

Northampton Township
Small Project Stormwater Management Site Plan

What classifies my project as a Small Project?

- The small project stormwater site plan is only permitted for residential projects proposing less than or equal to 5,000 square feet of impervious surface and less than 1-acre of earth disturbance

What is required to submit in a Small Project Stormwater Site Plan?

- A brief description of the proposed stormwater facilities, including types of materials to be used, total square footage of proposed impervious areas, volume calculations, and a simple sketch plan showing the following information:
 - Location of the proposed structures, driveways or other paved areas with approximate surface area in square feet.
 - Location of any existing or proposed on-site septic system and/or potable water wells showing proximity to infiltration facilities.
 - **Bucks County Conservation District erosion and sediment control “Adequacy” letter if disturbing greater than 2,000 square feet of earth for a pool, and greater than 1,000 square feet of earth for any other project.**

How to determine the runoff volume that is required to be controlled and how to choose the appropriate stormwater facility:

Step 1: Determine the Maximum Allowable Impervious Surface Ratio for your Zoning District:

- AR Agricultural-Residential District: 18% of lot area (23% permitted if accompanied by an appropriate stormwater management facility)
- EP Environmental Protection District: 5% of lot area (10% permitted if accompanied by an appropriate stormwater management facility)
- CR Country Residential District: 10% of lot area (15% permitted if accompanied by an appropriate stormwater management facility)
- R-1 Single-Family District: 20% of lot area (25% permitted if accompanied by an appropriate stormwater management facility)
- R-2 Single-Family District: 20% of lot area (25% permitted if accompanied by an appropriate stormwater management facility)
- R-3 Multi-family Residential District: See Section 27-407.2.E. of Zoning Ordinance
- R-5 Mobile Home Park District: See Section 27-408.2. of Zoning Ordinance

Note: The Director of Planning and Zoning shall have the final determination with respect to nonconforming conditions that may be identified.

Step 1: Determine Total Impervious Surfaces (See Appendix A – Step 1 for Worksheet)

- Impervious surfaces include sidewalks, driveways, parking areas, patios or pool decks. The area of the pool water should not be included in your impervious surface.

Impervious Surface Calculation Example

Impervious Surface			Area (sq. ft.)
House Roof (Front)	12 ft. x 48 ft.	=	576 sq. ft.
House Roof (Rear)	12 ft. x 48 ft.	=	576 sq. ft.
Garage Roof (Left)	6 ft. x 24 ft.	=	144 sq. ft.
Garage Roof (Right)	6 ft. x 24 ft.	=	144 sq. ft.
Driveway	12 ft. x 50 ft.	=	1000 sq. ft.
Walkway	4 ft. x 20 ft.	=	80 sq. ft.
Pool Deck (not including pool surface)	20 ft. x 32 ft.	=	300 sq. ft.
Equipment Pad	5 ft. x 4 ft.	=	20 sq. ft.
	Total Impervious		2,840 sq. ft.

Pervious Pavement Credit:

- When a pervious pavement system is used in the development of a site, 50% of the area covered by the pervious pavement shall be considered as impervious surface when determining compliance with the impervious surface requirements per the Zoning Ordinance. The Township engineer shall make the final determination as to those materials that are pervious and impervious.

Step 2: Determine Required Volume Control (cubic feet) using the following equation: (See Appendix A – Step 2 for Worksheet)

$$\text{Volume (cu. ft.)} = (\text{Total impervious area in square feet} \times 2 \text{ inches of runoff}) / 12 \text{ inches}$$

$$(2,840 \text{ sq. ft.} \times 2 \text{ inches of runoff}) / 12 \text{ inches} = 473.33 \text{ cu. ft.}$$

Step 3: Sizing the Selected Volume Control Best Management Practices (BMP) (See Appendix A – Step 3 for Worksheet)

Any of the following Best Management Practices can be used based upon the applicant's preferences and available space.

Tree Plantings and Preservation are recommended for projects under 300 square feet of new Impervious Surface.

Structural BMPs

A. Infiltration Trench, Seepage Bed, or Dry Well

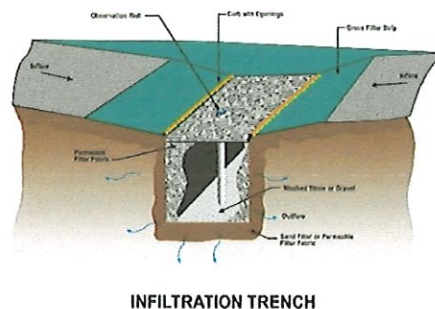
- A subsurface storage facility that temporarily stores and infiltrates stormwater runoff.

Design Conditions:

- Seepage Beds typically consist of 18 to 42 inches of clean washed, uniformly graded aggregate with 40% void capacity.
- Seepage Beds are not recommended when their installation would create a significant risk for basement seepage or flooding. In general, 10-20 feet of separation is recommended between Seepage Bed and building foundation.
- The facility may be either a structural prefabricated chamber or an excavated pit filled with stone.
- The Seepage Bed should be wrapped in a nonwoven geotextile (top, sides, and bottom) and must be placed on uncompacted soils.
- Cleanouts or inlets should be installed at both ends of the Seepage Bed and at appropriate intervals to allow access to the perforated pipe.
- Depth of seepage beds in excess of three and a half (3.5) feet should be avoided unless warranted by soil conditions.

Maintenance:

- Seepage Beds should be inspected at least four (4) times annually, as well as after large storm events.
- Remove sediment, debris/trash, and any other waste material from a seepage bed.
- Regularly clean out gutters and ensure proper connections to the seepage bed.
- Replace the filter screen that intercepts the roof runoff as necessary.



Sizing Example for a Seepage Bed or Infiltration Trench: **(See Appendix A – Step 1 for Worksheet)**

Determine Total Impervious Surface to Drain to Infiltration Trench:

Impervious Surface		=	Area (sq. ft.)
Garage Roof	6 ft. x 24 ft.	=	144 sq. ft.
Driveway	12 ft. x 50 ft.	=	1000 sq. ft.
Walkway	4 ft. x 20 ft.	=	80 sq. ft.
	Total Impervious		1,224 sq. ft.

1. Determine the required infiltration volume: **(See Appendix A – Step 3.A.1. for Worksheet)**

$(1224 \text{ sq. ft.} \times 2 \text{ inches of runoff}) / 12 \text{ ft} = 204 \text{ cu. ft.}$

$204 \text{ cu. ft.} / 0.4 = 510 \text{ cu. ft.}$ (0.4 assumes 40% void ratio in gravel bed)

2. Sizing the Infiltration volume: **(See Appendix A – Step 3.A.2. for Worksheet)**

- Volume of Facility = Depth X Width X Length
- Set depth to 3.5 ft; Set width equal to length for square chamber.
 $510 \text{ cu. ft.} / 3.5 \text{ ft.} = 146 \text{ sq. ft.}$
- Final Seepage pit dimensions: 3.5 ft. (D) X 69 sq. ft.

B. Rain Garden

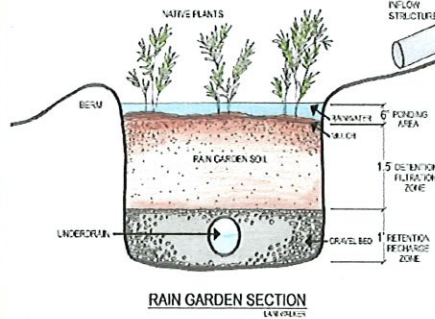
- A planted shallow depression designed to catch and filter rainfall runoff.

