



Mid West Region

The Fields of St. Croix

**A Conservation
Subdivision**

Before Development



Figure 1: A 1992 view of the Field's site before development shows largely agricultural use. The pond that is the centerpiece of the site today was in a similar form before development.

Location: City of Lake Elmo
Washington County, Minnesota

Year: 2004 Completed

Developer: Bob Engstrom, Robert Engstrom Companies

Planner/Designer: Jack Buxell, J Buxell Architecture

Development Size: 241 acres

Number of Units: 125 (113 single family detached; 12 single family attached)

Open Space: 144 acres (60%) Ag accounts for 32%

Overview

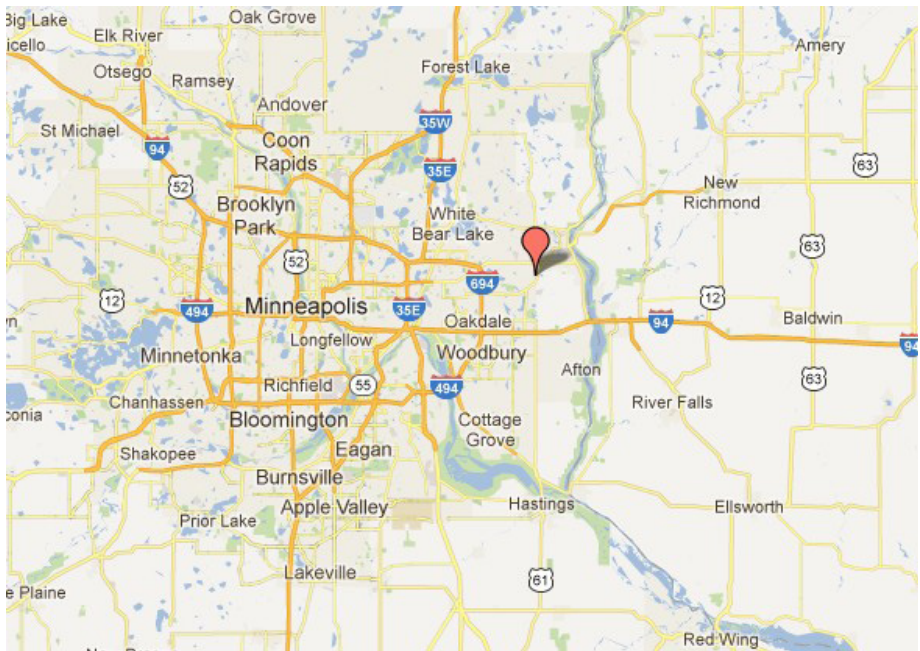



Figure 2: Location of the site, northwest of Minneapolis, Minnesota.

The Fields of St. Croix, a conservation development, was built between 1997 and 2004. It is located 30 miles northeast of St. Paul, Minnesota and resides between the Lake Elmo Village Center and the City of Stillwater. This development was one of the first large scale cluster housing communities in Minnesota.

The 241 acre parcel was originally 3 separate farms. The City of Lake Elmo and Bob Engstrom, the developer, worked together to achieve conservation goals, and the city revised its comprehensive plan to encourage conservation development because of this project. Under the City’s new open space development ordinance the land was zoned 6 residences per 20 acres; under this zoning Bob Engstrom could have divided the land into 72 lots of 3 acres each. Utilizing a density bonus for clustering under the ordinance, 125 single-family units (113 detached, 12 attached) were built on the land. Of the 241 acres of the site, 144 acres or 60% of the land was saved for permanent



open space protection. A conservation easement granted to the Minnesota Land Trust guarantees its permanent protection.

The open space at The Fields is comprised of trails, a park, tot lots, tennis courts, preserved woodlands, constructed wetlands, 30 acres of restored prairies, and a community supported agriculture farm. Open space areas of the site were chosen to protect and enhance the ecological functions of the land. Native grasses and forbs were planted throughout the site to improve habitat quality and stormwater treatment function. A buffer was maintained surrounding the pond, and large areas of prairie and oak savanna were restored. More than 90 acres of farmland was preserved as a scenic buffer to surrounding roadways. The farm is functional, and provides produce to residents who pay dues. The open space is visually accessible by all residents. The Fields of St. Croix is bordered by two other conservation developments, Tana Ridge and Tamarack Farms, creating a network of protected open space.

