Module: Introduction

Page: W0. Introduction

W0.1

Introduction

Please give a general description and introduction to your organization

General Motors is one of the world's largest automakers and traces its roots in the U.S. back to 1908. Based in Detroit, Michigan, GM employs 225,000 people in 396 facilities across six continents.
GM offers a comprehensive range of vehicles and services in more than 120 countries around the world. The largest national market for its products is China, followed by the U.S., Brazil, United Kingdom, Germany, Canada and Italy. Along with its strategic partners, GM produces cars and trucks, and sell and service these vehicles through the following brands: Chevrolet and Cadillac globally, and Baojun, Buick, GMC, Holden, Isuzu, Jiefang, Opel, Vauxhall, and Wuling in certain regions or specific countries.
GM also maintains equity stakes in major joint ventures including SAIC-GM, SAIC-GM-Wuling, and FAW-GM in China and GM Korea, as well as subsidiaries such as OnStar, a recognized industry leader in vehicle safety, security and information services and Cruise Automation, a leader in autonomous driving technology.
More information on the new GM is available at www.gm.com.
GM's commitment to sustainability applies to every part of our business and creates value for customers. It underscores GM's philosophy of "Customer-Driven Sustainability" – an approach for meeting customers' needs through sustainability by making the mobile experience safer, more efficient and better integrated with everyday life. As part of that commitment and philosophy, it continually assesses and takes steps to reduce the environmental impact of its products and operations. Focusing on areas such as energy management, carbon and waste intensity reduction, resource preservation and more efficient vehicles through its technological advances, global reach and innovative employees, helps the Company reduce its environmental footprint and also share best practices around the world for broad results.
Sustainability is also an important part of GM's people and culture. The Company integrates sustainability across every business function and through each level of the organization. GM is actively engaged in cross-functional efforts to seize environmental and social opportunities to improve our Company and the communities in which we operate.
The GM Environmental Principles are the foundation for the Company's environmental efforts and regional–specific policies around the world. Developed over 20 years ago, the Environmental Principles state:
As a responsible corporate citizen, GM is dedicated to protecting human health, natural resources, and the global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions.
The following environmental principles provide guidance to GM personnel worldwide in the conduct of their daily business practices.
• We are committed to actions to restore and preserve the environment.
• We are committed to reducing waste and pollutants, conserving resources, and recycling materials at every stage of the product life cycle.
• We will continue to participate actively in educating the public regarding environmental conservation.

• We will continue to pursue vigorously the development and implementation of technologies for minimizing pollutant emissions.
• We will continue to work with all governmental entities for the development of technically sound and financially responsible environmental laws and regulations.
• We will continually assess the impact of our plants and products on the environment and the communities in which we live and operate with a goal of continuous improvement.
GM also maintains Environmental Performance Criteria (GM EPC) to support the consistent implementation of the GM Environmental Principles across the globe, particularly where regulatory programs do not clearly address those goals. The GM EPC supplements applicable legal requirements by setting baseline environmental management and performance regardless of where GM operations are located. The GM EPC provides a common process for planning and implementing resource conservation and pollution prevention or control measures.

W0.2

Reporting year

Please state the start and end date of the year for which you are reporting data

Period for which data is reported
Fri 01 Jan 2016 - Sat 31 Dec 2016

W0.3

Reporting boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported

Companies, entities or groups over which operational control is exercised

W0.4

Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

W0.4a

Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
Water from Small insignificant facilities.	Water use and risk is not relevant. An example of these are: Small non-manufacturing facilities - field offices, training centers, and other small facilities are omitted due to de minimis water use. Based on our benchmarking activities with other Auto OEMs, GM may be the only one that includes all of our non-manufacturing operations in water management.

Further Information

Module: Current State

Page: W1. Context

W1.1

Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital for operations	Important	Direct Use: Water use in our direct operations is used for pre-treatment of vehicle bodies prior to painting and weld cooling, machining, and powerhouse operations making it vital for our operations, as we cannot manufacture without it. Also, our 225,000 employees rely on sufficient good quality water for drinking and sanitation purposes. Indirect use: Our supply chain manufactures automobile parts using raw materials that require significantly more water than in our direct operations according to a life cycle analysis of auto parts in the supply chain. Painting operations at Tier 1 facilities require high quality rinse water and welding uses cooling water making availability important as without it locations need to change causing increased cost. Ninety-five percent of the water use in the supply chain is at tiers 2-6 with the majority needed for electric power generation, mining, and agriculture. Additionally, supply chain employees need safe water for drinking and sanitation.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	Direct Use: Recycled water is used in our operations to reduce consumption in paint pre-treatment and cooling water and is important in our operations to reduce withdrawal. Additionally, in water stressed area, we use recycled water for all manufacturing operations with Zero Liquid Discharge process, including paint pre-treatment of vehicle bodies since water withdrawal is scarce and low quality. We do not source brackish or produced water. Indirect Use: Recycled cooling water is important to supply chain manufacturing of automobile parts for casting and welding as well as in electricity generation to reduce withdrawal of freshwater.

W1.2

For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	GM measures and monitors 100% of our major facilities water withdrawals using either invoices or meter data. It is tracked in a global utility database and the data is verified by an independent third party annually. Some small facilities (offices) have water service included in their lease rate and we do

Water aspect	% of sites/facilities/operations	Please explain
		not track the water withdrawal. Our estimate is that this represents less than 1% of our water withdrawal, so we measure and monitor 99% of water withdrawal. As water management is integrated into our business plan, we set goals for each facility measured and track progress on a monthly scorecard at facility, region, and company level and report to senior management.
Water withdrawals- volume by sources	76-100	GM measures and monitors 100% of our major facilities water withdrawals by source using either invoices or meter data. It is tracked in a global utility database by source and the data is verified by an independent third party annually. Some small facilities (offices) have water service included in their lease rate and we do not track the water withdrawal. Our estimate is that this represents less than 1% of our water withdrawal by source, so we measure and monitor 99% of water withdrawal by source.
Water discharges- total volumes	76-100	GM measures and monitors 100% of our major facilities water discharges using either invoices, meter data, or engineering estimates. It is tracked in a global environmental database on a monthly basis. Some small facilities (offices) have water service, including discharge included in their lease rate and we do not track the water discharged. Our estimate is that this represents less than 1% of our water discharge, so we measure and monitor 99% of water discharge.
Water discharges- volume by destination	76-100	GM measures and monitors 100% of our major facilities water discharges by destination using either invoices, meter data, or engineering estimates. It is tracked in a global environmental database on a monthly basis. Some small facilities (offices) have water service, including discharge destination included in their lease rate and we do not track the water discharged by destination. Our estimate is that this represents less than 1% of our water discharge by destination, so we measure and monitor 99% of water discharge destination.
Water discharges- volume by treatment method	76-100	GM measures and monitors 100% of our major facilities water discharges by treatment method using either invoices, meter data, or engineering estimates. It is tracked in a global environmental database on a monthly basis. Some small facilities (offices) have water service, including discharge by treatment method, included in their lease rate and we do not track the water discharged by treatment method. Our estimate is that this represents less than 1% of our water discharge by treatment method, so we measure and monitor 99% of water discharge by treatment method.
Water discharge quality data- quality by standard effluent parameters	76-100	GM measures and monitors 100% of our major facilities water discharges by quality data from lab results. It is tracked in a global environmental database on a monthly basis. Some small facilities (offices) have water service, including discharge that are included in their lease rate and we do not track the water quality data. Our estimate is that this represents less than 1% of our water discharge by quality data, so we measure and monitor 99% of water discharge quality data by standard effluent parameters.
Water consumption- total volume	76-100	Water Consumption is calculated from withdrawal by source and discharge by source data for 100% of our major facilities. Some small facilities (offices) have water service, including discharge that are included in their lease rate and we do not track the water withdrawal or discharge data. Our estimate is that this represents less than 1% of our water consumption, so we measure and monitor 99% of water

