

A photograph of a field of yellow Black-eyed Susans in the foreground. In the background, a two-story house with a grey roof and green trees are visible under a cloudy sky. The image is split into two sections: a dark grey top section with white text and a light grey bottom section with black text.

Mid West Region

**Cloverdale
Farm**

**A Conventional
Subdivision**

Before Development



Figure 1: The site in 1992 before development. Agricultural land use predominates, with forest stands surrounding the central pond, and a parcel of forest in the eastern portion of the site.

Location: Stillwater, Washington County
Minnesota

Year: 1994 (approval) 2000 (completion)

Developer: Bob Engstrom, Robert Engstrom
Companies

Planner/Designer: Jack Buxell, J. Buxell Architecture

Development Size: 256 acres

Number of Units: 58 single family detached units

Open Space: 0.3%

Overview

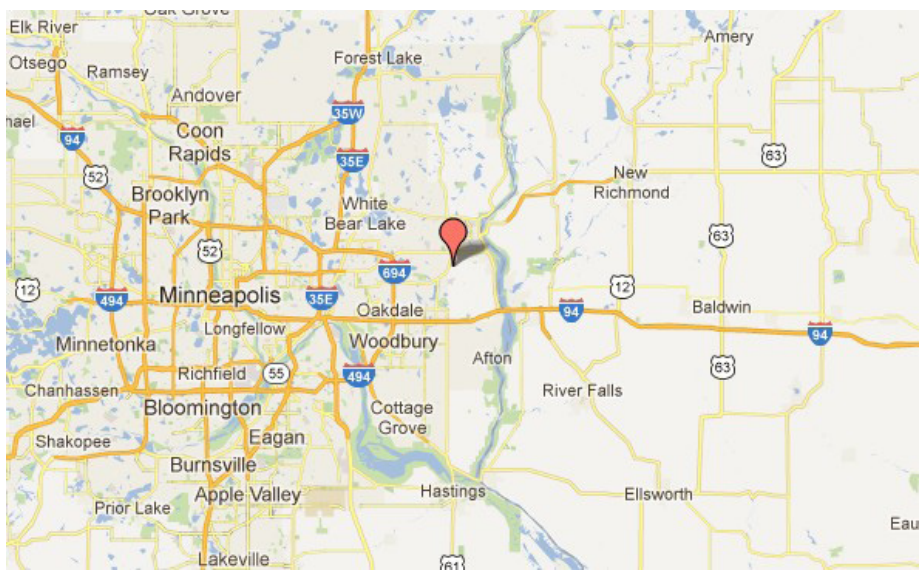



Figure 2: Location of the site northeast of Minneapolis. It is directly east of the Fields of St. Croix conservation subdivision.

Cloverdale Farm is a conventional development located 30 miles northeast of St. Paul Minnesota between the Lake Elmo Village Center and the City of Stillwater. It was built between 1994 and 2000. Almost the entire development is divided into 3.8 acre, single family lots. Even the ponds are platted into private ownership. Clustering of the house lots was not permitted in the code at the time of development approval.

The large-lot conventional development plan provided the opportunity for the developer, Bob Engstrom, to test whether homeowners would adopt the prairie landscape on their lots. His vision was to create a community with broad swaths of open prairie, within which individual homeowners would have their house lots. To preserve the open land in this development a covenant was enacted that required homeowners to landscape half of their lots in a natural state. Most homeowners chose prairie restoration to fulfill their obligation. Working together, the developer and homeowners were able to create contiguous stands of restored native prairie throughout the development.



A decade after construction, the original vision has succeeded. The prairie and oak savanna landscape is the dominant impression a visitor to the development sees when travelling through it. Re-evaluation of the landscape after the second decade has passed will be critical to understanding how the landscape character will change as ownership changes.

