CAR CARE GUIDE

MAINTAINING YOUR VEHICLE FOR SAFETY, DEPENDABILITY AND VALUE
# Car Care Guide

## THIS CAR CARE GUIDE BELONGS TO:

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<tr>
<td>Vehicle Year: Make: Model:</td>
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<td>Colour: Engine: Fuel Type:</td>
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## SERVICE PROVIDER INFORMATION:

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Taking care of your car or truck is integral to ensuring your vehicle is safe and reliable. Scheduling regular maintenance and service checks also reduces both your long and short-term costs, helps maintain your vehicle’s value and can help protect the environment.

The first step toward proper maintenance is to “Be Car Care Aware” – to understand your car, the care it needs, when it needs it and why. That’s why we’ve created this easy-to-use Car Care Guide, which explains typical preventive maintenance and repairs in everyday language and takes the mystery out of major car systems and parts.

As a further tool to help you navigate the world of car care, Be Car Care Aware (BCCA) has prepared a comprehensive and easy-to-use checklist included in this guide to help you plan and understand the service requirements needed to keep your car operating safely.

Keep this guide in your glove box. It’s a great tool that you can refer to whether you’re performing your own car maintenance or dropping your car off at a repair facility.
Things change – including the way we use our cars, how we drive them and the condition of our roads. Normal driving is defined as steady driving in non-extreme weather or environments. Today, driving in severe conditions is more the rule than the exception. The automotive industry refers to “severe driving” as:

- stop-and-go traffic;
- short commutes;
- heavier loads (cargo, passenger or towing a trailer);
- rough or mountainous roads;
- dusty or salty environments;
- driving the car before it’s had a chance to warm up; and/or
- driving in extremely hot or cold weather.

As a driver, you should be aware of your vehicle and properly maintain and repair it as outlined in this guide and your owner’s manual. If you do, your car will perform safely and dependably for years to come.
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Be Car Care Aware has developed a service interval schedule with general guidelines for the regular maintenance of passenger cars, minivans, pick-up trucks and SUVs.

This schedule applies to the majority of drivers and vehicles; however, always consult your owner’s manual for specific recommendations from your vehicle manufacturer.
## CHECK MONTHLY

- Interior and exterior lights
- Tire inflation and tread condition
- Windshield washer fluid level

## CHECK EVERY 6 MONTHS OR 7,000 KILOMETRES

- Chassis lubrication
- Coolant (antifreeze) level
- Finish (rust, scratches, dents)
- Horn
- Power steering fluid level
- Transmission fluid level
- Wiper blades

## CHECK EVERY 12 MONTHS OR 20,000 KILOMETERS

- Battery and cables
- Belts
- Brake system
- Cabin air filter
- Engine air filter
- Exhaust system
- Hoses
- HVAC System
- Steering and suspension

## OTHER CHECKS

- Dashboard indicator lights (always keep an eye out for these lights, especially if flashing)
- Engine oil and filter (check your owner’s manual)
- Spark plugs (check your owner’s manual)
BATTERY AND CABLES
Battery should be securely mounted and battery connections should be clean, tight and corrosion-free. Have your battery tested bi-annually, and if it is more than five years old, replace it.

BELTS
Check the tension and condition of V-belts and serpentine belts and replace when cracked, frayed, glazed or showing signs of excessive wear. Replace timing belt per interval specified in owner’s manual, typically every 80,000 to 160,000 kilometres. Sometimes the tensioner and pulleys must also be replaced to prevent the new belt from slipping.

BRAKE SYSTEM
Check the entire brake system every year, including brake pads, shoes, rotors, drums, calipers and brake fluid. Brake fluid should be changed every two to three years or 40,000 to 60,000 kilometres, with major brake replacement, or as directed in owner’s manual.

CABIN AIR FILTER
Replace annually or whenever heating or cooling efficiency is reduced. It will need to be replaced more often in areas heavy with airborne contaminants.

CHASSIS LUBRICATION
Many newer cars are lubed-for-life, but some still require this service so check your owner’s manual. Replacement steering and suspension components may require periodic lubrication.

COOLANT (ANTIFREEZE)
Check the level in the reservoir by removing radiator cap once it has cooled. Never open a hot radiator cap. Coolant does not evaporate, so if the level is low, have the system checked for leaks. Change coolant at the interval and with the correct fluid as specified in the owner’s manual (there are many different types of coolant because it is vehicle specific).

ENGINE AIR FILTER
Inspect the filter annually. Replace it when it is torn, water or oil soaked, restricted or showing other signs of wear.

ENGINE OIL AND FILTER
Oil and engine technology have changed dramatically over the last few decades, so vehicles do not require oil changes as frequently as before. Be sure to check your owner’s manual for your car’s specific recommended schedule and change your filter when you change your oil.

EXHAUST SYSTEM
Have the system inspected every fall for leaks, damage and broken supports or hangers. Exhaust leaks can be dangerous and must be corrected without delay. 
Note: Know your province’s emissions testing regulations.

FINISH
To prevent stripping the vehicle’s wax finish, use only automotive car wash products, not dishwashing liquids. Polish your car at least twice a year to maintain and protect the finish, and inspect your car regularly for rust, scratches and dents.
HORN
Check your horn every six months.

HOSES
Inspect hoses annually and replace when leaking, brittle, cracked, rusted, swollen or restricted.

HVAC SYSTEM (AIR & HEAT)
Have your HVAC system inspected annually or if you are experiencing difficulty defrosting.

INTERIOR AND EXTERIOR LIGHTS
If a light is out, first check the fuses, then immediately replace the bulb if necessary for safe and legal driving. Light covers should also be cleaned or replaced if light is weak or distorted.

POWER STEERING FLUID
Check the fluid with the car warmed up. Have the system inspected for leaks if the level is low, and replace if fluid is contaminated. Consult owner’s manual for vehicle specific service requirements.

SPARK PLUGS
Typical replacement intervals range between 50,000 and 160,000 kilometres, depending on the vehicle and type of spark plug. Always consult your owner’s manual for your specific vehicle.

STEERING AND SUSPENSION
Inspect this system annually, including wheel alignment, shock absorbers, struts and chassis parts like ball joints, tie rod ends and other related components. Replace parts if leaks, damage and/or loose mounting hardware are found. Symptoms of worn suspension include uneven tire wear, excessive bouncing and unusual noises.

TIRE INFLATION AND CONDITION
Check the pressure of all tires, including the spare, monthly in warmer weather and more often in colder temperatures. If low, inflate the tires to maintain them at the recommended pressure. Check the tread for uneven or irregular wear and cuts or bruises along sidewalls. Rotate your tires every 10,000 kilometres and replace them if worn or damaged. 
*Note: Canada’s provinces have different programs and requirements for winter tires. Be sure to check your province’s regulations.*

TRANSMISSION FLUID
If your car is equipped with a dipstick, check fluid level with engine running.