The Fields is located outside the reach of the City of Lake Elmo's sewage treatment plant. A wetlands wastewater treatment system was constructed to treat septic and stormwater runoff on-site, the first constructed in Minnesota. A series of treatment marshes and native wetland plants are used to treat the water before returning it to the water table. Additional swales, infiltration devices, and detention ponds throughout the site are used to treat stormwater runoff. This treatment system enables The Fields to be self sufficient in its wastewater treatment needs. In addition, street widths were kept to the minimum necessary to reduce stormwater runoff: one way streets are 14 feet wide, and two way streets with parking on each side are 24 feet wide.

In the first phase of The Fields of St. Croix much smaller lots were allowed by the City. In the second the smaller lot size was not permitted, therefore the character of The Fields, and other conservation developments built under the ordinance, are visually not unlike conventional developments in the area. The open space that was protected in the development is also somewhat fragmented, particularly in the distinctions between prairie and non-native ornamental plantings.

Awards:

Best in American Living Gold National Award

Sponsored by the National Association of Home Builders and Professional Builder magazine for communities of fewer than 150 units.

Best in American Living Regional Award

Competition includes both home designs and communities.

The 5th Annual Environmental Initiative Award: Land Use and Community Development

Award from the Minnesota Environmental Initiative, recognizing a commitment to efficient and well-planned land use, accounting for economic prosperity, environmental stewardship and community well being.

References:

Minnesota Land Trust (MLT) and the University of Minnesota (UM). 2001. Conservation Design Portfolio: Case Study 2. Accessed at:

