Gitzlaff Stewardship Plan

Somers, WI

March, 2014

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Stewardship Plan for Gitzlaff Park, Somers, WI

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1. INTRODUCTION

This stewardship plan is a companion report to the more comprehensive *Eco-hydrological Analysis and Restoration Planning, Somers Branch of the Pike River* (2014) that was also funded by the Fund for Lake Michigan. This plan was written to document current conditions and to set forth a strategy for protecting, restoring and managing Gitzlaff Park, a 24 acre property that was donated to the Town of Somers by Larry Gitzlaff in 2007. The site is adjacent Neumiller Woods, for which a stewardship plan was completed in September 2012. Many of the recommendations and activities within this plan can be conducted concurrently with that at Neumiller Woods.

This plan is funded by a portion of the 2013 Fund for Lake Michigan Grant. The Fund for Lake Michigan mission is "to support efforts, and in particular those in southeastern Wisconsin, that enhance the health of Lake Michigan and its shoreline and tributary river systems for the benefit of the people, plants and animals that depend upon the system for water, recreation and commerce" and the funding of this project is a product of this mission. This proposal outlines a plan for protecting and restoring Gitzlaff Park, which contains wetland, agricultural field and upland old field along the Somers branch of the Pike River, in order to positively impact water quality, improve wildlife habitat, and provide other ecosystem services to the river and its inhabitants.

The Somers branch of the Pike River flows across the site from west to east. Within the context of the greater Pike River watershed and watershed planning initiative currently underway, the site offers both ecological services and opportunities to tie the site into a broader ecological vision for the watershed. This plan will reflect the interest the Town of Somers has in expanding the initial stewardship of this park into a more broad-based ecological restoration of the Somers branch of the Pike River, which connects the adjacent Neumiller Woods with Gitzlaff Park. Therefore, the stewardship goals have a broader focus, and this will be an open document to develop over time.

North field at Gitzlaff Park- old field vegetation

The plan is also intended to educate Somers citizens and policymakers on the site's natural habitats and how these habitats can best be restored and managed. This plan will describe restoration opportunities as well as a five-year management plan. The eventual goal of the site is to provide Somers residents with opportunities to walk within the park, observe wildlife, and enjoy the general beauty of the property. Educational signs and a trail may also be installed to facilitate public enjoyment of the site.

The Somers Park Concept Plan prepared by Ruekert-Mielke, October 2009 shows active and passive recreation elements, with active areas on the south side of the stream, and passive areas on the north side, and restoration plans modify this plan by the addition of wetland restoration areas.

Site Description

The Gitzlaff Park property consists of 24.28 acres of land located north of CTH E and east of the Canadian Pacific railroad in the SW ¼ of the SE ¼ of Section 9 in Township 2 North, Range 22 East in the Town of Somers, Kenosha County, WI. The study area is bordered by the Canadian Pacific Railroad to the west, agricultural land to the north, agricultural land and residential lots to the east, and CTH E and agricultural land to the south. The site contains active and fallow agricultural land, upland old field vegetation and the Somers Branch of the Pike River which is primarily wooded. The wooded stream feature is mapped as Secondary Environmental Corridor, a natural area at least one mile long and 100 acres in size, by the Southeastern Regional Planning Commission (Figure 2).

Somers branch flows through Gitzlaff Park

This large stretch of continuous natural area allows wildlife to access a variety of habitats. Somers Branch ultimately connects to a large continuous stretch of primary environmental corridor (at least two miles long, 200 feet wide, and 400 acres in size), extending along the Pike River all the way to Lake Michigan (Figure 3).

Somers Branch flows east and divides the Gitzlaff site into two sections, the northern field totals 11.31 acres and plowing ceased sometime between 1985 and 1990. The southern field is 12.6 acres in size and is actively farmed. The 2012 and 2013 crop was winter wheat. The only access to the north site for vehicles is now blocked by the Maintenance shed and fencing. Currently there is no equipment access to the north side, although the stream is low enough to be crossed by foot in most seasons, or there is a narrow edge to the stream north of the culvert and south of the maintenance fence that can be walked as well.

