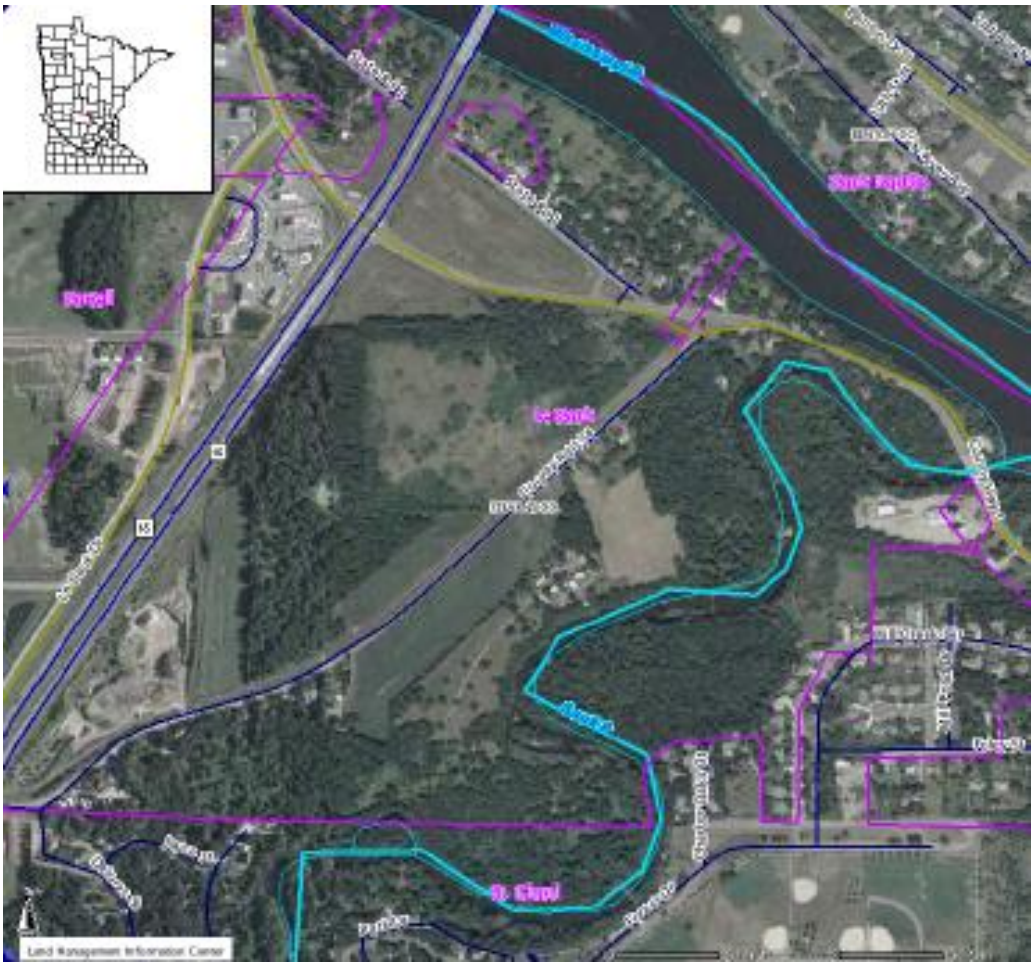
Environmental Scientist Evaluation - Sartell Partners Project



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Evaluation of the Sartell Partners Project

I. General

This report documents the observations, comments and recommendations of volunteer Environment & Development Team (EDT) scientists Stephen G. Saupe (PhD) and Robert L. Sip (MS) regarding the Sartell Partners Project.

We spent a total of approximately three hours at the site. Our first site visit was conducted with the entire EDT team on Monday July 16, 2007. During this visit, which lasted approximately one hour, we walked southwest from the old home site through roughly the middle of the property. On our second site visit (July 17, 2007), we spent approximately two hours attempting to visit sites that we had not seen previously. Although we examined much of the site, due to time limitations, we did not inspect the entire site.

