TOYOTA / North American Environmental Report / 2018

CARBON WATER MATERIALS BIODIVERSITY

ABOUT THIS REPORT

Toyota Motor North America, Inc. (TMNA) is a subsidiary of Toyota Motor Corporation (TMC). TMC is headquartered in Japan and produces *an annual environmental report,* which covers TMC initiatives as well as activities of consolidated subsidiaries and affiliates around the world.

TMNA has been producing a regional environmental report covering activities in the United States, Canada and Mexico since 2002. Our 2018 report covers TMNA activities under the Toyota and Lexus brands during fiscal year 2018 (April 1, 2017 through March 31, 2018) and product model year 2017. Data presented with different dates are clearly indicated.

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

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Cover Photo: *An aerial view of Toyota Motor North America's headquarters campus in Plano, Texas, showcases the solar panels on the roof of one of the parking structures. The 8.79-megawatt solar system supplies about one-third of the campus' annual electricity needs.*

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→ **HOME**

WELCOME TO TOYOTA'S **2018 NORTH AMERICAN ENVIRONMENTAL REPORT**, WHERE WE FEATURE INFORMATION ABOUT OUR ENVIRONMENTAL STRATEGY AND PERFORMANCE ACROSS FOUR KEY FOCUS AREAS – **CARBON, WATER, MATERIALS** AND **BIODIVERSITY** – PLUS RELATED **OUTREACH** ACTIVITIES. WE BELIEVE CONCENTRATING OUR EFFORTS WITHIN THESE CORE FOCUS AREAS WILL HAVE THE GREATEST POSITIVE IMPACT ON OUR BUSINESS, SOCIETY AND THE PLANET.

Our core focus areas are aligned with the Toyota Environmental Challenge 2050, a set of six goals that seek to challenge our impossible by encouraging us to go beyond minimizing negative impacts to creating a net positive impact on the environment and society. Challenge 2050 is part of Toyota's long-term commitment to support the creation of a more inclusive and sustainable society. Challenge 2050 is inspiring Toyota team members, partners and customers and connecting them with the company's core commitment to sustainable mobility.

Here in North America, we are working toward making the impossible a reality. We are innovating, continuously improving, thinking big and boldly, all to bring us closer to the goal of creating a net positive impact on the planet and society. In this report, you'll learn all about Challenge 2050 and how it is informing our strategy and pushing us to build a better, smarter, more sustainable future.

CARBON

POWERED BY THE SUN

The 8.79-megawatt solar system at Toyota headquarters in Plano is a state-of-the-art renewable energy system that provides about one-third of the daily electric needs for the entire campus while avoiding 7,198 metric tons of carbon dioxide emissions.

WATER

RAISING THE WATER I.Q.

The National Mayor's Challenge for Water Conservation, sponsored by the Wyland Foundation and Toyota, provides U.S. cities with a way to engage residents and raises the collective water I.Q. of the nation. Participants pledged to save over 3 billion gallons of water in 2018.

MATERIALS

DOING MORE WITH LESS

A team at Toyota's Indiana assembly plant reduced raw material use by 24,000 pounds. The team found 23 areas on the Sienna underbody where manual PVC spraying could be reduced or eliminated, with zero impact to quality.

BIODIVERSITY

WALKING WITH NATURE

The Woodstock Wetland Trail is a gift from Toyota to the local community. The trail, on the property of our assembly plant in Woodstock, Ontario, allows us to share our land with team members and the public to experience nature first hand.

DEAR READER:

At Toyota, we believe sustainable mobility goes well beyond cars. We are embracing emerging technologies to develop new products and services that offer people more ways to move – safely, responsibly and in harmony with the environment.

These beliefs are embedded in the Toyota Environmental Challenge 2050, a set of six goals that direct us to eliminate negative environmental impacts and help create a net positive impact on society and the planet by 2050. The six goals are:

- Reduce CO_2 emissions from new vehicles by 90 percent from 2010 levels,
- Eliminate CO_2 emissions in our supply chain,
- Eliminate CO_2 emissions from our operations,
- Protect water resources,
- Support a recycling-based society, and
- Operate in harmony with nature.

To reach these goals will take hard work, dedication and creativity. But, we can't achieve change on this scale alone. We need to work together. We must partner with suppliers, dealers, communities, nonprofit organizations and others and share expertise and experience with each other.

Challenge 2050 is the strongest commitment to sustainable development this company has ever made. But, challenges always bring out our best. In this report, you'll read about examples of our team members finding big and small ways to reduce energy and water consumption. They're finding new ways to recycle materials and eliminate waste. They're enhancing habitats on our sites and sharing nature with families and surrounding communities. They are also supporting communities through volunteerism, grants and educating the next generation about the importance of respecting our planet.

Our team members and our partners are working together toward a more resilient and sustainable future. I'm proud of the work we're doing and I'm happy to share our story with you.

Jim Lentz
Chief Executive Officer
Toyota Motor North America, Inc.

HIGHLIGHTS

CARBON

- Toyota and Lexus have 16 advanced technology vehicles on the market in North America, with cumulative sales topping 3.3 million.
- Toyota is building the world's first megawatt-scale molten carbonate power generation, hydrogen fuel, and pure water-producing system. When it comes online in 2020, Tri-Gen will be 100 percent renewable, supplying Toyota's vehicle logistics operation at the Port of Long Beach and making it the first Toyota facility in the world to use 100 percent renewable power generated on site.
- Toyota's 8.79-megawatt solar array at our Plano headquarters campus produces about one-third of daily electric needs for the campus. It is the largest on-site corporate solar installation among non-utility companies in Texas.

WATER

- Toyota's North American manufacturing plants recycled or reused 148 million gallons of water in fiscal year 2018. That's 148 million gallons of fresh water the plants saved, which is equivalent to the annual water use of 1,351 average American families (based on U.S. EPA's estimate that the average American family uses about 300 gallons of water per day at home).
- Toyota's assembly plant in Mississippi has reduced absolute water use by 32 percent in the last two years. Last year, the plant began using 1.4 million gallons of recycled water in the cooling tower.
- Toyota continued to sponsor the National Mayor's Challenge for Water Conservation with the Wyland Foundation. Since launching the national campaign in 2012, U.S. residents have pledged to conserve 12.3 billion gallons of water.

MATERIALS

- Toyota uses a variety of sustainable materials in our vehicles, including post-industrial denim and other cotton and synthetic garment clippings in door panel insulation, floor silencer and floor mats.
- A team at Toyota's Indiana assembly plant made a significant reduction in raw material use by decreasing the amount of PVC sprayed onto Sienna underbodies, with zero impact to quality. The amount of PVC per Sienna was reduced by 0.16 pounds, but with 150,000 Sienna minivans assembled annually, that's a 24,000-pound per year material savings.
- For several years, Toyota sites have hosted household waste collection events for team members and surrounding communities. These sites have invested close to $1 million to ensure more than 2 million pounds of material were either recycled or properly disposed.

BIODIVERSITY

- Toyota has about 1,000 acres at 12 sites engaged in conservation programs certified by Wildlife Habitat Council® (WHC).
- Toyota planted a new 11,000 square-foot pollinator garden outside the Visitor and Education Center at the Texas assembly plant. The plant is also partnering with the San Antonio Zoo to plant pollinator gardens at six local high schools.
- Toyota's Woodstock plant in Ontario opened the Wetland Trail, which meanders to the north of the assembly plant through 200 acres of wetlands and woods. The trail is a gift to the community to mark the 30th anniversary of Toyota Motor Manufacturing Canada.

OUTREACH

- In 2017, Toyota's support for National Public Lands Day made volunteerism possible at 2,100 sites, where 169,000 volunteers gave 680,000 hours of service worth $16.7 million.
- Toyota is proud to join the ranks of the top 10 companies with the most LEED®-certified retail locations. Toyota is the only automotive brand to be included in the top ranks (as of July 2018). In the U.S., Canada and Mexico, 61 Toyota and Lexus dealers have been awarded LEED certification.
- Toyota is working with logistics suppliers to reduce CO_2 emissions from transport activities. Ryder has replaced 29 diesel trucks that move goods for Toyota's assembly plant in Kentucky with trucks that run on renewable compressed natural gas (CNG). By 2021, Ryder hopes to convert one-third of its Toyota-dedicated fleet to renewable CNG.

FEATURE: CONTRIBUTING TO THE SDGS

KEVIN M. BUTT

Director, Environmental Sustainability
Toyota Motor North America, Inc.

So much needs to be done to solve the critical environmental issues facing the global community – climate change, water scarcity, resource depletion and habitat loss, to name the big ones. That's why, in September of 2015, the United Nations adopted the 2030 Agenda and Sustainable Development Goals (SDGs). The 17 SDGs and their corresponding 169 targets run from 2016 through 2030 and in that time, seek to "free the human race from the tyranny of poverty and want and to heal and secure our planet."[1] This may sound like an unrealistic mission, but the UN goals are actually achievable – if governments, businesses, nonprofits, other organizations and even individuals all do their part.

At Toyota, we are committed to doing our part. Toyota's Environmental Challenge 2050 supports many of the SDGs and shares their fundamental mission – to make the world better, safer and healthier. But we can't achieve these goals in isolation – no single entity can. These are shared problems that require a shared response. Here in North America, we believe environmental sustainability activities undertaken within our four focus areas can make significant contributions to six of the UN's Sustainable Development Goals:

FOCUS AREA	UN SDG	
Water	Goal 6	Clean Water and Sanitation
Carbon	Goal 7	Affordable and Clean Energy
	Goal 11	Sustainable Cities and Communities
	Goal 13	Climate Action
Materials	Goal 12	Responsible Consumption and Production Patterns
Biodiversity	Goals 15	Life on Land

This journey is only beginning. Achieving the SDGs and Toyota's Challenge 2050 will take careful planning. And time: We won't see progress on this massive scale overnight. Our environmental activities are about evolution – incremental, steady steps forward. They're also about innovation – finding new and creative ways to make change. They're about sharing our expertise to help others and maximize positive outcomes. And most of all, they're about doing. Our 36,000 North American team members are on board as well as suppliers, dealers and other partners. Together, we are ready to make great things happen and start our impossible toward a more sustainable future.

→ To find out more about the 17 UN SDGs, visit the UN's *Sustainable Development Knowledge Platform.*

1 *Transforming our World: the 2030 Agenda for Sustainable Development, Preamble, A/RES/70/1, adopted by the United Nations General Assembly on 25 September 2015* https://sustainabledevelopment.un.org/post2015/transformingourworld.

F1 / Contributing to the UN Sustainable Development Goals

The UN Sustainable Development Goals (SDGs) address the most urgent issues facing the world community. They call on governments, businesses, nonprofit organizations and individuals to play a role in addressing these issues. Toyota's response to the SDGs, particularly those addressing environmental issues, is centered around the six far-reaching goals within Toyota's Environmental Challenge 2050. Each major region is developing strategies and targets to help the company achieve these goals. Here in North America, our activities supporting both Challenge 2050 and the SDGs are organized by our core focus areas of Water, Carbon, Materials and Biodiversity. Our long-term strategy in each of these focus areas shows how we are taking steps to address the world's pressing environmental problems and become part of the solution.

** Toyota Motor Corporation (TMNA's parent company) recognizes additional SDGs as relevant to the global company. We only list the SDGs here considered relevant to Toyota in North America.*

TMNA FOCUS AREA: WATER

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

Water is a precious and finite resource that is critical to the survival of people and the planet, yet it is often undervalued. Through the Toyota Environmental Challenge 2050, Toyota recognizes water as a global issue that requires a local response (Challenge 4).

Some of Toyota's North American sites are in water-stressed areas, and our larger assembly plants use significant volumes of water during vehicle production, particularly in the painting process. To conserve water and improve water quality, we are developing water management plans for our sites located in areas of high water stress and limiting the levels of pollutants in our wastewater discharge to below permit requirements.

→ Find out more about how our activities contribute to meeting Sustainable Development Goal 6 on Clean Water and Sanitation in the *WATER CHAPTER* of this report.

TMNA FOCUS AREA: CARBON

ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

Access to energy is a key driver of economic growth. Given the world's growing population, clean energy is even more crucial. Energy storage, whether in second-life batteries or through stationary hydrogen storage, can help set the stage for increasing the share of renewable electricity on the grid. Through the Toyota Environmental Challenge 2050, Toyota recognizes the connection between using clean energy and limiting greenhouse gas emissions (Challenges 2 and 3).

Toyota uses energy to power our manufacturing plants, distribution centers and offices. Our suppliers also use energy to power their facilities. Ensuring energy is used efficiently and comes from renewable sources is a key component of our Carbon strategy.

→ Find out more about how our activities contribute to meeting Sustainable Development Goal 7 on Affordable and Clean Energy in the *CARBON CHAPTER* of this report.

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

More than half the world's population lives in cities. Air pollution is a major concern in cities, and many people living in cities breathe air that does not meet the air quality standards set by the World Health Organization. Through the Toyota Environmental Challenge 2050, we recognize our role in the development of sustainable transport and in reducing the environmental impacts of driving, especially in urban communities (Challenge 1).

Here in North America, we are supporting infrastructure development for hydrogen fuel cell electric vehicles, which emit no pollutants – only water. Toyota Mirai is our first hydrogen fuel cell electric vehicle, on the market in California and Quebec. We also unveiled the second generation of our hydrogen fuel cell electric Class 8 truck. The promise of zero-emission vehicles is fulfilled only when the fuel these vehicles use is created in a way that doesn't create emissions. That's why we are also researching renewable production methods for hydrogen fuel. And, we are participating in mobility projects that aim to reduce congestion.

→ Find out more about how our activities contribute to meeting Sustainable Development Goal 11 on Sustainable Cities and Communities in the *CARBON CHAPTER* of this report.

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

The global nature of climate change calls for broad cooperation in developing sustainable, low carbon pathways to the future. Toyota recognizes climate change as a global priority issue and has established three aggressive carbon goals to eliminate CO_2 emissions from our new vehicle fleet, facilities and logistics operations, and supply chain, all by 2050 (Challenges 1, 2 and 3).

Here in North America, we are working toward improving fuel economy and reducing CO_2 emissions from new vehicles, reducing absolute CO_2 emissions from our facilities and transportation activities, and increasing our use of renewable energy. We are also partnering with various stakeholders to advance infrastructure for alternative fuel vehicles, reduce congestion and develop low carbon fuels. And, we are working with suppliers to communicate our goals and help them find ways to reduce their carbon footprint.

→ Find out more about how our activities contribute to meeting Goal 13 on Climate Action in the *CARBON CHAPTER* of this report.

TMNA FOCUS AREA: MATERIALS

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Economic growth and development require the production of goods and services that improve the quality of life. But the rapid increase in global consumption of materials has come at a cost to the environment. Sustainable production and consumption patterns are required to minimize the natural resources and toxic materials used as well as the waste and pollutants generated. Through the Toyota Environmental Challenge 2050, Toyota acknowledges the need to move away from a throw-away society to a recycling-based society (Challenge 5).

Here in North America, to promote a circular economy and avoid both depletion of natural resources and environmental pollution from increasing amounts of waste, we focus on increasing reuse and recycling, reducing waste, and enhancing our use of sustainable raw materials.

→ Find out more about how our activities contribute to meeting Sustainable Development Goal 12 on Responsible Consumption and Production in the *MATERIALS CHAPTER* of this report.

TMNA FOCUS AREA: BIODIVERSITY

PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

Halting biodiversity loss has become a critical endeavor as many species slide toward extinction. To safeguard these species and their habitats, protected areas have been designated around the world. Through the Toyota Environmental Challenge 2050, Toyota recognizes the need to protect species and conserve habitat (Challenge 6).

Toyota owns more than 21,000 acres of land in North America and has facilities in or near crucial habitats. Our company believes strongly in working in harmony with nature. To that end, we partner with others to protect critical habitat and threatened species, certify projects with the Wildlife Habitat Council, and educate both our team members and communities about the importance of biodiversity.

→ Find out more about how our activities contribute to meeting Sustainable Development Goal 15 on Life on Land in the *BIODIVERSITY CHAPTER* of this report.

FEATURE: THE REAL CHALLENGE IN CHALLENGE 2050

KEVIN M. BUTT

Director, Environmental Sustainability
Toyota Motor North America, Inc.

In 2015, the Toyota Environmental Challenge 2050 was announced. Challenge 2050 has six goals – three on reducing the CO_2 emissions that cause climate change, one on conserving water, one on improving material flows, and one on protecting biodiversity – that seek to go beyond eliminating environmental impacts to creating net positive impacts on the planet and society. These six goals are the most demanding and most inspiring environmental commitments Toyota has ever made.

On the surface, the goals sound simple enough. The first three goals on Carbon call for drastically reducing or eliminating CO_2 emissions. But when you look at the challenges more closely, you'll see how complicated they really are.

Take Challenge 3, which calls for eliminating CO_2 emissions from our manufacturing and logistics activities. CO_2 is emitted from burning fuels. This means we need to eliminate CO_2 emissions from burning natural gas to heat our buildings and from combusting diesel in our logistics fleet. It also means we need to generate or purchase 100 percent renewable electricity.

We use the equivalent of more than 4 million megawatt-hours of fuel and electricity in our operations. We are using solar at some of our facilities, like our headquarters in Plano, but so far, only a small percentage of our electricity is from renewable sources. We have to find a way to scale up our renewable electricity use to meet this challenge.

But it's more than electricity. We also use natural gas and must come up with ways to heat our facilities that doesn't result in CO_2 emissions. We need to come up with unique and creative ways of generating and using thermal energy. There are a few small-scale options out there, but we need options that will work at all of our manufacturing facilities and every other location.

And in the case of our trucking fleet, we need to replace diesel as the fuel of choice. Our Project Portal hydrogen fuel cell electric truck is a step in that direction, but so far, it's only two trucks. Some of our third-party logistics carriers have begun to transition away from diesel, but we have a lot of trucks between our owned fleet and our third-party fleet.

Then we have Challenges 4, 5 and 6. These three are still being refined because the issues they address – water, materials and biodiversity – are more dependent on regional circumstances. Take Challenge 4 as an example. We know we need to conserve water and protect water resources, but water is such a local issue that each region must come up with its own way of conserving and protecting. We can't just use less water. We must use less water where water isn't so abundant.

At our headquarters in Plano, we installed a rainwater collection system so that we wouldn't need to purchase as much water from the city. Here in North America, we are focusing on water-stressed areas, particularly those areas where water scarcity is an issue. Some of our sites in California, Texas and Mexico are in areas where having enough water to operate isn't always a given.

Nothing about Challenge 2050 is simple, except the reasoning behind it. Toyota considers sustainable development to be a key driver of the company's global strategy. We know that our future – our health and well-being – depends on clean air, clean water and diversity in nature to provide us with medicines and other ecosystem services.

Challenge 2050 will not be achieved through continuous improvement alone. It will take new ideas and new technology. It will take creativity and thinking outside the box. It will take working with partners who will help us find success along the way.

Toyota's "Start Your Impossible" global campaign was rolled out during the Olympic Games in early 2018, but it's also applicable to Challenge 2050. Challenge 2050 on the surface sounds impossible – the whole idea of creating a net positive impact on the planet and society seems unattainable. But we have started our impossible. We have been reducing environmental impacts for years, and we are starting to see how we can turn that into net positive. We did it when we donated so many assets – furniture, computers, books and an entire building – when we vacated offices in Kentucky and California. We're doing it in Plano by selling renewable energy generated on weekends back to the grid and when we help our communities recycle household waste like old television sets.

And we'll keep doing it, step by step, until we achieve our goals. I look forward to sharing more examples of creating net positive in future reports. In the meantime, we'll continue doing the impossible and doing our part to build a better future.

Toyota's "Start Your Impossible" global campaign was rolled out during the Olympic Games in early 2018, but it's also applicable to Challenge 2050.

FEATURE: BUILDING FOR THE FUTURE

MARK YAMAUCHI

LEED AP®
Manager, Environmental Sustainability
Toyota Motor North America, Inc.

Toyota team members have always been directed by the company's guiding principles of continuous improvement, known to us as *kaizen*, and elimination of *muda*, or elimination of any waste from the process of manufacturing our vehicles. But did you know that our relentless focus on *kaizen* and eliminating *muda* extends well beyond our manufacturing operations? We recognize that our building footprint is significant, and our work to minimize and optimize its environmental impacts is, therefore, directed by these same Toyota guiding principles.

As our physical building footprint started increasing in the late 1990's, we made a concerted effort to apply environmental guidelines and our guiding principles to the way we design, construct and operate our facilities. The goal was to ensure the application of sustainable practices in our projects. This approach was used in 2000 as design began for the former Torrance, California, headquarters campus expansion known as South Campus. This 643,000 square-foot project increased the size of the headquarters campus by 47 percent and, when completed in 2003, was the largest commercial LEED Gold® building in the world. South Campus was also home to what at the time was the largest commercial rooftop solar photovoltaic system as well as many other sustainable features.

Since then, our North American real estate holdings have grown, and several facilities have undergone expansions. During this time, we have continually refined our approach to green building and construction.

So, in 2014, when it was announced that Toyota would be relocating to a new state-of-the-art sustainable campus in Plano, Texas, we were ready to scale up our approach for the new North American Headquarters.

What did we do? We aimed to incorporate the highest levels of sustainable features in all aspects of the new campus. These are the key steps we took as we progressed through designing, constructing and commissioning our new campus:

- Set project-specific sustainability **vision** and **aspirational goals**.
- Addressed Toyota Motor North America's four environmental focus areas of **Carbon**, **Water**, **Materials** and **Biodiversity**.
- Took an **integrated** as well as **holistic design and delivery** approach to ensure participation from designers, engineers, contractors and user stakeholders at project conception and continually through completion and commissioning.
- Challenged the project team to be innovative and aspire for leadership in environmental sustainability.
- Reviewed various third-party certification programs for their best practices and guidance.

- Used a **deductive approach** rather than an additive approach to sustainability.
- Evaluated possibilities and implemented options based on long-term environmental performance and financial value as well as initial cost

Our efforts to integrate environmental sustainability into the design and construction of Toyota's North American headquarters campus was recognized by the U.S. Green Building Council with the award of three LEED Platinum® certifications.

For our new headquarters campus, the **vision and goals** were set at the very beginning. These included visions of being net positive for renewable energy and net positive for water. Net positive means we would generate more electricity than we use and collect more rainwater than the total amount of water we use. In fact, as part of the Request for Proposal process, candidate architectural firms had to describe how their company and their design would address and respond to these visions of net positive. They had to show how closely they could design a campus that moved beyond just minimizing environmental impacts to one that actually would have a positive impact on the Plano community.

Integrated sustainability was incorporated into the very early stages of conceptual design using a **deductive approach**. This meant that we aimed to leave "no stone unturned" in looking at incorporating sustainable design and systems opportunities. All options were discussed and evaluated from the beginning.

While every option was discussed, not everything made sense for the project. For instance, using a geothermal system to assist the buildings' cooling system seemed like a good idea to reduce electricity consumption. A good idea, that is, until analysis showed, due to the heavy cooling load imposed by the hot northern Texas summer, the ground temperature would be raised by two degrees!

Wind power in Texas seemed to make sense until we realized the wind turbine blades would be more than 300 feet in diameter and their noise level would not be so neighborly.

Here are a few of the features that we did end up with at the new campus:

CARBON – We installed the largest commercial, non-utility solar photovoltaic system in the state of Texas at 8.79 megawatts, which provides about a third of the power needs for the campus.

WATER – We installed a rainwater harvesting system that at the time of installation was the largest commercial system in the U.S. The collected rainwater provides water for landscaping irrigation. Additionally, in the buildings, water-efficient fixtures and reuse of gray water to flush lavatories result in substantial conservation of potable water.

MATERIALS – We recycled 99 percent of the construction and demolition waste and were the first customer at the first construction and demolition recycling processing facility in northern Texas.

BIODIVERSITY – Native North Texas Blackland Prairie species were planted as part of an integrated design that helps to minimize water use, chemical amendments, mowing and trimming, and landscape waste, while simultaneously addressing management of pests and invasive species and promotion of pollinators by design.

Our efforts have been recognized by the U.S. Green Building Council with the award of three LEED Platinum® certifications for the campus.

We applied all these same principles to two other construction projects, one in York, Michigan, and one in Georgetown, Kentucky. Both projects are anticipating a high level of LEED® certification. And, many of our dealers have followed our lead. In fact, we have more Toyota/Lexus LEED-certified dealerships than our competitors combined.

The new Toyota supplier center in York, Michigan

The new Toyota Production Engineering and Manufacturing Center in Georgetown, Kentucky

We've learned a great deal from these experiences and we are applying our learning to other projects. We continue to refine our approach to green building, looking for ways to minimize the environmental footprint of our buildings and maximize our positive impacts. Not all projects will pursue LEED certification, but all will aim to incorporate sustainable features to the greatest practical extent.

These actions support Toyota's Environmental Challenge 2050, which aims to go beyond merely minimizing environmental impact to creating net positive change. We look forward to sharing our green building successes in future reports, including the renovation of our facility at the Port of Long Beach in California that is currently underway.

STRATEGY

INTRODUCTION TO STRATEGY

Toyota's global vision of Respect for the Planet is a core value of the company and a driving force behind our environmental initiatives. Respect for the Planet is also the foundation for Toyota Motor North America's (TMNA's) environmental sustainability strategy.

In 2015, our parent company unveiled the Toyota Environmental Challenge 2050, which builds on the core value of Respect for the Planet and provides a blueprint for the next 30-plus years. Challenge 2050 consists of six goals that seek to go beyond zero environmental impact and create a net positive impact on society and the planet. In North America, we developed a regional Environmental Mission Statement that aligns Respect for the Planet and Challenge 2050 with our four focus areas and five-year environmental action plan.

