

BRIDGESTONE AMERICAS TIRE OPERATIONS



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COMPANY PROFILE

Bridgestone Americas Tire Operations is a global leader in tire production. Across the Americas, the company has over 50 production facilities, operated by more than 43,000 employees. The largest agricultural tire plant in the country, Bridgestone's Des Moines facility produces Firestone brand tires. As the leader in agricultural tire manufacturing, the Des Moines plant operates 24/7 to meet demand.

PROJECT BACKGROUND

Bridgestone's Des Moines plant requires more than 157 million gallons of water per year. As an environmental steward, Bridgestone has identified a need to reduce its water usage. The Des Moines plant plans to reduce total water usage per ton of production by 13 percent. This means the overall water usage at the plant will need to decrease by roughly 20 million gallons.

INCENTIVES TO CHANGE

As a corporation committed to both its customers and to the environment, Bridgestone's mission statement reflects its priorities: "To offer the best for our customers and to society, not only in terms of our products, services and technology, but in all of our corporate activities". The company is dedicated to the continuous improvement of their products and processes, particularly in relation to its environmental footprint. Reducing water usage at the Des Moines plant would not only create a more sustainable manufacturing process, but would also offer a significant cost savings.

RESULTS

Curing Leak Repairs: The Des Moines plant's curing system utilizes high temperature steam to mold and vulcanize green tires. While steam is necessary for the production of tires, it negatively impacts facility infrastructure by corroding pipes. With more than 200 curing presses throughout the plant, corrosion is a major cause of water leaks. Dedicated pipe fitters, whose sole purpose is to repair leaks, could save an estimated \$100,000 annually, and roughly 2.8 million gallons of water.



CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN METRIC TONS

From Recommendations in Recommended Status

TOTAL FOR ALL SECTORS								
CO ₂	SO ₂	CH ₄	N ₂ O	CFC	NO _x	VOC	PM ₁₀	MTCO _{2e}
103.04	0.24	417.13	172.89	1.19	0.24	0.61	0.08	694.54



Cooling Tower Maintenance: Cooling towers are another location of regular leaks at the plant. Leaks in cooling towers have a variety of negative impacts, including water loss, loss of operational efficiency, and hazardous conditions created by large ice formations during colder months. By relying on a cooling tower supplier for annual maintenance, the plant could guarantee more effective and efficient functioning of the machinery, saving an estimated \$24,000 and 2.6 million gallons annually. In addition, the life cycle of the tower could be better anticipated.

Restroom Fixture Replacement: As with any aging facility, the Des Moines Firestone plant has areas of infrastructure that could be upgraded to improve efficiency. One area with the potential for great financial and environmental impact is the restrooms. Current environmental standards require a maximum of 1.6 gallons per flush; the fixtures at the Des Moines facility match the previous standards of 3.5 gallons per flush. A complete retrofit of the restroom fixtures would save the plant 1.6 million gallons of water each year, but the cost savings do not justify the immediate purchase of new fixtures. As old fixtures need to be replaced, more efficient fixtures should be installed in their place.

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
CURING LEAK REPAIRS	\$102,803	2,719,740 GALLONS 70,375 THERMS	RECOMMENDED
COOLING TOWER MAINTENANCE	\$24,147	2,628,000 GALLONS	RECOMMENDED
RESTROOM FIXTURE REPLACEMENT	\$15,359	1,582,000 GALLONS	RECOMMENDED

