If your car has overdrive gears, use them whenever they will pull the car smoothly. Overdrive can save fuel around town, not just on the freeway. Build up speed as you approach a hill or bridge overpass.
- Avoid rush-hour traffic when possible. Idling wastes fuel, your time and your patience. If you are waiting for someone or at a drive-through, turn the engine off. It takes less fuel to start an engine than to idle for thirty seconds or more.
- Combine shorter trips into one long one to drive as little as possible with a cold engine.
- Park at the first available space. You'll get some exercise and save gas and aggravation. Remember, over 20% of all accidents happen in parking lots.

REDUCE AUTO AIR CONDITIONING

Your car's air conditioner drains your engine's power, particularly in Florida's climate. Each time you avoid using it, you increase your mileage by between 5 to 20%, depending on your car and the driving conditions. It has the largest impact on efficiency when you drive around town in stop-and-go traffic. The FSEC test car used 15% more fuel with the air conditioner, over identical trips completed without its use.

- Choose a car with tinted windows and a light colored exterior to reduce the need for air conditioning.
- Try to park your car in a shady spot when possible.
- Use sunshades or car covers when your car must sit in the sun and leave the windows open about an inch to exhaust the hot air. Monitored test cars at FSEC showed that the air temperature inside stationary automobiles without shades can reach 150°F, compared to a 15°F cooler average for cars with carshades. Using shades or car covers will improve your initial comfort and reduce the need for air conditioning.
- On hot summer days, open your car's doors or windows and flush out the hot interior air for a minute or two before entering.
- When using the air conditioner, use the lowest setting at a high fan speed after the car has cooled to a comfortable level. Some air conditioners have an economy switch which should be used whenever possible.
- The air conditioner reduces fuel economy most during acceleration. Wait to turn on your air conditioner until you have reached cruising speed.
- Some sources claim that closing windows and using a car's air conditioner will result in higher fuel economy at freeway speeds than leaving the windows open without the air conditioner. FSEC tests showed this is not the case. In repeated evaluation at 65 miles per hour, our test car experienced 11% better fuel efficiency with no A/C and the windows open than using the air conditioner. We also found that closing windows at freeway speeds improved fuel efficiency by 2-3%.

THE FUTURE

A number of developments will affect the efficiency of transportation in Florida's future. Electric cars will become available since the state of California has legislated that 2% of manufacturers' vehicle sales must be non-polluting by 1998. General Motors has begun to convert a plant to produce electric vehicles, and the Japanese and Europeans have begun limited electric vehicle production in their home market. One significant new enhancement for electric vehicles is solar (photovoltaic) power. The addition of solar panels to

electric vehicles promises to increase their range and provide charging while they are parked.

As for gasoline-powered vehicles, the two-stroke engine, last seen in 60's-vintage Saabs, seems poised for a comeback. Although only slightly more efficient than conventional four-stroke engines, their smaller size and lighter weight allow for better aerodynamics and improved fuel economy. The highest mileage prototypes by various manufacturers in the past have all used direct-injection diesels. It is likely that this type of power plant will be seen more often, especially if national fuel economy standards are made more stringent.

Many automobile manufacturers have already built very fuel efficient prototype cars. In the U.S., General Motors has produced the *TPC*, an aluminum bodied two-seater automobile which achieves 74 mpg on the highway, and Ford has produced diesel-powered prototype which obtained up to 99 mpg in road tests. In Europe, Volvo has produced the 4-passenger *LCP 2000* which features an advanced diesel engine with lightweight materials and enhanced safety features which reaches 81 mpg on the highway. Most efficient of all, the half-ton Renault *VESTA2* achieved 107 mpg in repeated road tests using a 3-cylinder gasoline engine with light-weight materials and a highly refined aerodynamic design.