01

TOYOTA MOTOR NORTH AMERICA

2050 Environmental Sustainability Strategy

RESPECT FOR THE PLANET is one of Toyota's core values. To demonstrate the company's commitment to this value, Toyota issued the Environmental Challenge 2050, a set of six global challenges that will move our company beyond zero environmental impact to achieving a net positive impact on society. Here in North America, we have developed a strategy to align with these six challenges and achieve a net positive impact in our region.

Environmental Challenge 2050

To go beyond zero environmental impact and achieve a net positive impact:

1. Eliminate almost all CO_2 emissions from new Toyota vehicles
2. Eliminate all CO_2 emissions from the manufacturing of parts and materials used to produce Toyota vehicles
3. Eliminate all CO_2 emissions from Toyota facilities, logistics and processes
4. Ensure all Toyota facilities and processes conserve and protect water resources
5. Ensure all Toyota facilities and processes support a recycling-based society
6. Ensure all Toyota facilities and processes operate in harmony with nature

TMNA Environmental Mission

TMNA will demonstrate Respect for the Planet and achieve a net positive impact on society and the environment by:

1. Supporting Toyota's global Environmental Challenge 2050 through our five-year Environmental Action Plans and regional strategy
2. Managing priority issues specific to the North American region
3. Engaging in outreach by promoting awareness, developing strategic partnerships and sharing know-how with business partners and other stakeholders to create positive change

TMNA Focus Areas

TMNA has organized its priority issues into four focus areas:

Carbon | Water | Materials | Biodiversity

TMNA 5-Year Environmental Action Plans

Five-year targets in the following areas ensure incremental progress toward our 2050 goals:

- **Four Focus Areas**
- **Outreach**

ENVIRONMENTAL CHALLENGE 2050

The Toyota Environmental Challenge 2050, unveiled in September 2015, consists of six challenges that seek to go beyond merely minimizing environmental impact, to creating net positive change. For an overview of Challenge 2050 and how it relates to our focus areas and our activities in North America, please see *ENVIRONMENTAL 101*

Our four position statements, released in April 2018 as part of Toyota's Thought Leadership Summit in Sonoma, California, represent Toyota's roadmap in North America for how to attain sustainable development in four key areas by 2050. They describe TMNA's strategy for achieving Challenge 2050.

- *CARBON Position Statement*
- *WATER Position Statement*
- *MATERIALS Position Statement*
- *BIODIVERSITY Position Statement*

Achieving Challenge 2050 will require innovation, creativity and new ideas. We will not get there by continuous improvement alone. For more on what it will take to achieve Challenge 2050, see the *FEATURE STORY: The Challenge in Challenge 2050.*

02 / The Toyota Environmental Challenge 2050 at Work in North America

Toyota Motor North America (TMNA) has aligned our core focus areas with the Toyota Environmental Challenge 2050. In each focus area, we are working toward zero environmental impact and, with outreach, toward a net positive impact for society and the planet.

PRIORITY ISSUES

A global materiality assessment was conducted by our parent company, Toyota Motor Corporation (TMC), as part of developing the Toyota Environmental Challenge 2050. TMC evaluated global trends, risks and opportunities, including the United Nations (UN) 2030 Agenda and the 17 Sustainable Development Goals (SDGs), and identified the following serious environmental issues facing society and the planet:

- Extreme weather phenomena attributed to greenhouse gas emissions
- Aggravated air pollution in cities
- Water shortages due to population growth
- Resource depletion
- Ecosystem fragmentation and biodiversity loss

TMC then evaluated the importance of these issues to Toyota and external stakeholders. As a result of this process, TMC identified six material issues:

1. CO_2 emissions from new vehicles
2. CO_2 emissions from upstream activities and end-of-life treatment of vehicles
3. CO_2 emissions from vehicle manufacturing
4. Water stewardship
5. Materials management
6. Biodiversity protection

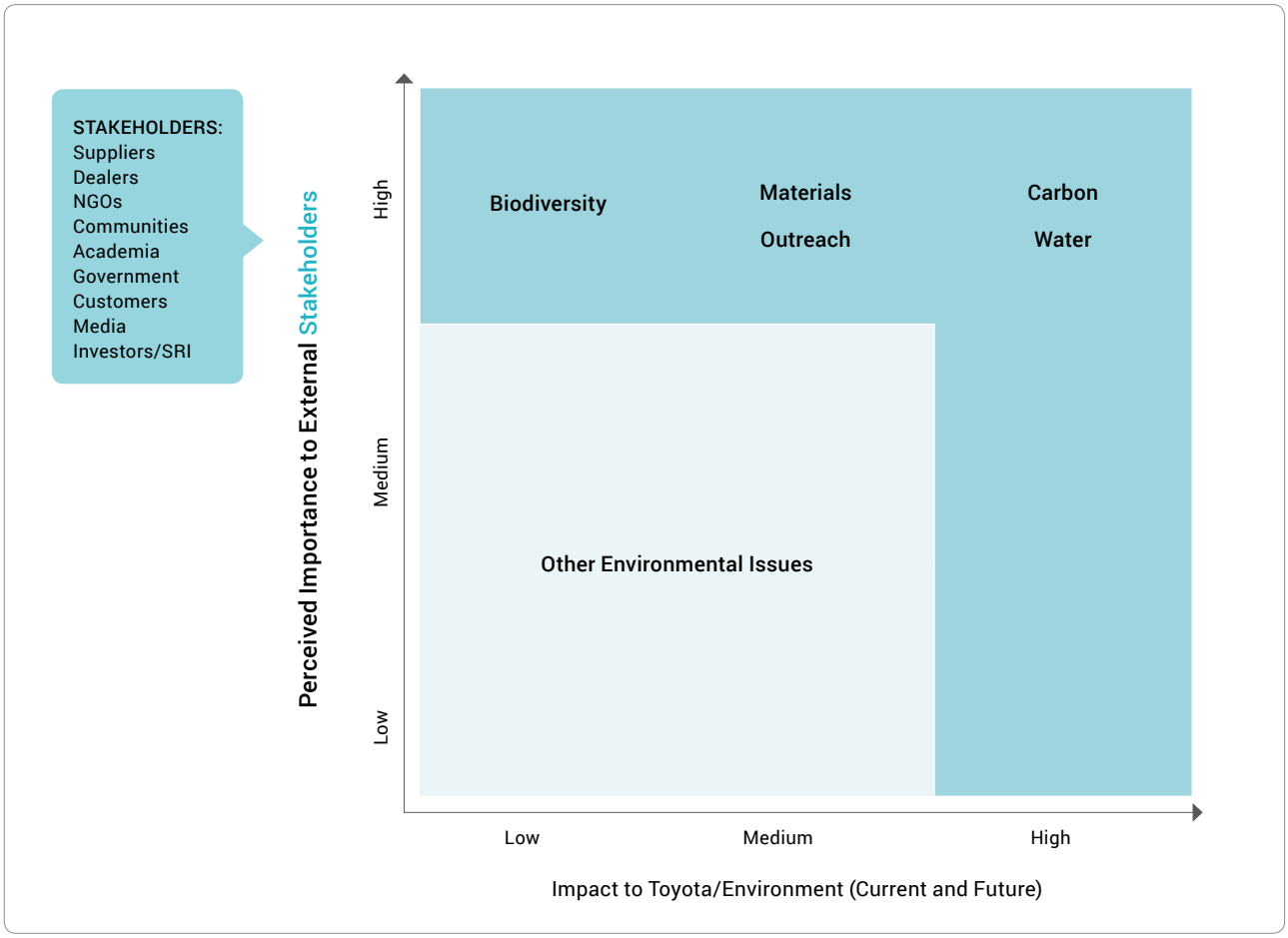
TMC addresses these six issues in the Toyota Environmental Challenge 2050, which consists of six environmental goals for creating a net positive impact on our planet.

TMNA's process in North America followed a similar path. Our identification of priority issues aligns with TMC's but consolidates the three CO_2 emissions challenges into a single issue we call "Carbon." We also call out the importance of sharing know-how for achieving a net positive impact by 2050. Our priority issues in North America are our four focus areas – Carbon, Water, Materials and Biodiversity – as well as Outreach.

We continue to manage other environmental issues, including air quality and green building, and we are as dedicated as ever to compliance with all applicable environmental laws and regulations. See *Performance* for information on our activities and progress in these areas.

→ See the feature story on *Contributing to the UN Sustainable Development Goals* for information on how Toyota's environmental sustainability activities are supporting the UN's 2030 Agenda and SDGs.

03 / Priority Environmental Issues for Toyota Motor North America (Materiality)



The environmental materiality assessment for Toyota Motor North America complements the global assessment conducted by our parent company, Toyota Motor Corporation (TMC). TMC's assessment identified six material environmental issues: CO_2 emissions from vehicles, CO_2 emissions from upstream activities and end-of-life treatment of vehicles, CO_2 emissions from vehicle manufacturing, water conservation, materials management and biodiversity protection. These are the issues addressed in the Toyota Environmental Challenge 2050, which establishes six environmental goals for creating a net positive impact on our planet. Our identification of priority issues aligns with TMC's, but consolidates the three CO_2 emissions issues into a single issue we call "Carbon." We also call out the importance of outreach for achieving a net positive impact by 2050.

We continue to manage other environmental issues, including air quality and green building, and we are as committed as ever to compliance with environmental laws and regulations.

2021 TARGETS

TMNA's Environmental Action Plan (EAP) for fiscal years 2017 to 2021 is organized by focus area and the six goals of Toyota's Environmental Challenge 2050. The targets put us on a path to achieving all six goals. We know there is much to do and a long way to go, but we are putting the building blocks in place for a successful strategy, which, by 2050, is expected to result in net positive impacts to society and the planet.

04 / TMNA ENVIRONMENTAL ACTION PLAN, FY2017-2021

FOCUS AREA/ CHALLENGE 2050	FY2021 TARGET	STATUS	FY2018 PROGRESS
CARBON Challenge 1 Challenge 2 Challenge 3	Foster accelerated adoption of next-generation vehicles by continuously supporting education and infrastructure deployment	△	• Supported education initiatives and continued participation in the Hydrogen Council • Partnering with Shell, FirstElement Fuels, Linde and Air Liquide on hydrogen infrastructure
	Advance the development and utilization of low carbon fuels	△	Working on developing renewable hydrogen fuel for the hydrogen fuel cell electric truck at the Los Angeles ports
	Develop a mobility project in North America that reduces congestion and GHGs	△	Developing a ride share program for Plano Headquarters
	Improve absolute GHG emissions from North American operations 15% from a baseline of FY2016	△	Total GHG emissions increased but we finished developing a plan that will decrease absolute emissions by FY2021
	Improve GHG emissions intensity from all logistics 5% from a baseline of FY2016	△	• Improved GHG intensity from owned and third-party U.S. parts and vehicle logistics by 14% compared to FY2016 • Data collection for manufacturing logistics is in process
WATER Challenge 4	Prioritize and implement water stewardship plans for facilities in water-stressed areas	△	• Mapped major sites with Aqueduct™ • Prioritized 15 sites in areas of "high" water stress according to Aqueduct™
MATERIALS Challenge 5	Reduce the use of packaging material	△	Piloting RFID chips to reduce returnable container losses and avoid the need to build and buy as many new ones
BIODIVERSITY Challenge 6	Partner with third parties and other Toyota regions to protect globally recognized biodiversity hotspots	△	• Continued participating in WWF partnership with TMC
	Partner with others to help protect and preserve natural habitat in North America	△	• Protecting ~ 1,000 acres through Conservation Certification® with the Wildlife Habitat Council® • Hosted NPLD events at 30+ sites and supported 2,100 sites nationwide
	Participate in regional biodiversity activities that support wildlife corridor(s)	△	Planted new pollinator gardens at the new production engineering and manufacturing center in Kentucky and outside the visitors center at the assembly plant in Texas
	Achieve 20 WHC Conservation Certifications by 2021	△	• Maintained 12 WHC Conservation Certifications • In the process of identifying programs for future certification

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

GOVERNANCE

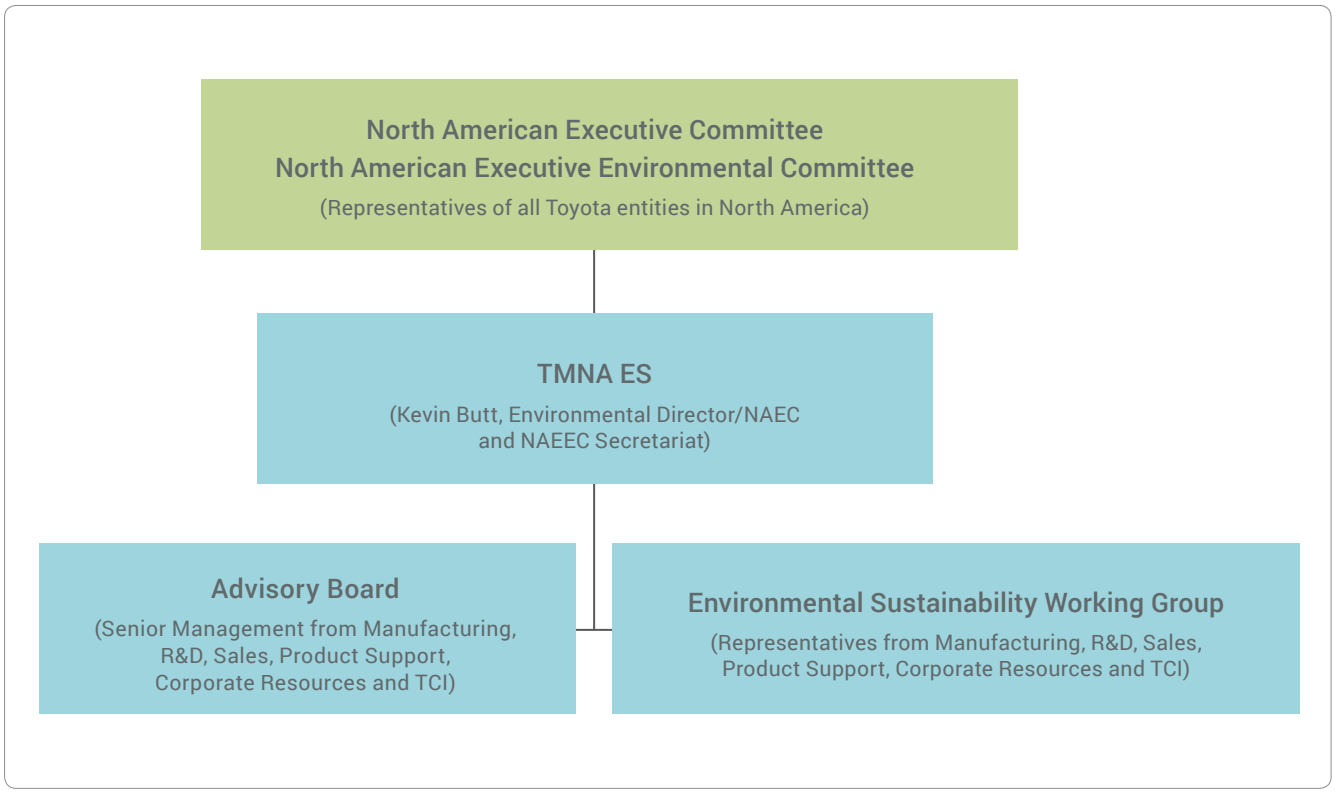
TMNA's Environmental Sustainability (ES) department reports to the North American Executive Environmental Committee (NAEEC) and serves as the chief environmental body representing Toyota entities in North America. ES, in cooperation with the NAEEC, establishes activities and provides one voice for appropriate responses to environmental sustainability issues in North America. The ES department'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.

TMNA ES facilitates an Advisory Board and Working Group as a coordinating mechanism across the organization. Both are comprised of environmental experts and representatives from various divisions:

- Manufacturing
- Research and Development
- Sales
- Product Support
- Corporate Resources (includes Regulatory Affairs and Legal)
- Social Innovation
- Compliance and Audit
- Toyota Canada Inc. (TCI)

This report contains information from these divisions. Representatives from these divisions also participate in focus groups that concentrate on a particular environmental issue (such as water or biodiversity). These focus groups report to the Environmental Sustainability 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 among team members

05 / Environmental Governance in North America



CARBON

David Absher, senior manager of Environmental Sustainability for Toyota Motor North America, holds a solar panel like the ones installed on the rooftops of the parking garages at our headquarters in Texas. The solar array contains 20,000 panels and provides one-third of the daily electric needs for the entire campus.

CARBON

"CARBON" IS ONE OF TOYOTA'S FOUR FOCUS AREAS IN NORTH AMERICA. OUR CARBON STRATEGY ADDRESSES CHALLENGES 1, 2 AND 3 OF THE TOYOTA ENVIRONMENTAL CHALLENGE 2050 THROUGH **REDUCING CO_2 EMISSIONS FROM NEW VEHICLES, ELIMINATING CO_2 EMISSIONS FROM MANUFACTURING** AND **SHARING OUR KNOW-HOW** WITH OTHERS. CLIMATE CHANGE AFFECTS PEOPLE IN ALL PARTS OF THE GLOBAL COMMUNITY. WE ARE WORKING AT EVERY STAGE OF THE VEHICLE LIFE CYCLE TO HELP THE WORLD BUILD A LOW CARBON FUTURE.

INTRODUCTION TO CARBON

Earth's average temperature has risen over the past century. Human influence on the climate system is clear: Anthropogenic greenhouse gas (GHG) emissions have increased since the pre-industrial era driven largely by economic and population growth. From 2000 to 2010, emissions were the highest in history.[2]

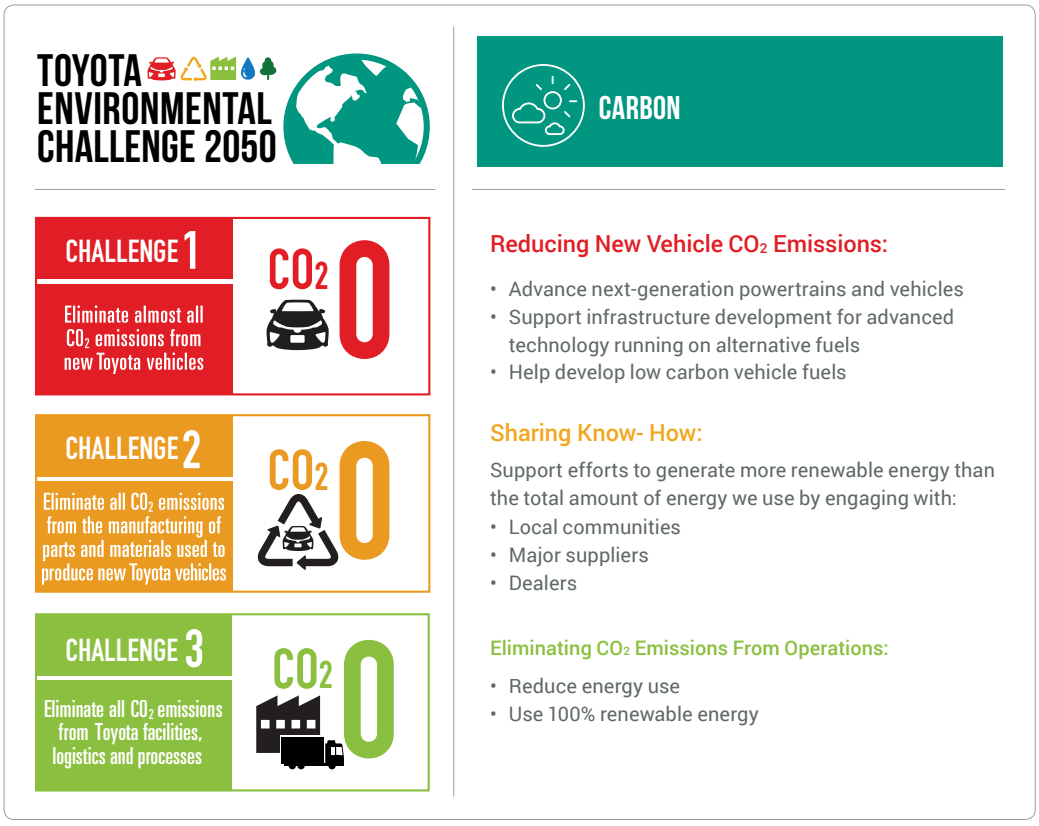
Continued emission of greenhouse gases (GHGs) – including carbon dioxide – is expected to cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and likely irreversible impacts for people and ecosystems. Surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation and storm events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level to rise.

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) concludes climate risk can only be limited by substantial and sustained reductions in GHG emissions, together with adaptation measures.

To address climate change issues, we've developed a North American strategy through 2050. To learn about our strategy and how it relates to Toyota's global Environmental Challenge 2050, read our *Carbon Position Statement.*

06 / TMNA's Approach to a Low Carbon Society

Our CARBON focus area relates to Challenges 1, 2 and 3 of Toyota's Environmental Challenge 2050. This challenge recognizes climate change as a global issue that must be addressed across the vehicle life cycle. Toyota is ready to do our part to build a low carbon future. Here in North America, we developed an approach to conquering this challenge that involves three actions:



2 *Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) "Climate Change 2014: Synthesis Report"*

CARBON TARGETS

Between fiscal years 2017 and 2021, Toyota Motor North America (TMNA) will:

Foster Accelerated Adoption of Next-Generation Vehicles by Continuously Supporting Education and Infrastructure Deployment (on track)

EDUCATION

We engage in a variety of activities to educate customers and the public about our advanced technology vehicles. For example, we host ride and drive events, participate in demonstration programs with universities and government agencies, and support influential opinion leader forums such as the Aspen Institute and the Environmental Media Awards.

Toyota is a Steering Committee member and former co-chair of the Hydrogen Council, a global initiative of leading energy, transport and industry companies with a united vision and long-term ambition for hydrogen to foster the transition to a low carbon society. Launched at the 2017 World Economic Forum in Davos, the Council is led by two Co-Chairs from different geographies and sectors, currently represented by Air Liquide and Hyundai.

The Hydrogen Council works with and provides recommendations to several key stakeholders such as policy makers, investors, international agencies and civil society to achieve these goals. For example, on September 18, 2017, the Hydrogen Council hosted its inaugural Investor Day – **Hydrogen: Ready to Scale**. As an affiliate event of New York Climate Week, the ground-breaking event boasted more than 160 investors, industry experts and policy stakeholders. Tom Stricker, vice president of Product Regulatory Affairs for TMNA, spoke on a panel "Market Ready Hydrogen Technologies." Panels covered how hydrogen empowers the energy transition, why these technologies are now considered market-ready, existing business cases and investment opportunities, and the strategies and tools required for scale deployment.

INFRASTRUCTURE DEPLOYMENT

Hydrogen fueling stations compress and cool processed hydrogen to deliver it safely to fuel cell electric vehicles (FCEVs). Hydrogen stations operate a lot like gasoline stations and it takes only about five minutes to refill the tank of Toyota's Mirai.

The availability of hydrogen fueling infrastructure is one of the most important elements in commercializing fuel cell electric vehicles like the Mirai. Toyota Canada has been working closely with partners over the past year to ensure the introduction of an appropriate fueling infrastructure in Quebec province. In June 2018, Canada's first public retail hydrogen refueling station opened in Vancouver. Toyota will launch Mirai in Quebec in early 2019.

The University of California Irvine estimates only 68 stations are needed to support 10,000 fuel cell electric vehicles state-wide, and 35 are already operating. Additionally, the state of California has earmarked $200 million for as many as 100 more hydrogen stations in the next several years. **Shell**, in partnership with Toyota, will be installing hydrogen refueling equipment at seven new retail stations in California. Furthermore, Toyota has helped fund the development of hydrogen infrastructure that is already supporting a growing community of thousands of FCEV drivers:

- **FirstElement Fuels**, as part of a financial agreement with Toyota, 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. As of June 2018, FirstElement has successfully opened 19 stations and has been awarded government grants to develop 12 more.
- Industrial gas supplier **Linde LLC** opened a hydrogen fueling station on Toyota-owned property in San Ramon, California, adjacent to Toyota's San Francisco Regional Office and Parts Distribution Center. This location serves local and regional customers and functions as an important connector site between the Sacramento and San Joaquin Valleys and the San Francisco Bay Area.
- In the northeastern United States, Toyota and **Air Liquide** are collaborating to develop and supply a fully integrated hydrogen fueling infrastructure network of 12 stations to support the introduction of Mirai on the East Coast.

→ See also the *target to advance the development of low carbon vehicle fuels* for information on the hydrogen refueling station being built at Toyota's logistics operation at the Port of Long Beach in California.

Advance the development of low carbon vehicle fuels (on track)

The promise of zero-emission vehicles is fulfilled only when the fuel these vehicles use is created in a way that doesn't create emissions. This is true for both electricity and hydrogen. TMNA is working on developing renewable hydrogen fuel for the hydrogen fuel cell electric truck being piloted at the Ports of Los Angeles and Long Beach.

Equilon Enterprises LLC, doing business as Shell Oil Products US (Shell), and Toyota have been awarded $8 million by the California Energy Commission (CEC) to develop the first hydrogen-truck refueling station at the Port of Long Beach. The funding forms part of the CEC's Alternative and Renewable Fuel and Vehicle Technology Program, which helps develop hydrogen and electric infrastructure at ports, warehousing and distribution centers in California.