2. EXISTING NATURAL RESOURCES

The existing soils, hydrology, topography, vegetation, wildlife and other landscape features on the site have been field reviewed on multiple visits to Gitzlaff Park in 2013.

i) TOPOGRAPHY

The Gitzlaff site topography is shown on Figure 4 from the USGS, and on Figure 5 from the Kenosha County GIS mapping. The site was surveyed by Tom Bernklau, Bernklau Surveying in a leaf – off condition in the winter and early spring of 2014. A copy of the survey and CADD file is provided in the electronic version of the Eco-hydrological Report on a CD. The purpose of the survey was to understand topography as it relates to water flow and restoration potential. The survey included cross sections of the stream and also all boundary corners were staked. This was not a boundary survey, so boundaries staked were for the general purpose of locating the property line. There is some overlap of property boundaries in the portion of the site south of the stream on the eastern edge, which needs to be further delineated; this was outside the scope of this survey.

The south field has low-lying areas adjacent the stream, which correspond with mapped hydric soils and active drain tiles (7 were field located-Figure 9). Elevations in the low-lying areas vary from 690 to 692 feet above sea level. The field rises to the south to a high of 700 feet above sea level adjacent C.T.H "E".

The north field has a narrow shelf adjacent the stream that is 691 to 692.5 feet above sea level. This low-lying portion of the site corresponds with hydric soils and one drain tile located. The terrain rises to the north and northwest corner of the site with a high knob at 711.5 feet above sea level at the northwest property line. This rise in elevation creates a very aesthetically appealing sense of isolation in the north field. The vista of open field and sky is only interrupted by the Canadian Pacific Railroad tracks on the east property boundary.

ii) SOILS

Very black clay rich soils found on site

Natural Resource Conservation Service classifies soils into soil series, which are detailed categories of soil types as shown on Figure 6. The Gitzlaff stream corridor is bordered by Ashkum silty clay loam (AtA), and Navin silt loam (Na), both hydric soils that were formed in a prairie landscape. At higher elevations away from the stream the predominant soil is Varna silt loam (VaB, VaB2), a well-drained upland soil also formed in a prairie landscape. There is a band of Elliot silty clay loam (EtB), a somewhat poorly drained soil, located south of the stream.

A series of soil pits were dug in 2013 in the north and south field and the locations of the pits are shown on Figure 6. The soil data is found in Appendix 3. On the south side of the stream (data points 1-8) the soils varied from 12 to 15 inches of black silty clay loam or black silty clay overlying at least one foot of clay (silty clay or sandy clay), with those layers depleted of oxygen in the areas closest to the stream. These depleted areas indicate that water perches long enough to drive out oxygen and create wetland soil conditions. These features remain in the soil despite the presence of subsurface drain tiles.

The soils on the north side of the stream varied from 9-15 inches of black silty clay loam on the stream edge with clay located below. Many of the soil samples had redoximorphic features in the upper 12 inches, which indicates water perching seasonally in the root zone, again indicating the presence of historic hydric (wetland) soils in the lowland areas adjacent the stream.

The black soils indicate that prairie plants once dominated the landscape and are conducive to re - introducing prairie species.

iii) WETLANDS

There are no mapped wetlands on Gitzlaff site, either by U.S. Fish and Wildlife (Figure 7) or WDNR (Figure 8). However there are wetlands upstream (Neumiller Woods) and downstream adjacent Somers Branch that could be expanded on by restoration of Gitzlaff.

iv) DRAIN TILES

Drain tile outlet into Somers Branch from the south field at Gitzlaff,

Sub surface drain tiles are visible in the south field of Gitzlaff on the Kenosha County 2005 aerial (Figure 9). Drain tiles are characteristic on aerial photos as regularly spaced white lines running perpendicular to the stream as an artifact of winter frost heave in a plowed field. They are not noticeable on the north field as there is permanent plant cover by 1990. Rachel Samerdyke of the U.S. Fish and Wildlife Service assisted us in locating tile outlets entering into the stream on November 13, 2013. Seven tile locations were found on the south side of the stream, and one tile on the north side of the stream. Some are newer plastic pipe as shown on the photo to the left, others were clay tile that would be an older installation. There were multiple other suspicious areas that appeared as washout areas or eroded channels on the north but we could not confirm tiles in them. Tile lines can become buried over time. As shown on Figure 9 drain tile lines are also present adjacent the Gitzlaff property on both the east and west fields south of the stream. These tiles drain the former wetland areas and facilitate agriculture.