Perhaps one of the most exciting areas of research is the use of hydrogen as an automotive fuel. Hydrogen has an extremely high heat content, burns cleanly and has the potential for very low engine emissions. Hydrogen can also be produced directly from water by electrolysis using solar electricity from photovoltaic cells. FSEC is conducting research on the production, storage and utilization of this promising fuel.

Unfortunately, efficient vehicles alone cannot reduce traffic congestion. Air pollution can be lessened, but not eliminated. We also need improved design of our communities to reduce travel distances between home and destinations. We need safe places for pedestrians and bicyclists. The future does hold promise though.

Instead of sprawling bedroom communities, many developers are planning to build compact new towns. Many new towns feature "village centers" that are no more than a five minute walk from home. And many existing communities are trying to add bicycle paths and pedestrian walks to assure safer travel for these pollution-free transportation modes.

The trip to work is changing too. Newly available communication equipment can reduce the daily travel to offices. Telecommuting can reduce energy use and air pollution. Local governments are enacting legislation requiring companies to provide incentives for employees to car-pool, or take transit to work. And as Florida becomes more urbanized, we can expect to see more transit options. Buses, trolleys, monorails and magnetic levitation trains will serve Florida's largest cities.

With adequate planning, Florida's future transportation needs can be met with less waste of our resources. Use the tips in this brochure to save energy now, and be open-minded to new vehicles, new work habits, new towns and new transit in the future. Energy efficiency can keep us moving.

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TABLE 1. MOST FUEL-EFFICIENT VEHICLES, 1983-1992

Make	Model	Trans/Eng/Cyl	City	Hwy	HIC
<i>Trans = transmission (M5: Manual 5-speed; L4: Lockup 4-speed automatic; A3: 3-speed automatic) Eng = engine size in liters; Cyl = number of cylinders; Dsl = Diesel; Tdsl = Turbodiesel; Conv = Convertible HIC = Head injury criteria, from 35 MPH crash tests (greater than 1000 = potential for serious head injury)</i>					
1992 Models					
Two Seaters					
1. GEO	Metro-Conv	M5/1.0/3	41	46	na
2. GEO	Metro-Conv	M5/1.0/3	32	38	na
3. Lotus	Elan	M5/1.6/4	24	31	na
Mini-Compact					
1. Nissan	NX	M5/1.6/4	28	38	na
2. Toyota	Paseo	M5/1.5/4	28	34	na
3. Nissan	NX	M5/1.6/4	27	36	na
Subcompact					
1. GEO	Metro-XFI	M5/1.0/3	53	58	951
2. Honda	Civic-VX	M5/1.5/4	48	55	na
3. Geo	Metro	M5/1.0/3	46	50	951
Compact					
1. VW	Jetta-TDsl	M5/1.6/4	37	40	na
2. Pontiac	LeMans	M5/1.6/4	31	41	819
3. Isuzu	Stylus	M5/1.6/4	31	37	580
Mid-Size					
1. Mazda	626/MX-6	M5/2.2/4	24	31	846
2. Plymouth	Acclaim	M5/2.5/4	23	31	663
3. Dodge	Spirit	M5/2.5/4	23	31	1421
Large Cars					
1. Saab	9000	L4/2.3/4	20	26	584
2. Saab	9000-Turbo	L4/2.3/4	19	26	584
3. Chrysler	Imperial	L4/3.3/6	19	25	517
Station Wagons					
1. Ford	Escort Wgn	M5/1.9/4	30	37	na
2. Mercury	Tracer Wgn	M5/1.9/4	30	37	na
3. Toyota	Corolla Wgn	M5/1.6/4	28	33	na
Passenger Van					
1. Dodge	Caravan	L3/2.5/4	21	24	903
2. Nissan	Axxess	M5/2.5/4	21	27	1051
3. Plymouth	Voyager	M5/2.5/4	20	28	903
Pickups					
1. Ford	Ranger	M5/2.3/4	23	28	977
2. GMC	Sonoma	ML3/2.5/4	23	27	985
3. Nissan	Truck	M5/2.4/4	23	27	742
1991 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	49	52	750
2. GEO	Metro-Conv	M5/1.0/3	41	46	na
3. Honda	CRX	M5/1.5/4	32	36	750

