

Sustainability at Trimble

August 2019

Transforming the Way the World Works

Since 1978, our industry-specific solutions have helped customers achieve economic breakthroughs while enhancing safety, boosting compliance, and reducing environmental impact—from feeding the growing global population and moving the goods of commerce to next-generation building and infrastructure. Our mission, Transforming the Way the World Works, drives our business to benefit all stakeholders—including employees, shareholders, customers, communities, and the world at large.

Agriculture

Feeding the world's booming population requires maximized farm production. Trimble's precision agriculture portfolio has revolutionized traditional farming practices by enabling farmers to increase efficiencies, enhance productivity, and improve crop performance, all while reducing costs and optimizing inputs.

- ▶ Up to 30% increased yield
- ▶ Reduced carbon emissions
- ▶ Up to 20% increased water efficiency
- ▶ Up to 30% cost savings
- ▶ Enhanced worker safety
- ▶ Increased waste reduction

Construction

A prosperous world requires robust infrastructure. Trimble continues to transform this industry's work across the entire planning, design, build, and operating lifecycle through the deployment of advanced automation solutions, precision machine control, 3D software, site positioning, mobile technologies, and real time connectivity.

- ▶ Increased productivity & efficiency
- ▶ Up to 50% less rework
- ▶ Up to 30% cost savings
- ▶ Informed decision making
- ▶ Increased waste reduction
- ▶ Up to 30% machine productivity & fuel savings

Geospatial

Trimble geospatial technologies are transforming the work of professionals across the globe engaged in surveying, mapping, GIS, 3D modeling, land administration, and the environment.

- ▶ 25-50% efficiency gains over traditional solutions
- ▶ Land & water management
- ▶ Informed decision making
- ▶ Enabling property rights, the basis of economic development
- ▶ Optimizing the buildout of cadastral systems

Transportation

In a world of fluctuating fuel costs and just-in-time delivery, Trimble transportation and logistics solutions bring efficiency and visibility into fleet operations for cleaner, greener, safer, and more profitable operations.

- ▶ Up to +20% fuel efficiency
- ▶ Reduced carbon emissions
- ▶ Increased fleet utilization up to +30%
- ▶ Cost savings
- ▶ Driver safety



Trimble Solutions Enabling a Sustainable World

Productivity		Quality	
	Earthworks productivity		Reduction in project duration
	Reduced survey and engineering time		Reduction in unique building components
	Increased fleet utilization		Reduction in space planning & management costs
Safety		Environmental sustainability	
	Construction site safety		Lower fuel consumption
	Regulatory compliance		Reduced water use
	Fleet safety		Offset credits generated for farmers



Trimble Solutions Enabling a Sustainable World (cont.)

Greenhouse
Gas
Reduction

Construction

Fewer passes on civil jobsite yields
reduced machine time



Agriculture

Most efficient field navigation
and input disbursement



Transportation

Improved capacity utilization
and route optimization reduces fuel use



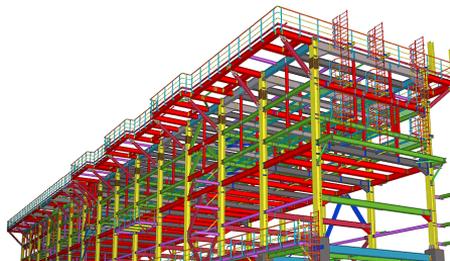
Water

Protecting and managing critical
water assets and infrastructure



Construction

Helping minimize scrap, rework, and
resource waste



Agriculture

Managing land, water & inputs through variable rate
technology and land forming solutions



Resource
Management

Trimble Solutions Enabling a Sustainable World (cont.)