Water aspect	% of sites/facilities/operations	Please explain
		consumption - total volume.
Facilities providing fully-functioning WASH services for all workers	76-100	100% of our facilities provide clean water for drinking, sanitation, cooking and cleaning purposes to our 225,000 employees at 396 facilities globally to the best of our knowledge.

W1.2a

Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	2901.7	About the same	
Brackish surface water/seawater	0	Not applicable	
Rainwater	5.0	Much higher	
Groundwater - renewable	2809.8	Higher	
Groundwater - non-renewable	1279.6	Much higher	
Produced/process water	0	Not applicable	
Municipal supply	35370.8	About the same	
Wastewater from another organization	0	Not applicable	
Total	42366.9	About the same	

W1.2b

Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface water	16264.0	Lower	
Brackish surface water/seawater	0	Not applicable	
Groundwater	165.2	Lower	
Municipal/industrial wastewater treatment plant	27763.5	Higher	
Wastewater for another organization	0	Not applicable	
Total	44192.7	Lower	

W1.2c

Water consumption: for the reporting year, please provide total water consumption data, across your operations

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
12710	Lower	As Consumption is calculated as Withdrawal minus Discharge and would result in a negative number due to on-site storm water that is discharged to combined-sanitary and storm systems. In reality GM measures an average 30% water use from evaporation and losses using engineering water balance methods and is reporting the amount used within facilities, not including storm water.

W1.3

Do you request your suppliers to report on their water use, risks and/or management?

Yes

W1.3a

Please provide the proportion of suppliers you request to report on their water use, risks and/or management and the proportion of your procurement spend this represents

Proportion of suppliers %	Total procurement spend %	Rationale for this coverage
Less than 1%	76-100	Supplier Selection: Suppliers are selected to participate in CDP Water Supply Chain as prioritized using Life Cycle Analysis (LCA) of water consumption during the manufacture of parts. CDP Supply Chain provides Water disclosure and performance information and allows GM to engage with suppliers in water management. Methodology: Using supplier spend data and part composition, Environmental and Economic input output analysis reveals water consumption by supplier. Selection is based on major consumption of water by supplier. The information is used to model risk with Global Water tool (WBCSD) and Aqueduct (WRI) water risk evaluation tools out to 2025. Suppliers are requested to respond to CDP Water Supply Chain by GM to engage our first tier suppliers in Water management. GM participates in and chairs the Automotive Industry Action Group water subgroup to engage the industry. A large portion of the suppliers selected for CDP Supply Chain are members of GM's Strategic Supplier Engagement group. This group has certain preferred benefits - Regular access to GM leadership in purchasing and engineering, "visioning" sessions to hash over GM's future needs for parts and commodities, Joint planning on "opportunities for growth", and training sessions that aren't offered to other suppliers. Based on continued interest in maintaining good standing status in this group, suppliers are incentivized to voluntarily engage with GM in reporting and reduction through CDP Supply Chain.

W1.3b

Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management

Primary reason	Please explain

W1.4

Has your organization experienced any detrimental impacts related to water in the reporting year?

Yes

W1.4a

Please describe the detrimental impacts experienced by your organization related to water in the reporting year

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
Mexico	Santiago	Phys-Increased water stress	Water supply disruption	Wells at our Silao Assembly plant experience temporary loss of supply and alternate wells need to be utilized, indicating stress on the 300 meter non-renewable wells.	3 years	Cost of implementation is $12 Million USD. Engineering ($500k) is being done in 2016-17 with implementation planned in 2018.	Infrastructure investment	Engineering implemented to install water reuse at facility to reduce withdrawal load on the wells.
United States of America	St. Lawrence	Reg-Higher water	Higher operating costs	Higher water and sewer rates increase cost.	2 years	$2M invested at Detroit Hamtramck Assembly plant	Increased investment in new	The site storm ponds were increased in size to hold a 100 year storm minimizing the amount

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
		prices					technology Promote best practice and awareness	discharged to Detroit's stressed combined sanitary and storm sewer system. Water treatment equipment installed to treat and reuse storm water for cooling tower make up and paint high quality use. Overall, the improvement reduces Detroit's release of raw storm and sanitary water to the Detroit river during a storm event and provides GM with a 2 year return on investment, saving about $1M USD per year.

W1.4b

Please choose the option below that best explains why you do not know if your organization experienced any detrimental impacts related to water in the reporting year and any plans you have to investigate this in the future

Primary reason	Future plans

Further Information

Module: Risk Assessment

Page: W2. Procedures and Requirements

W2.1

Does your organization undertake a water-related risk assessment?

Water risks are assessed

W2.2

Please select the options that best describe your procedures with regard to assessing water risks

Risk assessment procedure	Coverage	Scale	Please explain
Comprehensive company-wide risk assessment	Direct operations and supply chain	All facilities and suppliers	Using the Global Water tool (WBCSD) and Aqueduct (WRI) water risk evaluation tools out to 2025 provides a comparison of water risks known in 2016 to those predicted in 2025. Comparing the future growth geographies in our 6 year business plan, shows that the risks are similar, but getting worse in these areas. Based on our current mitigation plan, future manufacturing planning will incorporate additional measures related to water efficiency and conservation. In 2016, GM participated in CDP Water Supply Chain to assess water risk in the supply chain and we performed a life cycle analysis of water use in auto part production in our supply chain on a country specific basis and down to the fourth tier for all suppliers and used the information from high risk suppliers with WBCSD and WRI models to identify risk in the supply chain.

W2.3

Please state how frequently you undertake water risk assessments, at what geographical scale and how far into the future you consider risks for each assessment

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Annually	River basin	>6 years	Using water risk evaluation tools out to 2025 provides a comparison of risks in 2016 to those in 2025. Comparing future growth in our 6 year business plan, shows that the risks are getting worse in the water stressed areas in Mexico. Based on our current mitigation plan, future manufacturing planning will incorporate additional measures related to water efficiency and conservation. We use similar activities for our supply chain using life cycle analysis for our 18,000 suppliers.