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<i>Eng = engine size in liters; Cyl = number of cylinders; Dsl = Diesel; Tdsl = Turbodiesel; Conv = Convertible</i>					
<i>HIC = Head injury criteria, from 35 MPH crash tests (greater than 1000 = potential for serious head injury)</i>					
Mini-Compact					
1. Nissan	NX-Coupe	M5/1.6/4	28	38	1134
2. VW	Cabriolet	M5/1.8/3	25	32	na
3. L/Merc	Capri-Conv	M5/1.6/4	25	31	na
Subcompact					
1. GEO	Metro-XFI	M5/1.0/3	53	58	951
2. Daihatsu	Charade	M5/1.9/4	38	42	na
3. Ford	Festiva	M5/1.3/4	35	42	1014
Compact					
1. VW	Jetta-Dsl	M5/1.6/4	37	43	na
2. Ford	Escort	M5/1.9/4	31	41	802
3. Pontiac	LeMans	M5/1.6/4	31	40	819
Mid-Size					
1. Dodge	Spirit	M5/2.5/4	24	34	1421
2. Plymouth	Acclaim	M5/2.5/4	24	34	663
3. Mazda	626	M5/2.2/4	24	31	846
Large Cars					
1. Buick	LeSabre	L4/3.8/6	19	28	na
2. Pontiac	Bonneville	L4/3.8/6	19	28	na
3. Dodge	Monaco	L4/3.0/6	18	27	517
Station Wagons					
1. Honda	Civic-Wgn	M5/1.6/4	31	35	na
2. Ford	Escort-Wgn	M5/1.9/4	29	36	na
3. L/Merc	Tracer-Wgn	M5/1.9/4	29	36	na
Pickups					
1. Ford	Ranger	M5/2.5/4	24	29	977
2. Chevrolet	S-10	M5/2.5/4	23	27	985
3. Nissan	Hardbody	M5/2.4/4	23	27	742
Passenger Van					
1. Nissan	Axxess	M5/2.4/4	21	26	na
2. Plymouth	Voyager	ML3/2.5/4	21	25	903
3. Mazda	MPV	M5/2.6/4	20	25	1038
1990 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	49	52	750
2. Honda	CRX	M5/1.5/4	32	35	750
3. Honda	CRX	L4/1.5/4	29	35	750
Mini-Compact					
1. VW	Cabriolet	M5/1.8/4	25	32	na
2. VW	Cabriolet	L4/1.8/4	23	28	na
3. Nissan	240-SX	M5/2.4/4	29	35	407
Subcompact					
1. GEO	Metro-XFI	M5/1.0/3	53	58	951
2. GEO	Metro	M5/1.0/3	46	50	951
3. Suzuki	Swift	M5/1.3/4	40	44	951