Shell and Toyota expect the facility to encourage the use of zero-emission hydrogen fuel cell electric trucks in and around Long Beach, one of the world's largest freight hubs.

Shell will build, own and operate a hydrogen station at the Toyota Logistics Services location at the Port of Long Beach, fueling Toyota's Project Portal heavy-duty hydrogen fuel cell electric proof of concept truck and public fleets. Shell will source its hydrogen from Toyota's adjacent Tri-Gen facility, which will produce hydrogen from 100 percent renewable bio-gas. Please see *here* for more information on the Tri-Gen facility.

Implement a mobility project in North America that reduces congestion and GHGs (on track)

Toyota President Akio Toyoda addressed TMNA team members in his January 2018 global company address, and the primary message was that Toyota is transitioning from a car company to a mobility company. To support this goal, TMNA is researching, partnering and piloting different types of mobility, many of which don't involve owning a vehicle. In 2018, TMNA launched a shared commute program at our new North American headquarters in Plano, Texas. The goal of the program is to reduce both the environmental and societal impacts of single-occupancy vehicles during peak commute times. The app-based, flexible system allows team members to commute together using hybrid Toyota vehicles located in easily accessible locations in neighborhoods and near heavy commute corridors. Our experience with this program is providing us with key insights on how to market and operationalize this type of program, the primary motivations for using (or not using) the program, and how to maintain rider loyalty. These are all important lessons learned that will help us improve and develop future programs.

Toyota is offering a shared ride program at the headquarters campus in Plano, Texas, using Toyota hybrid vehicles, such as Camry Hybrid.

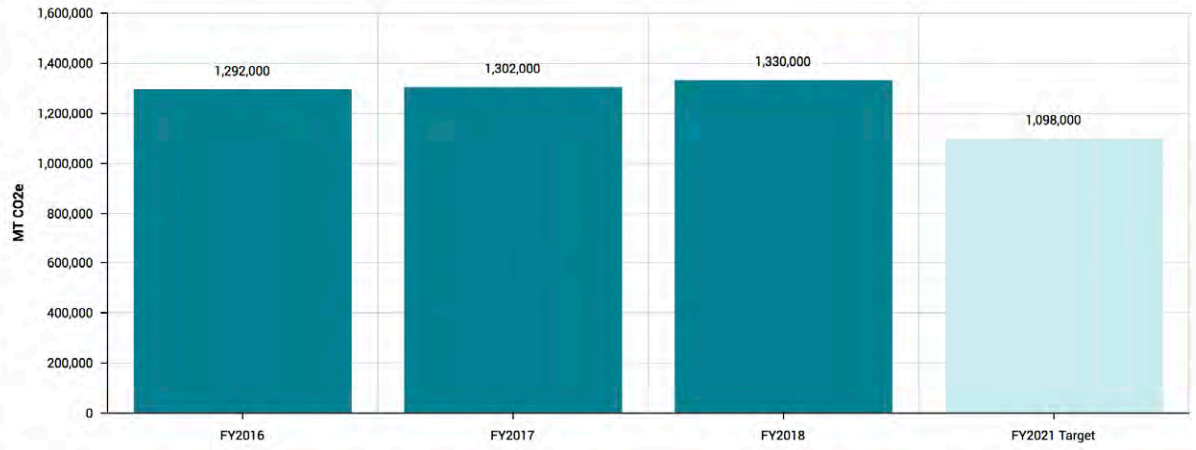
Reduce absolute GHG emissions (Scopes 1 and 2) from North American operations 15 percent, from a baseline of fiscal year 2016 (on track)

Scope 1 and 2 greenhouse gas (GHG) emissions increased between fiscal years 2017 and 2018. Despite an overall decrease in production, Toyota assembled more trucks at our plants in Texas and Mexico, where GHG emission factors are higher than at plants where production decreased.

We recently developed a GHG reduction plan for our sites that addresses GHG and energy efficiency as well as renewable energy use. Once the projects in this plan come online, we expect to see significant decreases in total emissions.

→ See *Eliminating CO_2 From Operations* for more on our activities to reduce energy use and GHG emissions.

07 GHG Emissions from Toyota's North American Operations



*Includes Scope 1 and Scope 2 GHG emissions from all Toyota Motor North America operations, including manufacturing, R&D, logistics and offices.

Reduce GHG emissions intensity from all logistics (owned and third-party) by 5 percent, from a baseline of fiscal year 2016 (on track)

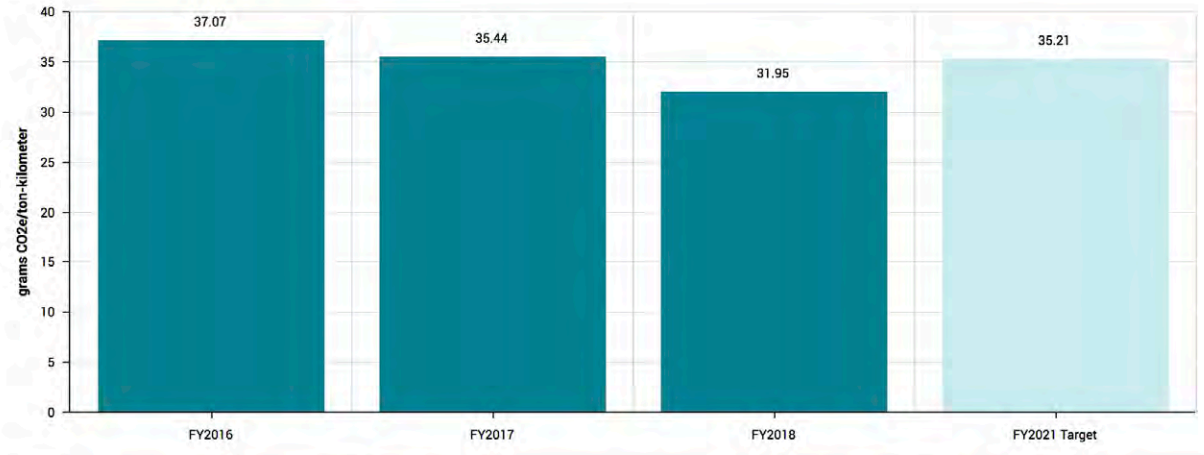
For fiscal year 2018, we report GHG intensity from owned and third-party U.S. service parts/accessories and vehicle logistics from all transport modes (trucking, marine, air and rail). We have restated data from previous years to account for a larger scope (previously, we only reported data from vehicle logistics). We will include manufacturing production control logistics in next year's report.

These logistics operations improved GHG intensity by nearly 14 percent compared to the baseline year (fiscal year 2016). We expect to see continued improvements as additional third-party carriers adopt GHG reduction plans.

→ For more information on activities to reduce GHG emissions from our own logistics, *click here.*

→ See *Third-Party Logistics* for information on how we work with third-party carriers.

08 GHG Intensity from U.S. Vehicle logistics (owned)



***Scope** = GHG emissions intensity from owned and third-party service parts/accessories and vehicle transport activities (e.g., trucking and rail).*

REDUCING NEW VEHICLE CO_2 EMISSIONS

The combustion of gasoline while driving results in CO_2 emissions. Challenge 1 of the Toyota Environmental Challenge 2050 calls on all Toyota regions globally to reduce CO_2 emissions from new vehicles by 90 percent by 2050, from a 2010 baseline.

To achieve this challenge, Toyota is pursuing multiple pathways to reduce vehicle fuel consumption and greenhouse gas (GHG) emissions in our global markets. We try to best match technologies to customer needs and government policies 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 features and performance.

There are several factors that must be weighed when considering the appropriate match. That's why we research driving trends, sociological behaviors, the changing energy and transportation landscape, and the evolution of cities. Government initiatives can also influence the adoption of advanced technologies where the market and supporting infrastructure are still developing. Researching these factors helps us understand which technologies are best suited for the circumstances in a given market.

Although the continued evolution of vehicle technology is critical to achieving zero emissions, vehicles and fuels must be evaluated as a system. That's why our vehicle portfolio approach considers the diversity of alternative transportation fuels currently available as well as those on the horizon.

For additional information related to vehicle CO_2 emissions in other sections of this report, please see the following:

- Toyota's approach to electrification *(Electric Avenue).*
- TMNA's target to foster accelerated adoption of *next-generations vehicles.*
- TMNA's target to advance the development of *low carbon vehicle fuels.*
- *Project Portal 2.0,* the heavy-duty hydrogen fuel cell electric truck being piloted at the Los Angeles ports.
- For information related to our fuel economy and vehicle GHG performance, see the Performance section *(Vehicle CO_2 Emissions).*

ADVANCING CONVENTIONAL TECHNOLOGY

In last year's environmental report, we highlighted the Toyota New Global Architecture (TNGA) Camry and Camry Hybrid, which both exemplify key elements of our technology strategy for simultaneously reducing vehicle CO_2 emissions, increasing fuel economy and boosting vehicle performance. Toyota is proud to announce new vehicle models that build upon the technology advancements showcased by the 2018 Camry. In the Toyota lineup are the new 2019 Avalon, Corolla and RAV4, while in the Lexus lineup, the new 2018 LS and 2019 UX demonstrate a balance of performance and luxury with groundbreaking vehicle efficiency. Continuing the use of TNGA enables many of the groundbreaking technologies to be more easily shared with future vehicles and is helping Toyota realize our commitment to "making ever-better cars." TNGA's integrated development supports the concept of total optimization for a lightweight, streamlined, high-performance platform and powertrain unit. TNGA helps us meet consumers' needs while continuing to improve the efficiency of our vehicles.

2019 TOYOTA AVALON

The 2019 Avalon follows the lead of the 2018 Camry by utilizing two TNGA powertrains: a punchy 3.5-liter V6 and a 2.5-liter Dynamic Force four-cylinder Toyota Hybrid System II. Compared to its predecessor, the new Avalon Hybrid is more fuel-efficient with a combined EPA-estimated rating of 44 mpg, runs cleaner and is more powerful.

2019 TOYOTA RAV4

The completely redesigned 2019 RAV4 is powered by the same 2.5-liter Dynamic Force engine used in the Avalon and Camry to bring leading fuel efficiency to Toyota's crossover segment. These advancements encompass Toyota's vast catalog of advanced engine technologies when paired with chassis innovations, resulting in improved aerodynamics, handling and fuel efficiency.

2019 TOYOTA COROLLA HATCHBACK

The newly designed 2019 Toyota Corolla Hatchback unveils the new TNGA 2.0-liter inline four-cylinder Dynamic Force direct-injection engine that is both smaller and lighter than the engine it replaces. In addition to the advanced TNGA engine embodying technologies like the 2.5-liter version described above, aluminum and high- and ultra-high tensile steel lighten the Corolla Hatchback's chassis and body while the vehicle structure employs a mixture of adhesives, spot welding and additional bracing. The 2019 Corolla Hatchback's torsional rigidity is a massive 60 percent improved compared to its predecessor. The total package enhances vehicle responsiveness while reducing fuel consumption. This commitment to overall vehicle development for a conventional internal combustion engine vehicle makes the new 2019 Corolla Hatchback better for the environment than the previous model while giving it a "fun-to-drive" identity. The 2019 Corolla Hatchback XSE (with automatic CVT) has a preliminary 33 combined mpg (estimated by Toyota).

2018 LEXUS LS 500 HYBRID

The 2018 Lexus LS Hybrid made its debut at the beginning of 2018 and showcases the Lexus brand's commitment to innovative and groundbreaking technologies in the luxury car segments. The Lexus LS 500h utilizes a 10-speed transmission combined with the Multi-Stage Hybrid System, resulting in breakthrough technology that pairs stepped gears and the newly developed Lexus hybrid system with a compact and lightweight lithium-ion battery. Additionally, the LS 500h can select operating points for high system efficiency from the low-speed range to the high-speed range, thus expanding the range of EV driving. This allows the LS 500h to achieve an exhilarating performance driving experience while being highly fuel-efficient. The 2018 Lexus LS 500h has a combined EPA-estimated fuel economy rating of 28 mpg.

2019 LEXUS UX

The brand-new 2019 Lexus UX debuted at the end of 2018 and further marks a series of technical innovations, including the first use of the new global architecture platform named GA-C. GA-C delivers fundamental high structural rigidity and a low center of gravity, resulting in excellent ride quality and stability. Aiding this is the use of lightweight aluminum for the side doors, fenders and hood as well as a resin material for the back door. New powertrains are also deployed for the first time: a new 2.0-liter engine that reaps the performance and fuel economy benefits of high thermal efficiency, and a new mid-power, fourth generation self-charging hybrid system. Efforts were made to reduce any "rubber band" effect in the operation of the hybrid system and transmission by optimizing the level of electric motor assistance and engine rpm to generate a linear acceleration feel, which avoids delays in acceleration with the engine running at high revs. An additional E-Four system gives the UX 250h all-wheel drive capability by placing an additional electric motor on the rear axle, automatically optimizing power when accelerating, cornering or driving on slippery surfaces.

The Lexus UX 250h debuted at the end of 2018 and uses lightweight aluminum for the side doors, fenders and hood as well as a resin material for the back door. The UX Hybrid has a preliminary combined fuel economy rating of 38 mpg (estimated by Lexus).

BRIDGING TO THE FUTURE

Going forward, hybrid technology will continue to be at 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 and electricity.

Toyota and Lexus currently have 14 conventional hybrid models, one plug-in hybrid model and one hydrogen fuel cell electric hybrid model on the market in North America with cumulative Toyota and Lexus hybrid sales in the region of over 3.3 million vehicles (as of July 2018). These numbers mean that Toyota will continue to use our portfolio of technologically advanced powertrains to develop and build our vehicles to readily adapt to future consumer needs while minimizing environmental impacts.

Looking further into the future, the Toyota Research Institute (TRI) is collaborating with research entities, universities and companies on materials science research, investing approximately $35 million over the next four years in research that uses artificial intelligence to help accelerate the design and discovery of advanced materials. Initially, the program will aim to help revolutionize materials science and identify new advanced battery materials and fuel cell catalysts that can power future zero-emission and carbon-neutral vehicles. These efforts will help lay the groundwork for the future of clean energy and bring us even closer to achieving Toyota's goal of reducing global average new vehicle CO_2 emissions 90 percent by 2050.

09 TOYOTA'S HYBRID ELECTRIC FLEET

Hybrid electric vehicles use batteries plus one other fuel source, either hydrogen (fuel cell electric hybrid) or gasoline (plug-in electric hybrid or gasoline-electric hybrid). The current fleet of Toyota and Lexus hybrid electric vehicles includes:

MODEL	TYPE OF HYBRID ELECTRIC VEHICLE
Toyota Mirai	Fuel Cell Electric
Toyota Prius Prime	Plug-in Gasoline-Electric
Toyota Prius	Gasoline-Electric
Toyota Prius *c*	Gasoline-Electric
Toyota Avalon Hybrid	Gasoline-Electric
Toyota Camry Hybrid	Gasoline-Electric
Toyota Highlander Hybrid	Gasoline-Electric
Toyota RAV4 Hybrid	Gasoline-Electric
Lexus ES 300h	Gasoline-Electric
Lexus GS 450h	Gasoline-Electric
Lexus LC 500h	Gasoline-Electric
Lexus LS 500h	Gasoline-Electric
Lexus NX 300h	Gasoline-Electric
Lexus RX 450h	Gasoline-Electric
Lexus RX 450hL	Gasoline-Electric
Lexus UX	Gasoline-Electric

All 16 Toyota and Lexus advanced technology vehicles were available during 2018. All but the Lexus UX were offered as 2018 models; the UX is a 2019 model year vehicle.

ELIMINATING CO_2 FROM OPERATIONS

At Toyota, we mainly use four types of energy – electricity and natural gas to power our sites, and diesel and gasoline in our logistics operations. Challenge 3 of the Toyota Environmental Challenge 2050 calls on us to eliminate all CO_2 emissions from the use of all types of energy at our facilities and in logistics. To put us on this path, we established targets to reduce GHG emissions from our operations by 15 percent and improve GHG emissions intensity in logistics by 5 percent, both by the end of fiscal year 2021. Our strategy for achieving these targets focuses on three activities: reducing our use of electricity and natural gas, investing in renewable energy, and making our logistics operations more fuel-efficient.

- For performance data related to our 15 percent GHG reduction target, *see here.*
- For performance data related to GHG emissions per vehicle produced, *see Figure P10.*
- For performance data related to our 5 percent GHG intensity target for logistics, *see here.*

ELECTRICITY AND NATURAL GAS

During fiscal year 2018, we used almost 4.1 million megawatt-hours of electricity and natural gas in our North American operations. To reduce electricity consumption, we installed LED fixtures in eight assembly and engine plants during the last two years. For this sizable lighting retrofit project, we selected LED high bay fixtures that deliver an unprecedented 214 lumens per watt, which helps to significantly reduce the amount of electricity required to light certain areas of our facilities. Additionally, the LED lights don't contain any mercury, making them easier to recycle than fluorescent lamps. We expect the eight plants to be saving an estimated 29 million kilowatt-hours per year and avoiding an estimated 17,000 metric tons of CO_2 per year from this retrofit project.

In addition to large projects such as lighting retrofits, our plants implement small measures that impact daily operations and reduce energy consumption. Toyota's engine plant in Alabama is adding labels to equipment to help team members remember when to turn machines off, for example, on weekends during non-production times. A trial over a single weekend demonstrated the potential of these labels – the plant could save 3.7 million kilowatt-hours and avoid 2,000 metric tons of CO_2 over the course of a year if all equipment is turned off every weekend.

RENEWABLE ENERGY

Renewable energy comes from naturally occurring sources that are not depleted because of consumption. Sunlight, wind, biomass and geothermal are common examples. Renewable energy sources can replace conventional fuels used for electricity generation and transportation.

We are expanding the use of renewable energy as a means of reducing our carbon footprint and our reliance on non-renewable energy sources. For example, Toyota's assembly plant in San Antonio, Texas, installed a 200-kilowatt ground-mount solar array to support the Visitor and Education Center and Family Health Center, and a 3.1 megawatt array on the roof of the assembly plant building, which is expected to generate around 3 percent of the plant's annual demand.

In addition to the Texas assembly plant, Toyota also receives renewable electricity from solar arrays at our Plano, Texas, headquarters campus; the parts center in Ontario, California; and the assembly plant in Tecate, Mexico. Combined with other renewable energy projects such as using landfill gas at our assembly plant in Kentucky, Toyota consumed or offset almost 54 million kilowatt-hours of renewable energy in fiscal year 2018.

Toyota's assembly plant in San Antonio, Texas, installed a 200-kilowatt ground-mount solar array to support the Visitor and Education Center and the Family Health Center.

A 3.1 megawatt solar array was also installed on the roof of the assembly plant building. These panels are expected to generate around 3 percent of the plant's annual demand.

→ See the *Spotlight Story* for more information about the innovative renewable energy system powering Toyota's new headquarters campus in Plano, Texas.

TOYOTA'S TRI-GEN RENEWABLE POWER AND HYDROGEN GENERATION STATION

TMNA is building the world's first megawatt-scale molten carbonate power generation, hydrogen fuel, and pure water-producing system. Bio-waste sourced from California agricultural waste will generate water, electricity and hydrogen. The Tri-Gen facility will support our vehicle logistics operations at the Port of Long Beach.

When it comes online in 2020, Tri-Gen will generate approximately 2.35 megawatts of electricity and 1.2 tons of hydrogen per day, enough to power the equivalent of about 2,350 average-sized homes and meet the daily driving needs of nearly 1,500 vehicles. The power generation facility will be 100 percent renewable, supplying Toyota's vehicle logistics operation at the Port and making it the first Toyota facility in North America to use 100 percent renewable power. Tri-Gen is a major step forward toward meeting our 2050 Environmental Challenge to achieve net zero CO_2 emissions from our operations.

Tri-Gen is also a key step forward in Toyota's work to develop a hydrogen society. In addition to serving as a key proof-of-concept for 100 percent renewable, local hydrogen generation at scale, the facility will supply all Toyota fuel cell electric vehicles moving through the Port, including new deliveries of the Mirai sedan and Toyota's heavy-duty hydrogen fuel cell electric class 8 truck, known as Project Portal. To support these refueling operations, Toyota is building one of the largest hydrogen fueling stations in the world on site with the help of Shell.

Tri-Gen has been developed by FuelCell Energy with the support of the U.S. Department of Energy, California agencies including the California Air Resources Board, South Coast Air Quality Management District, Orange County Sanitation District, and the University of California at Irvine, whose research helped develop the core technology. The facility exceeds California's strict air quality standards and advances the overall goals of the California Air Resources Board, the California Energy Commission, and the Air Quality Management Districts of the South Coast and the Bay Area, who have been leaders in working to reduce emissions and improve air quality.

LOGISTICS

According to the International Transport Forum and the Organization for Economic Cooperation and Development (OECD), trade-related freight transport emissions will increase by almost a factor of four between 2010 and 2050. Experts project that by 2050, global freight transport emissions will surpass those from passenger vehicles.

To address GHG emissions from Toyota's extensive logistics operation, TMNA has a *target* to improve GHG emissions intensity from all owned and third-party logistics by 5 percent from a baseline of FY2016. We are on track for achieving this target. One way we have reduced GHG emissions from logistics is by combining routes. Our manufacturing and service parts divisions decided to share trucks using the same routes. In less than two years, we avoided driving 1.5 million miles, which saved an estimated 2,300 metric tons of CO_2.

Toyota Transport, our in-house trucking carrier for completed vehicles, began replacing the auto hauler truck fleet in the spring of 2018. New trucks are equipped with more fuel-efficient engines that are expected to improve fuel economy by 16 percent.

→ See the *Suppliers section* to see how we are working with third-party logistics carriers to help them reduce their emissions.

SmartWay® Transport Partnership
U.S. Environmental Protection Agency

Toyota Transport (truck carrier) and Toyota Logistics Services (shipper) continue to participate 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.

PROJECT PORTAL 2.0

In June 2018, Toyota unveiled the second generation of our hydrogen fuel cell electric Class 8 truck during the Center for Automotive Research (CAR) Management Briefing Seminars in northern Michigan. The new truck, known internally as "Beta," expands on the capabilities of Toyota's first Project Portal test vehicle by increasing the estimated range to more than 300 miles per fill. The truck also enhances versatility and maneuverability with the addition of a sleeper cab and a unique fuel cabinet combination that further increases cab space without increasing wheelbase.

Since it first began operation in April 2017, the Project Portal "Alpha" truck has logged nearly 10,000 miles of testing and real-world drayage operations in and around the Ports of Long Beach and Los Angeles, all while emitting nothing but water vapor. The Beta vehicle began drayage operations in the fall of 2018, increasing the Ports' zero-emission trucking capacity and further reducing the environmental impact of drayage operations.

Project Portal 2.0 builds on the lessons learned from the Alpha vehicle. The first heavy-duty truck was the result of a true skunkworks effort within Toyota that moved from initial concept to a fully capable drayage truck driving silently out of a Michigan garage in just over a year. Engineers and technicians worked long hours to reconfigure the wire harnesses, electronics and other components of two off-the-lot Mirai fuel cell electric cars to create one of the world's first OEM-built zero-emission heavy trucks.

The results of their work continue to impress. With a gross combined weight capacity of 80,000 pounds and a driving range of more than 200 miles per fill, the 670-plus horsepower Alpha truck produces 1,325 pound-feet of torque from two Mirai fuel cell stacks and a 12 kWh battery. Project Portal Beta maintains these torque and horsepower numbers while also extending the range of the vehicle and pushing forward on other key performance metrics.

Toyota unveiled the second generation of its hydrogen fuel cell electric Class 8 truck in Michigan in June 2018. The new truck, known internally as "Beta," expands on the capabilities of Toyota's first Project Portal test vehicle by increasing the estimated range to more than 300 miles per fill.

SPOTLIGHT: POWERED BY THE SUN

Toyota's focus on innovation goes beyond our vehicle technology. Consider the state-of-the-art renewable energy system at our North American headquarters campus in Plano, Texas.

About 20,000 solar panels cover all four parking garages as part of an 8.79-megawatt solar system designed and installed by SunPower. Placing the solar panels on the rooftops of the parking garages protects the vehicles parked on the top level of the garages from the sun and from rain and hail, and the panels are pitched to direct water to the campus' rainwater collection cisterns.

The solar panels were manufactured at SunPower's plant that is certified LEED Gold® and is verified by NSF Sustainability as landfill-free, which means the facility prevents 99 percent or more of its waste from entering landfills. The panels manufactured at this plant were the first ever to become Cradle to Cradle Certified™ Silver, demonstrating a product's level of achievement in the areas of material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness.

"Manufacturing SunPower® solar panels in an environmentally sustainable way is just as important to us as it is to our customers like Toyota," explained Marc Gordon, director of national accounts for SunPower. "SunPower offers industry-leading solar technology that generates 45 percent more energy from the same space over the first 25 years compared to conventional solar panels. For Toyota, this means more savings on electricity bills and a lower carbon footprint over the long life of the system."

The system is the largest on-site corporate solar installation among non-utility companies in the state of Texas. In total, the system provides about one-third of the daily electric needs for the headquarters campus and reduces annual carbon dioxide emissions by 7,198 metric tons, or the equivalent of the electricity used by almost 1,200 average U.S. homes for a year.

A flexible energy contract is in place to preserve and resell excess power generation (for example, power generated on weekends) back to the grid.

That's not all. Additional grid energy consumed by the campus is being offset by Texas wind farm renewable energy credits. Other features, such as LED lights and high efficiency building shells, help cut down on the amount of energy used on campus. Rooftops on select buildings were specially designed with plant life to manage rainwater, reduce heat and further insulate the buildings. These features were all instrumental in the campus earning LEED Platinum® certification from the U.S. Green Building Council.

