

	Grow Zones* (I, C/I, R, M)	Tree Plantings* (I, C/I, R, M)	Rain Capture/ Reuse (I, C/I, R, M)	Bioretention/ Rain Garden (C/I, R, M)	Vegetated/ Bio Swales (I, C/I, M)	Pervious Pavement (I, C/I, R, M)	Green Roofs (I, C/I, M)	Subsurface Stormwater Retention/ Detention (I, C/I, M)
Description	Planting of native vegetation	Increased tree cover	Storing and reusing rain water	Landscaped surface depressions designed for the filtration or infiltration of stormwater	Stormwater conveyance channel designed for the filtration or infiltration of stormwater	Pavements that allows for filtration or infiltration of stormwater	Rooftops partially or completely covered with vegetation	Facilities underground to promote stormwater infiltration, filtration, or storage
Detail	<ul style="list-style-type: none"> Upland or riparian native planting areas 	<ul style="list-style-type: none"> Tree canopy and forest cover has been shown to reduce stormwater runoff 	<ul style="list-style-type: none"> Structures that capture stormwater for the purpose of reuse 	<ul style="list-style-type: none"> Shallow landscaped surface depressions Recommend using deep-rooted native plants Overflow drain is necessary Should be located at least 10 feet away from building 	<ul style="list-style-type: none"> Shallow stormwater channel that is densely planted with a variety of native grasses, shrubs, or trees Check dams can be used to improve performance, especially in steeper areas 	<ul style="list-style-type: none"> Pervious pavements (concrete, asphalt, and pavers) slows rain water before entering storm drains and streams 	<ul style="list-style-type: none"> Rooftops covered with vegetation and soil or a growing media planted over a waterproof membrane Allows the roof to function like a vegetated surface 	<ul style="list-style-type: none"> Underground aggregate-filled beds or vaults, tanks, large pipes, or other fabricated structures placed in aggregate-filled beds in the soil mantle to collect or filter stormwater
Where Effective	<ul style="list-style-type: none"> Parks Riparian corridors Road medians Grow zones are excellent opportunities for reducing local maintenance costs by converting turf or impervious areas to deep-rooted native vegetation 	<ul style="list-style-type: none"> Areas around impervious surfaces Adjacent to surface water Riparian corridors 	<ul style="list-style-type: none"> Rain barrels are well-suited for residential lots Cisterns and other large storage tanks are more appropriate for commercial or industrial sites Captured water can be re-used for a variety of applications, including irrigation and grey water uses in buildings 	<ul style="list-style-type: none"> Residential and commercial areas Parking lots (use curb cuts to direct stormwater runoff to depressed areas or consider “inverted” islands rather than raised islands.) 	<ul style="list-style-type: none"> Vegetated swales typically treat runoff from highly impervious surfaces (e.g., roadways and parking lots) and re-enters storm drains 	<ul style="list-style-type: none"> Parking lots Walking paths Sidewalks Playgrounds Plazas Basketball courts Parking lanes Bike paths Bike lanes Alleys Driveways 	<ul style="list-style-type: none"> Green roof are not common for residential homes Schools, libraries, and commercial or industrial buildings are perfect candidates for installation Flat roofs are preferred, but green roofs can be installed on pitched roofs when designed accordingly 	<ul style="list-style-type: none"> Under areas of high imperviousness to collect runoff Perfect for land uses where extensive parking is needed and green space is not feasible
Mechanisms of Pollutant Reduction	<ul style="list-style-type: none"> Slows runoff before entering streams or storm drains Infiltration Vegetative transpiration 	<ul style="list-style-type: none"> Stormwater volume reduction Interception (rain water collects on leaves before becoming surface runoff) Infiltration Reduces stream erosion 	<ul style="list-style-type: none"> Stormwater volume reduction 	<ul style="list-style-type: none"> Filtration/ Infiltration to reduce stormwater volume Vegetative transpiration 	<ul style="list-style-type: none"> Filtration to reduce stormwater volume Settling of sediment transported from impervious surfaces Vegetative transpiration 	<ul style="list-style-type: none"> Stormwater drains through the permeable surface where it is temporarily held in the voids of a stone bed or other storage reservoir, and then slowly releases into underdrains, or underlying soil 	<ul style="list-style-type: none"> Vegetative transpiration Stormwater volume control 	<ul style="list-style-type: none"> Stormwater is temporarily stored within the voids of the stone bed and then slowly infiltrates into the underlying soil, or into underdrains in areas of soil contamination, or reused as grey water
Other Benefits	<ul style="list-style-type: none"> Reduced maintenance costs compared to turf grass Enhances aesthetics 	<ul style="list-style-type: none"> Improved air and water quality Wildlife habitat Enhances aesthetics Heat reduction due to shading pavement 	<ul style="list-style-type: none"> Reduced use of potable water when reused Energy savings Money savings 	<ul style="list-style-type: none"> Enhances landscapes Could fulfill landscaping requirements for site plan approval 	<ul style="list-style-type: none"> For new construction, swales are more cost effective than storm sewers for conveyance 	<ul style="list-style-type: none"> Reduced storm sewer costs for new construction Recharges groundwater when soil is eligible for infiltration 	<ul style="list-style-type: none"> Reduces heating and cooling costs Increases lifespan of roof Heat island reduction Habitat enhancement Educational tool and site-seeing attraction 	<ul style="list-style-type: none"> Allows for various land uses above ground Reduces storm sewer costs
Local Resources	Michigan Native Plant Producers Association http://www.mnppa.org/	Muskegon Conservation District (231) 773-0008 http://muskegoncd.org	West Michigan Environmental Action Council (Grand Rapids) (616) 451-3051 http://wmeac.org	Muskegon Conservation District (231) 773-0008 http://muskegoncd.org		Michigan Concrete Paving Association www.miconcrete.org/ Asphalt Paving Association of Michigan www.apa-mi.org/	LifeRoof, L.L.C., Subsidiary of Hortech, Inc. (Spring Lake) (616) 842-1392 http://www.liveroof.com	Triton Stormwater Solutions™, LLC (Brighton) (810) 222-7652 http://www.tritonsws.com/

* Denotes BMPs **not** modeled with the Scoping Tool.

Land uses most appropriate for listed BMP: I= Industrial; C/I= Commercial and/or Institutional; R= Residential; M= Municipal