



Ford Motor Company of Canada, Limited
Ford du Canada Limitee

Oakville Assembly Complex
The Canadian Road
Oakville, Ontario
L6J 5C9

Health Protection Air Quality By-law Implementation
Corporation of the Town of Oakville
1225 Trafalgar Road,
Oakville, ON L6H 0H3

Attention: Environmental Policy

Re: Oakville Health Protection Air Quality By-Law
Supplement to the Application for Approval

In accordance with the '*Guidance for Implementation of Oakville Health Protection Air Quality By-Law 2010-035: Section 5 and 6 and approval requirements for major emitters*', Section 3.6, and as stated in Section 8 of our Oakville Health Protection Air Quality By-Law Application for Approval, please find attached, the Ford Motor Company of Canada, Limited, Oakville Assembly Complex, "Sustainability at Ford" for inclusion as a supplement to our original application submitted on September 28, 2012.

Please consider this presentation as additional information to Section 8 of our application.

Should you have any questions, or require any further information, please contact me at 905-845-2511 x 2224, or email gtwomey@ford.com

Sincerely

A handwritten signature in black ink that reads "M. A. Twomey".

Greg Twomey
Manufacturing Engineering Manager / Environmental Coordinator
Oakville Assembly Complex
Oakville, Ontario
905-8452511 ext 2224
gtwomey@ford.com

Oakville Assembly Complex



Sustainability at Ford

OCTOBER 2012

Commercially Confidential

Ford's Vision & Commitment

*"Our vision for the 21st century is to provide **SUSTAINABLE** transportation that is affordable in every sense of the word: **Environmentally, Socially & Economically**. Improved **sustainable** performance is not just a requirement, but a tremendous business **opportunity**."*

- Bill Ford
Executive Chairman



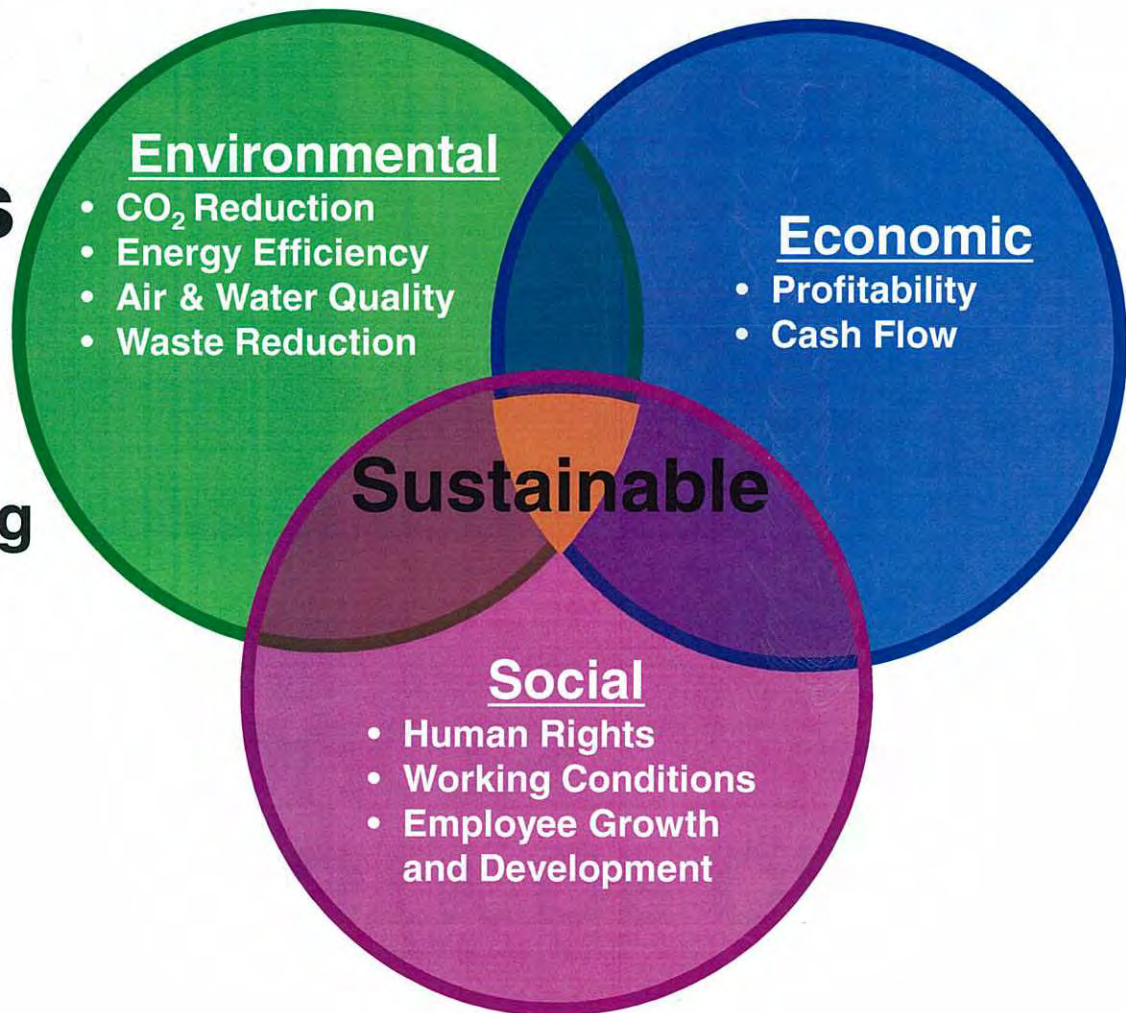
*"Ford is committed to offering customers affordable, **environmentally friendly technologies** in vehicles they really want. We are focused on providing solutions that can be used not for hundreds or thousands of cars, but for millions of cars because that is how Ford can truly make a difference."*

- Alan Mulally
President & CEO

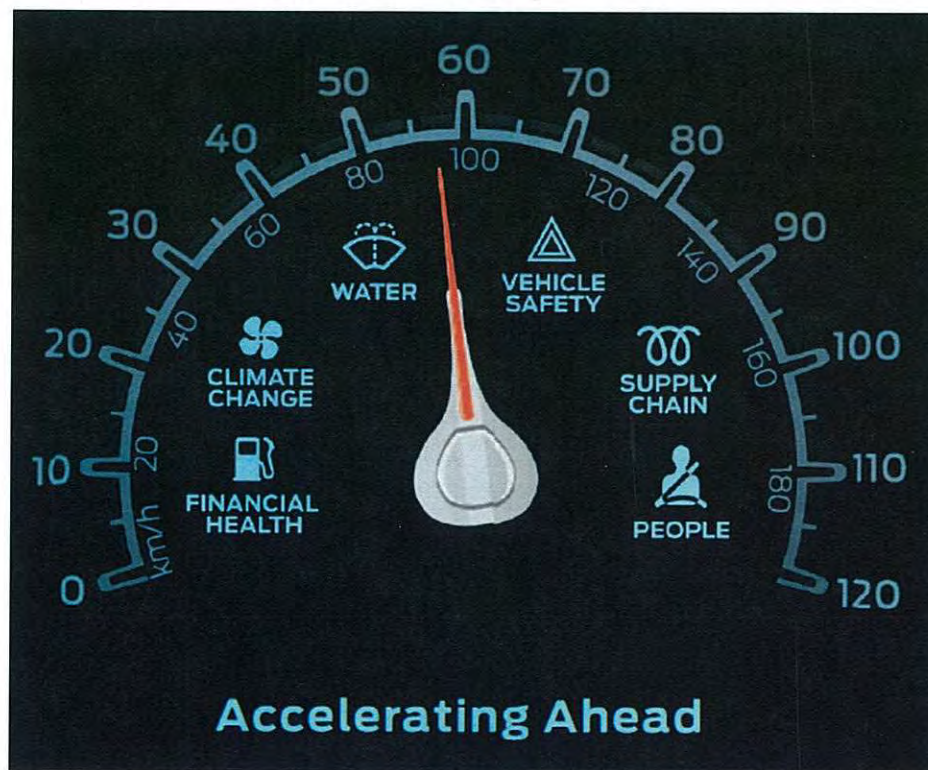


Sustainability at Ford

Meeting the **needs**
of the **present**
without compromising
the **future**.