"We are very happy with the way the energy system functions here at headquarters," said David Absher, senior manager of Environmental Sustainability at TMNA. "This is an excellent example of how to apply environmental sustainability in the real world. And it's moving us closer to achieving the Toyota Environmental Challenge 2050, which calls for eliminating carbon emissions in all operations."

About 20,000 solar panels cover all four parking garages as part of an 8.79-megawatt solar system at Toyota headquarters in Plano. The system is the largest on-site corporate solar installation among non-utility companies in the state of Texas. In total, the system provides about one-third of the daily electric needs for the headquarters campus and reduces annual carbon dioxide emissions by 7,198 metric tons.

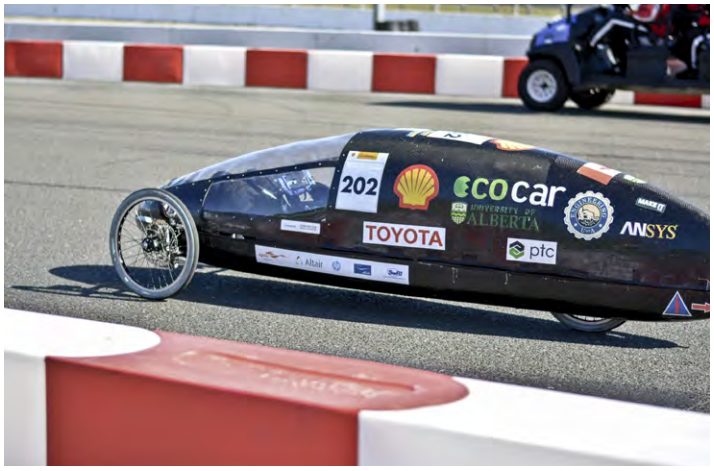
SHARING KNOW-HOW

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 we support **community initiatives** to help scale up efforts to develop and use more sustainable forms of energy. The Toyota Canada Foundation (TCF) provides funding to Actua, Canada's largest science, technology, engineering and math (STEM) outreach organization. Actua delivers national programs designed to reach and inspire youth who are currently underrepresented in STEM, encouraging them to pursue education and careers in the field. Every year, the organization's programs reach over 250,000 youth in more than 500 communities across the country. In 2017, TCF supported Actua's Innovation150 Maker Mobile tour, providing traveling science and technology exhibitions and workshops to children across Canada. One workshop took the young participants through a prototyping exercise to design their car of the future, including an exploration of the impact of resources and the changing climate on the automotive industry. From material considerations to fuel consumption and emissions, they examined the challenges involved with building their vehicles, while also considering how current technology could be used to solve common environmental issues.

Additional examples of community initiatives:

- We foster adoption of *next-generation vehicles* through education initiatives and by working with various partners to develop hydrogen fueling infrastructure for fuel cell vehicles.
- Toyota Canada Inc. is the exclusive automotive sponsor of the University of Alberta EcoCar Team (see photos and caption below). The sponsorship supports the development of hydrogen fuel cell electric vehicles.
- We support the annual *ECS Toyota Young Investigator Fellowship*, which provides $50,000 each to young professors and scholars pursuing innovative electrochemical research in green energy technology.

We also work with **suppliers and dealerships** on projects that reduce their carbon footprints. We are engaging with *logistics suppliers* to reduce GHG emissions from transporting parts and vehicles, and we have supported 61 *dealerships* across North America with achieving LEED® certification. LEED®, or Leadership in Energy and Environmental Design, is a point-based system promoting a whole-building approach to sustainable construction and remodeling. LEED® certification is based on meeting stringent requirements in sustainable site development, energy efficiency, water savings, materials selection and indoor environmental quality.



Toyota Canada sponsored the University of Alberta's EcoCar team that competed in the hydrogen fuel cell UrbanConcept and Prototype categories at the 2018 Shell Eco Marathon in Sonoma, California. The University of Alberta team was the only team to design and build their own fuel cell stack.

During an event at Toyota's North American headquarters in Plano, Texas, marine artist Wyland stands in front of the Toyota RAV4 Hybrid he hand-painted and talks about his amazing career and his passion for water conservation. The event kicked off the 2018 National Mayor's Challenge for Water Conservation, sponsored by the Wyland Foundation and Toyota.

WATER

"WATER" IS ONE OF TOYOTA'S FOUR FOCUS AREAS IN NORTH AMERICA. OUR APPROACH TO WATER STEWARDSHIP ADDRESSES CHALLENGE 4 OF THE TOYOTA ENVIRONMENTAL CHALLENGE 2050 AND CALLS FOR **CONSERVING WATER, PROTECTING WATER RESOURCES** AND **SHARING OUR KNOW-HOW** WITH OTHERS. EVERY LIVING THING NEEDS WATER TO SURVIVE. WHAT WE DO TODAY TO PROTECT THIS PRECIOUS RESOURCE CREATES LASTING VALUE AND BUILDS A BETTER TOMORROW FOR US AND THE PLANET.

INTRODUCTION TO WATER

Water is at the heart of every aspect of human development. We need water for health, food, energy, the environment and economic growth.

Globally, threats to water availability and water quality are increasing. According to the United Nations[3] , demand for fresh water has increased by a factor of six over the past 100 years and continues to grow steadily at a rate of about 1 percent per year. By 2050, global water demand will be 30 percent higher than today and up to 3 billion people could be living in potentially severely water-scarce areas.

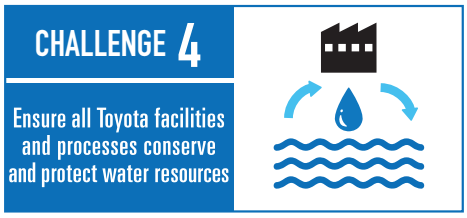
Water is a finite resource, and global population growth – expected to increase from 7.7 billion to between 9.4 and 10.2 billion people by 2050 – puts a strain on this already stressed resource. Rising demand for water threatens the safety and health of people and impacts the balance of nature.

To address water issues and increase how we value this resource, we've developed a North American strategy through 2050. To learn about our strategy and how it relates to the Toyota Environmental Challenge 2050, read our *Water Position Statement*.

3 *For more information, see The 2018 World Water Day Factsheet (http://worldwaterday.org/app/uploads/2018/02/fact_sheet_WWD2017_EN_2.pdf) and The United Nations World Water Development Report 2018: Nature-Based Solutions for Water (http://unesdoc.unesco.org/images/0026/002614/261424e.pdf)*

10 / TMNA's Approach to Water Stewardship

Our WATER focus area relates to Challenge 4 of Toyota's Environmental Challenge 2050. This challenge recognizes water as a global issue that must be managed locally. As the availability of clean water becomes more and more important to Toyota communities in drought-stressed regions of North America, we will continue to manage and preserve this critical resource. In North America, our approach to conquering this challenge involves three actions:



Conserving Water:

- Use less water
- Recycle more water

Protecting Water Resources:

- Discharge high quality water
- Ensure availability for all users

Sharing Know-How:

Conserve more water than we use by engaging with:

- Local communities
- Major suppliers
- Dealers

WATER TARGET

Between fiscal years 2017 and 2021, Toyota Motor North America (TMNA) will:

Prioritize and implement water stewardship plans for facilities in water-stressed areas (on track)

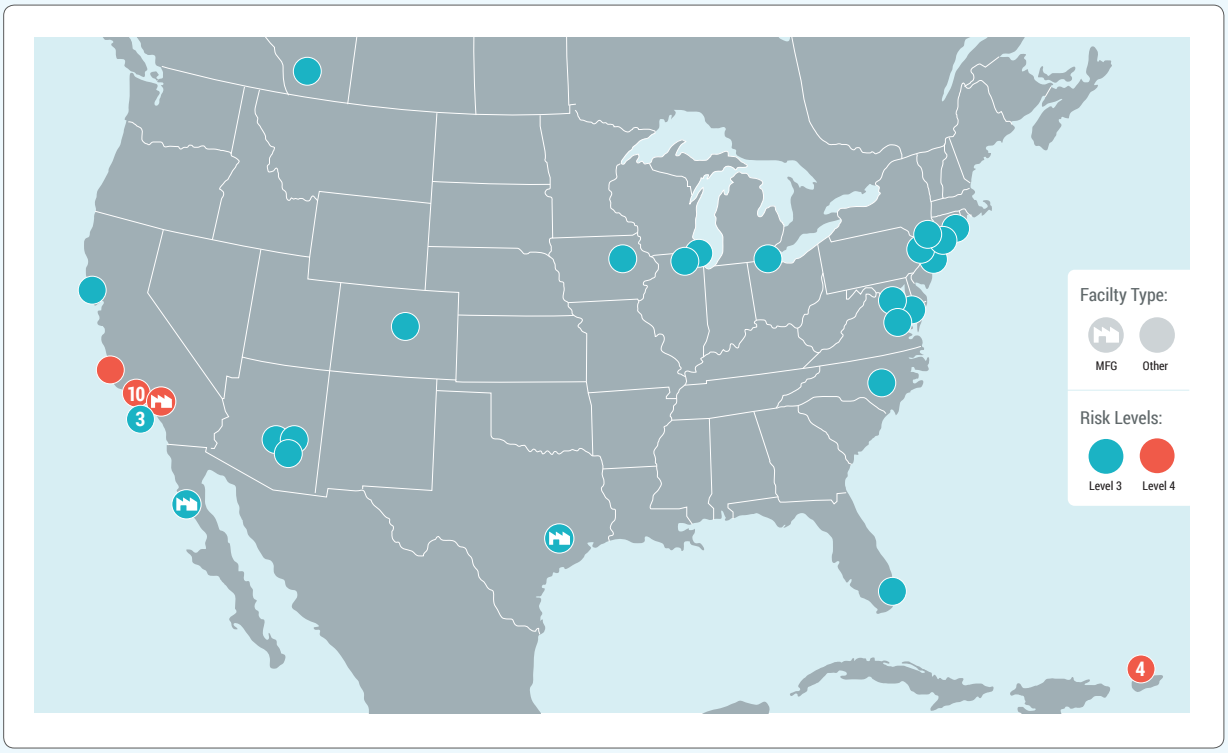
TMNA's water stewardship strategy focuses on facilities located in areas of water risk. We define water risk according to Aqueduct™, a tool developed by the World Resources Institute to help companies, investors, governments and communities better understand where and how water risks are emerging around 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 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.

We have mapped all our North American locations (manufacturing plants, offices and parts and vehicle distribution centers). The Atlas shows 15 of Toyota's North American locations in areas of "high" overall water risk (Level 4) and 25 in areas of "medium to high" risk (Level 3). Currently, we do not have any sites in areas of "extremely high" risk (Level 5).

In fiscal year 2018, 7 percent of the water Toyota withdrew in North America was at sites in areas of high water risk (Level 4), as defined by the Water Risk Atlas. Through the end of fiscal year 2021, we will be working on developing water stewardship plans at our highest risk sites. These plans will address water conservation (including potentially absolute water reduction targets), water quality, and outreach activities with suppliers and local communities.

11 / Toyota's Overall Water Risk in North America



This map was generated using data from WRI's Aqueduct™ Water Risk Atlas. The Atlas combines 12 indicators to create an overall map of where and how water risks may be prevalent. We mapped more than 100 sites in North America, including assembly and unit plants, R&D centers, parts and vehicle distribution centers, and office buildings. We show on the above map the 40 sites in two risk categories: "high" (Level 4) and "medium to high" (Level 3). We do not have any sites in the "extremely high" (Level 5) category. Circles with numbers inside indicate multiple facilities of that type; the map is too small to show each site in that area. For example, there are four non-manufacturing facilities in Puerto Rico, which is a Level 4 risk area.

CONSERVING WATER

During fiscal year 2018:

- Toyota **withdrew** 1.85 billion gallons of water at more than 100 North American facilities, including assembly and unit plants, parts and vehicle distribution centers, R&D sites and offices.
- More than 99 percent of this water came from municipal **sources** (both fresh and recycled water from utilities); other sources included surface water bodies, groundwater and rainwater.
- We estimate 1.2 billion gallons were **discharged**, either to surface waters or to municipal utilities.
- **Consumption** (defined as withdrawal minus discharge, or the water that was not returned to either a municipal utility or surface or ground water) was 630 million gallons.
- Our North American manufacturing plants **recycled or reused** 148 million gallons, which is 8 percent of our total withdrawal.
- **Water intensity** – gallons of water per vehicle produced – was 972 gallons. Several sites, including those in Puerto Rico, were included in our data for the first time. At the time this report was published, we had not finished updating data from previous years to include these sites. We will report trends again next year.

Our assembly plant in Mexico expanded production by 60 percent and added 800 new team members. With such a significant increase in production, team members were on the lookout for ways to reduce water use. Five projects completed in the paint shop – the plant's biggest water user – including reducing rinse time during electrodeposition, saved about 7 gallons per vehicle, or an estimated 784,000 gallons of water per year.

During fiscal year 2018, the assembly plant in Kentucky – Toyota's largest plant in the world – began recovering water from two sources: condensate from the humidity in compressed air and residual water from the high pressure humidification system in the paint booths. The recovered water is used in the plant's chilled water towers, reducing the amount of fresh water needed. Because the quality of the recovered water is better than the fresh water purchased from the municipality, this activity also allows the water to be used more efficiently, further reducing fresh water use. Recovered water is also used in the compressed air process. Compressing air not only generates condensate, it also generates heat, so the process requires cooling water. The plant reduced the amount of fresh cooling water needed by using some of the recovered condensate. Combined, these projects save the plant nearly 2.5 million gallons of fresh water per year.

The assembly plant in Mississippi is one of our newer assembly plants and has had the most success reducing water use. Thanks to the dedication and hard work of team members, absolute water use has been reduced by 32 percent since fiscal year 2016. This past year, they eliminated 80,000 gallons of water that were drained during cooling tower cleaning by switching from a manual process to a robot. The use of a robot eliminates the need to drain the tower and refill it with fresh water as well as the need to add chemicals to treat the water. Team members also found a way to use existing equipment in the paint shop to pump water from the air supply house to the cooling tower for use as makeup water. Condensation from the heating and cooling units is also being collected and used as cooling tower makeup water. Combined, the plant is now able to recycle nearly 1.4 million gallons of water to the cooling tower per year.

This is the robot used at Toyota's Mississippi assembly plant to clean the cooling tower. Using the robot eliminates the need to drain 80,000 gallons of water during the cleaning process.

PROTECTING WATER RESOURCES

According to the United Nations, over 80 percent of the wastewater generated by society globally flows back into the environment without being treated or reused. Unsafe water and poor sanitation and hygiene cause over 800,000 deaths per year.

Wastewater issues are not just a concern in the developing world. For example, here in North America, "dead zones" –areas where marine life can't survive due to low oxygen levels – form in the Chesapeake Bay, off the coast of Oregon, in Lake Erie, and in the Gulf of Mexico. The Gulf of Mexico dead zone is caused by excess nutrient loading from poorly treated wastewater in the Mississippi River basin.

Water quality monitoring is a key component of Toyota's environmental management systems. Some of our sites discharge wastewater that we treat and monitor to meet local, 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. There were no unplanned discharges of wastewater that adversely affected water bodies during fiscal year 2018, and no water bodies were adversely affected by Toyota's wastewater discharges.

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. The river basin supports our San Antonio assembly plant and vehicle distribution center as well as our on-site suppliers.

During the remainder of this action plan period (through the end of fiscal year 2021), we will be assessing Toyota's North American sites in areas of high water risk. We will consider the projected future availability of water at these sites and the potential impacts of our withdrawals to other water users.

SHARING KNOW-HOW

Toyota supports **community efforts** to educate individuals and families and encourage water conservation. These activities help to scale up conservation efforts and make positive outcomes more impactful.

For example, Toyota is the national sponsor of the Waterkeeper Alliance's annual SPLASH event series. Waterkeeper Alliance is one of the largest and fastest-growing nonprofits solely focused on clean water. Between June and August 2018, 20 SPLASH events took place on waterways across the United States, engaging thousands of community members and outdoor enthusiasts in water-based recreational activities like swimming, paddling, kayaking and fishing. Engaging people with their local waterways is a crucial part of securing drinkable, fishable, swimmable water.

Toyota and Lexus dealerships are also engaged in water conservation activities. Several dealerships have installed rainwater collection cisterns, including Toyota of Cedar Park in Austin, Texas. During the hot, humid Austin summers, the rooftop HVAC units can create up to 4,000 gallons of condensate in a single day. The condensation run-off is fed from the HVAC units to a cistern. Additionally, the showroom rooftop and service drive canopy are plumbed to direct rainfall into the cistern. The cistern is used as the primary water source for the local, native, arid-tolerant landscaping at the site.

SPOTLIGHT: RAISING THE WATER I.Q. IN THE U.S.

How do you get people excited about saving water? You start a competition. A big one. Competitions get people excited and engaged, so starting a nation-wide competition that involves almost 5,000 cities seems like a pretty good idea.

That's exactly what Toyota and the Wyland Foundation thought when they started the annual National Mayor's Challenge for Water Conservation in 2012. During the month of April, mayors across the country ask 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 U.S.

Since the Challenge's inception, the campaign has generated more than 1.6 million pledges and encouraged the conservation of 12.3 billion gallons of water across the U.S.

The challenge addresses the growing importance of educating individuals about the many ways they can conserve water — for example, by swapping out their lawns in favor of drought-resistant native plants, fixing leaks and 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.

In 2018, residents from 4,800 cities pledged 618,000 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 would reduce national water waste by 3 billion gallons.

Most people can't even fathom that much water. According to the U.S. EPA, the average American family uses more than 300 gallons per day at home. Participants of the challenge have pledged to save the amount of water used by roughly 28,000 families per year.

The cities with the highest percentage of residents making pledges during the 2018 campaign were Gallup, New Mexico; Westminster, California; Baton Rouge, Louisiana; Tucson, Arizona; and Dallas, Texas.

The partnership between Wyland Foundation and Toyota began in 2010 as part of a series of Wyland Living Green Fairs in West Palm Beach, Florida, and Long Beach, California. As part of the Living Green Fairs, the Wyland Foundation created an opportunity for mayors in several communities to engage in a challenge to see which city's residents could pledge to save the most water over the course of a month.

"The program seemed to strike such a chord that we talked with Toyota about expanding it to more communities," said Steve Creech, executive director of the Wyland Foundation.

After growing the program in Southern California, a national campaign was launched in 2012, with support from the U.S. EPA, National League of Cities, The Toro Company, Earth Friendly Products (ECOS) and Conserva Irrigation.

Toyota Social Innovation team members and Wyland Foundation staff work continually to refine and enhance the Mayor's Challenge as one of the nation's leading programs for promoting a broader understanding of the many ways water is used across the United States.

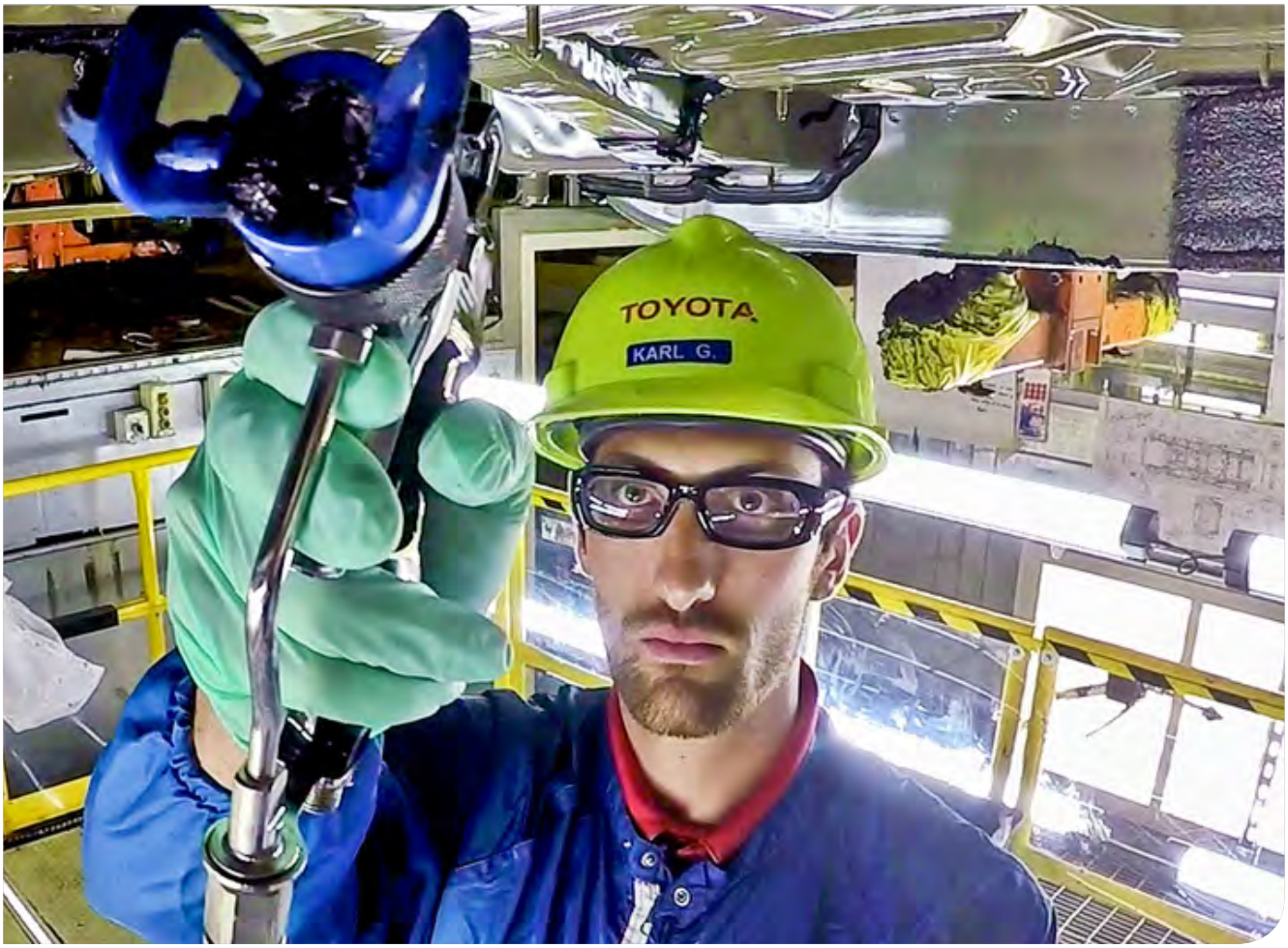
"Toyota employees not only take the challenge, but often volunteer to participate in Wyland Foundation community events," says Wyland. "It's a true collaboration in every sense of the word."

"Water is one pillar of the Toyota Environmental Challenge 2050," explained Kevin Butt, director of Environmental Sustainability at TMNA. "Water is a critical resource for our company, and we are committed to doing our part and helping others. The National Mayor's Challenge has become one of the largest water conservation programs of its kind in the United States, and we are honored to be a part of it."

In addition to reducing water, challenge participants in 50 states made pledges in 2018 to reduce the use of 8 million single-use plastic water bottles and eliminate 177,000 pounds of hazardous waste from entering watersheds. By altering daily lifestyle choices, pledges will also result in potentially 79.9 million fewer pounds in landfills. Potential savings of 22.2 million gallons of oil, 12.6 billion pounds of carbon dioxide emissions, 191.9 million kilowatt-hours of electricity, and $38.4 million in consumer cost savings rounded out the final pledge results.

And soon, the challenge will be going global. The Wyland Foundation is working with the United Nations Environment Program as the official outreach partner of the Wyland World Water Pledge.

Kevin Butt (right), director of Environmental Sustainability for Toyota Motor North America, with acclaimed artist Wyland. Wyland hand-painted one of his famous marine life artworks on a 2018 Toyota RAV4 Hybrid.



Thanks to the investigative skills of Karl Gottschalk (left), John Birkner (middle), Terry Thewes (right) and other team members, Toyota's plant in Indiana uses 24,000 fewer pounds of PVC during the assembly of Sienna minivans.

MATERIALS

"MATERIALS" IS ONE OF TOYOTA'S FOUR FOCUS AREAS IN NORTH AMERICA. MATERIALS INCLUDE EVERYTHING WE USE, FROM THE RAW MATERIALS THAT BECOME VEHICLES, TO THE OFFICE FURNITURE AND CAFETERIA SUPPLIES WE RELY ON EVERY DAY, TO THE WASTE WE RECYCLE OR DISPOSE. OUR MATERIALS STRATEGY ADDRESSES CHALLENGE 5 OF THE TOYOTA ENVIRONMENTAL CHALLENGE 2050, WHICH CALLS ON US TO SUPPORT A RECYCLING-BASED SOCIETY. WE DO THAT BY **CONSERVING NATURAL RESOURCES, ELIMINATING WASTE DISPOSAL** AND **SHARING OUR KNOW-HOW** WITH OTHERS. EVERYTHING WE DO TODAY TO BETTER MANAGE MATERIALS BUILDS A CLEANER, HEALTHIER FUTURE.