The ponds are a dominant feature on the site, and although in private ownership, there is a small access path to allow community members to swim in the eastern pond. The water quality of the ponds is protected from the additional site runoff through the construction of wetland areas. These areas treat the stormwater runoff before it enters Cloverdale and McDonald lakes. A development buffer was maintained along the Cloverdale lake shoreline to maintain both the pre-development forest, and the character of the lake.

Although the distinction is not visible, the open space in Cloverdale differs from that in the Fields of St. Croix development in its ownership and accessibility. The open space at Cloverdale consists of restored prairie, preserved woodlands, and constructed wetlands, similar to The Fields development, however it is held in private ownership. Trails are limited, although the roads and sidewalks maintain a similar function, and there is a small sports facility. The sports facility is the only area of common open space, apart from the roadways, in the community.

It is significant that “The open space development plan used at Cloverdale Farm was so successful that it has been used by both local governments and Robert Engstrom Companies on other projects.”

References:

Robert Engstrom Companies (REC). 2007. Robert Engstrom Companies Website: Project Portfolio. Online Internet. Accessed at: <http://www.engstromco.com/>



Figure 3: The development in 2003, fully built out. Cloverdale Lake is in the center of the site, with McDonald Lake to the east.

Ownership



Figure 4: Site plan showing ownership of the open space in Cloverdale. Almost the entire site is held privately, with the exception of roads and a small recreation facility.

Land ownership in Cloverdale is predominantly private. Almost 93 percent of the site is privately held, with the remainder in common roads and a small parcel (0.3% of the site) held by the home owners association. Of interest is the fact that even the lakes in this development are held in private ownership.

Table 1: Breakdown of the ownership of the open space by area and percent of total.

Ownership	Parcels #	Area		
		acres	ha	%
<i>HOA</i>	1	0.81	0.33	0.3
<i>Private</i>	60	231.24	93.65	92.9
<i>Roads</i>		16.83	6.828	6.8
Total area		248.88	100.80	100

Habitat

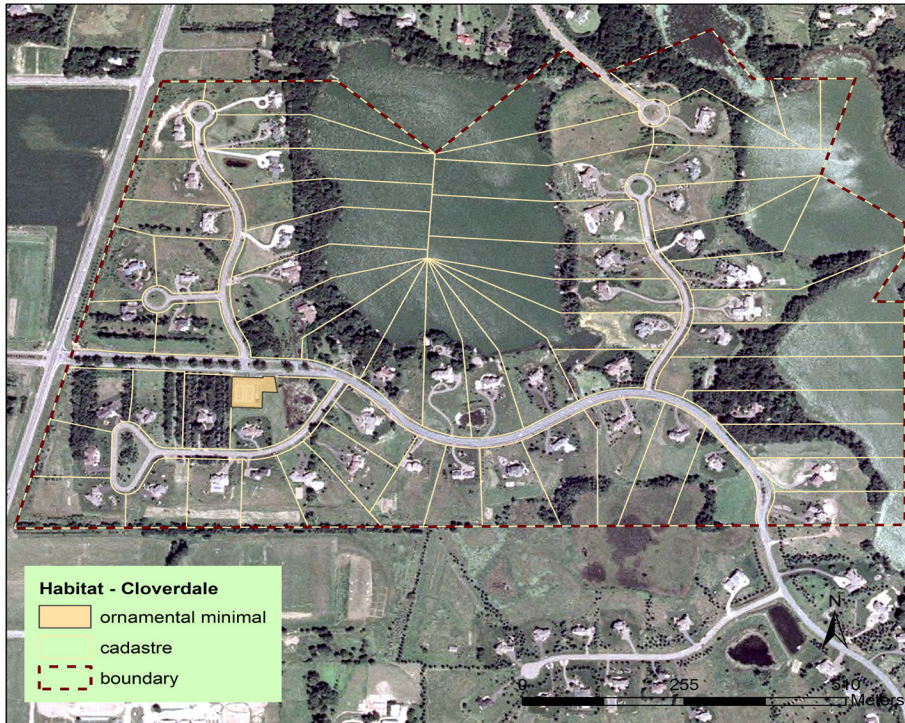


Figure 5: There is only a very small area of common open space on the site. It contains two tennis courts, and has tree and lawn plantings.

