
2015

TOYOTA

North American
Environmental Report

TABLE OF CONTENTS

HOME	3
DEAR READERS	6
STRATEGY	8
MISSION	9
MATERIALITY	12
ENVIRONMENTAL ACTION PLAN	14
GOVERNANCE	15
CARBON	16
VEHICLES	20
OPERATIONS	35
OUTREACH: Towards a Low Carbon Future	44
WATER	45
WATER RISKS	49
WATER CONSERVATION	50
WATERSHED PROTECTION	52
MATERIALS	56
CHEMICAL MANAGEMENT	58
WASTE MINIMIZATION	60
BIODIVERSITY	68
PARTNER: Wildlife Habitat Council	71
POLLINATORS	73
NATIVE SPECIES	76
OUTREACH: Conservation	78
OUTREACH	79
SUPPLIERS	82
DEALERS	83
STAKEHOLDERS	85
PERFORMANCE	106



> HOME PAGE

Welcome to Toyota’s 2015 North American Environmental Report. This year’s report focuses on five priority issues: CARBON, WATER, MATERIALS, BIODIVERSITY and OUTREACH.



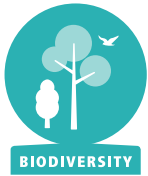
Toyota considers global warming to be a top priority. In 2015, the [Toyota Mirai](#) hit the market, powered by hydrogen and emitting nothing but water vapor; our 14 North American manufacturing plants won an impressive 11th consecutive [ENERGY STAR Partner of the Year – Sustained Excellence](#) award for superior energy efficiency; and [Yellowstone National Park](#), with our help, began generating sustainable power from used Camry hybrid batteries. These projects all required time, dedication and collaboration to succeed. We are innovating for positive change and moving along our path to a low carbon future.



Water is a precious resource. Throughout the company, we are making changes to use less water. We saved over 54 million gallons last year by doing some pretty creative things, like collecting rain water and using it to [water a rain garden](#). We’re helping others conserve water, too. Through programs like the [World Water Monitoring Challenge](#), team members are teaching youngsters about the importance of clean, fresh water. In Toyota’s cycle of water stewardship, everyone has a role in making sure this precious resource is available for generations to come.



For Toyota, “Materials” refers to everything used to make a vehicle, whether it ends up in the final product or not. Some materials contain [substances of concern](#), which we try to reduce or eliminate. And in the process of making vehicles, some materials become waste. Last year, we reduced, reused or recycled 96 percent of our own solid waste. We also collected over 212,000 pounds of [household waste and donation items](#) from our neighbors. Together, we are helping to keep usable material out of landfills and helping others reuse and recycle.



Over 2,100 species of animals and plants are listed as endangered or threatened around the world. To keep these species from disappearing forever, collaboration is key. Toyota partners with the [Wildlife Habitat Council](#) to bring together employees, government agencies and conservation organizations to build healthy ecosystems and connected communities. From protecting [pollinators](#) to supporting [National Public Lands Day](#), these efforts are all part of our mission to create positive environmental change.



Our outreach strategy seeks to make connections that scale up our activities in carbon, water, materials and biodiversity. Engaging stakeholders is central to the success of this strategy. We encourage team members to become [environmental ambassadors](#); work with our network of Toyota and Lexus [dealerships](#) on green building initiatives; and through the [National Mayor’s Challenge for Water Conservation](#), we are part of one of the largest conservation awareness programs in the U.S. Through the power of collaboration, we hope to create lasting positive outcomes on a macro scale.

Please visit the [Performance](#) section, where we’ve combined all our data charts. Here you will also find information about Air Quality (VOC emissions and criteria pollutant tailpipe emissions), a list of our LEED®-certified facilities, information on the ISO 14001 certification status of our sites, and our environmental compliance record.

ABOUT THIS REPORT

This report covers activities in the United States, Canada and Mexico, as well as the Toyota, Lexus and Scion brands in North America. The period covered is fiscal year 2015 (April 1, 2014 through March 31, 2015) and product model year 2015. Data presented with different dates is clearly indicated.

We listened to your comments and suggestions about last year's report and used them to improve this report. We would appreciate your feedback. You may participate in a [survey found here](#).

© November 2015

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Dear Readers:

Almost two decades ago, hybrid technology rolled into the automotive industry. It all began in 1997 with Prius, the vehicle that would become a symbol of our company’s respect for the planet. As we launch the fourth generation of this marquee vehicle, we also bring to the streets the latest in vehicle electrification, the Mirai - a fuel cell electric vehicle that runs on hydrogen and emits only water vapor.

We estimate Toyota’s hybrid technology has helped save more than 5.8 billion gallons of gasoline worldwide since 1997 and resulted in an estimated 58 million fewer tons of CO2 emissions.

These numbers grow bigger and bigger every year, but our efforts to address climate change and protect the environment don’t end with our vehicles. We have been working hard to ensure that our new headquarters campus in Plano, Texas, as well as the two additional sites being built in York, Michigan, and Georgetown, Kentucky, support - and even redefine - Toyota’s commitment to the environment. Case in point: We intend to pursue LEED® Platinum - the highest level of certification available - at all three sites.

While we spent a considerable amount of time during 2015 planning for these new sites, we didn’t lose sight of our existing commitments. We made steady progress against our environmental action plan targets in each of our core environmental focus areas: carbon, water, materials, biodiversity and outreach.

We also finalized our next environmental action plan, which sets targets in the same core focus areas through fiscal year 2021. We will share details of these targets in next year’s report when we close out our reporting of the current action plan.

In the meantime, find out what Toyota means by Respect for the Planet and explore this year’s North American Environmental Report. You’ll find everything from 11 consecutive Energy Star awards to rescuing baby hawks. The actions we take today to improve our environmental performance are shaping a more sustainable future. Tomorrow never looked better.



Jim Lentz
Jim Lentz
 Chief Executive Officer
 Toyota North America



Kevin M. Butt
Kevin M. Butt
 Regional Environmental Director
 Toyota North American Environmental

Highlights

<p>Carbon</p>	<ul style="list-style-type: none"> • Toyota Mirai is the only zero emission electric vehicle on the market that tops the 300 mile range milestone. Mirai is a fuel cell electric vehicle that uses hydrogen as fuel and emits only water vapor. • We received our 11th consecutive ENERGY STAR Partner of the Year – Sustained Excellence Award from the U.S. EPA. Our 14 North American manufacturing plants have reduced energy use by nearly 14 billion kilowatt hours since 2002. • Toyota’s Georgetown assembly plant now generates green power from local landfill gas, enough for the production of 10,000 vehicles per year.
<p>Water</p>	<ul style="list-style-type: none"> • Toyota saved over 54 million gallons of water in North America during fiscal year 2015, enough to fill 82 Olympic-size swimming pools. • Team members at Toyota’s assembly plant in San Antonio, Texas, reduced water use by 80 gallons per vehicle by installing additional filtration in the paint shop. • Toyota’s Chicago Service Training Center collects rain water and routes it to a rain garden where it’s reabsorbed into planting beds. Together with drought-tolerant native landscaping, this eliminates the need for irrigation.
<p>Materials</p>	<ul style="list-style-type: none"> • Toyota’s North American facilities reduced, reused, recycled or composted over 96 percent of non-regulated waste during calendar year 2014. • Toyota has 28 North American facilities that meet the U.S. Zero Waste Business Council’s definition of a “Zero Waste Business” – one with a 90 percent or greater diversion of all waste from landfill, incineration and the environment. • Toyota’s plant in Alabama is the first in North America to reuse batteries from end-of-life hybrid vehicles as stationary energy storage. Using these batteries gives them a second life and keeps them out of landfills.
<p>Biodiversity</p>	<ul style="list-style-type: none"> • Toyota currently has over 1,000 acres across nine North American sites certified to the Wildlife Habitat Council’s <i>Wildlife at Work</i> program. • Toyota’s assembly plant in Mississippi planted four pollinator gardens last year; all four were certified by Monarch Watch as monarch waystations. Waystations offer habitat for the monarch butterfly, whose numbers have declined 90 percent in the last two decades. • Over 130,000 trees were planted at Toyota’s Indiana assembly plant between 2008 and 2014. In 10 years, when these trees reach their peak, they will be capturing and storing 2,170 tons of CO₂ from the air annually.
<p>Outreach</p>	<ul style="list-style-type: none"> • At the Lamar Buffalo Ranch in Yellowstone National Park, an innovative distributed energy system combines solar power generation with reused Camry Hybrid battery packs. The result: reliable, sustainable, zero emission power to the field campus for the first time since it was founded in 1907. • Residents from more than 3,900 U.S. cities pledged to save over 1.5 billion gallons of water as part of the annual National Mayor’s Challenge for Water Conservation, supported by Toyota. • We have assisted 47 Toyota and Lexus dealers with LEED® certification. We have more LEED-certified dealers in the U.S. and Canada than any other auto manufacturer.



2015

STRATEGY

- > MISSION
- > MATERIALITY
- > ENVIRONMENTAL ACTION PLAN
- > GOVERNANCE

MISSION

Toyota North America's Environmental Mission (see FG1) states our commitment to minimizing environmental impacts and promoting positive environmental change.

This mission is deeply rooted in Toyota's Global Vision, Guiding Principles and Earth Charter (see FG2). Toyota's Global Vision is founded on a commitment to quality, constant innovation and respect for the planet. The Global Vision articulates the kind of company we strive to be — a company that shows consideration to the environment and investigates and promotes sustainable systems and solutions.

Toyota's values are outlined in the Guiding Principles and Earth Charter. The Guiding Principles challenge the company to “be a good corporate citizen,” “dedicate ourselves to providing clean and safe products,” and “pursue growth in harmony with the global community through innovative management.” Environmental responsibility is key to each of these.

The Earth Charter was developed in 1992 (and revised in 2000) to exemplify our comprehensive approach to managing environmental issues. The Earth Charter instructs us to strive for “growth in harmony with nature,” “zero emissions,” and “building close and cooperative relationships” with a wide range of stakeholders interested in preserving the environment.

FG1 • Environmental Mission Infographic

Toyota North American Environmental Mission

Respect for the planet. This is the global vision followed by Toyota companies around the world. In North America, this vision means we minimize environmental impacts while also promoting positive environmental change. We strive to be an environmental role model through our actions in three areas:



OUR BUSINESS

In **Our Products and Operations**, we will:

- Proactively assess our environmental impacts and develop challenging goals and targets to address core areas of focus.
- Pursue innovation and continuous improvement opportunities to maximize energy and fuel efficiency and optimize our environmental performance.
- Strive for zero emissions to air, land and water from our business activities and protect our natural world.

OUR STAKEHOLDERS

With **Our Stakeholders**, we will:

- Promote awareness, both internally and externally, of our environmental strategy and initiatives to encourage action and participation
- Develop strategic partnerships with external organizations to help achieve and further environmental performance.
- Share our know-how and participate in philanthropic activities for the benefit of society and the environment.

OUR BUSINESS PARTNERS

With **Our Business Partners**, we will:

- Strengthen relationships with business partners to better understand upstream and downstream environmental impacts.
- Share our know-how with suppliers and dealerships to help them continuously improve their environmental performance.
- Help our business partners strive for zero emissions to air, land and water from their activities and protect our natural world.

FG2 • Toyota’s Global Vision, Principles and Earth Charter

TOYOTA’S GLOBAL VISION

Toyota will lead the way to the future of mobility, enriching lives around the world with the safest and most responsible ways of moving people.

Through our commitment to quality, constant innovation and respect for the planet, we aim to exceed expectations and be rewarded with a smile. We will meet challenging goals by engaging the talent and passion of people, who believe there is always a better way.

TOYOTA’S GUIDING PRINCIPLES

Adopted January 1992, Revised April 1997

- | | | | | |
|---|---|---|--|--|
| <p>1. Honor the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen around the world.</p> <p>2. Respect the culture and customs of every nation and contribute</p> | <p>to economic and social development through corporate activities in local communities.</p> <p>3. Dedicate ourselves to providing clean and safe products and to enhancing the quality of life everywhere through our activities.</p> | <p>4. Create and develop advanced technologies and provide outstanding products and services that fulfill the needs of customers worldwide.</p> <p>5. Foster a corporate culture that enhances individual</p> | <p>creativity and teamwork value, while honoring mutual trust and respect between labor and management.</p> <p>6. Pursue growth in harmony with the global community through innovative management.</p> | <p>7. Work with business partners in research and creation to achieve stable, long-term growth and mutual benefits, while keeping ourselves open to new partnerships.</p> |
|---|---|---|--|--|

TOYOTA’S EARTH CHARTER (APRIL 2000)

The Toyota Earth Charter, published in 1992 and updated in 2000, describes Toyota’s Basic Action Policy and Action Guidelines regarding environmental improvements.

I. BASIC POLICY

1. Contribute toward a prosperous 21st century society

Aim for growth that is in harmony with the environment, and set a challenge to achieve zero emissions throughout all areas of business activities.

2. Pursue environmental technologies

Pursue all possible environmental technologies, developing and establishing new technologies to enable the environment and economy to coexist.

3. Take action voluntarily

Develop a voluntary improvement plan based on thorough preventive measures and compliance with laws, that addresses environmental issues on global, national and regional scales, while promoting continuous implementation.

4. Work in cooperation with society

Build close and cooperative relationships with a wide spectrum of individuals and organizations involved in environmental preservation, including governments, local municipalities and related companies and industries.

II. ACTION GUIDELINES

1. Always be concerned about the environment

Work toward achieving zero emissions at all stages, i.e., production, utilization and disposal;

Develop and provide products with top-level environmental performance;

Pursue production activities that do not generate waste;

Implement thorough preventive measures;

Promote businesses that contribute toward environmental improvement.

2. Business partners are partners in creating a better environment

Cooperate with associated companies.

3. As a member of society

Actively participate in social actions;

Participate in creation of a recycling-based society;

Support government environmental policies;

Contribute to nonprofit activities.

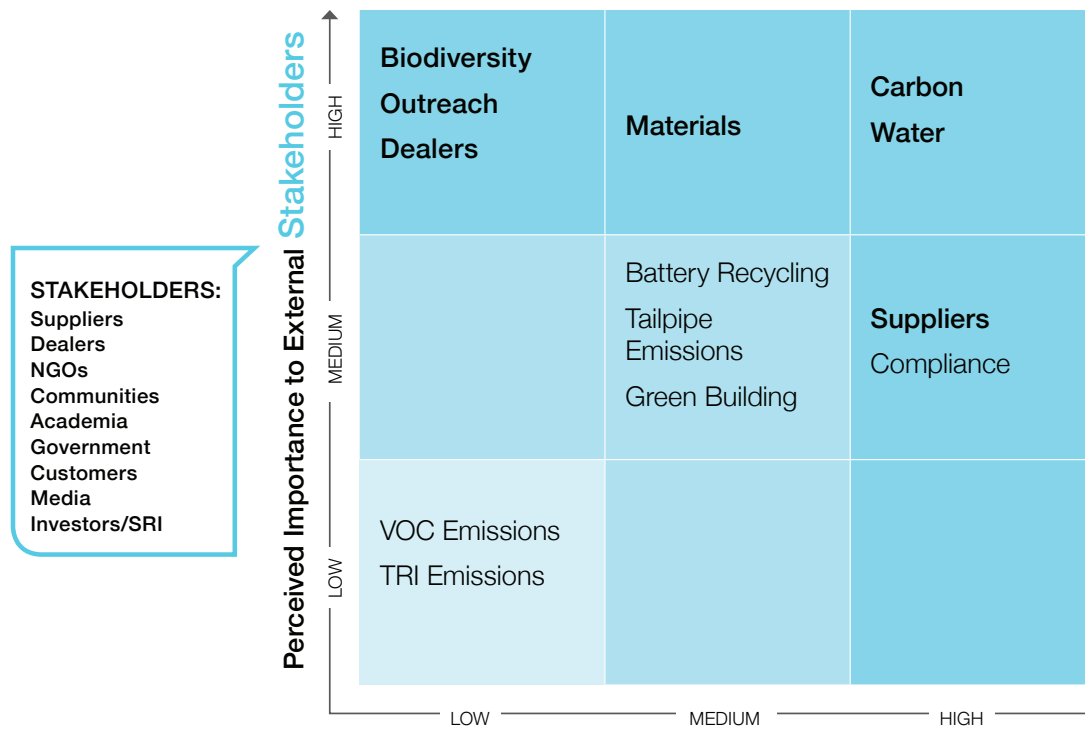
4. Toward better understanding

Actively disclose information and promote environmental awareness.

MATERIALITY

As part of our environmental materiality assessment for North America, we evaluated the relative significance of the environmental topics facing us in the region. We also undertook to determine how important these topics are to our stakeholders. We considered both current and expected future conditions. This was the first time we performed this analysis as One Toyota: manufacturing, sales and logistics, and R&D all participated. The result of our assessment is shown in Figure 3.

FG3 • Environmental Materiality Assessment for North America



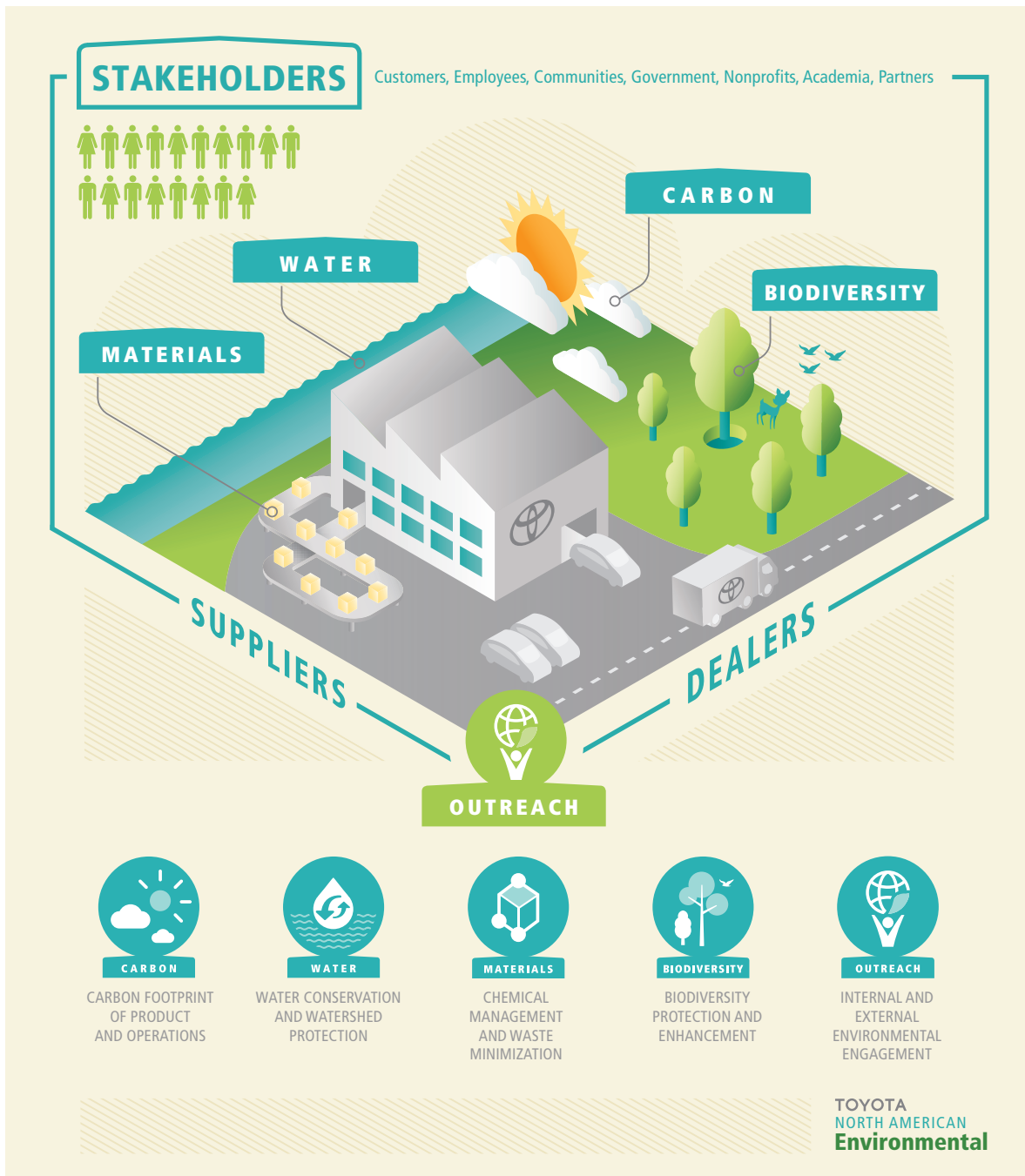
Impact to Toyota/Environment (Current and Within 5 Years)

Our environmental materiality assessment evaluates how relevant and significant environmental aspects and impacts are to Toyota and to our stakeholders. Our assessment identified 13 topics that we manage – and will continue to manage – on an ongoing basis. Of these, we identified the aspects in bold as having the most material impacts, meaning they are the most relevant and significant at this time. These are the aspects we have prioritized and are focusing on in our fiscal year 2014-2016 environmental action plan.

We performed our first environmental materiality assessment in 2012. Each year since, we have confirmed through a streamlined assessment that four core focus areas remain our top priorities: **Carbon**, **Water**, **Materials** and **Biodiversity**. Within each of these core focus areas, we conduct **Outreach** activities with **Suppliers** and **Dealers** as well as other **Stakeholders** to expand our positive impacts. We believe focusing our efforts on core issues will ultimately make the most difference.

Our next materiality assessment will be an in-depth review of current and future conditions in order to guide the development of the fiscal year 2017-2021 environmental action plan.

FG4 • Toyota North America’s Environmental Focus Areas



ENVIRONMENTAL ACTION PLAN

FG5 • Toyota North American Environmental Action Plan, FY2014-2016

	GOAL	FY2016 TARGET	STATUS	FY2015 PROGRESS	
CORE AREAS OF FOCUS	Carbon	Reduce carbon footprint of vehicles and operations	Expand Toyota's global hybrid lineup by successfully introducing new hybrid models in North America	Δ	Launched the 2015 Lexus NX 300h; announced the 2016 Toyota RAV4 Hybrid
			Reduce energy consumption 12% per vehicle produced, from a baseline of FY2010	⊙	Reduced energy use 16.6%
			Reduce GHG emissions from operations 12% per vehicle produced, from a baseline of FY2010	⊙	Reduced GHGs 16%
	Water	Conserve water and protect water sources	Reduce water withdrawal 6% per vehicle produced by FY2016, from a baseline of FY2010	⊙	Reduced water withdrawal per vehicle 8%
	Materials	Eliminate waste and improve recycling and reuse opportunities	Develop and test a new target for waste	Δ	Defined the 3R Rate
			Implement IMDS data management systems enterprise wide	Δ	Completed data collection for all North American-produced vehicles
Biodiversity	Improve biodiversity on and near Toyota facilities	Achieve Wildlife Habitat Council certification at 9 sites by the end of calendar year 2016	○	9 sites certified	
OUTREACH	Suppliers	Strengthen supplier relationships	Develop a new supplier environmental engagement process	Δ	Began working with third-party logistics to prepare for setting a GHG reduction target in the next EAP
	Dealers	Promote and enhance dealer environmental initiatives	Maintain the leadership position in dealership green building and certify 53 dealerships to LEED®	Δ	47 certified dealers
	Stakeholders	Strengthen Toyota's position as an environmental role model	Create environmental ambassadors by educating and empowering employees	Δ	Expanded and enhanced Earth Day/Week/Month activities
		Pursue philanthropic initiatives aligned with our environmental mission and goals	Support community projects that align with our core focus areas	Δ	All major projects align with 4 core focus areas. See FG 26

⊙ Target Exceeded ○ Target Achieved Δ On Track X Target Missed

This environmental action plan reflects the first time Toyota’s North American affiliates have come together and set targets as One Toyota. Instead of separate targets for manufacturing, R&D, and sales and logistics, our targets now cover over 85 assembly and unit plants, R&D sites, parts and vehicle distribution centers, and sales offices. The development of new metrics and new data tracking systems has been a huge accomplishment for us, and we are excited to share the results with you.

GOVERNANCE

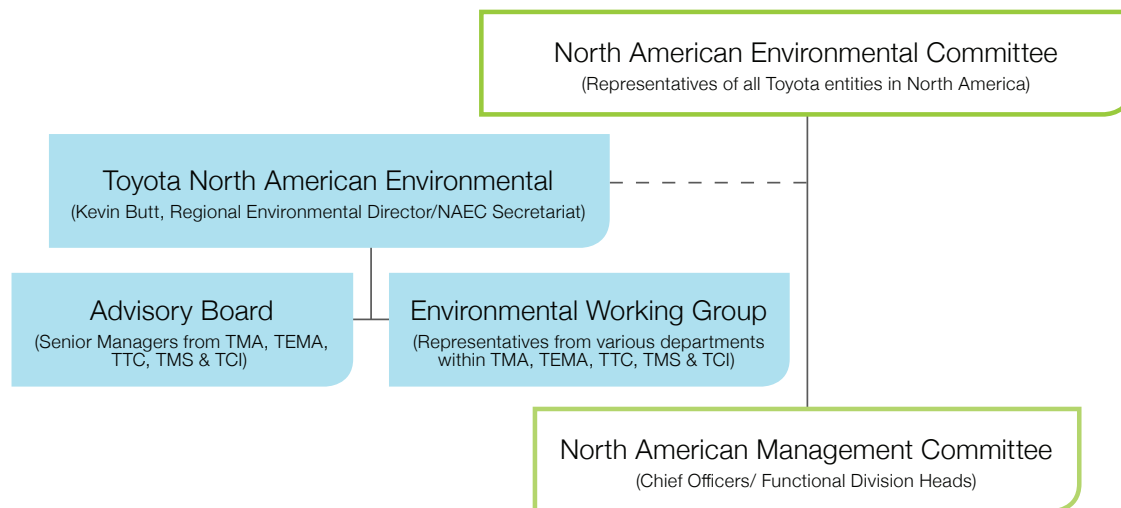
In 2013, we formed the Toyota North American Environmental (TNAE) organization. TNAE reports to the North American Executive Committee and serves as the chief environmental body representing Toyota entities in North America. TNAE, in cooperation with the Toyota North American Environmental Committee (which is comprised of members from the Executive Committee), establishes activities and provides one voice for appropriate responses to environmental issues in North America. TNAE’s primary responsibilities include setting policy and direction for the region, developing consolidated environmental action plan goals and targets, and developing the annual North American Environmental Report.

The TNAE organization includes an Advisory Board and an Environmental Working Group. Both are comprised of environmental experts and representatives from four of Toyota’s North American companies:

- Toyota Motor North America, Inc. (TMA)
- Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA)*
- Toyota Motor Sales, U.S.A., Inc. (TMS)
- Toyota Canada Inc. (TCI)

This report contains information from these four companies. Representatives from these companies also participate in focus groups that concentrate on a particular environmental issue (such as water or biodiversity). These focus groups report to the Environmental Working Group and help develop and implement environmental action plan targets, develop strategies for the region, perform benchmarking and data gathering activities, and raise awareness.

FG6 • Environmental Governance in North America



* TEMA includes both manufacturing and the Toyota Technical Center (TTC), Toyota’s North American research and development division.



2015

CARBON

> VEHICLES

> OPERATIONS

> OUTREACH: TOWARDS A LOW CARBON FUTURE



> CARBON

CARBON is one of Toyota's four focus areas in North America. We are working to reduce the carbon footprint of our [products](#) and our [operations](#), and conducting [outreach](#) activities that help our stakeholders do the same. Climate change is a significant challenge facing the global community. We are working at every stage of the vehicle life cycle to help the world build a low carbon future.

The impacts of climate change – floods, droughts, changes to weather patterns – are being felt around the globe. Earth’s average temperature has risen by 1.4°F over the past century, and is projected to rise another 2 to 11.5°F over the next 100 years. Small changes in the average temperature of the planet can translate to large shifts in climate and weather.

Approximately 20 percent of the world’s total CO₂ emissions from energy sources are generated by the transportation sector. Toyota considers responses to help prevent global warming – a key aspect of climate change – to be a priority management issue. In North America, Toyota’s strategy for a low carbon future focuses on our [products](#), our [operations](#) and [outreach](#) activities.

FG7 • Carbon Infographic



* The combined MPG fleet averages are calculated based on EPA-estimated fuel economy ratings for each vehicle in Toyota's U.S. fleet.

VEHICLES

Toyota pursues multiple technology paths to reduce vehicle fuel consumption and greenhouse gas (GHG) emissions in our global markets. We try to match technologies to best meet customer needs in each specific region. We evaluate vehicle powertrains, weight, aerodynamics and other design factors to boost vehicle efficiency while preserving the vehicle size, power, driving range and affordability that our customers demand — without sacrificing world-class vehicle safety and performance.

Our efforts to improve fuel economy and reduce GHGs have become more aggressive with the adoption in the United States of new fuel economy and GHG emissions standards for passenger cars and light trucks through the 2025 model year. The new vehicle fleet must meet a GHG standard of 250 grams of CO₂ per mile by 2016, equivalent to a Corporate Average Fuel Economy (CAFE) standard of 35.5 miles per gallon; by 2025 cars and light trucks are required to yield a combined 54.5 mpg. While overall compliance is based on a fleet average, each vehicle has a fuel economy/GHG target based on its footprint.

One significant challenge to meeting these standards is having technology options available that consumers are able and willing to purchase in sufficient quantities. At this point, it is nearly impossible to predict such outcomes so far into the future, since preferences will largely be determined by factors such as fuel price, economic conditions and infrastructure development — most of which are beyond an auto manufacturer's control. The National Highway Transportation Safety Administration and the U.S. Environmental Protection Agency, in cooperation with Environment Canada, have begun to monitor these factors under the “mid-term review” process, which will re-evaluate the feasibility of the 2022-2025 model year standards. A determination on feasibility will be made by 2018.

Toyota believes any evaluation should treat vehicles and fuels as a system. For example, higher octane and/or reduced sulfur can enable additional GHG emissions reductions and fuel savings from several engine technologies, while biofuels have the potential to reduce the carbon intensity of the fuel.

In Canada, Toyota supports a harmonized approach with the United States to setting emissions standards. The Canadian federal government introduced a GHG emissions regulation under the Canadian Environmental Protection Act for the 2011 through 2016 model years, and in October of 2014 issued final greenhouse gas emissions regulations for the 2017-2025 model years.