INTRODUCTION TO MATERIALS

Globally, the use of raw materials increased at about twice the rate of population growth during the last century. For every 1 percent increase in gross domestic product, raw material use has risen by 0.4 percent, and 50-75 percent of annual resource inputs to industrial economies is returned to the environment as wastes within just one year.[4]

Global competition for finite resources – and the corresponding generation of waste – will continue to expand as the world's population is projected to reach between 9.4 and 10.2 billion by 2050. This increasing consumption comes at a cost to the environment in the form of land and water contamination, habitat destruction, biodiversity loss, stressed and depleted fisheries, and desertification. Materials management is also associated with an estimated 42 percent of total U.S. greenhouse gas (GHG) emissions.[5]

To address materials issues and change the relationship between consumption and growth, we've developed a North American strategy through 2050. To learn about our strategy and how it relates to the Toyota Environmental Challenge 2050, read our *Materials Position Statement.*

4 *According to the Annex to the G7 Leaders' June 8, 2015 Declaration, which established the G7 Alliance on Resource Efficiency.*

5 *https://www.epa.gov/smm/sustainable-materials-management-basics*

12 / TMNA's Approach to a Recycling-Based Society

Our MATERIALS focus area relates to Challenge 5 of Toyota's Environmental Challenge 2050. Toyota recognizes the world must transition to a new way of thinking about material flows to avoid exploitation and depletion of natural resources and environmental pollution from unsustainable consumption patterns. We will continue to look for ways to keep materials circulating and out of landfills. In North America, we developed an approach to conquering this challenge that involves three actions:

Conserving Natural Resources:

- Increase the use of sustainable materials
- Extend the life of vehicle parts

Eliminating Waste Disposal:

- Reduce at the source
- Reuse
- Recycle

Sharing Know-How:

Help others reduce more waste than we generate by engaging with:

- Local communities
- Major suppliers
- Dealers

MATERIALS TARGET

Between fiscal years 2017 and 2021, Toyota Motor North America (TMNA) will:

Reduce the use of packaging material (on track)

Automotive companies and their suppliers ship vehicle parts using a variety of packaging types to prevent damage and maximize warehouse space. Where feasible, Toyota uses returnable packaging modules and racks for shipping parts between suppliers, distribution centers, plants and dealerships. We spend millions of dollars each year replacing lost returnable containers. Team members are trialing radio-frequency identification (RFID) chips to keep track of returnable containers, which should minimize losses and reduce the need to build and buy new containers.

In Canada, one of our suppliers collects returnable packaging containers that become obsolete after a model change, and ships them to providers for reuse or recycling. Instead of going to a landfill, 70 percent of this packaging is refurbished and returned to our Canadian plants. Toyota's plant in Mississippi plans to utilize this program for obsolete Corolla packaging once the new model launches.

→ See the *Suppliers section* for more information on our engagement with this stakeholder group.

CONSERVING NATURAL RESOURCES

Our approach to conserving natural resources focuses on using sustainable materials in vehicles and parts. Over the course of a vehicle's life cycle, sustainable materials – those that are renewable, recyclable or are made of recycled content – have a smaller greenhouse gas footprint and generate less waste than their alternatives.

We use renewable, recycled and recyclable materials where practical. For example, Toyota uses post-industrial garment clippings made of cotton and synthetic fibers in door panel insulation, floor silencer and floor mats. We also use bio-based plastics — plastics derived either wholly or in part from plant materials — in the seat cushions in Toyota Prius, Corolla and RAV4, and in Lexus RX 350. We will continue to develop and commercialize technologies that enable the use of sustainable materials in a wider range of components.

RARE EARTH METALS

Magnets made with a rare earth metal called neodymium (Nd) are used in high-output motors found in electric vehicles. Our parent company in Japan, Toyota Motor Corporation, has developed a magnet that replaces up to 50 percent of the neodymium with more abundant and cheaper lanthanum and cerium.

The new Nd-reduced, heat-resistant magnet is expected to have a wide range of applications in motors that require relatively high output such as those required for electric vehicle drive motors and generators, electric power steering, robots and various household appliances. It will also contribute to reducing the risks of a disruption in supply and demand of rare earths and price increases.

Toyota expects the magnets to be used in electric vehicles and other applications in the first half of the 2020s.

ELIMINATING WASTE DISPOSAL

Minimizing waste has always been part of Toyota's DNA. We began targeting zero waste to landfill in the 1990's. In 2003, Toyota's plants in Southern California and West Virginia became our first North American plants to achieve zero waste to landfill. Our focus on landfill was a way of reducing risk, but also a way to encourage recycling. Today, nearly all landfilling has been eliminated and our focus has shifted to reduce and reuse.

In calendar year 2017, our North American manufacturing plants, logistics sites and offices sent only 2 percent of waste for disposal to landfills. (For certain waste streams, landfill disposal is required by law.) We recycled, reused or composted 93 percent and sent only 5 percent of waste to waste-to-energy or fuels blending facilities. Total waste in 2017 was 3 percent less than 2016, in part due to an overall decrease in production.

Examples of waste minimization projects include the following:

- Toyota's parts distribution center in Boston sent 9,000 pounds of damaged windshields to Shark Glass Recycling North America. Shark is the only recycler we've found to find a valuable use for the safety film in the windshield. Typically, the glass is separated from the film and the film is disposed. Now, both the film and the glass are recycled. Other parts distribution centers plan to send damaged windshields to Shark in the future.
- Our production control logistics team improved the one-way skid manifest system for just-in-time manufacturing ("one-way Kanban") by eliminating the need for more than 1 million pounds of paper per year. In the past, our suppliers would print all skid manifests, even when no parts were required for the order that was generated. These "no requirement" manifests were then thrown away. Now, the system recognizes "no requirement" orders and does not print those manifests.
- Toyota's assembly plant in Mexico eliminated 1,500 pounds (689 kilograms) of sealer waste. When containers of sealer were changed out, there was quite a bit of sealer remaining at the bottom of the container. When disposed, this material is considered a hazardous waste. The pump inside the container was adjusted to reach to the bottom, resulting in more sealer used and less waste.
- Part of finalizing the consolidation of Toyota's North American headquarters in Plano, Texas, included sunsetting more than 20 structures in Torrance, California, in 2017. Donations to nonprofits represented about 85 percent of the assets, including office furniture, computers and supplies, that didn't make the journey to Plano. Toyota contracted with ANEW (Asset Network for Education Worldwide), a nonprofit that matches office supply donations with schools, nonprofits and public agencies in need. For 35 consecutive weeks beginning in March 2017, 80 organizations located throughout Southern California stopped by one of Toyota's lots in Torrance and took what they needed. Thousands of surplus items totaling more than 100,000 pounds found a new home. Even the hard-copy collection of Toyota's repair manuals was donated – they now reside in the Central Library in downtown Los Angeles.
- See the *Spotlight story* to see how Toyota's plant in Indiana assembles the Sienna with 24,000 fewer pounds of material.

13 TOTAL WASTE (POUNDS)

	2015	2016	2017
Regulated Waste*			
Recycled/Reused Regulated Waste	13,494,000	4,570,000	4,879,000
Incineration, Waste to Energy, Fuels Blending	11,183,000	7,247,000	11,599,000
Landfill	48,000	692,000	33,000
Non-Regulated Waste			
Composted	1,088,000	831,000	1,080,000
Recycled Scrap Steel from Mfg Plants	659,718,000	678,953,000	656,129,000
Other Recycled/Reused	79,267,000	87,805,000	79,940,000
Incineration, Waste to Energy, Fuels Blending	26,574,000	33,933,000	29,314,000
Landfill	7,602,000	8,081,000	16,995,000
TOTAL WASTE (Pounds) GENERATED	**798,974,000**	**822,112,000**	**799,969,000**

**Regulated waste includes hazardous, universal and special wastes regulated at the federal, state, provincial or local level. Non-regulated waste is all other waste.*

Scope = Toyota's North American headquarters, manufacturing, R&D, sales and logistics sites in the U.S., Canada and Puerto Rico. Also includes data from manufacturing in Mexico. Data from non-manufacturing sites in Mexico will be included in future years.

SPOTLIGHT: DOING MORE WITH LESS

To combat natural resource depletion, we must learn how to do more with less. Doing more with less is a central tenet of a recycling-based society, where materials are not wasted and little or nothing is thrown away.

How Toyota does more with less is evident at our plant in Princeton, Indiana, where 24,000 fewer pounds of material are needed to assemble Toyota Sienna minivans, thanks to the investigative skills of a group of dedicated team members.

The underbody of each Sienna is sprayed in various spots with polyvinyl chloride (PVC), a commonly used plastic that protects against corrosion, prevents fumes from entering the environment, and keeps water out of seams where parts overlap or are welded together. PVC is normally applied by robots, but due to the underbody design and body carrier position, some applications must be done manually.

"A few of us started to wonder why so many excess manual applications were being performed," explained Karl Gottschalk, specialist in Paint Engineering at Toyota Motor Manufacturing Indiana (TMMI). "So, we put a team together, with TMMI engineers from Body Design, Materials Engineering, Paint Production, Quality Production, Quality Engineering and Paint Engineering, and team members from Production Engineering at headquarters, and we started to investigate where manual PVC spraying was called for and whether it made a difference to the performance and quality of the vehicle."

The team examined the spray process in detail and discovered that the procedure drawing was not always clear on which areas of the underbody needed to be sprayed. The result was over spraying as a preventative measure.

"We found 23 areas on the underbody where manual spraying could either be reduced or eliminated," said Karl. "We were very careful about checking every one of those areas to confirm quality."

The team took Sienna minivans off the assembly line to conduct testing to ensure that less PVC – or even no PVC at all – would still maintain quality and prevent corrosion and water damage. In addition to visual and touch inspections, the team even used infrared cameras to detect water after the vehicle was exposed to simulated rain and water puddles.

"It was very important that all the different departments were involved in this project," explained John Birkner, assistant manager in TMMI Paint Engineering. "Each member of the team had a role, and we needed all of us working together to be successful."

Over the course of many weeks and after systematically evaluating each of the 23 areas, the team found that a Sienna needed 0.16 fewer pounds of PVC spray. That may not sound like a lot, but when you consider 150,000 Sienna minivans assembled per year, it adds up.

"We're saving 24,000 pounds of material per year just on Sienna," said Terry Thewes, manager in TMMI Paint Engineering. "That's a big win for this team."

Using less raw material supports the call for a recycling-based society found in the Toyota Environmental Challenge 2050. Team members at our Indiana plant will be evaluating Toyota Highlander next to see if a similar material reduction can be found.

Toyota team members demonstrate how PVC is sprayed on the underbody of a Sienna minivan. The PVC prevents corrosion and water damage. Team members were able to reduce the amount of PVC spray by 0.16 pounds per vehicle with no impact to performance or quality. The assembly plant in Indiana now uses 24,000 fewer pounds of PVC on Sienna underbodies.

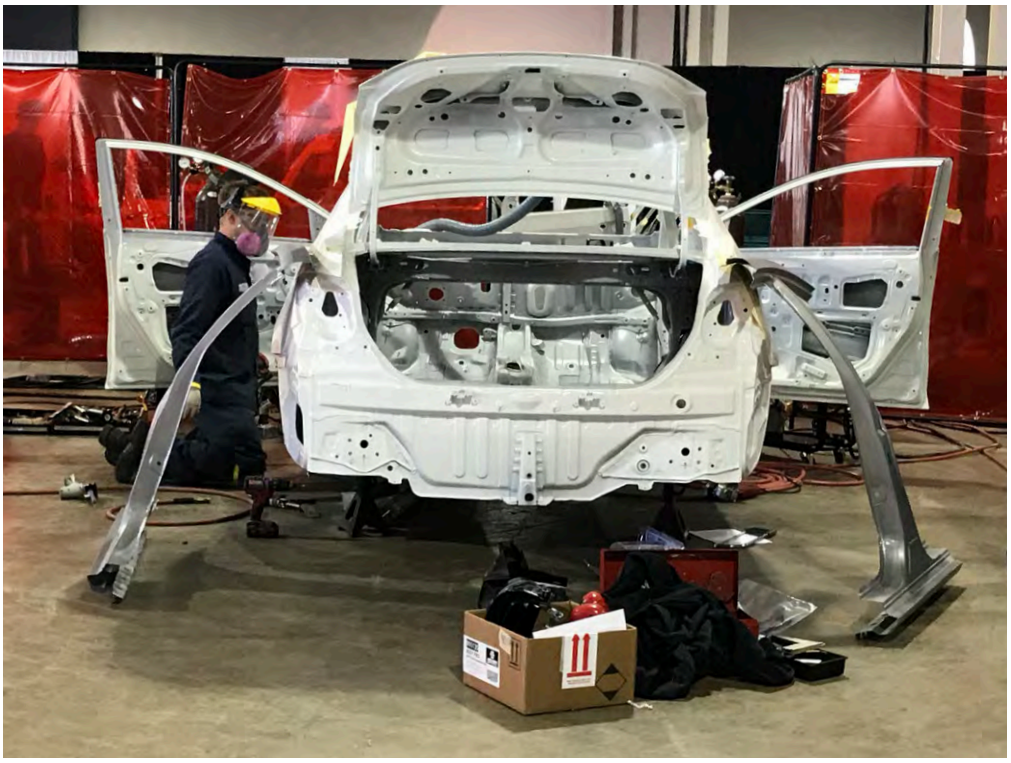
SHARING KNOW-HOW

The best way for us to help create a net positive impact on the environment is to share our expertise with others. That's why team members participate in projects large and small, near and far, to help spread the word about the environmental and cost benefits of reducing, reusing and recycling.

We start with our **local communities**. When we consolidated headquarters offices in 2017 in Plano, Texas, Toyota donated the Quality and Production Engineering Laboratory on the campus of our Erlanger-based North American manufacturing headquarters, along with office furniture, several pieces of equipment and office supplies. This gift will launch the Ignite Institute at Roebling Innovation Center, a STEAM (science, technology, education, arts and math)-based regional school and education center serving Northern Kentucky/Greater Cincinnati. The vision for the center also includes a collaborative space for educators, an incubator for business, a potential national hub for STEAM teacher training and an early childhood education facility. The 183,000 square-foot building sits on 22 acres and offers open spaces, high ceilings for robotics and other equipment, and plenty of room for classrooms and project space.

Since 1994, Toyota has helped team members and surrounding communities recycle and properly dispose of household waste. During designated collection days, team members and residents from surrounding communities can drop off electronic waste, appliances, paint and other household items that are difficult to recycle or dispose. Team members also collect items such as clothing and eye glasses that can be donated to those in need. Four sites have been hosting these events for several years and together, they have invested close to $1 million to ensure more than 2 million pounds of material are recycled or properly disposed. For more information, see the full story *here.*

Next, we consider our d**ealers and suppliers**. We have been supporting *dealerships* for many years during new construction and renovation projects, and we encourage the use of LEED®, which rewards the use of sustainable materials and recycling of construction and demolition waste. We are also a member of U.S. EPA's Supplier Partnership for the Environment, which encourages collaborating with *suppliers* to reduce waste, promote reuse and maximize recycling.



Toyota's plants in Canada donated 12 vehicle bodies and side panels to Skills Ontario, a nonprofit building the province's skilled trades and technologies workforce. Skills Ontario delivers in-school presentations across Ontario, hosts Canada's largest skills competition, runs summer camps for skills development and connects students to employers.

Brad Hertner from the Upper Thames River Conservation Authority and Toyota team member Malinda Salazar (middle) were joined by Malinda's wife Heather Tredway and other team members and their families to paint trail markers on the newly opened Wetland Trail at Toyota's Woodstock assembly plant in Ontario, Canada.

BIODIVERSITY

"BIODIVERSITY" IS ONE OF TOYOTA'S FOUR FOCUS AREAS IN NORTH AMERICA. BIODIVERSITY REFERS TO THE VARIETY AND INTERDEPENDENCE OF SPECIES AND ECOSYSTEMS AND THE NATURAL PATTERNS THEY FORM. OUR BIODIVERSITY STRATEGY ADDRESSES CHALLENGE 6 OF THE TOYOTA ENVIRONMENTAL CHALLENGE 2050 BY **PROTECTING VULNERABLE SPECIES, PRESERVING AND RESTORING HABITAT** AND **SHARING OUR KNOW-HOW** NEAR AND FAR. WE ARE COMMITTED TO OPERATING IN HARMONY WITH THE ENVIRONMENT AND BUILDING HEALTHY ECOSYSTEMS SO THAT FUTURE GENERATIONS MAY CONTINUE TO ENJOY THE NATURAL WONDERS OF OUR WORLD.

INTRODUCTION TO BIODIVERSITY

Biodiversity is a global asset of irreplaceable value to present and future generations. The combination of life forms and their interactions with each other and with the rest of the environment has made Earth a uniquely habitable place for humans. Biodiversity provides many goods and services that sustain our lives. For example, biodiversity is essential to global food security and nutrition, and tens of thousands of plant species are used in traditional and modern medicines.

But populations of vertebrate species – mammals, birds, reptiles, amphibians and fish – have declined more than 50 percent over the last 40 years due to a variety of factors, including habitat destruction.[6]*

To address biodiversity issues and improve our relationship to nature, we've developed a North American strategy through 2050. To learn about our strategy and how it relates to the Toyota Environmental Challenge 2050, read our *Biodiversity Position Statement.*

14 / TMNA's Approach to Harmony With Nature

Our BIODIVERSITY focus area relates to Challenge 6 of Toyota's Environmental Challenge 2050. Toyota recognizes the importance of operating in harmony with nature. We will minimize the disruption of natural habitats as we plan, construct and manage our facilities, and actively enhance the natural balance of plants, animals and ecosystems. Here in North America, we developed an approach to conquering this challenge that involves three actions:

BIODIVERSITY

Protecting Species:

- Promote native species and remove invasive species
- Support pollinator species

Conserving Habitat:

- Achieve Conservation Certification® with Wildlife Habitat Council®
- Participate in education activities that promote habitat conservation

Sharing Know-How:

Conserve or restore more acreage than we occupy by engaging with:

- Local communities
- Partners

6 https://www.worldwildlife.org/initiatives/wildlife-conservation

BIODIVERSITY TARGETS

Between fiscal years 2017 and 2021, Toyota Motor North America (TMNA) will:

Partner with third parties to protect globally recognized biodiversity hotspots (on track)

According to Conservation International, there are 36 "biodiversity hotspots" around the world. Biodiversity hotspots are regions with significant biodiversity that are threatened. The 36 areas represent just 2.3 percent of Earth's land surface, but they support more than half of the world's endemic plant species and nearly 43 percent of endemic bird, mammal, reptile and amphibian species.

During fiscal year 2018, TMNA continued to participate with our parent company, Toyota Motor Corporation, in a global partnership with World Wide Fund for Nature (WWF, known in the U.S. and Canada as World Wildlife Fund). Toyota is the first car company and the first Japanese company to sign a Global Corporate Partnership agreement with WWF.

As part of the five-year agreement with WWF, effective July 1, 2016, Toyota is donating $1 million to the **Living Asian Forest Project**, a new series of existing and planned WWF activities to conserve tropical forests and wildlife in Southeast Asia. The project will take place in Borneo (Kalimantan) and Sumatra in Indonesia, both WWF priority places. In the future, the project will expand to the Greater Mekong region. Toyota will continue its support of this project for a total of five years.

The partnership also focuses on increasing the sustainability of natural resources such as wood, paper and pulp, palm oil and natural rubber. Unsustainable production and use of these commodities are among the main causes of deforestation and increased threats to endangered species in these regions.

With demand expected to rise for natural rubber – the main resource for car tires – the partnership recognizes that the sustainable production and use of natural rubber is required for forest ecosystem conservation. Toyota acknowledges the environmental and social challenges surrounding natural rubber and will collaborate with industries and stakeholders to contribute to international standard-setting as well as other related activities that WWF promotes.

→ For more on this partnership, visit *WWF's website.*

Partner with others to help protect and preserve natural habitat in North America (on track)

We are working on a way to better track and quantify the impact of our actions that protect and restore habitat, particularly those that involve team member volunteers. In fiscal year 2018, our partnerships with Wildlife Habitat Council® and the National Environmental Education Foundation supported this target:

- Toyota has about 1,000 acres at 12 sites engaged in conservation programs certified by Wildlife Habitat Council (WHC). Our protected areas include grasslands, wildflower meadows, pollinator gardens and forests. About 700 acres are actively managed and 300 acres are not actively managed but support species management and/or education projects.
- In partnership with the National Environmental Education Foundation (NEEF), Toyota sponsors National Public Lands Day (NPLD), an annual event that is the largest single-day volunteer effort for public lands in the U.S. In September 2017, Toyota's support made volunteerism possible at 2,100 NPLD sites, where 169,000 volunteers gave 680,000 hours of service worth $16.7 million; see the full story ***here.***

Participate in regional biodiversity activities that support wildlife corridors (on track)

Many of our larger sites are located along the monarch butterfly's migration pathway. To support monarch butterflies, we have planted pollinator gardens and/or certified monarch waystation habitats in the following locations:

- The assembly plant in Cambridge, Ontario
- The assembly plant in Woodstock, Ontario
- The assembly plant in Princeton, Indiana
- The assembly plant in Georgetown, Kentucky
- The new production engineering and manufacturing center in Georgetown, Kentucky
- The assembly plant in Blue Springs, Mississippi
- The assembly plant in San Antonio, Texas
- The powertrain plant in Huntsville, Alabama
- The powertrain plant in Buffalo, West Virginia
- The aluminum casting facility in Jackson, Tennessee
- The aluminum casting facility in Troy, Missouri
- The R&D facility in York, Michigan
- The parts distribution center in Boston, Massachusetts
- TMNA's new headquarters campus in Plano, Texas

→ In the spring of 2018, new pollinator gardens were planted at the production engineering and manufacturing center in Kentucky and the assembly plant in Texas. See *Pollinator Species* for more information.

Achieve 20 WHC Conservation Certifications by 2021 (on track)

Wildlife Habitat Council (WHC) partners with corporations, fellow conservation organizations, government agencies and community members to empower and recognize wildlife habitat and conservation education programs. WHC's certification standard, Conservation Certification, recognizes meaningful wildlife habitat management and conservation education programs.

Toyota has 12 sites engaged in conservation programs certified by WHC. Our partnership with WHC began in 1999 when Toyota joined WHC's membership. In 2008, the conservation program at our Kentucky assembly plant became Toyota's first WHC certification. WHC helps us inventory plant and animal species on our sites and identify appropriate projects. Our protected areas include grassland, wildflower meadows, pollinator gardens and forests.

During 2018, TMNA evaluated several sites for potential certification. Sites will be implementing programs during 2019 and will apply for certification in 2019 and 2020. In the meantime, several of our sites enhanced their certified programs. Follow these links for a few examples:

- Team members at Toyota's engine plant in Buffalo, West Virginia, installed four large boulder piles that serve as habitat, installed raptor nest boxes, purchased and installed listening stations for birds and bats so that team members can log the species they hear, installed signs along the nature trail (see photos below), and built an *outdoor learning center.*
- Team members at our Mississippi plant installed and monitored *13 wood duck nesting boxes.*
- At the Texas plant, team members planted *a new pollinator garden* at the Visitor and Education Center.

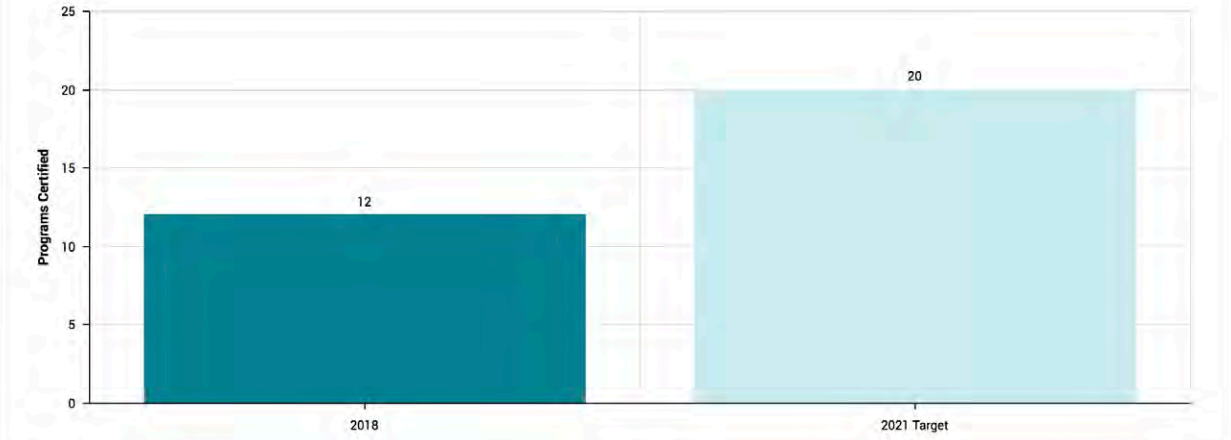
Toyota's engine plant in Buffalo, West Virginia, installed several educational signs along the walking trail to teach visitors about the many species, including pollinators, that can be found at the site. Wildlife Habitat Council awarded the plant's nature and education programs with a Gold Conservation Certification in 2016.

Toyota's North American sites with WHC-certified programs are:

- Toyota Motor Manufacturing, Kentucky — certified since 2008 (Gold)
- Toyota Motor Manufacturing Canada, Cambridge plant — certified since 2017* (Certified)
- Toyota Motor Manufacturing Canada, Woodstock plant— certified since 2012 (Gold)
- Toyota Motor Manufacturing, Indiana — certified since 2013 (Silver)
- Toyota Motor Manufacturing, Alabama — certified since 2014 (Gold)
- Toyota Motor Manufacturing, Mississippi — certified since 2014 (Gold)
- Toyota Motor Manufacturing, Texas – certified since 2015 (Certified)
- Toyota Bodine Aluminum, Jackson, Tennessee – certified since 2015 (Certified)
- Toyota Bodine Aluminum, Troy, Missouri – certified since 2016 (Certified)
- Toyota Motor Manufacturing, West Virginia – certified since 2016 (Gold)
- Toyota Arizona Proving Grounds, Phoenix, Arizona – certified in 2017 (Silver)
- Toyota Technical Center, York, Michigan – certified in 2017 (Silver)

** Toyota's Cambridge and Woodstock plants were first certified as a single program in 2012. The programs have since separated, and Cambridge obtained its own certification in 2017.*

15 Wildlife Habitat Council Conservation Certifications in North America



PROTECTING SPECIES

Imagine a world without Sumatran tigers. Or Amur leopards. Or Javan rhinoceros. These critically endangered species are iconic, but there are also thousands of lesser known plants, fish, reptiles and other mammals that are threatened by extinction. The loss of these species has implications for ecosystem functioning. And who knows which plant or fungus will provide the next life-saving medicine?