Design Considerations:

- A maximum side slope of 3:1 is recommended.
- The depth of a rain garden can range from 6 – 8 inches. Pondered water should not exceed 6 inches.
- The rain garden should drain within 72 hours.
- The garden should be at least 10-20 feet from a building foundation and 25 feet from septic system drain fields and wellheads.
- If the site has clay soils, soil should be amended with compost or organic material.
- Choose native plants such as ferns, sedges or wildflowers.
- At the rain garden location, the water table should be at least 2 feet below the soil level. If water stands in an area for more than one day after a heavy rain, you can assume it has a higher water table and is not a good choice for a rain garden.

Maintenance:

- Water plants regularly until they become established.
- Inspect twice a year for sediment buildup, erosion and vegetative conditions.
- Mulch with hardwood when erosion is evident and replenish annually.
- Prune and remove dead vegetation in the spring season.
- Weed as you would any garden.
- Move plants around if some plants would grow better in the drier or wetter parts of the garden.



Sizing Example for Rain Garden:

- Pick a site for the rain garden between the source of runoff and a low-lying area.
- Determine Total Impervious Surface to drain to Rain Garden: **(See Appendix A – Step 1 for Worksheet)**

Impervious Surface			Area (sq. ft.)
House Roof (Front)	12 ft. x 48 ft.	=	576 sq. ft.
	Total Impervious		576 sq. ft.

1. Determine the required infiltration volume: **(See Appendix A – Step 2 for Worksheet)**

$(576 \text{ sq. ft.} \times 2 \text{ inches of runoff}) / 12 \text{ ft} = 96 \text{ cu. ft.}$

2. Sizing the Rain Garden: **(See Appendix A – Step 3.B.1. for Worksheet)**

- In order to control 2 inches of runoff volume, the rain garden area needs to be multiplied by 2.
 $96 \text{ cu. ft.} \times 2 = 192 \text{ sq. ft.}$
- Assume a 6-inch depth. At the time of construction perform an infiltration test to confirm the depth of the rain garden.
- Final Rain Garden dimensions: 192 sq. ft. X 6 in. (D)

Non-Structural BMPs

1. Tree Plantings and Preservation

- Captures and stores rainfall in the canopy and releases water into the atmosphere through evapotranspiration (recommended for projects under 300 square feet of new Impervious Surface).

Tree Considerations:

- Existing trees must have at least a 4-inch trunk caliper or larger.
- Existing tree canopy must be within 100 ft of impervious surfaces.
- A tree canopy is classified as the continuous cover of branches and foliage formed by a single tree or collectively by the crowns of adjacent trees.
- New tree plantings must be at least 6 ft. in height and have a 2-inch trunk caliper.
- When using trees as volume control BMPs, runoff from impervious areas should be directed to drain under the tree canopy.

Determining the Required number of planted trees to reduce the runoff volume: **(See Appendix A – Step 1 for Worksheet)**

1. Determine Total Impervious Surface to drain towards Trees:

Impervious Surface			Area (sq. ft.)
Garage Roof (Right)	6 ft. x 24 ft.	=	144 sq. ft.
Pool Deck (not including pool surface)	20 ft. x 32 ft.	=	300 sq. ft.
Equipment Pad	5 ft. x 4 ft.	=	20 sq. ft.
	Total Impervious		464 sq. ft.

2. Calculate the required control volume: **(See Appendix A – Step 2 for Worksheet)**
 $(464 \text{ sq. ft.} \times 2 \text{ inches of runoff}) / 12 \text{ inches} = 78 \text{ cu. ft.}$
3. Determine the number of tree plantings: **(See Appendix A – Step 3.C.1.&2. for Worksheet)**
 - A newly planted deciduous tree can reduce runoff volume by 6 cu. ft.
 - A newly planted evergreen tree can reduce runoff volume by 10 cu. ft.

$$78 \text{ cu. ft.} / 6 \text{ cu. ft.} = 13 \text{ deciduous trees}$$

Determine the volume reduction for preserving existing trees:

1. Calculate approximate area of the existing tree canopy: **(See Appendix A – Step 3.C.3. for Worksheet)**
 $25 \text{ sq. ft.} \times 30 \text{ sq. ft.} = 750 \text{ sq. ft.}$
2. Measure distance from impervious surface to tree canopy: 35 ft. **(See Appendix A – Step 3.C.4. for Worksheet)**

3. Calculate the volume reduction credit by preserving existing trees: **(See Appendix A – Step 3.C.5. for Worksheet)**

- For Trees within 20 feet of impervious cover:
Volume reduction cu. ft. = (Existing Tree Canopy sq. ft. x 1 inch) / 12
- For Trees beyond 20 feet but not farther than 100 feet from impervious cover:
Volume Reduction cu. ft. = (Existing Tree Canopy sq. ft. x 0.5 inch) / 12

$$(750 \text{ sq. ft.} \times 0.5 \text{ inches}) / 12 = 31.25 \text{ cu. ft.}$$

This volume credit can be utilized in reducing the size of any of the structural or non-structural BMPS planned on the site. For example, the 12.5 cu. ft. could be subtracted from the 78 cu. ft. of newly planted trees.

$$78 \text{ cu. ft.} - 31.25 \text{ cu. ft.} = 46.75 \text{ cu. ft.}$$

$$46.75 \text{ cu. ft.} / 6 \text{ cu. ft.} = 8 \text{ deciduous trees}$$

2. **Minimize Soil Compaction and Replant with Lawn or Meadow** (Please contact the Township if you are considering utilizing this method.).

10/8/21

APPENDIX A

BMP Calculations

STEP 1

Address: _____ Lot Size: _____ square feet

Impervious Surface Breakdown

(Impervious Surface: A surface that does not absorb rain. All buildings, parking areas, driveways, roads, sidewalks, and any areas in concrete and asphalt shall be considered impervious surfaces within this definition. In addition, other areas determined by the Township Engineer to be impervious within the meaning of this definition will also be classified as impervious surfaces. The surface area of pools shall not be considered for the purpose of impervious surface calculation.)

A. House: _____ square feet

B. Shed/Detached
Garage(s): _____ square feet

C. Patio/Deck(s): _____ square feet
(Check if the patio is covered by a roof)
(Check if this is a deck)

D. Driveway: _____ square feet

E. Walkway(s) (inc. pool coping): _____ square feet

TOTAL (existing): _____ **square feet**

F. Proposed construction: _____ square feet

TOTAL (proposed): _____ **square feet** _____ **percent**

TOTAL PERMITTED _____ **square feet** _____ **percent**
(To be completed by Township)

STEP 2 – Determine Required Volume Control (Cubic Feet)

Impervious Surface to Be Mitigated x 2 inches of runoff / 12 inches

_____ sf x 2 = _____ / 12 = _____ Cubic Feet

STEP 3 – Sizing the Selected Best Management Practice (BMP)

Option A: Infiltration Trench, Seepage Bed, or Dry Well

1. Determine Required Infiltration Volume

Cubic Feet (from calculation Step 2) / 0.4 (0.4 assumes 40% void ratio in gravel bed)

_____ / 0.4 = _____ Cubic Feet

2. Sizing Infiltration Volume (Depth Set to 3.5 feet)

Cubic Feet (from calculation above in Step 3.A.1.) / 3.5 feet

_____ / 3.5 = _____ Square Feet (Final Seepage Pit Dimension)

Option B: Rain Garden

1. Sizing the Rain Garden

a. Cubic Feet (Calculation from Step 2) / Depth of Rain Garden (Min. 6 inches – Max. 8 inches) = Square Feet (Rain Garden Dimension for 1 inch runoff volume)

_____ (Cubic Feet) / _____ Depth of Rain Garden =
_____ Square Feet

b. Square Feet (Final Rain Garden Dimension) x 2 inches of runoff volume =

_____ (Square Feet) x 2 = _____ Square Feet
(FINAL Rain Garden Dimension)

Option C: Tree Plantings and Preservation

1. New Plantings

Determine Number of Trees:

A. Deciduous Trees – 6 cu. ft. per tree
Cubic Feet (Calculation from Step 2) / 6 cu. ft. = Number of
Deciduous Trees Required

_____ (Cubic Feet) / _____ 6 cu. ft. =
_____ Deciduous Trees Required

- B. Evergreen Trees – 10 cu. ft. per tree**
Cubic Feet (Calculation from Step 2) / 10 cu. ft. = Number
of Evergreen Trees Required

$$\underline{\hspace{2cm}} \text{ (Cubic Feet) } / \underline{\hspace{2cm}} 10 \text{ cu. ft. } =$$

$$\underline{\hspace{2cm}} \text{ Evergreen Trees Required}$$

Note: **Minimum 2 inch caliper tree.**
 Minimum 6 feet in height.
 Trees must be native to Pennsylvania (Appendix D).