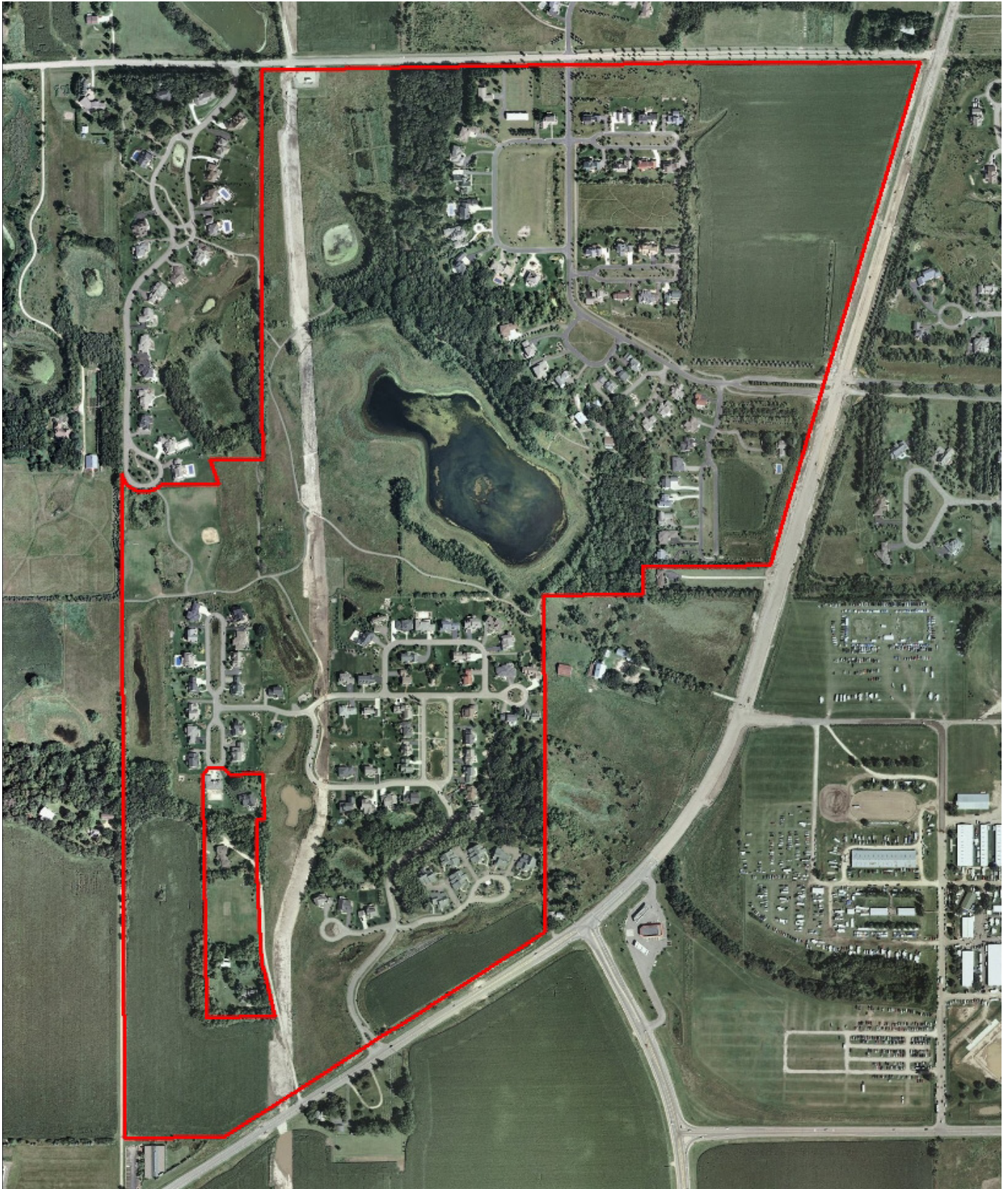


Figure 3: The fields of St. Croix is composed of a series of residential clusters in two areas of the site, one to the north and one to the south. The pond forms the centerpiece of the development.