In Mexico, the government has modeled GHG standards after U.S. requirements. The standards require automakers to meet a single sales-weighted fleet average over the period 2014 through 2016, and allow credits generated in 2012 and 2013 to be used toward compliance. These standards have been appropriately tailored to the unique driving conditions and product mix associated with the Mexican market, and contain similar compliance flexibilities and lead time as those offered in the United States. We report on Toyota's performance in this program in [Fuel Economy & CO₂ Performance](#).

Many of our hybrid products are already capable of meeting their respective future targets for fuel economy and GHG standards in all three countries. But there is still a sense of urgency as states like California seek to accelerate the number of zero emission vehicles on the road to meet its ZEV requirements.

To achieve compliance with these regulations and to minimize the carbon footprint of our vehicle fleet, Toyota's vehicle carbon strategy has four parts: 1) improving the fuel efficiency of our gasoline vehicles, 2) advancing the technology and mass acceptance of alternative powertrains, 3) supporting development of the infrastructure needed for full-scale commercialization of advanced technology vehicles that run on alternative fuels, and 4) complying with vehicle fuel economy and GHG regulations and meeting our own internal targets. We are making progress in all of these areas, bringing us closer to a low carbon future.

Improving Gasoline Vehicle FE

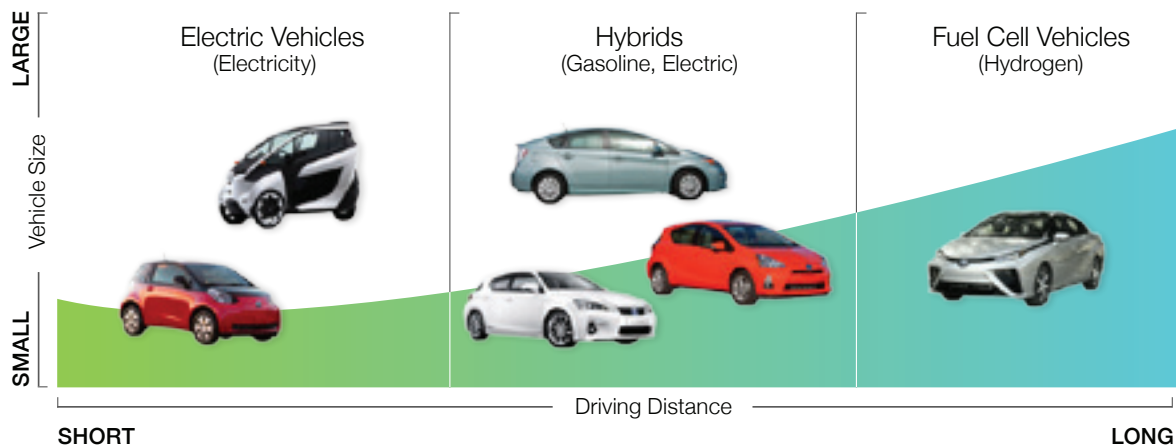
Toyota is working to introduce vehicles with highly efficient gasoline engines that achieve fuel efficiency improvements. The 2015 Lexus NX200T introduced a turbo 2.0L engine, which offers the best combination of efficiency and performance to meet customer demands. Toyota also introduced more fuel-efficient engines into the U.S. for the 2016 Toyota Tacoma 3.5L, Lexus RX and RX Hybrid. These engines will help Toyota achieve future fuel economy and CO₂ vehicle targets.

Advancing Alternative Powertrains

Improving fuel economy and reducing tailpipe emissions are major drivers for our investments in advanced technology. But it takes more than technology to design and build low or zero emission vehicles that the market will accept. We understand no one size fits all; that’s why we invest in researching driving trends, sociological behaviors, the changing energy and transportation landscape, and the evolution of cities. This research helps us understand which technology works in which circumstance so that we can build the vehicles that best suit the needs of the market.

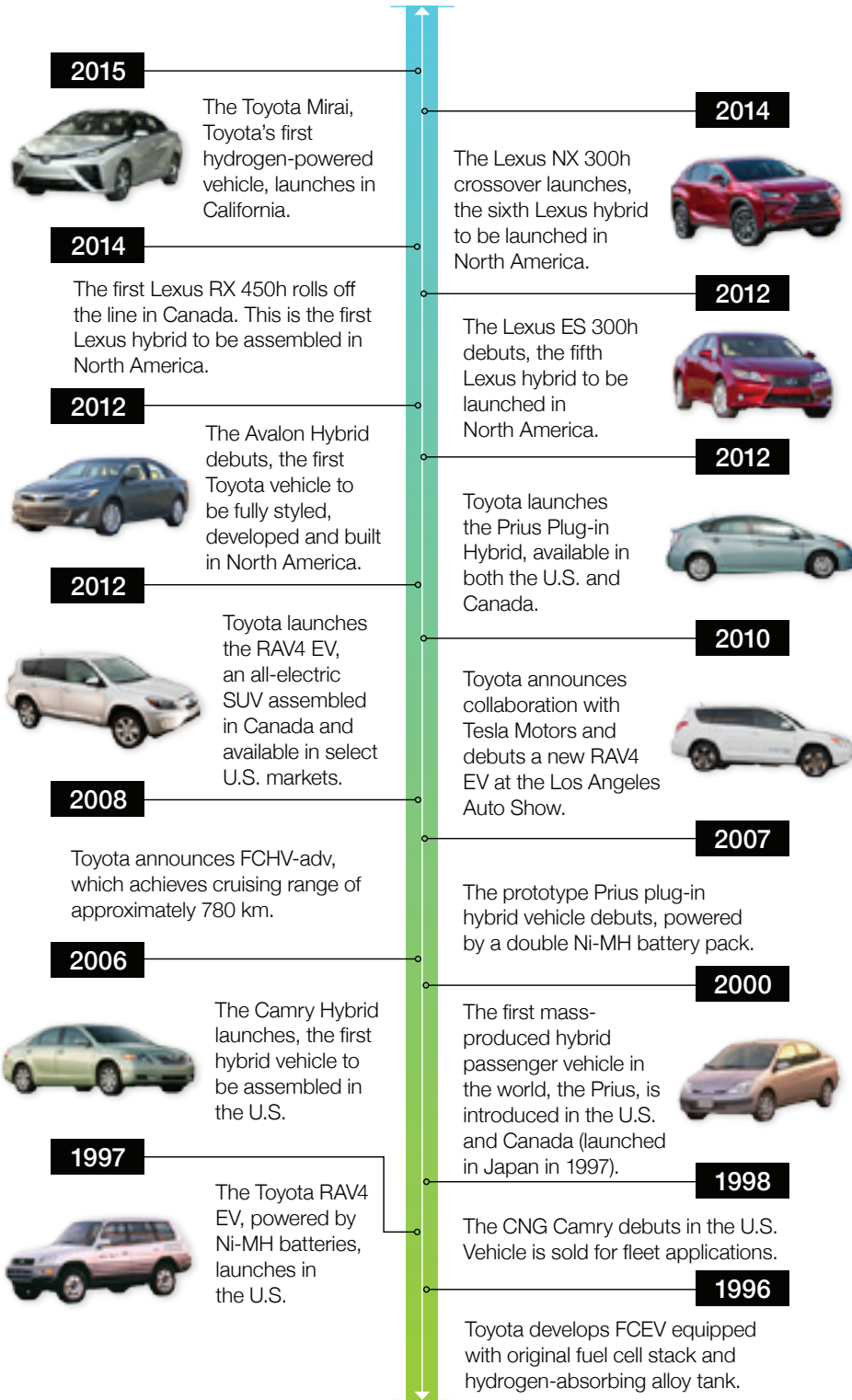
Our vision for small battery electric vehicles, for example, is based on short trips around town, while our Plug-in Hybrid and Fuel Cell Vehicle are ideal for longer driving distances. We address customers’ needs for driving distance and vehicle size using different portfolio technologies. Across our portfolio, we continue to innovate for better fuel efficiency and lower emissions.

FG8 • Toyota’s North American Advanced Technology Portfolio



* The vehicles shown from left to right are: Scion iQ EV, i-Road, Lexus CT 200h, Prius Plug-in, Prius c, and Mirai

FG9 • Advanced Technology Vehicle Milestones



HYBRID VEHICLES

As of the end of 2015, Toyota and Lexus have 14 hybrid vehicles on the market in North America, all using our unique series-parallel hybrid system. Hybrid technology is the foundation of Toyota's approach to minimizing the environmental impacts of gasoline-powered vehicles. Knowledge gained from hybrid development and deployment is helping Toyota accelerate the introduction of future powertrains that can utilize a wide variety of energy sources and fuels, including hydrogen, biofuel and electricity.

In August 2015, global Toyota and Lexus hybrid sales surpassed the 8 million unit mark. Toyota achieved this latest million-unit hybrid milestone in only 10 months.

"Hitting the 8 million mark represents our customers' recognition of the benefits of Toyota and Lexus hybrid vehicles," said Bob Carter, Toyota's senior vice president of automotive operations. "The appeal of excellent fuel economy, driving dynamics and the quality of our vehicles combined with our dealers' dedication to customer service makes Toyota the undeniable leader in hybrid technology."

Toyota sells 30 different hybrid passenger car models and one plug-in hybrid model in more than 90 countries and regions (as of August 2015). In the U.S., Toyota and Lexus offer 13 hybrid models and one plug-in* model, which account for 70 percent of industry hybrid sales. Cumulative Toyota and Lexus hybrid sales in North America are over 2.6 million.

The Toyota Prius hybrid is a marquee vehicle that established mainstream adoption of hybrid technology. By achieving global mass-market appeal, Toyota hybrids have created a significant positive impact in gasoline consumed and emissions generated by driving. As of July 31, 2015, we estimate that Toyota hybrid vehicles have saved about 5.8 billion gallons of gasoline worldwide and resulted in approximately 58 million fewer tons of CO₂ emissions** than would have been emitted or used by gasoline-powered vehicles of similar size and driving performance.

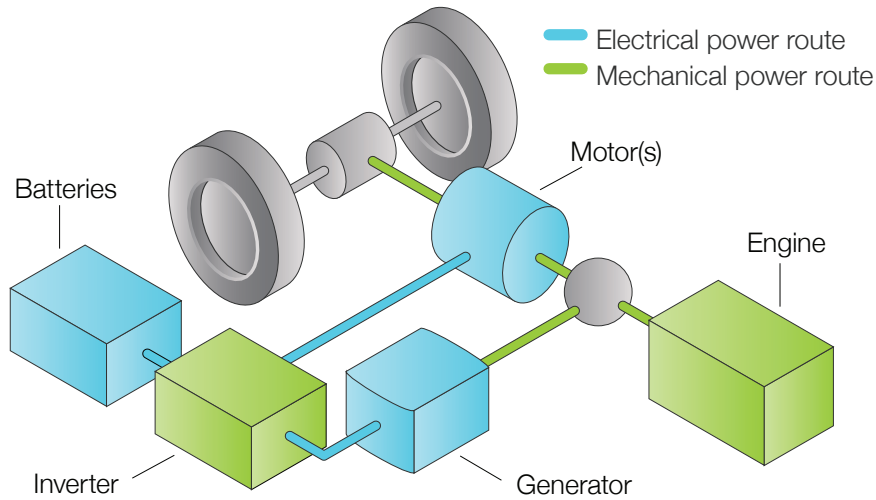
* Production of Prius Plug-in Hybrid ended in June 2015. Production will resume when a new model is launched in 2016.

**Number of registered vehicles × estimated distance traveled × fuel efficiency rating × CO₂ conversion factor

FG10 • Toyota Hybrid System and Fleet

Depending on driving conditions, the engine and the electric motor(s) can work together, or the motor(s) alone can propel the vehicle.

Series Parallel Hybrid



HYBRID FLEET

The current fleet of Toyota and Lexus hybrids includes:

MODEL	YEAR LAUNCHED
Prius	2000
Highlander Hybrid	2005
Lexus RX 400h/RX 450h	2005
Camry Hybrid	2006
Lexus GS 450h	2006
Lexus LS 600h L	2006
Prius v	2011
Lexus CT 200h	2011
Prius c	2012
Prius Plug-in Hybrid	2012
Lexus ES 300h	2012
Avalon Hybrid	2012
Lexus NX 300h	2014
RAV4 Hybrid	2015

* Launch dates refer to North American launches of the first generation of these vehicles. Production of Prius Plug-in Hybrid ended in June 2015. Production will resume when a new

TOYOTA ONE OF CANADA'S GREENEST EMPLOYERS

Toyota Canada Inc. (TCI) has been recognized as one of Canada's Greenest Employers for 2015. TCI was awarded the distinction based on an array of commitments that demonstrate positive environmental impact. Toyota offers a broad portfolio of products demonstrating environmental powertrain innovation, including a Canadian lineup of 13 Toyota and Lexus hybrid vehicles. Toyota has sold more than 100,000 hybrids in Canada, which we estimate has saved Canadians almost 260 million liters of fuel and avoided over 600,000 metric tons of CO₂ emissions.

"We are driven by a vision to create a future where mobility can meet the needs of society without impacting the environment," said Stephen Beatty, vice president, Toyota Canada Inc. "Being named one of Canada's Greenest Employers rewards us for realizing that vision and inspiring others to embrace environmental sustainability."

The Canada's Greenest Employers designation recognizes employers that led the nation in creating a culture of environmental awareness in their organizations. These employers have developed environmental initiatives and are attracting people to their organizations because of their environmental leadership.

AUTO INDUSTRY'S ONLY ASSET-BACKED GREEN BOND PROGRAM EXPANDED

Demonstrating an ongoing commitment to supporting the sale of green vehicles, Toyota Financial Services (TFS) issued the auto industry's second-ever Asset-Backed Green Bond in June 2015 in the amount of \$1.25 billion. TFS revolutionized the Green Bond market by introducing the auto industry's first-ever Asset-Backed Green Bond in 2014. Green Bonds are an important component of TFS' broad-ranging funding program and serve to enhance Toyota's already extensive environmental commitment.

"Investors enthusiastically welcomed the continuation of the auto industry's sole Green Bond program from Toyota Financial Services," said Mike Groff, TFS CEO. "The Green Bond itself represents the innovation that TFS brings to the financial marketplace and reflects Toyota's commitment to sustainable mobility. Its proceeds will enable us to continue to provide Toyota and Lexus customers with attractive financing options for their vehicles."

To develop the Green Bond, TFS worked closely with Citi, which has a long-standing relationship with TFS and shares its commitment to green innovation. Citi served as the structuring lead manager of the bond, and BofA Merrill Lynch and Credit Agricole acted as joint-lead managers.

"Citi is proud to support Toyota Financial Services and this innovative transaction," said Tyler Dickson, global head of capital markets origination at Citi. "With growing investor demand for environmentally friendly, energy-efficient assets such as the TFS Green Bond, we see a significant opportunity for Toyota to continue its leadership in clean transportation investments."

The TFS Green Bond program is unique in the auto industry and enhances Toyota's leadership reputation for green innovation. TFS is using the proceeds of the Green Bond toward the purchase of retail finance contracts and lease contracts for eight Toyota and Lexus vehicles that meet high green standards as established by three criteria:

- Gas-electric hybrid or alternative fuel powertrain
- Minimum EPA estimated MPG (or MPG equivalent for alternative fuel vehicles) of 35 city / 35 highway
- California Low-Emission Vehicle II (LEV II) certification of super ultra-low emission vehicles (SULEVs) or higher, which would include partial zero emissions vehicles (PZEVs) and zero emissions vehicles (ZEVs)

Qualifying models from Toyota include: Prius, Prius *c*, Prius *v*, Prius Plug-in, Camry Hybrid and Avalon Hybrid. From Lexus, qualifying vehicles are CT 200h and ES 300h.

PLUG-IN HYBRID VEHICLES

Plug-in hybrid vehicles use electricity from the power grid to partially offset the use of gasoline. As such, these vehicles typically release fewer emissions while in operation than a conventional vehicle. While the emissions implications vary (based on the source of the electricity), Toyota views the plug-in hybrid vehicle as a way to reduce fuel consumption and tailpipe emissions (including CO₂) beyond a standard gasoline-electric hybrid vehicle.

In 2012, Toyota launched the Prius Plug-in Hybrid in both the United States and Canada. Toyota’s Prius Plug-in offers all the advantages and utility of a conventional hybrid vehicle. Its 4.4 kWh lithium-ion battery can be charged using a 120V outlet in about three hours (with a dedicated 15 amp circuit).

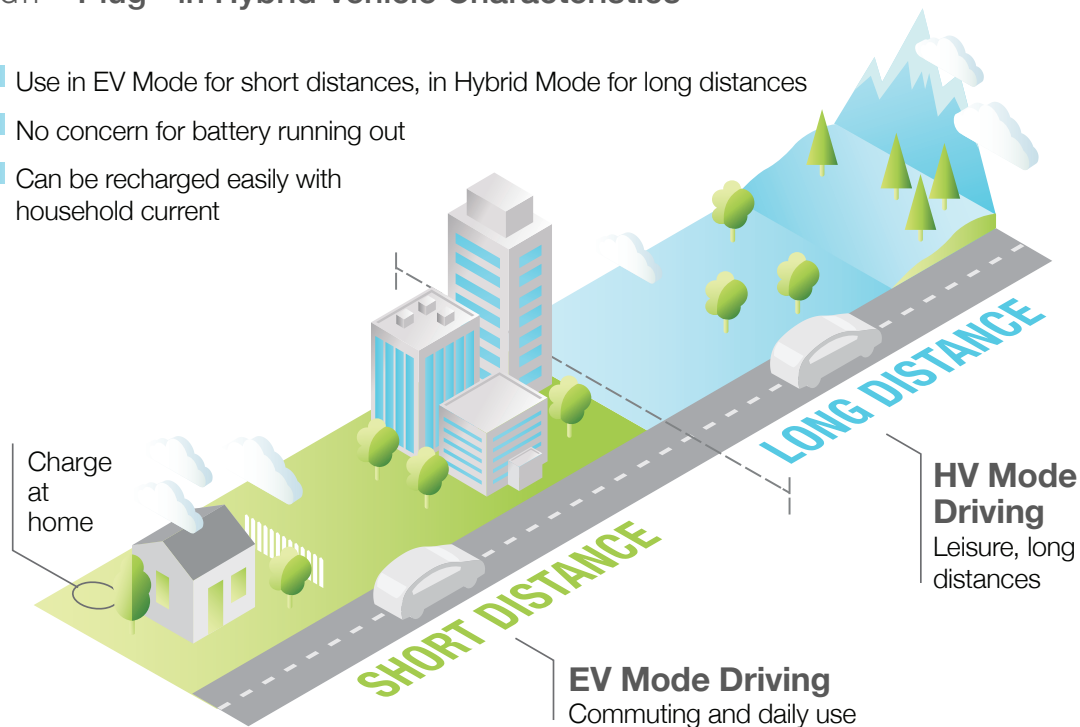
The Prius Plug-in can operate on battery power alone at speeds up to 62 miles per hour and is rated by the U.S. EPA with an EV Mode range up to 11 miles. For longer distances and at speeds above 62 miles per hour, the Plug-in automatically switches to hybrid mode and operates like a regular Prius.

The EV mode fuel economy for the Prius Plug-in is EPA-rated at 95 MPGe (miles per gallon equivalent). In hybrid mode, the Prius Plug-in has a combined EPA rating of 50 MPG. The total EPA-rated driving range is 540 miles on a single charge and single tank of gasoline. Drivers who charge the vehicle regularly and use it for street driving on frequent short trips will realize the biggest reduction in gasoline usage.

Production of Prius Plug-in Hybrid ended in June 2015. Production will resume when a new model is launched in 2016.

FG11 • Plug-in Hybrid Vehicle Characteristics

- Use in EV Mode for short distances, in Hybrid Mode for long distances
- No concern for battery running out
- Can be recharged easily with household current



A Plug-in Hybrid Vehicle is the integration and innovation of HV and EV technologies

BATTERY ELECTRIC VEHICLES

Battery electric vehicle (BEV) consumers embrace the technology for its smooth drive, excellent acceleration and zero tailpipe emissions, yet these vehicles represent a small percentage of the overall vehicle market. For most consumers, limited vehicle range and battery recharge time remain barriers to consideration. Toyota has active research projects in battery technology — both for today’s lithium-ion technology and for the future “beyond lithium” — that seeks to improve range and recharge time.

Toyota engineers have been studying electric vehicles for nearly 40 years. Alongside the company’s groundbreaking hybrid, plug-in hybrid and fuel cell vehicles, BEV technology represents another component of Toyota’s long-term vision for future mobility. While BEVs may not be the solution for every customer, they are one option in our portfolio of advanced technologies and we are working with partners like the [Department of Energy’s National Renewable Energy Lab](#) and others to determine where electric vehicles make sense and how to integrate the vehicle, the customer and the power grid.



Our first partner for the Scion iQ EV, the University of California Irvine, has placed 10 of these vehicles in their ZEV NET car sharing program and 20 in a Smart Grid Demonstration project, which focuses on validating smart charging system architecture.

TOYOTA i-ROAD

June was a big month for the i-Road in North Texas. At the launch of the Ever-Better Expedition at the site of Toyota’s new North American headquarters in Plano, Toyota’s three-wheeled electric vehicle stole the show.

And just a few days before the Ever-Better Expedition, Toyota gave North Texas residents a preview of the pint-sized concept at American Airlines Center in Dallas. The 65 participants spent time driving the i-Road, then answered questions about their driving preferences and how ultra-compact electric vehicles could be used in their daily lives, and provided feedback to Toyota researchers.

“As we look for ways to ease congestion in major hubs like the Dallas-Fort Worth Metroplex, we are exploring how these types of electric vehicles may fit into the transportation landscape,” said Jim Lentz, Toyota North America CEO. “We’re excited to show Texans where these advanced technologies could take us.”

Similar focus groups have been held in Silicon Valley. Demonstration programs for the i-Road are already under way in France and Japan, testing usage and acceptance in urban markets.



Toyota showed off the i-Road, a personal mobility electric vehicle, to a group of fifth and sixth grade students who belong to the robotics club at Golf Road Junior Public School in Toronto, Ontario. The students were intrigued by the car’s design. The ultra-compact size of the i-Road makes it ideal for crowded urban roads, and it only needs a parking space of half the size or less of a normal car.

FUEL CELL VEHICLES

The new Toyota Mirai hydrogen fuel cell electric vehicle offers an EPA-estimated 67 miles per gallon equivalent (MPGe) city/highway/combined, and an EPA-estimated driving range rating of 312 miles on a single fill of hydrogen.

Toyota North America CEO Jim Lentz announced the EPA-estimated performance figures at the Aspen Ideas Festival in Aspen, Colorado. Mirai is the only zero emission electric vehicle on the market that tops the 300 mile range milestone.

“Toyota realized in the early 90’s that electrification was key to the future of the automobile,” said Lentz. “Just as the Prius introduced hybrid electric vehicles to millions of customers nearly 20 years ago, the Mirai is now poised to usher in a new era of efficient, hydrogen transportation.”

One of the world’s first mass-produced hydrogen fuel cell electric vehicle, the Toyota Mirai is a four-door, mid-size sedan with performance that fully competes with traditional internal combustion engines – but uses no gasoline. Instead, Mirai creates electricity on demand using hydrogen, oxygen and a fuel cell, and emits nothing but water vapor in the process.



Beginning in the summer of 2015, California customers can request a 2016 Toyota Mirai by visiting www.toyota.com/mirai. The Mirai will be available for sale in the Northeast beginning in 2016.

Supporting EV and FCV Infrastructure

Alternative transportation fuels such as ethanol, biodiesel, natural gas, hydrogen and electricity are already in the marketplace here in North America. The availability and diversity of these alternatives to gasoline and diesel play a key role in helping countries realize their energy security and greenhouse gas emissions reduction goals.

Our vehicle portfolio approach takes into account the diversity of alternative transportation fuels currently available, as well as those on the horizon. But there are several hurdles to overcome before advanced technology vehicles can realize full-scale commercialization. Infrastructure development is one of these hurdles.

Through the California Fuel Cell Partnership (CaFCP), the Fuel Cell and Hydrogen Energy Association (FCHEA), H2USA, and the California Plug-in Electric Vehicle Collaborative, Toyota is working with government agencies (including the U.S. Department of Energy), other auto manufacturers, utilities and other key stakeholders to support the development of necessary infrastructure for advanced technology vehicles.

PLUG-IN EV CHARGING INFRASTRUCTURE

As states push for putting more zero emission vehicles on the road, the sale of battery electric and plug-in hybrid electric vehicles is expected to accelerate. The infrastructure for these vehicles needs to keep pace. But there is more to infrastructure than the availability of charging stations — the power grid must also be ready to handle this new demand.

The Toyota Research Institute-North America is working with the Department of Energy's National Renewable Energy Laboratory (NREL) to test real-world interactions between the electricity grid, plug-in vehicle charging, solar power and home electronics. A real residential electrical grid with vehicle charging infrastructure, solar power and energy storage has been constructed in a laboratory setting. Scientists and engineers at NREL's Energy Systems Integration Facility (ESIF) and NREL's Vehicle Testing and Integration Facility are using 10 Scion iQ electric vehicles and 22 Prius Plug-in hybrid electric vehicles to develop and explore ways to help grid operators accommodate the fast-growing U.S. electric vehicle fleet, including how to use signals from the grid to curtail charging when the demand for electricity from the grid is at its peak.

ESIF will also allow industry decision makers to model what an increasing penetration of solar or wind energy onto the grid would look like in real time, at a level of accuracy and detail never seen before. Manufacturers can test new energy equipment at megawatt scale. Vendors can analyze the optimal equipment balance as the energy system adds storage and two-way data sharing. ESIF brings together pertinent tools to integrate technologies in ways that weren't possible before.

HYDROGEN FUELING INFRASTRUCTURE

With each step, a hydrogen-driven future comes closer and closer. The transition from gasoline to hydrogen as the predominant fuel that powers passenger vehicles has begun to ripple across the North American landscape.

“When Honda and Toyota launched hybrids, there were a lot of naysayers,” said Craig Scott, national manager of the Advanced Technologies group at Toyota Motor Sales (TMS). “Fuel cell is different. There are five or six brands bringing vehicles to market in a near simultaneous launch. I don't think there's ever been a time when something like this happened all at once.”

But even though the vehicle technology is ready, fueling stations are not. By the end of 2015, approximately 10-15 public hydrogen stations are scheduled to be available in California. By the end of 2016, it's anticipated there will be 48 stations in California. By 2020 the total could top 100, helped along by \$200 million per year in state seed money.

By comparison, gasoline-powered vehicles can now refuel at approximately 10,000 stations statewide. California won't need nearly that many hydrogen stations to support a fleet of hydrogen vehicles: The University of California Irvine estimates 68 stations can support 10,000 hydrogen vehicles.

TMS and its affiliate Toyota Motor Credit Corporation (TMCC) are doing their part to support the development of hydrogen infrastructure by entering into a group of financial agreements with FirstElement Fuel Inc. By supplementing grant money from the state, the partnership with FirstElement supports the long-term operation and maintenance expenses of new hydrogen refueling stations in California. FirstElement, as part of the agreement, is working to develop an integrated and reliable network of fueling stations across California in target market locations approved by Toyota and consistent with the California Fuel Cell Partnership Road Map.

“The first few years here in California will be a critical period for hydrogen fuel cell technology,” said Bob Carter, Toyota’s senior vice president of automotive operations. “We are showing the future owners of this amazing technology that Toyota is helping to ensure that hydrogen refueling will be available, no matter what car brand is on the hood.”

Industrial gas supplier Linde LLC also plans to build a hydrogen fueling station on TMS-owned property located in San Ramon, California, adjacent to Toyota’s San Francisco Regional Office and Parts Distribution Center. This location will serve local and regional customers, and will function as an important connector site between the Sacramento and San Joaquin Valleys and the San Francisco Bay Area. This is the second station on or near a Toyota facility. The first station opened across the street from TMS headquarters in 2011. This station is unique because it was the first to be fed by an active industrial hydrogen pipeline.

In the northeast United States, Toyota and Air Liquide are collaborating to develop and supply a fully-integrated hydrogen fueling infrastructure to support eventual introduction of the Mirai on the east coast. Air Liquide’s hydrogen fueling infrastructure in the northeast is expected to initially consist of 12 filling stations across New York, New Jersey, Massachusetts, Connecticut and Rhode Island, with plans to extend the network as demand warrants. The hydrogen filling stations will offer a typical vehicle filling experience. The stations developed by Air Liquide allow FCVs to fill up in approximately five minutes.

“After more than a century with the automobile, we are making decisions about socially significant technologies aimed at building a true hydrogen society over the next 100 years,” said Steve Ciccone, group vice president for government affairs for Toyota.

Toyota and Air Liquide hosted a “ride-and-drive” experience with Toyota’s Mirai, while Air Liquide displayed a hydrogen dispenser to give users a better feel and understanding of how the hydrogen refueling experience will work. Several members of the New York State Legislature and key government officials discussed hydrogen fuel cell technology with technical experts from Air Liquide and Toyota and had an opportunity to enjoy the driving experience and capabilities of the Mirai on the streets of Albany.

Hybrid Vehicles Target

Successfully introduce new hybrid models in North America through FY2016 to reduce Toyota's product carbon footprint (on track)

Toyota launched the 2015 Lexus NX 300h crossover in the fall of 2014. The 2016 RAV4 Hybrid became available in the fall of 2015.

Fuel Economy & CO₂ Performance

Toyota offers several models that achieved best-in-class fuel economy ratings in 2015. Toyota Prius *c*, Prius Plug-in Hybrid and Lexus CT 200h all made the Greenest Cars list for model year 2015, published by the American Council for an Energy-Efficient Economy (ACEEE). Toyota Camry Hybrid and Prius were named two of the “10 Best Green Cars” for 2015 by *Kelley Blue Book's* KBB.com. KBB.com editors picked 10 standouts boasting the best combinations of fuel efficiency, value and overall appeal. The list also takes into account production methods and recyclability, and the editors try to seek vehicles appropriate for varying lifestyles.