- 2. Existing Plantings**
(Please submit a separate calculation for EACH existing tree. Feel free
to copy this sheet. If adjacent to woodlands, tree canopy can be
determined for full width and length of the wooded area.)

Area of Existing Tree Canopy

$$\underline{\hspace{2cm}} \text{ length } \times \underline{\hspace{2cm}} \text{ width } = \underline{\hspace{2cm}} \text{ sf}$$

- 3. Measure Distance from Impervious Surface to Tree Canopy**

$$\underline{\hspace{2cm}} \text{ feet}$$

- 4. Calculate Volume Reduction Credit of Tree**

- A. Tree Within 20 feet of Impervious Surface**

$$\text{Area of Existing Tree Canopy (sq. ft.) } \times 1 \text{ inch } / 12 =$$

$$\underline{\hspace{2cm}} \text{ sq. ft. } \times 1 / 12 = \underline{\hspace{2cm}} \text{ cu. ft.}$$

- B. Tree Greater Than 20 feet from Impervious Surface (Less than 100 feet)**

$$\text{Area of Existing Tree Canopy (sq. ft.) } \times .05 \text{ inch } / 12 =$$

$$\underline{\hspace{2cm}} \text{ sq. ft. } \times .05 / 12 = \underline{\hspace{2cm}} \text{ cu. ft.}$$

5. TOTAL C.1. (Proposed Plantings) + C.2. (All Existing Plantings)
= _____ (Volume Reduction Credit)

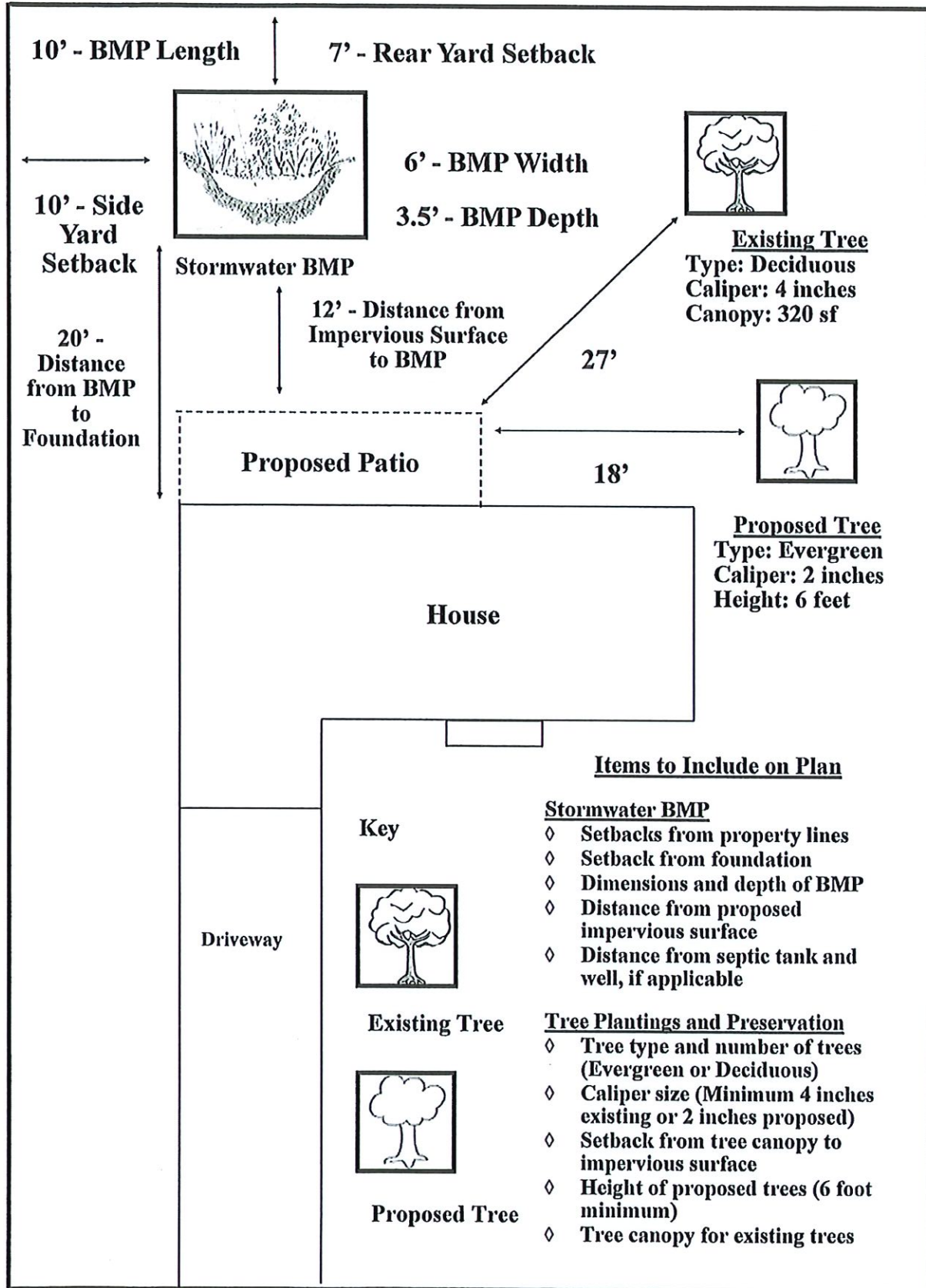
Note: Volume credit can be used to reduce the size of any of the structural or nonstructural BMPs planned for the site.

Township Use Only

APPENDIX B

Sample Site Plan

Sample Sketch Plan



Not To Scale

APPENDIX C

Structural BMP Renderings, Details, & Required Inspections

MATERIALS:

AGGREGATES – Clean Uniformly Graded Coarse Aggregate (PennDOT 2B or approved equivalent)

NON-WOVEN GEOTEXTILE – Mirafi 160N or 140N or approved equivalent

PLANTINGS – For Trees,

https://www.wildflower.org/plants/combo.php?distribution=PA&habit=habit_tree&duration=