If low, add the type of automatic transmission fluid specified in your owner’s manual and/or on your dipstick. For maximum performance, change every three to four years or 40,000 to 60,000 kilometres. 
*Note: Check your owner’s manual as replacement intervals vary and some vehicles don’t have dipsticks or don’t require transmission fluid.*

WINDSHIELD WASHER FLUID
Check fluid level monthly in the summer and weekly in the winter, and top up with washer fluid if necessary. Do not use water. *Note: Some vehicles have two reservoirs.*

WIPER BLADES
Replace bi-annually or when cracked, cut, torn, streaking or chattering. Consider winter wiper blades for Canada’s colder months.
Having your car regularly checked and maintained is essential to keeping you and your family safe on the road. Even so, sometimes things go wrong. Here are some things to keep in mind to keep you safe in the event that your car breaks down.

**PULL OFF THE ROAD**
Signal your intent and pull off to the shoulder of the road as quickly and safely as possible. Whether you pull over on the right or left side, be sure to move as far away from traffic as possible, and take note of your location. If you cannot pull off the road, do not try to push your car to the side of the road; simply turn on your hazard lights. If you are concerned about being hit from behind, leave your vehicle and move to a safer location.

**MAKE YOUR VEHICLE VISIBLE**
It is important to make your car visible to ensure other drivers, roadside assistance operators and/or emergency crews can see you. In most parts of the country, this involves turning your hazard lights on; however, be sure to check provincial regulations on the use of four-way flashers. To make your car more visible, especially in poor conditions, you can also tie a brightly coloured item to your antenna or door handle.

**ASSESS THE PROBLEM**
Take note of any unusual sights, sounds, or smells from your vehicle and consider whether your car responded differently (e.g. pulled to one side or hesitated when accelerating) than usual. This will be helpful information for roadside assistance. If you must exit your vehicle for the assessment, be sure to watch for oncoming traffic, exit from the side of your car that is furthest from the road, and avoid standing directly behind or in front of your car.

**CALL FOR ASSISTANCE**
If you break down on a busy highway or have been in a collision, call 911 and follow their instructions. If you do not need to call 911, call for roadside assistance and provide them with
your location, a summary of the problem, a description of your car, and any special circumstances (e.g. large number of passengers, unusual/rare vehicle, etc.). In both cases, you should also call a family member or friend to alert them to your situation and location.

**PROTECT YOURSELF**
A break down can leave you in a vulnerable position, so it’s important to protect yourself.

- If you exit your vehicle, do so from the side of your car facing away from traffic, be aware of your surroundings and make sure that you are visible to other drivers. If it’s dark, carry a flashlight.

- If you stay in your vehicle, keep the windows and doors locked and do not run your engine for extended periods, which could put you at risk of carbon monoxide poisoning.

- Keep small children buckled in their seats in the car to prevent them from wandering onto the road.

- Be careful who you trust – if you choose to rely on a fellow motorist, ask him/her for identification and let someone know who they are, where you are going with them, and how long you expect to be away.

Even the most diligently maintained vehicles can break down, so it is important to be prepared. In addition to following the above advice, you should also always keep an emergency kit in your vehicle.

Visit [www.becarcareaware.ca](http://www.becarcareaware.ca) for more details.
The key to a car running at its best is basic maintenance. Keeping up with fluid changes, tire checks, filter changes and other services will help avoid bigger and more expensive repairs. Over time, some car parts and components wear out or become damaged. Being aware of your car will help you address any issues before they become bigger problems.

This section outlines some of the most common maintenance procedures and repairs to keep your car operating safely and reliably while maintaining its long-term value.
Service to maintain engine performance, sometimes known as a tune-up, keeps your engine working hand-in-hand with the rest of your car’s powertrain. This is how optimum car performance is achieved.

**WHY DO I NEED THIS SERVICE?**

A well-tuned engine delivers the best balance of power and fuel economy and produces the lowest level of emissions. Modern engines compensate for worn parts to a degree, giving you the sense that everything is fine with your car. Keeping your engine tuned will restore your car to its normal operating state, and contribute to the overall efficiency of the engine and emissions system.
TYPICAL SERVICE

- For some vehicles, it is recommended that you inspect the spark plugs on a regular basis to prevent them from seizing.

- The typical replacement interval for spark plugs ranges from 50,000 to 160,000 kilometers, but it varies based on spark plug and vehicle type. Check your owner’s manual.

- Replace any other ignition system and/or emissions system parts as needed/recommended.

- Replace the fuel and air filters regularly.

QUESTIONS TO ASK

- When should I come in for my next tune-up?

- Are there other services that need to be performed at this time?
Critical parts of your engine are lubricated, cleaned and cooled by your car’s oil and filter. Other specifically formulated fluids are used for the operation and protection of systems and components such as brakes, cooling, power steering, automatic and manual transmissions, and transfer cases. Your car may also be equipped with a variety of filters including those for the transmission, fuel system and interior ventilation.

**WHY DO I NEED THIS SERVICE?**

Periodic oil and filter changes help keep your engine clean on the inside. Dust, metallic shavings, condensation and even antifreeze can contaminate motor oil and additives, which break down over time, are also subject to contamination. Other fluids in your vehicle may require periodic replacement. For example, the majority of automatic transmission failures are heat-related, and automatic transmission fluid breaks down rapidly when subjected to high temperatures. Your owner’s manual may specify periodic flushing and filling of the brake hydraulic system because contaminated brake fluid may lead to corrosion and other problems in the hydraulic system, especially on vehicles with anti-lock brakes (ABS).
**TYPICAL SERVICE**

- Oil level should be checked regularly and changed as directed in the owner’s manual.

- Many car manufacturers recommend extended oil drain intervals.

- For automatic transmissions, brakes, power steering and axles, vehicle-specific fluids should be used.

- Coolant should be changed periodically as specified in the owner’s manual. Coolant fluid type and replacement interval schedules vary by vehicle.

- You should not have to top up your coolant, brake fluid or power steering fluid. If any of these are low, have the system inspected for leaks.

**QUESTIONS TO ASK**

- Is an oil filter change included in this service?

- When should I get my next oil change?

- How often should I check my fluid levels?

- Will my car’s instrument panel alert me if fluids are low?
BETLS AND HOSES

Many experts recommend checking and/or replacing belts, radiator and heater hoses at specific intervals to prevent your car from breaking down. Losing a belt today can mean big trouble for the engine. Serpentine belts are used on most engines to turn the water pump, alternator, power steering and air-conditioning compressor, so if the belt snaps, you may be stranded. Older cars use individual V-belts for these various accessories. A blown hose could result in an overheated engine and can cause additional engine damage.