Natural Resources Canada (NRCan) named six Toyota vehicles as best-in-class for fuel efficiency for the 2015 model year. That's more than any other auto manufacturer. The vehicles awarded by NRCan for the lowest estimated annual fuel use in their respective classes were:

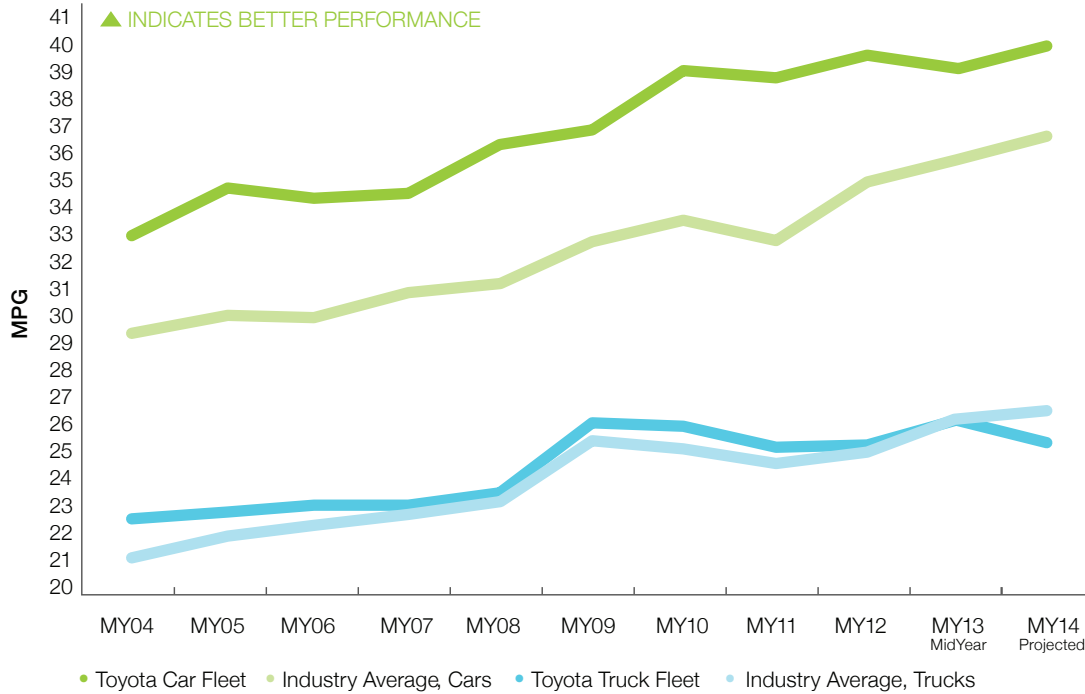
- Scion iQ (Mini-compact car)
- Toyota Prius *c* (Compact car)
- Toyota Prius (Mid-size car)
- Toyota Prius *v* (Mid-size station wagon)
- Toyota NX 300h AWD (Small SUV)
- Toyota Highlander Hybrid AWD LE (Standard SUV)

This marked the 15th year in a row that a vehicle from the Prius Family was named to the list, including the Prius *v* leading the way in each of the four years it has been on the market. In fact, this year every Prius hybrid model won its respective category.

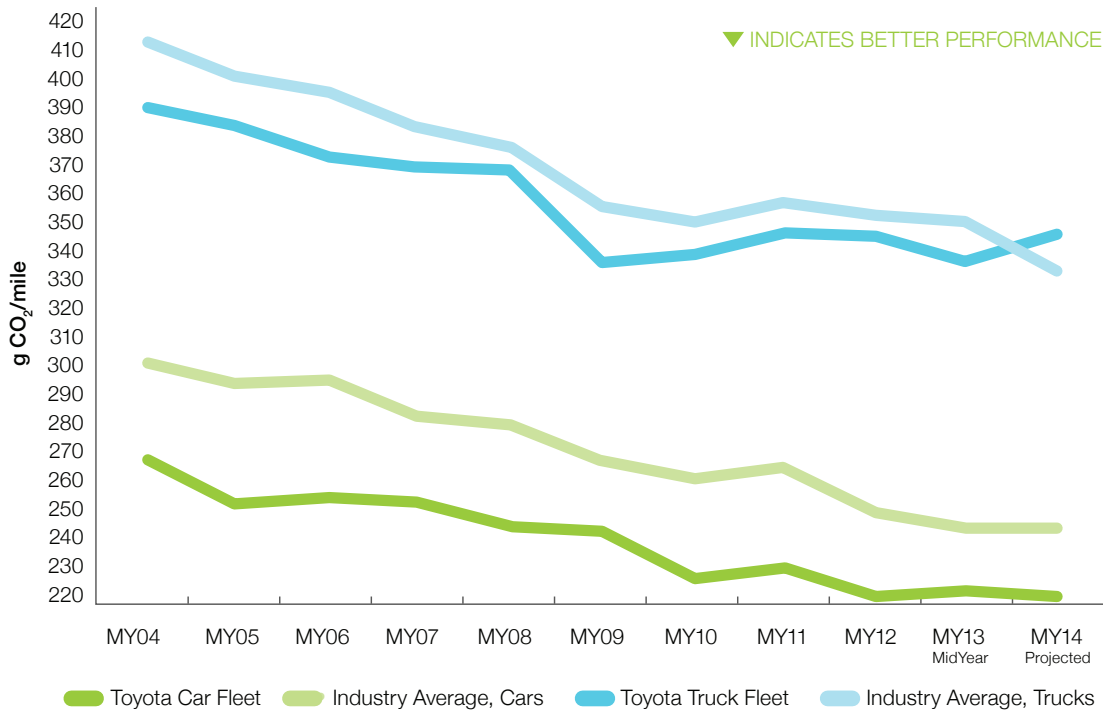
Toyota achieved the required U.S. Corporate Average Fuel Economy (CAFE) standards and met the required vehicle CO₂ standards in the United States, Canada and Mexico. See Figures 12-14 for our performance in U.S. and Canada. (Note, as of October 1, 2015, the National Highway Traffic Safety Administration had not published the CAFE summary that includes industry data for model years 2013-2015.) In Mexico, Toyota's fleet average in calendar year 2014 was 183.8 grams CO₂ per kilometer (g CO₂/km), and in 2015, Toyota's fleet average was 178.7 g CO₂/km.

UNITED STATES

FG12 • U.S. Car Corporate Average Fuel Economy, or CAFE



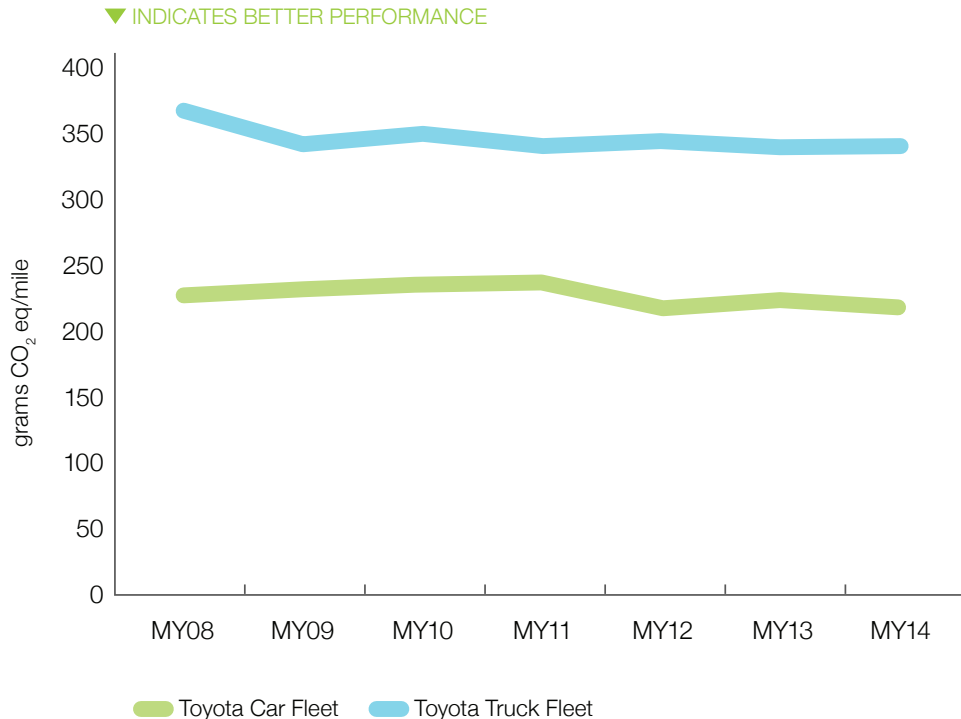
FG13 • Annual CO₂ per Mile*, Toyota U.S. Fleet



*This data represents CAFE fuel economy performance in terms of CO₂ (grams per mile) and does not reflect provisions in the U.S. EPA GHG program (starting 2012 model year) such as air conditioning credits.

CANADA

FG14 • Annual CO₂ per Mile*, Toyota Canada Fleet



*Based on CO₂ emissions data reported to Environment Canada

OPERATIONS

Toyota's North American operations use electricity, natural gas, diesel and gasoline. A large percentage of this energy is used at manufacturing plants to build powertrains and vehicles.

Toyota's strategy for reducing the carbon footprint of our operations has three components: 1) improving energy efficiency, 2) reducing greenhouse gas (GHG) emissions, and 3) using renewable energy sources. By investing today in innovative technologies that reduce our carbon footprint, we strive to find efficiencies and opportunities for continuous improvement that will lead us to a more sustainable future.

Carbon Targets & Performance

ENERGY

Energy Target: Reduce energy use 12% per vehicle by FY2016 (achieved early)

During fiscal year 2015, Toyota used 1.68 million MWh of electricity and 193.20 million cubic meters of natural gas at more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our consolidated energy target covers all of these sites. Our target is to reduce energy use from stationary sources by 12 percent per vehicle produced by fiscal year 2016, from a 2010 baseline.

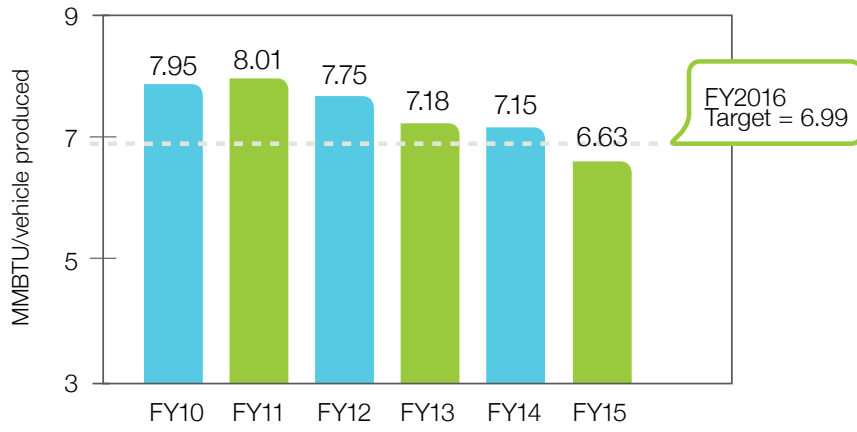
We met this target ahead of schedule and have achieved a 16.6 percent reduction thus far.

This target covers the purchase and use of electricity and natural gas. We convert all energy measurements to MMBtus for this target as a way to combine these energy sources into a single metric.

Toyota achieved these results by focusing on energy efficiency and GHG reduction projects. We have also been expanding the use of renewable energy as a means of reducing our carbon footprint and our reliance on non-renewable energy sources. Renewable energy comes from naturally occurring sources that are not depleted as a result of consumption. Sunlight, wind, biomass and geothermal are common examples. Renewable energy can replace conventional fuels used for electricity generation and transportation.

We are evaluating applications of solar, geothermal, landfill gas-to-energy and stationary hydrogen fuel cells, as well as the purchase of green power either directly from a utility company or through renewable energy credits. During fiscal year 2015, we used more than 15 million kWh of renewable energy across North America.

FG15 • Energy Use Per Vehicle (from Stationary Sources)



Fiscal Year (FY) runs April to March
Scope: Toyota North America

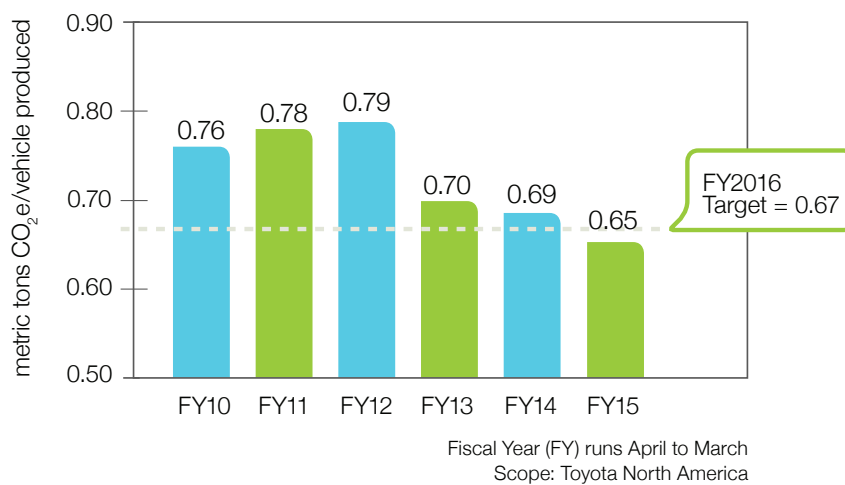
Greenhouse Gases

GHG Target: Reduce GHG emissions from stationary sources 12% per vehicle by FY2016 (achieved early)

Our consolidated GHG emissions target covers more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our target is to reduce GHG emissions from stationary sources (emissions from our use of electricity and natural gas) by 12 percent per vehicle produced by fiscal year 2016, from a 2010 baseline.

We have met this target early and have achieved a 16 percent reduction thus far.

FG16 • GHG Emissions Per Vehicle (from Stationary Sources)



GHG Data

Each year we prepare an inventory of GHG emissions from Toyota’s North American companies. The methodology used to calculate emissions is based on The GHG Protocol® developed by the World Resources Institute and the World Business Council for Sustainable Development. The process of preparing this consolidated inventory has helped us better understand where GHG emissions occur and has facilitated information sharing across Toyota’s North American companies.

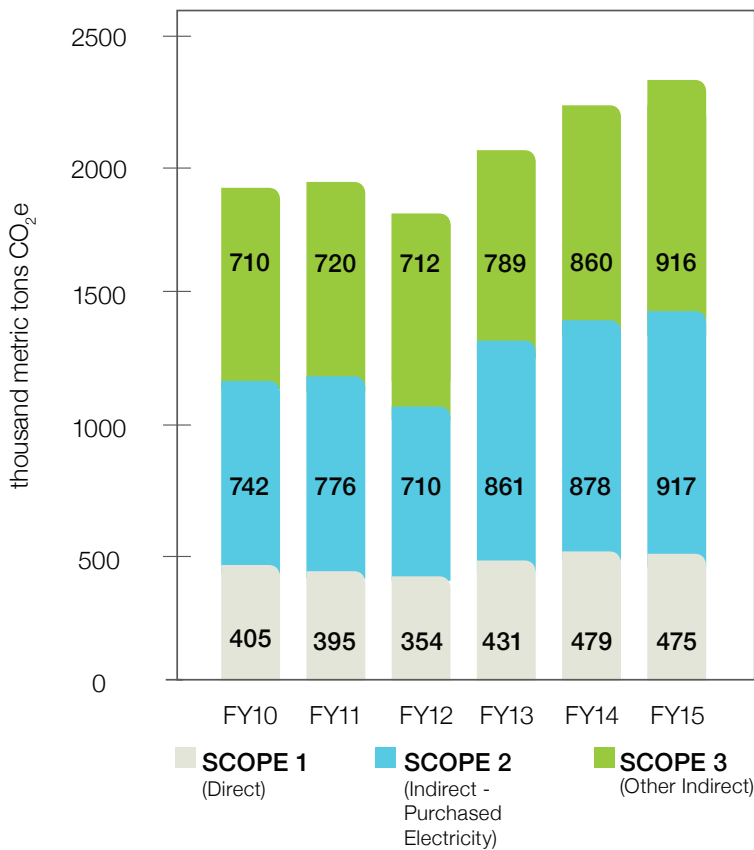
The inventory measures GHG emissions from Scopes 1, 2 and 3, as defined by The GHG Protocol:

- Scope 1 includes emissions from the consumption of natural gas, as well as fuel consumption by in-house trucking operations.
- Scope 2 includes emissions from the consumption of purchased electricity.
- Scope 3 includes emissions from fuel consumed by third-party carriers, employee commuting and business travel. These are emissions which Toyota has influence over but does not directly control. (Our Scope 3 emissions do not include emissions from the use of our sold vehicles. For information on our vehicle carbon footprint please see [Fuel Economy & CO₂ Performance](#).)

Three of Toyota’s U.S. manufacturing plants are required to report GHG emissions data under U.S. EPA’s Greenhouse Gas Reporting Program. Individual plant data for our plants in Kentucky, Texas and Indiana are available on the EPA’s website through its online data publication tool.

In Canada, CAPTIN and Toyota Motor Manufacturing Canada (TMMC) are required to report GHG emissions data. TMMC’s Cambridge plant is required to report under Environment Canada’s Greenhouse Gas Emissions Reporting Program; both the Cambridge and Woodstock plants are required to report GHG emissions to the province of Ontario under its Environmental Protection Act. CAPTIN is required to report GHG emissions to the province of British Columbia under its Greenhouse Gas Reduction Act.

FG17 • North American GHG Inventory



Examples of Energy & GHG Reductions

Below are some examples of how we reduced energy consumption and greenhouse gas emissions in our operations last year.

LED LIGHTING UPGRADES

During fiscal year 2015, Toyota installed LED warehouse lighting technology at the Portland Parts Distribution Center and the Princeton Vehicle Distribution Center in Indiana. LED fixtures and lamps with occupancy sensors were installed in both locations. A pilot was also conducted at the North American Parts Center in Kentucky to test LED fixtures in rack aisles and a dock operations area. LED lamps have three to five times more rated lamp life than metal halide fixtures, cost less to operate, and eliminate recycling costs associated with mercury-containing lamps. The LED upgrades in Portland and Indiana will save Toyota an estimated 1 million kWh per year.

“LED lighting and advanced lighting controls provide tremendous opportunity to reduce our environmental footprint,” said Tim Frank, facilities operations manager for Toyota Motor Sales. “It is revolutionizing our approach to office and warehouse lighting.”

IMPROVING FUEL EFFICIENCY IN LOGISTICS

In 2015, Toyota Transport, our in-house trucking carrier for completed vehicles, renewed its membership as a carrier in U.S. EPA’s SmartWay® Transport Partnership, a market-driven partnership aimed at helping businesses move goods in the cleanest, most efficient way possible. One of the main purposes of SmartWay is to improve fuel efficiency and reduce GHG emissions from the movement of goods. According to EPA, SmartWay partners have eliminated 51.6 million metric tons of CO₂ since 2004, resulting in savings of 120.7 million barrels of oil and \$16.8 billion in fuel costs. Since joining SmartWay in 2009, Toyota Transport has improved the carbon efficiency of its deliveries by 13.1 percent (per ton-kilometer).

Toyota Transport received the 2015 SmartWay Excellence Award from EPA for outstanding environmental performance and leadership. Reserved for the top-performing SmartWay Partners, this is EPA’s highest recognition for demonstrated leadership in freight supply chain energy and environmental performance.





Toyota Transport is investigating the use of alternative fuels to deliver vehicles to dealerships. In the fall of 2015, they began using a truck fueled by compressed natural gas (CNG) for short hauls in Long Beach, California.

LANDFILL GAS POWERS KENTUCKY ASSEMBLY PLANT

The Kentucky plant that manufactures some of the greenest cars on the road, including Camry Hybrid and Avalon Hybrid, is now powered in part by green electricity.

Toyota Motor Manufacturing, Kentucky (TMMK) has teamed up with Waste Services of the Bluegrass to generate power from local landfill waste, marking the region’s first business-to-business landfill gas to energy initiative. Toyota estimates the locally generated landfill gas will supply enough power each year for the production of 10,000 vehicles.

As solid waste naturally breaks down in a landfill, methane gas is created. A network of wells at the landfill collect this gas, which is used to fuel generators for electricity. Underground transmission lines then carry the electricity to Toyota’s assembly plant, located a few miles south of the landfill.

The system went online in late 2015 and generates 1 megawatt of electricity each hour it operates, or about what it takes to power approximately 800 homes, based on average consumption in the U.S.

Additionally, landfill greenhouse gas emissions are reduced by as much as 90 percent.

“At Toyota, we believe fuel-efficient cars are just the beginning,” said Jeff Klocke, facilities and environmental manager. “Together with our community, we think we can contribute to a greener world.”

TMMK is Toyota’s largest vehicle manufacturing plant in North America. Over 10 million vehicles have rolled off Toyota’s assembly line in Georgetown, where full-time employment is around 7,000 team members and investment tops \$5.9 billion. In addition to Camry, America’s best-selling car, TMMK assembles Camry Hybrid, Avalon and Avalon Hybrid, and 4- and 6-cylinder engines. In late 2015, the plant began production of the first U.S.-assembled Lexus, adding 50,000 vehicles to its annual capacity of 500,000 (engine production capacity: 600,000).



Toyota’s plant in Kentucky (TMMK) teamed up with Waste Services of the Bluegrass to generate power from local landfill waste. The blower/flare skid, shown here, is part of the system that extracts gas from the landfill, conditions it and supplies it as fuel to a generator at TMMK. Toyota estimates the landfill gas will supply enough power each year for the production of 10,000 vehicles.

OPTIMIZING CHILLED WATER SYSTEMS

Team members at Toyota Motor Manufacturing Canada's (TMMC) Woodstock plant modified the chilled water system and saved 1.2 million kWh and 95 metric tons CO₂e between May 2013 and June 2015. Toyota's plants in Texas and Mississippi have adopted this *kaizen* and together, these three plants have saved more than 23 million kWh and 12,000 metric tons CO₂e.

Chilled water is used in HVAC units to cool air, which in turn lowers humidity levels. Toyota has to carefully control the temperature and humidity of air in the paint shops to ensure paint adheres to the vehicle properly.

The Woodstock plant's chilled water system was consistently creating two types of waste: wasted energy due to the supply of chilled water regularly exceeding demand, and wasted time (production downtime) due to the chilled water temperature frequently exceeding the maximum set point for efficient humidity removal set by the paint shop. Working with the chiller equipment vendor, the facilities engineering and maintenance team were able to retrofit the chiller pumps to improve efficiency, as well as determine the cause of the temperature spikes that were leading to insufficient humidity removal.

For their efforts to save energy, TMMC team members John Murphy, Matt Robinson, Reid McPherson, Carl Showers, David Cai and Calin Seceanschi won a Silver ECO Award from Toyota Motor Corporation (TMC). TMMC has won a total of four awards in the last three years – two Silver awards and two Gold awards.

TMC established the Global ECO Awards in 2011 to recognize the environmental achievements of Toyota manufacturing centers around the world. Each year, North American manufacturing plants select *kaizens* and submit these to the North American manufacturing headquarters (TEMA) for review. TEMA then selects three *kaizens* to represent North America and compete against *kaizens* from other regions around the world. In the end, up to eight *kaizens* from the global pool are selected by TMC to receive a Gold Award. Platinum and Silver awards are also granted. Winners of Platinum and Gold awards travel to Japan to present their projects at the Global Environmental Meeting, held annually in November.



The TMMC *Kaizen* Team (left to right): Calin Seceanschi, specialist, West Facilities Engineering; John Murphy, *kaizen* lead, chief operating engineer/group leader, West Facilities Maintenance; Carl Showers, team member, West Facilities Maintenance; David Cai, team member, West Facilities Maintenance (not pictured: Matt Robinson and Reid McPherson, both team members in West Facilities Maintenance). Thanks to their efforts, improvements to the chilled water system have saved Toyota more than 23 million kWh and 12,000 metric tons CO₂e.

SPOTLIGHT: Celebrating Energy Excellence

At Toyota, the efforts of almost 43,000 team members across 14 North American manufacturing plants have saved nearly \$600 million since 2002. They've also resulted in Toyota's 11th consecutive ENERGY STAR Partner of the Year – Sustained Excellence Award from the U.S. EPA for continued leadership in protecting the environment through superior energy efficiency.

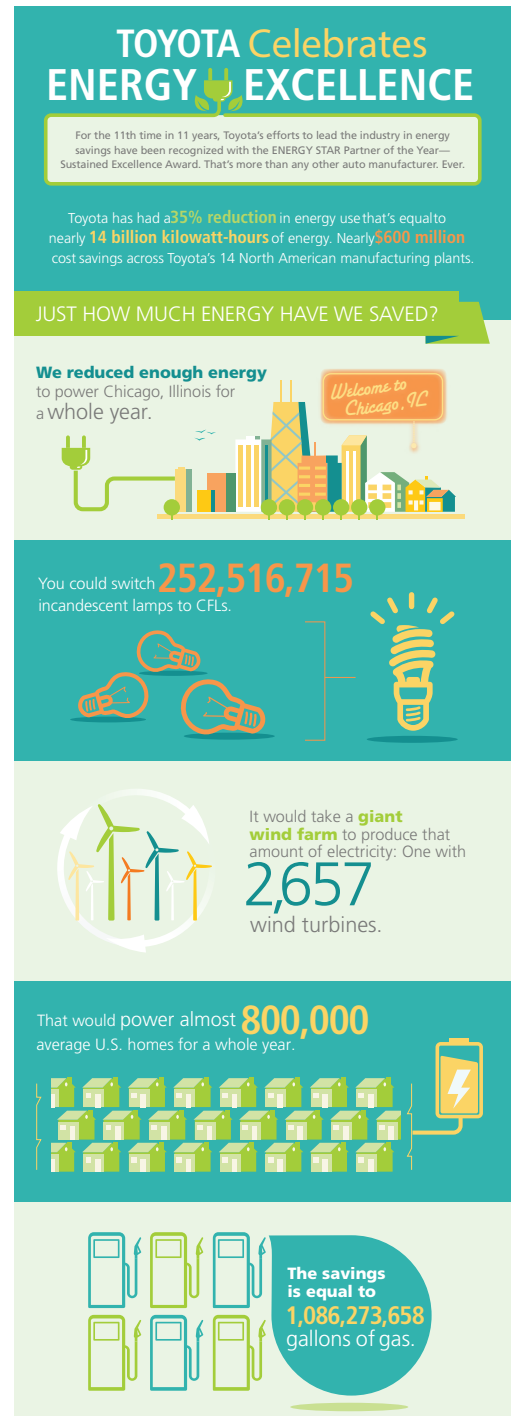
Eleven consecutive ENERGY STAR Partner of the Year – Sustained Excellence Awards are the most by any automaker.

Since 2002, Toyota's 14 North American manufacturing plants have reduced the amount of energy it takes to produce a vehicle by 35 percent and CO₂ emissions per vehicle by 40 percent. In total, these 14 sites have reduced total energy use by 14 billion kilowatt hours. That's enough power to keep the city of Chicago up and running for nearly an entire year.

“While there's always room for improvement, achieving energy efficiency demonstrates that good ideas have helped us become environmentally responsible while making a significant impact to our bottom line,” said Robin Haugen, general manager of Toyota's Plant and Environmental Engineering Group. “Through our team members' efforts and outstanding collaboration, we have minimized our environmental footprint in communities where we assemble vehicles, engines and parts. We're so proud to receive our 11th consecutive ENERGY STAR Partner of the Year – Sustained Excellence Award from the U.S. EPA and we'll strive to do better.”

Toyota's accomplishments were recognized in Washington, D.C. on April 20, 2015. The award is based on performance during the previous year.

FG18 • Energy Savings Infographic



For more information on our environmental programs and initiatives, as well as our performance against targets, please visit the **2015 Toyota North American Environmental Report**:
www.toyota.com/usa/environmentreport2015/
www.toyota.ca/rapportenvironnemental2015/ [FRENCH]

(*Source: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>)



OUTREACH: TOWARDS A LOW CARBON FUTURE

We know that reducing our own carbon footprint isn't enough. Achieving a low carbon future requires collaboration with a wide range of stakeholders. That's why our outreach takes many forms. We provide funding, donate vehicles and share our experience and know-how. We work with stakeholders ranging from government agencies to other companies and individual communities.

Examples of how outreach has helped us extend our commitment to a low carbon future include:

- Launching the inaugural [ECS Toyota Young Investigator Fellowship](#) in early 2015 to support young professors and scholars pursuing innovative electrochemical research in green energy technology.
- Working with partners to develop [hydrogen fueling infrastructure](#) for fuel cell vehicles.
- Helping [Yellowstone National Park](#) create a sustainable power source for the Lamar Buffalo Ranch.