For BMP Plantings, see Appendix D

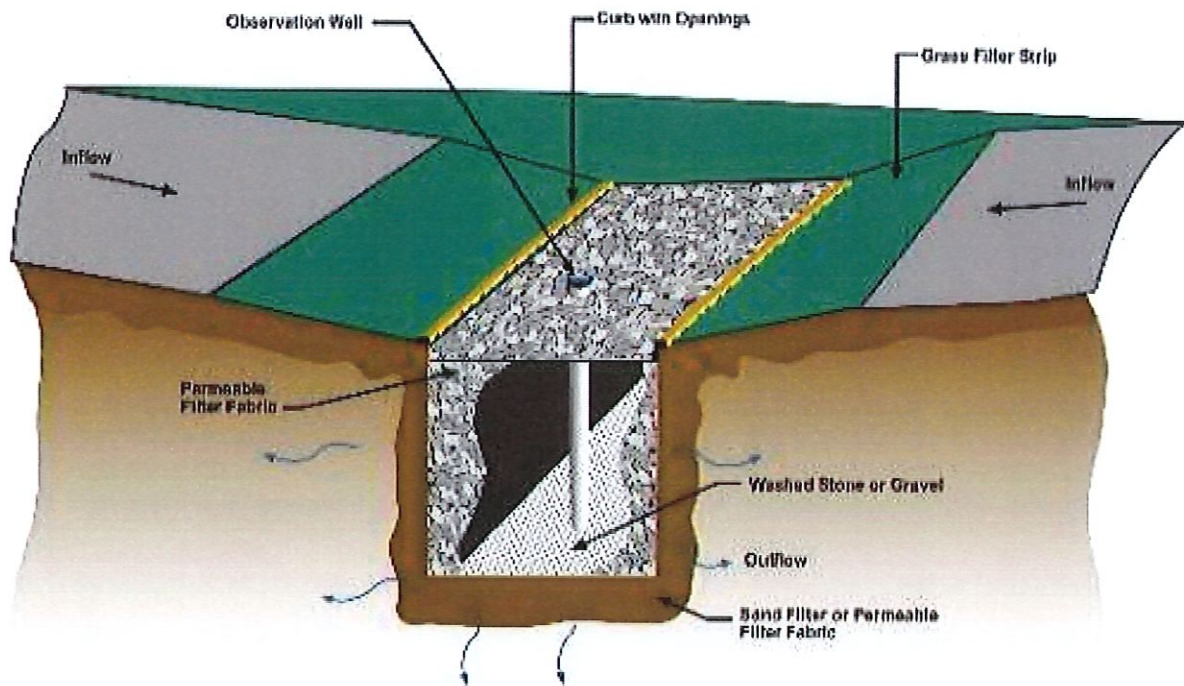
REQUIRED INSPECTIONS:

Contact Township Engineer's office a minimum of three (3) days prior to construction of stormwater management facilities.

- **For Infiltration Trenches or Seepage Beds (Drywells):**
 - o Inspection following excavation of trench or seepage bed, installation of fabric on the sides and bottom and first layer of stone.
- **For Rain Gardens:**
 - o Inspection following excavation of the rain garden.
- **For Non-structural BMPs (Trees)**
 - o Inspection upon installation of the trees.

***A FINAL INSPECTION OF THE CONSTRUCTION IS REQUIRED FOR ALL PERMITS REQUIRING GRADING WITH OR WITHOUT A STORMWATER MANAGEMENT FACILITY.**