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<i>Eng = engine size in liters; Cyl = number of cylinders; Dsl = Diesel; Tdsl = Turbodiesel; Conv = Convertible</i>					
<i>HIC = Head injury criteria, from 35 MPH crash tests (greater than 1000 = potential for serious head injury)</i>					
Compact					
1. VW	Jetta-Dsl	M5/1.6/4	37	43	na
2. Ford	Escort	M5/1.9/4	32	42	551
3. Pontiac	LeMans	M5/1.6/4	31	40	819
Mid-Size					
1. Chevrolet	Corsica	M5/2.2/4	24	34	772
2. Dodge	Spirit	M5/2.5/4	24	32	1421
3. Mazda	626	M5/2.2/4	24	31	846
Large Cars					
1. Saab	9000	M5/2.0/4	21	28	584
2. Chevrolet	Caprice	L4/4.3/6	19	27	1328
3. Buick	Electra	L4/3.8/6	18	27	423
Station Wagons					
1. Honda	Civic-Wgn	M5/1.5/4	31	34	na
2. Plymouth	Colt-Wgn	M5/1.5/4	28	34	810
3. Ford	Escort-Wgn	M5/1.9/4	27	26	na
Pickups					
1. Ford	Ranger	M5/2.3/4	24	29	977
2. GMC	S-15	M5/2.5/4	23	27	985
3. Nissan	Hardbody	M5/2.4/4	23	27	742
Passenger Van					
1. Dodge	Caravan	M5/2.5/4	22	28	903
2. Nissan	Axxess	M5/2.4/4	21	27	1051
3. Mazda	MPV	M5/2.6/4	20	24	1038
1989 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	50	56	750
2. Honda	CRX	M5/1.5/4	34	41	750
3. Honda	CRX	L4/1.5/4	29	36	750
Mini-Compact					
1. Toyota	Celica-Conv	M5/2.0/4	26	32	627
2. VW	Cabriolet	M5/1.8/4	24	27	na
3. VW	Cabriolet	A3/1.8/4	22	24	na
Subcompact					
1. GEO	Metro	M5/1.0/3	53	58	951
2. GEO	Metro-LSI	M5/1.0/3	46	50	951
3. Ford	Festiva	M5/1.3/4	39	43	1014
Compact					
1. Ford	Escort	M5/1.9/4	32	42	55
2. Pontiac	LeMans	M5/1.6/4	31	40	819
3. Pontiac	LeMans	M4/1.6/4	30	39	819
Mid-Size					
1. Dodge	Aries	M5/2.2/4	25	34	na
2. Chevrolet	Corsica	M5/2.0/4	24	34	772
3. Plymouth	Acclaim	M5/2.5/4	24	34	663

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Large Car					
1. Eagle	Premier	L4/2.5/4	22	31	877
2. Saab	9000	M5/2.0/4	22	28	584
3. Saab	9000-Turbo	M5/2.0/4	22	28	584
Station Wagons					
1. Honda	Civic-Wgn	M5/1.5/4	31	35	na
2. Dodge	Colt-Wgn	M5/1.5/4	30	35	810
3. Toyota	Corolla-Wgn	M5/1.6/4	30	35	na
Pickups					
1. Dodge	Ram-50	M5/2.0/4	23	28	na
2. Chevrolet	S-10	M5/2.5/4	23	27	985
3. Ford	Ranger	M5/2.3/4	23	27	977
Passenger Van					
1. Toyota	Van	M5/2.2/4	22	24	1183
2. Dodge	Caravan	M5/2.5/4	21	28	903
3. Mazda	MPV	M5/2.6/4	20	24	1038
1988 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	50	56	750
2. Honda	CRX	M5/1.5/4	34	39	750
3. Honda	CRX	A4/1.5/4	32	37	750
Mini-Compact					
1. Chevrolet	Sprint-Metro	M5/1.0/3	44	48	na
2. Chevrolet	Sprint-Turbo	M5/1.0/3	37	43	na
3. Suzuki	Forsa-Turbo	M5/1.0/3	37	43	na
Subcompact					
1. Chevrolet	Sprint-4DR	M5/1.0/3	44	48	na
2. Suzuki	Forsa-4DR	M5/1.0/3	44	48	na
3. Ford	Festiva	M5/1.3/4	39	43	na
Compact					
1. Ford	Escort	M4/1.9/4	33	42	551
2. Pontiac	LeMans	M5/1.6/4	31	40	819
3. Pontiac	LeMans	M4/1.6/4	30	39	819
Mid-Size					
1. Dodge	Lancer	M5/2.2/4	25	34	na
2. Chrysler	LeBaron	M5/2.2/4	25	34	791
3. Plymouth	Reliant	M5/2.2/4	25	33	na
Large Car					
1. Eagle	Premier	L4/2.5/4	25	34	877
2. Eagle	Premier	M5/2.5/4	24	32	877
3. Saab	9000	M5/2.0/4	21	28	584
Station Wagon					
1. Ford	Escort-Wgn	M4/1.9/4	33	42	na
2. Toyota	Corolla-Wgn	M5/1.6/4	30	35	na
3. Nissan	Sentra-Wgn	M5/1.6/4	29	35	1047