W2.4

Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?

Yes, evaluated over the next 5 years

W2.4a

Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?

As a clean water supply is vital to our operations, GM uses water stress tools - Global Water tool (WBCSD) and Aqueduct (WRI) to asses water stress in our global facilities areas as a screening tool. A more detailed specific local area water availability analysis is performed prior to facility siting for future operations. Similar to past practice, if other factors point to success for growth and water is a risk factor, GM would use zero liquid discharge technology (waste water reuse in processes). An example of how this strategy is used is in Silao Mexico where production growth is occurring that would have resulted in water stress on non-renewable wells resulting in GM engineering an increase to the water reuse system that will allow future growth at the site.

W2.4b

What is the main reason for not having evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy, and are there any plans in place to do so in the future?

Main reason	Current plans	Timeframe until evaluation	Comment

W2.5

Please state the methods used to assess water risks

Method	Please explain how these methods are used in your risk assessment
Internal company knowledge Life Cycle Assessment WBCSD Global Water Tool WRI Aqueduct Other: Integrated Biodiversity Assessment Tool (IBAT)	Water use in our direct operations is used for pre-treatment of vehicle bodies prior to painting and weld cooling, machining, and powerhouse operations making it vital for our operations as well as in our supply chain as identified using LCA. Water availability and quality thus requires identification and mitigation of risk in our own operations and in our supply chain to ensure continued production and parts supply. GM's water risk assessment begins with tracking internal water use information using a global system called GM2100. Water use data in the supply chain at tiers 1-6 is provided by Life Cycle assessment (LCA) using CEDA 5 database based on inputting spend from over 21,000 suppliers. The analysis is performed by Climate Earth providing consumption at supplier, tiers 1-6, and by industry levels. The next step is modeling to identify risk and GM uses WBCSD Global Water Tool and WRI Aqueduct models that provide a screening tool to identify potential water stressed areas globally in direct operations and prioritized by top 10 supply chains. GM uses LCA for supply chain water use data since it includes water use in all tiers. We use WBCSD and WRI models to provide global risk analysis of water for manufacturing in our own operations and in the supply chain. Internal company knowledge is used at each GM site to review water risk and provide mitigation methods. Each GM site has a site utility manager that is responsible to assess water risks and implement mitigation methods if needed. GM has a subject matter expert to assist sites if needed. The Integrated Biodiversity Assessment Tool is used at GM for Access on-line maps offering information on protected areas, the location and importance of priority sites for conservation (key biodiversity areas) and threatened species. This is used as a basis to plan for wildlife habitats at GM sites.

W2.6

Which of the following contextual issues are always factored into your organization's water risk assessments?

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included	Local water quality and availability assessment requires local management. Each GM manufacturing site has a site utility manager that provides internal company knowledge to monitor water supply availability and quality to provide risk management analysis and mitigation. SUM regularly reviews sampling reports from water utility companies and discusses water availability. Each facility has a 3rd party Chemical Manager that looks at water quality for each critical process. An example of the process is at Flint Engine plant where the city decided to switch water supplies and through regular testing GM determined that the quality was not sufficient for engine production and requested the city to change the water supply back to the original supply.
Current water regulatory frameworks and tariffs at a local level	Relevant, included	Local regulatory frameworks and tariffs assessment requires local management. Each GM manufacturing site has an environmental engineer (EE) and site utility manager (SUM) that provides internal company knowledge to monitor current regulatory frameworks and tariffs to provide risk management. Through monthly monitoring of water invoices, the SUM identifies changes in tariffs and requests to be informed about future changes by local municipalities. EE monitors regulatory news feeds to identify any current or future changes to regulations. An example of this is at GM Detroit Assembly plant where the storm water tariff increased so much that a water reuse project became financially viable and was implemented to drastically reduce storm water discharges at the site.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	Management of site conflicts requires local management. Each GM manufacturing site has a site utility manager (SUM) and environmental engineer (EE) that provides internal company knowledge to monitor and resolve conflicts of water resources at a local level. These local resources monitor local external stakeholder conflicts with community residents, non-governmental organizations, and other stakeholders involving water resources using newswires and monitoring social media. An example of this was during the Flint water crisis, GM monitored local stakeholder feedback to see if GM could provide any assistance. Water resource scarcity is also part of GM's Business Continuity Planning process that includes a "Peril" list identifying water risks.
Current implications of water on your key commodities/raw materials	Relevant, included	GM conducted a water life cycle analysis and risk modeling using WBSCD and WRI models at a part and supplier level to the tier 4 for auto components suppliers to identify the major users of water to quantify current and future risk implications in our supply chain. GM uses LCA and risk models to quantify water risk in the supply chain for commodities and raw materials.
Current status of ecosystems and habitats at a local level	Relevant, included	GM relies on IBAT (Integrated Biodiversity Assessment Tool created and maintained by the IBAT Alliance) to assess the current status of ecosystems and habitats at a local level as follows: a) Reports were generated using the IBAT tool in 2016 and distributed to all sites globally. b) In addition, GM has a commitment to have all manufacturing sites implement programs to manage their corporate lands in a way that benefits wildlife by 2020.
Current river basin management plans	Relevant, included	Managing current river basin plans requires local management. Each GM manufacturing site has a site utility manager (SUM) and environmental engineer (EE) that provides internal company knowledge to