Ownership

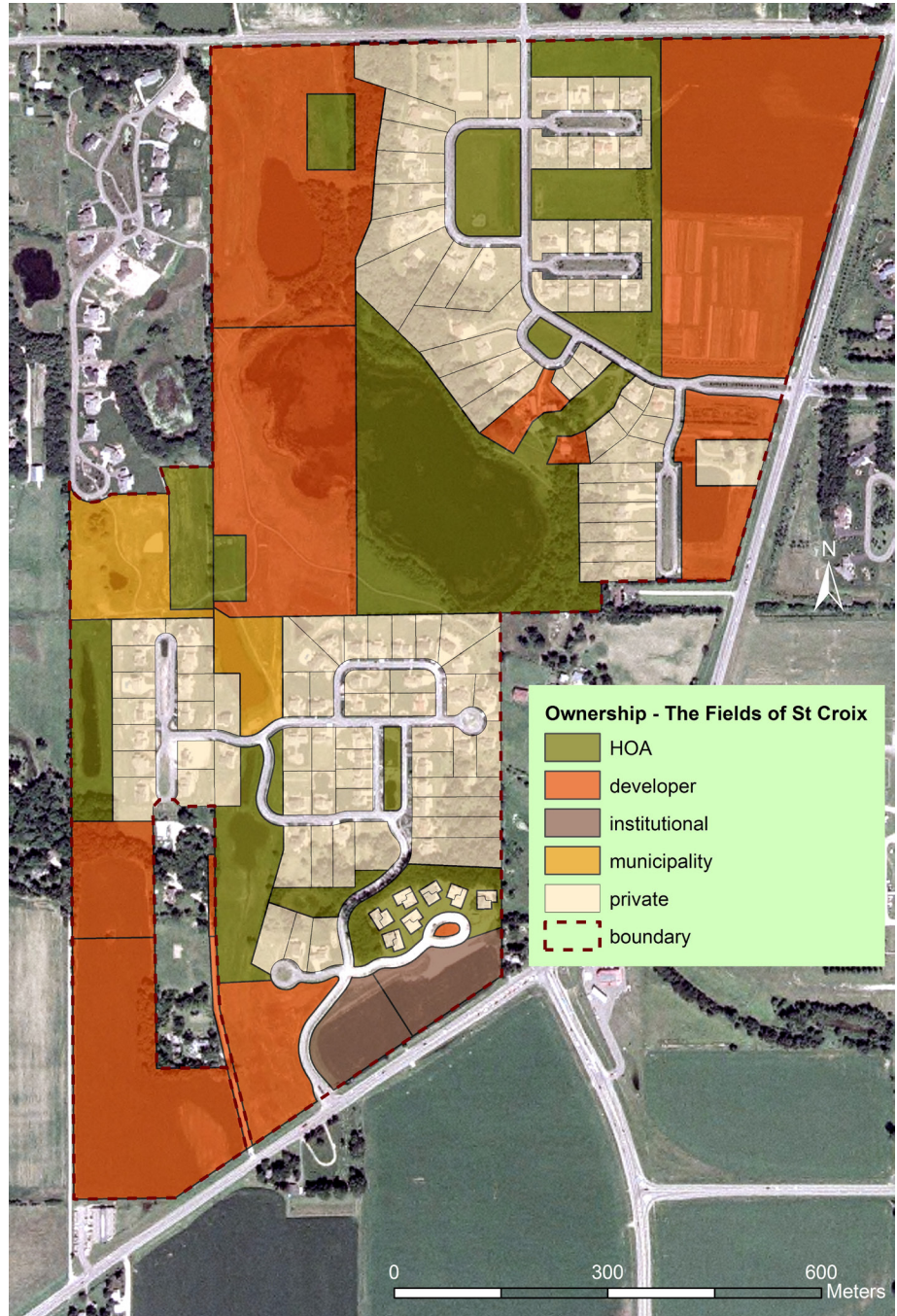


Figure 4: Site plan showing ownership of the open space at the Fields of St. Croix.

http://www.engstromco.com/downloads/FSOC_MLTUOMbroch.pdf

National Association of Home Builders (NAHB). 2007. *Smart Growth Case Study: The Fields of St. Croix*. Accessed at: <http://www.nahb.org/generic.aspx?sectionID=635&genericContentID=507>

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

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

| Ownership | Parcels # | acres | Area | |
|----------------------|------------------|---------------|---------------|------------|
| | | | ha | % |
| <i>HOA</i> | 13 | 57.81 | 23.41 | 21.9 |
| <i>Developer</i> | 12 | 99.76 | 40.40 | 37.8 |
| <i>Institutional</i> | 2 | 6.69 | 2.71 | 2.5 |
| <i>Municipality</i> | 2 | 9.17 | 3.71 | 3.5 |
| <i>Private</i> | 114 | 72.21 | 29.24 | 27.3 |
| <i>Roads</i> | | 18.50 | 7.49 | 7.0 |
| Total area | | 264.15 | 106.98 | 100 |



The open space of the site is held in a variety of ownerships. The playfields to the center left of the map (yellow) are held by the municipality. Much of the open space is held by the home owners association (green), including most of the area surrounding the pond. The developer has maintained a strong interest and presence in the development, and has held title to the community farm to the northeast, the open space between the development and Tanner Ridge to the northwest, and the agricultural fields to the south west. The Minnesota Land Trust holds an easement to all of the open space in the development.