SUSTAINABILITY OF OUR PRODUCTS



Accelerating Ahead: Ford's 2011/12 Sustainability Message

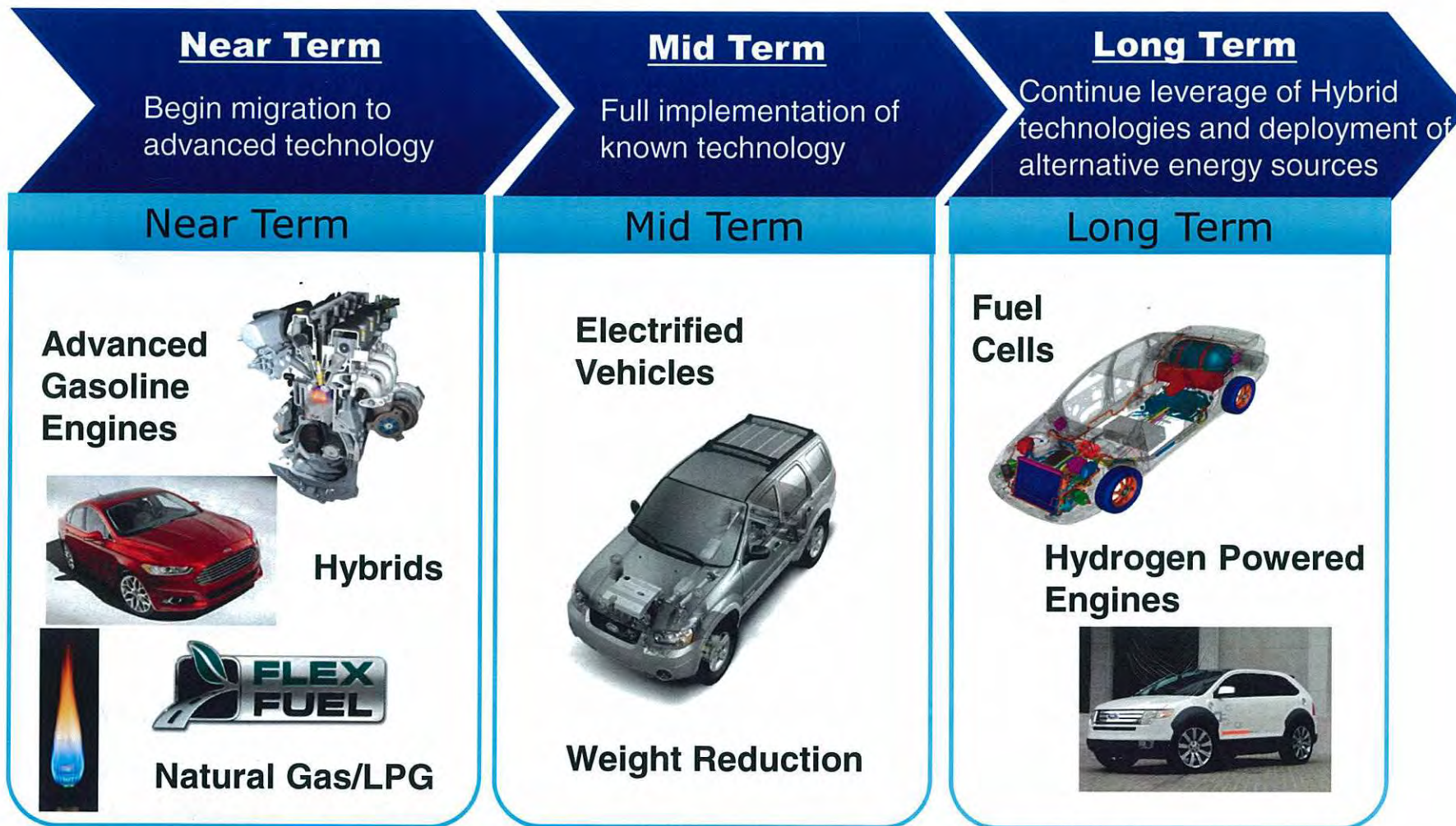
Sustainability of Our Products

Management Process



At Ford, sustainability is embedded into the fabric of our company

Ford's Path to Sustainability



THE POWER OF CHOICE



Ford's Strategy Is To Electrify Highest Volume Global Platforms
Providing Choice, Scale and Affordability

Ford's Sustainable Materials Strategy

- **Vision**

- **Ford Motor Company will ensure that our products are engineered to enable sustainable materials leadership without compromise to Product Quality, Durability, Performance or Economics.**

- **Key Positions**

- **Recycled** and **renewable** materials must be selected whenever technically and economically feasible. We will encourage the best green technologies to meet the increasing demand for these materials.
 - When we use **recycled** and **renewable** materials, there will be no compromise to Product Quality, Durability & Performance or Economics.
 - We will enhance technologies, tools and enablers to help validate, select and track the use of these materials in our products.
 - The use of **recycled** and **renewable** content is increased year by year, model by model where possible.
- 

Eliminate Undesirable Substances and Materials

- Ford was the first in Auto industry to develop the Restricted Substance Management Standard (1984) which has been used to manage substances used in Ford vehicles and plants for nearly 30 years.
- Ford was among the 7 OEMs who developed the International Material Data System (IMDS) to collect all substance/material/part information for our vehicle.
- Ford has been leading/supporting industrial efforts in developing Global Automotive Declarable Substance List, Registration, Evaluation, Authorization and Restriction of Chemicals (REACH, EU new law) Automotive Industry Guidelines, etc.

Opportunities for Recycled Materials

100% Recycled
carpets & fabrics

Post Industrial
recycled bumpers



Recycled
Polyurethane
foam components



Laundry & Milk Bottles into:
-Windshield washer bottles
-Climate Control Air Ducts



Tires into:
-aero deflectors
-under hood covers



Battery casings into:
-splash shields
-rocker moldings



SUSTAINABILITY AT OAC



Fumes to Fuel Process Equipment Recently Installed as Part of OAC Research Project

Sustainability of Our Operations

- Ford has adopted a rigorous and holistic approach to reducing the overall environmental impacts of our manufacturing facilities.
- We have established global environmental targets that address the range of our environmental impacts, including energy use, emissions, water use and waste generation.

Oakville Assembly Complex (OAC) has a Business Plan addressing reduction targets for air emissions, waste generation, and water use (among other metrics).



OAC: Part of the Community for 60 Years

PAST

**1st Plant Opened in 1953
(Oakville Assembly Plant)**

**2nd Plant Opened in 1965
(Ontario Truck Plant)**



PRESENT

**Single Manufacturing Complex
(Oakville Assembly Complex)
2,900 employees**

**Plant Size: 155,000 m²
Site Size: 197 hectares**



OAC Operations

Vehicle Assembly

- Body assembly and welding
- Paint shop
- Final assembly



Environmental Aspects

- Air emissions
- Energy consumption and generation
- Waste generation
- Water consumption and treatment

OAC Environmental Program

- OAC strives not only to meet, but to exceed requirements associated with current environmental regulations related to air and water emissions, and waste generation.
- Ford Motor Company continually strives to reduce the environmental footprint of its facilities by improving manufacturing efficiency, reducing energy and natural resource usage, and proactively addressing potential environmental aspects of its operations.
- OAC utilizes an industry-leading database, Global Emissions Manager (GEM), for measuring and reporting environmental data, which helps us track and improve our efforts to reduce our environmental footprint.



OAC Environmental Management System

- The Oakville Assembly Complex was the first assembly plant in North America registered to the ISO 14001 Environmental Management System in 1996.
- The environmental management system (EMS) and support activities are designed to:
 - Provide tools and systems to support robust compliance with the myriad of Federal, Provincial, and Local environmental regulations;
 - Assist the facility in ensuring conformance with Ford Motor Company's internal environmental policies; and
 - Provide a means of setting goals and tracking performance to support continual improvement.