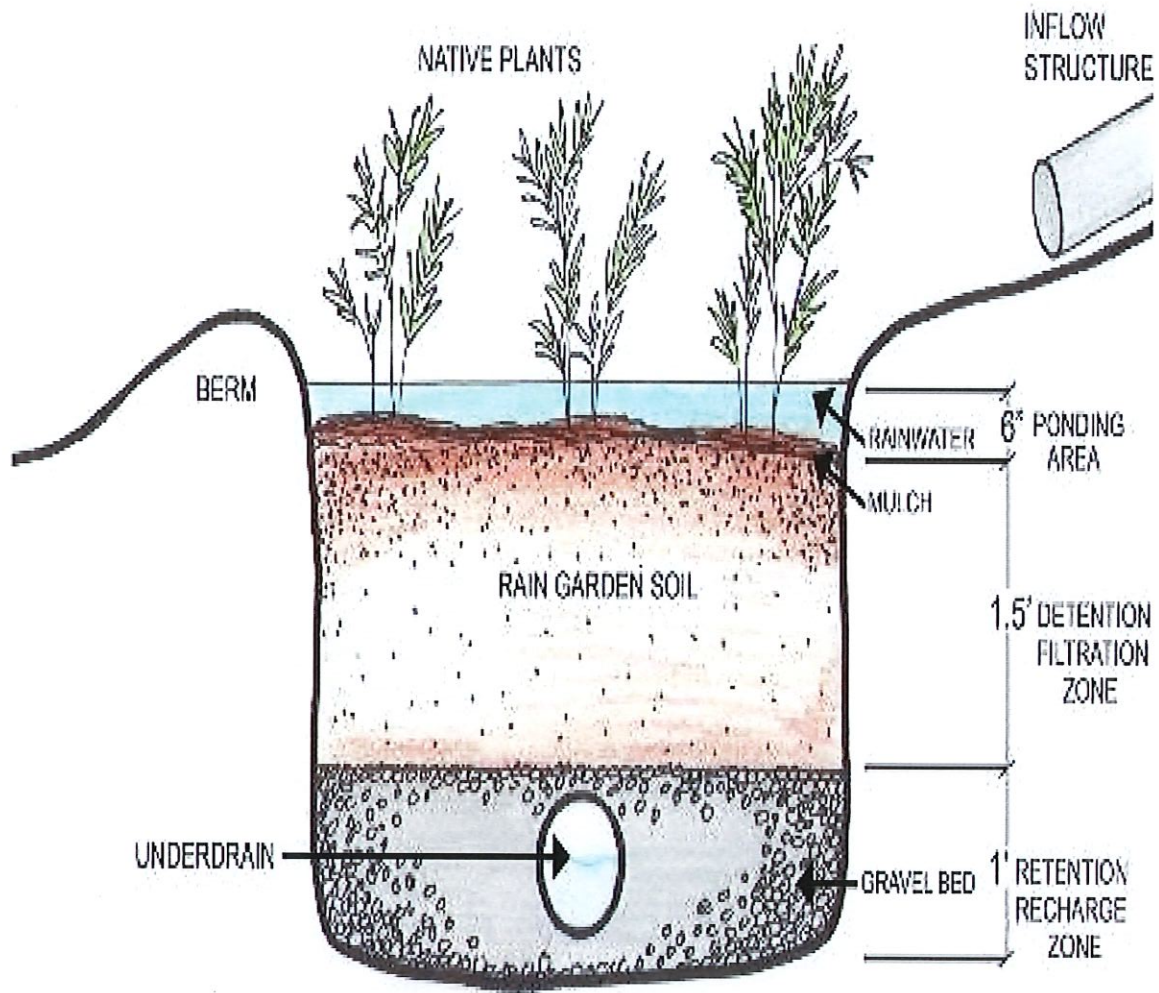
INFILTRATION TRENCH & SEEPAGE BEDS



INFILTRATION TRENCH

RAIN GARDEN





RAIN GARDEN SECTION
LANI WALKER

APPENDIX D

Pennsylvania Native Trees

BMP PLANT LIST

Common Name	Scientific Name	Plant Type	Wetland Indicator	Hydrologic Zone	Inundation Tolerance	Hardiness Zone	Commercial Availability	Wildlife Value	Notes
Fern, hay-scented	<i>Dennstaedtia punctilobula</i>	Fern	NI	4,5,6	No	4-8	Plants	Tolerate Deer Browsing.	Shade to partial sun.
Fern, marginal shield	<i>Dryopteris marginalis</i>	Fern	FACU-	4,5,6	No	5-8	Plants		Partial sun. Shade tolerant. Evergreen.
Fern, sensitive	<i>Oroclea sensibilis</i>	Fern	FACW	[3,4],5	Saturated	4-9	Plants	Moderate. Songbirds and small mammals	Full to partial sun. Shade tolerant
Fern, cinnamon	<i>Osmunda cinnamomea</i>	Fern	FACW	2,[3,4]	Saturated	4-8	Plants	Moderate. Songbirds and small mammals	Full to partial sun. Shade tolerant. Young "fiddle heads"
Fern, royal	<i>Osmunda regalis</i>	Fern	OBL	2,[3,4]	Saturated	4-9	Plants	Moderate. Small mammals.	Full to partial sun. Shade
Fern, New York	<i>Thelypteris noveboracensis</i>	Fern	FAC	[3,4],5	Saturated	2-8	Plants	Moderate. Songbirds and small mammals.	Partial sun. Shade tolerant. Drought tolerant.
Sweetflag	<i>Acorus americanus</i>	Forb	OBL	3,4	Seasonal		Plants, Rhizome	Low food. Good cover.	Tolerant of dry periods. Not a rapid colonizer. Tolerates acidic conditions.
Plantain, water	<i>Alisma plantago-aquatica (subcordatum)</i>	Forb	OBL			3-7			
Columbine, wild	<i>Aquilegia canadensis</i>	Forb	FAC	[4,5],6	No	3-8	Plants, Seed	Moderate. Butterflies, hummingbirds, and beneficial insects.	Full sun to full shade. Spreads by seed. Early spring flowers.
Milkweed, swamp	<i>Asclepias incarnata</i>	Forb	OBL	2,[3,4]	Saturated, 0-6"	3-8	Plants, Seed	Moderate. Butterflies, small mammals, and beneficial insects.	Full to partial sun. Drought tolerant. Not eaten by wildlife. Attractive flowers.
Milkweed, common	<i>Asclepias syriaca</i>	Forb	NI	5,6	No	4-9	Plants, Seed	High. Food for butterflies (esp. Monarch) and beneficial insects.	Full sun. Drought tolerant.
Butterflyweed	<i>Asclepias tuberosa</i>	Forb	NI	5,6	No	4-10	Plants, Seed	Moderate. Butterflies and beneficial insects.	Full to partial sun. Attractive orange flower.
Aster, white wood	<i>Aster divaricatus</i>	Forb	NI	4,[5],6	No	4-8	Plants	Low. Butterflies and beneficial insects.	Very shade tolerant. Long lasting white flowers.
Aster, New England	<i>Aster novae-angliae</i>	Forb	FACW	[3,4],5	Seasonal	3-9	Plants, Seed	Cover for birds and mammals.	Attractive purple flowers. Tolerates dry soils.
Aster, New York	<i>Aster novibergii</i>	Forb	FACW+	[3,4],5	Seasonal		Plants, Seed	Low. Butterflies and beneficial insects.	Pale purple flowers. Tolerates dry soils.
Trumpetweed	<i>Eupatorium fistulosum</i>	Forb	FACW	[3,4],5	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall plant with pink-purple flowers.
Joe-pye-weed, spotted	<i>Eupatorium maculatum</i>	Forb	FACW	[3,4],5	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall plant with pale purple flowers.
Boneset	<i>Eupatorium perfoliatum</i>	Forb	FACW+	[2,3],4	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Shade tolerant. Long lasting white
Joe-pye-weed, purple	<i>Eupatorium purpureum</i>	Forb	FAC	3,[4,5]	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall with showy flower.
Hibiscus, marsh	<i>Hibiscus moscheutos</i>	Forb	OBL	2,3	0-12"	5-11	Plants	Low. Hummingbirds.	Full to partial sun. Persistent during winter. Drought tolerant.
Iris, blue flag	<i>Iris versicolor</i>	Forb	OBL	2,[3,4]	0-6"		Plants, Seed	Moderate. Food muskrat and wildfowl. Cover, marshbirds. Persists under heavy grazing.	Very showy pink to white flowers. Slow growth. Full sun to partial shade. Tolerates clay. Fresh to moderately brackish water.
Cardinal flower	<i>Lobelia cardinalis</i>	Forb	FACW+	3,4	Saturated	2-8	Plants, Seed	High. Nectar for hummingbird, oriole, butterflies.	Attractive blue flower. Tolerates Partial shade. Does not persist well. Blood red flower.
Blue lobelia	<i>Lobelia siphilitica</i>	Forb	FACW+	3,4	Saturated		Plants, Seed	Moderate. Butterflies, hummingbirds, songbirds, and beneficial insects.	Full to partial sun. Shade tolerant. Attractive blue flower.
Monkey-flower	<i>Mimulus ringens</i>	Forb	OBL	3,4	Saturated	4-10	Plants, Seed	Low.	Full to partial sun. Interesting flower.

Pennsylvania Stormwater Best Management Practices Manual

Common Name	Scientific Name	Plant Type	Wetland Indicator	Hydrologic Zone	Inundation Tolerance	Hardiness Zone	Commercial Availability	Wildlife Value	Notes
Fern, hay-scented	<i>Dennstaedtia punctilobula</i>	Fern	NI	4,5,6	No	4-8	Plants	Tolerate Deer Browsing.	Shade to partial sun.
Fern, marginal shield	<i>Dryopteris marginalis</i>	Fern	FACU-	4,5,6	No	5-8	Plants		Partial sun. Shade tolerant. Evergreen.
Fern, sensitive	<i>Onoclea sensibilis</i>	Fern	FACW	[3,4],5	Saturated	4-9	Plants	Moderate. Songbirds and small mammals	Full to partial sun. Shade tolerant
Fern, cinnamon	<i>Osmunda cinnamomea</i>	Fern	FACW	2,[3,4]	Saturated	4-8	Plants	Moderate. Songbirds and small mammals	Full to partial sun. Shade tolerant. Young "fiddle heads" edible.
Fern, royal	<i>Osmunda regalis</i>	Fern	OBL	2,[3,4]	Saturated	4-9	Plants	Moderate. Small mammals.	Full to partial sun. Shade tolerant.
Fern, New York	<i>Thelypteris noveboracensis</i>	Fern	FAC	[3,4],5	Saturated	2-8	Plants	Moderate. Songbirds and small mammals.	Partial sun. Shade tolerant. Drought tolerant.
Sweetflag	<i>Acorus americanus</i>	Forb	OBL	3,4	Seasonal		Plants, Rhizomes	Low food. Good cover.	Tolerant of dry periods. Not a rapid colonizer. Tolerates acidic conditions.
Plantain, water	<i>Alisma plantago-aquatica (subcordatum)</i>	Forb	OBL			3-7			
Columbine, wild	<i>Aquilegia canadensis</i>	Forb	FAC	[4,5],6	No	3-8	Plants, Seed	Moderate. Butterflies, hummingbirds, and beneficial insects.	Full sun to full shade. Spreads by seed. Early spring flowers.
Milkweed, swamp	<i>Asclepias incarnata</i>	Forb	OBL	2,[3,4]	Saturated, 0-6"	3-8	Plants, Seed	Moderate. Butterflies, small mammals, and beneficial insects.	Full to partial sun. Drought tolerant. Not eaten by wildlife. Attractive flowers.
Milkweed, common	<i>Asclepias syriaca</i>	Forb	NI	5,6	No	4-9	Plants, Seed	High. Food for butterflies (esp. Monarch) and beneficial insects.	Full sun. Drought tolerant.
Butterflyweed	<i>Asclepias tuberosa</i>	Forb	NI	5,6	No	4-10	Plants, Seed	Moderate. Butterflies and beneficial insects.	Full to partial sun. Attractive orange flower.
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Trumpetweed	<i>Eupatorium fistulosum</i>	Forb	FACW	[3,4],5	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall plant with pink-purple flowers.
Joe-pye-weed, spotted	<i>Eupatorium maculatum</i>	Forb	FACW	[3,4],5	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall plant with pale purple flowers.
Boneset	<i>Eupatorium perfoliatum</i>	Forb	FACW+	[2,3],4	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Shade tolerant. Long lasting white flower.
Joe-pye-weed, purple	<i>Eupatorium purpureum</i>	Forb	FAC	3,[4,5]	Seasonal		Plants, Seed	Moderate. Butterflies, songbirds, and beneficial insects.	Full to partial sun. Tall with showy flower.
Hibiscus, marsh	<i>Hibiscus moscheutos</i>	Forb	OBL	2,3	0-12"	5-11	Plants	Low. Hummingbirds.	Full to partial sun. Persistent during winter. Drought tolerant. Very showy pink to white flowers.
Iris, blue flag	<i>Iris versicolor</i>	Forb	OBL	2,[3,4]	0-6"	2-7	Plants, Seed	Moderate. Food muskrat and wildfowl. Cover, marshbirds. Persists under heavy grazing.	Slow growth. Full sun to partial shade. Tolerates clay. Fresh to moderately brackish water. Attractive blue flower.
Cardinal flower	<i>Lobelia cardinalis</i>	Forb	FACW+	3,4	Saturated	2-8	Plants, Seed	High. Nectar for hummingbird, oriole, butterflies.	Tolerates Partial shade. Does not persist well. Blood red flower.