Habitat

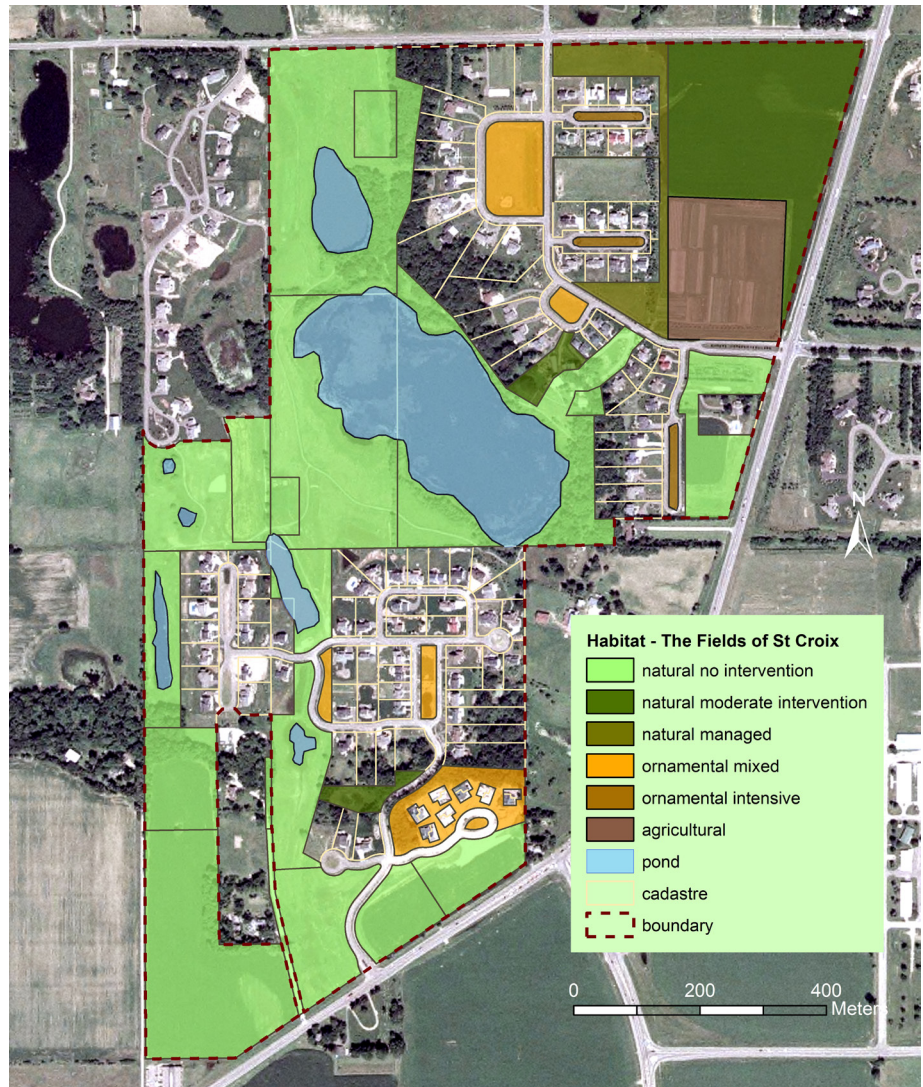


Figure 5: Most of the open space in the development is in native vegetative cover, with little to no intervention in its maintenance.

The site rates moderately well for habitat in its open space, although some of the transects showed lower levels of native plants. Total rating for the habitat potential of the site was about 70% due to the well restored oak savanna around the pond and prairie grasslands surrounding. Of the 71 percent of the development in open space, the majority, 61% is in natural vegetation with no to moderate management intervention.

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

| | Native Plants | Plant Cover | Notes | Rating |
|---------------------|----------------------|--------------------|---|-----------------------------------|
| | % | % | | % of total possible points |
| Transect 1 | 80 | n/a | n/a | 90 |
| Transect 2 | 80 | n/a | n/a | 90 |
| Transect 3 | 70 | n/a | n/a | 90 |
| Transect 4 | 70 | n/a | n/a | 90 |
| Transect 5 | 80 | n/a | n/a | 90 |
| Transect 6 | 60 | n/a | n/a | 90 |
| Transect 6B | n/a | n/a | n/a | 80 |
| Transect 7 | 0 | n/a | n/a | 60 |
| Transect 8 | n/a | n/a | n/a | 35 |
| Transect 9 | n/a | n/a | n/a | 37.5 |
| Transect 10 | 60 | n/a | n/a | 45 |
| Transect 11 | n/a | n/a | n/a | 50 |
| Transect 12 | n/a | n/a | n/a | 50 |
| | | | Very nice prairie. Would expect more side oats gramma and more bugs. | |
| Transect 13 | 100 | 100 | | 96.67 |
| Transect 14 | n/a | n/a | n/a | 83.33 |
| Transect 14A | 60 | 100 | n/a | n/a |
| | | | Observed weed species: knapweed, plantain, smooth brome, and quackgrass | |
| Transect 14B | 100 | 100 | | n/a |
| Transect 15 | n/a | n/a | n/a | 53.33 |
| Transect 15A | 50 | 100 | n/a | n/a |
| Transect 15B | 60 | 100 | n/a | n/a |
| Site Average | 66.92 | 100.00 | | 70.68 |

Table 3: A summary of habitat values at The Fields of St. Croix

| Habitat | acres | ha | Total Area | |
|----------------------------------|---------------|---------------|-------------------|-------------------------------|
| | | | % of OS | % of Total Development |
| Natural no intervention | 125.78 | 50.94 | 66.99 | 47.62 |
| Natural moderate intervention | 33.82 | 13.70 | 18.01 | 12.80 |
| Natural managed | 8.12 | 3.29 | 4.32 | 3.07 |
| Ornamental mixed | 8.66 | 3.51 | 4.61 | 3.28 |
| Ornamental intensive | 1.25 | 0.51 | 0.67 | 0.47 |
| Agriculture | 10.14 | 4.11 | 5.40 | 3.84 |
| Total area of Open Space | 187.77 | 76.05 | 100.00 | |
| Total area of development | 264.15 | 106.98 | | 71.08 |

Stormwater



Figure 6: The impervious surface area of the development was low at under 6 percent of the subdivision.