WHY DO I NEED THIS SERVICE?
It’s not easy to know the true condition of a belt or hose by its outward appearance, because most belts and hoses fail from the inside out. Rubber hoses can become hard and brittle, deteriorating with age and exposure to extreme temperatures, causing the hose to split, blister or leak. Belts also break down with heat, usage and age. Every time a belt passes around a pulley, it bends. Flexing produces heat that causes the rubber to harden over time. If the belt is loose or slips, the wear process can be accelerated.
TYPICAL MAINTENANCE AND REPAIR

TYPICAL SERVICE

- Hoses should be checked annually for age hardening (or softening) by pinching. Any hose that feels rock-hard or mushy is due for replacement. Leaking, cracks, blistering or any other visible damage on the outside of the hose also indicates a need for replacement.

- The clamps should be replaced when new hoses are installed.

- V-belts and serpentine belts should be checked for looseness, cracks, frays or glazing.

- Replace the timing belt every 80,000 to 160,000 kilometers or based on the interval specified in the owner’s manual. Interference engines can fail if the timing belt breaks.

- It may be recommended during serpentine belt service/replacement to also replace tensioners, pulleys or the water pump.

QUESTIONS TO ASK

- Does my vehicle have a V-belt and a serpentine belt?

- Do you recommend replacing the water pump and tensioners while replacing my belt(s)?
The brake system is your car’s most important safety system. Never put off routine brake inspections or any needed repairs.

WHY DO I NEED THIS SERVICE?

Brakes are a normal wear item for any car. Eventually, they’re going to need to be replaced for both performance and safety reasons. Don’t let your brakes get to the “metal-to-metal” point, requiring more expensive rotor or drum replacement. Your owner’s manual might specify periodic flushing and filling of the brake hydraulic system. Contaminated brake fluid can lead to corrosion and other problems in the hydraulic system, especially on cars with anti-lock brakes (ABS).
TYPICAL SERVICE

• Have your brake pads and shoes, drums and rotors, master cylinders, wheel cylinders, brake hoses, calipers, brake hardware and brake fluid inspected every year. This is also a good time to lubricate critical brake components.

• Depending on the condition or thickness of the drums or rotors, resurfacing or replacement may be necessary.

• The parking brake should also be checked for proper operation and adjustment. In some cases, the parking brake shoes/pads may need replacement.

QUESTIONS TO ASK

» Is there anything I should do to help the brakes on my car last longer?

» Are there any related services my car needs while this service is being performed?
Tires are your car’s critical connection to the road and can affect your ride, handling, traction and safety. Maintaining tire balance and wheel alignment reduces tire wear and improves handling and fuel economy.

**WHY DO I NEED THIS SERVICE?**

Tire replacement is necessary if the tread depth is below the minimum legal requirement or the sidewalls are severely cracked or punctured. In some cases, tread punctures cannot be repaired. Normal wear and road conditions can take their toll on your car’s steering and suspension system, and can disrupt the alignment settings. Ball joints, tie rods, steering arms, bushings and other suspension parts all wear gradually over time. Springs will gradually sag with age and kilometres driven. All of these will affect alignment angles, so adjustments need to be made or components replaced to restore optimum handling.
TYPICAL SERVICE

- Have your car’s alignment (all four wheels) checked at least once per year and at the first sign of improper handling or uneven wear. Your technician will make adjustments to the camber, caster, toe and thrust angle as needed.

- Request a wheel alignment when you buy a set of new tires.

- Check inflation pressure at least once per month, including the spares (check more often in cold temperatures).

- Have the tires rotated every 10,000 kilometers. Consult your owner’s manual, tire dealer or manufacturer for the correct rotation pattern for your tires.

- Rotation time is also a good time to have the wheels balanced. Unbalanced wheels can cause rapid wear of shock absorbers and struts, and wheel balance can change as a result of normal tire wear. Rotating the tires to keep their sizes equal is critical on full-time four-wheel drive vehicles, and replacing all four tires at the same time, is highly recommended.

- The Tire Pressure Monitoring System (TPMS) may need to be replaced or reset when servicing or installing new tires. The TPMS should be replaced or reset when servicing or installing new tires if your car came with factory-installed TPMS.

QUESTIONS TO ASK:

» What type of tires should go on my vehicle based on my driving?

» Why does my car shake at certain speeds?

» Is this a four-wheel alignment?

» Will you be replacing the TPMS sensors when you put on the new tires?

» Do you offer tire storage?
In 1996, an orange light on your car’s dashboard labeled “Check Engine” or “Service Engine Soon” became standard on all car makes and models. The light tells you there’s a problem with your car’s engine and powertrain control system.

**WHY DO I NEED THIS SERVICE?**

An illuminated “Check Engine” or “Service Engine Soon” light indicates that a vehicle system, such as the ignition, fuel injection or emission control, is not operating properly, even if the vehicle appears to be running normally. Only the right diagnostic equipment can determine the problem detected by your car’s on-board diagnostic system (OBD). Ignoring a check engine light can negatively impact your fuel economy or cause damage resulting in more costly repairs.
TYPICAL SERVICE

- A steady yellow light should be diagnosed at the first convenient opportunity.

- A flashing yellow light indicates a problem that is currently happening and may require immediate attention, such as catalytic converter damage.

- A red warning light indicates a serious problem. Pull over as soon as it is safe to do so and call for assistance.

- A technician connects a diagnostic scan tool to your car’s computer system to determine the problem.

- Further testing and diagnosis may be required to pinpoint the exact cause of the problem.

- Once the problem is pinpointed, repairs are made and the light is reset.

QUESTIONS TO ASK

» When checking out the cause of the light, did you notice any other services that need to be performed?

» Does the issue causing the light to come on need to be fixed immediately, or do I have time to save up for the repair?

» Will the light eventually turn off by itself?

» Will my car pass an emissions test if the light is on?
HVAC SYSTEM

Your car’s heating, ventilating and air conditioning system (HVAC) provides the right temperature and humidity level to keep your car interior comfortable in any season. The HVAC system also helps improve defroster operation.

WHY DO I NEED THIS SERVICE?
Proper heating and cooling performance is critical for interior comfort and for defrosting, which impacts safety. The HVAC system will work as designed if properly serviced.
TYPICAL SERVICE

- A thorough inspection of your car’s HVAC system should be performed annually.
- A service technician checks pressures to test operation, refrigerant charge and outlet temperatures.
- If the system is found to be low on refrigerant, a leak test is performed to find the source. A technician may also check for evidence of refrigerant cross-contamination, which is the mixing of refrigerants.
- A/C service should also include a check of the compressor’s drive belt and tension.