Issues	Choose option	Please explain
		monitor and manage river basin management plans and voluntary initiatives using newswires and regular communication with river basin managers. An example of this is the GM Detroit Assembly plant's response to the City of Detroit's need to reduce storm water discharge to combined city sewers. As the city raised rates, GM developed a cost effective project to reuse storm water and negotiated with the city to change the rate structure where both parties achieved their goals.
Current access to fully-functioning WASH services for all employees	Relevant, included	Access to WASH services for all employees requires local management. Each GM manufacturing site has a site utility manager (SUM) and environmental engineer (EE) that provides internal company knowledge to monitor and manage WASH services for all employees. As water for personal use is essential to our facility operations, our global facilities teams plan for sufficient water for building occupants. SUM regularly reviews sampling reports from water utility companies and discusses water availability with local authorities and may result in mitigating actions. An example of this is at GM San Luis Potosi Assembly and Transmission plant in Mexico a Zero Liquid Discharge water system was installed at additional cost to ensure adequate supply of water for the process and for building occupants for WASH.
Estimates of future changes in water availability at a local level	Relevant, included	Local water availability assessment of future changes requires local management. Each GM manufacturing site has a site utility manager (SUM) that provides internal company knowledge to monitor water supply availability for future changes to provide risk management. Additionally, GM applied the Global Water tool and Aqueduct to all of our major manufacturing facility locations which projects risk to 2025. An example of how internal company knowledge was applied is at our GM Silao Mexico Assembly plant where the SUM noticed local wells that were not providing water on a consistent basis indicating water stress. GM is responding with engineering and a plan to install increased water reuse equipment to reduce the withdrawal on the non-renewable wells.
Estimates of future potential regulatory changes at a local level	Relevant, included	Local water regulatory assessment of future changes requires local management. Each GM manufacturing site has an environmental engineer that provides internal company knowledge to monitor future potential regulatory changes to provide risk management. GM applied the Global Water tool and Aqueduct to all of our major manufacturing facility locations which projects risk to 2025. GM Global Facilities identified 3 sites in China listed in CDP Water report as medium to high risk of regulatory and reputational and is developing future plans for mitigation through water reuse.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included	Management of site conflicts requires local management. Each GM manufacturing site has a site utility manager and environmental engineer that provides internal company knowledge to monitor potential of future stakeholder conflicts of water resources at a local level. These local resources monitor local external stakeholder conflicts with community residents, non-governmental organizations, and other stakeholders involving water resources to gauge future issues. GM applied the Aqueduct tool to all of our major manufacturing facility locations which projects reputation and media water risk to 2025.
Estimates of future implications of water on your key commodities/raw materials	Relevant, included	GM conducted a water life cycle analysis at a part and supplier level to the tier 4 level for auto components suppliers to identify the major users of water and quantify current and future implications in our supply chain. Applying water use at prioritized supplier locations using WBCSD and WRI tools,

Issues	Choose option	Please explain
		filtered for 2025, provides future implications of water on our key commodities and raw materials. GM identified 5 suppliers with high risk for overall water in auto parts manufacturing, plastics, and casting.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	Local potential future changes in the status of ecosystems and habitats requires local management. Each GM manufacturing site has an environmental engineer (EE) that provides internal company knowledge to monitor future potential changes in wildlife habitats to provide risk management. GM applied the Global Water tool and Aqueduct to all of our major manufacturing facility locations which projects risk to 2025. Additionally, the Integrated Biodiversity Assessment Tool is used at GM for access to on-line maps offering information on protected areas, the location and importance of priority sites for conservation (key biodiversity areas) and threatened species. This is used as a basis to plan for wildlife habitats at GM sites with a goal to have one at each site by 2020.
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	Local scenario analysis of water quality and availability assessment requires local management. Each GM manufacturing site has a site utility manager (SUM) that provides internal company knowledge to monitor water supply availability and quality to provide risk management for future projects. SUM evaluates future indicators of water availability based on discussions with local utility companies or from groundwater studies when expansion plans indicate significant water use increases. An example of how internal company knowledge was applied is at our GM Silao Mexico Assembly plant where the SUM noticed local wells that were not providing water on a consistent basis indicating water stress. Scenario analysis revealed that with continued water stress and increased production at the site the wells may not have sufficient capacity to supply GM with enough quantity for future production. As a result, GM is responding with engineering and a plan to install increased water reuse equipment to reduce the withdrawal on the non-renewable wells.
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	Local scenario analysis of regulatory and / or tariff assessment requires local management. Each GM manufacturing site has an environmental engineer (EE) and site utility manager (SUM) that provides internal company knowledge to monitor regulatory and / or tariff changes to provide risk management for future projects. Local facilities evaluate future indicators of regulatory and / or tariff changes from local utilities when expansion plans indicate significant water use increases. SUM has regular discussions and meetings with local water supply utilities to understand the future years cost and regulation changes for annual future budget development. An example of this is a scenario analysis at GM Detroit Assembly plant revealed that the storm water tariff increased so much that a water reuse project would be financially viable and was later implemented to drastically reduce storm water discharges at the site.
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included	Management of stakeholder conflicts requires local management. Each GM manufacturing site has a site utility manager and environmental engineer that provides internal company knowledge to monitor potential of future stakeholder conflicts of water resources at a local level. These local resources monitor local external stakeholder conflicts with community residents, non-governmental organizations, and other stakeholders involving water resources to gauge future issues. GM applied the Aqueduct tool to all of our major manufacturing facility locations which projects reputation and media water risk to 2025. Local sites are aware of current stakeholder conflicts and use this feedback for future planning of

Issues	Choose option	Please explain
		potential water use increases. An example of how internal company knowledge was applied in a Scenario to avoid conflicts with stakeholders is at our GM Silao Mexico Assembly plant where the SUM noticed local wells that were not providing water on a consistent basis indicating water stress. GM is responding with engineering and a plan to install increased water reuse equipment to reduce the withdrawal on the non-renewable wells to avoid conflicts with stakeholders.
Scenario analysis of implications of water on your key commodities/raw materials	Relevant, included	GM conducted a water life cycle analysis at a part and supplier level to the tier 4 level for auto components suppliers to identify the major users of water and quantify current and future implications in our supply chain. Applying water use at prioritized supplier locations using WBCSD and WRI tools, filtered for 2025, provides future implications of water on our key commodities and raw materials. In 2016, we conducted a life cycle analysis of water in our automotive parts supply chain at the country level that is used to further refine our risk analysis of commodities related to water which identified sites in China for further evaluation of water risk.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, included	For major changes at sites, we survey to identify site elements and adopt a master plan for developing the project site, carefully site the building to minimize disruption to existing ecosystems and design the building to minimize its footprint. For previously developed sites, using local and regional governmental agencies, consultants, educational facilities and native plant societies as resources for the selection of appropriate native or adapted plants utilizing the findings of IBAT. An example of the process is at an expansion project at GM Fort Wayne assembly the design of an underground pipeline was changed to avoid impacting wetlands on the site.
Other	Not evaluated	

W2.7

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Relevant,	Water in the life cycle of the use phase of a GM automobile is 48 times more intensive than our own manufacturing use.