Reducing Greenhouse Gas Emissions

Agriculture

- Providing guidance and steering solutions that enable field applications to be completed efficiently, utilizing less diesel fuel, minimizing soil compaction and precisely applying seed, fertilizer, herbicide, pesticide
- Helping farmers monetize carbon credits they are earning through environmentally sustainable farming practices

Civil Construction

- Machine control systems improve accuracy and efficiency of heavy earthmoving equipment, thereby enabling job completion in less time, and using less diesel fuel

Transportation

- Improving utilization of available capacity and improved route selection, thereby improving fuel efficiency and reducing unnecessary fuel usage

Protecting and Managing Water Resources

Agriculture

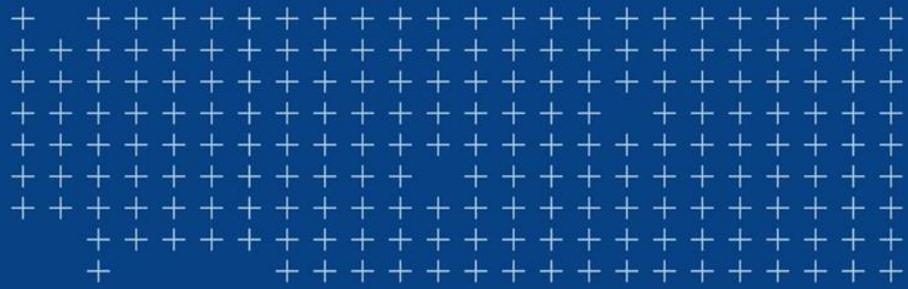
- Software and hardware solutions that help farmers level their land, manage water flow and retention, and minimize leaching of chemicals into water table
- Variable rate technologies that precisely deliver fertilizer, herbicide, and pesticide, minimizing over-application

Water Infrastructure

- Precision monitoring of dams for any signs of weakening or movement that would necessitate repair
- Monitoring flow and water levels within water networks to help alleviate and minimize flooding

Ports and Waterways

- Marine construction software to achieve and ensure proper depth of waterways, reducing risk of accidental groundings and enabling greater port flexibility



Greenhouse Gas Emissions Reduction

Greenhouse Gas Emissions Reduction Enabled by Trimble Solutions

Industry Challenges	Trimble Solutions
<p>Construction</p> <ul style="list-style-type: none">• Efficiently achieving necessary job specifications for grade• Utilization of heavy equipment fleet• Increasing difficulty attracting and retaining skilled labor	<ul style="list-style-type: none">• Trimble machine control systems for heavy equipment, including bulldozers, road graders and excavators
<p>Agriculture</p> <ul style="list-style-type: none">• Navigating farm equipment (e.g. tractors and other heavy machines) with precision in field so as to minimize unnecessary soil compaction and precisely apply seeds, fertilizer, insecticide, pesticide, water	<ul style="list-style-type: none">• Trimble precision guidance and steering systems
<p>Transportation</p> <ul style="list-style-type: none">• Improving utilization of available capacity• Attracting and retaining drivers• Improving profitability through optimal capacity, route, and fleet management decisions	<ul style="list-style-type: none">• Trimble telematics, mapping and route optimization solutions• Trimble enterprise systems to optimize scheduling and route coordination to improve capacity utilization

To view a video on Trimble machine control technology for excavators, please visit: https://www.youtube.com/watch?v=o_UuKbLmW4A

To view a video on Trimble Ag solutions, including precision guidance, please visit: <https://www.youtube.com/watch?v=Cav2lqFPBck>

To view a video on Trimble mapping and route optimization solutions, please visit: <https://vimeo.com/167262938>



Trimble Solutions Reduce Greenhouse Gas Emissions

Construction

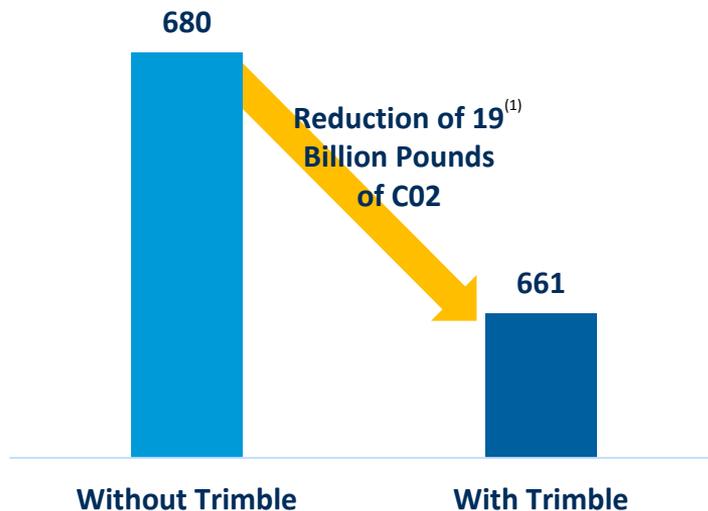
Agriculture

Transportation



Annual Pounds of Carbon Dioxide Usage (in billions)