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Make	Model	Trans/Eng/Cyl	City	Hwy	HIC
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Pickups					
1. GMC	S-15	M5/2.5/4	24	30	985
2. Ford	Ranger	M5/2.3/4	24	28	977
3. Dodge	Ram-50	M5/2.4/4	23	28	na
Passenger Van					
1. Toyota	Van	M5/2.2/4	22	23	1183
2. Dodge	Caravan	M5/2.5/4	21	28	903
3. Plymouth	Voyager	M5/2.5/4	21	28	903
1987 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	52	57	750
2. Honda	CRX	M5/1.5/4	45	50	750
3. Honda	CRX	L4/1.5/4	29	34	750
Mini-Compact					
1. Chevrolet	Sprint-ER	M5/1.5/4	52	57	750
2. Chevrolet	Sprint-Turbo	M5/1.0/3	37	43	na
3. Suzuki	Forsa-Turbo	M5/1.0/3	37	43	na
Subcompact					
1. Chevrolet	Sprint	M5/1.0/3	44	49	na
2. Subaru	Justy	M5/1.2/3	38	41	611
3. Honda	Civic	M4/1.3/4	37	43	787
Compacts					
1. Ford	Escort	M5/2.0/4	37	45	551
2. VW	Golf Diesel	M5/1.6/4	36	41	896
3. Renault	Alliance	M4/1.4/4	34	41	na
Mid-Size					
1. Dodge	Aries	M5/2.2/4	25	32	na
2. Chrysler	LeBaron	M5/2.2/4	25	32	791
3. Dodge	Lancer	M5/2.2/4	24	32	na
Large Cars					
1. Saab	9000 Turbo	M5/2.0/4	25	32	584
2. Saab	9000	M5/2.0/4	21	26	584
3. Chevrolet	Caprice	L4/4.3/6	18	27	1328
Station Wagons					
1. Honda	Civic-Wgn	M5/1.5/4	31	34	na
2. Toyota	Tercel-Wgn	M5/1.5/4	29	36	na
3. Nissan	Sentra-Wgn	M5/1.6/4	28	35	1047
Pickups					
1. Isuzu	Pickup Diesel	M4/2.2/4	35	39	1764
2. Isuzu	Pickup Diesel	M5/2.2/4	32	35	1764
3. Isuzu	Turbo Diesel	M5/2.2/4	31	33	

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Passenger					
Vans					
	Caravan	M5/2.2/4	22	29	
1. Dodge	Van	M5/2.2/4	22	24	
2. Toyota	Aerostar	M5/2.3/4	22	26	
3. Ford					
SUV's					
1. Suzuki	Samurai	M5/1.3/4	27	29	
2. Jeep	Cherokee	M5/2.1/4	26	29	
3. Isuzu	Trooper	M5/2.2/4	25	25	
1986 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	52	57	
2. Honda	CRX	M5/1.5/4	31	37	
3. Honda	CRX	L4/1.5/4	29	35	
Mini-Compact					
1. Chevrolet	Sprint-ER	M5/1.0/3	55	60	
2. Chevrolet	Sprint	M5/1.0/3	44	50	
3. Suzuki	Forsa	A3/1.0/3	40	42	
Subcompacts					
1. Nissan	Sentra Dsl	M4/1.7/4	45	50	
2. Chevrolet	Sprint Plus	M5/1.0/3	44	50	
3. Chevrolet	Chevette Dsl	M5/1.8/4	40	46	
Compacts					
1. Ford	Escort Dsl	M5/2.0/4	41	49	
2. VW	Golf Dsl	M5/1.6/4	37	44	
3. VW	Jetta Dsl	M5/1.6/4	37	44	
Mid-Size					
1. Dodge	Aries	M5/2.2/4	25	35	
2. Chrysler	LeBaron	M5/2.2/4	25	35	
3. Dodge	Lancer	M5/2.2/4	25	35	
Large Cars					
1. Saab	9000 Turbo	M5/2.0/4	21	28	
2. Buick	LeSabre	L4/3.8/6	19	30	
3. Oldsmobile	Delta 88	L4/3.8/6	19	30	
Station Wagons					
1. Ford	Escort Dsl-Wgn	M5/2.0/4	36	43	
2. Mercury	Lynx-Wgn	M4/1.9/4	32	41	
3. Toyota	Tercel-Wgn	M5/1.5/4	31	37	
Pickups					
1. Isuzu	Pickup Diesel	M4/2.2/4	35	38	
2. Isuzu	Pickup Diesel	M5/2.2/4	32	35	
3. Isuzu	Turbo Diesel	M5/2.2/4	31	33	

