

Report: Tollefson Site Concept Plan

prepared by

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Site Visits: Jointly, we visited the Tollefson Site on May 7th (with the entire EDT committee) and May 11th. In addition, one of us (SGS), accompanied by a forester from St. John's, visited the site on May 9th. On each of these visits we spent approximately two hours at the site.

Site 147 Description (Dry Oak Forest): Site 147 sits on sandy deposits of a Mississippi River terrace. The site is relatively flat with gently rolling topography and is a classic example of a “Dry Oak Forest” (Wovcha *et al.*, 1995; Minnesota Natural Heritage Program, 1993) according to the MN Department of Natural Resources classification scheme. The canopy is made up primarily of pin oak (*Quercus ellipsoidalis*) with a few red oaks (*Quercus rubra*). The trees are fairly dense with a cover of at least 70% and many are at least 50 foot tall. Bur oak (*Quercus macrocarpa*) and a few aspen (*Populus tremuloides*) are found along trail edges and in more open areas. Understory trees include mountain ash (*Sorbus* sp.), juneberry (*Amelanchier* sp.) and black cherry (*Prunus serotina*). The shrub layer is dense with the primary species being chokecherry (*Prunus virginiana*) and hazel (*Corylus americana*). There are a few colonies of blueberry (*Vaccinium angustifolium*) which is somewhat unusual for our area). Herbaceous plants we observed include wild geranium (*Geranium maculatum*), bedstraw (*Galium* sp.), wood anemone (*Anemone quinquefolia*), Pennsylvania sedge (*Carex pensylvanica*), wild lily-of-the-valley (*Maianthemum canadense*) and raspberry (*Rubus* sp.). Relatively few herbs were observed on the forest floor, in part because it was still early in the growing season and because relatively few herbs normally occur in this type of forest (Wovcha *et al.*, 1995).

Relatively few invasive plant species were observed. Some European buckthorn (*Rhamnus cathartica*) was present, though not in excessive numbers and it would be relatively easy to remove the plants in a couple of afternoons. Few buckthorns were observed with berries. No poison ivy (*Rhus radicans*) was seen, though it likely occurs on the site. Some introduced honeysuckle (*Lonicera* sp) was also present. Overall, we were impressed with the limited extent of exotic invasive species.

The woods have been cut, grazed or otherwise disturbed in the past. This can be determined because many of the pin oaks grow in clumps indicating that the original tree was removed by grazing or cutting and that it subsequently sprouted from the base of the previous stem. This is a characteristic of relatively young dry oak forests (Wovcha *et al.*,

1995). We estimate that the largest trees are less than 80 years old, though it is difficult to actually determine without doing cores. Some trees may be considerably older but since they grow slowly in sand it is difficult to estimate their age by girth alone.

The absence of large, single-stemmed pin oaks also suggests that dry oak forest was not the original pre-settlement vegetation on this site, but rather, it developed from oak woodland–brushland (which is a community type with fewer trees and the ground layer dominated by prairie herbs). This conclusion is supported by MN land survey records which show that the “oak woodland–brushland” community was a common vegetation type in the Mississippi river terraces in eastern Sherburne County. Wovcha *et al.* (1995) estimate that 9260 acres of dry oak forest exist and rate the rarity of this community as “3” on a five point scale.

There are trees of various ages including seedlings suggesting that the woods are regenerating. There are some snags & hazard trees scattered through the site. In general, the trees appear to be healthy.

This area was not graded by the St. Cloud Natural Area Inventory; apparently because there was “no access.” Although we have limited experience with this grading system we give this forest a grade of at least “B.” The reason we assigned this grade is that according to the Community Survey Form (Appendix D) the woods has some unique species (mountain ash, blueberry), few exotics (European buckthorn, honeysuckle), and provides wildlife habitat for deer, badger, squirrels, raccoon, an assortment of birds and other animals. The community is intact, a classic example of a dry oak forest, and the aesthetic value of the area is high. Communities graded “A” are judged to “outstanding element occurrences” tract virtually undisturbed or recovered to where community is intact and reflect presettlement conditions.” Thus, our grade would be higher if there were less evidence of human disturbance (*i.e.*, deer stands, discarded appliances and trash, “borrow pits”) and slightly less European buckthorn.

Site 147 Recommendations: We recommend that every effort should be made to preserve this entire community. Not only is this site is an excellent example of a dry oak forest, but what makes it especially desirable is that it is adjacent to the largest complex of natural areas within the City of St. Cloud. This area would make a good wildlife corridor with wetland, prairie and forest habitats. The site is approximately 40 acres which, according the St. Cloud Environmentally Sensitive Areas Ordinance (ESAO, p 30, #1), “should be considered for forest preserves (reserves), particularly examples of high quality forest ecosystems or rare forest communities.” It will be a great loss to the natural communities of the City if this parcel is developed as proposed.