OAC Air Emission Initiatives

- State-of-the-art automated paint application technology that reduces the total amount of paint usage
- State-of-the-art particulate removal technology built into the new paint shop constructed in 1995
- First automotive facility in Canada to implement regenerative thermal oxidizer (RTO) technology for Volatile Organic Compounds (VOCs) and odour control
- Reduction of hazardous air pollutants (HAPs) in paints and paint solvents
- Purge solvent recovery program for re-use
- Elimination of air emission sources
 - Largest of two paint shops decommissioned in 2006
 - Remaining paint shop refurbished & upgraded
 - Significant reduction in smog forming pollutants and GHGs



Local Air Quality Initiatives

- **CASIA Environmental Association Inc. (CASIA)**
 - As part of recommendations from the Clarkson Airshed Study (CAS), CASIA currently manages two air quality monitoring stations within the Clarkson airshed.
 - Ford has been and continues to be an active member in this industry self-monitoring program and was a participant in the CAS.
- **Oakville-Clarkson Air Zone Management Advisory Committee**
 - Collaborative committee consisting of resident organizations, industry, business, municipal government, Regional Health Units and the Ministry of the Environment.
 - Committee is working to develop a locally focused action to achieve on-going air quality improvements.
 - Ford is an active member of the Committee and was also an active member in the Southwest Greater Toronto Area Air Quality Task Force chaired by Dr. David Balsillie.



OAC Energy Reduction Initiatives

- Recognized as Canadian Industry Program for Energy Conservation (CIPEC) Energy Innovator
- 5 year, 25% energy reduction initiative with \$650,000 invested in 2012
- Conversion from inefficient steam heating to localized direct-fired natural gas heaters
- Air driven tools have been replaced with more efficient and precise electric tools eliminating a central air compression system
- Air Compressor control upgrades
- Automatic lighting that shuts off when not in use
- Lighting improvements to more efficient lamps
- Installation of energy efficient roof



Environmental Highlights at OAC

- Continual environmental footprint reductions from surface coating operations
- Ford was a partner in Canada's first pollution prevention agreement in 1992
- Stormwater management facilities have been added in the Joshua Creek and Wedgewood Creek watersheds to mitigate peak flows and improve water quality
- A new wastewater treatment plant is in operation
- Tree plantings and site naturalization has been undertaken
 - 100 trees planted on-site for 2011 Earth Day activities



Environmental Awards and Recognition

- Ford Motor Company was named as the inaugural member to the Oakville Awards for Business Excellence Hall of Fame.
 - Ford was also honoured as a Special Corporate Citizen for “exemplifying business excellence through its recognition and support of the community needs of the Town of Oakville.”
- Recipient of the 2006 Manufacturer of the Year Award from the Oakville Awards for Business Excellence
- Conservation Halton recognized Ford as a “Green Giant” at the 2008 Conservation Awards of Excellence for our Fumes to Fuel Research Project.





Fumes to Fuel Research Project

Mission Statement:

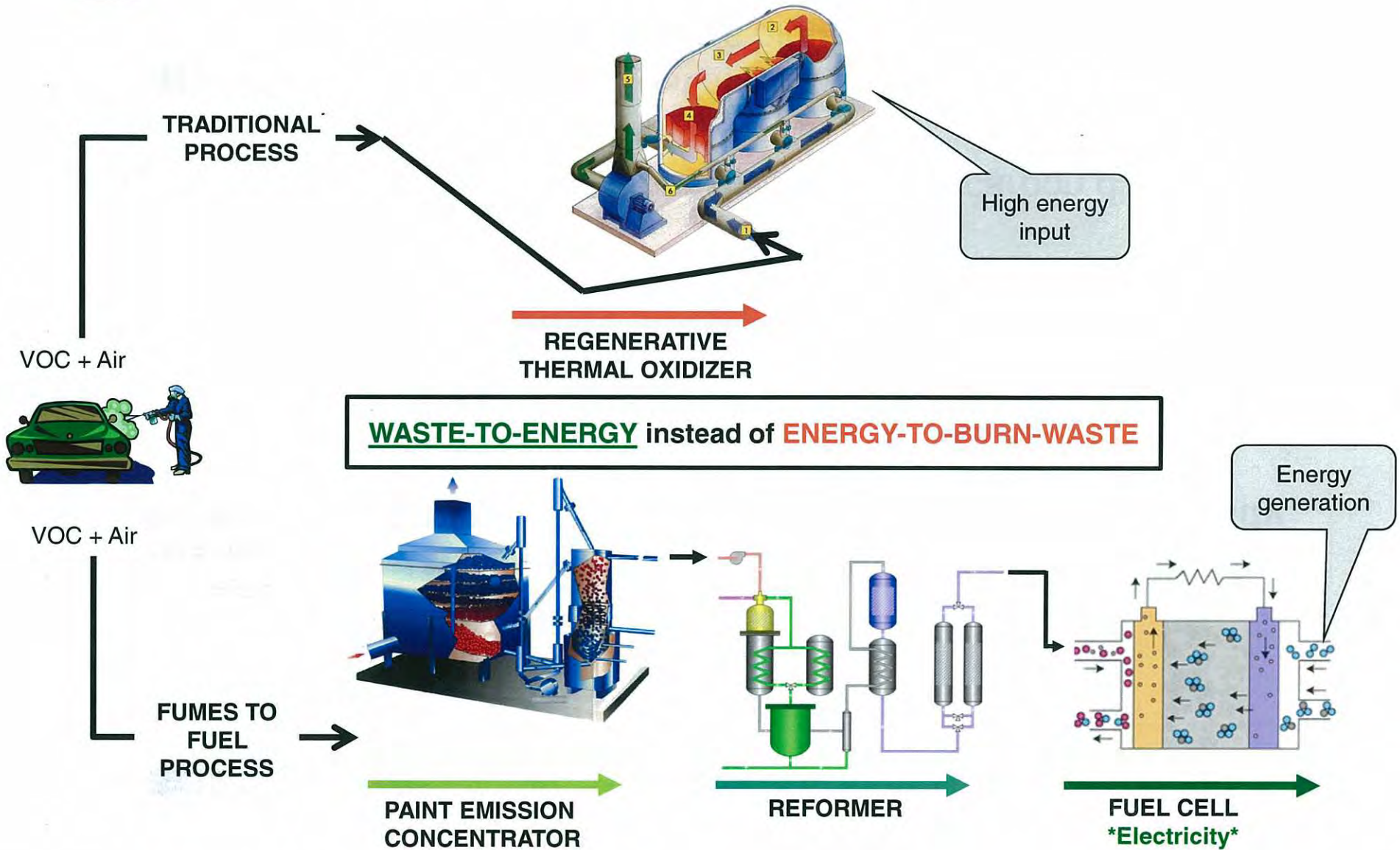
"To develop and demonstrate a fumes abatement system that could revolutionize manufacturing processes by creating a breakthrough in reducing VOC emissions, while at the same time generating energy."