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Passenger					
Vans					
	Safari	M5/2.5/4	23	28	
1. GMC	Caravan	M4/2.2/4	22	28	
2. Dodge	Van	M5/2.2/4	22	24	
3. Toyota					
SUV's					
1. Jeep	Cherokee	M5/2.2/4	28	28	
2. Isuzu	Trooper tdsl	M5/2.2/4	28	28	
3. Suzuki	Samuai 4WD	M5/1.3/4	27	29	
1985 Models					
Two Seaters					
1. Honda	CRX-HF	M5/1.5/4	49	54	
2. Honda	CRX	M5/1.5/4	31	38	
3. Honda	CRX	L3/1.5/4	28	31	
Mini-Compact					
1. Chevrolet	Sprint	M5/1.0/3	47	53	
2. Chevrolet	Sprint	A3/1.0/3	41	43	
3. VW	Cabriolet	M5/1.8/4	24	29	
Subcompacts					
1. Nissan	Sentra Dsl	M4/1.7/4	45	50	
2. Chevrolet	Chevette Dsl	M5/1.8/4	39	46	
3. Honda	Civic DX	M5/1.3/4	38	42	
Compacts					
1. Ford	Escort Dsl	M5/2.0/4	43	52	
2. Toyota	Corolla Dsl	M5/1.8/4	38	47	
3. VW	Golf Dsl	M5/1.6/4	37	46	
Mid-Size					
1. Chevrolet	Celebrity	L3/3.3/6	26	35	
2. Plymouth	Reliant	M4/2.2/4	26	33	
3. Dodge	Aries	M5/2.2/4	25	33	
Large Cars					
1. Buick	Electra	L4/3.3/6	26	35	
2. Chevrolet	Impala Dsl	L4/5.7/8	21	30	
3. Chevrolet	Caprice Dsl	L3/5.7/8	21	29	
Station Wagons					
1. Ford	Escort Dsl Wgn	M5/2.0/4	37	44	
2. Mercury	Lynx Dsl Wgn	M5/2.0/4	36	44	
3. VW	Quantum T-Dsl	M5/1.6/4	33	38	
Pickups					
1. Isuzu	Pickup Diesel	M4/2.4/4	35	38	
2. Toyota	Diesel	M4/2.4/4	33	35	
3. Isuzu	Pickup	M5/2.2/4	32	36	