During the preparation of this report we received a memorandum dated July 23, 2007 from Mr. Rob Bouta (Westwood Professional Services) concerning this property. The only other documents directly related to this area that were available to us were maps provided to the entire EDT team.

We know that at least two other scientific teams (Mr. Jason Husveth; Mr. Kim Chapman, Applied Ecological Systems) studied the site. We did not have access to any reports that they may have prepared. We attempted to access via FTP documents from Applied Ecology but were unable to do so. Nor did we have access to other documents about the site such as MNRAM results, wetland delineation reports or Technical Evaluation Panel decisions.

II. Site Description

The property is comprised of a plateau that occupies roughly the northern half of the property. This plateau is bounded by a ridge runs approximately east/west and likely represents the extent of the former banks of the Sauk River. The remainder of the site is lower with a series of wetlands and was likely the former river floodplain. The main wetlands run roughly from the northeast to the southwest and some areas appeared to have been ditched in the past. Included in this complex of wetlands is a 1-2 acre (we did not measure it) pond (see Appendix – Site 5, Fig.11). Somewhat surprisingly, we observed a couple of interesting wet areas on the top of the ridge (Appendix – Site 4, Figs. 7- 10; Site 7, Figs. 14 - 17). These latter areas, as well as the lower wetland complexes, suggest that the geology and hydrology of the site is somewhat complex.

III. Plant Communities

Many of the plant communities on the site are described in more detail in the Appendix. In general, although there are some interesting plants on the site, the plant communities are relatively disturbed. Many invasive species such as European buckthorn (*Rhamnus cathartica*) and Tartarian honeysuckle (*Lonicera tartarica*) are abundant.

Much of the site is covered with thick brush. Numerous stump suckers and the lack of any trees more than about 15 feet tall suggests that the site was logged recently and successional plant communities are well-established. We were told logging occurred in 2005 and this is consistent with our site visit. Based on the species we observed, prior to logging this area was likely oak woodland dominated by northern red oak (*Quercus rubra*), bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*) and basswood (*Tilia americana*). Understory shrubs included red elder (*Sambucus pubens*), hazel (*Corylus americana*), chokecherry (*Prunus virginiana*), downy arrowwood (*Viburnum rafinesquianum* var. *affine*), and nannyberry (*Viburnum lentago).* Among the dominant herbs are one or more species of clump-forming, shade tolerant sedges (genus *Carex*). Aside from a few scattered wild bergamot (*Monarda didymus*), Culver's root (*Veronicastrum virginicum*) and a couple of other species, we noted few native prairie species, especially native grasses.

We were told at our first EDT meeting that the site is a savanna. Though it may have been at some point in the past, no typical savanna community currently exists on the site based on our field observations. This supports Mr. Bouta's (Westwood Professional Services, July 23, 2007) conclusion that "the structure of a savanna was not present prior to logging, nor is it present today." However, a major question is why previous ecologists reported that the site was a savanna. In a conversation with Mr. Chapman (26 July), he stated that the birds (*i.e.,* indigo bunting, clay-colored sparrows, brown thrashers) and plants present at the site suggest that this area occupies the moister end of a savanna gradient and could be called a "brush savanna." Though we agree, a massive restoration effort would be required to return this area to what most would consider a typical savanna.

There is a variety of interesting wetlands on the site (*e.g*., see Appendix – Sites 4 – 8.). Some of these areas are comprised of largely native plants while others have been degraded by reed canary grass (*Phalaris arundinacea*).

IV. Wildlife Species

During the site visits, a variety of songbirds and other native birds were observed. However, we did not see any occurrences of uncommon species. It would be expected that this site in its current condition would provide habitat for deer, waterfowl including ducks and geese, pheasant, etc. We observed frogs in the wetlands as well. Considering its current condition and location to the Sauk River corridor, this property may be an important wildlife area. For example, many areas were observed where deer had bedded overnight.