The NRCS (Natural Resource Conservation Service) Wetland Inventory Map (Figure 10) characterizes the areas of hydric soils with drain tiles as "prior converted". This designation is used to map areas of former wetlands that were converted to agriculture prior to 1988 and generally correspond with areas actively drained by ditches, dikes, drain tile and other measures.

v) HYDROLOGY

There is evidence of groundwater discharge in the site. There was groundwater sheen in multiple places in the stream bed that bisects the site. There is also watercress (*Nasturtium officinale*) in the stream bed, another indicator of groundwater. A more detailed description of the hydrology of Somers Branch is found in the Eco-hydrological Analysis and Restoration Planning Report, 2013.

Relic prairie plants include native yellow coneflowers mixed within the old field vegetation north of the stream

vi) VEGETATION

Plants were inventoried in the 2013 field season on multiple field dates from spring to fall. There are three major vegetation communities on the Gitzlaff property: old field vegetation, lowland hardwood forest and agricultural field (Figure 11). A complete list of vegetation including species names as well common name is found in the Appendix 2.


tracks on the north side of the stream at Gitzlaff

Old field Vegetation: The north field was in agricultural production for most of the 20th century, the 1937 historic aerial photo shows the field is plowed, with a single tree in the center of the site, and several trees on the north property line (Figure 12). It was taken out of agriculture in the late 1980's and is succeeding to old field vegetation. Old field vegetation is described as the annual and perennial plants that colonize former agricultural fields in the decades following release from agriculture, often a mixture of non-native grasses and native early successional forbs in Southeastern Wisconsin. The vegetation in the north field is dominated by non-native grasses including common brome grass, Kentucky blue grass, Canada blue grass and reed canary grass (small stands). Forbs include common milkweed, Canada goldenrod, saw-toothed sunflower, wild strawberry, and annual fleabane. Non-native invasive forbs include sweet clover. There are box elder saplings colonizing the open field. Native prairie forbs area colonizing the site including yellow coneflower (large stands), evening primrose, Indian-hemp, and ironweed. The adjacent railroad tracks may have provided a refuge for native plants during the years of agriculture.

There a small pockets of wetland vegetation adjacent the wooded stream corridor that include sedges, stalk-grain sedge, common fox sedge, saw-toothed sunflower, curly dock, yellow avens, late goldenrod, early goldenrod and reed canary grass.

There is a ***hedgerow*** on the north property boundary that includes black locust, a tree considered to be non-native to Kenosha County, and a tree that responds positively to fire disturbance. Box elder, honeysuckle and black locust seedlings are present as well.


Native choke cherry shades the stream at Gitzlaff

Lowland Hardwood Forest: The stream corridor is a narrow corridor of lowland forest dominated by trees and overhanging shrubs and is an effective buffer to the stream, shading and cooling the stream and providing cover to wildlife. The lowland hardwood forest is dominated by box elder, crack willow, black cherry, black walnut, green ash, slippery elm, silver maple and Russian mulberry.

The ***shrub layer*** is dominated by native shrubs including choke cherry, highbush cranberry, gray dogwood, wahoo, black raspberry, hawthorn and elderberry. These shrubs provide shelter, shade, and wildlife food. Non-native shrubs include honeysuckle and common buckthorn, which are present but not dominant at this time.

Herbaceous plants on the stream bank include Solomon's seal, fowl manna grass, Canadian honewort, jewelweed, common three-seed mercury, yellow and white avens, cleavers, beggar's ticks, bristly buttercup, early goldenrod, Canada goldenrod. Weedier species include reed canary grass, dandelion, catnip, dame's rocket, burdock, garlic mustard, and oxeye daisy.

Vines overhanging the stream and adjacent vegetation include wild cucumber, climbing nightshade and riverbank grape.