Greenhouse Gas Reduction

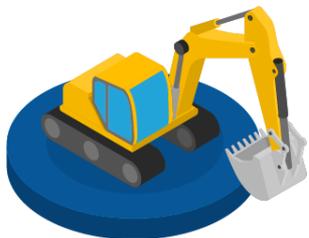


(1) Equivalent to 8,716 thousands of metric tons, based on 2,204.62 pounds per metric ton. Source: Company estimates.

Trimble Solutions Reduce Greenhouse Gas Emissions (cont.)

Construction

Fewer passes on civil jobsite yields reduced machine time



Agriculture

Most efficient field navigation, maximizing fuel efficiency



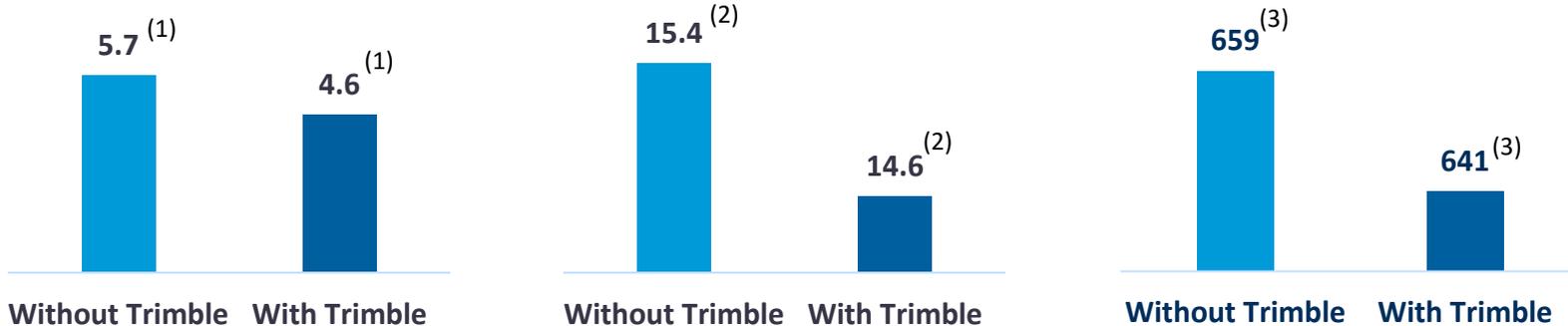
Transportation

Improved capacity utilization, route optimization



Solution Benefits

Annual Pounds of Carbon Dioxide Usage (in billions)



Greenhouse Gas Reduction

1. Reflects internal estimates and is based on a number of assumptions, including: (1) the number of bulldozers, motor graders and excavators, that utilize Trimble machine control technologies, (2) annual hours of machine usage, (3) average gallons of fuel consumption per hour, and (4) pounds of carbon dioxide per gallon of diesel fuel.
 2. Reflects internal estimates and is based on a number of assumptions, including: (1) the number of tractors that utilize Trimble guidance technologies, (2) annual hours of machine usage, (3) average gallons of fuel consumption per hour, and (4) pounds of carbon dioxide per gallon of diesel fuel.
 3. Reflects internal estimates and is based on a number of assumptions, including: (1) the number of trucks that utilize Trimble route planning and capacity utilization technologies, (2) annual miles driven per truck, (3) average gallons of fuel consumption per mile, and (4) pounds of carbon dioxide per gallon of diesel fuel.
 Source: Company estimates.