Process Overview:

- Research project with the ultimate goal of becoming production-ready
- Capture VOCs from the painting process exhaust
- Super concentrate the VOCs in Paint Emission Concentrators
- Condense and store the VOCs
- Generate electricity with an Internal Combustion Engine Generator
- Reformulate the VOCs into a fuel for the Fuel Cell
- Generate electricity with a Fuel Cell



Fumes to Fuel Research Project

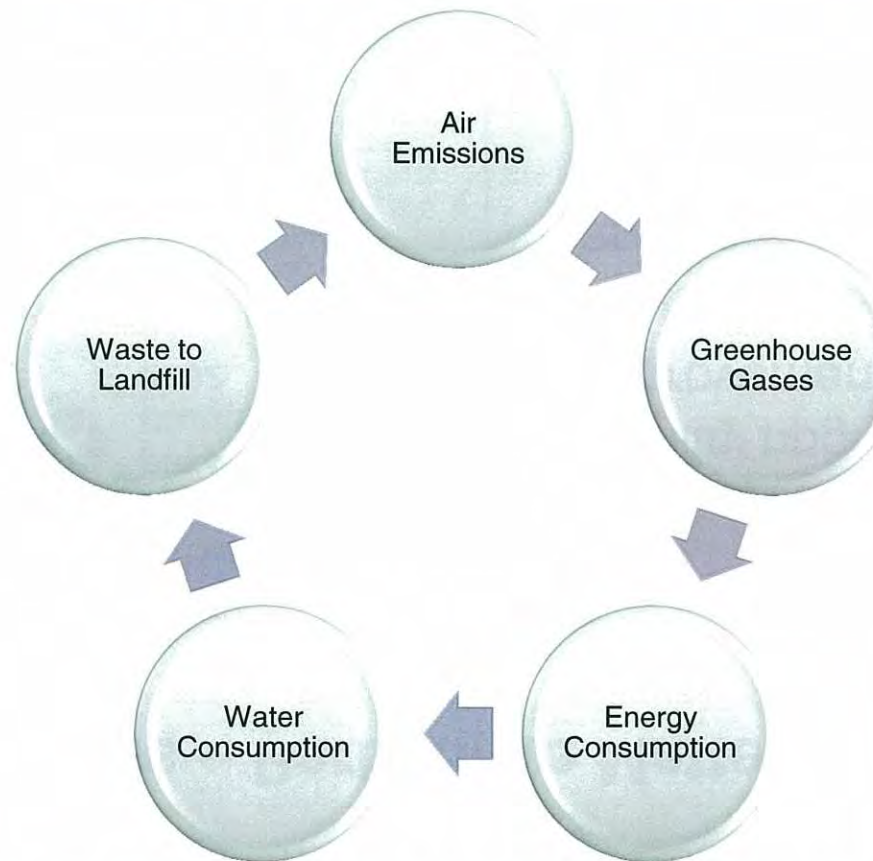




Fumes to Fuel Research Project

- **The Oakville stationary Fuel Cell System is the first of its kind worldwide to “harvest” emissions from an automotive facility**
- **Potential Benefits:**
 - Generate electricity as opposed to consuming it
 - Unlike traditional technology, it does not need natural gas to operate
 - System generates no nitrous oxide and low carbon dioxide emissions
 - In essence, it has the potential to become the perfect green solution to one of the industry’s biggest environmental challenges

ENVIRONMENTAL FOOTPRINT IMPROVEMENTS



OAC Maintains an Ongoing Process to Improve our Environmental Footprint



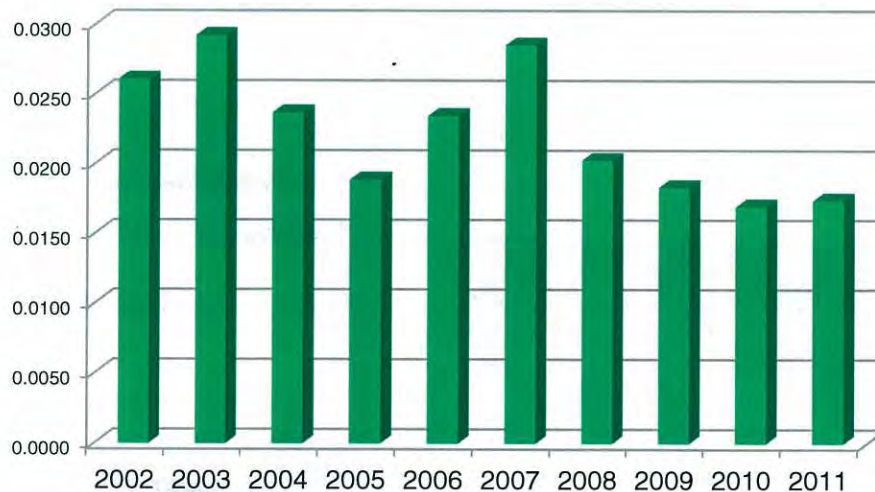
Air Emissions – Particulate Matter



33%

decrease in
PM2.5 emissions
per vehicle
produced since
2002

PM2.5 Per Vehicle Produced (kg/vehicle)



Highlights

- Facility upgrades and improvements in 2006
- State-of-the-art paint application and particulate removal technology reduces paint usage
- Venturi scrubber control system for add-on PM emissions control
- Conversion from steam to natural gas
- Fumes-to-Fuel Research Facility



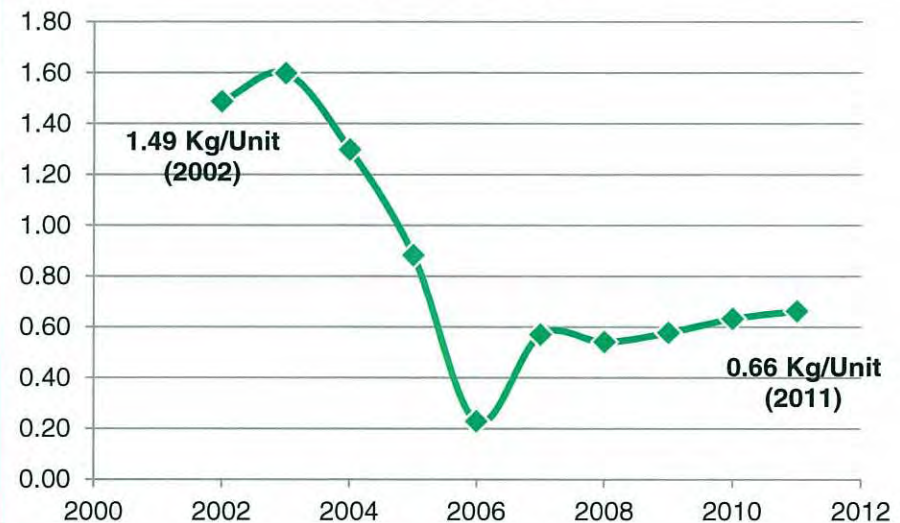
Air Emissions – VOCs

Highlights

- Elimination of 2 regenerative thermal oxidizers (RTOs) since 2006
- Compliance can be demonstrated without the use of an RTO
- Use of low hazardous air pollutant (HAP) paints and paint solvents
- Reformulated paints
- Fumes to Fuel Research Project

 **56%** decrease in the amount VOC emissions per vehicle produced since 2002

NPRI Reportable VOC Emissions Per Unit
(2002 - 2011)

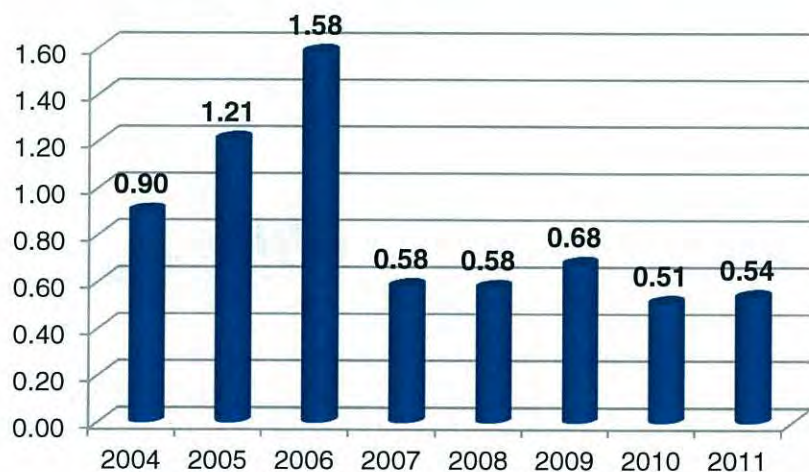




Greenhouse Gas Emissions

 **40%** decrease in CO₂ per vehicle produced since 2004

CO₂ Per Vehicle Produced (m-tons/vehicle)



Highlights

- Voluntarily reported to the Canadian Voluntary Challenge and Registry (VCR) from 1999 to 2006
- Recipient of two Leadership Awards; Gold Champion Level Reporter
- Emissions currently reported annually to Environment Canada, Ontario MOE and The Climate Registry
- Third-party verification conducted annually
- Energy efficiency, conservation and awareness initiatives continue to realize GHG emission savings