Since only a small fraction of the open space on this site is commonly held, the habitat analysis was done on the privately-held areas under covenant. In these areas of restored prairie, the results were variable. Of the five transects with plant counts, two rated highly for native plants, and the other three rated medium to low. Overall habitat rating was fairly high for the site however, at

Table 2: A summary of the native plant analysis for the site.

	Native Plants %	Plant Cover %	Notes	Rating % of total possible points
<i>Transect 1</i>	50	n/a	Reed canarygrass and non-native cattails are the dominant species noted at this site.	70
<i>Transect 2</i>	79	n/a	Native cattail observed here. Good quality wetland.	87.5
<i>Transect 3</i>	50	n/a	Generally low level of human induced disturbance surrounding the lake provides for moderate/good wildlife and amphibian habitat.	70
<i>Transect 4</i>	90	100	Prairie is exhaustively maintained by homeowners. Great example of a restored prairie, probably best example within Cloverdale.	93.33
<i>Transect 5</i>	33.33	90	Dominated by bluegrass, smooth brome, vetch, and thistle. Occasional red cedar observed. No restoration has occurred on site, good example of what the entire property was probably like before development and restoration.	16.66
<i>Transect 6A</i>	n/a	n/a	Old formerly elm dominated forest in succession. Understory and overstory are poorly developed. Very few saplings observed, stand lacks age diversity.	30
<i>Transect 6B</i>	n/a	n/a	n/a	63.33
Site Average	60.47	95.00		71.80

almost 72 percent.

Each private homeowner is under covenant to maintain half of their lot in native vegetation. Many have also opted to convert their lawn area into prairie as well. Although 27 percent of homeowners maintain a lawn area, 19 percent maintain prairie almost exclusively, and another 19 percent maintain a mix of prairie and lawn. This increases the habitat potential of the site considerably.

Table 3: A summary of types of land cover in the common open space.

<i>Habitat</i>	<i>acres</i>	<i>ha</i>	<i>Total Area</i>	
			<i>% of OS</i>	<i>%</i>
<i>Ornamental minimal</i>	0.81	0.33	100.00	0.33
Total area of Open Space	0.81	0.33	100.00	
Total area of development	248.88	100.80		0.33

Table 4: Vegetative cover on private lots.

<i>Vegetation</i>	<i># of lots</i>	<i>% of total number of lots</i>
lawn	27	45.76
prairie/lawn	11	18.64
prairie	12	20.34
wooded	2	3.39
lawn/wooded	1	1.69
n/a	6	10.17
	59*	100

* - two additional lots are entirely in McDonald Lake and are attached to ownerships outside of Cloverdale.

Stormwater



Figure 6: Impervious surface is dispersed across the development as roads, driveways and roofs.

The imperviousness of the site is relatively low at 8.8 percent. Dispersal of the imperviousness across the site allows more of the runoff to infiltrate before entering the lakes. In addition, stormwater ponds and swales were installed to augment the cleansing process.

Table 5: Total imperviousness of the development is 8.8%

	<i>Acres</i>	<i>% of Subdivision</i>
Roads	7.37	3.0
Roofs	7.08	2.8
Driveways	7.54	3.0
Parking Lots	0.00	0.0
Total Area	21.99	8.8