QUESTIONS TO ASK

» What happens if I continue to use my car’s A/C system, even though it’s not cooling properly?
» Water drips underneath my car when I use the A/C system. Is this normal?
» A musty odour comes out of the A/C vents at times. Can anything be done about this?
» My car’s A/C system seems to cool intermittently and I hear a clicking on and off from underneath the hood. What does this mean?
Keeping a vehicle looking new is tough, even with today’s long-lasting finishes. Dents, dings, cracked glass and dirty upholstery are several items that age the appearance of a vehicle. Fortunately, technology and advances in vehicle protectants have helped rectify these problems, making the fixes quicker and less expensive.

WHY DO I NEED THIS SERVICE?
Caring for your car’s appearance helps you protect your investment. Appearance problems left unattended, like breaks in glass or body damage, can lead to larger problems and repairs.
**TYPICAL SERVICE**

- Frequent washing and periodic vehicle polishing go a long way toward protecting your investment.
- Keeping your vehicle consistently clean prevents the buildup of damaging chemicals and dirt that may damage your car’s finish.
- In areas of the country that use road salt in winter months, frequent washing can reduce the corrosive effects of salt that cause body rust-through.
- Always use a different mitt for the tires and wheels than is used for the body and paint.
- To prevent stripping the vehicle’s finish, only use soap specified for automotive cleaning.

**QUESTIONS TO ASK**

» Can you recommend an effective cleaning product?

» Are these scratches okay to touch up myself or should they be professionally painted?

» Would my vehicle benefit from rust proofing treatment?
Your car has many parts and systems that work alone or together to perform important driving functions. Over time, these components are subject to wear and tear that lead to the need for repair or replacement.

Become more familiar with each of your car’s systems and parts so you can make informed decisions about needed maintenance and repairs.

The descriptions and depictions in this section can vary depending on car make, model and type.
WHAT ARE THEY?
Your car’s belts and hoses are essential to the cooling, air conditioning and charging systems and to the engine. Don’t ignore routine replacement intervals because they can break down and leave you stranded.

WHAT DO THEY DO?
The timing belt keeps the crankshaft and camshaft mechanically synchronized to maintain engine timing. Whether serpentine, V-belt or fan belt (the belts on the outside of the engine), they all transmit power from the front of the engine to accessories that need to be driven, such as the air conditioning, the charging system and fans. Radiator and heater hoses carry coolant to and from the engine, radiator and heater core.

TYPICAL WEAR AND TEAR
Key items that affect the replacement interval for belts and hoses include:
- Vehicle age
- Electrolytic corrosion
- Mileage
- Oil contamination
- Belt tension
- Failed hose clamps

SYMPTOMS
- Squeaking noise from under the hood during start-up or operation
- Coolant leaks
- Dashboard light illumination
- A/C system failure
- Engine overheating
- Smell of burnt rubber
THE BELTS AND HOSES MOST FREQUENTLY USED ARE:

A. Serpentine belt
B. Heater hoses
C. Lower radiator hose
D. Drive belt (V-belt)
E. Fan belt
F. Upper radiator hose
G. Timing belt

Not all cars use timing belts. Some cars use one serpentine belt for all accessories or a combination of serpentine and V-belts, while others use only V-belts.
BRAKE SYSTEM

WHAT IS IT?
Your car’s brake system is its most critical safety system and should be checked immediately if you suspect any problems. A properly operating brake system helps ensure safe vehicle control and operation under a wide variety of conditions.

WHAT DOES IT DO?
When you push the brake pedal, the force generates hydraulic pressure in the master cylinder. This pressure flows through the hydraulic lines and hoses to the wheel cylinders and calipers, forcing the shoes against the drums (drum brakes) or the pads against the rotors (disc brakes). The resulting friction slows the vehicle and is relative to the amount of force applied at the brake pedal.

TYPICAL WEAR AND TEAR
Brakes are a normal wear item for any car and eventually they’re going to need replacement. Avoid letting your brakes get to the “metal-to-metal” point, which usually means expensive rotor or drum replacement. Factors that affect wear include driving habits and quality of brake pads and shoes.

SYMPTOMS
- Car pulls to one side during braking
- Pulsating brake pedal or steering wheel shake
- Brake pedal feels “mushy”
- More brake force is needed on the pedal
- Unusual noise when you step on the brake pedal
- Frequent need to add brake fluid to the master cylinder
- Brake fluid sprayed onto outside of wheel
- Unusual odour or smoke
YOUR CAR’S BRAKING SYSTEM INCLUDES:
A. ABS modulator
B. Wheel speed sensors
C. Pads
D. Rotors
E. Brake calipers (disc brakes)
F. Master cylinder
G. Hydraulic lines and hoses
H. Shoes
I. Wheel cylinders (drum brakes)
J. Bearings, seals or hub units
K. Drums (not shown – would cover H)
WHAT IS IT?
Your car’s emission system keeps the engine running cleanly and efficiently in all sorts of operating conditions. A steady or flashing warning light on your vehicle dashboard indicates a problem that is currently happening and may require immediate attention.

Failure to do so can reduce your fuel efficiency and cause your vehicle to pollute.

WHAT DOES IT DO?
Your car’s emission system controls your car’s emissions, exhaust and pollutants (including gasoline vapours escaping from the fuel tank), using an array of sensors, computerized engine controls and exhaust components. The emission system substantially reduces the production of harmful gases such as carbon monoxide (CO), unburned hydrocarbons (HC) and oxides of nitrogen (NOx). By law, your emission system must be maintained in operating condition.

TYPICAL WEAR AND TEAR
Some factors affecting the emission system include:

- Driving and atmospheric conditions
- Mileage
- Vehicle age
- Spark plug electrode material
- Poor vehicle maintenance
- Poor quality fuel
- Damaged or worn sensors
- Dry-rotted or cracked vacuum hoses
YOUR CAR'S EMISSION SYSTEM CONSISTS OF:

A. Catalytic converter and exhaust components
B. EGR valve and related components
C. PCV valve
D. Evaporative system
E. Oxygen sensors
F. Control Module
G. Gas cap
WHAT IS IT?
The engine cooling system affects your car’s overall dependability and your engine’s longevity. Cooling systems have advanced over the years with new coolant formulations and new radiator designs and materials. If you suspect a problem with your cooling system, you should have it checked immediately.

WHAT DOES IT DO?
The key parts of the cooling system remove heat from the engine and automatic transmission and dissipate that heat to the air outside. The water pump circulates coolant through the engine; the coolant absorbs heat and returns it to the radiator where heat is dissipated; and the thermostat regulates the coolant temperature to keep it consistent for efficient engine operation.