Stakeholder	Choose option	Please explain
	included	The majority of the use phase water use is for fuel production for use in GM vehicles. Achievement of GM's climate change public goals to reduce vehicle emissions by improving fuel economy will help to reduce the water consumption in the vehicle use phase. Chevrolet uses customer engagement to provide information to customers specifically on Fuel Economy on a website. It describers the fuel economy features of their vehicles like Bolt EV "Regen on demand" braking, "One-pedal driving", and "Energy Usage Score" provided on the touch screen display.
Employees	Relevant, included	As water management is integrated into GM's business plan, along with safety, quality, and cost at a facility level, employees are involved in the plans and metrics as a normal course of business. Each major facility has a site utility manager (SUM) dedicated to water management and team members are engaged in the planning process to include water conservation measures on business plans, including goals, objectives, metrics, and countermeasures if the target is not achieved. On a monthly basis, GM reports performance to water target (M3/Vehicle) which is reviewed at each site globally to ensure that the goal is met and if not countermeasures are developed to meet the goal. Also, GM conducts Treasure hunts at facilities to train employees how to identify energy and water efficiency opportunities and implement them.
Investors	Relevant, included	Many of GM's institutional investors are CDP members and request GM to participate in CDP Water response indicating they are important stakeholders. GM uses CDP Water report to inform investors and others on our water stress, management practices, and performance. We published our annual 2016 Corporate Sustainability Report (page 113) to inform investors and others about water risks as demonstrated in an article titled "Manage Water-related risks".
Local communities	Relevant, included	Since we share the water sources with the local communities, they are always included as stakeholders. Additionally, in North America, we have long-standing partnerships developed among our employees, local watershed groups and schools, all focused on watershed education through the Global Rivers Environmental Education Network (GREEN) program, now in its 25th year, having mentored 17,000 students annually.
NGOs	Relevant, included	NGOs provide feedback on their concerns about GM's water management making them an important external stakeholder. GM uses CDP Water report to inform NGOs on our water stress, management practices, and performance. We partner with groups like Global Environmental and Technology Foundation and WRI on water related issues to ensure our engagement meets NGO expectations. As an example, GM partnered with WRI, the Global Environment & Technology Foundation and Dow to conduct a water risk workshop for internal and external stakeholders.
Other water users at a local level	Relevant, included	Since GM shares water sources with the local communities, GM participates with community groups at a local level including other users as stakeholders to understand water supply, quality, and risks at the local level. As the manufacturing of water bottles uses magnitudes more water that the amount in the bottle, recycling conserves water. As a response to the Flint water crisis, working with the city of Flint and six regional GM facilities, we collected more than four million used water bottles in 2016 and worked with local companies and organizations to recycle the bottles into insulating fleece used in coats for the homeless, air-filtration components for use at GM facilities and a noise-reducing fabric that covers the engine of our Chevrolet Equinox crossover.
Regulators	Relevant, included	GM has a team at central office (Global Environmental Compliance and Sustainability, (GECS) and an environmental engineer (EE) at each major facility focused on Environmental compliance and sustainability that engages with regulators at the local, state, and federal levels. EE has regular contact with regulators on compliance and upcoming regulations.

Stakeholder	Choose option	Please explain
		Regulators are a key stakeholder as they drive compliance requirements for our facilities. GECS and EE regularly interact with local, state and federal regulators on water quality issues at GM facilities globally.
River basin management authorities	Relevant, included	GM has a team at central office (Global Environmental Compliance and Sustainability, (GECS) and an environmental engineer (EE) at each major facility focused on Environmental compliance and sustainability and a site utility manager (SUM) focused on water management. SUM and EE use newswires feeds and have regular meetings and communications with river basin managers. River basin authorities are a key stakeholder as they drive compliance requirements for some of our facilities as applicable. As an example, GM negotiated with the City of Detroit Water and Sewer department to develop a green tariff that GM uses for storm water discharge based on our storm water reuse project at Detroit Assembly plant.
Statutory special interest groups at a local level	Relevant, included	Since we share the water sources with the local communities, special interest groups are always included as stakeholders. Local GM resources, including environmental engineers (EE) and GM public relations monitor local issue to keep engaged with special interest groups. An example of engagement is during the Flint water crisis hundreds of GM's United Auto Workers volunteered to deliver water bottles to local community center and The General Motors Foundation donated $50,000 to the local United Way chapter for the purchase of water filters for city residents.
Suppliers	Relevant, included	GM conducted a life cycle analysis of water use in our supply chain and found water use significant with 50 times the use compared to our own operations. GM became members of CDP Water Supply Chain in 2014 and continued in 2015-2016. We included high risk suppliers into our comprehensive water management strategy. The vehicle interior is the major area of water use, electric power generation is the major industry using water, and the Tier 1 suppliers are only 4% of the total with Tier 2 suppliers at 26%.
Water utilities at a local level	Relevant, included	GM has a team at central office (Global Environmental Compliance and Sustainability (GECS), Global Facilities (GF), local site utility manager (SUM) and an environmental engineer (EE) at each major facility that engages with water utilities at a local level with regular meetings and communications. As suppliers to many facilities of water and wastewater services, Water Utilities are a key stakeholder to GM. As an example, GM negotiated with the City of Detroit Water and Sewer department to develop a green tariff that GM uses for storm water discharge based on our storm water reuse project at Detroit Assembly plant.
Other	Not evaluated	

W2.8

Please choose the option that best explains why your organisation does not undertake a water-related risk assessment

Primary reason	Please explain

Further Information

Module: Implications

Page: W3. Water Risks

W3.1

Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?

Yes, direct operations only

W3.2

Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk

For direct operations, GM defines substantive change in their business to be when more than 20% of operating production could be impacted at a company level for ongoing operations (for example an impact to 2 million vehicles of production). The Chief Risk Officer of GM is Mary Barra, also Chairman and CEO. The Risk Committee of the Board is responsible for overseeing GM's management of enterprise-level risks. Additionally, during new construction planning, the site planning team considers substantive risk as inadequate water supply for direct operations to meet 100% design operating production volumes.

While the risks related to water at any individual GM facility are not substantive to GM in total, our operations in Mexico at San Luis Potosi, Silao, and Ramos Arizpe were identified as substantive during the site planning phase and corrective actions to mitigate the water risks were implemented prior to production start. This includes additional spending for water reuse to meet production water supply requirements, even at the extreme level of Zero Liquid Discharge at one facility, to minimize the impact to GM's operations and the local community.

For supply chain operations, GM has performed life cycle analysis of water consumption of all suppliers and used water consumption information to identify the top

100 suppliers by overall risk using WRI Aqueduct model. Although 4% showed high risk, our experience with current operations show that there is not a substantive risk due to water for these suppliers.

To engage these high risk and other strategic suppliers, GM joined CDP Water supply chain in 2014, continuing in 2015-6 and invited all of our strategic suppliers, including the high risk suppliers to engage them in water risk management.

W3.2a

Please provide the number of facilities* per river basin exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure; and the proportion of company-widefacilities this represents

Country	River basin	Number of facilities exposed to water risk	Proportion of company-wide facilities that this represents (%)	Comment
Mexico	Santiago	1	1-5	Silao Mexico plant is experiencing depletion of non-renewable wells. Plans are being made to implement near zero liquid discharge to preserve the wells as well as other water efficiency and conservation measures. Engineering began in 2016-7 and implementation is expected in 2018.
China	Huang He (Yellow River)	2	1-5	GM is a joint venture in two at risk facilities in the Huang He Basin: Qingdao and Dongyue. This basin experiences a high projected water stress and possible pollution. Both sites are therefore installing rain harvesting and wastewater treatment devices.
China	Xi Jiang - Bei Jiang	1	1-5	GM is a joint venture in one at risk facility in the Xi Jiang river basin: Liuzhou Assembly. This basin experiences a high projected water stress and possible pollution of the water source. This site has therefore installed a wastewater recovery system to save water.