2015

WATER

- > **WATER RISKS**
- > **WATER CONSERVATION**
- > **WATERSHED PROTECTION**



> WATER

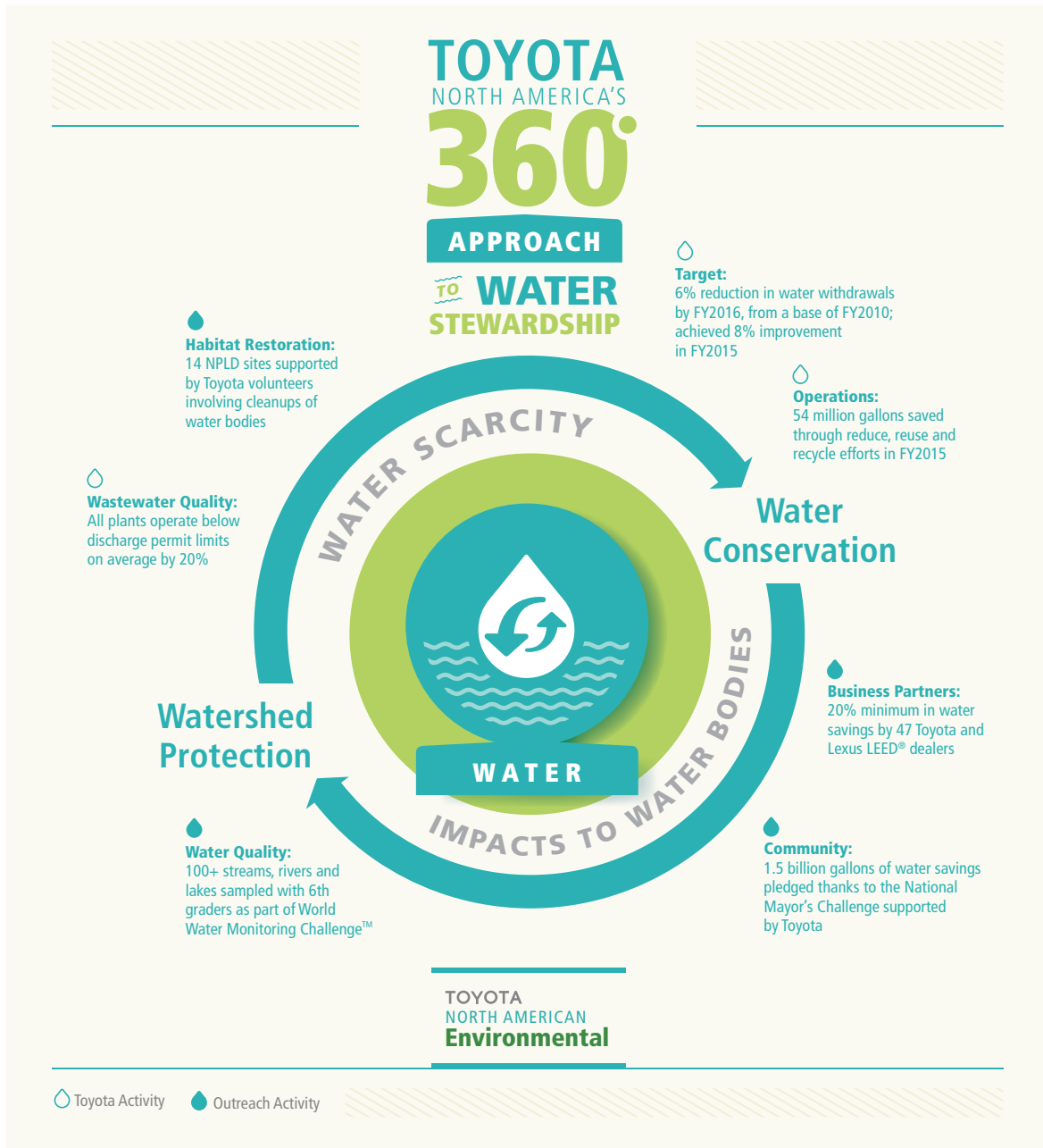
WATER is one of Toyota's four focus areas in North America. We have developed a 360° approach to water stewardship that addresses [water risks](#) through [water conservation](#) and [watershed protection](#) activities at our sites and in our communities. Every living thing needs water to survive. What we do today to protect this precious resource creates lasting value, helping to ensure a better tomorrow for the planet.

As the world's population increases, so, too, does the world's demand for fresh water. Research by the 2030 Water Resources Group suggests that by 2030, global water demand will be 40 percent greater than today's reliable, accessible supply. That demand relies on the small fraction of water on the planet that's fresh water and actually available for people to use.

Water is a precious resource. So what can we do to protect and conserve the limited supply of fresh water we have? Each of us has a role to play: Individuals, elected officials, companies and communities must work together to protect and conserve the limited supply of fresh water we have — or we risk permanent damage to the health of our economy and the environment.

Across Toyota, team members have all hands on deck. Our 360 degree approach to water stewardship is based on an evaluation of [water risks](#) in North America and a commitment to [water conservation](#) and [watershed protection](#). Our efforts to conserve water encompass our entire value chain, from our own operations to those of our business partners and communities. We supplement these conservation efforts with outreach activities that protect water quality and restore habitat. This is Toyota's cycle of water stewardship, where everyone has a part in making sure our most precious resource is available for generations to come.

FG19 • Water Infographic



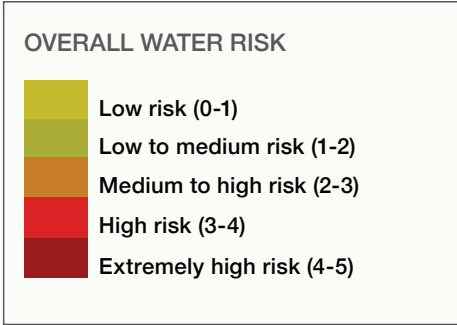
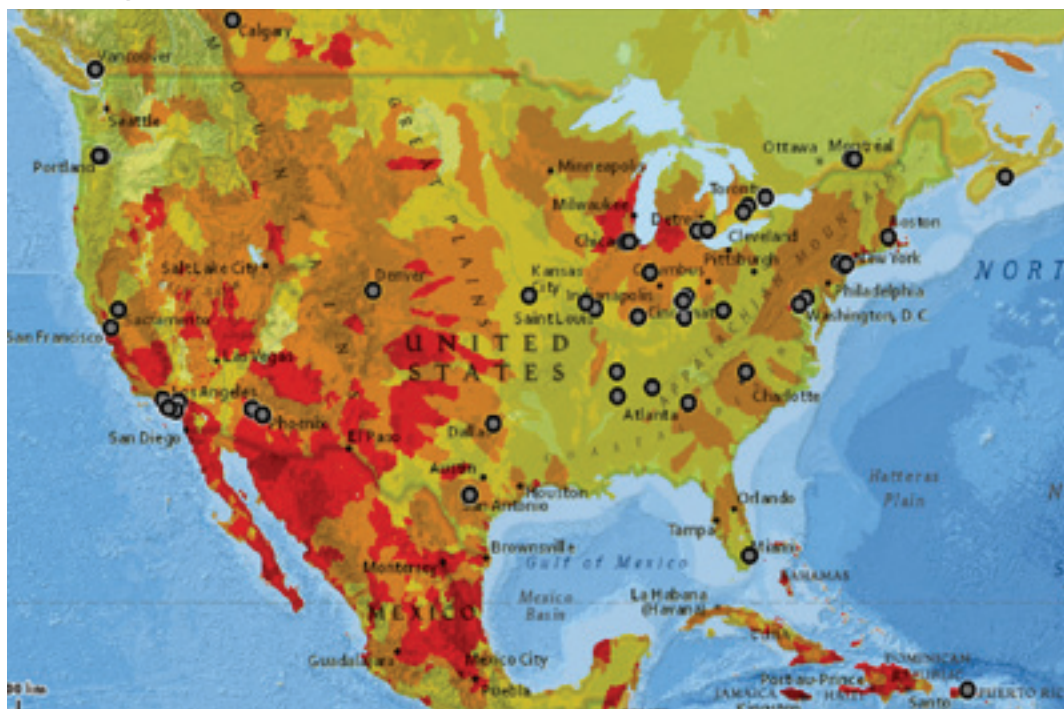
WATER RISKS

During fiscal years 2014 and 2015, we conducted and refined an analysis of our North American locations and mapped them using Aqueduct™. This tool was developed by the World Resources Institute to help companies, investors, governments and communities better understand where and how water risks are emerging around the world. The centerpiece of Aqueduct is the Water Risk Atlas, which creates customizable global maps of water risk.

The Atlas combines 12 indicators in three categories (physical risk quantity, physical risk quality, and regulatory and reputational risk) to create an overall map of where and how water risks may be prevalent. The Atlas shows a total of 19 of Toyota’s North American locations, including three manufacturing plants, in areas of high overall water risk. Currently, we do not have any sites in areas of extremely high risk.

The Water Risk Atlas is helping us further focus water conservation efforts on sites in water-stressed regions, and on sites with concerns about future water availability. The Aqueduct tool is also helping us incorporate all water risk factors into our analysis, which will aid in developing future tailored strategies for certain sites and/or regions within North America.

FG20 • Toyota’s Overall Water Risk in North America



* This map was generated from WRI’s Aqueduct™ Water Risk Atlas. The Atlas combines 12 indicators in three categories (physical risk quantity, physical risk quality, and regulatory and reputational risk) to create an overall map of where and how water risks may be prevalent. We mapped 73 sites in North America, including assembly and unit plants, R&D centers, parts and vehicle distribution centers, and office buildings. Not all 73 sites are visible at this resolution. Sites in close proximity appear as a single dot.

WATER CONSERVATION

Water Target & Performance

Water Target: Reduce water withdrawals 6% per vehicle by FY2016 (achieved early)

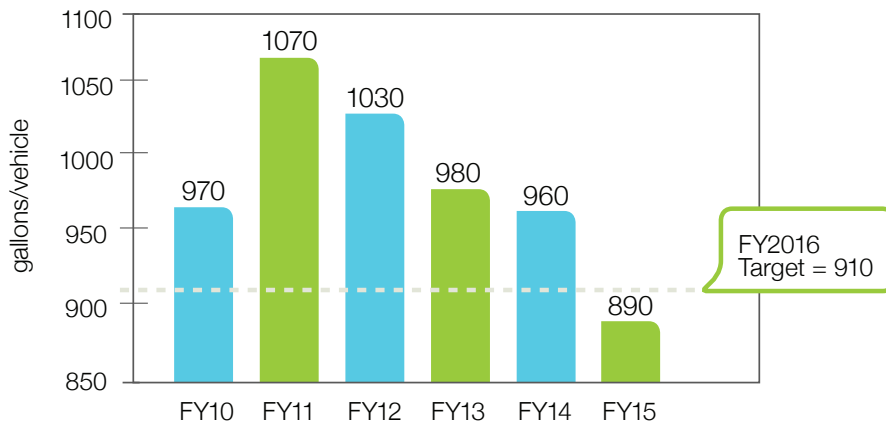
During fiscal year 2015, Toyota withdrew over 1.7 billion gallons of water at more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our consolidated water target covers all of these sites. Our target is to reduce water withdrawals by 6 percent per vehicle produced by fiscal year 2016, from a baseline of fiscal year 2010.

Our metric counts water withdrawals, such as from a public utility or groundwater well. We are developing an internal water inventory management plan — similar to a greenhouse gas inventory management plan — to document accounting practices related to our water metric and target.

In fiscal year 2015, we met our target early and achieved an 8 percent reduction.

There were no unplanned discharges of wastewater during fiscal year 2015, and no water bodies were adversely affected by Toyota’s wastewater discharges.

FG21 • Water Withdrawal per Vehicle



* Includes Toyota North America’s water withdrawals, such as from a public utility or groundwater well. There are a handful of water sources currently not included in our metric. We are evaluating these and will include them going forward, as appropriate.

Operations

To conserve water, we look for ways to **reduce** (use less), **reuse** (use what we have already used again, without further processing) and **recycle** (use what we have already used, after some level of treatment). By practicing the three R's, Toyota saved 54 million gallons of water in North America during fiscal year 2015.

- One of the ways Toyota saves water is by closely monitoring where water is used. The assembly plant in Indiana (TMMI) began installing a wireless metering system in late 2014. The meters are used with the plant's reverse osmosis concentrate recovery system and with the electrodeposition (ED) process. The metering results are transmitted to a computer where team members can see the results. By making it visual, it becomes easier for team members to find opportunities to conserve water. TMMI is already working on changing nozzles and spray patterns to conserve water in the paint shop. Other plants are also planning to install wireless meters.
- Toyota's assembly plant in Texas reduced water use by 80 gallons per vehicle by installing additional water filtration in the paint shop. This amounts to an annual water savings of more than 18.8 million gallons.
- At the San Francisco Region Office and Parts Distribution Center, Toyota is implementing a water stewardship program. Drought conditions are in effect throughout the state of California, and the site is located in an area of high overall water risk (see FG 23 showing Toyota sites mapped with the Aqueduct Water Risk Atlas) and extreme water scarcity. In an effort to reduce the site's annual water use of 15 million gallons, team members performed a water treasure hunt and implemented leak detection, management and repair programs. They are now working on a landscape masterplan for low impact plantings and irrigation.
- Rain water from the roof of the Chicago Service Training Center is collected and routed to a rain garden where it is reabsorbed into the planting beds, diverting it from the storm sewer. The rain garden is planted with drought-tolerant native landscaping, eliminating the need for irrigation. The Chicago Service Training Center is Toyota's 13th facility in North America to achieve LEED® certification (for more information on LEED click [here](#)).

Business Partners

Dealers are key business partners. We track utility cost and usage information from all of our dealers, which allows us to identify opportunities for improvement. By analyzing monthly changes in water use, we've been able to help dealerships identify water leaks. Dealerships have vast amounts of piping, so finding and repairing these leaks is crucial to their water efficiency efforts.

We also encourage dealers to pursue LEED® certification and guide them through the process. The 47 Toyota and Lexus dealers that have achieved LEED certification to date have all implemented water savings projects. Many of these dealers applied for certification under the LEED NC (new construction) standard, which required them to have a plan to achieve a minimum of 20 percent water savings. There was also extra credit for getting to 30 percent savings, which several of our dealers accomplished (including Mark Miller, Kendall-Eugene, and Rockwall, all Toyota dealerships). (Click [here](#) for a full list of LEED-certified Toyota and Lexus dealers.)

Pat Lobb Toyota of McKinney, in the Dallas metro area, was the first Toyota dealership to become LEED certified. Pat Lobb has a 20,000-gallon water cistern that collects condensate from air conditioners and runoff from the roof, which covers a 50,000 square-foot building. The cistern collects about 5,000 gallons a day and it is never empty. The water is used to irrigate the landscaped areas around the dealership and is also provided to the local fire department for putting out fires that start along the state highway in McKinney. With California facing one of the most severe droughts on record, a number of dealers throughout the state are considering similar systems.

Community Action

Companies can be active stewards of a healthy environment by supporting community efforts. That's why Toyota partners with the Wyland Foundation in support of the National Mayor's Challenge for Water Conservation. Mayors across the country once again asked residents to make a commitment to conserve water and cut pollution by taking part in a national contest aimed at drastically slashing water use across the nation.

During April 2015, U.S. mayors participated in the 4th annual National Mayor's Challenge for Water Conservation and encouraged their residents to make pledges online to reduce water usage. Overall, residents from 3,900 cities in 50 states pledged 391,325 specific actions over the next year to change the way they use water in their homes, yards and communities.

By sticking to their commitments, the collective efforts of these residents will reduce national water waste by more than 1.5 billion gallons.

The challenge addresses the growing importance of educating individuals about the many ways they use water — from swapping their lawns out in favor of drought-resistant native plants to fixing leaks to looking at how we use water for food and manufacturing. As prospects of water reduction mandates grow in the U.S., the campaign provides cities with a way to engage residents with positive incentives and raises the collective water I.Q. of the nation. Pledges are designed to promote water sustainability and improve water quality. Click [here](#) for the full story.

WATERSHED PROTECTION

Water is a finite resource, and Toyota's efforts to use less are only part of our approach to water stewardship. Healthy watersheds need more than adequate flow; they also need clean water and the right balance of animals and plants. To promote healthy watersheds, Toyota participates in a number of educational and biodiversity efforts.

Water Quality

We know the importance of water quality monitoring. Some of our sites discharge wastewater, and we monitor that wastewater to meet state and federal regulations and to ensure we don't negatively impact water bodies. In fact, Toyota requires all manufacturing sites to operate below discharge permit limits by an average of 20 percent.

Toyota's Texas assembly plant makes an annual donation to support one of the San Antonio River Authority's monitoring stations. The River Authority was established in 1937 to protect the San Antonio River Basin, an area covering over 3,600 square miles.

Toyota Technical Center in Ann Arbor, Michigan, was recognized by the Washtenaw County Water Resources Commissioner for their fifth term of participation in the Community Partners for Clean Streams program. Participation in this program demonstrates a desire to protect the county's rivers and streams by promoting business practices that protect water quality.

We also know the importance of teaching youngsters about water quality. Each year, team members from our Indiana assembly plant work with sixth-grade students to sample about 100 different lakes, rivers and streams across southwestern Indiana. Monitoring data is uploaded into the World Water Monitoring Challenge™ database. Click [here](#) to see the full story.

Habitat Restoration

Many species live on or near water bodies. Team members and associates participate in a variety of events to help keep waterways free of debris. For example, Toyota supported 44 National Public Lands Day (NPLD) sites in September 2014, helping to clean up parks, streams and recreation sites across the U.S.; 14 of these involved cleanup of a water body:

- Dauphin Island Parks & Beaches, Alabama
- Least Tern Colony, California
- Lytle Creek, California
- Madrona Marsh Preserve, California
- Santa Fe Dam Recreational Area, California
- Seal Beach National Wildlife Refuge, California
- Torrance Beach at Miramar Park, California
- Big Bone Lick State Park, Kentucky
- West Hill Dam, Massachusetts
- Cuivre River State Park, Missouri
- Smithville Lake, Missouri
- Cathedral Park, Portland Harbor, Oregon
- Mitchell Lake Audubon Center, Texas
- Town of Flower Mound, Texas

Keeping these habitats clean and free of trash and debris protects the quality of the water. In 2014, over 175,000 individuals came out to support NPLD, showing the power of collective action. Click [here](#) to read the full story.

SPOTLIGHT: The 360° Approach in Action

Clean, clear water. That might not be the image that comes to mind when you think of a port. But at Terminal 4 at the Port of Portland, located on the Willamette River, that's exactly what comes to mind. Terminal 4 is Toyota's Portland Vehicle Distribution Center (VDC), where team members take a 360° approach to water stewardship.

"Everything we do has a tie to water," explained Brent LaFollette, safety and environmental administrator at the VDC. The VDC processes Toyota, Scion and Lexus vehicles and distributes these vehicles to dealers in 23 states. "From flushing toilets to washing vehicles, managing storm water and protecting the Willamette River, water is all around us and is always top of mind."

It's no surprise the VDC earned LEED® Gold certification when Toyota redeveloped the site in 2004 (click [here](#) for more information on LEED). Water conservation measures played a large role. Rain water is collected from the roof of the main building and drains into a large underground tank. The rain water is used to flush toilets in the main building, which helps to save water during the rainy season. The toilets are fitted with dual function flush, which also conserves water.

“When Toyota renovated this facility, our water conservation efforts extended beyond the building,” said Doug Warneke, production supervisor at the VDC. “The bioswale in particular is a pretty neat feature.”

The site has a 4-acre bioswale, a series of shallow ditches that hold water during runoff. The grass and other biomass in the ditches slow the water down, allowing time for particulates to settle out. The ditches also cool the water that runs off the asphalt. The bioswale helps to improve the quality of the water ultimately flowing into the Willamette River, which helps to protect the many species living in and near the river.

“The bioswale even serves as a protected wildlife habitat,” said Doug. “We’ve seen eagles, geese, ducks, rabbits, coyotes and other critters.”

As a precaution, Toyota also installed filters to absorb oil in high-risk areas, such as the parking lot and the loading area. “We have gone so far as to ban a couple of vehicles from parking on our lot. They were leaving an oily residue, so we asked their owners not to drive those vehicles to work,” explained Doug.

As part of the site’s storm water pollution prevention program, team members take quarterly samples of storm water to test for contaminants. The levels have been consistently low, and the Oregon Department of Environmental Quality is allowing Toyota to opt out of monitoring. “We are choosing to stay in the program,” said Brent, “because it’s a good way for us to remain vigilant about water quality.”

“Water stewardship is about the little things,” he continued. “Training people to wash the vehicles only in a wash bay and not outside with a hose. Only washing vehicles we put an accessory on, instead of washing every vehicle. Using vegetable-based hydraulic oil instead of a petroleum-based one. Not using pesticides on any landscaped areas. Using native, drought-resistant plants for landscaping. All of this helps to protect the watershed that we so greatly depend on.”

And to round out their water stewardship, team members at the VDC partner with the Willamette Riverkeeper for the annual Willamette River cleanup. Using canoes and motorboats, dedicated team members haul debris out of the river, filling multiple beds of Toyota Tundra trucks.

“Willamette Riverkeeper has been very fortunate to experience Toyota’s support of the cleanup event since 2010,” said Kate Kuthe, outreach and education coordinator for Willamette Riverkeeper. “Toyota has been an incredible host. They provide breakfast for the volunteers and the use of their trucks to bring waste and recyclables back to their facility for processing. Thanks to their participation, this cleanup site is one of the most popular amongst our volunteers.”



The bioswale at the vehicle distribution center in Portland is a series of shallow ditches that help improve the quality of the water flowing into the Willamette River. It also serves as habitat for local wildlife.



MATERIALS

- > CHEMICAL MANAGEMENT
- > WASTE MINIMIZATION



> MATERIALS

MATERIALS is one of Toyota's four focus areas in North America. "Materials" refers to everything used to make a vehicle, whether it ends up in the final product or not. Our materials strategy addresses both [chemical management](#) (sourcing and use of inputs) and [waste minimization](#).

Everything we do today to better manage materials at all stages of the vehicle life cycle leads us closer to a cleaner, healthier future.

CHEMICAL MANAGEMENT

Chemical management addresses Toyota's use of certain chemicals of concern in our products and manufacturing processes, as well as the shipment of items (such as used hybrid batteries) that contain chemicals of concern. Every part used to produce vehicles, from seat cushions to the dashboard to exterior paint, is made up of chemicals. Toyota's engineers manage chemical content at the vehicle design stage, where we have the most influence over the composition of our products. As a result, we are able to minimize the impacts to the environment from the use of chemicals both in operations and at the end of a vehicle's life.

Around the world there are a number of regulations and voluntary agreements concerning chemicals contained in consumer products. These regulations either restrict or prohibit the use of certain chemicals, or require their use to be reported to a government agency. Toyota complies with these global regulations and voluntary agreements, with the intent of reducing the potential risks from chemical use in our vehicles and in all aspects of our business.

Chemical Management Target: Implement IMDS data management system enterprise wide (on track)

Toyota uses the International Material Data System (IMDS) as the primary tool for collecting the chemical composition of parts and accessories. Suppliers are required to enter into IMDS detailed information about the chemical composition of parts and accessories. Through this system, Toyota tracks the use of chemicals on the Global Automotive Declarable Substance List (GADSL), a list developed and maintained by a global automotive stakeholder committee, in which Toyota actively participates.

Use of IMDS is particularly crucial for ensuring compliance with international recyclability and chemical management laws (such as those in China, Korea, Europe and Japan). Therefore, we adopted IMDS in North America to facilitate tracking and verification of compliance with these laws for vehicles assembled here and exported to international markets. For example, in fiscal year 2015 Toyota exported the Avalon, Camry, Sienna and Venza* from North America to South Korea. Data collected with IMDS is used to verify compliance with South Korea's recyclability laws.

We have collected IMDS data for all vehicles we produce in North America. Our recent experience with using IMDS in North America is helping us better understand its benefit for overall chemical management. Beginning in July 2014, suppliers were required to report IMDS data for all new production parts following part drawing release.

Substances of Concern

HEAVY METALS

Our strategy for managing substances of concern (SOCs) initially focused on four heavy metals known to cause environmental and health effects: hexavalent chromium, mercury, lead and cadmium. In 2004, Toyota made a voluntary commitment in North America to minimize these four heavy metals found in parts and accessories to the *de minimis* levels specified in the European Union's "Directive on End-of-Life Vehicles" — even though vehicles were not being exported to Europe. After working closely with suppliers, parts and accessories in North America have not contained hexavalent chromium, mercury, lead or cadmium above levels outlined in the European Union's Directive since 2007.

* Production of Toyota Venza was discontinued in June 2015; exports of this vehicle ended shortly thereafter.

COPPER IN BRAKE PADS

Copper in brake pads is to be reduced by 2021 to the required *de minimis* levels, in alignment with recent legislation in Washington State. The legislation was created to address concerns about copper found in runoff water. We are working with suppliers on finding a suitable alternative.

Renewable / Recycled / Recyclable Materials

Over the course of a vehicle's life cycle, renewable, recycled and recyclable materials have a smaller greenhouse gas footprint and generate less waste than their alternatives. Plus, substituting vehicle parts containing chemicals of concern with those made from renewable, recycled and recyclable materials reduces risks from the use of chemicals of concern. Toyota uses renewable, recycled and recyclable materials where practical.

Over the last several years, Toyota has evaluated numerous materials made from renewable resources to assess their performance, appearance, safety and mass production capability. In addition, the automotive industry is working on finding recyclable and renewable alternatives to petroleum-derived plastics, which would reduce reliance on fossil fuels.

Toyota is working with SAE's International Green Technology Systems Group on characterizing bio-based materials. This is part of a larger effort by SAE to serve as a guiding body for development of consensus standards for environmental sustainability issues in the automotive sector. We have been using bio-based plastics — plastics derived either wholly or in part from plant materials — in numerous parts and components for over a decade. For example, we use bio-based plastics in the seat cushions in the Toyota Prius, Corolla, Matrix and RAV4, and in the Lexus RX 350 and CT 200h. We will continue to use these materials where appropriate.

WASTE MINIMIZATION

Minimizing waste and conserving natural resources are fundamental to Toyota's commitment to producing vehicles efficiently.

Waste Target & Performance

Waste Target: Develop and test a new waste metric (on track)

As part of Toyota's fiscal year 2014-2016 environmental action plan, we set a target to develop and test a new target for waste. We started by identifying a new key performance indicator (KPI) in 2014: the 3R Rate. Toyota's 3R Rate is defined as:

$$\text{(Reduce + Reuse + Recycle)} / \text{(Reduce + Reuse + Recycle + Recover + Landfill)}$$

This new KPI reflects the evolution of Toyota's waste management metrics, which focused initially on reduction in waste to landfill, then on reduction in non-saleable waste. Toyota's use of the 3R Rate encourages focus on all three R's — reduce, reuse, recycle. Simply measuring waste generation would ignore end-of-life management and does not adequately account for reuse.

"Our new 3R Rate uses the same waste hierarchy promoted by the U.S. Zero Waste Business Council: Reduce > Reuse > Recycle > Recover Clean > Disposal," said Ryan McMullan, environmental and safety manager at Toyota Motor Sales and head of Toyota's North American Waste Focus Group. "We see this organization as the leading industry group for waste reduction thinking." Toyota became a founding member of the U.S. Zero Waste Business Council (USZWBC) in December 2013.

In the USZWBC hierarchy, disposal includes landfilling as well as "dirty" forms of recovery such as burning waste to recover energy. "Toyota's 3R Rate is unique in that it shifts the focus from the end of the hierarchy on landfill to the top of the hierarchy to reduce/reuse/recycle," explained Ryan. "It also doesn't say that incineration, or even burning waste to recover energy, is equal to recycling."

USZWBC defines a "Zero Waste Business" as one with a 90 percent or greater diversion of all waste from landfill, incineration and the environment, with an ultimate goal of 100 percent diversion. Toyota has 28 North American facilities that meet this definition, including 10 manufacturing plants.



Toyota's 3R Rate was 96.0 percent using calendar year 2014 data. (We are using calendar year data instead of fiscal year data to align with EPA's WasteWise program.) This data covers all North American assembly and unit plants, plus U.S. parts and vehicle distribution centers and sales offices. Going forward, Toyota will roll in the remaining North American sites. Next steps include developing an integrated waste tracking system for use by all North American entities and estimating avoided waste from *kaizen* activities.

Ultimately, our work on developing and testing this new KPI will prepare us for setting a 3R Rate target in our next five-year environmental action plan.

WASTE DATA

In calendar year 2014, Toyota’s North American operations (including plants, logistics sites and offices) generated 873,126,000 pounds of non-hazardous (non-regulated) waste.

FG22 • Waste Infographic



* Additional reduce/reuse activities have occurred but have not yet been calculated using our new methodology.

Based on calendar year 2014 data to align with EPA’s WasteWise program. Scope includes all North American assembly and unit plants, plus U.S. parts and vehicle distribution centers and sales offices. Data includes non-regulated waste.

WasteWise Membership

Toyota North America became a WasteWise member in 2015. For the first time, our membership includes both U.S. manufacturing plants and sales and logistics sites. The U.S. EPA's WasteWise program helps organizations and businesses apply sustainable materials management practices to reduce municipal and select industrial wastes.

Our U.S. sales and logistics arm, Toyota Motor Sales U.S.A., Inc. (TMS), has been a WasteWise member since 2009. TMS was the 2013 WasteWise Large Business Partner of the Year. This title marked the second time TMS received the Large Business Partner of the Year designation and the fourth consecutive year Toyota sales and logistics facilities have received a WasteWise award. The WasteWise awards program recognizes organizations' efforts to reduce refuse, increase recycling and purchase environmentally preferable products.

We Voluntarily Participate in



Examples of Reduce, Reuse & Recycle

Toyota team members focus on minimizing all kinds of waste — from industrial waste to office trash and cafeteria scraps— using the practices we all know: reduce, reuse and recycle.

- The Chicago Service Training Center was certified LEED® Gold in June 2015. This new building serves as a training facility for the region's dealers and technicians. Whenever we construct or remodel a facility, construction and demolition wastes are a top priority, especially since this type of waste constitutes 40 percent of the total solid waste stream in the United States (according to U.S. Green Building Council estimates). Over 99 percent of the waste generated during construction of the training center was salvaged and recycled, diverting 946 tons of construction waste from landfill. Additionally, 100 percent of wood materials were sourced from FSC (Forest Stewardship Council)-certified products, ensuring environmentally sustainable harvest and re-planting practices were followed in the extraction and manufacturing of wood for cabinets, doors and lumber used on the project.

The building has a comprehensive recycling program to collect and recycle aluminum/other metals, plastic, office paper, cardboard and glass. To facilitate and encourage recycling, individual office paper collection bins are provided at each staff work station, and recycling bins fabricated from post-consumer recycled HDPE are located in all regularly used spaces including classrooms and the training bays.

- Since 2001, our Canadian sales division (TCI) has reduced annual paper consumption from 8.6 million sheets to 2.1 million sheets. Through technological changes (such as smart print and printing both sides automatically) and awareness promotion (such as posters and announcements), annual paper consumption per person has decreased from 16,900 to 3,200 sheets. The majority of team members at the Head Office in Toronto use less than 2,000 sheets per year. TCI continues to target paper consumption - a major component of office waste - and hopes to further reduce paper use to 1.99 million sheets by the end of 2016.
- At the Lexus plant at Toyota Motor Manufacturing Canada (TMMC), we test a number of instrument panel (IP) skins each day as part of overall airbag quality control. Because this is a destructive process, the IP skins are scrapped daily. To reduce the amount of waste generated by this process, team members established a technique for non-destructive testing of airbag notches, which allows 75 percent of the IP test skins to be saved each day. Thanks to this technique, IP skin scrap waste has been reduced by 2,900 kilograms (about 6,400 pounds) per year. TMMC team members are currently working on sharing this waste reduction method with Toyota's plants in Texas and Kentucky.
- Toyota Motor Manufacturing, Alabama (TMMAL) is the first Toyota manufacturing plant in North America to reuse batteries from end-of-life hybrid vehicles as stationary energy storage. Using these batteries for energy storage gives them a second life and keeps them out of landfills.