TYPICAL WEAR AND TEAR
Factors that affect the replacement of cooling system parts include:

- Driving habits
- Operating conditions
- Type of vehicle
- Type of coolant
- Frequency of regular maintenance such as coolant changes

SYMPTOMS
- Overheating
- Sweet smell
- Leaks
- Repeatedly needing to add fluid
- No heat from heater
YOUR CAR’S COOLING SYSTEM CONSISTS OF:
A. Heater core
B. Water pump
C. Cooling fan
D. Coolant reservoir
E. Radiator and cap
F. Thermostat
G. Hoses
WHAT IS IT?
Exhaust systems have come a long way from the old days of exhaust pipes and mufflers. Today, the exhaust system is safety and emissions control rolled into one. Have your car’s exhaust system inspected regularly and have it checked immediately if you suspect any problems.

WHAT DOES IT DO?
The exhaust system routes dangerous exhaust gas from the engine out and away from the car to protect the occupants. It also reduces exhaust noise from the engine. The catalytic converter reduces the level of harmful pollutants in the exhaust, while the oxygen sensors, mounted in the exhaust system, monitor the level of oxygen in the exhaust gases to maintain efficient engine operation and monitor the converter’s operation.

TYPICAL WEAR AND TEAR
Factors that affect replacement requirements include:
- Driving habits (short trips take their toll on exhaust system life)
- Road conditions (salt, road spray, bumps)
- Vehicle type
- Age of exhaust system parts

SYMPTOMS
- Loud noise
- Rattling noise when starting, accelerating or braking
- Drowsiness while driving (from exhaust entering car)
- Smell of rotten eggs
YOUR CAR’S EXHAUST SYSTEM CONSISTS OF:

A. One or more mufflers and resonators
B. One or more oxygen (O2) sensors
C. One or more catalytic converters
D. Exhaust pipe
E. Tail pipe
WHAT ARE THEY?
Your car’s filters are important to the longevity of your car and should be replaced regularly.

WHAT DO THEY DO?
The oil filter traps contaminants, allowing the oil to flow through the engine unrestricted. The fuel filter separates harmful contaminants that may cause problems with carburetors or intricate fuel injectors. The air filter traps dirt particles, which can cause damage to engine cylinders walls, pistons and piston rings, and plays a role in keeping contaminants off the airflow sensor (in fuel-injected cars). The cabin filter helps trap pollen, bacteria and dust that may find their way into a car’s ventilation system so that passengers can breathe more easily.

TYPICAL WEAR AND TEAR
Filters are normal wear items that require regular checks and replacement. Factors that affect replacement intervals include:

- Mileage/time
- Driving habits
- Driving and road conditions
- Type of filter
- Vehicle type

SYMPTOMS
- Poor fuel economy
- Hesitation while accelerating
- Musty odour in the cabin
YOUR VEHICLE’S FILTERS MOST LIKELY INCLUDE:
A. Cabin filter
B. Air filter
C. Automatic transmission filter
D. Oil filter
E. Fuel filter
WHAT IS IT?
Your car’s fuel system works with the rest of the engine control system to deliver the best performance with the lowest emissions. Have your car’s fuel system checked regularly. If you smell gas or suspect a problem, have it checked immediately.

WHAT DOES IT DO?
The fuel system transfers fuel from the fuel tank and passes it through a filter for straining before it arrives at the injectors. A pressure regulator controls fuel pressure to ensure good engine performance under a variety of speed and load conditions. Fuel injectors, when activated, spray a metered amount of fuel into the engine. Some vehicles use a return line system to return unused fuel back to the tank.

TYPICAL WEAR AND TEAR
Fuel system maintenance intervals can vary based on:
- Fuel quality
- Vehicle age
- Mileage/time
- Operating conditions
- Maintenance history

SYMPTOMS
- Poor fuel economy
- Vehicle won’t start
- “Check Engine” light is illuminated
YOUR CAR’S FUEL SYSTEM INCLUDES:

A. Pressure regulator  
B. Fuel injectors  
C. Lines/hoses  
D. Fuel filter  
E. Fuel tank  
F. One or more fuel pumps
WHAT ARE THEY?
Lights and wipers play a major role in safe driving – your chance of having an accident increases if you can’t see or be seen. If you detect any problems with your car’s lights or wipers, have them checked out at once.

WHAT DO THEY DO?
The wiper system keeps excessive water, snow or dirt from building up on the windshield to maintain clear visibility through the windshield. The lighting system provides nighttime visibility, signals and alerts other drivers, and supplies light for viewing instruments and the vehicle’s interior.

TYPICAL WEAR AND TEAR
Lights and wipers are normal wear items that require periodic replacement. Factors affecting replacement intervals include:

- Operating conditions
- Frequency of use
- Material/type of lights and wipers
- Heat from the sun
- Cold weather
- Ice on the windshield (can tear rubber edge)

SYMPTOMS
- Wiper is chattering or streaking
- Rapid signal blinking
- Dimming lights
THE LIGHTS AND WIPERS OF YOUR CAR
MOST OFTEN INCLUDE:
A. Wiper arm
B. Wiper blade
C. Wiper motor
D. Fog lights (optional)
E. Headlights (high and low beam)
F. Parking lights
G. Turn signals/emergency flashers
H. Washer fluid reservoir and fluid
I. Fuses
J. Instrumentation lighting
K. Interior lights
L. Stoplights, tail and marker lights
M. Backup lights
WHAT ARE THEY?
Your car’s starting and charging systems and battery help ensure dependable vehicle operation. Make sure to have these systems checked regularly.

WHAT DO THEY DO?
The battery stores electrical energy and the starter converts that energy into mechanical force to turn the engine for starting. The alternator produces electric current to replace what the starter used from the battery during start-up and to support electrical loads when the engine is running. An ignition module turns the low-voltage supply to the ignition coil on and off, and the coil produces the high voltage for the ignition system. This creates a spark at the spark plugs and ignites the air/fuel mixture in the engine. A belt transmits power from the front of the engine to the alternator’s pulley and other accessories.

TYPICAL WEAR AND TEAR
Driving habits such as frequent engine on/off cycles will cause more wear on the starter than a simple trip back and forth to work. Other factors affecting wear include:

• Driving and weather conditions
• Usage and vehicle age
• Excessive electrical draws (e.g. in-vehicle entertainment systems)

SYMPTOMS
• Headlights/interior lights dim
• “Check Engine” and/or battery light illuminate
• Accessories fail to operate
• Car has no start or slow start
• Engine whines/squeals when running
YOUR CAR’S IGNITION, STARTING, CHARGING AND BATTERY SYSTEM CONSISTS OF:

A. Spark plug wires  
B. Spark plugs  
C. Belts  
D. Alternator  
E. Starter  
F. Battery  
G. Ignition coil(s)  
H. Ignition module
WHAT ARE THEY?
The steering and suspension systems are key safety-related systems that largely determine your car’s ride and handling. Have these systems checked at least once a year. A good time to get them checked is with your wheel alignment.