W3.2b

For each river basin mentioned in W3.2a, please provide the proportion of the company's total financial value that could be affected by water risks

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected	Comment
Mexico	Santiago	% global production volume	1-5	As the community expands manufacturing, GM is planning to implement water reuse to avoid water stress in the area.
China	Huang He (Yellow River)	% global production volume	11-20	GM's joint ventures in the Huang He Basin are exposed to water risks and are mitigating these risks by investing in rain water storage and reuse as well as wastewater treatment devices.
China	Xi Jiang - Bei Jiang	% global production capacity	6-10	GM's joint venture in the Xi Jiang river basin is exposed to water risks and is mitigating the risk by investing in a wastewater recovery system.

W3.2c

Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
Mexico	Santiago	Physical-Increased water stress	Higher operating costs	GM's Site Utility Manager (SUM) identified that our 300 meter Non-Renewable wells are showing signs of water stress as some need a day to recover after low	1-3 years	Probable	Medium-high	Increased capital expenditure	Installing near zero liquid discharge system to recycle water similar to another GM facility at San	Engineer and install water reuse equipment (Zero Liquid Discharge) to recycle the plant water for reuse using

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				flow. With increased production from GM and other manufacturers developing operations in the local area there is concern that adequate well water will not be available in the future.					Luis Potosi, Mexico shows that a near Zero Liquid Discharge system will cost an estimated $12 Million USD	membrane and other technologies is expected to cost over $10 Million USD to install.
China	Huang He (Yellow River)	Physical-Climate change Physical-Increased water stress Physical-Pollution of water source	Water supply disruption	The baseline water stress in this region is extremely high, which puts the facility at risk of future water supply disruption. There have not been water supply disruptions in the past, but climate change is expected to cause problems in the future.	4-6 years	Unlikely	Medium-high	Infrastructure investment Water management incentives	$1,646,000	Wastewater recovery systems were installed at both Dongyue and Qingdao. Dongyue's investment was about $176,000 USD. GM's joint-venture, SAIC-GM-Wuling, which includes the Qingdao Complex and three other facilities, invested $1.47 million USD in rain water storage tanks and wastewater

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										treatment.
China	Xi Jiang - Bei Jiang	Physical-Projected water stress	Water supply disruption	The baseline water stress in this region is extremely high, which puts the facility at risk of future water supply disruption. There have not been water supply disruptions in the past, but climate change is expected to cause problems in the future.	4-6 years	Unlikely	Medium-high	Infrastructure investment	$90,000	A wastewater recovery system was installed at GM's joint-venture facility in Liuzhou for about $90,000 USD.

W3.2d

Please list the inherent water risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs

W3.2e

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain

W3.2f

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	WRI Aqueduct model identified 5 high risk suppliers for overall water risk in auto parts manufacturing, plastics, and casting industries, GM's experience with uninterrupted delivery from these 5 suppliers demonstrates that water risk not substantive as their manufacturing operations have not been disrupted and are meeting reliable supply requirements as a result of mitigating water risks. This assessment will be completed annually to assure continued reliability.

W3.2g

Please choose the option that best explains why you do not know if your organization is exposed to water risks that could generate a substantive change in your business operations, revenue or expenditure and discuss any future plans you have to assess this

Primary reason	Future plans

Further Information

Page: W4. Water Opportunities

W4.1

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

W4.1a

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
Mexico	Increased brand value Improved community relations Improved water efficiency	Manufacturing vehicles in the water stressed area of San Luis Potosi (SLP) provides GM with an opportunity to show our leadership in water reduction, recycle, and reuse. The vehicle and transmission manufacturing facilities at SLP have been equipped with Zero Liquid Discharge (ZLD) capability based on GM's innovative facility design and operations where all water, except evaporation is reused in the process of manufacturing. Providing jobs in a water stressed area while having minimum impact on the aquifer provides positive local, regional, and global recognition of the extreme efforts taken by GM to protect and conserve water, one of our most precious and important natural resources. Increasing customers that identify with environmental excellence could represent a one-half percentage increase in market share that represents a potential of increasing net income by $46 Million (USD).	>6 years	
Brazil	Improved community relations Improved water efficiency	Waste water at our Joinville engine plant is treated in a contained wetland and further reclaimed and is reused as water make up to cooling towers reducing the impact of water withdrawal on local aquifer. Providing jobs in a water stressed area while having minimum impact on the aquifer provides positive local, regional, and global recognition of the extreme efforts taken by GM to protect and conserve water, one of our most precious and important natural resources. Increasing customers that identify with environmental excellence could represent a one-half percentage	>6 years	

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
		increase in market share that represents a potential of increasing net income by $46 Million (USD).		
Company-wide	Improved water efficiency	Global Bill-of-Process and Technical Requirements for new installations (e.g. paint shops) are employed to ensure the latest process best practices are utilized. Efficient 3 and 4 stage cascading rinse systems, high efficiency RO systems, real-time department water meters and process water meters are specified for all new paint shops. Pilot testing is underway for a new technology to reuse rinse system wastewater.	Current-up to 1 year	
Company-wide	Improved water efficiency	New High Purity Water Systems, Reverse Osmosis (RO) for paint shops are now specified to be more efficient, rejecting 13% less water than typical RO systems. New Reverse Osmosis installations are specified to be 85% efficient (typical is 75%). Pilot testing is underway for technology to reduce reject water further.	Current-up to 1 year	
United States of America	Cost savings Improved community relations Improved water efficiency	Alternate sources of water - Assembly Plant in Detroit installed a system to use up to 200 Million gallons of water a year that would otherwise go to a combined sewer system that has issues with combined sewer overflows during heavy rain events. A new 40 Million gallon pond was constructed to handle a 100-year storm event. Stormwater is treated and pumped through multimedia filtration for use in cooling towers and paint sludge. Additional water is further treated through carbon filtration and directed to reverse osmosis to create high purity water for the Paint shop saving over $1M in cost in 2016	Current-up to 1 year	
United States of America	Cost savings Improved water efficiency	Alternate Sources of Water - At our assembly plant in Missouri, the Foundation Drainage (Artesian Well) that was pumped and discharged through the site's stormwater system is now captured and used for processes that off-set City Water requirements. Water is used for paint sludge system and other processes saving 22 million gallons per year of city water.	Current-up to 1 year	
Mexico	Improved community relations Social licence to operate	Use major recycle system up to Zero-Liquid-Discharge (ZLD) in water stressed regions. Silao complex in Mexico is undergoing engineering to increase wastewater recycling from 30% currently to 80% or more (ZLD is being considered).	1-3 years	
Company-wide	Improved water efficiency	Dry Paint Overspray Systems being utilized in new paint shops. Eliminates the wet paint sludge systems which are large water users.	1-3 years	

Please choose the option that best explains why water does not present your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain

W4.1c

Please choose the option that best explains why you do not know if water presents your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain

Further Information

Module: Accounting

Page: W5. Facility Level Water Accounting (I)

W5.1

Water withdrawals: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
Facility 1	Mexico	Santiago	GM Silao Assembly	666.3	About the same	New construction activities generated slightly higher water use (3%) and site continues to institute water conservation activities as engineering proceeds to install increased water reuse to reduce stress on the 300 meter wells.
Facility 2	China	Huang He (Yellow River)	SGMW Qingdao	1007.6	Higher	Production increased slightly (3%) at Qingdao between 2015 and 2016, leading to an increase in water withdrawals despite water reuse in the plant.
Facility 3	China	Huang He (Yellow River)	SGM Dongyue	1488.3	About the same	Production decreased by about 2% at Dongyue between 2015 and 2016 leading to a small decrease (4%) in water withdrawals.
Facility 4	China	Huang He (Yellow River)	SGMW Liuzhou	2047.1	Lower	A 13% production decrease at Liuzhou led to about a 9% decrease in water withdrawals.