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Common Name	Scientific Name	Plant Type	Wetland Indicator	Hydrologic Zone	Inundation Tolerance	Hardiness Zone	Commercial Availability	Wildlife Value	Notes
Reedgrass, bluejoint	<i>Calamagrostis canadensis</i>	Grass	FACW+	2,[3,4]	0-6", saturated		Seed, Plants		
Managrass, fowl	<i>Glyceria striata</i>	Grass	OBL	[2,3],4	Seasonal		Plants, Seed	High. Food for waterfowl, muskrat, and deer.	Partial to full shade.
Fowl managrass	<i>Glyceria striata</i>	Grass	OBL	[2,3],4	Seasonal		Plants, Seed	High. Food and cover.	Full sun although tolerant of shade. Shoreline stabilization.
Cutgrass, rice	<i>Leersia oryzoides</i>	Grass	OBL	[2,3],4	0-6"		Plants, Seed	High. Seeds, cover for waterfowl, songbirds.	Tolerates wet/dry conditions.
Switchgrass	<i>Panicum virgatum</i>	Grass	FAC	[4,5],6	Seasonal	4-9	Seed and Plants	High. Good food and cover.	Full sun. Grows 4-6 feet tall.
Indiangrass	<i>Sorghastrum nutans</i>	Grass	UPL	5,6	No	3-9	Seed, Plants		Full sun. Tolerates poor soils and drought.
Bluestem, little	<i>Schizachyrium scoparium</i>	Grass	FACU-	6	No	3-9	Seed, Plants		
Sedge, fringed	<i>Carex crinita</i>	Grass-like	OBL	2,[3,4]	Saturated		Plants, Seed	Moderate. Songbirds and waterfowl. Good food and cover.	Full to partial sun.
Sedge, Pennsylvania	<i>Carex pennsylvanica</i>	Grass-like	NI	5,6	Yes	4-8	Plants, Seed	Moderate. Songbirds and waterfowl.	Partial sun. Shade tolerant.
Sedge, broom	<i>Carex scoparia</i>	Grass-like	FACW	3,[4],5	Sat, 0-6"		Plants, Seed	Moderate. Good food and wildlife cover.	Tolerates moist to dry conditions.
Sedge, tussock	<i>Carex stricta</i>	Grass-like	OBL	1,[2,3],4	Sat, 0-6"	5-9	Plants, Seed	Moderate. Songbirds.	Full sun. Persists during winter.
Sedge, fox	<i>Carex vulpinoidea</i>	Grass-like	OBL	1,2,[3],4	Sat, 0-6"		Plants, Seed	High. Songbirds and waterfowl.	Full to partial sun. Prefers fluctuating water levels.
Rush, Canada	<i>Juncus canadensis</i>	Grass-like	OBL	2,[3,4]	Sat, 0-6"		Plants, Seed	Moderate. Songbirds, waterfowl, and small mammals	Full to partial sun. Shown to have good nutrient uptake tolerates occasional dry conditions.
Rush, soft	<i>Juncus effusus</i>	Grass-like	FACW+	[2,3],4	0-1'	3-8	Plants, Seed	Moderate	Full to partial sun. Shown to have good nutrient uptake tolerates occasional dry conditions.
Bulrush, hard-stem	<i>Scirpus acutus</i>	Grass-like	OBL	[1,2],3	0-3'		Plants, Seed	High. Cover, food (achenes, rhizomes) ducks, geese, muskrat, fish. Nesting for bluegill and bass.	Quick to establish. Fresh to brackish. Good for sediment stabilization and erosion control. Shown to have good nutrient uptake.
Woolgrass	<i>Scirpus cyperinus</i>	Grass-like	FACW	2,[3,4]	Saturated	4-8	Plants, Seed	Moderate. Cover, food.	Requires full sun. Can tolerate acidic soils, drought. Colonizes disturbed areas, moderate growth. Shown to have good nutrient uptake.
Bulrush, three-square	<i>Scirpus pungens</i>	Grass-like	FACW+	[2,3],4	Saturated, 0-6"		Plants, Seed	High. Seeds, cover. Waterfowl and fish.	Shown to have good nutrient uptake. High metal removal. Drought tolerant.
Bulrush, softstem	<i>Scirpus tabernaemontani</i>	Grass-like	OBL	1,[2,3]	0-1'		Plants, Seed	High. Good cover and food.	Full sun. Aggressive colonizer. High pollutant removal.
Bur-reed, American	<i>Sparganium americanum</i>	Grass-like	OBL	[2,3],4	Saturated, 0-6"		Plants, Seed	Good food and cover.	Spreads rapidly. Tolerates partial shade.
Bur-reed, giant	<i>Sparganium eurycarpum</i>	Grass-like	OBL	1,[2,3]	0-12"		Plants, Seed	High. Food (seeds, plant) waterfowl, beaver and other mammals. Cover for marshbirds, waterfowl.	Rapid spreading. Tolerates partial sun. Good for shoreline stabilization. Salinity <0.5 ppt. Spreads rapidly, can be invasive.
Cattail, narrowleaf	<i>Typha angustifolia</i>	Grass-like	OBL	1,[2,3]	0-1'	3-11	Plants	Low food. Good nesting and cover.	Shown to have good nutrient uptake properties.
Cattail, broadleaf	<i>Typha latifolia</i>	Grass-like	OBL	1,[2,3]	0-1'	3-9	Plants	Low food. Good nesting and cover.	Spreads rapidly, can be invasive. Shown to have good nutrient uptake properties.
Alder, speckled	<i>Alnus rugosa</i>	Shrub	FACW+	2,3	Saturated		Yes	High. Cover, browse for deer, seeds for birds.	Rapid growth. Stabilizes streambanks. Roots fix N2.
Alder, smooth	<i>Alnus serrulata</i>	Shrub	OBL	[1,2],3	Saturated, 0-3"		Yes	High. Food, cover.	Rapid growth. Stabilizes streambanks. Roots fix N2.

