

Kalamazoo Township Vehicle Repair Parking Lot and Stream Edge Plan
1720 Riverview Drive

The intent of the plan for the area between the vehicle repair parking lot and the natural stream edge at the Kalamazoo Township office complex is to decrease the force of runoff from rainstorms and to beautify the area with native plants. This is not an area much under public scrutiny and appears to receive little to no maintenance currently. The native plants will also require very little maintenance after their establishment period although some may be needed during that time. As soil disturbance will be minimal and all work is being done upland of the water and not structurally interfering with the natural flow of the stream, no permits are required. The area considered in the design is approximately 85 feet long and varies in width from 6 to 18 feet. More precise measurements were made difficult by the presence of heavy vegetation in places, particularly that of poison ivy.

Site preparation will require first an inventory of the site to determine if there are any non-weedy native plants left along the streambank. Those that are found should be marked and any nearby undesirable plants should be weeded out by hand. Larger areas of undesirable plants should be treated with an appropriate herbicide before the new planting is undertaken and includes a small area of turf on the south side of the planting area. Herbicide should be applied at least twice, preferably three times, at two week intervals prior to the planting date to be most effective. This preparation will significantly decrease maintenance needed during the establishment period for the new planting. The recommended window for planting is late May to early June.

The presettlement vegetation maps for Kalamazoo County indicate that this area was typically an oak-hickory forest. Unfortunately that map does not show on it the existence of the little stream and wetland behind the office complex so ascertaining the original vegetation is problematic. In addition to that the soil closest to the parking lot has been highly disturbed in the past. Plants will be chosen for this site which will tolerate a variety of conditions: wetter areas, drier areas, poor to bad soil, and partial shade to sun. The plant palette will include perennials, sedges, grasses and a few shrubs and will be planted in a largely random manner in order to appear more natural. The plants used will be either plugs, 2" pots or bare-root plants, with the exception of the shrubs which would be in #1 sized containers and some ferns may not be available in the smaller sizes. If a quick show is desired the first year, a planting of annual seeds, such as sunflowers, may be included.

The parking lot drains largely to the southeast corner and thus the force of the runoff is greatest at this location. A drift of variously sized rocks will be located in this area and assist in breaking up the force of the flow and spreading it out, decreasing its erosive capacity and limiting the amount of pollutants reaching the stream. The rocks are being donated to the project and vary from softball to almost basketball size. If the Township should have a stockpile of rocks and prefer to use those, they should be of similar size. It is estimated that the project will require 15-20 various sized rocks. Any loose stones found on the site will be added to the drift.

Using mulch so near to the stream may be problematic as we do not wish it to wash into the water. It is recommended that we use only shredded hardwood bark mulch as it has less of a tendency to migrate and that we do not use it within a foot of the streambank. That foot along the bank will be more densely planted in order to keep the weeds down and create a barrier for the mulch.

Some maintenance after planting will be required for the first three years while the native plants become established, mostly in the form of weeding. During the first year it is recommended that the planting be checked weekly at least through July, partly to look for weeds and partly to check for plants dug up by the local fauna (the muskrat in particular). If plants are found soon enough, re-planted and watered they may very well survive. After July the planting should be checked every two to three weeks for the rest of the season and weeds pulled as they are found. If there should be a serious drought during the first year, plants should be assessed and watered if that is indicated. In the following spring, the dead tops of the perennials and grasses will need to be cut back and a spring weeding done. In order to facilitate weeding and spring maintenance, a narrow mulched path will run throughout the planting. During the second and third years, weed patrol should be done every two weeks in May and June and every three to four weeks after that. Weeding will taper off as the years progress and the only scheduled maintenance needed after the establishment years will be periodic scouting for problems (three to five times a season) and the spring cut back. More mulch will need to be applied periodically to the pathway if keeping it as a permanent feature of the planting is desired. Any problems found while scouting should be dealt with immediately (for example a sudden infestation of garlic mustard) while they are still small and easy to control. The spring cut back may be augmented once every three years by a spring burn if desired. If a burn is done, shrubs should not be burned. Maintenance during the establishment phase should not be ignored. Most new gardens, native or not, tend to fail because the initial maintenance is not completed.