WHAT DO THEY DO?
The suspension maintains the relationship between the wheels and the frame or unibody and interacts with the steering system to provide vehicle control. When working properly, the suspension system helps absorb the energy from road irregularities such as potholes and helps to maintain vehicle stability. The steering system transmits your input from the steering wheel to the steering gear and other steering components to control the car’s direction.

TYPICAL WEAR AND TEAR
Over time, steering and suspension components wear out and require replacement. Regular checks are critical to maintain a safe car. Factors that affect wear include:
- Driving habits
- Road conditions
- Vehicle type
- Type of steering and suspension system
- Frequency of regular maintenance such as chassis lubrication and wheel alignment
- Mileage

SYMPTOMS
- Car pulls to one side
- Uneven tire wear
- Excessive noise, vibration or bouncing
- Loss of control
THE KEY COMPONENTS IN YOUR CAR’S STEERING AND SUSPENSION SYSTEMS INCLUDE:

A. Shocks and/or struts
B. Steering knuckle
C. Ball joints
D. Steering rack/box
E. Bearings, seals or hub units
F. Tie rod ends

Other main parts of the steering and suspension system include springs, pitman arm and idler arm.
WHAT IS IT?
The transmission works with the engine to provide power to your car’s wheels. Whether automatic or manual, the transmission plays a major role in the overall performance of your car. Make sure to have it checked at the first sign of problems.

WHAT DOES IT DO?
A transmission/transaxle keeps the engine’s output optimally matched to the speed and load conditions of your car. The torque converter, connected to the automatic transmission/transaxle input shaft, connects, multiplies and interrupts the flow of engine torque into the transmission. Universal and/or constant velocity (CV) joints connect to the driveshaft to transmit output power from the transmission to the rear axle on rear-wheel-drive cars and the front axle on front-wheel-drive cars. These joints also allow the driveshaft and/or CV shaft to work at an angle. The different types of automatic transmission fluid clean, cool, lubricate, transmit force, transmit pressure, inhibit varnish buildup and continually protect the transmission.

TYPICAL WEAR AND TEAR
Wear and tear on the transmission can be influenced by:

- Driving habits
- Towing or excessive loads
- Operating conditions
- Condition of the transmission fluid
- Frequency of regular maintenance

SYMPTOMS

- Slipping
- Hesitation
- Bucking
- Grinding gears
- Difficulty shifting
THE TRANSMISSION IN YOUR CAR INCLUDES:

A. Automatic transmission/transaxle, or manual transmission/transaxle
B. Transmission fluid/dipstick
C. Torque converter
D. CV joint/axle/boot
E. Half shaft
F. Universal joints

Some vehicles with all-wheel-drive or four-wheel-drive will also use a transfer case after the transmission.
Living a green lifestyle with your car can be easier than you think. Adjusting driving and car care habits can increase fuel economy and reduce harm to the environment. The automotive service and repair industry itself has been green for years through both recycling and reusing. This section covers maintenance and driving procedures to improve fuel economy, recycling and remanufactured engines and alternative fuel options.

The following pages outline some of the most common maintenance procedures and repairs to keep your car operating safely and reliably while maintaining its long-term value.
FUEL ECONOMY AND ENVIRONMENTAL AWARENESS

Fuel economy is the number of kilometers per litre your car gets, and this number can vary depending on how you maintain and drive your vehicle. In addition to saving you money at the pump, good vehicle maintenance and driving habits can go a long way toward protecting the environment.

Low tire pressure, a clogged air filter and worn or fouled spark plugs can lower gas mileage, as can aggressive driving, excessive idling, driving over the speed limit and using the car’s A/C system when travelling at lower speeds.

MAINTENANCE
A properly maintained vehicle can improve its efficiency, reduce emissions and save you money. Regular engine performance maintenance will help you burn less fuel, pollute less, and prevent car trouble down the line. See Typical Maintenance and Repair – Engine Performance for details on engine performance maintenance. This will include checking the spark plugs, replacing the fuel and air filters, replacing ignition system and/or emission system parts if needed and ensuring the onboard computer control system is working properly.

You can improve gas mileage by four percent on a proper tune-up and up to 40 percent when fixing a serious maintenance problem, such as a faulty oxygen sensor.
**Tire Checks:** Tire pressure should be checked at least once every month, including the spare. Tires that are not properly inflated add rolling resistance that makes the engine work harder to move the vehicle. Remember, tires can lose pressure due to seasonal temperature changes and should be checked more often in the winter. Proper tire pressure can improve gas mileage by 3.3 percent.

**Motor Oil:** Using the correct motor oil for your vehicle and changing it as per your manufacturer’s recommendations can improve your gas mileage. Refer to your owner’s manual for details.

**Air Filters:** Filters can become clogged with dirt, dust or bugs that choke off the air and create a “rich” mixture that causes the engine to lose power. Replacing a dirty filter will improve performance and acceleration. The air filter should be inspected at each oil change, and replaced annually or when restricted, torn, or water or oil-soaked.

**A/C Maintenance and Use:** The A/C system should receive an annual inspection, during which a technician checks pressures to test operation, refrigerant charge and outlet temperatures.
**Drive Green:** Driving technique has a big impact on your fuel economy. Drive wisely and minimize unnecessary kilometres by consolidating errands, getting good directions and avoiding excessive idling. You should also:

- Use your vehicle’s cruise control features when possible.
- Use your air conditioning only when needed or when travelling at high speeds. Parking in the shade and using a reflective windshield shade can help your car stay cooler when parked, meaning it takes less to cool it off when you get back in.
- Avoid sudden starts and stops and go the speed limit.

**Speeding and Aggressive Driving:** Most cars lose fuel efficiency over 80 kilometres per hour (km/h), and you average about 10 percent fuel loss for every 10 km/h over 93 km/h. Aggressive driving (speeding, rapid acceleration and sudden braking) can also reduce gas mileage – as much as 33 percent on the highway and five percent on city streets.

**Lighten the Load:** Storing unnecessary items in your vehicle (i.e. sports equipment, empty roof top carrier, etc.) increases your gas usage. You should, however, always keep emergency items such as a spare tire and an emergency first-aid kit in your car.

