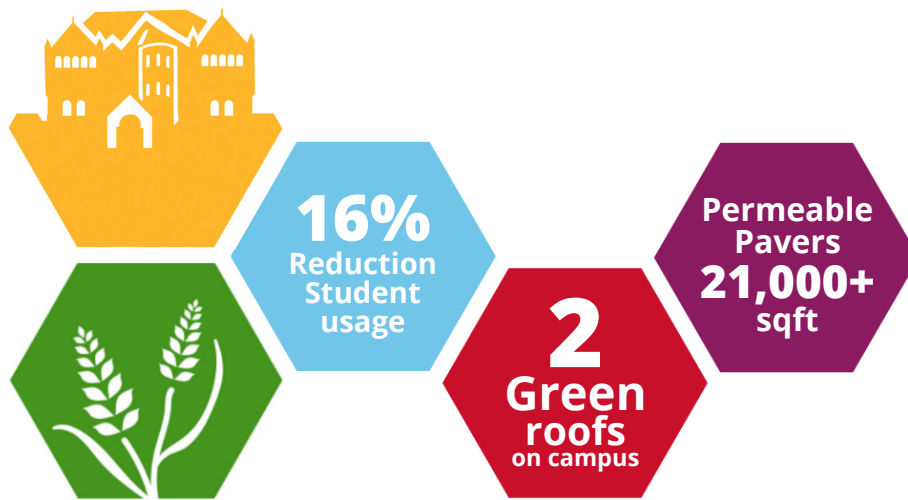


WATER



Water at Macalester

As a result of climate change, Minnesota is experiencing more intense storms with large volumes of water falling in a shorter period of time. When this occurs, the ground is unable to absorb and filter the water effectively. The result is an increase in water runoff into the stormwater system, which flows directly into the Mississippi River. Stormwater in the Mississippi River introduces pollutants and causes short term flooding. To prevent excessive erosion of the riverbanks, stormwater needs to be captured in systems that maximize absorption.

To address the stormwater issue, the 2009 Macalester College Sustainability Plan established a goal to reduce the first inch of precipitation across campus.

To address potable water consumption, the Facilities department focuses on improving efficiencies on campus.

Permeable pavers outside Weyerhauser Hall reduce stormwater runoff.



By The Numbers

- 💧 **Potable Water** - Usage per full-time student has decreased by 16% from FY 2014/15 as a result of fixture upgrades and behavior changes.

Programs

- 💧 **Markim Hall** - The first building in Minnesota higher education to achieve LEED Platinum. It is energy efficient, uses 95% recycled construction materials, reduces water usage by 80%, optimizes daylight, and controls stormwater runoff with native plant species, permeable pavers, and underground perforated pipes. All of Markim's emissions from electrical and on-site combustion are offset through Renewable Choice Energy.
- 💧 **Janet Wallace Stormwater Rain Garden** - The parking lot was re-sloped to prevent standing water or ice and to direct stormwater into the rain garden. The rain garden removes 70-80% of suspended solids, over 50% of phosphorus, 45-85% of metal, 35% pathogens, and 80% of hydrocarbon toxins to help protect and preserve the Mississippi River's ecosystem.
- 💧 **Permeable Pavers** - These are small slabs of concrete with gaps in between allowing water to easily sink into the ground. Rocks and minerals cleanse the runoff before it makes its way to the Mississippi River. Pavers cover more than 21,000 square feet in five locations on campus.
- 💧 **Green Roofs** - Kagin and the link between Turck and Doty are planted with low maintenance sedums that weeded once each year. The MacCARES student group started the project in 2006-7. The roofs increase the lifetime of a roof by 30 years, property value, and insulation potential.
- 💧 **Hydrology Class Living Laboratory** - Dr. Kelly MacGregor's hydrology class calculates the runoff from different parts of campus by considering land cover and existing stormwater remediation measures for land parcels across campus. The class hopes to estimate total anticipated runoff, and use the data to apply for a reduction on charges on stormwater fees for areas with stormwater projects.