Trimble Solutions Reduce Greenhouse Gas Emissions - Detail

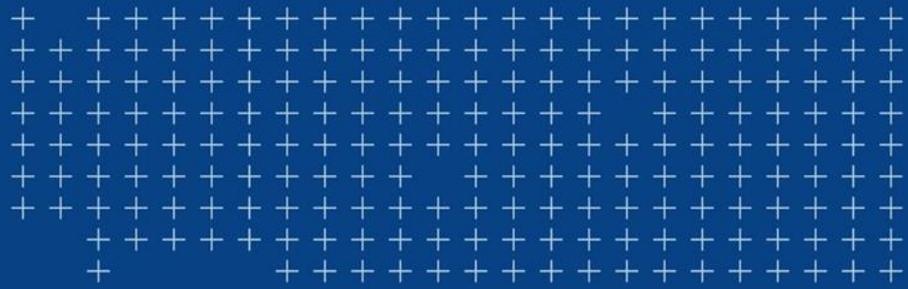
	Pounds of CO2 Emitted Per Year		
	Without Trimble Solution	With Trimble Solution	Difference
Civil Machine Control Systems (1)			
Bulldozers	2.7	2.2	(0.5)
Motor Graders	0.9	0.7	(0.2)
Excavators	<u>2.1</u>	<u>1.7</u>	<u>(0.4)</u>
Subtotal	5.7	4.6	(1.1)
Agriculture Guidance Systems (2)			
Agricultural Tractors	<u>15.4</u>	<u>14.6</u>	<u>(0.8)</u>
Subtotal	15.4	14.6	(0.8)
Transportation & Logistics Route and Capacity Optimization (3)			
Trimble MAPS (ALK + Appian) Routing, Navigation, and Fleet Optimization	466.7	455.0	(11.7)
PeopleNet Route and Capacity Utilization	78.8	74.3	(4.5)
TMW Load Optimization	<u>113.3</u>	<u>112.2</u>	<u>(1.1)</u>
Subtotal	658.8	641.5	(17.3)
Total	679.9	660.7	(19.2)

1. Reflects internal estimates and is based on a number of assumptions, including: (1) the number of bulldozers, motor graders and excavators that utilize Trimble machine control technologies, (2) annual hours of machine usage, (3) average gallons of fuel consumption per hour, and (4) pounds of carbon dioxide per gallon of diesel fuel.

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Source: Company estimates.



Water and Water Infrastructure Trimble Solutions

Trimble Addresses Global Water Challenges

Industry Challenges	Trimble Solutions
Building/constructing water infrastructure <ul style="list-style-type: none">• Ensuring proper waterway depth	<ul style="list-style-type: none">• Trimble marine construction software
Maintaining/monitoring water infrastructure <ul style="list-style-type: none">• Inadequate and aging infrastructure• Water main rehabilitation• Leak detection	<ul style="list-style-type: none">• Dam monitoring• Surveying• Telog IoT and wireless monitoring & management
Managing water effectively in Agricultural uses <ul style="list-style-type: none">• Land leveling and drainage• Minimizing fertilizer polluting waterways• Minimizing insecticide/pesticide usage• Carbon credit marketplace in Canada	<ul style="list-style-type: none">• Soil leveling and water management• Guidance and variable rate application control• Agritrend software
Environmental rehabilitation of waterways <ul style="list-style-type: none">• Restoration of natural habitats	<ul style="list-style-type: none">• SX10 scanning total station

For more information on Trimble's water solutions, please visit: <https://www.trimblewater.com/>

To view the Trimble Water Overview video, please visit: https://www.youtube.com/watch?time_continue=21&v=3xi9rPLq1Uc

To view the Trimble Ag Water Management Overview video, please visit: <https://www.youtube.com/watch?v=UgzCBQ4F40E>

To view a video on Trimble marine construction software, and a customer case study, please visit: <https://www.youtube.com/watch?v=gdOPwPgZ78Q>

Trimble Solutions for Water Utilities



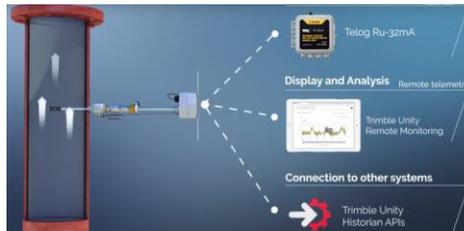
Enabling development of an accurate digital model of utility assets



Increasing field productivity by delivering maps and work orders to mobile workers



Connecting the Digital and Physical Worlds



Wireless smart water monitoring and metering solutions to eliminate the “blind spots” in water systems



Delivering a range of high accuracy field technologies for mobile workers