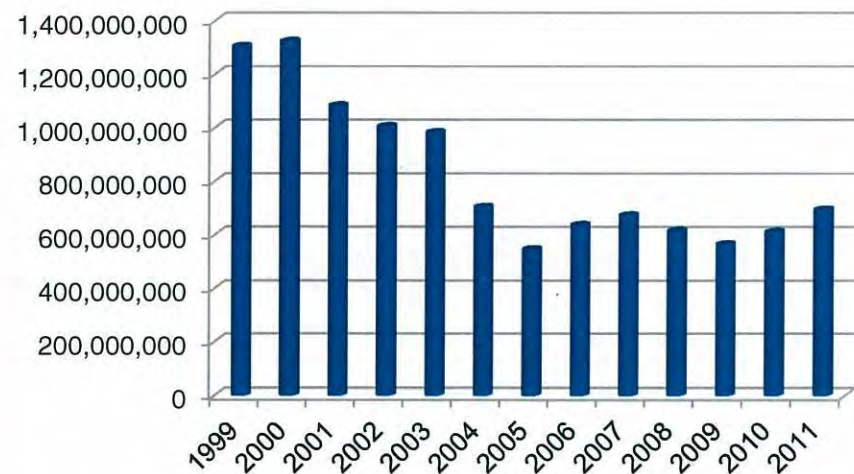
Energy Consumption

Highlights

- Recognized as Canadian Industry Program for Energy Conservation (CIPEC) Energy Innovator
- The connected electrical load has been reduced from over 55 Mw to 29 Mw since 2006 – a reduction of almost half
- In 2000, the boiler house that provided steam for heating and production was retired in favour of more efficient, lower emission direct fired heating units and conversion of remaining steam applications
- De-centralization of compressed air

 **47%** decrease in total energy use since 1999

Total Energy Consumption (kWh)

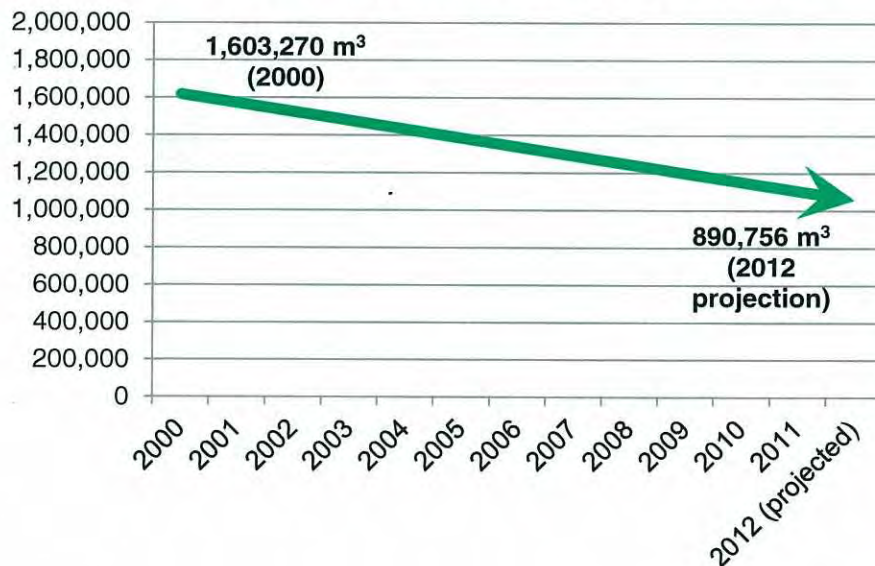




Water Consumption

↓ 44% decrease in total water consumption since 2000

Water Consumption Trend (2000-2012)



Highlights

- Water consumption per vehicle produced also decreased by 28%
 - 5.7 m³/vehicle in 2000 to 3.6 m³/vehicle in 2012
- Surface water consumption (lakes, rivers, streams) eliminated in 2010
 - >900,000 m³ used in 2000
- Implementation of internal daily communication procedures between WWTP and plant process managers to address water usage



Waste to Landfill

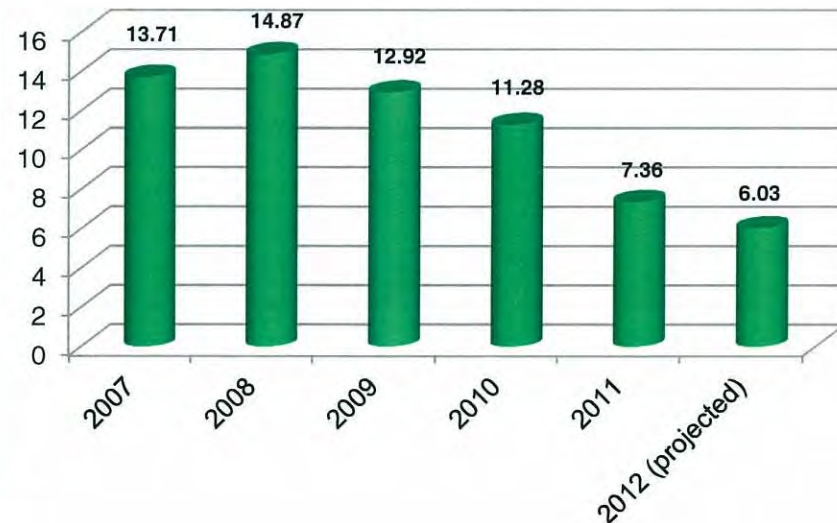
Highlights

- Reduction of waste has been designated as one of Ford's top environmental priorities
- Overall Waste to Landfill decreased by 50% from 2007 to 2012
 - 2,966,483 kg in 2007
 - 1,488,765 kg in 2012 (projected)
- Packaging of incoming components has been replaced with engineered retainable dunnage (96%) eliminating most solid waste

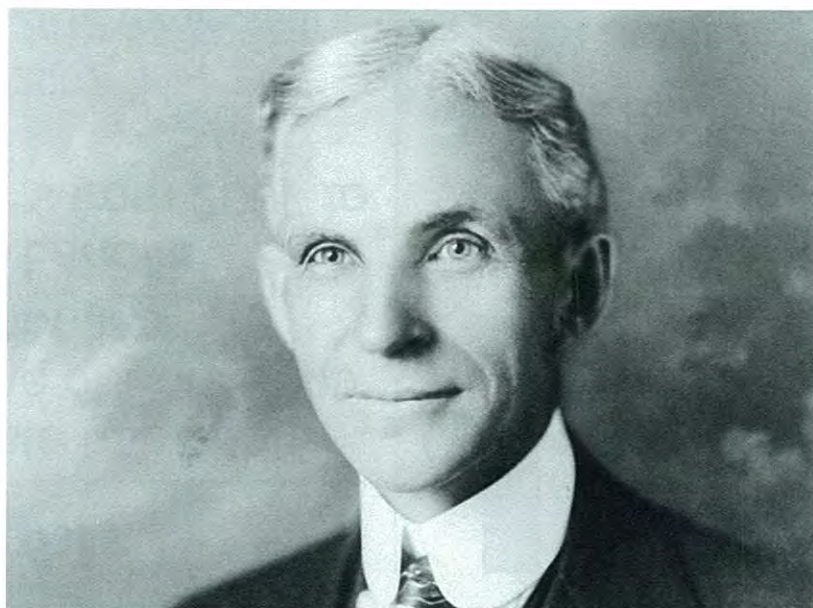
↓ 50%

decrease in the amount of waste to landfill per vehicle produced since 2007

Waste to Landfill Per Vehicle Produced (kg/vehicle)



Sustainability at Ford also includes serving the communities in which we operate



"The gifted man bears his gifts into the world, not for his own benefit, but for the people among whom he is placed; for the gifts are not his, he himself is a gift to the community."