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Common Name	Scientific Name	Plant Type	Wetland Indicator	Hydrologic Zone	Inundation Tolerance	Hardiness Zone	Commercial Availability	Wildlife Value	Notes
Choke Berry, Red	<i>Aronia arbutifolia</i>	Shrub	FACW	3,[4,5]	Seasonal	4-9	Yes	Moderate. Songbirds.	Bank stabilizer. Partial sun. White flowers with red fruit. Partial sun. White flowers with black fruit.
Choke Berry, Black	<i>Aronia melanocarpa</i>	Shrub	FAC	3,[4,5]	Seasonal		Yes	Moderate. Songbirds.	Full sun to partial shade. Will grow in dry areas. Interesting flowers and seed.
Bottombush, common	<i>Cephalanthus occidentalis</i>	Shrub	OBL	[1,2],3	0-3'	5-10	Yes	High. Ducks and shorebirds. Seeds, nectar and nesting.	Partial sun. Shade tolerant. Attractive white flower spikes. Shade and drought tolerant.
Pepper-bush, sweet	<i>Clethra alnifolia</i>	Shrub	FAC+	[3,4],5	Seasonal	3-9	Yes	Moderate. Butterflies, songbirds, waterfowl, small mammals, and beneficial insects.	Good bank stabilizer. White flowers with blue fruit. Stems have good winter color.
Dogwood, silky	<i>Cornus amomum</i>	Shrub	FACW	[3,4],5	Seasonal	5-8	Yes	High. Songbirds and mammals.	Full to partial sun. Shade tolerant. Drought tolerant. White flowers and fruit.
Dogwood, gray	<i>Cornus racemosa</i>	Shrub	FAC	3,[4,5]	Seasonal		Yes	High. Songbirds, waterfowl, and small mammals.	Full to partial sun. Shade tolerant. Drought tolerant. Good streambank stabilizer. White flowers and fruit.
Dogwood, redtwig	<i>Cornus sericea</i>	Shrub	FACW+	[3,4],5	Seasonal		Yes	High. Songbirds, waterfowl, and small mammals.	Partial sun to shade. Inhabits dry woodlands. Edible nuts. Wood used for divining rods.
Hazel-nut, American	<i>Corylus americana</i>	Shrub	FACU-	4,[5,6]	No	4-9	Yes	Moderate. Songbirds and small mammals.	Prefers shade. Ornamental. Unusual flowers in Nov. - Dec.
Witch-hazel, American	<i>Hamamelis virginiana</i>	Shrub	FAC-	4,[5,6]	No	4-9	Yes	Low. Food for squirrels, deer, and ruffed grouse.	Full to partial sun. Shade tolerant. Evergreen. Avoided by birds.
Inkberry	<i>Ilex glabra</i>	Shrub	FACW-	3,[4,5]	Seasonal		Yes	High. Songbirds, waterfowl, and small mammals.	Full sun to partial shade. Seasonally flooded areas. Red fruits persist through winter.
Winterberry, common	<i>Ilex verticillata</i>	Shrub	FACW+	[3,4],5	Seasonal	3-9	Yes	High. Cover and fruit for birds. Holds berries into winter.	Shade and rich soils. Tolerates acidic soils. Good understory species. Red berries.
Spice Bush	<i>Lindera benzoin</i>	Shrub	FACW-	3,4,5	seasonal	5-9	Yes	Very high. Songbirds.	Coastal plain species. Roots fix N2. Drought tolerant.
Bayberry, northern	<i>Myrica pennsylvanica</i>	Shrub	FAC	[3,4],5	Seasonal		Yes	High. Nesting, food, cover. Berries last into winter.	Full to partial sun. Susceptible to damage from disease and insects. Showy pink and white flowers.
Azalea, swamp	<i>Rhododendron viscosum</i>	Shrub	OBL	[3,4],5	Saturated	3-9	Yes	Low. Waterfowl and small mammals.	
Sumac, smooth	<i>Rhus glabra</i>	Shrub	NI	4,[5,6]	No	3-8	Yes	High. Songbirds, small mammals, and beneficial insects.	Full sun. Drought resistant.
Rose, pasture	<i>Rosa carolina</i>	Shrub	NI	5,6	No	5-9	Yes	High. Songbirds, and small mammals.	Full to partial sun.
Rose, swamp	<i>Rosa palustris</i>	Shrub	OBL	2,[3,4]	Saturated	5-8	Yes	High. Food (hips) for birds including turkey, ruffed grouse and mammals.	Prefers full sun. Easy to establish. Low salt tolerance. Avoided by deer.
Rose, Virginia	<i>Rosa virginiana</i>	Shrub	FAC	3,[4,5]	Seasonal	3-8	Yes	High. Songbirds, and small mammals.	Full to partial sun.
Blackberry, common	<i>Rubus allegheniensis</i>	Shrub	FACU-	4,5,6	No		Yes	High Butterflies, songbirds, small mammals, and beneficial insects.	Full to partial sun. Edible fruit.
Willow, pussy	<i>Salix discolor</i>	Shrub	FACW	[3,4],5	Yes	4-8	Yes	Low. Buds eaten by grouse.	Furry catkins are a harbinger of spring. Good streambank stabilizer. Roots easily from cuttings.
Elderberry	<i>Sambucus canadensis</i>	Shrub	FACW-	3,4,5,6	Yes	3-9	Yes	Extremely high. Food and cover, birds and mammals.	Full sun to partial shade. Drought tolerant. Bears fruit when four years old.

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Blueberry, highbush	<i>Vaccinium corymbosum</i>	Shrub	FACW-	3,[4],5,6	Seasonal	3-8	Yes	High. Butterflies, songbirds, waterfowl, and small mammals.	Full to partial sun. Shade tolerant. Prefers acid soils. Attractive plant year round. Grows best in sun to partial shade. Drought tolerant.
Arrow-wood, southern	<i>Viburnum dentatum</i>	Shrub	FAC	3,[4],5,6	Seasonal	4-8	Yes	High. Songbirds and mammals.	Full to partial sun. Shade tolerant. Wood can be brittle. Rapid growth. Tolerates acidic soil.
Black-haw	<i>Viburnum prunifolia</i>	Shrub	FACU	4,5,6	No	3-9	Yes	Moderate. Songbirds and small mammals.	Full to partial sun. Forms thickets. Wood can be brittle. Rapid growth. Tolerates acidic soil.
Box-elder	<i>Acer negundo</i>	Tree	FAC+	3,[4],5	Seasonal	2-9	Yes	High. Seeds and browse.	Full to partial sun. Hardy and slow growing.
Maple, red	<i>Acer rubrum</i>	Tree	FAC	3,[4],5	Seasonal	3-9	Yes	Moderate. Songbirds and small mammals. Excellent for cavity nesting wildlife.	Full to partial sun.
Maple, silver	<i>Acer saccharinum</i>	Tree	FACW	3,[4],5	Seasonal	3-9	Yes	High. Songbirds.	Bank erosion control. Full sun. Nice ornamental.
Birch, river	<i>Betula nigra</i>	Tree	FACW	3,[4],5	Seasonal	4-9	Yes	Moderate. Songbirds.	Short lived tree (30-50 years). Early successional species.
Birch, gray	<i>Betula populifolia</i>	Tree	FAC	4,[5],6	Seasonal		Yes	Moderate. Songbirds, waterfowl, and small mammals.	Partial sun. Shade tolerant. Small understory tree. Smooth gray bark.
Ironwood	<i>Carpinus caroliniana</i>	Tree	FAC	3,[4],5,6	Seasonal	3-9	Yes	Moderate. Songbirds, waterfowl, and small mammals.	Full to partial sun. Hardy and slow growing.
Hickory, sweet pignut	<i>Carya glabra</i>	Tree	FACU-	4,[5],6	No	4-9	No	Moderate. Songbirds, waterfowl, and small mammals.	Full sun. Distinctive peeling bark.
Hickory, shag-bark	<i>Carya ovata</i>	Tree	FACU-	4,[5],6	No	4-8	Yes	Moderate. Songbirds, waterfowl, and small mammals.	Partial sun. Shade tolerant. Edible nuts, prolific seed production. Usually found in areas with fluctuating water tables. Evergreen.
Cedar, Atlantic white	<i>Chamaecyparis thyoides</i>	Tree	OBL	[1,2],3,4	Saturated	4-8	Yes	High. Songbirds, waterfowl, and small mammals.	Full to partial sun. Good nut crop every 2-3 years. Smooth gray bark.
Beech, American	<i>Fagus grandifolia</i>	Tree	FACU	4,[5],6	No	4-9	Yes	High. Food.	All sunlight conditions. Well drained soils. Grows to 100' tall.
Ash, white	<i>Fraxinus americana</i>	Tree	FACU	4,[5],6	No	4-9	Yes	Moderate.	Rapid growing streambank stabilizer. Full sun to partial shade. Small tree 30-50' tall.
Ash, black	<i>Fraxinus nigra</i>	Tree	FACW	3,4,5	Saturated		Yes	Moderate. Songbirds. Prolific seeder.	Full to partial sun. Shade tolerant. Evergreen. Attractive red fruits persist through winter. Full sun. Good wind break or screening plant. Early successional species. Evergreen. Full sun to partial shade. Well drained soils. Rapid growth.
Ash, green	<i>Fraxinus pennsylvanica</i>	Tree	FACW	3,4,5	Seasonal	2-9	Yes	Moderate. Songbirds.	Can be difficult to transplant. Prefers sun to partial shade. Nice ornamental with deep red fall color.
Holly, American	<i>Ilex opaca</i>	Tree	FACU	4,5,6	No	5-9	Yes	High. Songbirds and small mammals.	Full sun. Old trees are fire resistant due to their thick bark. Grows well on poor sites. Evergreen.
Cedar, eastern red	<i>Juniperus virginiana</i>	tree	FACU	4,5,6	No	2-9	Yes	Moderate. Seeds and nest sites.	
Tuliptree	<i>Liriodendron tulipifera</i>	Tree	FACU	4,5,6	No	4-9	Yes	High. Songbirds, egrets, herons, raccoons, owls.	
Blackgum	<i>Nyssa sylvatica</i>	Tree	FACW+	2,[3],4,5	Seasonal	3-9	Yes	High. Songbirds and small mammals.	
Pine, pitch	<i>Pinus rigida</i>	Tree	FACU	4,5,6	No	4-7	Yes	High. Songbirds and small mammals.	