V. Conclusions & Recommendations

The Sartell Partners site is an interesting area that provides wildlife habitat for a diversity of species. From a botanical perspective, the much of the site is highly degraded with many invasive species. However, some of the wetland communities are in relatively good shape, notably the small pothole on the northwest side of the property and the mossy-wet area near the gravel pit. We assume that before development is approved, all wetland areas will receive full consideration under existing wetland protection legislation. Based on the quality of the existing terrestrial communities and the amount of effort it would take to restore them, there

is no compelling botanical reasons to prohibit development in terrestrial areas. However, if the City of Sartell approves development it will loose significant wildlife habitat and open space.

We recommend that MNRAM and TEP results should be evaluated by competent scientists before any decisions are made about this property.

We recommend that a hydrologist, geologist and/or other individual(s) with expertise in groundwater and wetlands inspect the property to help interpret and further evaluate the hydrology and geology of the site. We think this is necessary because the hydrology of the site appears complex. For example, even though we are in the midst of a severe drought, there is still moisture in the two areas mentioned above and a small wetland has formed in the base of the gravel pit.

We recommend that the site developers incorporate as many "green concepts" as possible to minimize environmental impacts and maximize the use of the property for wildlife. Of the three scenarios that we were provided, Scenario 1a perhaps comes closest, though many modifications could be made to maximize its conservation potential. For example, planners should consider maintaining a wildlife corridor through the site and incorporate rain gardens and stormwater basins that provide plant and animal habitat. A recent workshop by Russell Arendt held at St. John's University provides excellent examples of conservation development in which habitat is preserved while at the same time maximizing financial gains. Many local organizations/individuals (*e.g.,* Stearns County Soil and Water Conservation District Urban Conservationist) can provide additional assistance in creating an ecologically sound development project.

Even though requested, we were not provided with documents that are necessary to accurately evaluate this property. For example, we understood that two previous ecological surveys were conducted in this area but were unable to obtain a copy of the sections pertaining to this site. We assume that this may be a glitch in the City of Sartell's relatively new EDT process. We hope that future volunteer scientists will be provided with the documents that they require to expedite this process and make their work easier.

APPENDIX A: Site Descriptions

This appendix summarizes some of our observations, field notes and digital photographs of some of the sites that we visited.

1. Home Site (N 45 35.610; W 94 11.224)
The area around the old home is over-grown with numerous weeds. As you walk away (west) from the home site, the vegetation includes a significant number of tree suckers sprouting from cut stumps. These include basswood (*Tilia americana*), burr oak (*Quercus macrocarpa*), northern red oak (*Quercus rubra*), and green ash (*Fraxinus pennsylvanica*). The understory shrubs include honeysuckle (*Lonicera tartarica*), gray dogwood (*Cornus foemina* ssp. *racemosa),* chokecherry (*Prunus virginiana*), and European buckthorn (*Rhamnus cathartica*). Except for the trails, this area is dense brush and stump suckers. Herbaceous plants include largely weedy species such as yarrow (*Achillea millefolium*) and western poison ivy (*Toxicodendron rydbergii*).

Figure 1. Home site, looking west.

Figure 2. Home site, looking south.

<u>2. Field Site</u> (N 45 36.630; W 94 11.319)
Along the north edge of the site is a triangular region that was once a cultivated field. This area is bounded on one side by County Road 1 and on the other by Hwy 15. The vegetation in this area is mostly smooth brome (*Bromus inermis*) interspersed with an includes an assortment of other species, mostly weeds including yarrow (*Achillea millefolium*), Siberian elm (*Ulmus pumila*) and bird's-foot trefoil (*Lotus corniculatus*). There are a few scattered prairie forbs in this area including prairie sage (*Artemisia ludoviciana*) and gray-headed coneflower (*Ratibida pinnata*). There is at least one rocky outcrop in this area.

Figure 3. Field site, along County Road 1, looking east.

Figure 4. Field site, along County Road 1, looking west.

Figure 5. Field site, along County Road 1, rocky outcrop.