**Gas Caps and Fill-Ups:** A loose or cracked gas cap allows gas to escape from your tank as a vapour, wasting fuel and increasing vehicle emissions. Topping off your gas tank once the pump clicks off automatically can also release harmful vapours into the environment and increase emissions. In some areas, the automatic shut off means their vapour recovery system will redirect any further fueling back into the pump.
The service and repair industry has been green long before it was mainstream! Here are a few examples of their efforts on behalf of the environment:

- **Engine oil:** About 95 percent of companies recycle used engine oil. This oil is sold as combustible fuel for power plants and heating or re-refined back into engine oil. Re-refining takes 85 percent less energy than producing crude oil.

- **Batteries:** More than 95 percent of an automotive battery can be recycled. Even old battery acid can be turned into chemicals used for laundry detergent, glass and more!

- **Tires:** Scrapped tires can be recycled and put to new productive uses. You may have seen them as the surface of your local playground or running trail!

- **Refrigerant:** For more than 20 years, the service and repair industry has been instrumental in recovering and recycling mobile air conditioning refrigerant to minimize greenhouse gases and is in the process of finding refrigerant alternatives.

- **Plastics:** The majority of repair shops also recycle plastics.

- **Scrap metal:** The energy saved from recycling one ton of aluminum is equal to the amount of electricity used by the average home in 10 years.

- **Cleaning solvents:** Solvents used by repair shops can be harmful to humans and the environment and have a risk of contaminating water or causing fires. Many shops not only recycle these solvents but follow green practices to minimize their use, including reusing them and choosing less harmful options.

Recycle at home! If you are performing your own oil changes, make sure to dispose of the used oil properly. DO NOT pour the oil down the sink, on the ground or in the storm drain. Many auto repair shops and auto parts stores accept used oil and filters. You can also contact your local government to identify a used oil recycling facility near you or visit www.usedoilrecycling.com.
Many consumers facing major engine damage think that buying a new vehicle is the only solution when, in fact, a remanufactured engine is a greener and more cost effective option.

What is a Remanufactured Engine?
It is an engine that is remanufactured to prescribed standards and specifications by highly-skilled machinists using state-of-the-art equipment and components. The engine is completely disassembled and all surfaces and components are machined, cleaned, and reassembled by expert technicians. Critical internal parts are then replaced with new ones. Due to effective design and better quality parts, often times a remanufactured engine will be more efficient than the original.

Remanufacture Options:
- **Factory Remanufactured.** These engines have been remanufactured at a factory. Many internal engine parts have been replaced with new ones. These engines have been tested and come with a warranty that usually covers installation expenses.
- **Custom Remanufactured.** The vehicle’s engine is removed and remanufactured. Like the factory version, many internal engine parts get replaced with new ones.

Going Green: A remanufactured engine not only reuses and recycles an engine, it eliminates the energy needed to process discarded car engines and vehicles, and conserves energy and resources required to manufacture new engines. Remanufactured engines will get better gas mileage and produce fewer emissions than a used engine.

Cost Effective: Repowering a typical car or truck with a remanufactured engine costs between $2,500 and $5,000 or about 10 to 15 percent of the cost of a new vehicle.

Will it last? A remanufactured engine, with proper maintenance, is capable of lasting as long as a new car engine. They are dependable, reliable and backed by warranty programs.
More than a dozen alternative fuels are in production or under development for use in alternative fuel vehicles and advanced technology vehicles.

**FLEXIBLE FUEL VEHICLES**
Flexible fuel vehicles (FFVs) are the most similar to conventional gasoline vehicles. They have an internal combustion engine and are capable of operating on gasoline, E85 (a gasoline-ethanol blend containing 51 percent to 83 percent ethanol, depending on geography and season), or a mixture of the two. However, many flex fuel vehicle owners don’t realize their car is an FFV and that they have a choice of fuels.

**HYBRID AND PLUG-IN ELECTRIC VEHICLES**
Hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and all-electric vehicles (EVs) — also called electric drive vehicles collectively — use electricity either as their primary...
fuel source or as a secondary source for improved efficiency.

- **Hybrid Electric Vehicles:** HEVs are powered by an internal combustion engine or other propulsion source that runs on conventional or alternative fuel and an electric motor that uses energy stored in a battery. The battery is charged through regenerative braking and by the internal combustion engine and is not plugged in to charge.

- **Plug-In Hybrid Electric Vehicles:** PHEVs are powered by an internal combustion engine that can run on conventional or alternative fuel and an electric motor that uses energy stored in a battery. The vehicle can be plugged into an electric power source to charge the battery.

- **All-Electric Vehicles:** EVs use a battery to store the electric energy that powers the motor. EV batteries are charged by plugging the vehicle into an electric power source. EVs are sometimes referred to as battery electric vehicles (BEVs).

**FUEL CELL ELECTRIC VEHICLES**

Fuel cell electric vehicles, powered by hydrogen, are more efficient than conventional internal combustion engine vehicles and produce no harmful tailpipe exhaust — their only emission is water. Fuel cell electric vehicles are fueled with pure hydrogen gas stored directly on the vehicle, can be refueled in as little as three minutes and can achieve a range of more than 500 kilometres on a single tank.
NATURAL GAS VEHICLES
Natural gas vehicles (NGVs) run on compressed natural gas (CNG) and work much like gasoline-powered vehicles with spark-ignited engines. A CNG fuel system transfers high-pressure natural gas from the storage tank to the engine while reducing the pressure of the gas to the operating pressure of the engine’s fuel-management system. The natural gas is injected into the engine intake air the same way gasoline is injected into a gasoline-fueled engine. The engine functions the same way as a gasoline engine.

PROPANE VEHICLES
Propane is also known as liquefied petroleum gas (LPG), or autogas. There are two types of propane vehicles: dedicated and bi-fuel. Dedicated propane vehicles are designed to run only on propane, while bi-fuel propane vehicles have two separate fueling systems that enable the vehicle to use either propane or gasoline. A propane vehicle’s power, acceleration and cruising speed are similar to those of conventionally-fueled vehicles. Propane vehicles work much like gasoline-powered vehicles with spark-ignited engines. Propane is stored as a liquid in a relatively low-pressure tank.

DIESEL VEHICLES USING BIODIESEL
Biodiesel and conventional diesel vehicles are one and the same. Although diesel vehicles are not technically “alternative fuel” vehicles, many are capable of running on biodiesel. Biodiesel is most often used as a blend with regular diesel fuel.

This information is provided by the U.S. Department of Energy Alternative Fuel Data Center.
Go beyond the basics of car maintenance and learn more about your vehicle warranty, telematics and what to look for in a vehicle repair shop. Want to learn more? Visit www.BeCarCareAware.ca for more information, tips and tricks.
UNDERSTANDING YOUR WARRANTY

When a manufacturer builds a car, it generally comes with a promise, known as a warranty, to fix certain malfunctions over a set period of time and to pay for the repair and parts needed.