Recreation

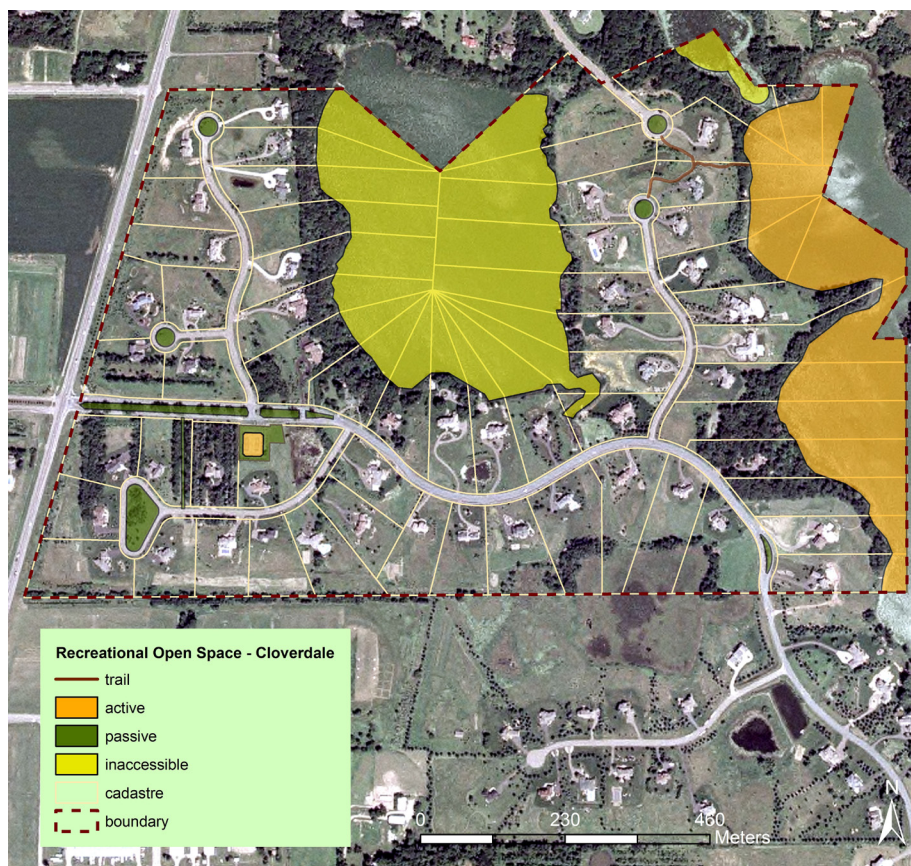


Figure 7: Recreational opportunities at Cloverdale are largely confined to private land. A small recreational facility with tennis courts is maintained by the home owners association in the southwestern portion of the site.

Recreation in a development with limited common open space such as Cloverdale is restricted to activities that can occur on the roads and sidewalks, or on the limited common access areas. Although the developer designated common access trails to each lake, during our site visit residents only identified the access path to McDonald Lake, and that seemed rarely used. Residents did use the quiet streets and sidewalks for biking and walking, however.

Table 4: Recreational opportunities in the open space.

	<i>acres</i>	<i>ha</i>	<i>Area</i> <i>% of open space</i>	<i>% total development</i>
Passive	37.85	15.33	56.27	15.21
Active	3.46	1.40	5.14	1.39
Inaccessible	25.96	10.51	38.59	10.43
Total open space	67.27	27.24	100	
Total development	248.88	100.80		27.03
trail [m]	270.68			

Visual quality was defined for the development using two measures: consistency of the landscape enhancement plantings, and distance to community open space. Although other case studies in this series rated only the common open space, the treatment of the eased portion of the private parcels was so integral to the development concept, it is included here.

Distance to open space was calculated by identifying the average distance from each home to the nearest community open space. Since the community open space is contained in one parcel, the distances were, on the average, large. The design of the development intended that visual quality would be managed on each private site, with fairly strong success.

Visual Quality

Table 5: Visual quality rating for The Fields of St. Croix

<i>Consistency of landscape enhancement plantings</i>	<i>high</i>	
<i>Average distance to open space</i>	1,1508.9 m.	4,950.6 ft.
Number of parcels	59	
Maximum distance to open space	3,301.5 m	10,832.1 ft.