<u>3. Western edge</u> (N 45 35.589; W 94 11.504)
This site is approximately halfway along the western edge of the property, near the small wetland. The vegetation is similar to the area near the old home site (Site 1) and throughout much of the property. There is a dense brush cover comprised of an assortment of shrubs (primarily buckthorn and chokecherry) as well as some shrubs/small trees characteristic of a shaded woods such as red elder (*Sambucus pubens*) and downy arrowwood (*Viburnum rafinesquiananum* var. *affine*). We noted a few interesting forbs including giant hyssop (*Agastache foeniculum*) and figwort (*Scrophularia lanceolata*). In this site, and throughout many of the sites, there are clumps of a sedge (species unknown) which are more characteristic of shaded woods.

Figure 6. General appearance of the site in the NW corner of the property.

4. Wetland Depression (N 45 35.534; W 94 11.541)
This wetland is a small circular area, approximately 10 meters in diameter across that has a diversity of wetland plants including meadowsweet (*Spiraea alba*), dead nettle (*Stachys vulgaris*), water horehound (*Lycopus* sp.), bulrushes (*Scirpus* sp.), at least four species of sedge (*Carex* sp.), ironweed (*Vernonia*) and blue vervain (*Verbena stricta*). Reed canary grass (*Phalaris arundinacea*) occurred at the margins. The brushy forest remnants come right up to the edge of this wet area. Woody plants in the surrounding area include aspen (*Populus tremuloides*), prickly ash (*Xanthoxylum americanum*), hazel (*Corylus americana*) and nannyberry (*Viburnum lentago*).

Figure 7. Wetland depression, western edge

Figure 8. Wetland depression, western edge

Figure 9. Wetland depression, western edge

Figure 10. Wetland depression, western edge

5. Pond (N 45 35.452; W94 11.532)
The relatively large (1-2 acres) pond on the site was ringed by reed canary grass. There was little transition between the reed canary and the brush beyond which included largely aspen, chokecherry and many of the species mentioned above.

Figure 11. Large open water wet area.

6. Sedge Meadow
Just south of the large pond was a wet meadow area dominated by reed canary grass. However, there were quite a few sedges present, also. This particular wetland appeared to have been ditched at some point. On a nearby wet area we observed a variety of forbs including Culver's root (*Veronicastrum virginicum*), whorled loosestrife (*Lysimachia ciliata*), monkeyflower and agrimony (*Agrimonia* sp).

Figure 12. Wetland.

Figure 13. Steeplebush in the wetland.

<u>7. Mossy-Wet Area</u> (N 45 35.387; W 94 11.695)
One interesting area that we observed in the site was a small wet area along the eastern edge of the gravel pit in the southwest corner of the property. This region had perhaps the best, undisturbed vegetation of the site and included horsetails (*Equisetum*), boneset (*Eupatorium perfoliatum*), a variety of sedges, water horehound, swamp milkweed (*Asclepias incarnata*) and several species of willow (*Salix* sp.). There was a relatively thick carpet of a sphagnum-like moss throughout the site.

Figure 14. Wet area adjacent to the gravel pit.

Figure 15. Sphagnum-like moss in the wet area adjacent to the gravel pit.

Figure 16. Horsetails (*Equisetum*) in the wet area adjacent to the gravel pit.

Figure 17. Wet area adjacent to the gravel pit.

Figure 18. Sedge in the wet area adjacent to the gravel pit.

<u>8. Wetland in Gravel Pit</u> (N 45 35.310; W 94 11.763)
The excavated pit was very sandy and lined with an assortment of weeds. An unexpected find in the southwest corner of the largest pit was a small wetland that featured cattails (*Typha angustifolia*), boneset, and blue vervain.

Figure 19. Wetland in gravel pit.

Figure 20. Wetland in the gravel pit.

Figure 21. Looking at the east wall of the gravel pit from the wetland. The mossy-wet area is located approximately in the middle of the image.

9. Wetland along south edge

Cattails and sedges dominated the wetlands along County Road 134 on the eastern edge of the property. Also observed were yellow avens (*Geum aleppicum* var. *strictum*) and other species.