The battery packs are charged at off-peak energy times. The energy stored in the battery packs can be used to reduce energy peak demand or for emergency backup.

Used hybrid vehicle batteries are also being used to power the Lamar Buffalo Ranch at [Yellowstone National Park](#).

- See [Suppliers](#) for information on how Sodexho, our food service provider in southern California, is helping us reduce food waste.



Toyota Motor Manufacturing, Alabama (TMMAL) is the first Toyota manufacturing plant in North America to reuse batteries from end-of-life hybrid vehicles as stationary energy storage.

SPOTLIGHT: A Second Life for Scrap Parts

Recycling is easy, right? Separate your plastic bottles from the rest of your trash, let someone take them away, and they become garden furniture or a fleece jacket. But what about seat fabric from a car? Or rubber? Or foam?

It can be challenging to find a recycler for automotive parts, but thanks to a unique partnership with Boles Parts Supply (BPS), Toyota is now able to recycle all of these items and more. Toyota's North American Parts Operation (NAPO) and BPS created the National Scrap Program to help Toyota's parts centers and parts distribution centers recycle damaged or out-of-spec parts. The program created a one-stop shop for all of NAPO's recycling needs.

"BPS helps us control the disposal of scrap parts by keeping them out of the grey market," explained Juliana Dee, manager of the program at NAPO. "We don't want anyone getting these parts and thinking they're brand new. We also wanted to keep this material out of landfills."

In 2014, Toyota rolled out the National Scrap Program to the parts centers in Ontario, California, and Hebron, Kentucky. "We started with our two largest facilities," said Ernest Lopez, environmental administrator at NAPO. "And in only 15 months, the parts centers have already recycled over 40,000 pounds of cloth and foam, two materials they weren't able to recycle before."

The program also covers Toyota's parts distribution centers in Cincinnati, Los Angeles, San Francisco and Portland. Between April 2014 and June 2015, the six sites in the program recycled over 88,000 pounds of cloth, foam, glass and rubber, 92 percent of which is material that wasn't previously being recycled - it was ending up in landfills or being incinerated.

"Before, we struggled to find vendors for certain materials. Bumper covers are a good example," said Ernest. "BPS shreds the plastic bumper covers and finds a vendor to turn them into different sizes of plastic pellets. They went out of their way to help us recycle this material."

"Toyota is such an outstanding client and these guys are truly focused on environmental performance," said Jerry Boles, BPS President. "BPS was excited to help Toyota find a buyer - and together we did just that. We are very proud of the success of this program."

In addition to helping Toyota recycle at least 14 different elements of their waste stream, BPS is also bringing another level of accountability to the recycling process. "BPS is able to track where our scrap parts are ending up. We know, for example, that some of our seat fabric is sold to automotive fabric makers and is going back into another vehicle. Our plastic bumper covers are also being used to make other automotive plastic parts," explained Ernest.

"We've been enormously pleased with the success of this program," added Juliana. "Thanks to our partner BPS, we are giving a second life to things that used to be trash and making a real improvement in our recycling rate."

Overall, NAPO realized a 3 percent increase in its recycling rate in fiscal year 2015 (compared to 2014), largely thanks to the National Scrap Program. The parts center in Ontario saw the biggest improvement, with an 11 percent increase in recycling over the past year.

"It's great to see these parts get recycled. It means fewer raw materials are used and less waste is being disposed - a real win-win for the environment," said Juliana. "We are looking forward to seeing how big these numbers get once the remaining sites are rolled into the program." The program is under review for possible roll-out to the remaining parts distribution centers by the end of fiscal year 2017.



Toyota's North American Parts Operation and Boles Parts Supply (BPS) created a national scrap program to help Toyota's parts distribution centers recycle damaged or out-of-spec parts. For example, BPS shreds bumper covers (top) into plastic pellets (bottom), then sells the pellets to a company that makes other automotive plastic parts. Thanks to this program, these parts are getting a second life and staying out of landfills.



Outreach: Recycling

A core part of our environmental strategy involves outreach. When it comes to waste minimization, this means we encourage team members to find ways to broadcast Toyota’s commitment to Reduce, Reuse and Recycle at home and in their communities.

Team members from the Terra Business Partner Group at the North American Parts Center in Hebron, Kentucky, helped spruce up the courtyard at Burlington Elementary School by building a reading nest from recycled wood pallets and benches made from recycled bottle caps. They spent an entire Saturday making the courtyard a safe and fun place for the children to play during recess. Terra is planning to return next year to build each grade their own raised garden bed for growing vegetables to support the cafeteria.

For over 20 years, Toyota has helped team members and surrounding communities recycle and properly dispose of household waste. During designated collection days, many of our sites collect electronic waste, appliances, paint and other household items that are difficult to recycle or dispose. At the same time, we also collect items such as clothing and eye glasses that can be donated to those in need. For more information on 2015 household and e-waste collections, see the full story [here](#).

Toyota Technical Center (TTC) in Ann Arbor, Michigan, donated 150 used computers, monitors and related parts to Digital Inclusion, a computer refurbishment and technical training enterprise that benefits area youth and low income residents. Digital Inclusion is operated by The B. Side, a youth-driven entrepreneurial and leadership organization that provides economic opportunities for Ypsilanti and Washtenaw County area youth. The donation benefits their store in the College of Technology at Eastern Michigan University, which supports and sells to low income community members, helping to close the technology gap. TTC recently began a similar collaboration with Washtenaw Community College.



A member of The B. Side works on refurbishing a laptop. The laptop, along with other computer equipment, will be sold at Digital Inclusion’s store on the campus of Eastern Michigan University, which supports and sells to low income residents.



2015

BIODIVERSITY

- > **PARTNER: WILDLIFE HABITAT COUNCIL**
- > **POLLINATORS**
- > **NATIVE SPECIES**
- > **OUTREACH: CONSERVATION**



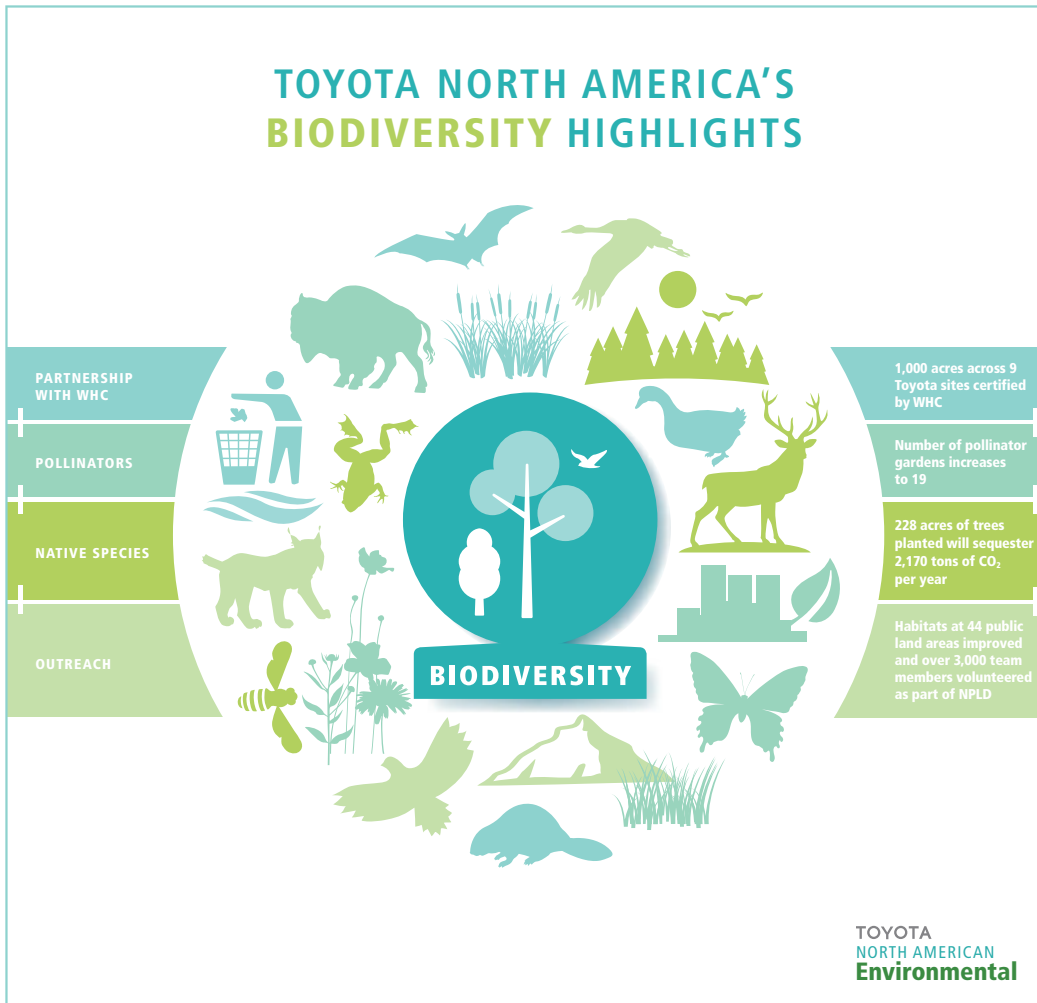
> BIODIVERSITY

BIODIVERSITY is one of Toyota's four focus areas in North America. Our activities focus on expanding our [partnership with the Wildlife Habitat Council](#), engaging team members in [pollinator protection](#) activities, enhancing [native species](#) on our sites, and [outreach](#) with our communities. We are doing our part to protect biodiversity so that future generations may continue to enjoy the natural wonders of our world.

Biodiversity refers to the variety of animal and plant life on Earth. The diversity of living organisms and the habitats in which they live are crucial for the functioning of ecosystems. We benefit from the resources they provide, including fresh water, fertile soils, food, ingredients for medicines, shelter and recreation.

Human activities can have great influence — both positive and negative — on biodiversity. That’s why Toyota strives to minimize negative environmental impacts (for example, by generating less waste) and maximize positive ones.

FG23 • Biodiversity Infographic



PARTNER: WILDLIFE HABITAT COUNCIL

Our partnership with the Wildlife Habitat Council (WHC) began at our Georgetown, Kentucky, plant in 2008, when it became the first Toyota plant to obtain certification to WHC’s “Wildlife at Work” and “Corporate Lands for Learning” programs. Since then, several more Toyota facilities have been certified as Wildlife at Work sites (see [Biodiversity Target](#)).

The Wildlife Habitat Council is a nonprofit group of corporations, conservation organizations and individuals dedicated to restoring and enhancing wildlife habitat. WHC works with corporations and other landowners to create tailored voluntary wildlife habitat enhancement and conservation education programs on corporate facilities and in the communities where they operate.

The Wildlife Habitat Council’s Corporate Wildlife Habitat Certification/International Accreditation Program recognizes commendable wildlife habitat management and environmental education programs at individual sites. Certification criteria are stringent. Sites must demonstrate programs have been active for at least one year and have a management plan listing goals, objectives and prescriptions as well as complete documentation of all programs. The Certification Review Committee, a panel of WHC wildlife biologists and staff, reviews the materials for certification eligibility and recognizes deserving projects under an appropriate category.

Toyota Bodine Aluminum Tennessee and Toyota Motor Manufacturing, Texas (TMMTX) are the latest to apply for WHC certification for Wildlife at Work. Both plants were certified in late 2015. See [Pollinators](#) for information on their pollinator gardens.

At TMMTX, a critical component of the site’s wildlife management plan is managing feral hog populations. Feral hogs destroy habitat, compete for resources with other wildlife, and sometimes come into contact with team members. They also facilitate the growth of invasive plants by damaging and disrupting native vegetation. TMMTX works with a trapper to set and maintain five traps for feral hogs. The traps have proven effective, as the number of hogs spotted onsite has decreased over the past few years. The site’s biodiversity team continues to manage this population.



WILDLIFE
HABITAT
COUNCILSM

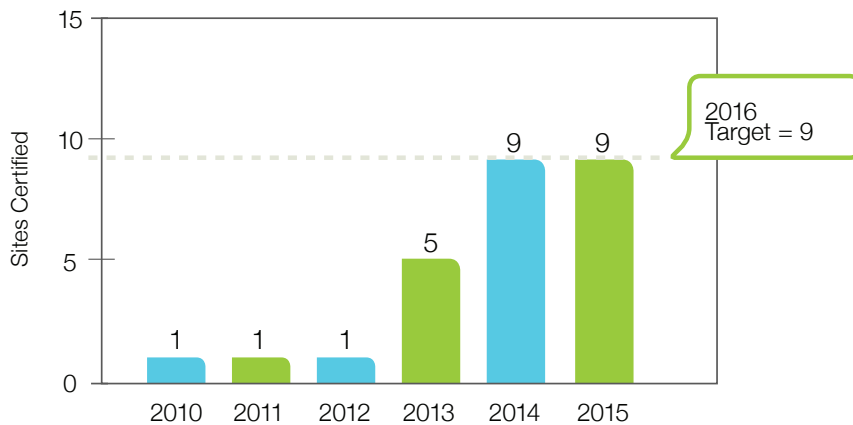
Biodiversity Target & Performance

Target: Certify 9 sites with the Wildlife Habitat Council by the end of 2016 (achieved)

WHC awards certifications in November of each year. Because of this timing, our target is based on a calendar year cycle. As of the end of 2015, Toyota had nine sites certified with the Wildlife Habitat Council:

- Toyota Motor Manufacturing, Kentucky — certified in 2008 and recertified in 2013 for Wildlife at Work and Corporate Lands for Learning
- Toyota Motor Manufacturing Canada, Cambridge plant — certified in 2013 for Wildlife at Work; recertified in 2014
- Toyota Motor Manufacturing Canada, Woodstock plant — certified in 2013 for Wildlife at Work; recertified in 2014
- Toyota Motor Manufacturing, Indiana — certified in 2013 for Wildlife at Work
- Toyota Motor Engineering & Manufacturing North America — certified in 2013 for Wildlife at Work
- Toyota Motor Manufacturing, Alabama — certified in 2014 for Wildlife at Work
- Toyota Motor Manufacturing, Mississippi — certified in 2014 for Wildlife at Work
- Toyota Motor Manufacturing, Texas – certified in 2015 for Wildlife at Work
- Bodine Aluminum (Jackson, Tennessee) – certified in 2015 for Wildlife at Work

FG24 • Wildlife Habitat Council Certifications in North America (cumulative)



* Toyota’s Kentucky plant was the first site to be certified, and maintains both *Wildlife at Work* and *Corporate Lands for Learning* certifications. All other sites are certified for *Wildlife at Work*. Our Cambridge and Woodstock, Ontario, sites are covered by a single certification.

POLLINATORS

Pollinators move pollen from the male to the female part of a flower to fertilize the plant. There are a variety of pollinators, ranging from bees to birds, bats and butterflies.

These industrious creatures pollinate more than flowers. A number of food crops, like apples, pumpkins and alfalfa, rely on honeybees for pollination. In fact, pollinators affect 35 percent of the world's crop production, increasing outputs of 87 of the leading food crops worldwide, as well as many plant-derived medicines (Source: Food and Agriculture Organization of the United Nations).

Bees are the most recognized pollinator, and the most effective. But hard times have befallen the honeybee. Over the past decade, colony numbers in the U.S. have dropped to their lowest in 50 years.

That's why efforts to protect honeybees and other pollinators are so important. With 21,000 acres of land in North America, we decided we could put this acreage to good use by planting pollinator gardens. A number of sites, including those certified or applying for certification with the Wildlife Habitat Council, are already maintaining pollinator gardens, and more are on the way.

Toyota on Monarch Migration: Traffic Welcome

Butterflies play an irreplaceable role in plant reproduction. Unfortunately, the monarch population in North America has declined 90 percent over the past two decades. In fact, scientists from several environmental organizations filed a petition asking the U.S. Fish and Wildlife Service to classify the monarch as "threatened" under the U.S. Endangered Species Act.

Toyota hopes to help stem that by offering these colorful commuters a "pollinator pit stop" on their trip south in the fall and north in the spring. It helps that a number of Toyota facilities are located along the monarch's migration pathway, from Canada in the north, through the U.S., to Mexico in the south.

A number of Toyota's North American plants are developing monarch butterfly waystation habitats onsite and in the surrounding community. The waystations contain wildflowers and milkweed. Wildflowers provide nectar for the adults while milkweed serves as food and shelter for monarch larvae.

- Toyota's North American manufacturing headquarters (TEMA) in Erlanger, Kentucky, has a pollinator garden with a butterfly pond.
- Toyota Motor Manufacturing, Kentucky (TMMK) has two monarch waystations onsite and has supported our additional waystations in surrounding communities.
- Toyota Bodine Aluminum Tennessee (BAI), located in Jackson, worked with a landscaper to plant over an acre of Southeastern Wildflower mix. BAI is an aluminum casting facility that manufactures engine blocks for Toyota. The site's biodiversity team is focusing on providing the essential habitat components for pollinators, birds, bats and other wildlife, as well as encouraging team members and the community to explore and learn more about native species.
- Toyota Motor Manufacturing, Texas (TMMTX) has four pollinator gardens onsite. Team members are working on increasing the variety of native species in these gardens.

- Toyota Motor Manufacturing, Mississippi (TMMMS) planted four pollinator gardens alongside two new pavilions built by team members. The pavilions include a number of sustainable features, including furniture made from recycled plastic, solar lighting and rain water harvesting. All of the gardens were certified by Monarch Watch as monarch waystations.



- In Cambridge, Toyota Motor Manufacturing Canada (TMMC) has over 150 milkweed plants already established; additional wildflowers were planted this year to enhance pollinator habitat.



- In Woodstock, TMMC enhanced naturally occurring wildflower and milkweed growth by adding new wildflower mixes. Monarch butterflies and their caterpillars have been observed in these areas. Monarch larvae eat milkweed leaves as their first meal and use the plant for shelter as they grow. To increase awareness of the importance of monarch butterflies and other pollinators, team members created a new pollinator garden using both wildflower mixes and plants from the Canadian Wildlife Federation.



NATIVE SPECIES

A key aspect of our biodiversity strategy focuses on restoring native species. Restoration activities are often conducted with input from wildlife specialists and other interested third parties, who help us assess the needs of the area, such as the health of a watershed or whether endangered species are present. A number of these efforts are conducted as part of [Wildlife Habitat Council certification](#) activities. Some of our larger sites are also reforesting some of their open spaces with native trees, which also provide habitat for other indigenous species.

In May 2008, the Environmental Affairs team at Toyota Motor Manufacturing, Indiana (TMMI) began a project that called for planting native species of trees on many of the 1,160 acres of land the automaker calls home. TMMI has planted 130,900 trees in the last six years. That number equates to more than 25 trees planted for each of the plant’s 4,700 team members.

The area has become a thriving habitat for wildlife, including white-tailed deer, red-tailed hawks and even bobcats.

And in 10 years, when the trees reach their peak, they will be capturing and storing 2,170 tons of CO₂ from the air annually*.



TMMI has planted native species of trees on 228 acres. The trees shown above were planted by team members during the third phase of the afforestation project in 2012.

* This estimate is based on a methodology used by U.S. EPA in its Greenhouse Gas Equivalency Calculator, where it is assumed that it takes about 10 years for a tree to reach its full potential for sequestering carbon.

SPOTLIGHT: Soaring High

If you've ever been on a long car ride, you've probably seen a red-tailed hawk. These birds of prey soar high above the ground, slowly making a circle with their broad, rounded wings. They occupy just about every type of open habitat in North America. And thanks to a few of our team members, several of these majestic birds call Toyota home.

It all started in June 2008, when a pair of red-tailed hawks built a nest on a utility pole at Toyota Arizona Proving Grounds (TAPG) in Phoenix. Somehow, one of the adult hawks died, leaving a chick in the nest.

"That's when we called in the experts," said Daryl Petry, senior specialist at TAPG. "Liberty Wildlife brought the baby hawk to their rehabilitation center and nurtured it for six months. Then they brought the young hawk back to TAPG for release."

Returning the chick to the wild wasn't the only objective. "We were hoping the other adult would return," explained Daryl. Pairs of red-tailed hawks often refurbish nests they've used in previous years. Their nests are tall piles of dry sticks that can be up to 6.5 feet high and three feet across. So for the safety of the hawks – and to avoid power outages – team members put up a 15 meter pole within 50 meters of the original nest, then transferred the nest to the pole.

Transferring the nest proved to be a good move. "Since we put up the pole, there have been eight red-tailed hawks born in the relocated nest," said Daryl.

Team members continue to watch over these birds. Earlier this year, a chick was found out of its nest. "We partnered with Liberty Wildlife again, who transported the chick back to their facility for rehabilitation," explained Daryl.

In October 2015, the young hawk was released at TAPG. It is now soaring high, enjoying the view of the desert and TAPG's 12,000 acres. "The hawks are amazing to watch," Daryl exclaimed. "It's nice to know we had the opportunity to provide the hawks with a safe nesting location. Many thanks to the wildlife specialists for helping us make this a success."



This young red-tailed hawk was found out of its nest by a team member at TAPG. Liberty Wildlife brought the hawk to a rehabilitation center for six months, then brought it back to TAPG for release.

OUTREACH

Our biodiversity efforts extend beyond our facilities into our communities. We participate in a number of conservation activities to help protect pollinators and other species, plant trees, restore habitats, spruce up state and national parks, clean up waterways and educate children about the importance of biodiversity. For example:

- Team members at our Indiana assembly plant helped the [Boy Scouts](#) build over 400 Eastern Bluebird boxes to distribute in local communities. These boxes provide nesting sites.
- In September 2014, over 3,000 Toyota team members volunteered at 44 sites across the U.S. for [National Public Lands Day](#).
- A number of sites host annual [Earth Day/Earth Week/Earth Month](#) events to educate team members about Toyota's environmental commitment and provide them with opportunities to participate in activities that protect nature. For example, the local Audubon Society chapter was included in the lineup of Earth Week guests to educate team members at our Texas plant about the Mitchell Lake Audubon Center. The center is one of the 44 NPLD sites supported by Toyota in 2014.



2015

OUTREACH

- > SUPPLIERS
- > DEALERS
- > STAKEHOLDERS



> OUTREACH

OUTREACH is a core element of Toyota's approach to our four main focus areas in North America. We conduct outreach activities related to carbon, water, materials and biodiversity as a way of creating value for our [suppliers](#), [dealers](#), [team members](#) and [communities](#). Our actions are about more than building better cars. They are about connecting with others and harnessing the power of partnerships to shape a more sustainable future.

Here in North America, Toyota has identified four interrelated environmental issues as our core focus areas: **carbon**, **water**, **materials** and **biodiversity**. This report provides a wealth of information on our efforts to minimize negative impacts and maximize positive outcomes in each of these areas.

But if we really want to make a difference — and we do — we can't act alone. We must engage with our business partners and stakeholders to work towards common objectives.

That's why **outreach** is such a crucial component of our environmental strategy. Through outreach we can create mechanisms for scaling up the positive outcomes of our environmental programs. We can act locally and create value globally.

We start by communicating. By sharing our story in this report, on our website and through social media, not only will we inspire others, but we will also motivate ourselves to continue to do more. We connect with consumers and the general public, government agencies and organizations that communicate environmental messages in creative and effective ways. Together, we are spreading the word and encouraging a greener, more sustainable future.

The next step is engaging business partners. We work with our network of Toyota and Lexus dealers to encourage green building practices, and with suppliers to reduce waste and consumption of energy and water.

We can't stop there. The dedication and creativity of Toyota's employees is a big part of our success story when it comes to our own environmental performance, but we want them to be ambassadors for us beyond the workplace. We create opportunities for team members to get involved at home and in their communities to educate and promote conservation.

And of course, we reach out to individuals and communities locally, nationally and regionally. Through the power of collaboration, we hope to create lasting positive outcomes on a macro scale that will lead us to a more sustainable future.

SUPPLIERS

Toyota recognizes that environmental impacts extend into our supply chain. We have a vast network of suppliers providing us with everything from parts and accessories to waste management and cafeteria services and office supplies. We work closely with suppliers, sharing our knowledge and experience to help them improve their environmental performance.

Our suppliers also bring their know-how to us. Sodexo is helping Toyota reduce waste through a new program called WasteWatch. Sodexo, a leading provider of integrated food and facilities management services in North America, implemented this program at two cafeterias at Toyota's Torrance, California, campus. The goal is to reduce food waste – for example, from preparing too much or buying too much. Even though food waste is composted, reducing the amount wasted saves time and money.

Sodexo uses buckets to collect kitchen food waste, then measures the volume of waste daily and records the results. Weekly totals are entered into a weekly tracking tool. Since tracking began October 2014, total food waste has already been reduced by 30 percent. Overproduction of food has decreased and food that is beyond its expiration date has been nearly eliminated.

Fiscal year 2015 was the first year of the program. Toyota and Sodexo hope to reduce food waste sent to compost by 10 percent in 2016.

Sodexo is also expanding local sourcing, which cuts down on transportation costs and related GHG emissions. Sodexo chefs buy produce from local farms to serve in Toyota's Torrance cafeterias. The chefs coordinate the menus according to what's in season. Thanks to these efforts, Toyota team members have a number of healthy and fresh food choices every day.

For another example of a supplier helping Toyota reduce waste, see how Boles Parts Supply is working with Toyota's parts operation to find a [second life for scrap parts](#).

Supplier Target

Develop a new supplier environmental engagement process (on track)

In the past, our efforts to work with suppliers to reduce environmental impacts were decentralized and sharing successes internally was not easy. That's all changing. Now that we are consolidating under One Toyota and coming together at a single headquarters campus in Plano, we have begun to develop a new, consolidated supplier environmental engagement process that will build on the successes of the past and ensure even greater success going forward.

A primary focus of this new engagement process is logistics. Toyota's logistics network is a complex operation that ensures smooth shipping and delivery of vehicles, parts and accessories, from the supplier to the plant, to Toyota's distribution centers, and ultimately to dealerships. Through the use of returnable shipping containers, packaging reductions, light weighting and densification, we have already helped our third-party logistics carriers reduce waste, fuel consumption and greenhouse gas (GHG) emissions.

Through fiscal year 2016, we will be working with third-party logistics (mainly trucking and rail carriers) to prepare for the launch of our next five-year environmental action plan. We will be establishing methods of tracking and communicating progress, sharing best practices and piloting new technologies, all in advance of setting a target to reduce GHG emissions from logistics.

DEALERS

There are approximately 1,850 Toyota and Lexus dealerships in the United States, Canada and Mexico. These dealerships are all independently owned franchises. In keeping with our overall philosophy, it is important we share our environmental values and know-how with the dealership population and support their efforts to be environmentally responsible.

We work closely with dealers to promote green building practices, since buildings — both residential and commercial — have a large environmental footprint. Buildings are responsible for about one-third of the energy consumed in the United States and Canada. Operating green buildings can reduce energy use and associated greenhouse gas emissions by 25-60 percent, water use by 30-95 percent and solid waste by 50-95 percent, and green buildings have been shown to improve employee health and productivity.

Both our Toyota and Lexus divisions work with dealers on new construction and remodeling projects through programs that encourage sustainable building practices and the use of the Leadership in Energy and Environmental Design (LEED®) rating system. LEED is a point-based system administered by the U.S. and Canadian Green Building Councils promoting a whole-building approach to sustainable construction and remodeling. LEED certification is based on meeting stringent evaluations in sustainable site development, water savings, energy efficiency, materials selection and indoor air quality.

We emphasize three areas to dealers to get the best return on investment from green building practices: using high-quality materials on the building envelope (particularly the insulation and the roof), using LED lighting in both interior and exterior areas, and right-sizing the heating, ventilation and air-conditioning systems. A study performed on LEED-certified Toyota dealerships shows the average dealer who completes the LEED process can save about 25 percent on their energy costs per square foot per year (based on a 52,000 square-foot building). The often rapid return on investment for environmentally sustainable materials, energy-efficient lighting fixtures and other LEED elements confirms the economic benefit of building green.

Dealer Target

Maintain the leadership position in dealership green building and certify 53 dealerships to LEED by 2016 (on track)

2015 marks our 10th year working on LEED projects with our dealers, and we are leading the industry with the number of dealerships certified to LEED. As of August 2015, we have assisted 47 Toyota and Lexus dealerships — 42 in the United States and 5 in Canada — with LEED certification:

- United States: 36 Toyota and 6 Lexus dealerships
- Canada: 4 Toyota and 1 Lexus dealerships

Toyota and Lexus have more LEED-certified dealers in both the U.S. and Canada than any other auto manufacturer. Several more dealerships have completed construction and are waiting for their ratings to be decided. Many more are under construction or in the design and permitting phase and have registered their intent to pursue LEED with the U.S. or Canadian Green Building Councils. In North America, Toyota and Lexus dealerships combined have over 2.5 million square feet of LEED-certified building space.

“Toyota is a proponent of LEED-certified dealerships for many reasons,” said Ernest Bastien, vice president of retail market development at Toyota Motor Sales, U.S.A., Inc. “When a Toyota or Lexus dealer facility team meets green building standards developed by the U.S. Green Building Council, they receive attention not only for the energy cost savings, but also for being responsible members of the community.”