The **intermittent stream** has pockets of vegetation low on the bank including native fowl manna grass, northern water plantain, and water smartweed as well as non-native reed canary grass and watercress. Because the stream is wooded the low light levels inhibit reed canary grass from dominating the channel. The presence of watercress is an indicator of groundwater discharge into the stream.


Winter wheat planted in agricultural field south of the stream at Gitzlaff

Agricultural Field: The south field is currently plowed and planted; winter wheat was the crop planted and harvested in 2012 and 2013.

There were a total of 113 plants identified in 2013 on the Gitzlaff park property, 75 were native Wisconsin species, 38 were non-native species. There were no listed species (threatened, endangered or special concern). The Chicago Region Coefficients of Conservation were used to evaluate the quality of the vegetation. The mean Chicago Region coefficient of conservation value for Gitzlaff was 2.83, and the Chicago Region Floristic Quality Index was 24.48. In comparison the Neumiller Woods mean C-value is 2.84 and the FQI for Neumiller Woods is currently 25.56.


Pearly Crescentspot butterfly at Gitzlaff

The reason we applied Chicago Region Coefficients of Conservatism values for Florist Quality Index is because the Chicago Region is an area that includes land surrounding the southern tip of Lake Michigan, including Kenosha County. It is a specific eco-region where the plant communities developed in similar geology and climate over 10,000 years, following the last ice age. Coefficient of Conservatism values were first developed for the flora of the Chicago Region, in the late 1970s to evaluate the likelihood of a plant to be found in a natural plant community. Since then, these values have increasingly been used to evaluate and monitor the quality and potential of remnant and restored lands. The Floristic Quality Index, which uses the Coefficient of Conservatism values, was developed to discriminate between tracts of land with differing levels of floristic integrity. Recently other regions and states have developed their own Coefficient of Conservation values to assess their plant communities. Wisconsin's Coefficient of Conservation values became available for use in the early 2000s. Wisconsin is a large state and has many eco-regions, but assigns only one value to a species. It is our judgment that the Chicago Region values are more specific to Kenosha County than the Wisconsin values.

Invasive Species:

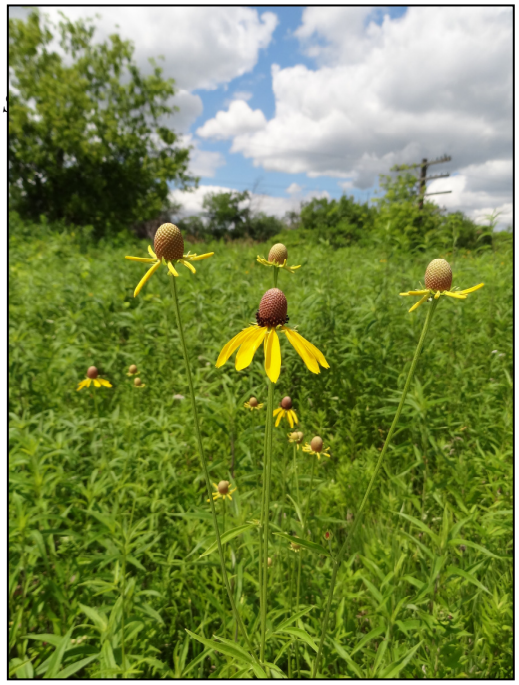
Invasive species are of concern to on-going restoration as they outcompete native plants for space and resources often forming monocultures. In addition they generally provide low habitat value for native species. The non-native species that should be controlled during and after restoration of Gitzlaff include black locust, common buckthorn, honeysuckle, sweet clover, reed canary grass and garlic mustard. These are currently in pockets throughout the site and possible to control. See the Appendix 5 for notes on invasive plant identification and control.


Deer bed north of stream at Gitzlaff

vii) Ecological and Historical Significance of On-site Habitats

Prior to European settlement, Kenosha County was home to prairie, oak savanna (oak openings), maple/oak/basswood forest and wetlands dominated by marsh and sedge meadow habitats. When settlers arrived, they soon discovered that the deep prairie soils were excellent for farming, and almost all suitable land was converted for agricultural purposes, including all wetlands that could feasibly be drained. In the Pike River watershed, 93% of wetlands were filled or drained to accommodate cropland and urban construction.