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Pine, eastern white	<i>Pinus strobus</i>	Tree	FACU	4,5,6	No	3-8	Yes	High. Songbirds and small mammals.	Full sun. Rapid growth. Large and long lived tree. Evergreen. Rapid growth. Common in floodplains and alluvial woodlands. Drought tolerant. Shallow rooted, subject to windthrow. Invasive roots. Will grow on dry sites. Weak wood. Rapid growth
Sycamore, American	<i>Platanus occidentalis</i>	Tree	FACW-	[3,4],5	Seasonal	4-9	Yes	Low. Food, cavities for nesting.	Common in floodplains and alluvial woodlands. Drought tolerant. Shallow rooted, subject to windthrow. Invasive roots. Will grow on dry sites. Weak wood. Rapid growth
Cotton-wood, eastern	<i>Populus deltoides</i>	Tree	FAC	[3,4],5	Seasonal	2-9	Yes	Moderate. Cover, food.	Willow. Rapid growth and short lived (40-50 years). Rapid growth
Aspen, big-tooth	<i>Populus grandidentata</i>	Tree	FACU	[4,5,6]	No		Yes	Moderate. Ruffed Grouse eats buds and catkins.	Short lived tree. Nice fall color. Moist soils or wet bottomland
Aspen, quaking	<i>Populus tremuloides</i>	Tree	FACU	[4,5],6	Seasonal	1-7	Yes	Moderate. Buds and some nesting.	Short lived tree. Nice fall color. Moist soils or wet bottomland
Cherry, black	<i>Prunus serotina</i>	Tree	FACU	[4,5],6	No	2-8	Yes	High. Food.	Excellent fruit production. Full to partial sun. Slow growing. Longest lived tree in the northeast
Oak, white	<i>Quercus alba</i>	Tree	FACU	4,5,6	No	3-9	Yes	High. Songbirds and small mammals.	Longest lived tree in the northeast
Oak, swamp white	<i>Quercus bicolor</i>	Tree	FACW+	2,[3,4],5	Seasonal	4-8	Yes	High. Songbirds, waterfowl and small mammals.	Good bottomland tree. Drought tolerant. Nice ornamental
Oak, scarlet	<i>Quercus coccinea</i>	Tree	NI	5,6	No	4-9	Yes	High. Songbirds and small mammals.	Full to partial sun. Rapid growing and long lived. Nice fall color. Gypsy moth target.
Oak, pin	<i>Quercus palustris</i>	Tree	FACW	[3],4,5,6	Seasonal	4-8	Yes	High. Songbirds and small mammals.	Full to partial sun. Rapid growing and long lived. Nice fall color. Gypsy moth target.
Oak, willow	<i>Quercus phellos</i>	Tree	FAC+	[3,4],5	Seasonal	5-9	Yes	High. Songbirds, waterfowl, and small mammals.	Full to partial sun.
Oak, red	<i>Quercus rubra</i>	Tree	FACU-	5,6	No	3-8	Yes	High. Small mammals.	Full to partial sun. Rapid growing and long lived. Valuable timber tree.
Willow, black	<i>Salix nigra</i>	Tree	FACW+	[2,3],4	Seasonal		Yes	High. Browsing and cavity nesters.	Rapid growth, stabilizes streambanks. Full sun. Roots easily from cuttings.
Bald Cypress	<i>Taxodium distichum</i>	Tree	OBL	1,[2,3],4	Saturated, 0-2	4-9	Yes	Little food value, but good perching site for waterfowl.	Tolerates drought.
Basswood, American	<i>Tilia americana</i>	Tree	FACU	[4,5],6	No	2-8	Yes	Moderate. Butterflies, songbirds, small mammals, and beneficial insects.	Partial sun. Shade tolerant. Important pollen source for honey bees.
Serviceberry, downy	<i>Amelanchier arborea</i>	Tree (small)	FAC-	3,[4,5],6	Seasonal	4-9	Yes	Moderate. Songbirds and small mammals.	Partial sun. Shade tolerant. Very early spring flowers. Handsome tree.
Serviceberry, shadbush	<i>Amelanchier canadensis</i>	Tree (small)	FAC	4,5,6	Seasonal	4-7	Yes	High. Nesting, cover, food. Birds and mammals.	Prefers partial shade. Common in forested wetlands and upland woods. Very early spring flowers. Full sun to partial shade. Small tree 30-50' tall. Fruit persists into winter.
Hackberry, common	<i>Celtis occidentalis</i>	Tree (small)	FACU	4,5,6	No	3-9	Yes	High. Food and cover.	Partial sun. Shade tolerant. Nitrogen fixer. Nice ornamental.
Redbud, eastern	<i>Cercis canadensis</i>	Tree (small)	FACU-	4,5,6	No	4-9	Yes	Moderate. Butterflies, songbirds, and small mammals.	Full sun to partial shade. Small tree 30-50' tall. Fruit persists into winter.
Hackberry, common	<i>Celtis occidentalis</i>	Tree (small)	FACU	4,5,6	No	3-9	Yes	High. Food and cover.	Partial sun. Shade tolerant. Nitrogen fixer. Nice ornamental.
Redbud, eastern	<i>Cercis canadensis</i>	Tree (small)	FACU-	4,5,6	No	4-9	Yes	Moderate. Butterflies, songbirds, and small mammals.	Partial sun to shade. Understory plant in hardwood forests. Nice ornamental.
Dogwood, flowering	<i>Cornus florida</i>	Tree (small)	FACU-	4,5,6	No	5-9	Yes	High. Songbirds, waterfowl, and small mammals. Fruits eaten by >100 species of bird.	Southeast part of state. Shade and drought tolerant. Attractive and fragrant flowers.
Magnolia, sweetbay	<i>Magnolia virginiana</i>	Tree (small)	FACW+	[3,4],5	Seasonal		Yes	Moderate. Seeds.	