Ford's Economic Impact on the Community

Taxes

- Ford has paid over \$15 Million in taxes for OAC over the past three (3) years

Investment in Oakville

- Ford has invested more than \$2.3 Billion in capital expenditures at OAC since 1999

Employment

- Ford currently employs almost 2,900 employees at Oakville Assembly Complex

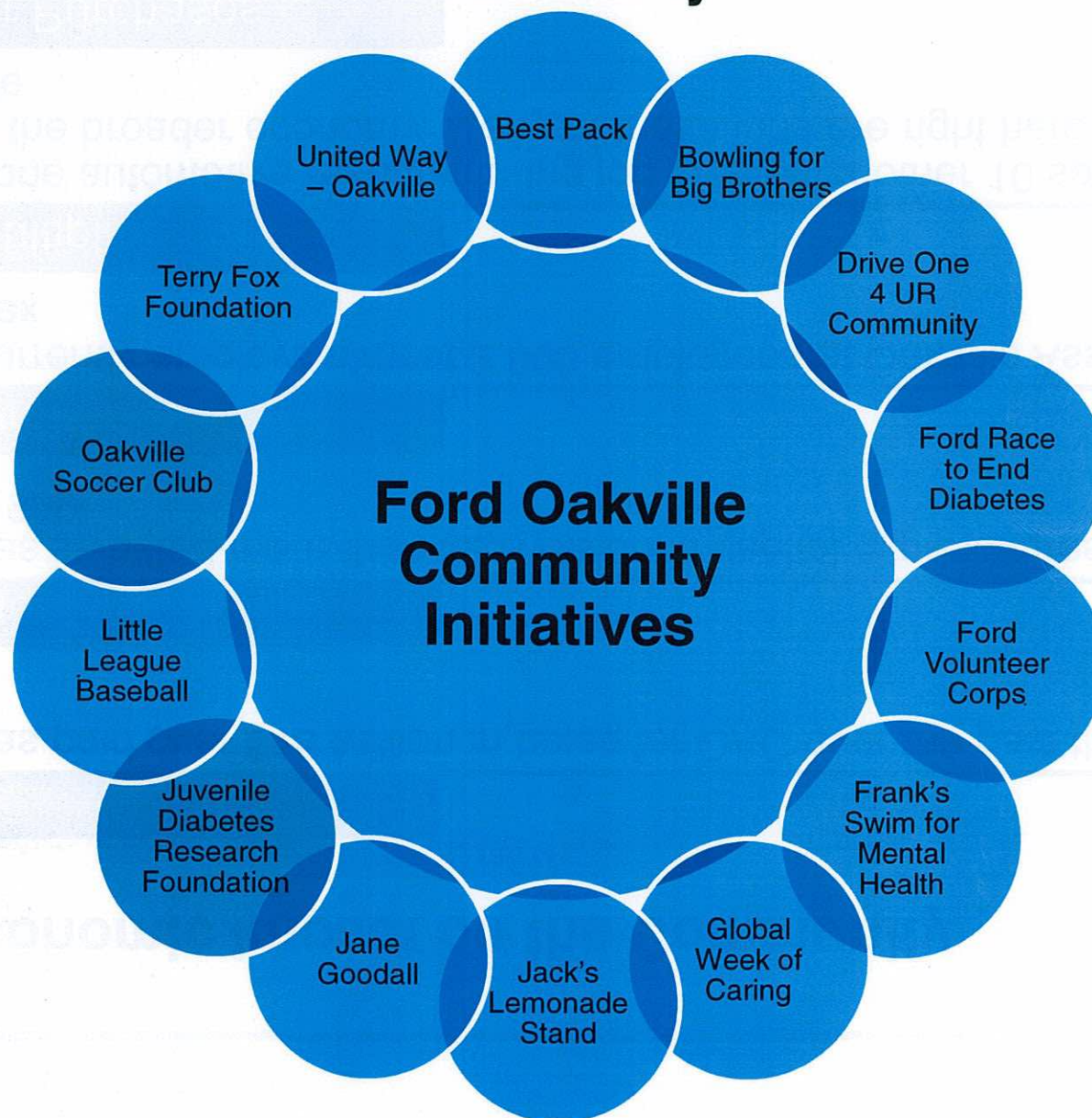
Jobs Multiplier

- Every one automotive manufacturing job creates another 10 spinoff jobs in the broader economy. Many of these jobs are right here in Oakville

Supplier Purchases

- Ford purchases over \$4 billion dollars annually from Canadian suppliers, many of whom are located in the Oakville region

OAC Gives Back to the Community





Community Charity Involvement

Terry Fox Foundation

- The Fox Foundation is one of the largest non-governmental funders of cancer research in Canada
- Ford donated Terry's original Econoline van that followed him on his historic race, and in 2008 donated the restoration work
- Ford is a corporate participant in the Oakville Terry Fox Run



Juvenile Diabetes Research Foundation

- JDRF is the leading global organization focused on type 1 diabetes research
- Ford is the largest global sponsor of JDRF
- In 2011, Ford launched the Oakville Race to End Diabetes
- In 2011 and 2012, the event has raised over \$75,000 to support JDRF

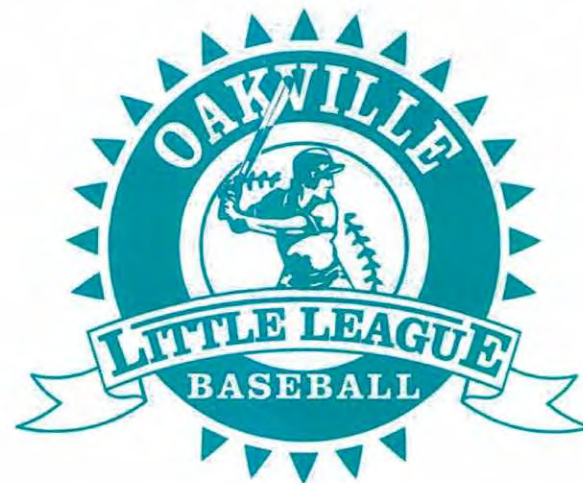




Community Sports League Involvement

Highlights

- Marquee Sponsor of the Oakville Little League for 2012 Season
- Hosted “Drive-One” event to raise funds for Little League season
- Partnership with Canada’s largest Soccer Club: Oakville Soccer Club
- Ford’s sponsorship supports over 4,000 children in the local community





Community Business Involvement



Best Pack TM



Highlights

- Ford is particularly proud of our almost twenty-year relationship with Best Pack (one of the longest continuous corporate partnerships)
- Best Pack is affiliated with Community Living Oakville, and their mission is to *“provide a competitive work environment for people with developmental disabilities.”*
- Ford contracts Best Pack to match each window sticker and invoice and then sort them into the production order on a daily basis for all units produced at OAC
- In 2012, Best Pack completed this task for each of the 244,000 units produced at OAC



Education Involvement

Sheridan College

- Ford has donated thousands of dollars over the years to Sheridan College
- In 2011, Ford was made a “Partner” Donor to The Sheridan Institute of Technology & Advanced Learning



Jeff Zabudsky, President of Sheridan College, Unveiling Plaque to Honour Ford. *Jan 5, 2012*

- In addition to our support of the Institute, Ford donated a new Fiesta to Sheridan’s 4th Annual Big Picture Gala

University R&D

- Ford conducts millions of dollars of research with local Universities and Colleges
- Including: McMaster, Toronto, Guelph, Windsor, and Queens

High School Robotics Programs

- Over the years Ford has contributed equipment and resources to local high schools to help establish robotics and manufacturing programs.



Annual Ford Global Week of Caring Oakville Food and School Supplies Drive

Highlights

- The Ford Global Week of Caring mobilizes thousands of Ford volunteers around the world that go to work in 28 countries on six continents during the second week of September every year.
- In Oakville, the Ford team hosts an annual food and school supplies drive. This year the Fill-A-Flex campaign was a contest between the different floors in the Oakville office to see what floor could fill the most supplies in an Oakville-built FLEX.
- Over the years, thousands of pounds of food and school supplies have benefitted: Kerr Street Mission, Food for Life, United Way Oakville, Halton Trauma Centre, and many other community agencies.
- The 2012 Oakville Global Week of Caring culminated in the return of a Ford team in the Terry Fox Run on September 16.