Attached is a list of plants that could potentially be used in this garden although not all plants will be used. The list is extensive because of the wide range of plants needed. Not all plants will be used. Selection will depend on availability and costs, but if the Township would like to see certain plants used, please let us know and we will do our best to find them.

Designed and Submitted by Gina A. Frasson-Hudson
for Geum Services, Inc.
February 2011

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List of Potential Plants

Ferns:

<i>Adiantum pedatum</i>	Maidenhair Fern
<i>Athyrium filix-femina</i>	Lady Fern
<i>Cystopteris bulbifera</i>	Bulblet Fern
<i>Dryopteris spinulosa</i>	Wood Fern
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Polystichum acrostichoides</i>	Christmas Fern
<i>Thelypteris noveboracensis</i>	New York Fern

Forbs (Wildflowers):

<i>Allium cernuum</i>	Nodding Wild Onion
<i>Anemone cylindrica</i>	Thimbleweed
<i>Aquilegia canadensis</i>	Columbine
<i>Asclepias incarnata</i>	Red/Swamp Milkweed
<i>Asclepias tuberosa</i>	Butterfly Milkweed
<i>Asclepias verticillata</i>	Whorled Milkweed
<i>Aster azureus</i>	Sky Blue Aster
<i>Aster cordifolius</i>	Heart-Leaved Aster
<i>Aster ericoides</i>	Heath Aster
<i>Aster laevis</i>	Smooth Blue Aster
<i>Aster macrophyllus</i>	Big Leaf Aster
<i>Aster oolentagiensis</i>	Prairie Heart-Leaved Aster
<i>Baptisia lactea</i>	White Wild Indigo
<i>Baptisia leucophaea</i>	Cream Wild Indigo
<i>Campanula rotundifolia</i>	Harebell
<i>Cassia hebecarpa</i>	Wild Senna
<i>Chelone glabra</i>	Turtlehead
<i>Coreopsis palmata</i>	Prairie Coreopsis
<i>Eryngium yuccifolium</i>	Rattlesnake Master
<i>Eupatorium maculatum</i>	Joy-Pye Weed
<i>Eupatorium perfoliatum</i>	Boneset
<i>Eupatorium purpureum</i>	Sweet Joe-Pye Weed
<i>Eupatorium rugosum</i>	White Snakeroot
<i>Filipendula rubra</i>	Queen of the Prairie
<i>Geranium maculatum</i>	Wild Geranium
<i>Geum triflorum</i>	Prairie Smoke
<i>Echinacea purpurea</i>	Purple Coneflower *
<i>Helenium autumnale</i>	Sneezeweed
<i>Heuchera americana</i>	Alum Root

Forbs (continued):