The Gitzlaff site and adjacent Neumiller Woods property were originally prairie as documented in the Eco-hydrological Report on Somers Branch. The Somers Branch of the Pike River is currently channelized within a defined streambed, but historically it was likely a grassy wide swale of wetter low prairie or sedge meadow without a defined channel. Upon European settlement this property was converted to farmland, visible in the earliest historical photos (Figure 12) which shows a 1937 aerial photo with a plowed field on the north side of the stream, and cut vegetation in rows on the south field. The 1967 and 1986 maps show plowed fields with evidence of drain tiles. The 1990 photo shows the north field not farmed.



Yellow cone flowers on north Gitzlaff field

Gitzlaff Park and adjacent Neumiller Woods are part of the Southern Lake Michigan Coastal Ecological Landscape as designated by the WDNR. This region, covering most of Kenosha, Milwaukee, and Racine counties, is the most highly populated and developed area in the state. Since European settlement, wetland systems and associated upland native habitats have been degraded and hydrology significantly altered. Because of these changes, stormwater runoff has increased, causing greater water pollution and more flooding events. In a 2010 report, the WDNR cited the Pike River Watershed as having some of the most degraded waters in the state.

To address these problems, the WDNR set water quality goals for the watershed, including minimizing stormwater runoff, restoring wetlands, establishing riparian buffers, monitoring and controlling non-native species, and increasing citizen awareness of regional water issues. The Root-Pike Watershed Initiative Network brought together many partners to address these issues, and a Pike River Watershed Plan (AES, 2013) was crafted to protect and restore the Pike River, ultimately enhancing Lake Michigan's water quality. The Gitzlaff Park protection and restoration are an example of a watershed project to accomplish the goals of the plan.

Other restoration projects in the Pike River basin are underway to improve water quality and decrease flooding. In the north branch of the Pike, a long-term restoration was initiated in 1997 by the Village of Mount Pleasant and continues today. After an historic flooding event, the WDNR authorized restoration of 5.5 miles of the Pike River in the Village of Mount Pleasant. According to the WDNR and Village ecological consultants, the restoration has already significantly increased flood storage, enhanced water quality and wildlife habitat, and increased the total wetland area in the watershed. Another restoration is taking place downstream from Gitzlaff Park at Petrifying Springs Park, about 2 miles away. This project involves removing an abandoned dam, stabilizing the banks of the Pike River, and installing permeable pavement to increase stormwater infiltration. This dam removal is significant as it was the last major obstruction to fish passage on the Pike River. Altogether these restorations will have a significant positive impact on water quality, flood reduction, and quality of life for residents of the basin, and incrementally benefit Lake Michigan.

viii) WILDLIFE

Mammals and birds

Wildlife currently inhabiting the Gitzlaff Park site includes white tailed deer (deer beds and tracks seen), cottontail rabbit, raccoon and coyote. Songbirds including song sparrow, chickadee, gold finch and red winged blackbird were observed in 2013; however no formal bird survey was undertaken so we expect many more birds to be utilizing these habitats. Sandhill crane calls were heard in the vicinity of Gitzlaff in the spring, and they might utilize restored areas in the future.

Question Mark butterfly feeding on native Indian hemp at Gitzlaff Park

Invertebrates

The wildflowers in the north field attracted at least three species of butterflies in 2013; Monarch (*Danaus plexippus*), Pearly Crescentspot (*Phyciodes tharos*), and Question Mark (*Polygonia interrogationis*) were seen on multiple occasions. Red milkweed beetles (*Tetraopes tetrophthalmus*) were found on flowering milkweed plants.

Chimney crayfish burrows were found on the north side of the stream. Chimney crayfish burrow to the groundwater table, often many feet below the soil surface, and these burrows are important to other wildlife including resident snakes that overwinter in the burrows.