Further Information

Page: W5. Facility Level Water Accounting (II)

W5.1a

Water withdrawals: for the reporting year, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.1

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
Facility 1	0	0	0	0	666.3	0	0	0	Silao Assembly complex withdraws water from 9 non-renewable wells, 300 Meters deep with some water reuse. Based on indications of water stress, engineering is underway to increase the amount of water reuse with increased reverse osmosis equipment.
Facility 2	0	0	0	0	0	0	1007.6	0	Qingdao receives all of its water from the municipality.
Facility 3	0	0	0	0	0	0	1488.3	0	Dongyue receives all of its water from the municipality.
Facility 4	0	0	0	0	0	0	2047.1	0	Liuzhou receives all of its water from the municipality.

W5.2

Water discharge: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
Facility 1	361.5	About the same	Plant water conservation included in business plan.
Facility 2	503.1	Higher	This facility saw a small increase in production (3%), leading to an increase in water discharges despite wastewater recovery in the plant.
Facility 3	862.5	Lower	This facility saw a small decrease in production (2%) leading to a decrease of 8% in water discharges. This decrease is due both to production and to wastewater recovery in the plant.
Facility 4	1162.9	Lower	This facility saw a decrease in production (13%) leading to a 21% decrease in water discharges, in part due to wastewater recovery in the plant.

W5.2a

Water discharge: for the reporting year, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.2

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
Facility 1	0	319.1	0	42.4	0	
Facility 2	0	503.1	0	0	0	
Facility 3	0	862.5	0	0	0	
Facility 4	0	1162.9	0	0	0	

W5.3

Water consumption: for the reporting year, please provide water consumption data for all facilities reported in W3.2a

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
Facility 1	304.8	About the same	Water conservation is included in plant business plan to reduce withdrawal and 40% recycle. Consumption is calculated as ground water withdrawal minus discharge, including municipal publicly owned treatment works and eventually to surface water and groundwater discharge. Surface water discharge is a benefit to communities in this water stressed area.
Facility 2	504.5	Higher	This facility had a 3% increase in production leading to an increase in water consumption despite wastewater recovery in the plant.
Facility 3	625.8	About the same	This facility had a 2% decrease in production. While withdrawals and discharges were both decreased slightly, total consumption remained about the same.
Facility 4	884.1	Higher	At this facility, discharges decreased more than withdrawals, in part due to wastewater recovery in the plant. This leads to higher consumption.

W5.4

For all facilities reported in W3.2a what proportion of their water accounting data has been externally verified?

Water aspect	% verification	What standard and methodology was used?
Water withdrawals- total volumes	76-100	100% verified by ISO 14064-3:2006 -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions. See attached file for GM's total water withdrawal verification statement from an independent third party.
Water withdrawals- volume by sources	76-100	100% verified by ISO 14064-3:2006 -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions. See attached file for GM's total water withdrawal verification statement from an independent third party.

Water aspect	% verification	What standard and methodology was used?
Water discharges- total volumes	Not verified	
Water discharges- volume by destination	Not verified	
Water discharges- volume by treatment method	Not verified	
Water discharge quality data- quality by standard effluent parameters	Not verified	
Water consumption- total volume	Not verified	

Further Information

GM verifies 100% of water withdrawal using an independent 3rd party to ISO 14064-3:2006 standard with limited assurance.

Attachments

https://www.cdp.net/sites/2017/64/7164/Water 2017/Shared Documents/Attachments/Water2017/W5.FacilityLevelWaterAccounting(II)/11102036 Water Verification Statement 2016 [from RPT-10].pdf

Module: Response

Page: W6. Governance and Strategy

W6.1

Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Board of individuals/Sub-set of the Board or other committee appointed by the Board	Scheduled - monthly	Water is measured and monitored on a monthly basis and is a Key Performance Indicator (KPI) and one of our metrics integrated into our business plan and reviewed monthly at the plant, regional, and globally at the senior-management level.

W6.2

Is water management integrated into your business strategy?

Yes

W6.2a

Please choose the option(s) below that best explains how water has positively influenced your business strategy

Influence of water on business strategy	Please explain
Establishment of sustainability goals	Water sustainability goals have been established since 2010 and extend to 2020 for a 15% intensity reduction target. We are currently ahead of our glide path at 12% reduction in 2016 from 2010. Each manufacturing facility has a water intensity goal to meet on a monthly and annual basis and plant management is incentivized to meet their annual goal, which has positively impacted GM's business plan to emphasize water sustainability. An example is funding of a project to reuse storm water in cooling towers and paint shop at our Detroit - Hamtramck assembly plant.
Introduction of water management KPIs	Water is integrated into our Global Manufacturing System, (GMS) at the facility level. Water per unit is part of the plant level Environmental element within the Continuous Improvement section of our business plan deployment (BPD). Monthly targets are established, Water per unit is measured each month, and sufficiency plans developed to meet the goal using Plan, Do, Check, Act

Influence of water on business strategy	Please explain
	(PDCA) methodology. The BPD drives results in water conservation and efficiency. An example of results from BPD is after building an updated paint shop, the monthly target at a facility was not meeting the expected target and a subject matter expert along with the plant performed a Water Treasure hunt and found and implemented water conservation measures to meet the target by cascading water for reuse from high quality to lower quality process water tanks.

W6.2b

Please choose the option(s) below that best explains how water has negatively influenced your business strategy

Influence of water on business strategy	Please explain
Increased capital expenditure	In areas that GM expands operations that are water stressed, we have invested additional capital for reuse and recycling. In one of our newest plants in Mexico, GM installed a zero liquid discharge facility. As part of our business plan to meet our water targets, we also evaluate business cases for water efficiency and spend additional monies to reduce water consumption. In Brazil, we installed water reuse in a new engine plant and reuse wastewater in an assembly plant for cooling tower make-up.