<i>Heuchera richarsonii</i>	Prairie Alum Root
<i>Hydrophyllum virginianum</i>	Virginia Waterleaf
<i>Iris versicolor</i>	Blue Flag Iris
<i>Lespedeza capitata</i>	Round-Headed Bush Clover
<i>Liatris cylindracea</i>	Cylindrical Blazingstar
<i>Liatris scariosa</i>	Savannah Blazingstar
<i>Lobelia cardinalis</i>	Red Lobelia/Cardinal Flower
<i>Lobelia siphilitica</i>	Blue Lobelia
<i>Lupinus perennis</i>	Lupine
<i>Mimulus ringens</i>	Monkey-flower
<i>Penstemon digitalis</i>	Foxglove Beardtongue
<i>Penstemon hirsutus</i>	Hairy Beardtongue
<i>Phlox divaricata</i>	Woodland Phlox
<i>Physostegia virginiana</i>	Obedient Plant
<i>Pycnanthemum tenuifolium</i>	Narrow-leaved Mountain Mint
<i>Rudbeckia fulgida</i>	Orange-Black-Eyed Susan
<i>Rudbeckia hirta</i>	Black-Eyed Susan
<i>Ruellia humilis</i>	Hairy Ruellia
<i>Senecio aureus</i>	Golden Ragwort
<i>Senecio obovatus</i>	Round-Leaved Ragwort
<i>Smilacina racemosa</i>	False Solomon's Seal
<i>Solidago caesia</i>	Blue-Stemmed Goldenrod
<i>Solidago rigida</i>	Stiff Goldenrod
<i>Solidago speciosa</i>	Showy Goldenrod
<i>Stylophorum diphyllum</i>	Celandine Poppy
<i>Thalictrum dasycarpum</i>	Tall Meadow Rue
<i>Thalictrum dioicum</i>	Early Meadow Rue
<i>Tradescantia ohimensis</i>	Spiderwort
<i>Vernonia missurica</i>	Ironweed
<i>Veronicastrum virginicum</i>	Culver's Root
<i>Viola pubescens</i>	Yellow Violet
<i>Vilosa sororia</i>	Common Blue Violet
<i>Zizia aptera</i>	Heart-Leaved Alexander
<i>Zizia aurea</i>	Golden Alexander

* Plant extirpated from Michigan. Not indigenous seed.

Grasses and Sedges:

<i>Bouteloua curtipendula</i>	Side-Oats Grama
<i>Carex crinita</i>	Fringed Sedge
<i>Carex grayi</i>	Gray's Sedge
<i>Carex muskingumensis</i>	Muskingumen/Palm Sedge
<i>Carex pensylvanica</i>	Pen or Common Oak Sedge

Grasses and Sedges (continued):

<i>Carex vulpinoidea</i>	Fox Sedge
<i>Cinna arundinacea</i>	Wood Reed Grass
<i>Elymus hystrix</i>	Bottlebrush Grass
<i>Koeleria macrantha</i>	June Grass
<i>Schizachryium scoparium</i>	Little Bluestem
<i>Sorghastrum nutans</i>	Indian Grass
<i>Sporobolus heterolepis</i>	Prairie Dropseed

Groundcovers:

<i>Anemone canadensis</i>	Canada Wood Anemone
<i>Asarum canadense</i>	Wild Ginger
<i>Fragaria virginiana</i>	Wild Strawberry
<i>Fragaria vesca</i>	Woodland Wild Strawberry
<i>Gaultheria procumbens</i>	Wintergreen
<i>Potentilla simplex</i>	Common Cinquefoil
<i>Sanguinaria canadensis</i>	Bloodroot
<i>Waldsteinia fragarioides</i>	Barren Strawberry

Woody Plants:

<i>Aronia arbutifolia</i>	Red Chokeberry
<i>Aronia melanocarpa</i>	Black Chokeberry
<i>Ceanothus americanus</i>	New Jersey Tea
<i>Clematis virginiana</i>	Virgin's Bower (vine)
<i>Diervilla lonicera</i>	American Bush Honeysuckle
<i>Hypericum kalmianum</i>	Kalm's St John's Wort
<i>Hypericum prolificum</i>	Shrubby St. John's Wort
<i>Hamamelis virginiana</i>	American Witchhazel
<i>Ilex verticillata</i>	Winterberry/MI Holly
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Physocarpus opulifolius</i>	Ninebark
<i>Ribes hirtellum</i>	Northern Goosberry
<i>Spiraea alba</i>	Meadowsweet
<i>Spiraea tomentosa</i>	Steeplebush
<i>Symphoricarpos albus</i>	Snowberry
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum
<i>Viburnum alnifolium</i>	Hobblebush Viburnum
<i>Viburnum dentatum</i>	Arrowwood Viburnum
<i>Viburnum lentago</i>	Nannyberry Viburnum