FG25 • North American Toyota and Lexus Dealerships With LEED® Certifications

DEALER NAME	LOCATION	YEAR CERTIFIED	CERTIFICATION LEVEL
Livermore Toyota	Livermore, California	2015	Certified
Miracle Toyota	Winter Haven, Florida	2015	Certified
Hendrick Lexus	Merriam, Kansas	2015	Certified
Hendrick Toyota	Merriam, Kansas	2014	Certified
Bell Lexus	Scottsdale, Arizona	2014	Gold
Victory Toyota	Seaside, California	2014	Silver
Toyota Vandermeer	Cobourg, Ontario, Canada	2014	Gold
Dunning Toyota Ann Arbor	Ann Arbor, Michigan	2014	Silver
R&H Toyota	Owings Mills, Maryland	2014	Gold
Transky Sawmill Toyota	Dublin, Ohio	2014	Gold
Lost Pines Toyota	Bastrop, Texas	2013	Gold
OpenRoad Lexus	Richmond, British Ontario, Canada	2013	Silver
DCH Toyota of Torrance	Torrance, California	2013	Gold
Westbrook Toyota	Westbrook, Connecticut	2013	Certified
Toyota of Lakewood	Bradenton, Florida	2013	Certified
Tustin Toyota	Tustin, California	2013	Silver
Kenny Ross Toyota	Coraopolis, Pennsylvania	2013	Certified
Welland Toyota	Welland, Ontario, Canada	2012	Gold
Beaverton Toyota (TCSC)	Beaverton, Oregon	2012	Gold
Grappone Toyota	Concord, New Hampshire	2012	Certified
San Francisco Toyota	San Francisco, California	2012	Platinum
Alamo Toyota	San Antonio, Texas	2012	Silver
Sun Toyota	Holiday, Florida	2012	Gold
Vancouver Toyota	Vancouver, Washington	2012	Silver
Bennett Toyota	Allentown, Pennsylvania	2012	Gold
Toyota of the Black Hills	Rapid City, South Dakota	2012	Silver
Maguire Toyota	Ithaca, New York	2012	Platinum
Toyota Scion of Bend	Bend, Oregon	2011	Gold
Beaman Toyota	Nashville, Tennessee	2011	Certified
Legends Toyota	Kansas City, Kansas	2011	Gold
Lexus of Henderson	Henderson, Nevada	2011	Gold
Stouffville Toyota	Stouffville, Ontario, Canada	2011	Gold
Dave Mungenast Lexus of St. Louis	St. Louis, Missouri	2010	Silver
Grossinger City Toyota	Chicago, Illinois	2010	Silver
Fred Bean's Toyota of Flemington	Flemington, New Jersey	2010	Silver
Jerry Durant Toyota	Granbury, Texas	2010	Silver
Kendall Toyota	Eugene, Oregon	2010	Platinum
Stratford Toyota	Stratford, Ontario, Canada	2010	Gold
Toyota of El Cajon Certified Center	Santee, California	2010	Gold
Toyota of El Cajon	El Cajon, California	2010	Silver
Caldwell Toyota	Conway, Arkansas	2009	Gold
Fitzgerald's Lakeforest Toyota	Gaithersburg, Maryland	2009	Gold
Lexus of Las Vegas	Las Vegas, Nevada	2009	Gold
Mark Miller Toyota	Salt Lake City, Utah	2009	Gold
Sewell Lexus Pre-Owned	Fort Worth, Texas	2009	Gold
Toyota of Rockwall	Rockwall, Texas	2008	Gold
Pat Lobb Toyota	McKinney, Texas	2007	Silver

STAKEHOLDERS

Two of Toyota's key stakeholder groups in North America are [team members](#) and [communities](#). Our engagement with these stakeholders is described below.

We also engage and collaborate with state and local government agencies and other companies through state-sponsored environmental programs:

- **Partners for Pollution Prevention** is organized by the Indiana Department of Environmental Management (IDEM). The program provides a forum to discuss and share pollution prevention (P2) successes and to advise IDEM on P2 policies and programs. Our assembly plant in Indiana is a member and last year hosted one of the quarterly meetings, where they exchanged ideas about the financial and environmental benefits of P2 projects with 70 participants from other companies, nonprofits and government agencies.
- **EnHance** (Envision Heightened Awareness Nurturing Conservation & Environmental Excellence) is a voluntary environmental stewardship program. Run by the Mississippi Department of Environmental Quality, it recognizes committed environmental leaders who accomplish goals beyond their legal requirements. Toyota's Blue Springs assembly plant (TMMMS) was accepted into the program in 2014 as a "Leader;" their membership is valid through 2016.

In September 2014, TMMMS co-hosted a workshop with the enHance Stewardship Program for 22 participants from local industry. The workshop on Toyota's environmental management system and energy and waste reductions sparked interest in the enHance program: Three companies that attended ended up joining. TMMMS co-hosted a second workshop in July 2015 on energy and waste reduction strategies.

For demonstrating outstanding leadership, Toyota was recognized with an enHance Partnership Award during the annual workshop and awards luncheon in April 2015.

Team Member Target

Create environmental ambassadors by educating and empowering team members (on track)

We take a variety of approaches to communicating our environmental mission, action plan and activities to team members. We do everything from hosting lunch-and-learns, to publishing newsletters and including an overview of Toyota's North American Environmental Report in new hire training. We want to make sure everyone at every level — not just those with the word "environmental" in their job title — is aware of our environmental activities and understands they have a role to play.

Toyota's North American Environmental Report is the primary avenue for communicating all things environmental. We use it as a reference guide and as a source for stories. Even the process of developing the report provides an opportunity to engage a wide array of job functions at all levels of the company.

Creating ambassadors takes more than good communication. We want to empower team members to take all the good things they do at work and apply them at home and in their communities. That's why we're always happy to learn when our team members practice "*kaizen*" both at work and at home, because it's then that the concept of "continuous improvement" becomes rooted within our culture.



Examples of posters on display at TMMC to educate team members about Toyota’s environmental commitment and how the company shows “kindness to the earth.”

In the fall of 2014, TMMC asked team members to share their personal contributions toward improving the environment outside of work through “at-home environmental *kaizens*.” They received a number of great responses:

- One team member integrated a rain water cistern into his backyard landscaping project. Rain water now flows into the rain barrel from a downspout connected to the eaves trough. When the barrel is full, the overflow is connected to the cistern, which uses gravity to water the lawn and flowerbeds.
- Another team member began collecting organic waste, reducing his monthly trash by over 50 percent.
- Another mounted 40 solar panels on his roof. Each panel can generate 250 watts of power and in just over a year, his home has produced 13.4 MWh of electricity – enough to power 444 houses for one day and offset carbon by the equivalent of 238 trees.
- A fourth team member built a log home and installed geothermal energy, planted a vegetable garden and composts organic waste.

These are all great examples of sustainable living and a testament to how our team members are becoming environmental ambassadors.

CELEBRATING EARTH DAY

Earth Day provides an annual opportunity for us to educate team members about environmental topics and empower them to take what they know home and into their communities. Many of our locations host activities for a week or even a whole month. For example, during Earth Week at our manufacturing headquarters in Erlanger, Kentucky, team members were visited by some dashing penguins from the Newport Aquarium, participated in a scavenger hunt and had the opportunity to win prizes for their knowledge of all things environmental.

The assembly plant in Texas (TMMTX) hosted its first Earth Week event in 2015. Each day presented team members with an opportunity to learn something different about the environment and the role each of us plays in protecting our natural world:

- Monday – The Texas Commission on Environmental Quality was the guest, promoting the “Take Care of Texas” campaign. The campaign supports collaborative conservation and celebrates conservation heroes who have created exemplary projects that can be replicated by others.
- Tuesday – The City of San Antonio Solid Waste Management Program was on hand to educate team members about recycling and proper waste disposal at home.
- Wednesday – The local Audubon Society provided information about the Mitchell Lake Audubon Center, and Osage Plastic Recycling taught team members how they turn the plastics recycled by the plant into products like picnic tables, trash bins and eclothing.
- Thursday and Friday – Both days were dedicated to a waste management contest in the style of an Environmental Dojo. The Dojo consisted of several stations where team members from all areas of the plant were invited to test their knowledge about proper disposal and recycling of waste streams found at TMMTX. Giving team members an opportunity to participate in hands-on activities was a great way to end the week.

And at Toyota Motor Manufacturing Canada (TMMC), Earth Month was marked with a busy schedule of events built around the environment and sustainable living. TMMC kicked off the month-long celebration of the planet with Earth Hour, held the evening of March 28. This global initiative highlights the need for climate action by encouraging cities, businesses and citizens to turn off all unnecessary lights for one hour. Earth Hour was first launched by the World Wildlife Fund (WWF) in 2007 and, according to WWF, has become the world’s largest mass participation event in history. Millions of supporters worldwide joined forces this year from over 100 countries, Antarctica, and even aboard the International Space Station. TMMC once again ensured lights out for the hour, a large but worthwhile undertaking by the Facilities departments. Plus, 472 team members participated in Earth Hour in their own homes.

Each week of Earth Month, TMMC highlighted one of Toyota’s four core focus areas: Energy, Water, Biodiversity and Waste. Team members who participated in lunchtime activities won various environmentally themed prizes, including low-wattage fluorescent lightbulbs and reusable water bottles.

During all four weeks, team members were invited to make “Green Pledges” to reduce their environmental footprints at home. TMMC received an outstanding 519 Green Pledges this year. Pledges included packing no-waste lunches, carpooling to work and planting water-wise gardens at home.

For every team member who participated in an Earth Month activity, 50 cents was donated to the Shade’s Mills Conservation Area in Cambridge, Ontario, to support the Toyota Nature Centre. This year, team member participation in the various Earth Month activities translated into a donation of over CAD\$2,000 to Shade’s Mills.



To complement Waste Week, this year's family activity was an Eco Home Design Challenge. TMMC team members and their families were challenged to construct dollhouse-sized houses out of household recyclables. The activity highlighted the concepts of reuse and recycle, and touched on the principles of environmental innovation and sustainable development. Winners won family passes to the Grand River Conservation Authority parks. Sophie (age 6) and Emily (age 3) (daughters of Pete Idzik, specialist in Quality Assurance) built one of the winning entries. Their Eco Home is complete with solar panels and a windmill on the roof to generate power, sky lights for natural lighting, a rain barrel for collecting rain water, and a rooftop greenhouse.

Community Target

Support community projects that align with our core areas of focus (on track)

Now more than ever, consumers expect companies to be active stewards of a healthy environment by both engaging in sustainable business practices and supporting community efforts. To be a good corporate citizen, companies must do everything in their power not just to minimize their environmental impacts and conserve resources, but also to drive that same commitment more broadly throughout their communities.

We want to build more than just great cars. We want to build great places to live. By sharing our principles and practices and through collaborating with community partners, we are driving toward a better world for all.

We map our existing environmental partners against our core focus areas to show the projects we support are extensions of our commitments in carbon, water, materials and biodiversity. Our community projects cover a wide spectrum, from simple trash pickups to building hybrid battery storage systems for the oldest national park in the U.S. Just as we innovate green technology in our vehicles, we have some innovative ways of sharing our know-how with others.

Our hope is that we continue to spur a spirit of collaboration among our team members and associates and with the communities we touch. Our collective actions are all helping to build a better tomorrow.

FG26 • The Power of Collective Action

Toyota supports community projects that focus on the same issues we do: carbon, water, materials, biodiversity. By concentrating our support on these issues, we are harnessing the power of collective action to shape a better tomorrow.



COMMUNITY PROJECTS	CARBON	WATER	MATERIALS	BIODIVERSITY
Boy Scouts of America				
Dream Car Art Contest				
ECS/Toyota Young Investigator Fellowship				
Household Trash & Recycling Collections				
Lexus Eco Challenge				
National Mayor's Challenge for Water Conservation				
National Public Lands Day				
World Water Monitoring Challenge™				
Yellowstone National Park Hybrid Battery Storage System				
Youth Environmental Program, West Virginia				

BOY SCOUTS AND BLUEBIRDS

Thanks to some help from team members from Toyota Motor Manufacturing, Indiana (TMMI), Boy Scouts from the Buffalo Trace Council in Evansville assembled over 400 Bluebird boxes in just one day. This activity was part of a 3-day, 2-night STEM (Science Technology Engineering Math) camporee held in September 2014, sponsored by TMMI and Boy Scouts of America.

“We created line-side style work instruction sheets that broke down the birdhouse assembly into small pitches, just like we use to break down the assembly of our vehicles,” said Paul Delor, environmental specialist at TMMI. “This was a great way to teach the scouts how to build the birdhouses, while also giving them a glimpse of what it’s like to work for Toyota.”

Team members were on hand to assist, while two scouts in each session took the conveyance role and delivered parts to each pitch. Other scouts acted as quality control, inspecting the boxes and fixing any issues before the box was approved for handing out.

The North American Bluebird Society (NABS) was also available to teach the scouts about the Eastern Bluebird. Bluebirds are native to the Evansville area, but their natural habitat is disappearing. They are cavity nesters, which means they usually look for a hole in a tree. Since so many dead trees are cut down, natural nesting sites have been eliminated. So it’s important to provide the birdhouses to give the Bluebirds a place to nest. NABS also explained the benefits of having Bluebirds around – namely, they are big insect eaters – and taught the scouts how to properly install and clean out the boxes.

TMMI purchased the bluebird box kits from O’Bannon Woods, a southern Indiana state park. O’Bannon Woods works with the local correctional facility to create the Eastern Bluebird box kits as part of the rehabilitation process. The park funds educational programs from sales of the kits.

“This was a great day,” Paul claimed. “It’s always rewarding to work with the scouts, and even more so when we can accomplish something for the community and the environment.”

The scouts installed the Bluebird boxes around the Evansville area.



Team members from Toyota’s assembly plant in Indiana worked with Boy Scouts from the Buffalo Trace Council to build over 400 Eastern Bluebird boxes. A high percentage of Eastern Bluebirds in North America nest in birdhouses, which are helping the species recover from loss of habitat and nesting sites.

DREAMING OF THE FUTURE OF MOBILITY

The Toyota Dream Car Art Contest is an annual contest designed to inspire creativity in youth and imagine the future of mobility. From September 22 through December 13, 2014, youth, ages 4-15, across the U.S. and Canada were invited to create and submit a drawing of their idea of a “Dream Car.”

The first international contest was held in 2004 by Toyota Motor Corporation in Japan, with the dual goals of inspiring children to understand the importance of having a dream while encouraging them to become interested in cars by designing “Dream Cars” of their imagination.

Winners of the worldwide Toyota Dream Car Art Contest are chosen from three age categories (under 8 years old, 8-11 years old and 12-15 years old), and judging is based on three criteria: execution of concept, uniqueness, and artistry.

The nine U.S. Winners and nine Canadian Winners were selected by panels of judges. Their artwork advanced to represent the U.S. and Canada as the World Contest Semi-Finalists to compete among entrants from over 80 countries.

“I can’t say enough about what the Toyota Dream Car Art Contest does to shine light into the workings of children’s minds,” said Canadian judge Brandie Weikle, editor of thenewfamily.com. “It was a treat to get to spend time looking at these drawings and reading about the creative thinking that went into them.”

In August 2015, the top 30 young artists selected worldwide won an all-expenses-paid trip to Toyota City, Japan, to participate in the World Contest awards ceremony, which included a tour of a Toyota manufacturing plant.

“Judges were immediately impressed by the level of talent and creativity in each work of art,” said U.S. judge Stewart Reed, transportation chair of Art Center College of Design. “But even more remarkable is the way young people have taken the concept of their dream car and turned it into an outlet for expressing their concerns over modern-day issues, and for suggesting imaginative ways to improve their world.”



Every fall, Noelle saw piles and piles of falling leaves on the road. She began to wonder if all those leaves could be put through a recycling process. She visualized a “Leafmobile” that collects all the leaves and turns them into fertilizers or manure for the plants. Noelle Yau, age 11, is one of Canada’s Winners and one of 30 Global Finalists in Toyota’s Dream Car Art Contest.



Michael has read books about sea creatures and learned that millions are killed because of ocean pollution. He designed the “Ocean Clean Car for Everyone” to pick up debris and clean up oil spills, and to give everyone - even the physically handicapped - a chance to experience the amazing beauty of the seas. Michael Zhou, age 11, is one of the U.S. Winners and one of 30 Global Finalists in Toyota’s Dream Car Art Contest.

FELLOWSHIP WINNERS FOR PROJECTS IN GREEN ENERGY TECHNOLOGY

The Electrochemical Society (ECS) Toyota Young Investigator Fellowship Selection Committee has selected three recipients to receive \$50,000 each for the inaugural fellowships for projects in green energy technology. The winners are Professor Patrick Cappillino, University of Massachusetts Dartmouth; Professor Yogesh (Yogi) Surendranath, Massachusetts Institute of Technology; and Professor David Go, University of Notre Dame.

ECS, in partnership with the Toyota Research Institute of North America (TRINA), a division of Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA), launched the inaugural ECS Toyota Young Investigator Fellowship in early 2015. More than 100 young professors and scholars pursuing innovative electrochemical research in green energy technology responded to ECS's request for proposals.

“The science of electrochemistry can help provide solutions for daunting challenges, like the need to transition to a less carbon intensive economy,” says ECS Executive Director Roque Calvo. “ECS was thrilled to partner with Toyota on this program and congratulates our three inaugural fellows.”

The ECS Toyota Young Investigator Fellowship aims to encourage young professors and scholars to pursue research in green energy technology that may promote the development of next-generation vehicles capable of utilizing alternative fuels.

Global development of industry and technology in the 20th century, increased production of vehicles and the growing population have resulted in massive consumption of fossil fuels. Today, the automotive industry faces three challenges regarding environmental and energy issues:

- Finding a viable alternative energy source as a replacement for oil
- Reducing CO₂ emissions
- Preventing air pollution

Although the demand for oil alternatives—such as natural gas, electricity and hydrogen—may grow, each alternative energy source has its disadvantages. Currently, oil remains the main source of automotive fuel; however, further research and development of alternative energies may bring change.

Electrochemical research has already informed the development and improvement of innovative batteries, electrocatalysts, photovoltaics and fuel cells. Through this fellowship, ECS and TRINA hope to see further innovative and unconventional technologies borne from electrochemical research.

“We view research as an investment in our future both for our business, but also for the greater society,” says Fellowship Chair and Manager of Toyota's North American Research Strategy Office Paul Fanson. “In order to start to overcome the very difficult technical challenges that we face, it is necessary to invest in and encourage scientists from diverse backgrounds with creative ideas that are willing to think outside of the box. I feel that we were able to accomplish that goal with this inaugural fellowship program, and I am very excited to be a part of it.”

The selected fellows received restricted grants of \$50,000 to conduct the research outlined in their proposals within one year. They will also receive a one-year complimentary ECS membership as well as the opportunity to present and/or publish their research with ECS.

2015 ECS Toyota Young Investigator Fellows:

- **Prof. Patrick Cappillino, University of Massachusetts Dartmouth**

Battery Division of ECS

Mushroom-derived Natural Products as Flow Battery Electrolytes: to investigate the use of a naturally occurring and biologically produced compound in non-aqueous redox-flow batteries (NRFB) to tune three important attributes while retaining extraordinary metal-binding properties: redox potential; solubility in NRFB solvents; peripheral electrostatic and steric properties.

- **Prof. Yogesh (Yogi) Surendranath, Massachusetts Institute of Technology**

Energy Technology Division of ECS

Methanol Electrosynthesis at Carbon-Supported Molecular Active Sites: to synthesize a selective electrocatalyst for methane to methanol conversion by ligating single site transition metal compounds known to activate methane with graphitic carbon surfaces that allow for facile charge transfer.

- **Dr. David Go, University of Notre Dame**

Physical and Analytical Electrochemistry Division of ECS

Plasma Electrochemistry: A New Approach to Green Electrochemistry: to demonstrate the feasibility of using plasma electrochemistry to process CO₂ for the production of alternative fuels, thereby ushering in a novel electrochemically driven approach to both capture and reutilize CO₂, reducing the overall carbon footprint of automobiles.

The ECS Toyota Young Investigator Fellowship is an annual program, and the 2016 request for proposals were released in the fall of 2015.

HOUSEHOLD TRASH & RECYCLING COLLECTIONS

For over 20 years, Toyota has helped team members and surrounding communities recycle and properly dispose of household waste. During designated collection days, many of our sites collect electronic waste, appliances, paint and other household items that are difficult to recycle or dispose. At the same time, we also collect clothing and eye glasses to donate to those in need. In 2015, we collected 212,674 pounds of waste and donations – equal to 69 Prius vehicles or 17 elephants:

- Toyota Canada (TCI) collected 12,604 kilograms (27,787 pounds) of electronic waste and donations, an almost 150 percent increase from 2014.
- Toyota Motor Sales USA (TMS) collected over 10,000 pounds of electronics, donated household goods, and secure documents for recycling in partnership with Goodwill Industries.
- Toyota Motor Manufacturing Canada (TMMC) collected 3,647 kilograms (7,643 pounds) of electronic waste, 84 percent more than in 2014.
- Toyota Motor Manufacturing, Indiana (TMMI) collected 53,400 pounds of paint, solvents, waste oils, antifreeze, aerosols, pesticides, electronic waste, fluorescent bulbs and batteries from over 1,200 team members and Gibson County residents.

In addition to the household waste collection day, team members from TMMI can bring in their recyclables at any time and leave them in one of TMMI's collection bins. This is one way TMMI promotes recycling "beyond the gates." Recycling bins are located in the parking lots, and battery recycling containers have been installed at turnstiles. Since 2009, TMMI has collected and recycled 609,500 household batteries, 1.6 million aluminum cans, 570,000 newspapers and 3.1 million plastic bottles. Revenue generated from these recycling efforts is donated to the Team Member Activity Association, which coordinates and underwrites social and recreational activities for team members and their families.

- Toyota Motor Manufacturing, Kentucky (TMMK) hosted a household hazardous and electronic waste collection for team members and local residents in partnership with the City of Georgetown, Scott County and Green Metals Inc. Over 760 vehicles came to TMMK to drop off 113,844 pounds of household hazardous and electronic waste.



Toyota Motor Manufacturing, Kentucky (TMMK) held their largest-ever household hazardous and electronic waste collection in 2015. TMMK has been helping the community recycle and properly dispose of waste for over 20 years. Top: (from left to right) Jeff Klocke, TMMK Manager, Environmental Engineering; Jared Hollon, Scott County Fiscal Court Deputy Judge Executive; Wil James, TMMK President; Tom Prather, City of Georgetown Mayor; and Mark Mangione, Manager, Green Metals Inc. Bottom: TMMK contractors collect and sort waste dropped off by local residents.



LEXUS ECO CHALLENGE

Who would have thought algae patties and cow patties would be the basis for scholarships and grants! Students across the nation are learning about the environment and making their communities a better place through science, technology, engineering and math. Using these studies, students, teachers and schools are being rewarded with \$500,000 through the Lexus Eco Challenge.

The Lexus Eco Challenge is an educational program and contest that inspires and empowers young people to learn about the environment and take action to improve it. High school and middle school teams nationwide define an environmental issue that is important to them, develop an action plan to address the issue, implement the plan, and report on the results.

Lexus and Scholastic reviewed the finalists' innovative submissions to select one middle school team and one high school team as the 2014-2015 Lexus Eco Challenge Grand Prize winners.

The Grand Prize winning teams earn \$30,000 each, of which the school receives a grant for \$7,000. Each Grand Prize winning team's teacher advisor receives a \$3,000 grant, while the students share \$20,000 in scholarships. Eight First Place winning teams are awarded \$15,000 each.

This year's Grand Prize winners are "First Class Biogas" from Daniel Boone High School in Birdsboro, Pennsylvania, and middle school team "S.T.A.X." from P.S. #28 Christa McAuliffe in Jersey City, New Jersey.

To encourage the advancement of energy alternatives that do not contribute to an increase in greenhouse gases, "First Class Biogas" promoted the use of small-scale power generation systems like the methane gas biogas digester. The biogas digester converts organic waste into methane gas to generate electricity. The team encouraged a local dairy farm to build its own digesters to reduce electricity costs, sell electricity to the power grid, and use post digested organic material more efficiently. The team also educated and lobbied its community and local and state government officials on clean, renewable energy alternatives.

"S.T.A.X." researched a way to remove algae from its local reservoir without chemicals using tilapia. The team designed and built an aquaculture program for tilapia, learned how to make algae patty fish food, obtained tilapia, and received a permit to release the fish into the reservoir using a tilapia chinampa (an island of vegetation floating on the surface of the water) designed to keep the non-native fish captive while they enjoy the reservoir's algae buffet. S.T.A.X.'s influence went beyond the reservoir as it educated the community and students about its preservation efforts.

The 2014-2015 Lexus Eco Challenge had more than 1,125 students participate. Thirty-two middle and high school teams were selected as finalists for the Lexus Eco Challenge – claiming a \$10,000 prize to be shared among the team, teacher and school.

All 32 finalist teams were asked to reach beyond the local community and inspire environmental action around the world through innovative ideas that are communicated to a wide audience for the final challenge.



Lexus Eco Challenge High School Grand Prize Winner “First Class BioGas” from Daniel Boone High School in Birdsboro, Pennsylvania. The team researched hydroponic gardening and built its own “biogas digester system,” which converted organic waste into methane gas in order to generate energy and reduce greenhouse gas emissions.



Lexus Eco Challenge Middle School Grand Prize Winner “S.T.A.X.” from P.S. #28 Christa McAuliffe in Jersey City, New Jersey. The team developed and implemented an aquaculture system—that is, controlled conditions in order to harvest marine organisms—so that it could raise tilapia to rid their reservoir of algae.

NATIONAL MAYOR'S CHALLENGE FOR WATER CONSERVATION

Americans pledged to save enough water over the next year to fill 2,300 Olympic-sized swimming pools as part of the 2015 Wyland National Mayor's Challenge for Water Conservation, an annual awareness campaign presented by the Wyland Foundation and Toyota that encourages leaders to promote water efficiency in their communities. During the month of April, residents from more than 3,900 cities made 391,325 pledges online to reduce their water use at home, around the yard, and in their lives. The challenge addresses the growing importance of educating consumers about the many ways they use water — from swapping their lawns out in favor of drought-resistant native plants to fixing leaks to looking at how we use water for food and manufacturing.

The cities with the highest percentage of residents that made pledges during the month-long campaign included San Diego, California; Aurora, Colorado; Torrance, California; Poway, California; and Hermosa Beach, California. Additionally, mayors of cities in 35 states, including Pittsburgh, Dallas, Denver, Miami, Stockton, Boise, Santa Fe, Pasadena, Gainesville and Tucson stepped up their involvement with personal appeals to residents to participate.

Residents from winning cities were entered into a drawing for over \$50,000 in water-saving or environmentally themed prizes, including a Grand Prize Toyota Prius v, EcoFlow showerheads from WaterPik, home irrigation equipment from the Toro Company, and hundreds of home improvement store gift cards. A \$1,000 home improvement store shopping spree was also awarded from among the entire pool of U.S. participants. Additional prizes included a water efficient landscape park or school makeover for one of the winning cities, as well as WaterSmart Software tools for water utilities to help reduce resident water consumption up to 5 percent.

As prospects of water reduction mandates grow in the U.S., the campaign provides cities with a way to engage residents with positive incentives and raises the collective water I.Q. of the nation. Pledges are designed to promote water sustainability and improve water quality, along with tips for additional water savings. Additional support for the challenge is provided by the U.S. EPA, the National League of Cities, the Toro Company, ByteLaunch, and WaterSmart Software.

“Toyota is committed to using its knowledge, resources and time to support programs that promote the efficient use of natural resources,” said Kevin Butt, regional environmental director for Toyota. “We’ve been proud to watch the National Mayor’s Challenge for Water Conservation grow in just a few short years from a grass-roots initiative with a handful of mayors to one of the largest water conservation awareness programs in the nation.”

In addition to making 1.5 billion gallons in water-saving pledges, challenge participants in 50 states pledged to reduce their use of single-use plastic water bottles by more than 4.6 million bottles and eliminate 141,000 pounds of hazardous waste from entering watersheds. By altering daily lifestyle choices, pledges also resulted in potentially 47 million fewer pounds of waste going to landfills. Potential savings of 13 million gallons of oil, 7 billion pounds of carbon dioxide, 139 million kilowatt-hours of energy, and \$35 million in consumer cost savings rounded out the final pledge results.



(Left to right) Cochran School Assistant Principal Linda Olivarez, DISD Assistant Superintendent Desiree Aria, Mayor Mike Rawlings, EPA Administrator Gina McCarthy, Cochran School Principal Demarcus L. Goree Watkins, Toyota's Kevin Butt, and Region 6 EPA Administrator Ron Curry break ground on the outdoor classroom and gardens with students at Cochran Elementary School in Dallas as part of the kick-off to the 4th Annual National Mayor's Challenge for Water Conservation on Thursday, April 9, 2015. In 2014, Dallas was the top-ranked city in the 600,000-and-over population standings. To recognize the city's efforts for sustainability, an outdoor classroom and student gardens that incorporate new water-efficiency techniques and native plants were donated to the school by the Wyland Foundation.

NATIONAL PUBLIC LANDS DAY

National Public Lands Day (NPLD) is the nation’s largest, single-day volunteer effort for public lands. It is a celebration of the work, play and learning that takes place on public lands every day and offers everyone an opportunity to help maintain them.

In 2014, over 3,000 Toyota team members and their families volunteered at 44 different public land areas in 17 states and Puerto Rico. This marks the 16th year Toyota has been the national corporate sponsor of NPLD.

“Toyota’s commitment to public lands and to NPLD continues to grow,” said Diane Wood, president of the National Environmental Education Foundation. “Each year, their passion for the program and for finding new ways to give back to their own communities through this special day has surpassed our expectations. They are a true partner.”

This was the first year Toyota Alabama organized volunteers in support of NPLD. Over 100 team members planted trees, cleared trails, built fences and painted – all part of the master plan to turn John Hunt Park into a focal point for Huntsville. The plan for the 387-acre park includes tree-lined walking, jogging and biking paths, a splash park and children’s playground, picnic areas, green space, additional tennis courts and more. The plant also made a \$10,000 donation to John Hunt Park to support these improvement efforts.

“This unique sponsorship supports Toyota’s global commitment to environmental stewardship by providing our employees with meaningful volunteer opportunities to help improve public lands in their local communities,” said Michael Rouse, vice president of diversity, philanthropy and community affairs at Toyota Motor Sales.



In 2014, more than 850 team members and families from Toyota Motor Manufacturing, Mississippi (TMMMS) came out to roll up their sleeves, get their hands dirty and make their community a better place. This was an all-time high for TMMMS, who year after year sets the record for the number of team member volunteers. Volunteers at the New Albany Park Along the River and Shady Dell Park restored and painted playground equipment, built new picnic tables and benches, cleared invasive weeds and planted flower beds. Even the young children of Toyota team members got into the act. At each location, the kids did such things as artistic painting of trash cans, building birdhouses and decorating fencing.