Chimney crayfish burrow to right
Shelf fungi on box elder to left

Sowbugs and other invertebrates on rock in stream adjacent Gitzlaff

Stream macroinvertebrates provide an indicator for water quality and stream habitat, and in addition to providing a food source for other animals (fish, birds, amphibians) they are an essential ecological connection for recycling nutrients and energy from plant material that falls into in the stream back into the ecosystem. Kick samples taken along the Somers branch indicate that the stream invertebrate community is typical for an intermittently flowing stream, dominated by taxa with high tolerance for low oxygen levels such as blood worm midgets (family Chironomidae) and sow bug isopods (family Asellidae). In areas of flowing water over rocks and gravels, taxa of higher sensitivity were found such as common net spinner caddisflies (family Hydropsychidae) and small minnow mayflies (family Baetidae).

Fish

Due to general constraints of fish passage downstream and the intermittent flow in the stream there are few fish in Somers branch. The low gradient and lack of water depth in pools is also a primary factor inhibiting fish abundance and diversity. Fish that persist are small minnows that can survive in small pools during low water periods. Because there are few fish, any restored wetlands could be significant for amphibians, as fish would not prey upon their early life history stages.

Reptiles and Amphibians

No resident snakes, turtles or amphibians were noted. However the north field, with the proximity of wetlands, stream and chimney crayfish burrows is excellent snake habitat. There were spring peeper calls heard from the wetland located in a kettle within a neighboring farm field to the northwest of the Canadian Pacific Rail Road tracks. If wetlands were restored, amphibians could potentially utilize these new breeding areas.

ix) CONSTRAINTS

The property neighboring Gitzlaff Park on the southeast side of the stream is farmed as well. A small shooting range/target practice area with a wooden barrier is located on the stream edge very close to the property boundary. This is also the portion of the site where the exact property boundary needs to be researched. Park design and usage will need to be made in consideration of this neighboring use.

There is a former sewer treatment building on the west side of Gitzlaff that is now a Town of Somers Maintenance Building/yard. Storage of Town materials is behind a locked gated yard and accessed by a culvert over the stream. This culvert and access road is the only way to access the north portion of the site. Creating a gate on the north side of the yard would allow for restoration and maintenance vehicles to access the north side.

Maintenance yard fence blocks equipment access to north side of stream

An agricultural lease granting access for a tenant farmer on the south side of the Gitzlaff property is active until December, 2014 unless re-negotiated by the Town of Somers.

3. ECOLOGICAL RESTORATION PLAN

x) RESTORATION OPPORTUNITIES:

The **positive ecosystem services** currently present at Gitzlaff include:

1. Fallow farm field to north succeeding to old field vegetation and lowland hardwood forest adjacent stream with 75 native species present
2. The mean Chicago Region coefficient of conservation value for Gitzlaff was 2.83, and the Chicago Region Floristic Quality Index was 24.48
3. Wildlife/songbird/ habitat provided by stream corridor
4. Groundwater sheen and watercress in stream indicates some degree of groundwater discharge into site
5. Attractive site on north side that could be further restored and provide open space, parkland and passive recreation within a minute of Town Hall.
6. Adjacent to Neumiller Woods and both are in a landscape location within near headwaters of Somers branch-South and connected by Secondary Environmental Corridor to Pike River and Lake Michigan

Somers Branch of the Pike River at Gitzlaff

The **evident disturbances** present at Gitzlaff include:

1. Drain tile delivering water/agricultural runoff to stream and agricultural land south of stream
2. Invasives present including common buckthorn, honeysuckle, garlic mustard, dame's rocket, black locust and reed canary grass
3. Culvert under access road (See Eco-hydrology Report for details)
4. Some degree of flooding – can this wetland accommodate more water?
5. Active railroad with high berm and culvert segments and isolates site from adjacent Neumiller Woods to the west, alters original hydrologic connection, and creates a barrier for wildlife and people to move freely. Railroad a potential barrier to a trail system from Neumiller to Gitzlaff.
6. Actively farmed on south side and very narrow buffer to stream
7. North side has poor access due to locked maintenance yard
8. Property boundaries not visible within the park.

xi) DRAINAGE IMPROVEMENTS (CULVERTS)

As discussed in detail in the Eco-hydrological Report the Town of Somers has installed an access road to a public works yard on the north side of Somers Branch Creek, which includes a small bridge made up of two 30-inch culverts. The Town road crossing was not included in the 2012 FEMA flood elevation study. The effect of the crossing was evaluated using the FEMA data and the U.S. Army Corps of Engineers HEC-RAS software. This analysis determined that replacing crossing with larger culverts would reduce

the upstream flood stages by 0.2 to 1.0 feet. Table 1 below shows the effects of alternative size replacement culverts on the flood stages in the vicinity.