W6.2c

Please choose the option that best explains why your organization does not integrate water management into its business strategy and discuss any future plans to do so

Primary reason	Please explain

W6.3

Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes

W6.3a

Please select the content that best describes your water policy (tick all that apply)

Content	Please explain why this content is included
Publicly available Company-wide Performance standards for direct operations Incorporated within group environmental, sustainability or EHS policy Acknowledges the human right to water, sanitation and hygiene	i. Consistent with 2 of GM's environmental principles: • We are committed to actions to restore and preserve the environment. • We are committed to reducing waste and pollutants, conserving resources, and recycling materials at every stage of the product life cycle. GM has integrated water management into its business plan, developed a public goal for water intensity reduction of our direct operations, and implemented water efficiency projects and conservation measures at our facilities. As GM's environmental principles require conserving resources, including water at every stage of the product life cycle, our policy is publicly available, extends to all GM operations, and performance standards are established monthly to ensure that we achieve the goals. ii. Based on another one of GM's long standing environmental principles related to educating the public regarding environmental conservation, GM discloses the performance to this policy in our corporate sustainability report annually. iii. Each GM facility provides adequate water, sanitation, and hygiene services for our 225,000 employees as we acknowledge this as a human right. iv. GM formally supports Automotive Industry Action Group (AIAG) guiding principles for environmental sustainability that includes an expectation that suppliers will reduce water consumption. Although this does not include specific performance standards, it is a first step to engaging suppliers in water conservation.

W6.4

How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting year compare to the previous reporting year?

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
1.0	1.4	Increased spend for engineering for water reuse in water stressed area in Mexico and completed installation of storm water reuse at Detroit Hamtramck to reduce GM's water withdrawal intensity.

Further Information

Page: W7. Compliance

W7.1

Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?

Yes, not significant

W7.1a

Please describe the penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
Fairfax Assembly	Fine	Exceeded monthly permit limit for zinc as determined by the semi-annual waste water compliance sampling performed May 19-20, 2016.	1	1250	USD($)	Incident resolved with corrective action
Grand Rapids Component Holdings	Fine	The City collected a sample of wastewater from the facility and alleged the copper result of 2.445 mg/L exceeded the applicable limit of 2.4 mg/L.	1	228	USD($)	Further sampling resulted in concentrations below the regulated limit.
Baltimore Transmission	Fine	The site only provided three Total Suspended Solids samples instead of the required four.	1	140	USD($)	Sampling in future met required number of samples

W7.1b

What proportion of your total facilities/operations are associated with the incidents listed in W7.1a?

1.00%

W7.1c

Please indicate the total financial impacts of all incidents reported in W7.1a as a proportion of total operating expenditure (OPEX) for the reporting year. Please also provide a comparison of this proportion compared to the previous reporting year

Impact as % of OPEX	Comparison to last year
0.00	No change

Further Information

Page: W8. Targets and Initiatives

W8.1

Do you have any company wide targets (quantitative) or goals (qualitative) related to water?

Yes, targets and goals

W8.1a

Please complete the following table with information on company wide quantitative targets (ongoing or reached completion during the reporting period) and an indication of progress made

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
Other: Reduction of water withdrawal intensity	Water stewardship	One of GM's environmental principles is to conserve resources as stated in our 2016 Corporate Sustainability Report, page 101 - “We are committed to reducing waste and pollutants, conserving resources, and recycling materials at every stage of the product life cycle”. GM has publicly committed to reduce Water withdrawal intensity (M3/Vehicle), including all manufacturing and non-manufacturing facility water withdrawal (municipal, surface, well), normalized by vehicle production by 15% from 2010 baseline to 2020.	% reduction per unit of production	2010	2020	80%

W8.1b

Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress
Watershed remediation and habitat restoration, ecosystem preservation	Shared value	One of GM's environmental principles is to restore and preserve the environment as stated in our 2016 Corporate Sustainability Report, page 101 - "We are committed to actions to restore and preserve the environment". GM set a public goal to improve biodiversity at our global facilities with a baseline in 2010 to 2020. The goal is to improve wildlife habitats by having a Wildlife Habitat Certification (or equivalent) at each GM manufacturing site where feasible by 2020.	GM is 58% complete to goal within 60% of time to complete until 2020. 65 GM manufacturing sites are certified wildlife habitats through Wildlife Habitat Council. In 2016, GM increased the number of site certified by 41% from 46 sites to 65 sites.

W8.1c

Please explain why you do not have any water-related targets or goals and discuss any plans to develop these in the future

Further Information

Of the 65 sites that are certified in General Motors Company as wildlife habitats through the Wildlife Habitat Council, 24 of these have active managed wetland habitat projects. Of these 9 are non-manufacturing and 15 manufacturing sites with actively managed wetland projects. These are based on the WHC standards for Wetlands & Water Bodies. They include being locally appropriate, exceeds regulations, have a conservation objective, value & benefits, and monitoring & documentation. The sites must re-certify every 2-3 years, depending on the strength of the project. They must demonstrate the project activity through data submitted in their certification or re-certification.

Module: Linkages/Tradeoff

Page: W9. Managing trade-offs between water and other environmental issues

W9.1

Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?

Yes

W9.1a

Please describe the linkages or trade-offs and the related management policy or action

Environmental issues	Linkage or trade-off	Policy or action
Extreme water stressed areas require water reuse by treating wastewater to industrial water standards. This requires additional energy and increased greenhouse gas (GHG) emissions.	Trade-off	Increased GHG emissions are acceptable at facilities with high water stress for water reuse to ensure sustainability efforts in areas where growth is needed due to market demand, as GHG emissions increases due to water reuse are extremely small compared to total Company emissions. GM's Global facilities policy is to reuse water at sites with extreme water stress to ensure water supply for production and employee water, sanitation, and hygiene. An example of this is at San Luis Potosi, Mexico where Zero Liquid Discharge equipment increased the energy use and carbon emissions slightly, but allows GM to manufacture in that local area using water reuse.

Further Information

Module: Sign Off

Page: Sign Off

W10.1

Please provide the following information for the person that has signed off (approved) your CDP water response

Name	Job title	Corresponding job category
Charles K. Stevens, III	Executive Vice President and Chief Financial Officer	Chief Financial Officer (CFO)

W10.2

Please indicate that your organization agrees for CDP to transfer your publicly disclosed data regarding your response strategies to the CEO Water Mandate Water Action Hub.

Note: Only your responses to W1.4a (response to impacts) and W3.2c&d (response to risks) will be shared and then reviewed as a potential collective action project for inclusion on the WAH website.

By selecting Yes, you agree that CDP may also share the email address of your registered CDP user with the CEO Water Mandate. This will allow the Hub administrator to alert your company if its response data includes a project of potential interest to other parties using water resources in the geographies in which you operate. The Hub will publish the project with the associated contact details. Your company will be provided with a secure log-in allowing it to amend the project profile and contact details.

Yes

Further Information

CDP 2017 Water 2017 Information Request