

Mount Pleasant Borough – Parking Lot Rain Gardens

Design features: Five rain gardens, concrete curb cuts, permeable concrete

Date of Installation: 2009

Location: Mount Pleasant Borough, Westmoreland County PA

Client: Mount Pleasant Borough, Mount Pleasant Parking Authority

Installation Cost: \$75,000, PA DEP Growing Greener / EPA 319 grant funding

Partners: Westmoreland Conservation District, Borough of Mount Pleasant, Mount Pleasant Parking Authority, WG Land Company LLC

Project contact: Kathy Hamilton RLA, kathyh@wcdpa.com



Completed rain gardens capture a portion of parking lot stormwater runoff through curbcuts.

Project Description

This project is a stormwater management retrofit to capture and treat stormwater from an uncontrolled 1 acre of parking lot. Pollutants and runoff were being discharged directly into an adjacent roadway. Five, 15-foot wide by 20-foot long areas of existing asphalt paving were removed and replaced with a landscaped rain garden. An asphalt traffic island was also replaced with permeable concrete and canopy trees. The systems capture and retain stormwater runoff from the parking lots, reducing the volume of runoff and providing water quality improvements. There was a 4 space net loss of parking spaces in the parking lots, and additional green space and landscaping was provided.

Benefits/Performance Measures

Impervious area managed: 1/4 acres

Stormwater reduction performance analysis: Runoff from a 2" storm event on 1/4 acres of

impervious area is fully managed by 1,000 sq ft rain garden which captures 1,750 cu/ft total runoff.

Community and economic benefits that have resulted from the project: The rain gardens and permeable paving provide catchment for debris and pollutants, provide cooling for heated runoff, and provide volume reduction and water quality improvements to the Jacobs Creek Watershed in an area where little currently exists.

Related information: The project included pavement demolition, excavation, installation of rain garden with engineered soil mix, underdrain system, and landscaping and permeable concrete and trees.

Recommended Maintenance

[Link to maintenance guidelines for similar projects](#)

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Additional Information



Mount Pleasant Borough Parking Authority lots generated uncontrolled runoff into the Borough streets and onto neighboring properties prior to the rain garden project



Concrete curbs with formed curb cuts protect the rain garden from traffic and allow water into the rain garden. A gravel underdrain is separated from the soil layer with a geotextile and a pipe riser will handle overflow in large storms.

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An existing asphalt island in a parking lot provides an opportunity for stormwater management.



Permeable concrete is poured flush with the surrounding parking lot to handle stormwater.

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Completed parking lot rain gardens are planted with versatile perennials.



A permeable concrete strip allows stormwater to irrigate newly planted shade trees.

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Runoff captured in the parking lot trench drain is reduced by a flow splitter to safeguard overloading a rain garden already limited in size by existing conditions.



The landscaped rain garden captures and treats a portion of the parking lot stormwater runoff.