This culvert replacement would require permits from the WDNR (Contact Elaine Johnson, WDNR) and Kenosha County.

Table 1 – Effects of replacement culverts on flood stages Upstream of the Town driveway

	Stage Change Upstream of Town Driveway (feet)		Stage Change Upstream of CP Railroad (feet)	
Culvert Alternative	**10-year**	**100-year**	**10-year**	**100-year**
Existing (twin 30" CMP)	0.0	0.0	0.0	0.0
Proposed 48" CMP	-0.6	-0.2	-0.6	-0.2
Proposed 47"x71" CMPA	-1.0	-0.5	-1.0	-0.5

xii) WETLAND RESTORATION

In our investigation of the existing conditions at Gitzlaff Park we found wetland soils adjacent the stream in a broad band on the south side of the stream and a narrower band on the north side of the stream. In the farm field adjacent the south side of the stream the soils varied from 12 to 15 inches of black silty clay loam or black silty clay overlying at least one foot of clay (silty clay or sandy clay), with those layers depleted of oxygen in the areas closest to the stream. These depleted areas indicate that water perches long enough to drive out oxygen and create wetland soil conditions. These features remain in the soil despite the presence of subsurface drain tiles.

The soils on the north side of the stream varied from 9-15 inches of black silty clay loam on the stream edge with clay located below. Many of the soil samples had redoximorphic features in the upper 12 inches, which indicates water perching seasonally in the root zone, again indicating the presence of historic hydric (wetland) soils in the lowland areas adjacent the stream.

We found multiple drain tiles entering into the stream on the south bank, indicating that the south field has sub surface drainage. These tiles matched the drain tile shadow on the 2005 aerial photo (Figure 9). We only found one active drain tile on the north bank of the stream, however there were multiple seeps that may indicate buried tile, or may be groundwater seeps.

These areas of wetland soils, and wetland drainage (tiles) were found in areas of low topography, which will also capture periodic floodwaters.

xiii) SCRAPES

Wetland restoration involving a series of four wetland scrapes varying from 1-2 feet in depth are shown on the accompanying wetland restoration plan located in Eco-hydrological Report Appendix D. The U.S. Fish and Wildlife Private Lands Office is interested in partnering with the Town to accomplish the work. The scrapes are located adjacent the stream in clay-rich hydric soils which will pond water. Scrapes on the south side of the stream are 0.82 and 0.16 acres in size, and 0.27 and 0.15 acres on the north side of the stream, for a total of 1.4 acres of wetland restoration.

Since the black soils are less than 1-2 feet in depth, topsoil shall be stockpiled and then re-spread over the excavated basin. The spoils from the excavation on the south side of the stream shall be used to create a berm on the eastern property boundary. This berm is planned to be planted to native prairie species.