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Passenger Vans					
	Caravan				
	Van	M4/2.2/4	24	29	
1. Dodge	Astro	M5/2.0/4	23	25	
2. Toyota		M5/2.5/4	23	28	
3. Chevrolet					
1984 Models					
<i>Note: The EPA used a city/highway average number prior to 1985.</i>					
Two Seaters					
1. Honda	CRX	M5/1.4/4	51		
2. Honda	CRX	M5/1.5/4	36		
3. Honda	CRX	A3/1.5/4	32		
Mini-Compact					
1. Toyota	Starlet	M5/1.3/4	44		
2. Toyota	Starlet	M4/1.3/4	42		
3. VW	Rabbit Conv	M5/1.8/4	27		
Subcompact					
1. Nissan	Sentra Dsl	M4/1.7/4	50		
2. VW	Rabbit Dsl	M4/1.6/4	47		
3. Isuzu	I-Mark Dsl	M4/1.8/4	44		
Compact					
1. Toyota	Corolla Dsl	M4/1.8/4	47		
2. Ford	Escort Dsl	M5/2.0/4	42		
3. Ford	Tempo Dsl	M5/2.0/4	41		
Mid-Size					
1. Dodge	Aries	M4/2.2/4	29		
2. Plymouth	Reliant	M5/2.2/4	27		
3. Chevrolet	Citation II	M4/2.5/4	27		
Large Cars					
1. Chevrolet	Impala Dsl	A4/5.7/8	23		
2. Buick	Electra Dsl	A4/5.7/8	23		
3. Pontiac	Parisienne Dsl	A3/5.7/8			
Station Wagons					
1. VW	Quantum T-Dsl	M5/1.6/4	42		
2. Nissan	Sentra Dsl	M5/1.7/4	42		
4. Ford	Escort Dsl	M5/2.0/4	41		
Pickups					
1. Isuzu	Pickup Dsl	M4/2.2/4	38		
2. Isuzu	Pickup Dsl	M5/2.2/4	36		
3. Chevrolet	S-10 Dsl	M5/2.2/4	34		
Passenger Vans					
	Van Wagon	M5/2.0/4	25		
1. Toyota	Van Wagon	A4/2.0/4	24		
2. Toyota	G-15 Rally Dsl	M4/6.2/4	21		
3. GMC					
1983 Models					

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Two Seaters					
1. Ford	EXP	M4/1.6/4	29		
2. Lincoln/Merc	LN7	A3/1.6/4	27		
3. Fiat	X1/9	M5/1.5/4	26		
Mini-Compacts					
1. Honda	Civic	M5/1.3/4	46		
2. Toyota	Starlet	M5/1.3/4	44		
3. Toyota	Starlet	M4/1.3/4	42		
Subcompact					
1. VW	Rabbit Dsl	M4/1.6/4	50		
2. Nissan	Sentra Dsl	M4/1.7/4	48		
3. Isuzu	I-Mark Dsl	M4/1.8/4	44		
Compact					
1. VW	Quantum T-Dsl	M5/1.6/4	41		
2. Renault	Alliance	M4/1.4/4	37		
3. Renault	Alliance	M5/1.4/4	35		
Mid-Size					
1. Dodge	Aries	M4/2.2/4	29		
2. Volvo	760 GLE T-Dsl	M4/2.4/6	28		
3. Plymouth	Reliant	M5/2.2/4	28		
Large Cars					
1. Chevrolet	Caprice Dsl	A4/5.7/8	23		
2. Buick	Electra Dsl	A3/5.6/8	23		
3. Oldsmobile	Delta 88 Dsl	A3/5.6/8	23		
Station Wagons					
1. Nissan	Sentra Dsl	M5/1.7/4	42		
2. VW	Quantum T-Dsl	M5/1.6/4	41		
3. Nissan	Sentra Dsl	A3/1.7/4	38		
Pickups					
1. VW	Dsl Pickup	M4/1.6/4	42		
2. VW	Dsl Pickup	M5/1.6/4	40		
3. Isuzu	Pickup Dsl	M4/2.2/4	38		
Passenger Vans					
1. VW	Vanagon Dsl	M5/1.6/4	30		
2. GMC	G-15 Rally Dsl	A4/6.2/8	20		
3. Dodge	B-150 Wagon	M4/3.8/6	19		