WORLD WATER MONITORING CHALLENGE

Each year during Earth Week, Toyota’s Indiana plant sponsors a poster contest for fifth-grade students in Gibson, Vanderburgh, Posey and Warrick counties. The winning design is put on a T-shirt given to all sixth-grade students who participate in the World Water Monitoring Challenge™ in the fall.

World Water Monitoring Challenge (WWMC) is an international education and outreach program that builds public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies. Each year, over 180,000 visits are made by participants to monitoring sites in more than 50 countries.

Fifth-grade students are asked to design a poster focusing on why we need clean water and how to protect the earth’s water resources. The 2015 Earth Day Poster Contest had over 1,500 student entries representing 81 different classes. All participating classes received a pizza party just for entering the contest – that’s over \$5,000 in pizza!

Toyota Indiana has supported World Water Monitoring Challenge activities since 2005. In November 2014, Toyota once again worked with about 700 sixth graders from 30 classes to sample about 100 different lakes, rivers and streams across southwestern Indiana. Monitoring data is uploaded into the WWMC database.



Paul Delor, Environmental Specialist at TMMI, stands with the 2015 T-shirt contest winner, Keirsten Read from Scott Elementary School in Evansville. After the judging was complete, we learned Keirsten’s father Doug is actually a team member here at TMMI and was there for the presentation of the T-Shirt prototype.

YELLOWSTONE NATIONAL PARK

Toyota Flips the Switch to Sustainable Power at Yellowstone National Park

At the Lamar Buffalo Ranch field campus in Yellowstone National Park, an innovative distributed energy system that combines solar power generation with re-used Camry Hybrid battery packs is now online. The result: reliable, sustainable, zero emission power to the ranger station and education center for the first time since it was founded in 1907.

Announced in June 2014, the partnership among Toyota, Indy Power Systems, Sharp USA SolarWorld, Patriot Solar, National Park Service and Yellowstone Park Foundation is an innovative effort to extend the useful life of hybrid vehicle batteries while providing sustainable power generation for one of the most remote, pristine areas in the United States.

Solar panels generate the renewable electricity stored within the 208 used Camry Hybrid nickel-metal hydride battery packs, recovered from Toyota dealers across the United States.

“Through our long-standing partnership with Yellowstone National Park and the Yellowstone Park Foundation, Toyota has helped preserve Yellowstone for future generations,” said Toyota North America Chief Executive Officer Jim Lentz. “Today, our relationship with Yellowstone continues, as more than 200 battery packs that once powered Toyota Camry hybrids have found a new home on the range.”

On an annual basis, the solar system generates enough electricity to power six average U.S. households for a year, or plenty of power for the five buildings on the Ranch campus. The hybrid batteries provide 85kWh of energy storage to ensure continuous power, as the system charges and discharges. Onsite micro-hydro turbine systems, capturing energy from a neighboring stream, are scheduled to join the power mix in 2016.

The Yellowstone system is the first of its kind to use recovered hybrid vehicle batteries for commercial energy storage. Each battery pack has been disassembled and tested, and every piece that could be was repurposed. New components were also designed and built by Indy Power Systems specifically for this application, including an onboard battery management system for each battery pack. The battery management system is designed to maximize battery life and will also provide important insights into real-world performance. These insights will help Toyota design future battery performance and durability improvements.

“Toyota’s innovative response to solve a difficult problem has helped Yellowstone move closer to its goal of becoming the greenest park in the world,” said Steve Iobst, acting superintendent of Yellowstone.

Hybrid batteries typically reach the end of their usable life in automobile-grade applications with significant remaining power storage capacity. While Toyota has a robust hybrid battery recycling program in place, the Yellowstone project reflects ongoing efforts to extend the life of existing hybrid batteries. Engineers expect this type of use to double the overall lifespan of the hybrid batteries.

The Lamar Buffalo Ranch project is just part of Toyota’s extensive work with Yellowstone National Park and the Yellowstone Park Foundation, including providing hybrid vehicles to support park operations, and green building expertise and financial backing for the Old Faithful Visitor Education Center, which opened in 2010.

“As exemplified by the Lamar Buffalo Ranch project, Toyota’s mission-driven philanthropic focus and expertise in sustainability will make a difference in Yellowstone for generations to come,” said Karen Bates Kress, president of the Yellowstone Park Foundation.

To learn more about Yellowstone National Park sustainability initiatives please visit <http://www.nps.gov/yell/parkmgmt/sustainability-contents.htm>.

Details on the Yellowstone National Park Sustainability Project Energy Storage and Management System:

Power Generation: 40 kW solar system producing ~67,900 kWh annually (40 kW propane backup generator onsite for emergency use only).

Storage Array: 208 repackaged battery packs, each internally re-wired in parallel and arranged in series in four arrays of 52. Each array provides a nominal 375 volts. Total storage capacity of 85 kWh.

Power Management: Indy Power Systems’ Energy Router™ manages and optimizes generation and use of energy between solar energy, battery storage, and/or propane generators (if emergency generator is needed).



At the Lamar Buffalo Ranch field campus in Yellowstone National Park, 208 reused Toyota Camry Hybrid battery packs (bottom) store energy generated by solar panels (top) in an innovative distributed energy system.



SPONSORING WEST VIRGINIA'S YOUTH ENVIRONMENTAL PROGRAM

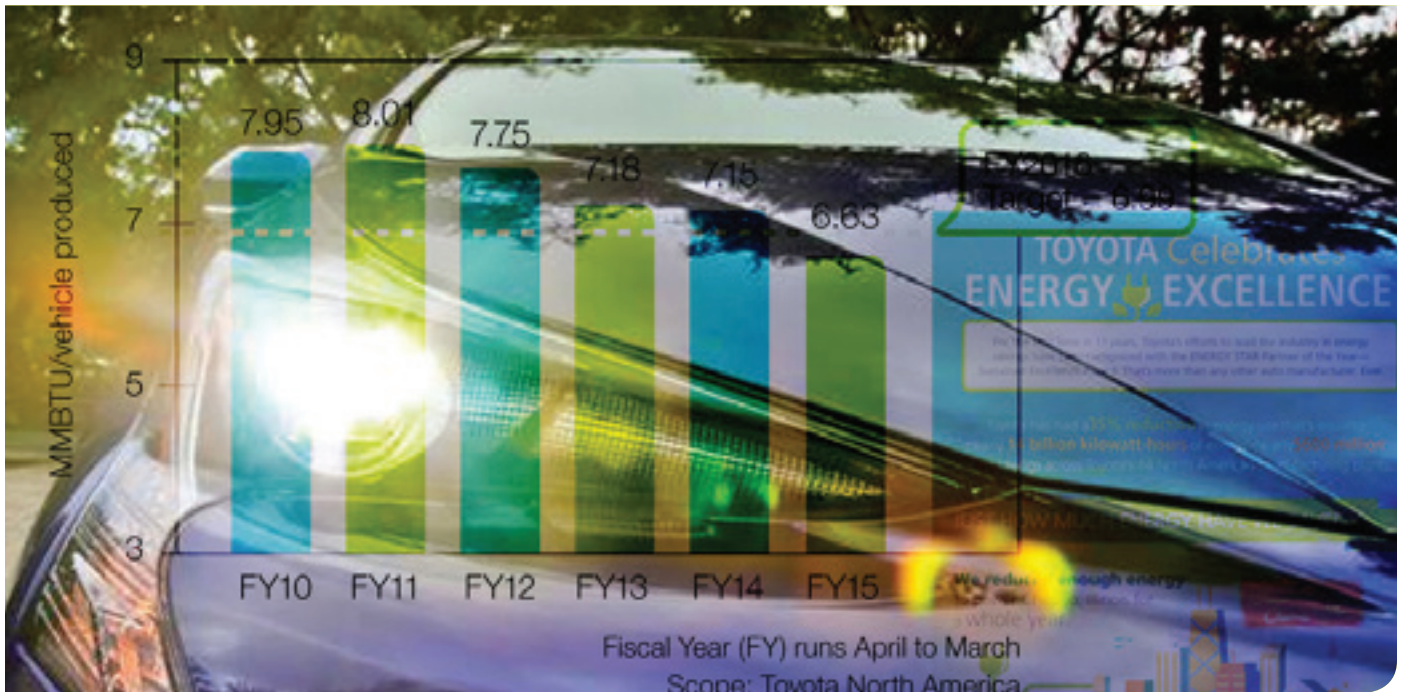
Toyota's plant in West Virginia — where we make 4- and 6-cylinder engines and 6-speed automatic transmissions — believes in teaching children about the environment and getting them outdoors to enjoy the beauty of nature. After all, children are our future — our future team members, engineers and environmental specialists. So each June, Toyota sponsors 20 children to attend the state Department of Environmental Protection's Junior Conservation Camp. The one-week camp, open to children ages 11 to 14, is part of the state's Youth Environmental Program. The camp offers a wide variety of classes to teach pre-teens about the environment and encourage them to become good stewards of our natural resources. Classes cover a range of topics such as forestry, wildlife, water study and recycling.

Toyota, along with other companies, also provides funding for awards handed out at the annual Youth Environmental Day at North Bend State Park. Over \$11,000 in cash awards and scholarships are presented to youth groups who participate in the state's Youth Environmental Program, in recognition of their outstanding environmental accomplishments.

2015 marked Toyota's 16th year participating in the state's Youth Environmental Program. Toyota sponsored awards for youth groups involved in community environmental projects including litter cleanups, recycling drives, school landscaping projects, tree planting, wildlife management, watershed protection and much more. Students worked on these projects all year long. Congratulations to all of the students who are working hard to make our world a better place.



George Vickers, Environmental Specialist at TMMWV, was on hand at the 2015 Youth Environmental Day to hand out awards and scholarships. Danielle Marcum, Emily Parsons, Ethan Marcum and Julia Parsons each won an award for their environmental projects.



> PERFORMANCE

Welcome to the Performance section of Toyota’s North American Environmental Report. Here we provide our ENVIRONMENTAL ACTION PLAN as well as data related to our environmental performance in the following areas:

- CARBON
- WATER
- MATERIALS
- BIODIVERSITY
- DEALER GREEN BUILDING
- AIR QUALITY
- LEED® CERTIFICATION
- ENVIRONMENTAL MANAGEMENT SYSTEMS
- COMPLIANCE

ENVIRONMENTAL ACTION PLAN

FG5 • Toyota North American Environmental Action Plan, FY2014-2016

	GOAL	FY2016 TARGET	STATUS	FY2015 PROGRESS	
CORE AREAS OF FOCUS	Carbon	Reduce carbon footprint of vehicles and operations	Expand Toyota's global hybrid lineup by successfully introducing new hybrid models in North America	△	Launched the 2015 Lexus NX 300h; announced the 2016 Toyota RAV4 Hybrid
			Reduce energy consumption 12% per vehicle produced, from a baseline of FY2010	⊙	Reduced energy use 16.6%
			Reduce GHG emissions from operations 12% per vehicle produced, from a baseline of FY2010	⊙	Reduced GHGs 16%
	Water	Conserve water and protect water sources	Reduce water withdrawal 6% per vehicle produced by FY2016, from a baseline of FY2010	⊙	Reduced water withdrawal per vehicle 8%
	Materials	Eliminate waste and improve recycling and reuse opportunities	Develop and test a new target for waste	△	Defined the 3R Rate
			Implement IMDS data management systems enterprise wide	△	Completed data collection for all North American-produced vehicles
Biodiversity	Improve biodiversity on and near Toyota facilities	Achieve Wildlife Habitat Council certification at 9 sites by the end of calendar year 2016	○	9 sites certified	
OUTREACH	Suppliers	Strengthen supplier relationships	Develop a new supplier environmental engagement process	△	Began working with third-party logistics to prepare for setting a GHG reduction target in the next EAP
	Dealers	Promote and enhance dealer environmental initiatives	Maintain the leadership position in dealership green building and certify 53 dealerships to LEED®	△	47 certified dealers
	Stakeholders	Strengthen Toyota's position as an environmental role model	Create environmental ambassadors by educating and empowering employees	△	Expanded and enhanced Earth Day/Week/Month activities
			Pursue philanthropic initiatives aligned with our environmental mission and goals	Support community projects that align with our core focus areas	△

⊙ Target Exceeded ○ Target Achieved △ On Track X Target Missed

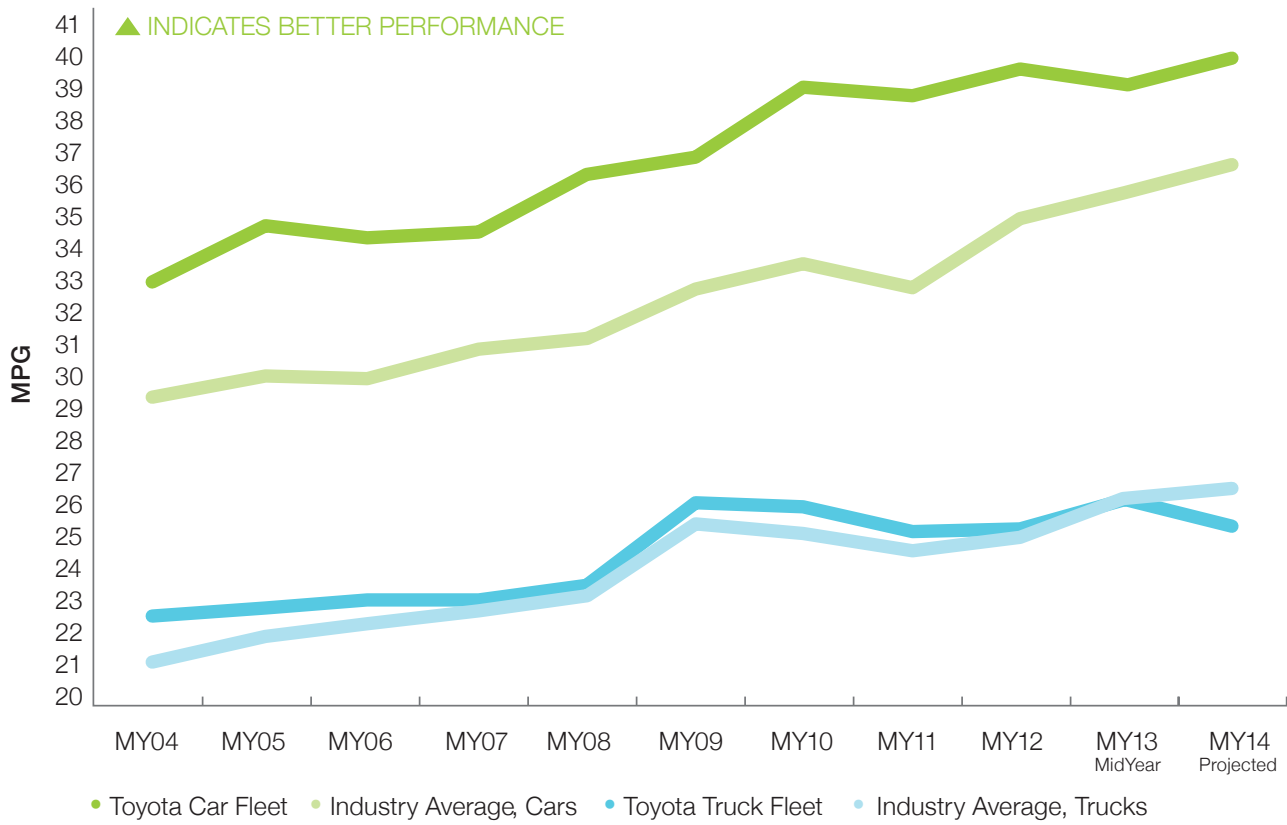
About This Chart: This chart summarizes progress against our fiscal year 2014-2016 environmental action plan targets in the areas of carbon, water, materials, biodiversity and outreach. This is the first time Toyota's North American affiliates have come together and set targets as One Toyota. Instead of separate targets for manufacturing, R&D, and sales and logistics, our targets now cover over 85 assembly and unit plants, parts and vehicle distribution centers, sales offices and R&D sites.

CARBON

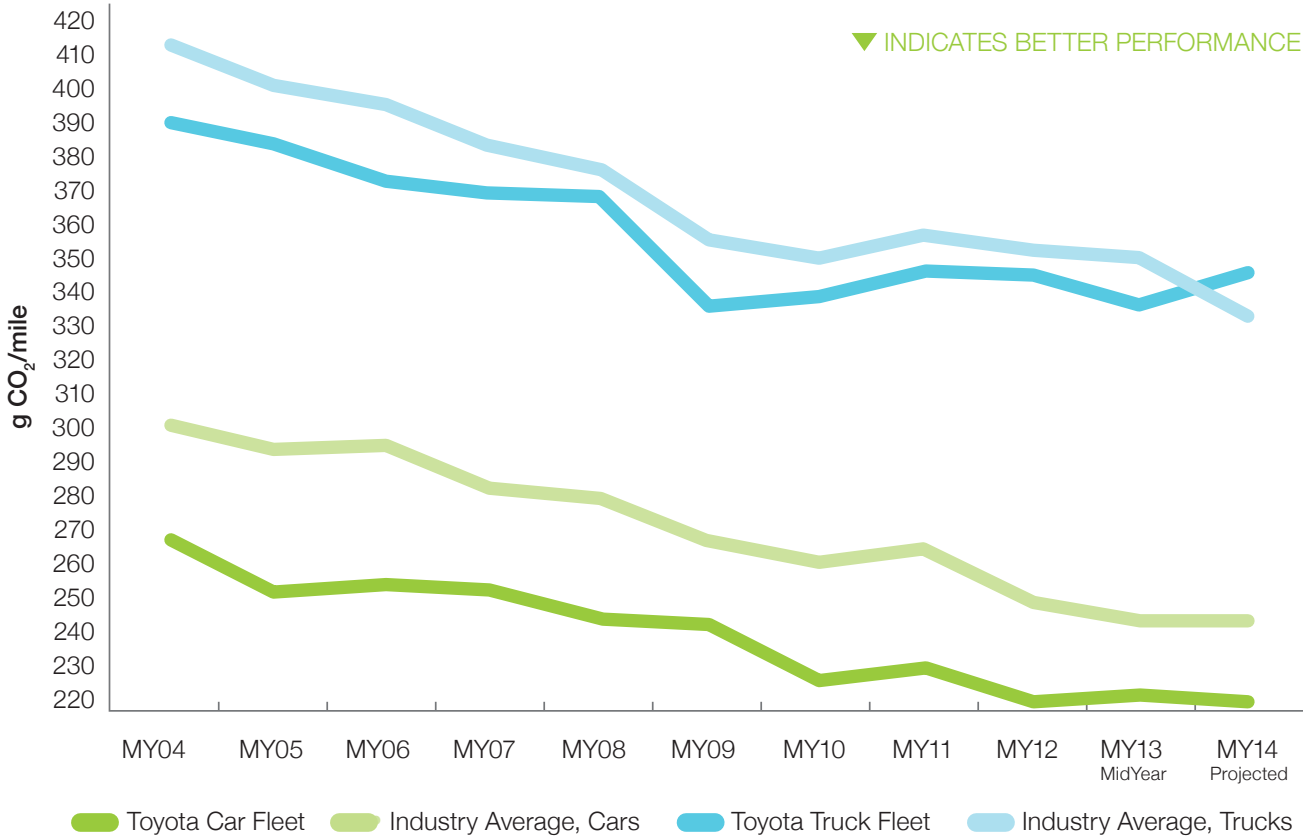
Vehicle Fuel Economy + CO₂

UNITED STATES

FG12 • U.S. Car Corporate Average Fuel Economy, or CAFE



FG13 • Annual CO₂ per Mile*, Toyota U.S. Fleet

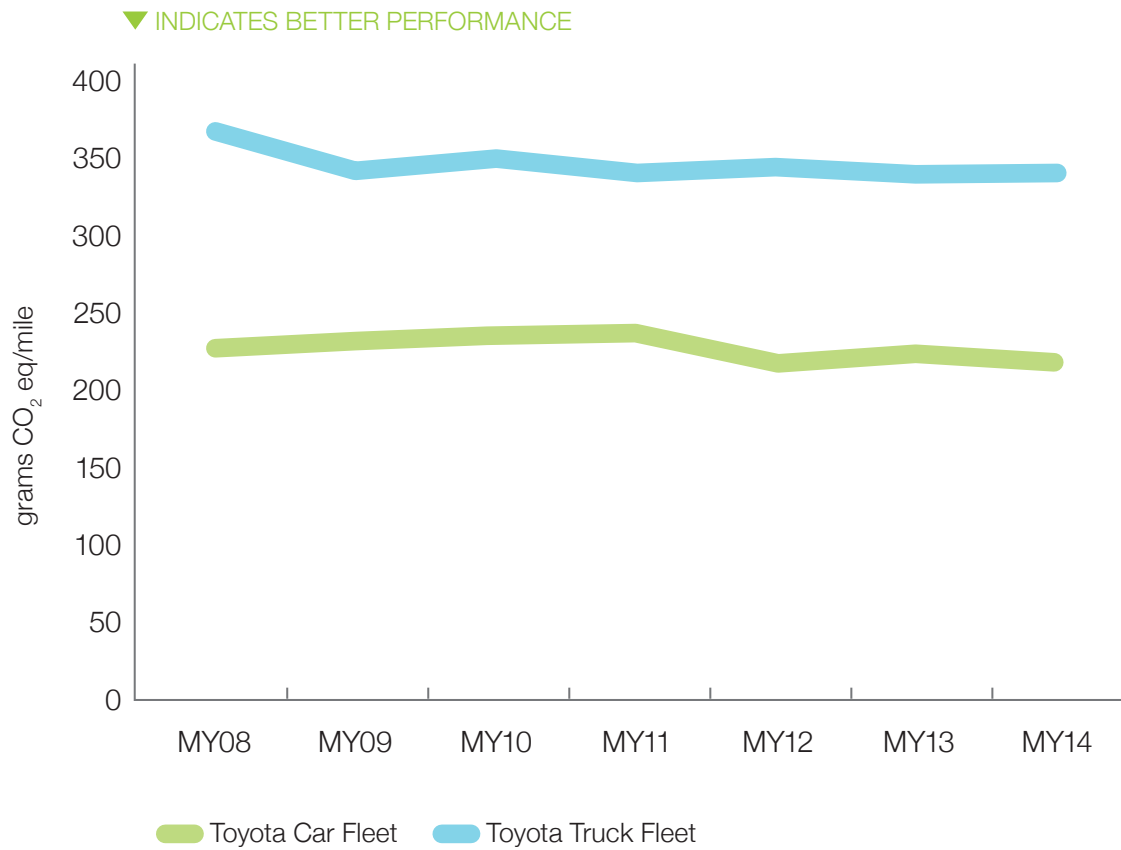


*This data represents CAFE fuel economy performance in terms of CO₂ (grams per mile) and does not reflect provisions in the U.S. EPA GHG program (starting 2012 model year) such as air conditioning credits.

About These Charts: Toyota achieved the required U.S. Corporate Average Fuel Economy (CAFE) standards for both cars and trucks, and the required vehicle CO₂ standards.

CANADA

FG14 • Annual CO₂ per Mile*, Toyota Canada Fleet



*Based on CO₂ emissions data reported to Environment Canada

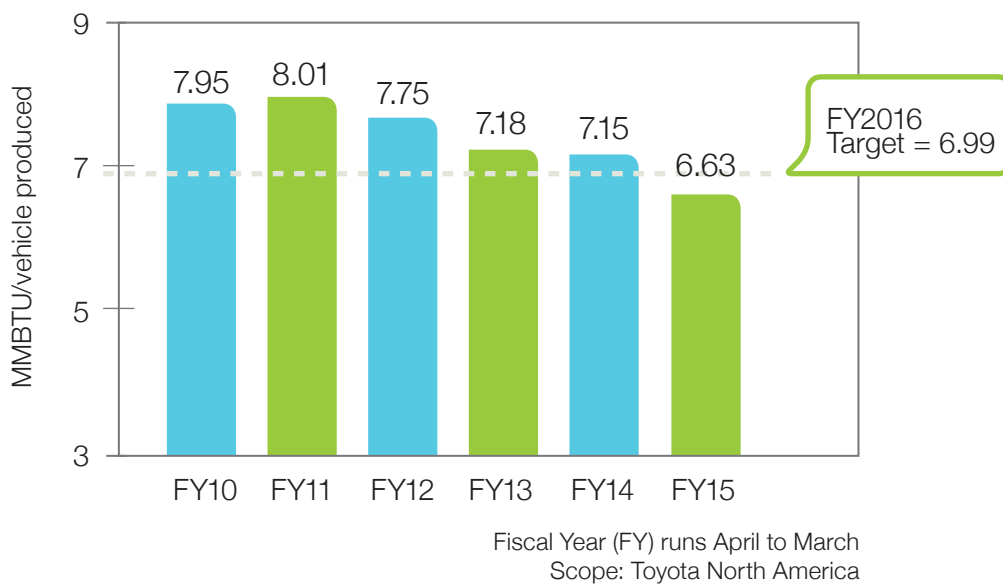
About This Chart: Toyota met the required vehicle CO₂ standards in Canada for the 2014 model year. (2014 is the latest full year of data available.)

MEXICO

In Mexico, Toyota achieved the required vehicle CO₂ standards for calendar years 2014 and 2015. In 2014, Toyota’s fleet average was 183.8 grams CO₂ per kilometer (g CO₂/km), and in 2015, Toyota’s fleet average was 178.7 g CO₂/km.

Energy Use + GHG Emissions in Operations

FG15 • Energy Use Per Vehicle (from Stationary Sources)

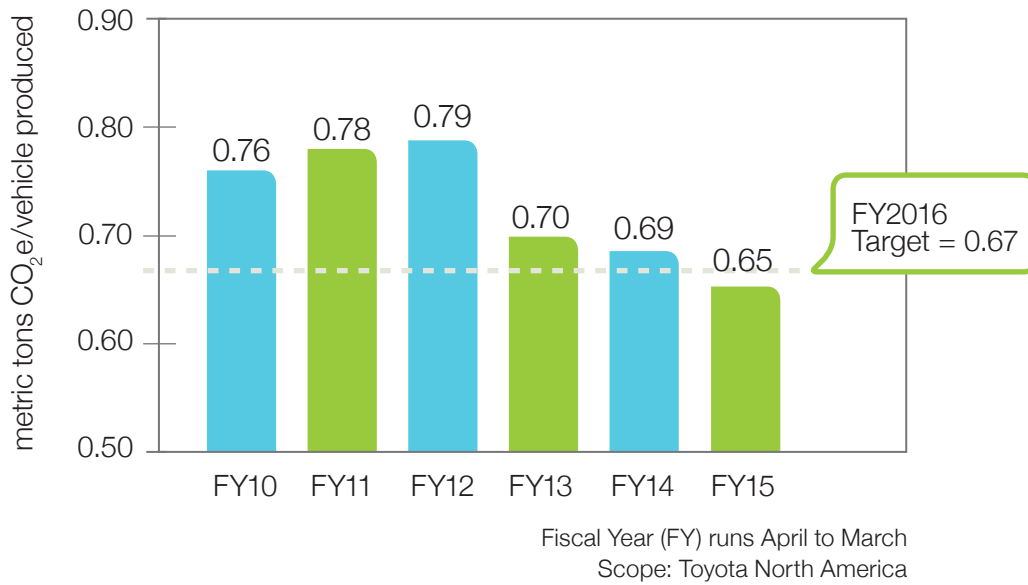


About This Chart: During fiscal year 2015, Toyota used 1.68 million MWh of electricity and 193.20 million cubic meters of natural gas at more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our consolidated energy target covers all of these sites. Our target is to reduce energy use from stationary sources by 12 percent per vehicle produced by fiscal year 2016, from a 2010 baseline.

We met this target ahead of schedule and achieved a 16.6 percent reduction. Examples of how we reduced energy use during fiscal year 2015 can be found here.

This target covers the purchase and use of electricity and natural gas. We convert all energy measurements to MMBtus for this target as a way to combine these energy sources into a single metric.

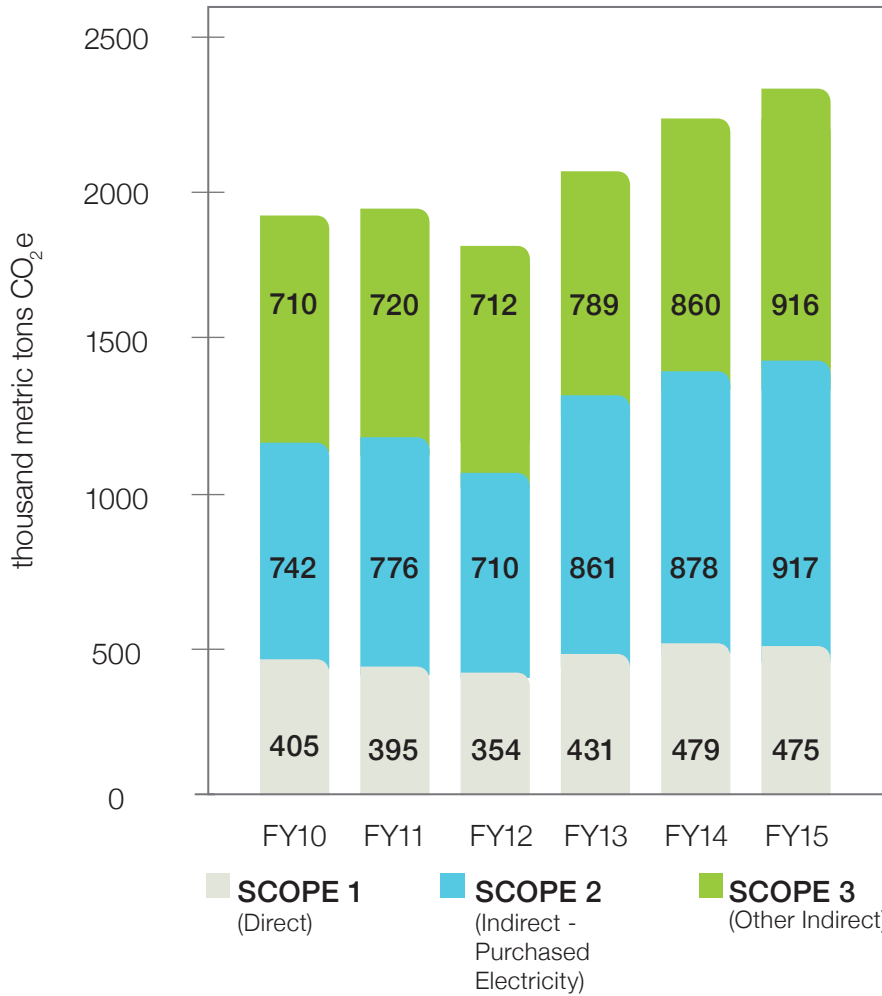
FG16 • GHG Emissions Per Vehicle (from Stationary Sources)



About This Chart: Our consolidated GHG emissions target covers more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our target is to reduce GHG emissions from stationary sources (emissions from our use of electricity and natural gas) by 12 percent per vehicle produced by fiscal year 2016, from a 2010 baseline.