Ford Motor Company
**Global Week
of CARING**

September 7th-16th 2012





Other Community Activities

Jack's Lemonade Stand

- Corporate Sponsor for 2011 and 2012 to support this famous local organization to raise money for Sick Kids Hospital

Bowling for Big Brothers

- Ford teams have participated in the event to raise funds

Frank's Swim for Mental Health

- Sponsored event to help raise funds for the Mental Health program at OTMH and the Day Program in Oakville

Jane Goodall Comes to Halton

- Platinum Sponsor of Jane Goodall event in Halton Region in September 2012 to support local green community initiatives

Conclusions

- Ford Canada, founded in 1904, is Canada's longest established automaker and since 1953, we have proudly called Oakville our Canadian headquarters.
- Ford is proud of our long legacy of environmental stewardship and contributions to the local community, including Ford's world-leading Fumes to Fuel R&D Center, located in Oakville.
- Oakville Assembly Plant has in place a stringent environmental management system based on the ISO 14001 standard with a goal of continuous improvement in our environmental performance.
- Oakville Assembly Plant has achieved significant improvements in the reductions of air and water emissions, waste by-products, and energy and water usage in the past decade.



Go Further

www.ford.com/go/sustainability

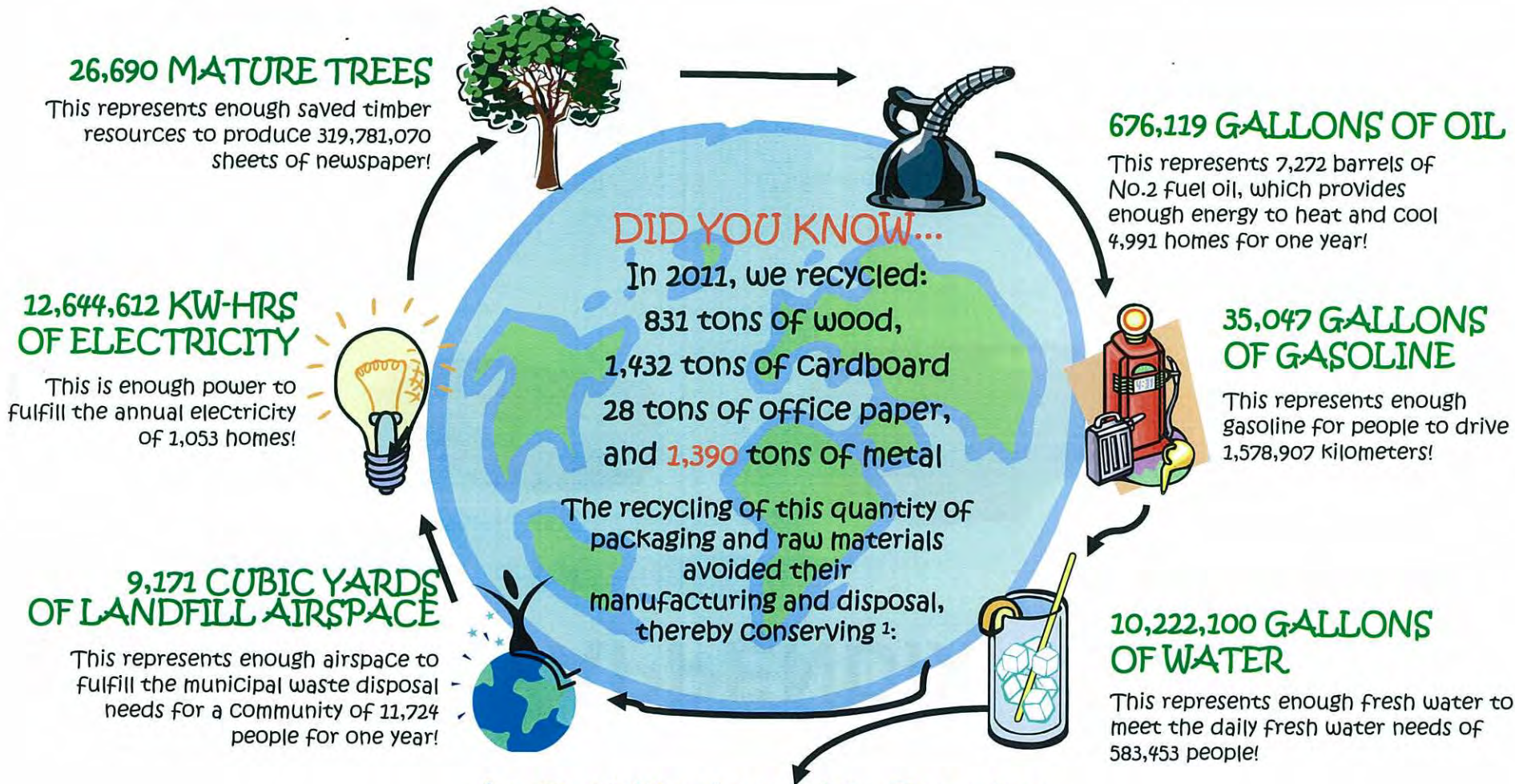


APPENDIX





OAC Recycling Benefits (2011)

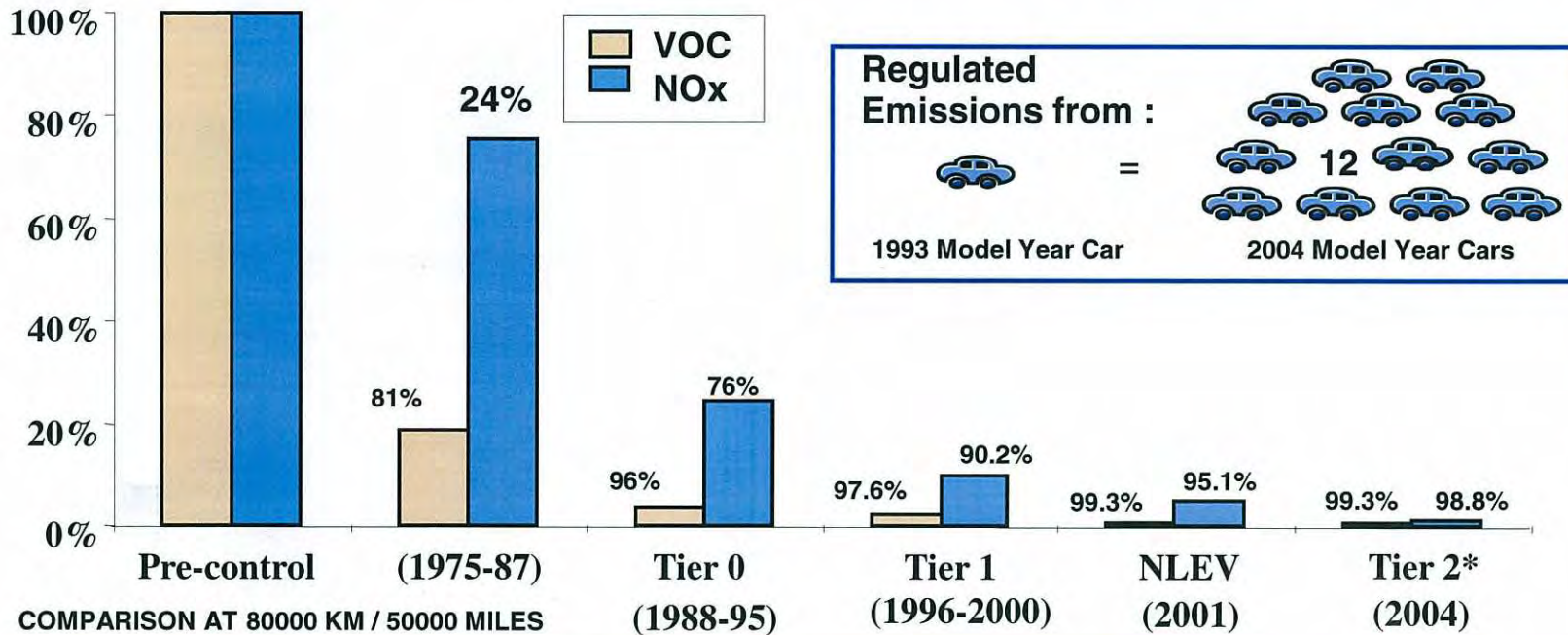


At Oakville Assembly Complex

We Share the Ford Vision to be a worldwide automotive leader while preserving the environment in the community where YOU live and we work

Environmental Leadership in Reducing Emissions

PASSENGER CAR REDUCTIONS FROM PRE-CONTROL



New vehicles are the cleanest on the road – smog causing emissions are down 99% from pre-control levels.