DO I HAVE TO GO TO THE DEALER FOR MAINTENANCE AND REPAIRS?
No, a dealer cannot deny warranty coverage simply because non-warranty repairs or maintenance work was performed by someone else. As a vehicle owner, you can visit the repair shop of your choice for any regular maintenance or repair services that are not covered under your warranty or do the work yourself if you have the necessary training.

WHO CAN SERVICE MY CAR?
Maintenance can be done by any qualified service facility or skilled technician. Keep all receipts as proof of completion of work, and have the service provider fill out the Maintenance Record.

Note: If a problem is not repaired correctly, or if a replaced part is defective, and in turn affects another part of the vehicle, the dealer or manufacturer can refuse to fix the new problem under your warranty.
UNDERSTANDING YOUR WARRANTY

WARRANTY TIPS:

- **Familiarize Yourself with the Warranty**: Understand the details of your coverage and be aware of the expiration. Have problems checked before the warranty expires.

- **Regular Vehicle Maintenance**: Regular check-ups will keep your warranty intact. See your owner’s manual or our vehicle maintenance schedule (page 3) for more information.

- **Keep Records**: Keep receipts for all services, regardless of who performs them. You can use these records to prove that you maintained your vehicle if you ever need to use your warranty.

- **Know Your Rights**: If you think your warranty claim has been denied unfairly you can file a complaint with the manufacturer, a consumer protection organization, or your local Better Business Bureau.
From first-time drivers to DIY enthusiasts, everyone needs an auto repair shop they trust for maintenance and repairs. Though most shops are dedicated to keeping you safe on the road, it is important to find a shop that you are comfortable with. Here are some things to consider when selecting a repair shop:

**IS THE SHOP AND WAITING AREA CLEAN AND ORGANIZED?**
Cleanliness and organization are signs of a well-run business.

**ARE CUSTOMERS GREETED AND TREATED IN A FRIENDLY AND RESPECTFUL MANNER?**
Many auto repair businesses excel in the area of customer service and satisfaction. A simple phone call to the shop to inquire about their services can give you an idea of how they treat their customers.

**ARE THE TECHNICIANS OR SERVICE ADVISORS AVAILABLE TO ANSWER YOUR QUESTIONS?**
It’s important to trust your service provider. Your technician and/or service provider should be available to explain required maintenance or repairs and to answer any of your questions.

**DOES THE BUSINESS PROVIDE A WRITTEN ESTIMATE?**
The business should complete a written estimate and request your signature prior to starting any repairs on your car.
DOES THE BUSINESS OFFER A WARRANTY?
Most auto repair businesses offer a warranty on parts and labour, and the warranty is usually in writing or posted in the waiting area.

DOES THE BUSINESS HAVE A LIST OF SATISFIED CUSTOMERS OR REFERENCES THAT IT IS WILLING TO GIVE YOU?
Satisfied customers and recommendations from family, friends and neighbours are helpful in finding a good shop. Many auto repair facilities also have company websites with testimonials and additional information about the business that are worth checking out. According to Statistics Canada, there are over 20,000 automotive service and repair shops in Canada, and the overwhelming majority of them value their relationships with customers.

Do your research to find the right shop for you and put in the time and effort to build a relationship with your service advisor. Don’t be afraid to ask questions and discuss your car’s maintenance needs so that you can leave your shop feeling good about your service visit.

SHOP/TECHNICIAN CERTIFICATIONS MAY INCLUDE:
- Provincial Licensing
- Red Seal trade certification
- Successful completion of ongoing training
- Better Business Bureau (BBB) accreditation
The connected car is here! Here is what telematics means to your auto care decisions.

“Telematics” commonly refers to the wireless communication of information to and from a vehicle. Familiar examples include navigation systems, Bluetooth connection to your phone or music player, and the automated call for help after a breakdown or accident. Traditionally added on at an additional cost, it is becoming more common for telematics or “connected car” technology to be offered (or even standard) on new vehicles.

A new category of telematics services is vehicle management – think of it as a 24/7 health monitor for your car. Modern vehicles come with computers, electronic controllers and sensors, and telematics makes use of that technology to coach drivers about ways to improve fuel economy, alert to unsafe driving behavior and speed, monitor the vehicle for trouble codes or faults and remind the owner of periodic maintenance intervals.

Best of all, you can now benefit from telematics without having to buy a new car! A new family of devices and services are now also available that plug into the on board diagnostic (OBD) port, usually below the steering wheel.

These devices that offer many of the safety and convenience services of the built-in systems include a phone chip, GPS, accelerometers and computer processors in a package that fits in the palm of your hand.
THE CAPABILITIES OF AFTERMARKET TELEMATICS VARY, BUT THE MOST COMMON FEATURES ARE:

- Driving behaviour monitoring and management – leading to more fuel-efficient driving;
- Geo-fencing and stolen vehicle location tracking – popular with parents of new drivers;
- Remote diagnostics of the check engine light – providing peace of mind and safety; and
- Maintenance reminders based on your odometer and other convenient services.

Whether you choose the original equipment system or an aftermarket telematics upgrade, these new systems can be extremely useful. It is, however, a good idea to know what kind of information is being collected by your car and who has access to it. And always remember to drive distraction-free.
Are you interested in a rewarding career? Consider the automotive aftermarket industry.

The automotive service and repair industry offers boundless career opportunities for those seeking an active and passionate industry. This industry keeps our cars and trucks moving, so we can keep our lives moving.

**THE INDUSTRY OFFERS CAREER OPPORTUNITIES IN:**
- Manufacturing
- Distribution
- Retail
- Service and repair
- Business services

**Including positions in:**
- Communications
- Engineering
- Marketing and sales
- Environmental, health and safety
- Managerial and executive
- Human resources
- Information technology
- Accounting and finance
- Customer service

Automotive service and repair industry careers are diverse, challenging yet rewarding, and dynamic. As an industry that is global in nature, many manufacturers are multi-national and offer opportunities for travel, relocation and international business dealings.

The service and repair industry plays an integral role in our everyday lives and can therefore offer stable jobs. Along with steady employment, the industry offers great earning potential, networking and leadership growth.

The automotive aftermarket industry is always moving forward with leading edge technology, making it a great place to be for technology-lovers.
The road to a great career is wide open – you can work your way up through the ranks within one company or industry segment, or you follow your interests/goals and cross over to another company or segment.

With so many opportunities, there is definitely a place for you.

For more information about automotive service and repair industry careers in Canada, visit www.aiacanada.com/careers.
Interested in learning more about Be Car Care Aware? Visit www.BeCarCareAware.ca for resources and tools for both consumers and the industry with safety information, car care tips, cost-savings ideas and more.

Get social with Be Car Care Aware!

Follow us online!

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## YOUR CAR CARE MAINTENANCE LOG

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