Through a five-year partnership with the International Union for the Conservation of Nature (IUCN), Toyota is providing funding to broaden the scope of the IUCN Red List of Threatened Species™. This will significantly increase knowledge on the extinction risk of more than 28,000 species, including many that are key food sources for a significant portion of the global population, and will help IUCN reach its goal of assessing 160,000 species (about 80,000 species have been assessed so far). With our planet experiencing extinctions at the fastest rate in its history, IUCN and Toyota believe there has never been a greater need to understand the status of the species upon which our survival depends.

We can't protect every species, but we can focus on those that call our sites home. By transitioning our thinking from landscaping to habitat management, we support native species at many of our larger sites. And because pollinator species are so important to biodiversity and agriculture, we pay special attention to the birds and the bees, bats and butterflies.

NATIVE SPECIES

When managing habitats on our sites, we promote native species by planting native trees and plants and removing invasive species. For example, at our assembly plant in Georgetown, Kentucky, team members control and prevent future growth of cattails and Japanese honeysuckle, both invasive species. Reducing the population of invasive species encourages native wetland species to repopulate, including two endangered plants found on the property: Short's goldenrod and Running Buffalo Clover.

→ See *Figure P03* for a list of the endangered and protected species found at or near our sites and what we do to protect them.

Fifth-grade students from Roch Carrier French Immersion Public School built 25 birdboxes for native migratory birds with supplies provided by Toyota's assembly plant in Woodstock, Ontario. Team members helped the students install the boxes along the new Wetland Trail.

Later in the season, the fifth graders returned to the plant to participate in birdbox monitoring and count how many boxes were occupied. The plant now has a total of 72 birdboxes on its property, and in the spring of 2018, 53 were occupied by nesting tree swallows, eastern bluebirds and house wrens.

WOOD DUCKS IN MISSISSIPPI

Wood ducks are found in various parts of North America. They live in slow-moving woodland rivers, shallow ponds and marshes, often in areas where large shade trees hang over the water. They also can be found in open marshes next to forested areas.

Wood ducks are native to Blue Springs, Mississippi, where Toyota has an assembly plant sitting on 1,500 acres. Toyota's property provides wood ducks with nesting sites in several of their favorite habitats.

Last year, team members formed teams and adopted wood duck nesting boxes. Almost 40 team members volunteered, and 13 new nesting boxes were built and installed, joining four that were installed the previous year. The teams monitored all 17 boxes and found 150 eggs in the boxes between February and May 2018.

One of the wood duck nesting boxes installed at Toyota's Blue Springs, Mississippi, plant yielded duck eggs, and eventually, baby ducks. About 135 eggs hatched during the 2018 nesting season. Footage of baby ducks leaving one of the nests was captured by the plant's external camera.

POLLINATOR SPECIES

Pollinators come in different shapes and sizes, from bees to birds, bats and butterflies. They move pollen from the male to the female part of a flower to fertilize the plant.

These industrious creatures pollinate more than flowers. A variety of food crops, like apples, pumpkins and alfalfa, rely on honey bees 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. In the United States alone, pollination of agricultural crops is valued at $10 billion annually. Globally, pollination services are likely worth more than $3 trillion.[7]

With more than 21,000 acres of land in North America, Toyota is dedicated to doing our part to support pollinator species. Fourteen Toyota sites have pollinator gardens, including new gardens at the production engineering and manufacturing center in Georgetown, Kentucky, and at the assembly plant in Texas.

A few times a year, team members from Toyota's Texas assembly plant are given the opportunity to visit nearby Bracken Cave Preserve to witness Mexican free-tailed bats emerge from the cave at dusk for their nightly insect hunt. Bracken Cave is the summer home to 15 million of these bats, making it the world's largest bat colony. Bats are important pollinators – more than 500 plant species rely on bats to pollinate their flowers.

7 *Sources for this data include the Food and Agriculture Organization of the United Nations and the U.S. Fish & Wildlife Service.*

POLLINATORS FIND A HOME AT TMMTX

Just outside the Visitor and Education Center at Toyota's plant in Texas (TMMTX) sits a new 11,000 square-foot pollinator garden. The assembly plant's environmental team worked with Texas Parks and Wildlife and the San Antonio Zoo to fill the garden with 250 native plants that will attract pollinators such as bees, butterflies and hummingbirds. Urban Biologist Judith Green from Texas Parks and Wildlife designed the garden, selected plants native to the San Antonio region and TMMTX's soil type, and educated team members on installation, care and maintenance of the garden. The horticulture department at the San Antonio Zoo potted and raised the plants – pesticide free – until TMMTX team members were ready to put them in the ground.

Toyota's Texas plant is also partnering with the San Antonio Zoo to plant pollinator gardens at six local high schools. Those schools will be provided with educational resources and programming to help students learn about the importance of pollinators in our environment.

These activities enhance TMMTX's nature and education program, which earned a WHC Conservation Certification in 2015.

Toyota's assembly plant in San Antonio, Texas, planted a pollinator garden covering 11,000 square feet in front of the newly renovated Visitor and Education Center. The garden has 250 native plants that will attract pollinators such as bees, butterflies and hummingbirds.

Each plant in the pollinator garden has a sign with a QR code that can be read on a mobile device. Using an app called Plants Map, the code brings up information on the plant, including how visitors can grow the plant in their own backyard.

MONARCH BUTTERFLIES

Even in the best of circumstances, the monarch butterfly *(Danaus plexippus)* has a low chance of survival in the wild. An adult butterfly can lay up to 400 eggs, but only a few of those survive to adulthood. This is what nature intended, except nature didn't plan on the species declining by 90 percent in the past 20 years.

That's where Toyota team members come in. At 14 Toyota sites across North America, team members have planted pollinator gardens to nurture monarchs as well as other pollinator species.

In the spring of 2018, a half-acre monarch habitat was planted on the grounds of Toyota's Kentucky assembly plant through a partnership with Columbia Gas. This habitat, along with three others (at our two plants in Ontario and at the plant in Mississippi) have been certified as monarch waystations by Monarch Watch. Certification as a waystation requires sufficient plant density to provide monarchs with shelter, one or more species of milkweed, one or more species of biennial and perennial nectar plants, and sustainable management practices such as removing invasive species and avoiding the use of insecticides.

All 14 of Toyota's sites with pollinator gardens are on the monarch migration path. The gardens provide food and shelter to the butterflies at various stages of their life cycle as they make their way south for the winter, then return in the spring. These gardens support the *target to promote wildlife corridors.*

The monarch is the only butterfly known to make a two-way migration. Unlike other species of butterflies that can overwinter as larvae, pupae or even as adults, monarchs can't survive the cold winters of northern climates.[8] Monarchs from the eastern part of North America migrate to the Sierra Madre Mountains in Mexico, where they spend October to late March roosting in oyamel fir forests. Monarchs from west of the Rocky Mountain range in North America overwinter in California along the Pacific coast near Santa Cruz and San Diego, roosting in eucalyptus, Monterey pines and Monterey cypresses. Some migration routes are 3,000 miles long and it can take a monarch up to two months to complete its journey south.

8 *See the U.S. Department of Agriculture website at USDA's page here: https://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/migration/index.shtml*

16 / Toyota and the Monarch Migration

The monarch is the only butterfly known to make a two-way migration. Monarchs from the eastern part of North America migrate to the Sierra Madre Mountains in Mexico, while those from west of the Rocky Mountain range overwinter in California. Some migration routes are as long as 3,000 miles. It can take as long as two months for a monarch to complete the journey south.

Toyota hopes to help the monarchs by offering these colorful commuters a “pollinator pit stop” on their trip south in the fall and north in the spring. Toyota has 14 facilities with pollinator gardens located along the monarch’s migration pathway.

CONSERVING HABITAT

Protecting species and conserving habitat go hand in hand – saving the species isn't possible unless the species has a place to live. Some species require very little area to survive, others roam across vast expanses. To protect and restore habitats large and small, Toyota pursues activities within North America by pursuing Wildlife Habitat Council Conservation Certification and volunteering to restore parks and recreation sites during National Public Lands Day (see the target to help *protect and preserve natural habitat* in North America). We also participate in a global corporate partnership with WWF (see the target to protect *globally recognized biodiversity* hotspots).

→ See also *Figure P04* for a list of TMNA sites in or near a protected area, critical habitat or biodiversity hotspot.

SPOTLIGHT: WALKING WITH NATURE

Toyota is committed to working in harmony with nature, but what does that mean? At Toyota, it means being aware of the environmental impacts of our activities and working to minimize them. But it's more than that. It's also about maximizing positive outcomes to create a more sustainable future.

At our assembly plant in Woodstock, Ontario, we are creating a more sustainable future by sharing our land with team members and the public to allow them to experience nature first hand.

In September 2017, the Woodstock Wetland Trail officially opened. The trail is a gift from Toyota to the community to mark the 30th anniversary of Toyota Motor Manufacturing Canada (TMMC).

The 2.2 kilometer (1.4 mile) trail is an extension of the Vansittart Woods Trail, which is owned by the Ministry of Natural Resources and used for educational purposes by the Thames Valley District School Board (TVDSB). The trail was designed and built with help from the Upper Thames River Conservation Authority.

The trail meanders to the north of Toyota's Woodstock plant through 200 acres of wetlands and woods that are provincially significant, meaning this land has been set aside to be preserved in its natural state.

"The importance of the Wetland Trail can't be overstated," explained Brad Hertner, community partnership specialist with the Upper Thames River Conservation Authority. "The trail sits on the edge of the Carolinian Zone, which has experienced extensive habitat destruction. Large areas of original forests are gone. That's why the protection of this area and Toyota's help in educating visitors about its biodiversity are so important."

The Carolinian Zone is a vegetation zone that makes up only 1 percent of Canada's land mass but is the most biodiverse zone, containing more species of plants and animals than any other Canadian region. The Zone contains 70 species of trees, 27 species of reptiles, 20 species of amphibians and countless bird species.

"The trail contributes to our Wildlife Habitat Council (WHC) certification and supports the Toyota Environmental Challenge 2050," explained Malinda Salazar, team member relations specialist at Toyota's Cambridge plant. "Both WHC and Challenge 2050 encourage us to preserve nature and to reach out to our community. The trail is a great way to bring us closer to nature and at the same time, provide an educational opportunity."

Toyota team members are especially eager to educate children about the animals and plants along the trail. Team members and their families created dozens of colorful trail markers that illustrate some of the creatures seen along the trail. They also created critter cards to illustrate the different butterfly species found along the trail. These cards are handed out with a trail map to students when they come to visit the trail.

"When we take the kids outside, they see everything they've learned about in books and in the classroom," said Malinda. "Education is key to the success of the trail. We encourage our team members to walk it and bring their families along, and we want to teach them a few things along the way."

In fact, during Earth Month, team members were rewarded for walking the trail with either a pair of baseball caps or an educational kit featuring a sling bag, *The Life of Butterflies* book, and butterfly monitoring sheets.

As Malinda explained, "The educational opportunities coupled with the amazing plants and animals make the trail extra special. It's really the perfect place to see nature's diversity and experience how Toyota is operating in harmony with nature."

Toyota team member Jennifer De Leur and her son Nolan joined other team members and their families at the Woodstock assembly plant in Ontario, Canada, to paint trail markers. These colorful signs have been placed along the Wetland Trail, which meanders through a portion of the plant's property and connects to the Ministry of Natural Resources' Vansittart Woods Trail.

SHARING KNOW-HOW

Supporting community initiatives helps to scale up conservation efforts. In the communities where we live and work, we focus our efforts on building knowledge and fostering a love of nature in children through school programs. Allowing youngsters to experience wildlife and learn about biodiversity at an early age helps them understand the value of biodiversity and the importance of protecting it.

Team members at Toyota's West Virginia engine plant installed an outdoor learning center on site, where the table and some of the concrete seats were made to look like logs and stones to make the space fit seamlessly in its natural setting. Team members invite students from Hometown Elementary and Winfield High School to visit the outdoor classroom and teach them about native species, the role of pollinators and the importance of biodiversity. These education events support the plant's WHC Conservation Certification.

The outdoor classroom at Toyota's West Virginia engine plant blends seamlessly into its surroundings. With concrete seats that look like wooden logs and animal footprints in the concrete pad, it's the perfect spot to bring local students and teach them about species native to Putnam County, the role of pollinators and the importance of biodiversity.

Toyota's engine plant in Huntsville, Alabama, hosted the Girls, Inc. and Boys and Girls Club at the 2018 Earth Day Celebration, which included a tour of the pollinator garden.

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 **RAISING AWARENESS** AND **CREATING A NET POSITIVE IMPACT.** BY **COLLABORATING WITH VARIOUS STAKEHOLDERS**, OUR ACTIONS HARNESS THE POWER OF PARTNERSHIPS TO ADVANCE US BEYOND BUILDING BETTER CARS – WE ARE BUILDING CONNECTIONS THAT ARE HELPING TO SHAPE A MORE SUSTAINABLE FUTURE.

INTRODUCTION TO OUTREACH

Toyota Motor North America (TMNA) has identified four interrelated environmental issues as our core focus areas: **Carbon, Water, Materials** and **Biodiversity**. These focus areas align with the Toyota Environmental Challenge 2050, which consists of six goals that seek to create a net positive impact on the planet.

This report provides information on our efforts to minimize negative impacts and maximize positive outcomes in each of our four focus areas. But if we really want to make a difference — and we do — we can't just act alone. We must engage with our stakeholders to work toward common objectives.

TMNA's stakeholders include customers, *team members*, *dealers*, *suppliers*, *communities and nonprofit organizations*, *government agencies*, academia and other partners (including other companies and trade associations). **Outreach** with these groups is a crucial component of our environmental sustainability strategy. Through outreach, we create mechanisms for building on the successes of our environmental programs and scaling up the outcomes. We can act locally and make a difference globally.

We acknowledge that a stronger commitment to partnership and collaboration is needed to address the world's environmental challenges successfully. Through our diverse set of partnerships, we are taking steps to build a path to achieving Challenge 2050 and a net positive impact. Through the power of collaboration, we hope to create lasting positive outcomes on a macro scale that will help us build a more sustainable future.

COMMUNITIES & NONPROFITS

TMNA supports local and national community projects that align with our core focus areas of **Carbon**, **Water, Materials** and **Biodiversity**. By concentrating our support on organizations that address challenges in these four areas, we are building on our environmental commitment beyond minimizing negative impacts and helping to promote positive environmental change across the North American region. We share our know-how and collaborate so that we can build more than great cars – we are building a better tomorrow by harnessing the power of collective action.

17 THE POWER OF COLLECTIVE ACTION

Toyota supports community projects that focus on the same issues we do: carbon, water, materials, and 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
Dream Car Art Contest	✓	✓	✓	✓
ECS/Toyota Young Investigator Fellowship	✓			
Household Waste & E-Waste Collections			✓	
Lexus Eco Challenge	✓	✓		✓
National Mayor's Challenge for Water Conservation		✓		
National Public Lands Day		✓		✓

For additional partnership examples, follow these links:

- *ACTUA Maker Mobile Youth Innovation Tour*
- *Hydrogen Council*
- *International Union for the Conservation of Nature (IUCN)*
- *Waterkeeper Alliance*
- *Wildlife Habitat Council*

TMNA team members are members of the Boards of Directors of several nonprofit organizations, such as **Yellowstone Forever, Kentucky Fish & Wildlife Foundation, National Environmental Education Foundation** and **Environmental Media Association.** TMNA has a representative on the **TRUE Advisory Council** and is a platinum member of the **U.S. Green Building Council.**

Toyota is also a member of the National Council of **World Wildlife Fund (WWF)**, an advisory group to WWF's Board of Directors in the U.S. Globally, Toyota participates in three WWF programs:

- *Living Asian Forest Project*, part of Toyota's Global Corporate Partnership Agreement.
- **Earth Hour:** Toyota's Canadian offices participated in Earth Hour 2018 by turning off all non-essential lighting. Earth Hour, coordinated by WWF and other volunteer organizations, is the world's largest grassroots movement for the environment. The 2018 through 2020 events endeavor to spark conversations on climate change and biodiversity loss and inspire people to act to protect our planet.
- **CN Tower Climb for Nature** *(see photo below).*

In 2018, team members from Toyota Canada's headquarters office participated in the WWF CN Tower Climb for Nature for the third consecutive year. The CN Tower Climb challenges participants to climb the 1,776 stairs of Toronto's tallest tower. Toyota Canada's team of 31 raised more than $5,300 to support WWF's conservation priorities.

DREAM CAR ART CONTEST

The Toyota Dream Car Art Contest is a worldwide contest presented annually, designed to inspire youth to imagine the future of mobility. Winners of the Toyota Dream Car Art Contest in participating countries are chosen from three age categories (under 8 years old, 8-11 years old, and 12-15 years old), with judging based on three criteria: artistry, uniqueness and execution of concept. The first international contest was held in 2004 by Toyota Motor Corporation in Japan.

Nine U.S. and nine Canadian Winners were selected by panels of judges. Their artwork advanced to represent the U.S. and Canada in competing against entrants from over 80 countries. In August 2018, the top 30 World Winners won an all-expenses-paid trip to Toyota City, Japan, and participated in an awards ceremony, which included a tour of a Toyota manufacturing plant.

"I am blown away by the drawings that were submitted," said Camille Forget, artistic director at DentsuBos. "I thought I would be seeing a lot of monster trucks and glittery princess cars, and instead I found cars that clean our oceans, shelter the homeless, plant trees, etc. Young minds crafting elaborate mechanisms based on sustainability and recycling. A lot of imagination fueling the way toward a colorful, better future."

Fiona Chen, age 9 from British Columbia, Canada, dreams of a car called "Watertopia," an underwater mobile hotel that collects garbage in the ocean and transforms it into new furniture. Fiona was one of the Canadian winners of Toyota's 2018 Dream Car Art Contest.

ECS FELLOWSHIP FOR PROJECTS IN GREEN ENERGY TECHNOLOGY

The ECS Toyota Young Investigator Fellowship is a partnership between the Electrochemical Society (ECS) and Toyota Research Institute (TRI), a division of Toyota Motor North America. The 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.

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

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

Each year, fellows deliver presentations to Toyota, discussing the overall scope of the research before participating in breakout sessions, where the winners meet with specific research groups that are more directly connected to their topical areas. During these sessions, the fellows learn about some of the research being developed at Toyota, connecting fundamental work to applied research.

The ECS Toyota Young Investigator Fellowship Selection Committee chose two recipients to receive the 2018-2019 fellowship awards for projects in green energy technology. The awardees are **Professor Kimberly See**, California Institute of Technology, and **Professor Iryna Zenyuk**, University of California, Irvine.

Now in its fourth year, the ECS Toyota Young Investigator Fellowship is an annual program; the 2019-2020 request for proposals was released in the fall of 2018.

HOUSEHOLD WASTE & E-WASTE COLLECTIONS

Since 1994, Toyota has helped team members and surrounding communities recycle and properly dispose of household waste. During designated collection days, team members and residents from surrounding communities are invited to drop off electronic waste, appliances, paint and other household items that are difficult to recycle or dispose. Iitems such as clothing and eye glasses are also collected and donated to those in need.

Four sites have been hosting these events for several years and together, they have invested close to $1 million over the years to ensure more than 2 million pounds of material have been recycled or properly disposed. Here are results from their most recent events:

- Toyota's assembly plant in Georgetown, Kentucky, hosted a collection event in May 2018 for team members and residents from surrounding communities in partnership with the city of Georgetown, Scott County and Green Metals, Inc. In addition to household and electronic waste, team members and residents were provided with an option to have documents shredded and recycled. More than 796 vehicles came to the plant to drop off 117,737 pounds of waste.
- Toyota's assembly plant in Princeton, Indiana, hosted household waste and recycling days for team members and Gibson County residents in October 2017 and April 2018 and collected 53,790 pounds of waste that was originally destined for landfill. Since the program's inception in 2006, Toyota Indiana has collected 747,200 pounds of material from the community, including paints, oils, electronic equipment, fluorescent tubes and batteries. Additionally, the plant places four recycling containers in the parking lots for team members to drop off paper, cardboard, aluminum and glass from home. Over the last year, Toyota Indiana recycled more than 57,000 pounds on behalf of team members. The plant also collected and recycled 2,700 pounds of batteries from team members, which is the equivalent of about 54,000 AA batteries.

- Toyota's assembly plants in Cambridge and Woodstock, Ontario, hosted their sixth electronic waste drop-off for team members during Earth Month (April) 2018 and collected more than 7,500 pounds (3,400 kilograms).
- Toyota's head office in Toronto held its 11th annual event in June 2018 and collected 1,200 pounds of electronic waste and 700 pounds of donations.

Team members at Toyota's assembly plant in Kentucky helped unload household waste from a resident's vehicle. Residents and team members were invited to drop off household and electronic waste for recycling and have paper documents shredded. More than 796 vehicles came to the plant to drop off 117,737 pounds of waste.

During a household waste collection event in April 2018, about 150 vehicles came to Toyota's assembly plant in Indiana to drop off household and electronic waste. The plant collected enough television sets to fill the truck shown in the photo more than six times!

LEXUS ECO CHALLENGE

Over the past 11 years, the Lexus Eco Challenge has awarded more than $5 million in scholarships that have helped more than 33,000 middle and high school students have an impact on their communities, learn about the environment and improve their teamwork skills. The annual Lexus Eco Challenge is an educational program and contest that inspires and empowers high school and middle school students to learn about an environmental issue, develop an action plan to address the issue, implement the plan and report on the results.

The Grand Prize-winning teams earn $30,000. Each winning team divides the grand prize: a $7,000 grant for the school, a $3,000 grant for the team's teacher advisor, and $20,000 in scholarships for the students to share. Eight First Place-winning teams are awarded $15,000 each.

The 2017-2018 Lexus Eco Challenge had more than 2,300 students in grades 6 through 12 participate. Lexus and Scholastic reviewed the finalists' innovative submissions and selected one middle school team and one high school team as the 2017-2018 Lexus Eco Challenge Grand Prize winners. The Grand Prize winners were the "Enerjagers" from Saint Joseph Academy in Cleveland, Ohio, and "Plastic Elastic 3.0" from Christa McAuliffe School (P.S. 28) in Jersey City, New Jersey.

Enerjagers and teacher advisor Kristen Schuler focused on reusing materials and trash that would otherwise find its way into a landfill. The students produced 600 candles from old glassware, crayons and beeswax and distributed them to local residents.

Plastic Elastic 3.0, guided by teacher advisors Malissa Yabut and Robert O'Donnell, explored and confronted the dangers of how microfibers work their way into our water supply and eventually into our food. They created jewelry from recycled plastic bags and gave them as gifts to young students and local seniors.

NATIONAL MAYOR'S CHALLENGE FOR WATER CONSERVATION

In 2018, residents from more than 4,800 cities across the United States took part in the seventh annual Wyland National Mayor's Challenge for Water Conservation by pledging to save over 3 billion gallons of water over the next year.

The challenge, presented by the Wyland Foundation and Toyota, with support from the U.S. EPA, National League of Cities, The Toro Company, Earth Friendly Products (ECOS) and Conserva Irrigation, addresses the growing importance of educating consumers about the many ways they can conserve water. 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.

→ For more information, see the full story *here.*

NATIONAL PUBLIC LANDS DAY

Toyota encourages all team members, dealers and customers to offer a little nurture to nature on National Public Lands Day (NPLD). Held every September, NPLD is the largest single-day volunteer effort for public lands in the U.S. 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 these special places. NPLD is hosted by the National Environmental Education Foundation.

For the 19th consecutive year, Toyota was the national corporate sponsor of NPLD. In addition to financial backing for the program, Toyota hosted more than 30 events in 2017 at sites across the nation for employees, ranging from Oak Point Nature Preserve in Texas to Tombigbee State Park in Mississippi and The Leslie Science and Nature Center in Michigan.

In 2017, Toyota's support made volunteerism possible at 2,100 NPLD sites, where 169,000 volunteers gave 680,000 hours of service worth $16.7 million.

Toyota's plant in Mississippi hosted its third NPLD event at Tombigbee State Park as part of a five-year, $250,000 partnership with the park and the Mississippi Department of Wildlife, Fisheries and Parks. More than 500 team members participated.

John Paul Blaylock, a group leader in Paint Kaizen, designed and headed a team of volunteers who created a new primitive campsite and — for each of the existing three sites — installed posts for hammocks, built a fire pit and grille and added benches as well as a swing and tent platform.

Meanwhile, Phillip Williams, a specialist in Facilities, managed teams that built a sand volleyball court, replaced a rusted-out basketball hoop and restriped the adjoining asphalt, and swapped out a faded 1970s-era park sign for a new one designed by one of Williams' project leaders.

And while that was going on, other team members stained 15 picnic tables purchased by Toyota's Mississippi plant.