If the area is developed then we recommend that development should proceed carefully and cautiously to preserve as much of the forest character and ecological integrity of this area as possible. The developers should follow the guidelines specified in the “Forests and Woodlands” section of the St. Cloud Environmentally Sensitive Areas Ordinance (p 30 - 31). Specifically, we recommend that:

1. construction should be prohibited during May and June to prevent the spread of oak wilt disease (ESAO, p 31, e)
2. before construction the developer should be required to erect fences around trees to be saved (ESAO, p 31, d)
3. the developer/construction company be required to complete or show certification in construction techniques that minimize tree damage. This certification could take several forms including attendance at a seminar or other similar workshop. The City forester should be able to provide the developers/construction company with acceptable options.
4. a buffer of trees (ESAO, p 30, #4) is maintained along the eastern and southern edge of the property to help buffer residents from the noise from the airport, shooting range and rock crusher). It would also be wise to require individuals who purchase lots to sign an agreement acknowledging the sources of noise to prevent complaints down the road
5. redesign the development to avoid forest fragmentation (ESAO, p 31, a). At least 25% of the woods on the site should remain undeveloped in a contiguous area and the residential units should be clustered (ESAO, p 31, b & c). Small islands of trees, such as diagrammed in the middle of the development to the west of the wetlands will likely just become an extension of the backyard of the homes bordering it. It will be used as a dumping ground and play area by the residents reducing its wildlife and ecological value. Habitat fragmentation leads to ecological disintegration of an area. We recommend preserving the southeast corner of the woods roughly speaking, along a line drawn from the SW corner of the property to the proposed pond along the east border. This area would become a "nature preserve" with unpaved walking trails to be shared by the residents. An additional benefit of this plan is that it would eliminate the need for a second wetland crossing.
6. avoid removing excessive trees (ESAO, p31, c). As currently formulated, we estimate that the development plan will destroy a majority of the trees on the site. We predict that about 70% of the trees will be removed or otherwise lost during the construction process and welcome a confirmation of our estimate by a qualified forester such as the City of St. Cloud forester. Note that our estimate also considers snags and hazard trees. For safety reasons these trees, though normal and desirable in a healthy forest, will need to be removed along the roadways and in each lot because the homes are so densely spaced.
7. educate homeowners about the importance of removing European buckthorn and honeysuckle on their property and in any communal woodland spaces (ESAO, p 31, h).

Site 146 Description (Wetland). Site 146 is a continuous linear wetland that runs from the NW to SE corner of the property. The east is bounded by an old post glacial river banks which is continuous to the Sauk Rapids hills. The NW corner of the wetland is especially degraded where it merges with a farm field that was apparently hayed in recent years.

The dominant plant in the wetland is reed canary grass (*Phalaris arundinacea*) which is rather invasive and has relatively low wildlife value. The wetland also supports other grasses including brome (*Bromus inermis*), timothy (*Phleum pratense*), and foxtail (*Setaria* sp.), as well as sedges (*Carex* sp.). Although the quality of the wetland is rated low (“C”) according to the St. Cloud Natural Areas Inventory, it is a continuous hydrological zone that parallels the Mississippi River and is important for filtering and retention of ground water.

Site 146 Recommendations. Since development in wetlands is governed by Minnesota law our primary recommendation is that all delineated wetland areas should be honored and should conform with the recommendations in the ESAO, pp 34 – 35. Specifically, we recommend that:

1. no lot be platted within the boundary of the wetland.
2. a buffer zone with dedicated easements be created along the edge of the wetland (ESAO, p 34). A walking/biking trail could run through this buffer zone. The buffer zone will make the boundary of the wetland clear to adjacent homeowners (ESAO, p 34), help reduce runoff from chemicals used by homeowners (ESAO, p 34), minimizing the amount of dumping and damage by homeowners (ESAO, p 34), and hopefully prevent homeowners from removing vegetation, filling or otherwise altering the wetland. Fences should be erected during the construction period to avoid erosion and damage (ESAO, p 35).
3. homeowners should be educated on the proper use of agricultural/lawn chemicals to avoid contamination of the wetland
4. remove the second road crossing to minimize wetland damage
5. houses near the wetlands should not have basements. Basements will interfere with subsurface ground water flow and natural flood control. Extensive excavation would have a significant impact on the soil structure and hydrology.
6. If the proposal will impact the wetlands, the City should not approve the plat until a Wetland Replacement Plan has been approved by Benton County.

Additional Observations:

1. In the NE corner of the property, which is not included in sites 146 or 147, there is a significant amount of water that runs onto the property from a ditch on Co. Rd 8. This water runs into a wetland in the NE corner of the property. The wetland continues into Sherburne County. The developers will need to address the source and handling of this water.
2. There is a good quality wetland on the east border of the property in Site 147 that has cattails and other emergent vegetation. This piece may be on the National Register.

References:

Minnesota Natural Heritage Program. 1993. *Minnesota's Native Vegetation. A Key to Natural Communities*. Version 1.5

St. Cloud Natural Areas Inventory and Planning Framework. Short Elliot Hendrickson, Inc.

Wovcha, DS, BC Delaney, and GE Nordquist. 1995. *Minnesota's St. Croix River Valley and Anoka Sandplain. A Guide to Native Habitats*. University of Minnesota Press, Minneapolis.