

Fuel Conservation Practices

Fleet Services Division (FSD)
Department of Public Works
City of Naperville

City's Fuel Conservation Program

- City has had a Fuel Conservation Program in place since 2005
- Goal: 10% improvement in fuel economy for City vehicles
- Results: Have improved overall fleet fuel economy by 3.4%

Forces Driving Fuel Conservation

- Fuel Cost: More than doubled since 2004
- EPA: Clean environment
- DOE: Decrease dependence on foreign oil
- Much of the increase in price appears permanent: Increase in global demand for oil not being matched by discoveries of new oil reserves

Fuel Efficient Driving Techniques

- Warm-up Time
- Idling Time
- “Jackrabbit” Starts & Stops
- Air Conditioning Use
- Excess Weight
- Routing
- Unnecessary Trips
- Drive at Lower Speeds



Warm Up Time- Gasoline Engines

- With fuel injected engines, do NOT press on the accelerator when starting the engine; it is unnecessary and wastes fuel
- The most fuel efficient way to warm up a gasoline engine is to drive it, not idle it
- The fastest way to warm up the interior of a gasoline powered vehicle is to drive it, not idle it
- Above 32 degrees, 30 seconds is adequate warm up time in all gasoline engines. Under 32 degrees; two minutes or until frost is removed from windows.
- Excessive warm also creates carbon and soot deposits which decrease fuel economy
- Excessive warm up can lead to premature engine damage from partially burned fuel diluting the engine oil

Warm Up Time- Diesel Engines

- Above freezing: Warm up a diesel engine until all pressure readings are acceptable and all “ wait” lights are out and at least two minutes has passed.
- Below freezing: parked inside; same as above
- Below freezing: parked outside overnight; Five minutes
- In addition to wasting fuel, excessive warm up time at low engine RPM harms diesel engine components which are designed to run at higher temperatures

Idling

- Eliminating excess idling will increase fuel economy
- Restarting vehicles does NOT prematurely wear out components
- Typical fuel use at idle:
 - Gasoline engines: .2 to .4 gallons/hour idling
 - Diesel engines: .6 to 1.6 gallons per hour idling
- With fuel injected engines, more fuel efficient to stop engine and restart if stopped for longer than one minute
 - At job sites
 - At home base
 - Freight trains
 - Traffic jams

“Jackrabbit” Starts and Stops

- Avoid fast stops and starts
- Accelerate smoothly
- Maintain an even speed
- Coast to stops

Air Conditioning

- Use of air conditioning can reduce fuel economy by 10%
 - Air conditioning utilizes 3-5 engine horsepower
 - Lower all windows and vent out the hot air for three minutes before turning on the air conditioning.
 - Leave the A/C off, lower windows and use the “Vent” setting on the fan if the inside temperature is below 75 degrees

Excess Weight

- Carry only the tools and work material necessary
- Remove all debris daily
- Take an inventory annually and remove unnecessary tools and equipment

Route Planning

- Review routes and time of travel to avoid congestion and unnecessary idling
- Review routes for shortest distance
- Review daily work assignments to consolidate trips for least mileage

Unnecessary Trips

- Pool rides whenever possible
- Use telephone or teleconferencing
- Use courier services for deliveries

Lower Speeds

- Observe all posted speed limits
- 10% reduction in speed can improve fuel economy by 5% even in low speed city driving
- Maintain a steady speed
- Anticipate traffic flows

Fuel Efficient Maintenance Techniques

- Use manufacturer recommended fuel
- Keep tires properly inflated
- Replace air filter as necessary
- Tuneups
- Beware of gas saving devices

Use Manufacturer Recommended Fuel

- No benefit to fuel economy in using a higher grade fuel

Keep Tires Properly Inflated

- 10% under inflation can decrease fuel economy by 3-4%
- Tires will naturally lose at least one pound of air per month so check pressure regularly

Replace Air Filter as Necessary

- A badly clogged air filter cause reduce fuel economy by 10%

Engine Tuneups

- Tuneups important, but not necessary as frequently as they used to be
- Can improve MPG up to 20% if badly out of tune

Beware Fuel Saving Devices !

- To check for tests of fuel saving devices, go to www.gov/otaq/consumer.htm
- Be very skeptical of any of these devices; EPA has tested over 100 and found very few that provide any fuel economy improvement
- If not an EPA tested product, be very, very skeptical

Buying a New car?

- When replacing a vehicle, see if it can be downsized; 8 cylinder engine to 4 cylinder; full size to midsize, etc..
- The difference between a car getting 20 MPG vs 30 MPG; at \$3.00/gallon: save \$750 per year on fuel costs if you drive 15,000 miles per year
- Consider gas/electric hybrid. Federal tax rebates: see www.eere.energy.gov/afdc/progs
- Example 2008 Ford Escape 2WD Hybrid: \$3000
- Stay tuned for new “Plug In” hybrids in 2010, new small diesel engines for passenger cars, and other new technologies