Unlike past years, children were welcome. While their parents worked, the kids took part in relay races, hula hoop contests, face painting and other carnival-like activities. In addition, the Wyland Mobile Learning Experience was on hand to teach the next generation about water conservation.

Toyota Mississippi team member volunteers pause to admire their handiwork: a new park sign designed by one of their own.

Above: Team members from Toyota's Kentucky assembly plant gathered at Suffoletta Family Aquatic Center for National Public Lands Day 2017.

Left: Team members from Toyota's Indiana assembly plant weeded, mulched, planted trees, picked up trash, painted park structures and built new picnic tables at Gavin Park for National Public Lands Day 2017. Toyota Indiana also donated $20,000 to the park to support future improvements.

DEALERS

Toyota is proud to join the ranks of the top 10 companies with the most Leadership in Energy and Environmental Design (LEED®)-certified retail locations. While the list includes retailers from various industries, Toyota is the only automotive brand to be included in the top ranks.[9]

"Inclusion among the top 10 retailers to date for LEED certification, and being the only automotive brand, speaks volumes to the movement Toyota has achieved through our environmental efforts to improve the overall quality of life," said Kevin Butt, director of Environmental Sustainability at Toyota Motor North America (TMNA). "Environmental leadership means supporting our dealers as we continue to drive environmental performance across four key areas – Carbon, Water, Materials and Biodiversity. Toyota is focused on environmental sustainability with a goal of zero impact by the year 2050."

"Toyota is one of the leading examples of a business embracing sustainability and taking action to drive change," said Mahesh Ramanujam, president and CEO of the U.S. Green Building Council. "As one of our Platinum level members and one of the most prolific users of LEED in their retail spaces, Toyota demonstrates an unmatched commitment to sustainable development and responsible growth among their peers in the automotive industry."

Toyota and Lexus brands have achieved various levels of LEED certification for the construction and renovation of their sales and service areas. As of July 2018, 61 Toyota and Lexus dealers in the U.S., Canada and Mexico had achieved LEED certification, and more than 30 more are registered with the U.S. Green Building Council.

Toyota and Lexus work with their dealerships on an individual basis, providing guidance on sustainable strategies to achieve LEED certification and vendor support for products and programs such as LED lighting retrofits for energy savings. Through efforts like the Toyota Image II facility initiative and Lexus Vision USA, dealerships incorporate the best of sales and retail in an environmentally friendly setting featuring windows allowing for natural light and low-emitting interior finishes.
There are approximately 1,850 Toyota and Lexus dealerships in the United States, Canada and Mexico, all independently owned franchises.

One such example is Kendall Toyota in Eugene, Oregon, a LEED Platinum® dealership. A few of their sustainable features include:

- Photovoltaic Panels: With photovoltaic panels covering most of the dealership's roof, they produce up to 30 percent of the building's energy needs.
- Recycled Cisterns: Two 10,000 gallon, above-ground cisterns are recycled fluid tanks. They serve as an important role in the water recycling system at the dealership.
- Capturing and Recycling Rainwater: Approximately 60 percent of the water accumulated on the roof is collected and directed into two above-ground cisterns. This water supplies the car wash and landscape irrigation.
- Other features include on-site storm water treatment, high-performance HVAC, day lighting, recycled building materials and native landscaping.

9 *Excludes financial institutions with retail bank locations. Toyota is the only automotive company in the top 10 (as of July 2018).*

Toyota and Lexus recognize the hard work that goes into the LEED certification process. The continued efforts not only are attractive to environmentally conscious consumers, they also can provide dealerships an edge in recruiting and retaining team members.

The growth of LEED certifications by Toyota and Lexus dealers closely aligns with the company's larger goal to have a net positive impact on society and the planet by the year 2050.

LEED®, or 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 requirements in sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

18 TOYOTA/LEXUS LEED® DEALERSHIPS

	TOYOTA	LEXUS
Platinum	4	0
Gold	20	4
Silver	17	3
Certified	11	2
Total	**52**	**9**

**As of July 2018, 54 Toyota and Lexus dealerships in the U.S, 6 in Canada and 1 in Mexico have been certified to LEED®.*

GOVERNMENT AGENCIES

Establishing positive and productive working relationships with local, state, provincial and federal government agencies is vital for sharing ideas and facilitating a common understanding of issues. Sharing information helps us understand the government's concerns and helps them understand how potential new requirements impact our business. Together, we can seek a balance that protects health and the environment without putting unnecessary burden on our facilities.

- Our assembly plant in Indiana has been a member of Partners for Pollution Prevention since 2006. This program is organized by the **Indiana Department of Environmental Management (IDEM)** to provide a forum for local businesses to discuss and share pollution prevention (P2) successes and challenges with each other and to advise IDEM on P2 policies and programs. The sharing of ideas amongst Indiana businesses allows everyone to improve together. Good ideas are shared, as are bad ideas so that everyone learns from mistakes and challenges.
- Our assembly plant in Blue Springs, Mississippi, has been a Leader in EnHance (Envision Heightened Awareness Nurturing Conservation & Environmental Excellence) since 2013. EnHance is a voluntary environmental stewardship program run by the **Mississippi Department of Environmental Quality (MDEQ)** that recognizes committed environmental leaders who accomplish goals beyond their legal requirements. In 2017, the Mississippi plant's membership was renewed through 2020. Toyota's Mississippi plant was a platinum sponsor of EnHance's 2018 annual workshop and awards luncheon, where the program marked its 10th anniversary.
- In recent years, several large companies, including Toyota, have moved headquarters to the **city of Plano** in Texas. They've brought jobs, but their presence has also led to increased traffic congestion and a higher population density. To address these issues, the city's Environmental Health and Sustainability Department convened the Corporate Sustainability Forum in 2017 to bring together some of the city's largest businesses to share and network with each other and to put their extensive expertise together to help solve the city's mobility and transportation challenges. The group meets every other month, bringing together sustainability officers from Toyota, Capital One, FedEx, NTT Data, Ericsson, Pizza Hut, Dr. Pepper/Snapple Group, Bank of America, Plano ISD, Children's Medical Center and PepsiCo/Frito-Lay. Toyota hosted the March 2017 meeting of the group. Forum members are currently exploring options for a joint initiative that all members can work together on to support the city's commitment to sustainable living.
- Our assembly plants in Cambridge and Woodstock, Ontario, offer tours to **Canadian ministries** to demonstrate the minimal impacts of our operations. Regulators have told us these tours helped them see firsthand and understand the controls we already have in place and how risks are managed.
- Toyota's two Ontario assembly plants participate on the Automotive Manufacturing Working Group facilitated by the Facility Environment and Energy Committee of the Canadian Vehicle Manufacturers' Association. This working group meets regularly with **Environment and Climate Change Canada (ECCC)** and the **Provincial Ministry of Environment and Climate Change** to discuss upcoming regulatory changes.

SUPPLIERS

Toyota recognizes that environmental impacts extend into our supply chain. When considering the full life cycle impacts of manufacturing, distributing and driving vehicles, supply chain impacts outpace our own. That's why the Toyota Environmental Challenge 2050 directs us to work with suppliers to achieve three main goals:

- Engage with suppliers to eliminate CO_2 emissions from the process of manufacturing the parts and materials we purchase to make our vehicles (Challenge 2). Toyota Motor Corp. joined CDP's Supply Chain Program, which helps us gather information on major supplier initiatives worldwide. We will continue to use this information to prioritize engagement with major suppliers in North America.
- Eliminate CO_2 emissions from our own operations and third-party logistics (Challenge 3). Below, we discuss how working with third-party carriers is helping us meet this challenge.
- Collaborate to help establish a recycling-based society (Challenge 5). We work with our suppliers to help us find ways to reuse packaging and recycle damaged parts. See the *MATERIALS CHAPTER* for more information.

Meeting these challenges depends on close collaboration with our major suppliers. Collaboration takes many forms, and training is arguably the most vital joint activity. During fiscal year 2018, team members at our assembly plant in Tecate, Mexico, conducted training for 160 on-site suppliers from seven supplier companies. The training covered waste management practices in a "dojo" setting – a room with interactive exhibits that provide a more hands-on experience. The same training was also given to all the plant's new hires plus 89 team members in five different shops.

Toyota is a member of U.S. EPA's Suppliers Partnership for the Environment (SP), an innovative partnership between automobile original equipment manufacturers, their suppliers and EPA. SP provides a forum for small, mid-sized and large automotive and vehicle suppliers to work together, learn from each other and share environmental best practices. Toyota is currently co-chairing the Materials Efficiency Working Group with General Motors.

SUPPLIERS PARTNERSHIP FOR THE ENVIRONMENT™

THIRD-PARTY 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 and customers. Through the use of returnable shipping containers, packaging reductions, light weighting and densification, our own logistics operation has reduced waste, fuel consumption and greenhouse gas (GHG) emissions, and we have helped our third-party logistics carriers do the same.

We set a target to reduce the GHG intensity of both owned and third-party logistics by 5 percent by fiscal year 2021, from a 2016 baseline. Fiscal year 2018 results can be found *here.* This target supports the Toyota Environmental Challenge 2050, which calls for eliminating CO_2 emissions from operations and logistics (Challenge 3).

Toyota's production control logistics operation – which procures the parts and materials used to manufacture our vehicles – has been working on a strategy to reduce GHG emissions from two primary sources: over the road transportation (OTR) and cross dock yard operations. Their focus is converting diesel-powered OTR equipment to alternative fuels such as renewable compressed natural gas, and to trial alternative power systems at the cross docks such as electric shunt trucks.

Ryder System Inc. (Ryder) has a fleet of trucks and trailers dedicated to Toyota operations. The company operates at several of our larger plants, including the assembly plants in Kentucky, Indiana and Texas. We have been working with Ryder on developing a plan to help us meet our 2021 target to improve GHG intensity from logistics operations by 5 percent as well as the Challenge 2050 goal to eliminate CO_2 emissions from manufacturing and logistics operations.

Ryder carries parts from our suppliers either directly to the plants or to a cross dock (where materials are consolidated and loaded onto trailers without warehousing). The company has replaced 29 of its diesel trucks that move goods for Toyota's assembly plant in Kentucky with trucks that run on renewable CNG (compressed natural gas). The CNG is considered renewable because renewable natural gas credits are purchased from the fuel provider to offset GHG emissions.

By 2021, Ryder hopes to convert one-third of its Toyota-dedicated fleet to renewable CNG, which will result in a 5 percent absolute reduction in GHG emissions.

TEAM MEMBERS

We expect our team members to be environmental ambassadors. We expect them to be educated about Toyota's environmental activities and participate in projects that improve our environmental performance, and we want them to be inspired to share our know-how with others.

We take a variety of approaches to **educating team members** about the Toyota Environmental Challenge 2050 and our North American environmental action plan and activities. We host lunch-and-learns, publish newsletters and include 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. Some of our sites give team members a chance to test their environmental knowledge through a trivia game and award the high scorers with T-shirts and other prizes. The engine plant in Alabama hosted an open house for family and friends in October 2018, where the Environmental Department had a booth to showcase information about Challenge 2050. Our assembly plants in Ontario use their internal newsletter to raise awareness about Toyota's environmental performance and provide educational material to help team members live a more environmentally sustainable lifestyle at home.

Team members play a major role in **identifying projects** that protect nature, save energy and water, and reduce waste. Some projects require a small group of dedicated team members, and others succeed thanks to help from our suppliers. A number of these projects are described in the Carbon, Water, Materials and Biodiversity sections of this report. Each year, all sites are asked to submit examples of their best environmental projects for a chance to win one of Toyota's global Eco Awards.

Finally, we encourage team members to take all the good things we do at work and **share their know-how** with others. Earth Day provides an annual opportunity for us to educate and engage team members on 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 that include a chance for team members to give back to their communities.

At our assembly plants in Ontario, Earth Month participation in 2018 increased by 35 percent compared to 2017. The plants awarded prizes to team members for participating in any online or in-person Earth Month activity. For example, team members were asked to submit a Green Pledge and explain how they would make a positive change for the environment. During Earth Month, 530 team members stepped up to the challenge and submitted their Green Pledges to cut waste and water use, shift to reusable containers and away from disposable plastic bottles, and use more efficient lighting at home. Two team members won tickets to ***An Evening with Jane Goodall*** as she described her extraordinary scientific breakthroughs in animal behavior and her journey to becoming one of the world's most prominent and active conservationists.

Toyota's engine plant in Huntsville, Alabama, hosted the Girls, Inc. and Boys and Girls Club at the 2018 Earth Day Celebration. Team members took the children on a tour of the pollinator garden (left) and pond (right) and hosted treasure hunt activities, games and prizes.

ENVIRONMENTAL ACTION PLAN

AIR QUALITY

BIODIVERSITY

CARBON

COMPLIANCE

DEALERS

ENVIRONMENTAL MANAGEMENT SYSTEMS

GREEN BUILDING

MATERIALS

WATER

2021 ENVIRONMENTAL ACTION PLAN

P01 / TMNA ENVIRONMENTAL ACTION PLAN, FY2017-2021

FOCUS AREA/ CHALLENGE 2050	FY2021 TARGET	STATUS	FY2018 PROGRESS
CARBON Challenge 1 Challenge 2 Challenge 3	Foster accelerated adoption of next-generation vehicles by continuously supporting education and infrastructure deployment	△	• Supported education initiatives and continued participation in the Hydrogen Council • Partnering with Shell, FirstElement Fuels, Linde and Air Liquide on hydrogen infrastructure
	Advance the development and utilization of low carbon fuels	△	Working on developing renewable hydrogen fuel for the hydrogen fuel cell electric truck at the Los Angeles ports
	Develop a mobility project in North America that reduces congestion and GHGs	△	Developing a ride share program for Plano Headquarters
	Improve absolute GHG emissions from North American operations 15% from a baseline of FY2016	△	Total GHG emissions increased but we finished developing a plan that will decrease absolute emissions by FY2021
	Improve GHG emissions intensity from all logistics 5% from a baseline of FY2016	△	• Improved GHG intensity from owned and third-party U.S. parts and vehicle logistics by 14% compared to FY2016 • Data collection for manufacturing logistics is in process
WATER Challenge 4	Prioritize and implement water stewardship plans for facilities in water-stressed areas	△	• Mapped major sites with Aqueduct™ • Prioritized 15 sites in areas of "high" water stress according to Aqueduct™
MATERIALS Challenge 5	Reduce the use of packaging material	△	Piloting RFID chips to reduce returnable container losses and avoid the need to build and buy as many new ones
BIODIVERSITY Challenge 6	Partner with third parties and other Toyota regions to protect globally recognized biodiversity hotspots	△	• Continued participating in WWF partnership with TMC
	Partner with others to help protect and preserve natural habitat in North America	△	• Protecting ~ 1,000 acres through Conservation Certification® with the Wildlife Habitat Council® • Hosted NPLD events at 30+ sites and supported 2,100 sites nationwide
	Participate in regional biodiversity activities that support wildlife corridor(s)	△	Planted new pollinator gardens at the new production engineering and manufacturing center in Kentucky and outside the visitors center at the assembly plant in Texas
	Achieve 20 WHC Conservation Certifications by 2021	△	• Maintained 12 WHC Conservation Certifications • In the process of identifying programs for future certification

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

ABOUT THIS CHART:

This chart summarizes fiscal year 2018 progress against our environmental action plan (EAP) targets for fiscal years 2017 to 2021. These targets cover assembly and unit plants, parts and vehicle distribution centers, sales offices and R&D sites in the U.S., Canada and Mexico.

AIR QUALITY

CRITERIA POLLUTANT TAILPIPE EMISSIONS

Hydrocarbons, nitrogen oxides (NOx) and carbon monoxide — all byproducts of fuel combustion — are linked to various air quality issues such as smog formation as well as various 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 (the Canadian program is aligned with the U.S. federal program). EPA's certification program is changing from Tier 2 and began phasing in Tier 3 in 2017.

While the EPA Tier 3 and California Low Emission Vehicle III (LEV III) regulations have different nomenclature for categorizing vehicle emissions, the bins include the same vehicle emission groupings. For the 2017 model year, EPA Tier 3 and California LEV III regulations required an auto manufacturer's fleet average to meet an emission standard for non-methane organic gas with nitrogen oxides (NMOG + NOx) of 0.086 g/mi for passenger cars and light-duty trucks up to 3,750 pounds, and 0.101 for other light-duty trucks. The standard decreases until 2025, when the NMOG + NOx average for both sets of vehicles will become 0.030 g/mi.

The EPA Tier 3 vehicle standards were intended to be harmonized with California's Low Emission Vehicle program and create a federal vehicle emissions program that allows automakers to sell the same vehicles in all 50 states. The vehicle standards are being implemented over the same timeframe as the greenhouse gas/fuel efficiency standards for light-duty vehicles (promulgated by EPA and the National Highway Traffic Safety Administration in 2012) as part of a comprehensive approach toward regulating emissions from motor vehicles.

Environment and Climate Change Canada has issued Tier 3 regulations aligned with the final U.S. Tier 3 rule.

Toyota's goal is to maintain flexibility to build vehicles based on customer preferences. In setting tailpipe emission regulations, we believe standards should be performance-based and consider 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. Fuels must be considered with vehicle technologies as a holistic system. Reduced sulfur levels in gasoline, required by the federal Tier 3 and California LEV III programs, are enabling the after-treatment systems being designed for compliance.

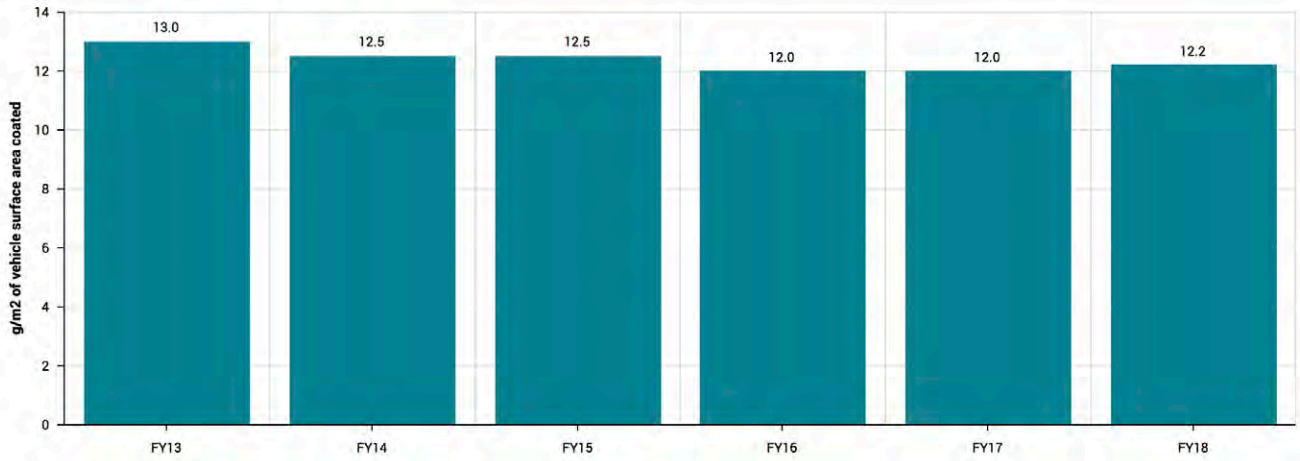
Toyota annually complies with the state of California, U.S. and Canadian federal vehicle emissions programs, and we have met the requirements for each model year.

The American Council for an Energy Efficient Economy (ACEEE) "Greenest Vehicles of 2018" list contains the Toyota Prius Eco.[10] The list is notable in that it considers a variety of criteria when determining the greenest cars, including the car's emissions, emissions from the electric grid on which it charges, and energy necessary to build and dispose of the car.

10 *The Prius Eco is an available trim level within the Prius model line. This trim option offers customers even better fuel efficiency thanks to lighter weight and further optimized aerodynamics.*

VOLATILE ORGANIC COMPOUNDS

P02 VOC EMISSIONS



Fiscal Year(FY) runs April to March

Scope: Toyota's North American Manufacturing Plants

ABOUT THIS CHART:

The primary concern with non-greenhouse gas 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 several health issues and is particularly prevalent in dense urban areas with heavy traffic, industrial activity and sunny, warm climates.

Painting operations generate most of Toyota's VOC emissions. Toyota's North American manufacturing plants measure grams of VOCs emitted per square meter of vehicle surface area coated (g/m^2). There was a slight increase in VOC emissions from fiscal year 2017 to 2018, due to some production shifting from better performing plants and truck deck painting at our assembly plant in Mexico, where truck production increased from the previous year. Since 2002, we have reduced total VOC emissions by 65 percent, from 35.0 to 12.2 g/m^2.

BIODIVERSITY

P03 / ENDANGERED, THREATENED OR PROTECTED SPECIES ON OR NEAR TOYOTA SITES

TOYOTA SITE	ENDANGERED, THREATENED, OR PROTECTED SPECIES	LAW/REGULATION	ACTIVITIES
All TMNA sites in North America	Monarch butterfly	The U.S. Fish & Wildlife Service is legally bound to determine whether to protect monarchs under the Endangered Species Act. A decision will be made by June 2019.	See Protecting Species/Pollinator Species/Monarch Butterflies
Manufacturing plant in Baja California, Tecate (Mexico)	• *Ceanothus verrucosus* (a medicinal shrub) • *Crotalus ruber* (a native rattlesnake) • *Linx rufus* (bobcat) • *Lepus californicus* (black-tailed jackrabbit) • *Ferocactus gracilis* (fire barrel cactus)	Protected by Mexico's Ministry of Environment and Natural Resources (SEMARNAT) under NOM-059-SEMARNAT- 2010	These species are found on 143 acres of the site's property that are protected as a wildlife preserve.
Manufacturing plants in Cambridge and Woodstock, Ontario (Canada)	Tree Swallow	Protected by the Migratory Birds Convention Act	See Protecting Species/Native Species
Engine plant in Huntsville, Alabama	Alabama cave shrimp	Protected by the U.S. Endangered Species Act	Cave shrimp are found in an area of the site that is not disturbed by site operations or activities.
Assembly and unit plant in Georgetown, Kentucky	Short's Goldenrod, Running Buffalo Clover, Indiana Bat	Protected by the U.S. Endangered Species Act	Planted Short's Goldenrod along a one-mile nature trail onsite
Vehicle logistics site at the Port of Portland, Oregon	Coho Salmon	Protected by the U.S. Endangered Species Act	Salmon Safe certified; site maintains a bioswale and storm water pollution prevention program; team members participate in annual cleanup of the Willamette River

*Includes all Toyota-owned sites as of September 2018

ABOUT THIS CHART:

As sites apply for certification with the Wildlife Habitat Council, they work with a WHC biologist to take an inventory of species on site. This inventory includes any species listed by federal law as endangered or threatened. In addition to the 12 sites with WHC-certified programs, we have begun to inventory other manufacturing and logistics sites. As we gather this information, it will be used to inform our biodiversity strategy and project selection.

→ *VIEW* THIS SECTION

P04 TOYOTA SITES IN OR NEAR A PROTECTED AREA, CRITICAL HABITAT OR BIODIVERSITY HOTSPOT

SITE NAME	LOCATION	TYPE OF OPERATION	PROTECTED AREA, CRITICAL HABITAT AND/OR BIODIVERSITY HOTSPOT
TMMBC	Baja California, Tecate, Mexico	Manufacturing	Hotspot: California Floristic Province; Protected area: Wildlife Preserve
TMMC	Cambridge and Woodstock, Ontario, Canada	Manufacturing	Protected Area: Vansittart Woods wetlands
TABC	Long Beach, California	Manufacturing	Hotspot: California Floristic Province
Gardena Technical Center	Gardena, California	R&D	Hotspot: California Floristic Province
LA Parts Distribution Center	Los Angeles, California	Parts logistics	Hotspot: California Floristic Province
TLS Long Beach	Port of Long Beach, California	Vehicle logistics	Hotspot: California Floristic Province
San Ramon Regional Office and Parts Distribution Center	San Ramon, California	Parts logistics	Hotspot: California Floristic Province
North American Parts Center California	Ontario, California	Parts logistics	Hotspot: California Floristic Province
TLS Portland	Port of Portland, Oregon	Vehicle logistics	Critical Habitat for Soho Salmon
TAPG	Phoenix, Arizona	Proving ground	Critical Habitat for Yellow-billed Cuckoo

ABOUT THIS CHART:

TMNA has begun an analysis to determine whether sites are in a protected area, critical habitat or biodiversity hotspot (see below for definitions of these terms). We started with our largest facilities, those that have Conservation Certification from the Wildlife Habitat Council, and those undergoing major renovations. In the table above, we only include the sites located in these areas. We will be analyzing additional sites going forward and the information will be used to inform our biodiversity strategy and project selection.

A **Protected Area** is defined as a geographic area that is designated, regulated or managed to achieve specific conservation objectives. (GRI Standards Glossary 2016)

Critical Habitat is a term defined and used in the U.S. Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

A **Biodiversity Hotspot** is defined as an area that meets two criteria:

- It must have at least 1,500 vascular plants as endemics — which is to say, it must have a high percentage of plant life found nowhere else on the planet. A hotspot, in other words, is irreplaceable.
- It must have 30 percent or less of its original natural vegetation. In other words, it must be threatened.

Around the world, 36 areas qualify as biodiversity hotspots. They represent just 2.3 percent of Earth's land surface, but they support more than half of the world's endemic plant species and nearly 43 percent of endemic bird, mammal, reptile and amphibian species.

Critical Ecosystem Partnership Fund (CEPF) maintains a list of hotspots by region. CEPF is a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank.