Motor vehicle emissions fully address Ontario’s ASAP objective of 45% smog reduction by 2015

* Includes all light duty trucks up to 193,000 kms (120,000 miles)



Ford's Sustainable Materials Strategy

What goes in

A key goal in Ford's sustainable materials strategy is to identify opportunities to use recycled or renewable material – in place of nonrenewable virgin material – in its vehicles. Here are some of the green materials Ford is using:

Recycled materials (non-metal)

- Post-consumer plastics made into:
 - Underbody shields
 - Battery tray
 - Carpets
 - Heater and air conditioning housing
 - Fan shroud
 - Replacement bumpers
 - Wheel arch liners
 - Air cleaner assembly
 - Roof lining
 - Instrument panel
 - Parcel shelf
 - Soundproofing
 - Insulation
 - Seat fabrics



- Post-industrial yarns made into seat fabrics
- Post-industrial cotton from blue jeans made into interior padding
- Post-consumer nylon carpeting made into resin for cylinder head covers



Renewable materials

- Soy-based polyurethane foams used for seat cushions, seatbacks and headliners
- Wheat straw and other plant fiber-reinforced plastic used for vehicle storage bins and interior door panels
- Engineering wood technology (recycled and renewable) used for interior trim
- Sugars made from corn, beet and cane under consideration for biodegradable plastic parts



Reduce, Reuse and Recycle

What goes into a vehicle at the beginning of its lifecycle and what comes out of it at the end contribute greatly to its environmental friendliness. That's why Ford is committed to maximizing the use of recycled, renewable and recyclable content in its vehicles, while enabling maximum end-of-life vehicle recycling.

This Reduce, Reuse and Recycle commitment is part of Ford's broader global sustainability strategy to reduce its environmental footprint and accelerate the global development of advanced fuel-efficient vehicle technologies.



The end-of-life process

Once all of the salvageable material is removed from a vehicle at the end of its useful life, the remaining structure is flattened and pulverized into fist-sized pieces at the rate of one car every 45 seconds.

Industrial-strength magnets are used to separate the ferrous (iron and steel) from non-ferrous (aluminum) metals and the recovered ferrous metals are recycled to produce new steel. The steel industry recycles more than 14 million tons of steel from end-of-life vehicles each year.

Following the removal of all recyclable materials, the remaining non-recyclable ASR (auto shredder residue), which includes plastics, rubber, foam, fabric and glass, is disposed of in landfills.

What comes out

About 85 percent of the materials used on Ford vehicles are recyclable. Approximately 95 percent of the materials from all vehicles retired from use annually are recoverable, according to International Organization for Standardization guidelines.

- Dismantled, reconditioned and sold on the used auto parts market when possible:

- Starter
- Alternator
- Engine
- Transmission
- Steering wheel column
- Fuel tank
- Seats
- Stereo
- Fenders
- Doors



- Drained for reuse when possible:

- Fuel
- Coolant
- Windshield fluid

- Batteries recycled or sold on the used auto parts market when possible



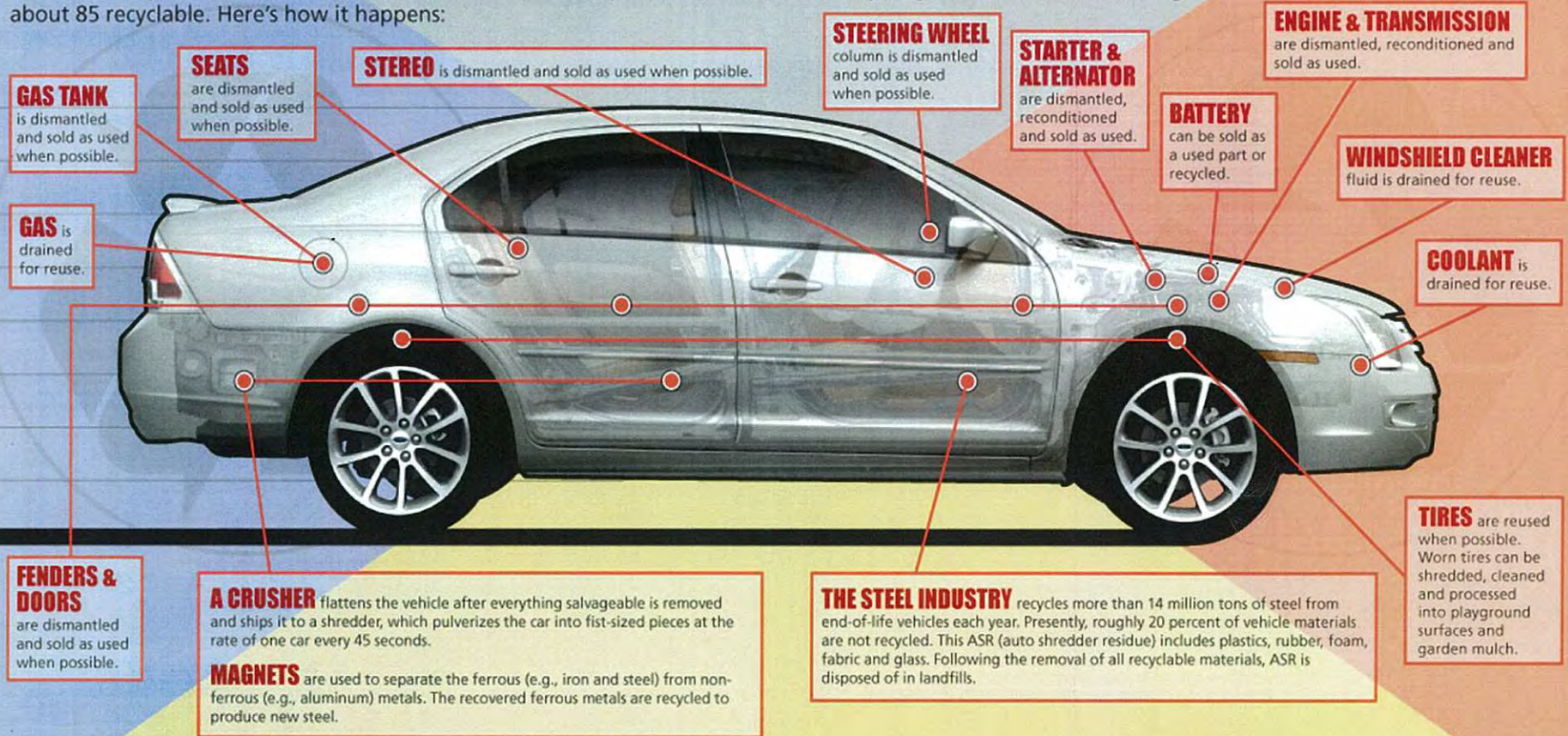
- Tires reused when possible, or shredded, cleaned and processed into playground surfaces and garden mulch



VEHICLE RECYCLING 101

Automobiles are the most-recycled consumer product.

Approximately 95 percent of vehicles retired from use each year are processed for recycling, with Ford vehicles being about 85 recyclable. Here's how it happens:



The American auto industry works together through the United States Council for Automotive Research to optimize vehicle recycling, continually searching for solutions that reduce waste.