We met this target early and achieved a 16 percent reduction.

FG17 • North American GHG Inventory



About This Chart: Each year we prepare an inventory of GHG emissions from Toyota's North American companies. The methodology used to calculate emissions is based on The GHG Protocol® developed by the World Resources Institute and the World Business Council for Sustainable Development. The process of preparing this consolidated inventory has helped us better understand where GHG emissions occur and has facilitated information sharing across Toyota's North American companies.

The inventory measures GHG emissions from Scopes 1, 2 and 3, as defined by The GHG Protocol:

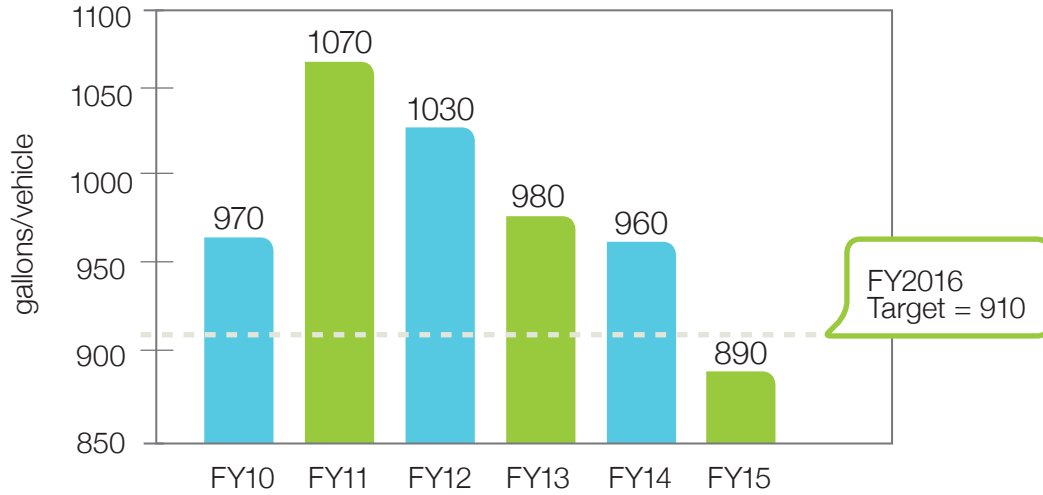
Scope 1 includes emissions from the consumption of natural gas, as well as fuel consumption by in-house trucking operations.

Scope 2 includes emissions from the consumption of purchased electricity.

Scope 3 includes emissions from fuel consumed by third-party carriers, employee commuting and business travel. These are emissions which Toyota has influence over but does not directly control. (Our Scope 3 emissions do not include emissions from the use of our sold vehicles. For information on our vehicle carbon footprint please see [Vehicle Fuel Economy + CO₂e](#).)

WATER

FG21 • Water Withdrawal per Vehicle



* Includes Toyota North America’s water withdrawals, such as from a public utility or groundwater well. There are a handful of water sources currently not included in our metric. We are evaluating these and will include them going forward, as appropriate.

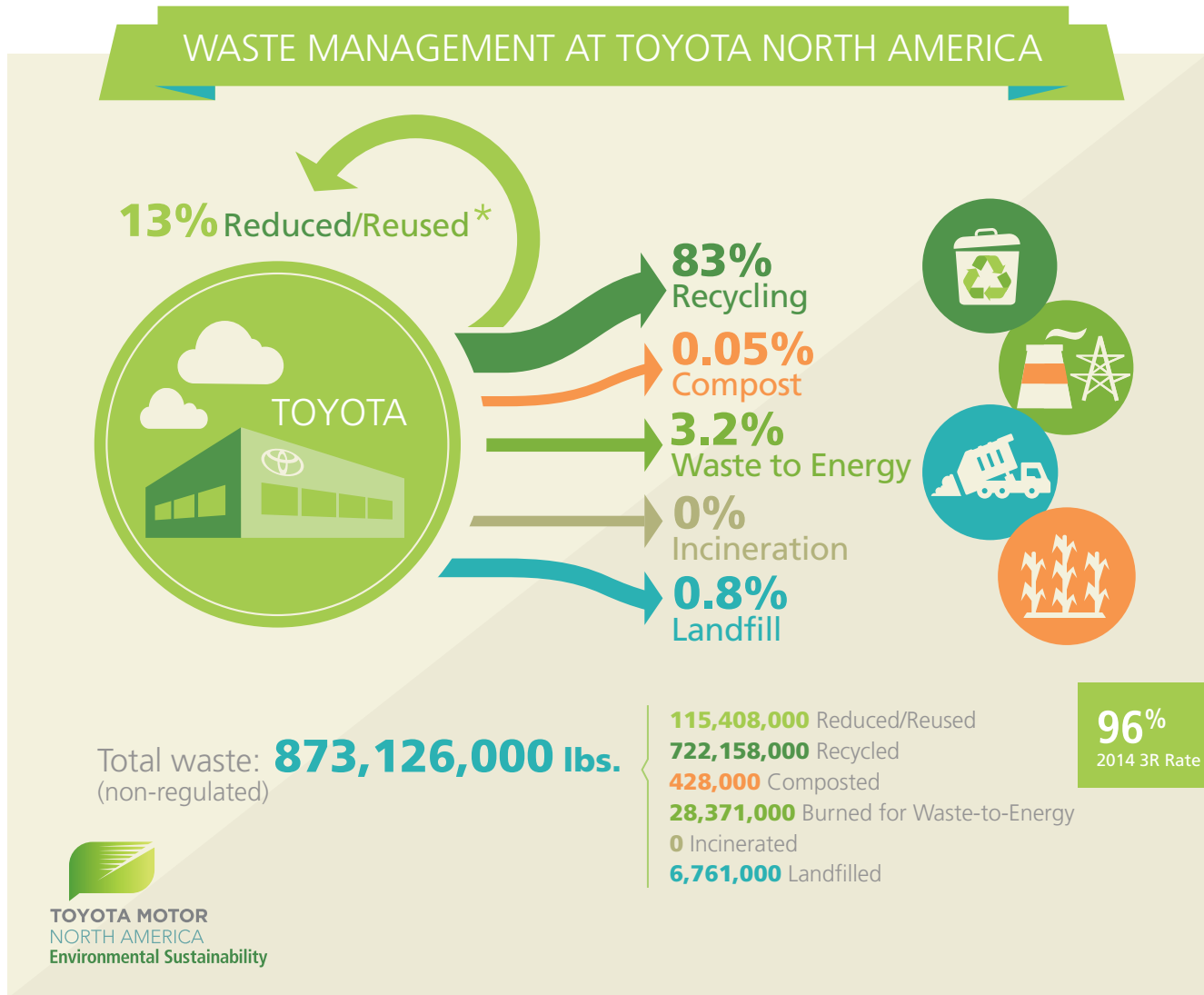
About This Chart: During fiscal year 2015, Toyota withdrew over 1.7 billion gallons of water at more than 85 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D centers and offices. Our consolidated water target covers all of these sites. Our target is to reduce water withdrawals by 6 percent per vehicle produced by fiscal year 2016, from a baseline of fiscal year 2010.

Our metric counts water withdrawals, such as from a public utility or groundwater well. We are developing an internal water inventory management plan – similar to a greenhouse gas inventory management plan – to document accounting practices related to our water metric and target.

In fiscal year 2015, we met our target early and achieved an 8 percent reduction. Examples of how we saved water during fiscal year 2015 can be found [here](#).

MATERIALS

FG22 • Waste Infographic



* Additional reduce/reuse activities have occurred but have not yet been calculated using our new methodology.

Based on calendar year 2014 data to align with EPA's WasteWise program. Scope includes all North American assembly and unit plants, plus U.S. parts and vehicle distribution centers and sales offices. Data includes non-regulated waste.

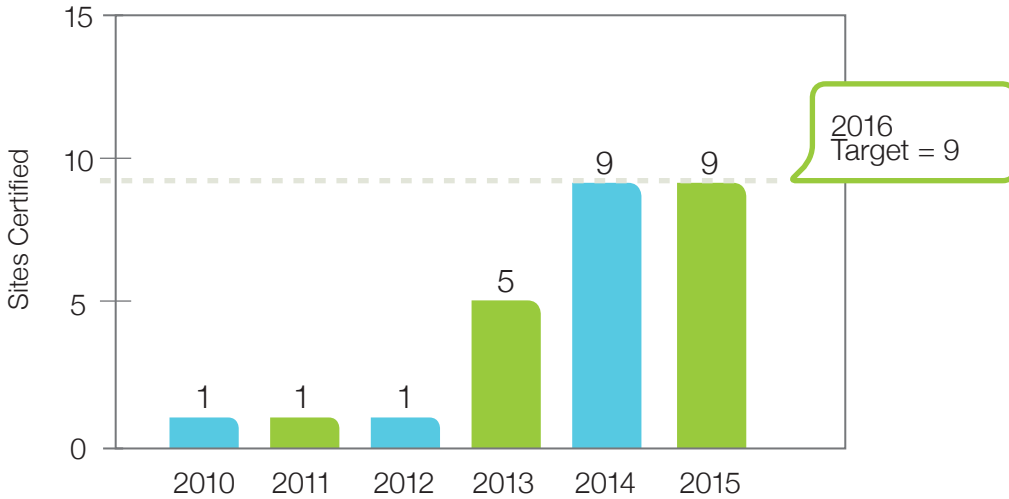
About This Chart: As part of Toyota's fiscal year 2014-2016 environmental action plan, we set a target to develop and test a new target for waste. We started by identifying a new key performance indicator (KPI) in 2014: the 3R Rate. Toyota's 3R Rate is defined as: (Reduce + Reuse + Recycle) / (Reduce + Reuse + Recycle + Recover + Landfill).

Toyota's 3R Rate was 96.0 percent using calendar year 2014 data. (We are using calendar year data instead of fiscal year data to align with EPA's WasteWise program.) This data covers all North American assembly and unit plants, plus U.S. parts and vehicle distribution centers and sales offices.

Going forward, Toyota will roll in the remaining North American sites. Next steps include developing an integrated waste tracking system for use by all North American entities and estimating avoided waste from kaizen activities. Ultimately, our work on developing and testing this new KPI will prepare us for setting a 3R Rate target in our next five-year environmental action plan.

BIODIVERSITY

FG24 • Wildlife Habitat Council Certifications in North America (cumulative)



* Toyota’s Kentucky plant was the first site to be certified, and maintains both *Wildlife at Work* and *Corporate Lands for Learning* certifications. All other sites are certified for *Wildlife at Work*. Our Cambridge and Woodstock, Ontario, sites are covered by a single certification.

About This Chart: The Wildlife Habitat Council (WHC) awards certifications in November of each year. Because of this timing, our target is based on a calendar year cycle. As of the end of 2015, Toyota had nine sites certified with WHC. WHC’s Corporate Wildlife Habitat Certification/International Accreditation Program recognizes commendable wildlife habitat management and environmental education programs at individual sites. Certification criteria are stringent. Sites must demonstrate programs have been active for at least one year and have a management plan listing goals, objectives and prescriptions as well as complete documentation of all programs.

DEALER GREEN BUILDING

FG25 • North American Toyota and Lexus Dealerships With LEED® Certifications

DEALER NAME	LOCATION	YEAR CERTIFIED	CERTIFICATION LEVEL
Livermore Toyota	Livermore, California	2015	Certified
Miracle Toyota	Winter Haven, Florida	2015	Certified
Hendrick Lexus	Merriam, Kansas	2015	Certified
Hendrick Toyota	Merriam, Kansas	2014	Certified
Bell Lexus	Scottsdale, Arizona	2014	Gold
Victory Toyota	Seaside, California	2014	Silver
Toyota Vandermeer	Cobourg, Ontario, Canada	2014	Gold
Dunning Toyota Ann Arbor	Ann Arbor, Michigan	2014	Silver
R&H Toyota	Owings Mills, Maryland	2014	Gold
Transky Sawmill Toyota	Dublin, Ohio	2014	Gold
Lost Pines Toyota	Bastrop, Texas	2013	Gold
OpenRoad Lexus	Richmond, British Ontario, Canada	2013	Silver
DCH Toyota of Torrance	Torrance, California	2013	Gold
Westbrook Toyota	Westbrook, Connecticut	2013	Certified
Toyota of Lakewood	Bradenton, Florida	2013	Certified
Tustin Toyota	Tustin, California	2013	Silver
Kenny Ross Toyota	Coraopolis, Pennsylvania	2013	Certified
Welland Toyota	Welland, Ontario, Canada	2012	Gold
Beaverton Toyota (TCSC)	Beaverton, Oregon	2012	Gold
Grappone Toyota	Concord, New Hampshire	2012	Certified
San Francisco Toyota	San Francisco, California	2012	Platinum
Alamo Toyota	San Antonio, Texas	2012	Silver
Sun Toyota	Holiday, Florida	2012	Gold
Vancouver Toyota	Vancouver, Washington	2012	Silver
Bennett Toyota	Allentown, Pennsylvania	2012	Gold
Toyota of the Black Hills	Rapid City, South Dakota	2012	Silver
Maguire Toyota	Ithaca, New York	2012	Platinum
Toyota Scion of Bend	Bend, Oregon	2011	Gold
Beaman Toyota	Nashville, Tennessee	2011	Certified
Legends Toyota	Kansas City, Kansas	2011	Gold
Lexus of Henderson	Henderson, Nevada	2011	Gold
Stouffville Toyota	Stouffville, Ontario, Canada	2011	Gold
Dave Mungenast Lexus of St. Louis	St. Louis, Missouri	2010	Silver
Grossinger City Toyota	Chicago, Illinois	2010	Silver
Fred Bean's Toyota of Flemington	Flemington, New Jersey	2010	Silver
Jerry Durant Toyota	Granbury, Texas	2010	Silver
Kendall Toyota	Eugene, Oregon	2010	Platinum
Stratford Toyota	Stratford, Ontario, Canada	2010	Gold
Toyota of El Cajon Certified Center	Santee, California	2010	Gold
Toyota of El Cajon	El Cajon, California	2010	Silver
Caldwell Toyota	Conway, Arkansas	2009	Gold
Fitzgerald's Lakeforest Toyota	Gaithersburg, Maryland	2009	Gold
Lexus of Las Vegas	Las Vegas, Nevada	2009	Gold
Mark Miller Toyota	Salt Lake City, Utah	2009	Gold
Sewell Lexus Pre-Owned	Fort Worth, Texas	2009	Gold
Toyota of Rockwall	Rockwall, Texas	2008	Gold
Pat Lobb Toyota	McKinney, Texas	2007	Silver

About This Chart: 2015 marks our 10th year working on LEED® projects with dealers, and we are leading the industry with the number of dealerships certified to LEED. As of August 2015, we have assisted 47 Toyota and Lexus dealerships — 42 in the United States and 5 in Canada — with LEED certification.

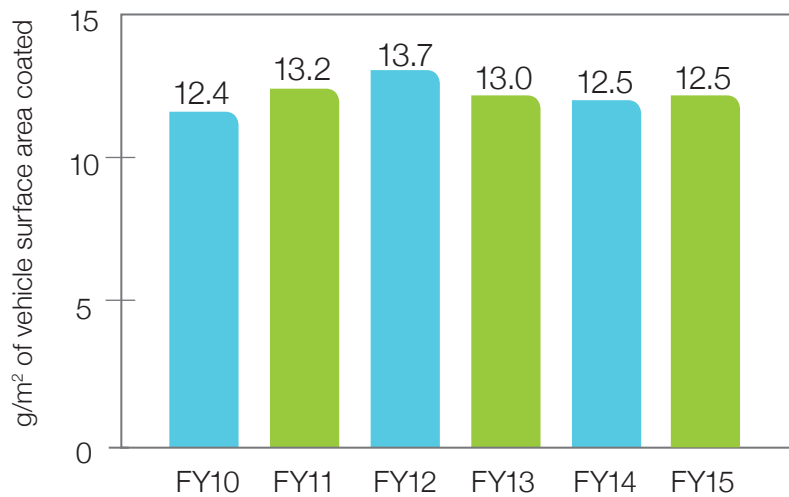
Toyota and Lexus have more LEED-certified dealers in both the U.S. and Canada than any other auto manufacturer. Several more dealerships have completed construction and are waiting for their ratings to be decided. Many more are under construction or in the design and permitting phase and have registered their intent to pursue LEED with the U.S. or Canadian Green Building Councils. In North America, Toyota and Lexus dealerships combined have over 2.5 million square feet of LEED-certified building space.

LEED (Leadership in Energy and Environmental Design) is a point-based system administered by the U.S. and Canadian Green Building Councils promoting a whole-building approach to sustainable construction and remodeling. LEED certification is based on meeting stringent evaluations in sustainable site development, water savings, energy efficiency, materials selection and indoor air quality.

AIR QUALITY

Volatile Organic Compounds

FG27 • VOC Emissions



Fiscal Year (FY) runs April to March

Scope: Toyota's North American Manufacturing Plants

About This Chart: The primary area of concern for non-GHG air emissions is smog. Smog is formed as particulate matter, nitrogen oxides and volatile organic compounds (VOCs) react with sunlight. Smog has been linked to a number of health issues and is particularly prevalent in dense urban areas with heavy traffic, industrial activity and sunny, warm climates.

Toyota's painting operations generate the majority of our VOC emissions. We have a North American Manufacturing VOC Working Group studying aspects of the vehicle body painting process to find ways to reduce VOC emissions. Group members review painting operations as a whole, as well as the components of the process, to find big and small opportunities for improvement. We benefit from sharing and transfer of knowledge and lessons learned from one plant to the next.

Toyota's North American manufacturing plants measure grams of VOCs emitted per square meter of vehicle surface area coated (g/m²). Since 2002, we have reduced VOC emissions by 64 percent, from 35.0 to 12.5 g/m².

Criteria Pollutant Tailpipe Emissions

FG28 • Toyota and Lexus SULEVs

Specifically for vehicles offered in the 2015 model year, 36 percent of all Toyota, Lexus and Scion passenger cars and 20 percent of trucks are certified to SULEV or better. These vehicles include:



*Data is U.S. only and is not sales-weighted.

About This Chart: Hydrocarbons, nitrogen oxides (NOx) and carbon monoxide — all byproducts of fuel combustion — are linked to various air quality issues, including smog and acid rain, as well as a number of health effects. Limiting criteria pollutant tailpipe emissions from our vehicles helps to reduce some of the environmental impacts of driving.

The U.S. Environmental Protection Agency (EPA) and the state of California have certification programs to categorize vehicles in terms of their level of tailpipe emissions. EPA's certification program categorizes vehicles into Tier 2, Bins 1 through 8. Lower bin numbers correspond to vehicles with lower tailpipe emissions; Bin 1 is for vehicles with zero tailpipe emissions. This program requires a manufacturer's fleet average to meet a Tier 2 NOx standard of 0.07 grams per mile (gpm). (The Canadian and U.S. federal programs have equivalent standards.)

In California, the Low-Emission Vehicle II (LEV II) regulations categorize vehicles as LEV (Low Emission Vehicle), ULEV (Ultra Low Emission Vehicle), SULEV (Super Ultra Low Emission Vehicle), ZEV (Zero Emission Vehicle), or AT-PZEV (Advanced Technology Partial Zero Emission Vehicle). For the 2015 model year, the California LEV II regulations required an auto manufacturer's fleet average to meet an emission standard for non-methane organic gas (NMOG) of 0.035 gram per mile (g/mi) for passenger cars and light-duty trucks up to 3,750 pounds, and 0.043 for other light-duty trucks.

LEV III was adopted in California on December 31, 2012, and was in effect for the 2015 model year. For the 2015MY, the portion of an auto manufacturer's fleet that are certified to the California LEV III compliance, must meet an average emission standard for non-methane organic gas (NMOG) plus NOx of 0.10 g/mi for passenger cars and light-duty trucks up to 3,750 pounds, and 0.119 for other light-duty trucks.

Federal vehicle emission standards will change based on EPA's issuance of their Tier 3 rule. In Tier 3, EPA established more stringent vehicle emissions standards to reduce the sulfur content of gasoline beginning in 2017, as part of a systems approach to addressing the impacts of motor vehicles and fuels on air quality and public health. The gasoline sulfur standard will make emission control systems more effective for both existing and new vehicles. The more stringent vehicle standards will reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. This will result in significant reductions in pollutants such as ozone, particulate matter and air toxics and help state and local agencies in their efforts to attain and maintain health-based National Ambient Air Quality Standards.

These vehicle standards are intended to harmonize with California's Low Emission Vehicle program, thus creating a federal vehicle emissions program that will allow automakers to sell the same vehicles in all 50 states. The vehicle standards will be implemented over the same timeframe as the greenhouse gas/fuel efficiency standards for light-duty vehicles (promulgated by EPA and the National Highway Safety Administration in 2012), as part of a comprehensive approach toward regulating emissions from motor vehicles. The final rule became effective on June 27, 2014. Environment Canada has issued Tier 3 regulations aligned with the final U.S. Tier 3 rule.

Toyota, along with other auto manufacturers, supported efforts to harmonize the new California LEV III and federal Tier 3 programs. We worked with federal and state agencies, through their regulatory processes, to help develop rules that are both effective and feasible. Our goal was and is to maintain the flexibility to build vehicles based on customer preferences. In setting tailpipe emission regulations, we believe standards should be performance-based and take into account the interaction with other vehicle rules — such as fuel economy/greenhouse gas standards — to ensure the total package of requirements is effective and acceptable to the consumer. As with greenhouse gas emissions, fuels must be considered with vehicle technologies as a holistic system. Reduced sulfur levels in gasoline, already available for the LEV III program, are needed to enable the after-treatment systems being designed for Tier 3 compliance. Toyota annually complies with the state of California, U.S. and Canadian federal vehicle emissions programs, and we have met the requirements for each model year.

Three Toyota/Lexus vehicles were named on the American Council for an Energy Efficient Economy (ACEEE) "Greenest Vehicles of 2015" list: Toyota Prius c, Lexus CT 200h and Toyota Prius Plug-in Hybrid. The list is notable in that it takes into account a variety of criteria when determining the greenest car, including the car's emissions, emissions from the electric grid on which it charges, and energy necessary to build and dispose of the car. More information about the emissions performance of Toyota, Lexus and Scion vehicles sold in the United States can be found in EPA's Green Vehicle Guide. At the Vancouver International Auto Show in March 2015, Toyota Canada was recognized with a special "best pass rate" award for the BC AirCare Program. From 1992 through 2014, non-exempt vehicles in the Vancouver and Fraser Valley regions of British Columbia needed to pass the AirCare test to obtain mandatory auto insurance. The program performed more than 17 million total inspections on about 2.9 million individual vehicles. Among brand names with more than 500,000 initial inspections, Toyota had the highest pass rate of approximately 92 percent, with more than 1.5 million initial inspections. The overall industry average was just over 88 percent. For more than 22 years, Toyota vehicles consistently performed well in AirCare testing, demonstrating the quality and durability of Toyota products.

LEED CERTIFICATION

FG29 • Toyota’s North American Facilities With LEED® Certifications

TOYOTA FACILITY	LOCATION	YEAR	CERTIFICATION LEVEL
Chicago Service Training Center	Aurora, Illinois	2015	Gold
Lexus Eastern Area Office	Parsippany, New Jersey	2014	Platinum
Toyota Kansas City Training Center	Kansas City, Missouri	2012	NC Gold
Toyota Inland Empire Training Center	Rancho Cucamonga, California	2010	CI Gold
Toyota Motor North America, Inc.	New York, New York	2010	CI Gold
Toyota Technical Center	York Township, Michigan	2010	NC Gold
Toyota Racing Development North Carolina	Salisbury, North Carolina	2010	NC certified
Lexus Florida Training Center	Miramar, Florida	2009	CI Gold
Toyota Phoenix Training Center	Phoenix, Arizona	2009	CI Silver
North America Production Support Center	Georgetown, Kentucky	2006	CI Silver
Toyota Motor North America, Inc.	Washington, D.C.	2006	CI Silver
Portland Vehicle Distribution Center	Portland, Oregon	2004	NC Gold
Toyota Motor Sales – South Campus	Torrance, California	2003	NC Gold

NC = new construction CI = commercial interiors

About This Chart: A total of 13 Toyota and Lexus facilities have achieved Leadership in Energy and Environmental Design (LEED®) certification. LEED is a point-based system administered by the U.S. and Canadian Green Building Councils promoting a whole-building approach to sustainable construction and remodeling. LEED certification is based on meeting stringent evaluations in sustainable site development, water savings, energy efficiency, materials selection and indoor air quality.

Ranging from office space to vehicle distribution centers, these facilities represent Toyota’s continued efforts to improve the design and efficiency of all operations. The Chicago Service Training Center was the latest to be certified, earning a Gold in June 2015. This new building serves as a training facility for the region’s dealers and technicians. The center’s LEED elements included:

Salvaging and recycling over 99 percent of the waste generated during construction, diverting 946 tons of construction waste from the landfill. Whenever we construct or remodel a facility, construction and demolition waste are a top priority, especially since this type of waste constitutes 40 percent of the total solid waste stream in the United States (according to U.S. Green Building Council estimates).

Sourcing 100 percent of wood materials from FSC (Forest Stewardship Council)-certified products, ensuring environmentally sustainable harvest and re-planting practices were followed in the extraction and manufacturing of wood for cabinets, doors and lumber used on the project.

Implementing a comprehensive recycling program to collect and recycle aluminum/other metals, plastic, office paper, cardboard and glass. Recycling bins, fabricated from post-consumer recycled HDPE, are located in all regularly used spaces including classrooms and the training bays to facilitate and encourage recycling, along with individual office paper collection bins which are provided at each staff work station.

Collecting rain water from the roof and routing it to a rain garden where it is reabsorbed into the planting beds, diverting it from the storm sewer. The rain garden is planted with drought-tolerant native landscaping, eliminating the need for irrigation.

ENVIRONMENTAL MANAGEMENT SYSTEMS

FG30 • ISO 14001 Certifications of Toyota’s North American Facilities

	LOCATION	ORIGINAL CERTIFICATION DATE	DATE OF LATEST RECERTIFICATION
Manufacturing Plants	Huntsville, Alabama	2005	2013
	Long Beach, California	1998	2013
	Princeton, Indiana	1999	2014
	Georgetown, Kentucky	1998	2013
	St. Louis, Missouri	1998	2014
	Troy, Missouri	1998	2014
	Blue Springs, Mississippi	2012	2015
	Jackson, Tennessee	2007	2013
	San Antonio, Texas	2008	2014
	Buffalo, West Virginia	2000	2013
	Woodstock, Ontario	2009	2013
	Cambridge, Ontario	1998	2013
	Delta, British Columbia	1997	2015
	Baja California, Mexico	2006	2015
Vehicle Distribution Centers	Toronto, Ontario	2002	2014
	Montreal, Quebec	2003	2014
Parts Distribution Centers	Toronto, Ontario	2001	2014
	Vancouver, British Columbia	2002	2014
Sales and Regional Offices	Canadian Sales Headquarters in Toronto, Ontario	2001	2014
	Pacific Regional Office and TFS	2002	2014
	Quebec Regional Office and TFS	2005	2014
	Prairie Regional Office and TFS	2008	2014
	Atlantic Regional Office and TFS	2006	2014

Our logistics facilities in the U.S. (parts centers, parts distribution centers and vehicle distribution centers) are all operating under an ISO 14001-compliant management system that goes beyond the requirements of ISO 14001. Our Toyota Integrated EHS Management System, or TIMS, includes environmental management as well as the management of occupational safety (compliant to the OHSAS 18001 standard) and HazMat transportation. In order to dedicate additional resources to the launch of this comprehensive management system, we have not had these facilities third-party certified.

About This Chart: Environmental management systems are an essential part of Toyota's overall effort to minimize risks and achieve leading levels of environmental performance. Each Toyota location has an environmental management system (EMS) that identifies the significant environmental aspects and impacts of its operations and sets corresponding controls, goals and targets to manage and reduce these impacts over time. The facilities listed in the chart have been certified to the ISO 14001 standard, the International Organization for Standardization's standard for designing and implementing an effective environmental management system.

All ISO standards are periodically updated to keep them current and relevant. The International Organization for Standardization recently completed a four-year revision process to the ISO 14001 standard. ISO 14001:2015 is the culmination of work done by 121 expert members of ISO's Technical Committee TC207. The revision focuses on proactive initiatives, improving environmental performance, life cycle thinking, effective communication and greater commitment from senior leadership. Sheena Donald, specialist at Toyota Motor Engineering & Manufacturing North America (TEMA), was one of the 121 experts and one of only two U.S. representatives on TC 207. In August 2015, Sheena was presented with an award from the U.S. Technical Advisory Group to TC207 for "Outstanding Achievement in Standards Development and Exceptional Contributions" in the development of ISO 14001:2015.

COMPLIANCE

FG31 • Complaints and Non-Compliance

	Complaint Cases	Notices of Violation
FY10	0	0
FY11	0	2
FY12	0	1
FY13	0	0
FY14	0	0
FY15	0	0

About This Chart: Many of our activities in vehicle development, manufacturing and logistics are subject to local, state, provincial and federal laws that regulate air emissions, water discharges, storm water management, greenhouse gas emissions, waste treatment and disposal, and chemical management. These regulations vary by facility based on the type of equipment we operate and the functions performed. In fiscal year 2015, our North American manufacturing plants and logistics sites had zero regulatory violations.

Toyota's North American manufacturing plants also track the number of complaints made by third parties. There were no complaints in fiscal year 2015.