→ *VIEW* THIS SECTION

ABOUT THIS CHART:

Toyota has a target to achieve 20 Wildlife Habitat Council (WHC) Conservation Certifications by 2021. This target is based on a calendar year. As of the end of 2018, Toyota's North American sites with WHC-certified programs are:

- Toyota Motor Manufacturing, Kentucky — certified since 2008 (Gold)
- Toyota Motor Manufacturing Canada, Cambridge plant — certified since 2017* (Certified)
- Toyota Motor Manufacturing Canada, Woodstock plant— certified since 2012 (Gold)
- Toyota Motor Manufacturing, Indiana — certified since 2013 (Silver)
- Toyota Motor Manufacturing, Alabama — certified since 2014 (Gold)
- Toyota Motor Manufacturing, Mississippi — certified since 2014 (Gold)
- Toyota Motor Manufacturing, Texas – certified since 2015 (Certified)
- Bodine Aluminum, Jackson, Tennessee – certified since 2015 (Certified)
- Bodine Aluminum, Troy, Missouri – certified since 2016 (Certified)
- Toyota Motor Manufacturing, West Virginia – certified since 2016 (Gold)
- Toyota Arizona Proving Grounds, Phoenix, Arizona – certified in 2017 (Silver)
- Toyota Technical Center, York, Michigan – certified in 2017 (Silver)

** Toyota's Cambridge and Woodstock plants were first certified as a single program in 2012. The programs have since separated, and Cambridge obtained its own certification in 2017.*

→ *VIEW* THIS SECTION

CARBON

VEHICLE CO_2 EMISSIONS

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 was required to meet a GHG standard of 250 grams of CO_2 per mile by 2016, equivalent to a Corporate Average Fuel Economy (CAFE) standard of 35.5 miles per gallon (mpg); 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 in vehicles that consumers are willing to purchase in sufficient quantities needed for compliance with the standards. Low fuel prices have added to this challenge. In 2012, when the standards were set through the 2025 model year, it was impossible to predict market outcomes so far into the future, since preferences are largely determined by factors such as fuel price and economic conditions, which are beyond an auto manufacturer's control. As such, the regulations call for a feasibility evaluation of the 2022-2025 standards, which is now underway. Toyota is collaborating with the relevant government agencies to ensure the regulations are aligned with technology and market realities while achieving the program's environmental goals.

The Canadian federal government introduced a GHG emissions regulation under the Canadian Environmental Protection Act for the 2011-2016 model years, and in October of 2014 issued final GHG regulations for the 2017-2025 model years.

In Mexico, the government has modeled vehicle 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.

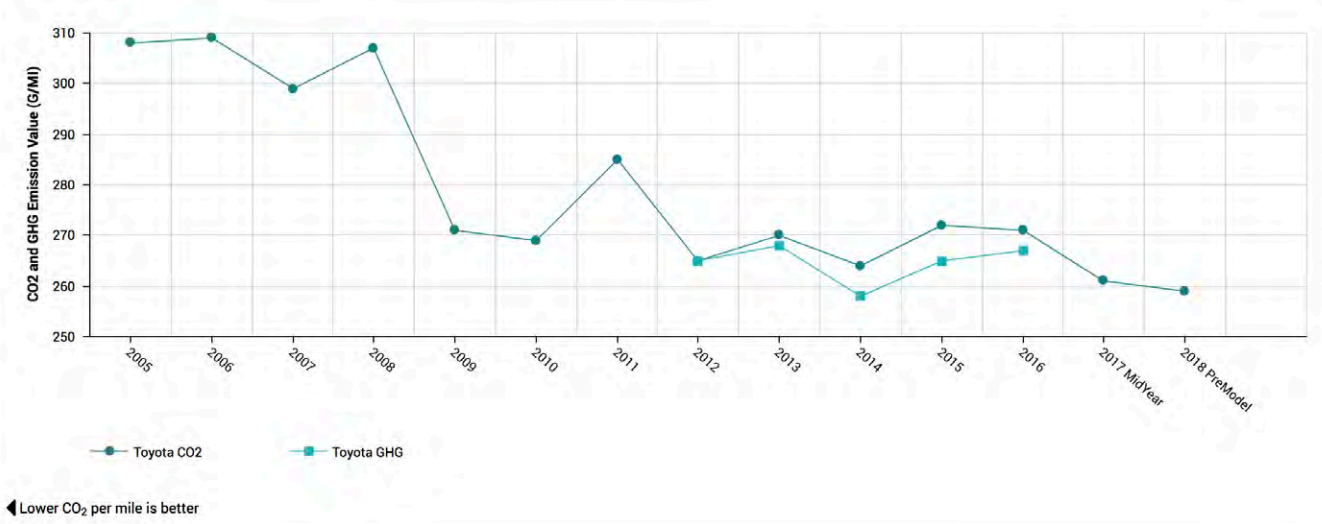
Many of our hybrid products are already capable of meeting their respective future targets for fuel economy and GHG standards in all three countries. But there is still a sense of urgency as states like California seek to accelerate the number of zero-emission vehicles on the road to meet its ZEV requirements.

Toyota achieved the required U.S. Corporate Average Fuel Economy (CAFE) standards and met the required vehicle GHG standards in the United States, Canada and Mexico. See Figures P6-8 below for Toyota fleet performance in the U.S., Canada and Mexico.

→ VIEW *THIS SECTION* for more information about reducing vehicle CO_2 emissions.

→ VIEW *THE FEATURE* on Toyota's approach to electrification.

P06 TOYOTA FLEET CO_2 AND GHG DATA FROM CAFE AND GHG REPORTS



ABOUT THIS CHART:

The performance of the U.S. vehicle fleet is being shown in two ways. The darker blue line shows Toyota's fleet-wide fuel economy (CAFE) presented in terms of grams of CO_2 per mile. This measure of performance, shown in previous Toyota North American Environmental Reports, only reflects GHG emissions reductions measured at the tailpipe during the official government test procedure.

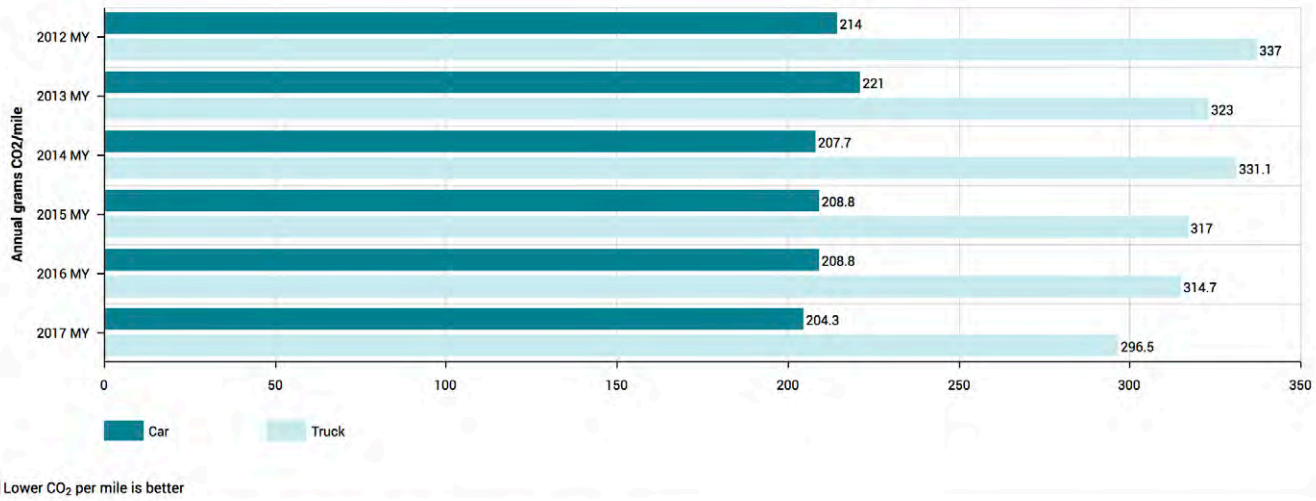
The shorter, lighter blue line depicts a broader view of GHG performance that entails provisions in the U.S. EPA GHG program (starting with the 2012 model year). The annual GHG compliance values account for real-world GHG benefits from off-cycle technologies, such as air conditioning and aerodynamic improvements not observed over the official testing conditions.

Showing both values provides a transparent way of looking at Toyota's historical fleet performance as we continue to pursue both GHG reductions and fuel economy improvements under both the GHG and CAFE programs.

→ Follow this link for more information about the *U.S. National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) program.*

→ Follow this link for more information about the *U.S. EPA GHG program.*

P07 / ANNUAL CO_2 PER MILE*, TOYOTA CANADA FLEET



Based on CO_2 emissions data reported to Environment and Climate Change Canada

ABOUT THIS CHART:

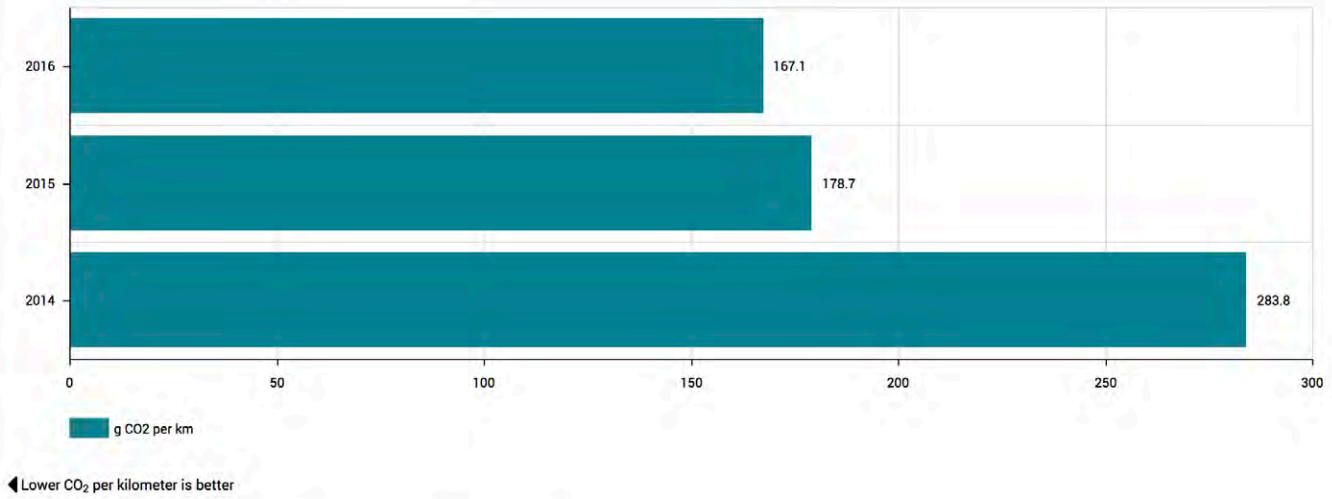
The Canadian federal government introduced a GHG emissions regulation under the Canadian Environmental Protection Act for the 2011-2016 model years, and in October of 2014 issued final GHG emissions regulations for the 2017-2025 model years. Toyota met the regulatory obligations regarding vehicle CO_2 emissions in Canada for the 2017 model year.

Natural Resources Canada (NRCan) named five Toyota/Lexus vehicles as best-in-class for fuel efficiency for the 2018 model year. Best-in-class vehicles have the lowest combined fuel consumption rating, based on 55 percent city and 45 percent highway driving. For each class, the most fuel-efficient conventional vehicle and the most efficient advanced technology vehicle (where applicable) are recognized. Five Toyota and Lexus vehicles were awarded by NRCan for the lowest estimated annual fuel use in their respective classes:

- Toyota Prius *c* (Compact car)
- Toyota Prius (Mid-size car)
- Toyota Prius *v* (Mid-size station wagon)
- Toyota RAV4 Hybrid AWD (Small SUV)
- Lexus RX 450h AWD (Standard SUV)

This marked the 18th year in a row that at least one vehicle from the Prius Family was named to the list.

P08 ANNUAL CO_2 PER KILOMETER, TOYOTA MEXICO FLEET



** 2017 Mexico fleet data was not available in time for inclusion in this report.*

ABOUT THIS CHART:

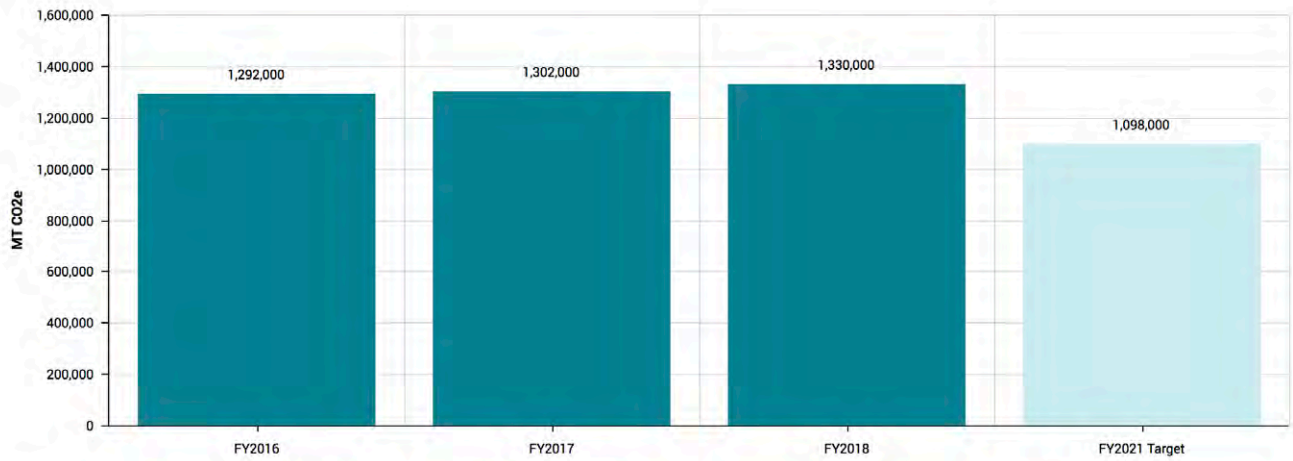
In Mexico, the government has modeled vehicle GHG standards after U.S. requirements. The standards require automakers to meet a single sales-weighted fleet average over the period 2014 through 2016, and allow credits generated in 2012 and 2013 to be used toward compliance. These standards have been appropriately 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. Toyota continues to be in compliance with these standards.

GREENHOUSE GAS EMISSIONS

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 EPA's website through its online data publication tool.

In Canada, Toyota Motor Manufacturing Canada (TMMC) and Canadian Autoparts Toyota, Inc. (CAPTIN) 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.

P09 / GHG EMISSIONS FROM TOYOTA'S NORTH AMERICAN OPERATIONS



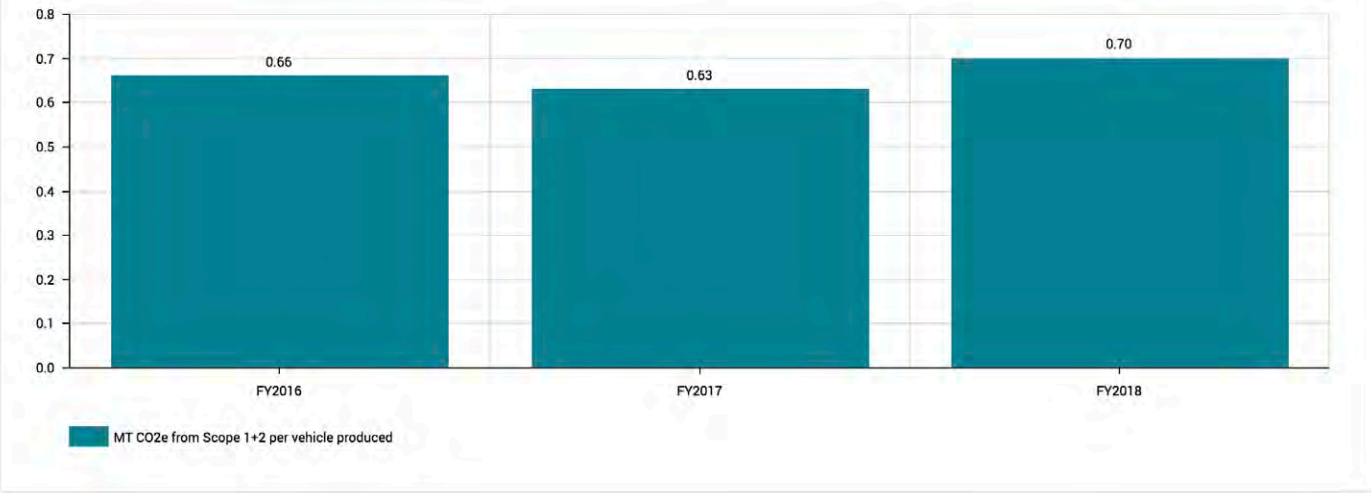
*Includes Scope 1 and Scope 2 GHG emissions from all Toyota Motor North America operations, including manufacturing, R&D, logistics and offices.

ABOUT THIS CHART:

Scope 1 and 2 greenhouse gas (GHG) emissions increased between fiscal years 2017 and 2018. Despite an overall decrease in production, Toyota assembled more trucks at our plants in Texas and Mexico, where GHG emission factors are higher than at plants where production decreased. We recently developed a GHG reduction plan for our sites that addresses GHG and energy efficiency as well as renewable energy use. Once the projects in this plan come online, we expect to see significant decreases in total emissions.

→ *VIEW* THIS SECTION

P10 GHG EMISSIONS PER VEHICLE PRODUCED

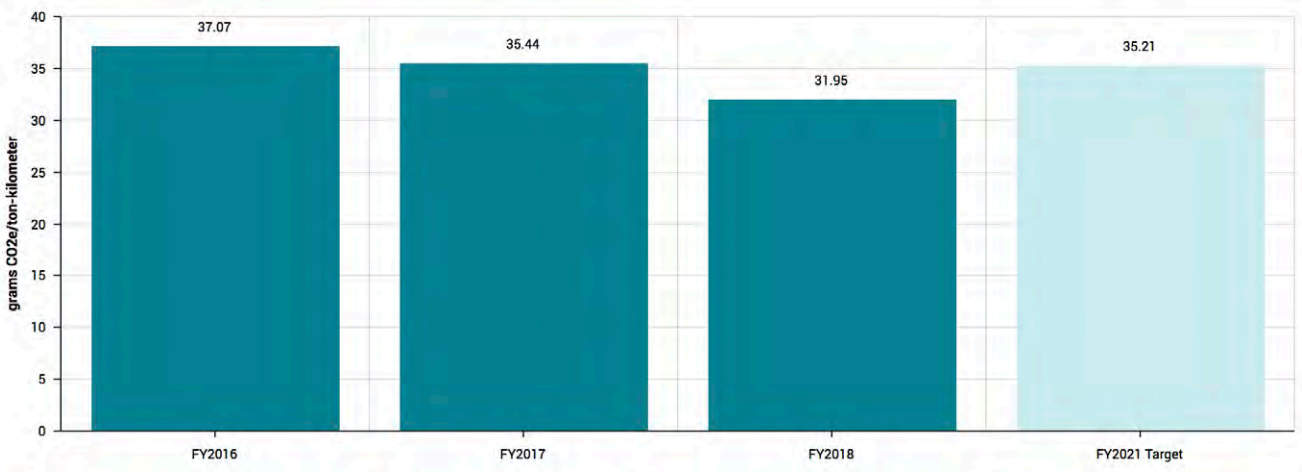


ABOUT THIS CHART:

This chart shows Scope 1 and Scope 2 GHG emissions from all North American sites, including manufacturing, logistics, sales and R&D. Scope 1 and 2 GHG emissions per vehicle produced increased by 11 percent in fiscal year 2018 compared to the previous year due to an overall decrease in production coupled with assembling more trucks at our plants in Texas and Mexico, where GHG emission factors are highest.

→ *VIEW* THIS SECTION

P11 GHG INTENSITY FROM U.S. PARTS AND VEHICLE LOGISTICS



***Scope** = GHG emissions intensity from owned and third-party service parts/accessories and vehicle transport activities (e.g., trucking and rail).*

ABOUT THIS CHART:

For fiscal year 2018, we report GHG intensity from owned and third-party U.S. service parts/accessories and vehicle logistics from all transport modes (trucking, marine, air and rail). We have restated data from previous years to account for a larger scope (previously, we only reported data from vehicle logistics). We will include manufacturing production control logistics in next year's report.

These logistics operations have improved GHG intensity by nearly 14 percent compared to the baseline year (fiscal year 2016). We expect to see continued improvements as additional third-party carriers adopt GHG reduction plans.

→ *VIEW* THIS SECTION

COMPLIANCE

P12 ENVIRONMENTAL COMPLIANCE

	SIGNIFICANT ENVIRONMENTAL VIOLATIONS
FY13	0
FY14	0
FY15	0
FY16	0
FY17	0
FY18	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 chemical management, air emissions, water discharges, storm water management, greenhouse gas emissions, and waste treatment and disposal. These regulations vary by facility based on the type of equipment operated and the functions performed.

Toyota reports environmental violations resulting in fines of $5,000 or more and in an impact to the environment (we do not report administrative violations). In fiscal year 2018, our North American manufacturing plants and logistics sites had zero significant environmental regulatory violations.

DEALERS

P13 TOYOTA / LEXUS LEED® DEALERSHIPS

	TOYOTA	LEXUS
Platinum	4	0
Gold	20	4
Silver	17	3
Certified	11	2
Total	**52**	**9**

**As of July 2018, 54 Toyota and Lexus dealerships in the U.S, 6 in Canada and 1 in Mexico have been certified to LEED®.*

ABOUT THIS CHART:

Toyota and Lexus continue to lead the industry with more LEED®-certified dealership facilities in North America than any other auto manufacturer. As of July 2018, we have assisted 61 Toyota and Lexus dealerships with LEED certification. (Note, Beaverton Toyota in Oregon received two separate certifications for the sales building and service center; we counted this dealership only once).

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.

LEED®, or 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 requirements in sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

→ *VIEW* THIS SECTION

ENVIRONMENTAL MANAGEMENT SYSTEMS

P14 ISO 14001 CERTIFICATIONS OF TOYOTA'S NORTH AMERICAN FACILITIES

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

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 third-party certified to ISO 14001, the International Organization for Standardization's standard for designing and implementing an effective environmental management system.

GREEN BUILDING

P15 / TOYOTA'S NORTH AMERICAN FACILITIES WITH LEED® CERTIFICATIONS

TOYOTA FACILITY	LOCATION	YEAR	CERTIFICATION LEVEL
Toyota Motor North America Headquarters (Office Towers, High Bay Evaluation Building, Vehicle Delivery Center)	Plano, Texas	2017	BD+C Platinum
Chicago Service Training Center	Aurora, Illinois	2015	NC Gold
Lexus Eastern Area Office	Parsippany, New Jersey	2014	CI Platinum
Toyota Kansas City Training Center	Kansas City, Missouri	2012	NC Gold
Toyota Inland Empire Training Center	Rancho Cucamonga, California	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.	2016	CI Silver
Portland Vehicle Distribution Center	Portland, Oregon	2004	NC Gold
Toyota Motor Sales - South Campus	Torrance, California	2003	NC Gold

***BD+C** = Building Design + Construction*
***NC** = New Construction*
***CI** = Commercial Interiors*

ABOUT THIS CHART:

Thirteen 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 requirements in sustainable site development, water savings, energy efficiency, materials selection and indoor environmental 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 Municipality of Clarington in Ontario will be home to Toyota Canada's new Eastern Canada Parts Distribution Centre. The new 350,000-square foot facility will be built on a 30-acre parcel of land in Bowmanville. When it opens its doors in 2019, the new location's direct access to major transportation routes will allow Toyota Canada to better service Toyota and Lexus customers and dealerships across Eastern Canada (from Manitoba to Newfoundland). The site also provides plenty of space for future growth. The new facility is pursuing LEED certification.

→ *VIEW* THIS SECTION

MATERIALS

WASTE

P16 TOTAL WASTE (POUNDS)

	2015	2016	2017
Regulated Waste*			
Recycled/Reused Regulated Waste	13,494,000	4,570,000	4,879,000
Incineration, Waste to Energy, Fuels Blending	11,183,000	7,247,000	11,599,000
Landfill	48,000	692,000	33,000
Non-Regulated Waste			
Composted	1,088,000	831,000	1,080,000
Recycled Scrap Steel from Mfg Plants	659,718,000	678,953,000	656,129,000
Other Recycled/Reused	79,267,000	87,805,000	79,940,000
Incineration, Waste to Energy, Fuels Blending	26,574,000	33,933,000	29,314,000
Landfill	7,602,000	8,081,000	16,995,000
TOTAL WASTE (Pounds) GENERATED	**798,974,000**	**822,112,000**	**799,969,000**

**Regulated waste includes hazardous, universal and special wastes regulated at the federal, state, provincial or local level. Non-regulated waste is all other waste.*

Scope = Toyota's North American headquarters, manufacturing, R&D, sales and logistics sites in the U.S., Canada and Puerto Rico. Also includes data from manufacturing in Mexico. Data from non-manufacturing sites in Mexico will be included in future years.

ABOUT THIS CHART:

Waste data is collected on a calendar year basis. In 2017, our North American manufacturing plants, logistics sites and offices sent only 2 percent of waste for disposal to landfills. (For certain waste streams, landfill disposal is required by law.) We recycled, reused or composted 93 percent and sent only 5 percent of waste to waste-to-energy or fuels blending facilities. Total waste in 2017 was 3 percent less than 2016, in part due to an overall decrease in production.

→ *VIEW* THIS SECTION