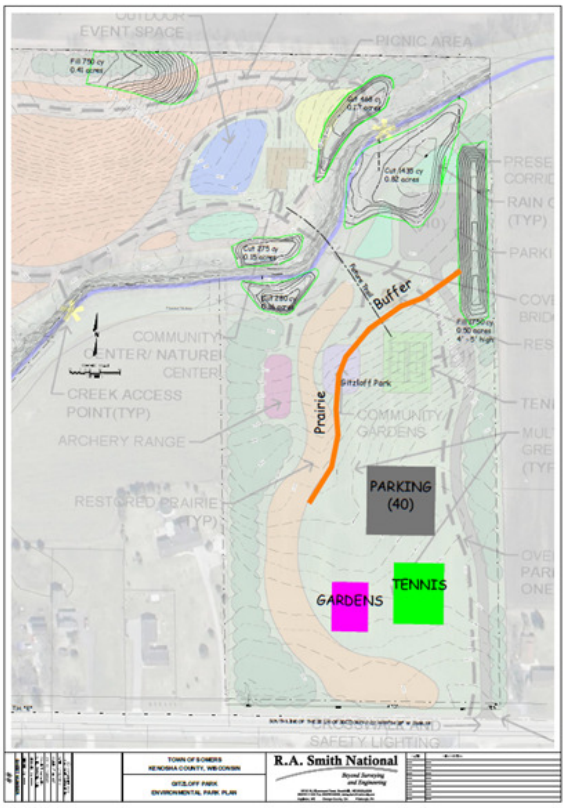
The areas of the two wetland scrapes on the north side may contain sub surface drain tile, the area should be examined for tile that could be an additional source of hydrology as the scrapes are constructed.

xiv) PRAIRIE ENHANCEMENT/RESTORATION

Native prairie is proposed to be planted as a buffer to the wetland restoration areas on both sides of the stream. See the Eco-hydrological Report Appendix D for detail. Prairie buffers increase the habitat value of the wetlands and create areas to further treat overland flow. The dense vegetation slows water as it travels on the soil surface while the deep prairie roots create pore spaces in the soil to infiltrate water.

The south side is proposed to have an approximate 100-foot buffer to the wetlands and stream seeded to native prairie. This complements the Ruekert-Mielke designed park plan (shown at right) that showed prairie restoration as a component of the park plan. This prairie would be approximately 3 acres in size.

North of the stream the uplands are presently old field vegetation as described in the section on existing Gitzlaff vegetation above. Some prairie species are already colonizing the site including evening primrose, yellow coneflower, ironweed and Indian hemp. Instead of destroying the current vegetation to plant prairie species we recommend the site be burned and then overseeded with native species. Alternately the site could be mowed closely followed by native seed however this may not be as effective as a burn. Seeding in late fall would allow the frost action to work the seeds into the soil. The prairie area that potentially could be restored is 10 acres.



Modified Gitzlaff Park Plan
(Source: Ruekert-Mielke and R.A. Smith National)

xv) RECREATION/PUBLIC ACCESS

Trails and bridge

The Gitzlaff Park Plan designed by Ruekert-Mielke proposes several trails to access natural features on the north and south side of the stream (Ruekert-Mielke, 2009). UWM students also studied public access on the Gitzlaff property, and propose a trail system to facilitate public access. The trail material would need to be engineered if there needed to be access for support vehicles used for maintenance or police patrols.

A footbridge was also proposed in the Ruekert-Mielke plan to connect the two sides of the park. Since the stream is intermittent and shallow, there are many times of the year currently when the stream can be crossed by foot.

Maintenance Road

A gravel maintenance road currently exists that runs between Highway E and the maintenance shed and fenced yard. This road could be extended north in order to provide access to the northern site. The road could be utilized for general maintenance of the property including prescribed burns and regular police patrol as the park use is developed. A preliminary proposal on the Gitzlaff restoration plan is to insert a locked gate into the chain link fence on the north side of the yard to provide limited access for wetland restoration construction and maintenance.

Restoration Goals:

Improve the ecological function of Gitzlaff by restoring four wetland scrapes on the banks of the Somers Branch of the Pike River thus improving water infiltration and modulating flow.

Provide and enhance upland buffers to wetlands and stream by converting agricultural land on south side to prairie buffer and restoring north field to prairie

Enhance wildlife habitat, songbird and amphibian habitat with wetland restoration and prairie establishment

Manage woody debris on stream banks while maintaining wooded buffer

Control Invasive Species as funding and volunteer opportunities develop

Establish an aesthetically pleasing, ecologically managed, and accessible park that provides a public setting for wildlife observation and education. Include planning for trails and boardwalks and investigate some connection to Neumiller Woods around an active railroad track.

Integrate restoration of Gitzlaff Park with the adjourning Town-owned Neumiller Woods and the entire Somers branch of the Pike River, to amplify the impact of restoration and ecological services to the Pike River and Lake Michigan downstream.