Table 3: Total imperviousness of the development is extremely low at 5.7%

| | Acres | % of Subdivision |
|-------------------|--------------|-------------------------|
| Roads | 3.06 | 1.2 |
| Roofs | 7.13 | 2.7 |
| Driveways | 4.89 | 1.9 |
| Parking Lots | 0.00 | 0.00 |
| Total Area | 15.08 | 5.7 |

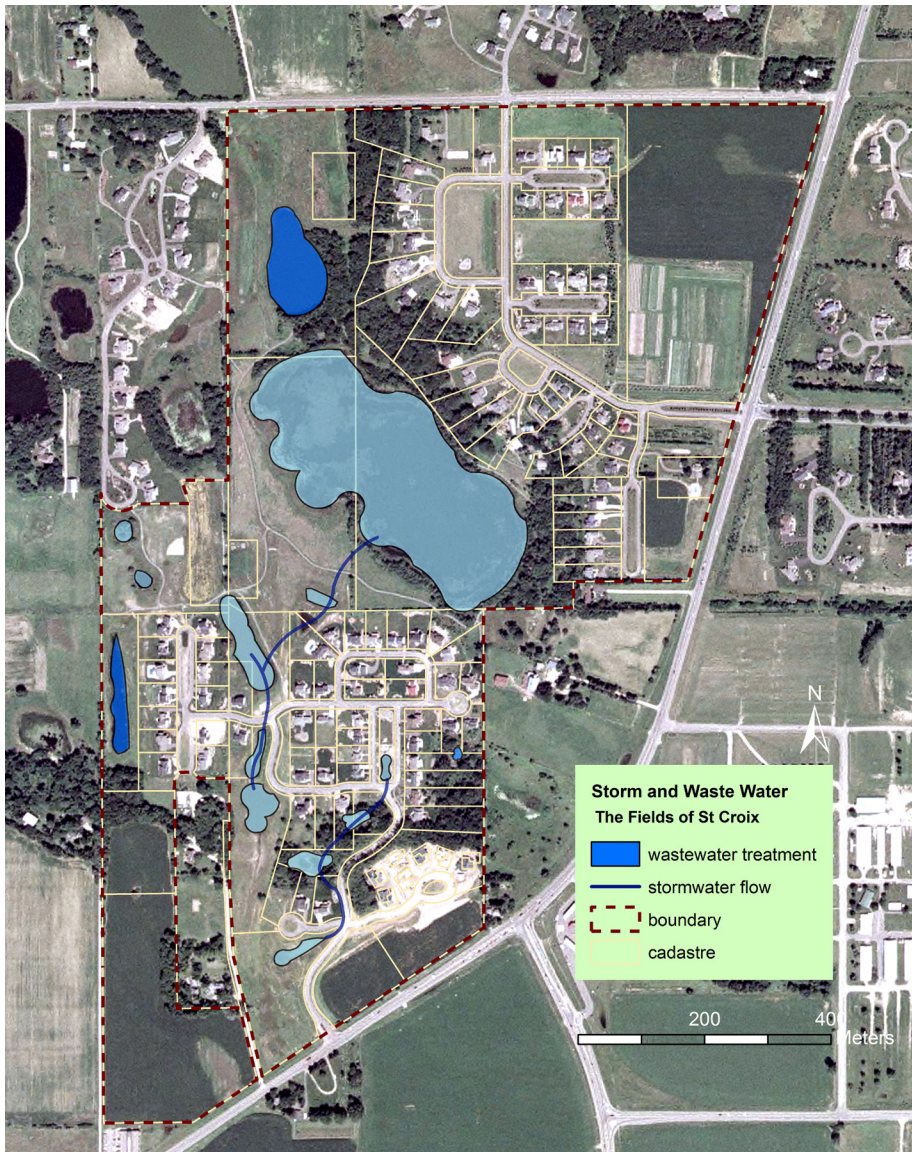


Figure 7: Stormwater management is controlled on site, using infiltration and a series of stormwater ponds.

Recreation

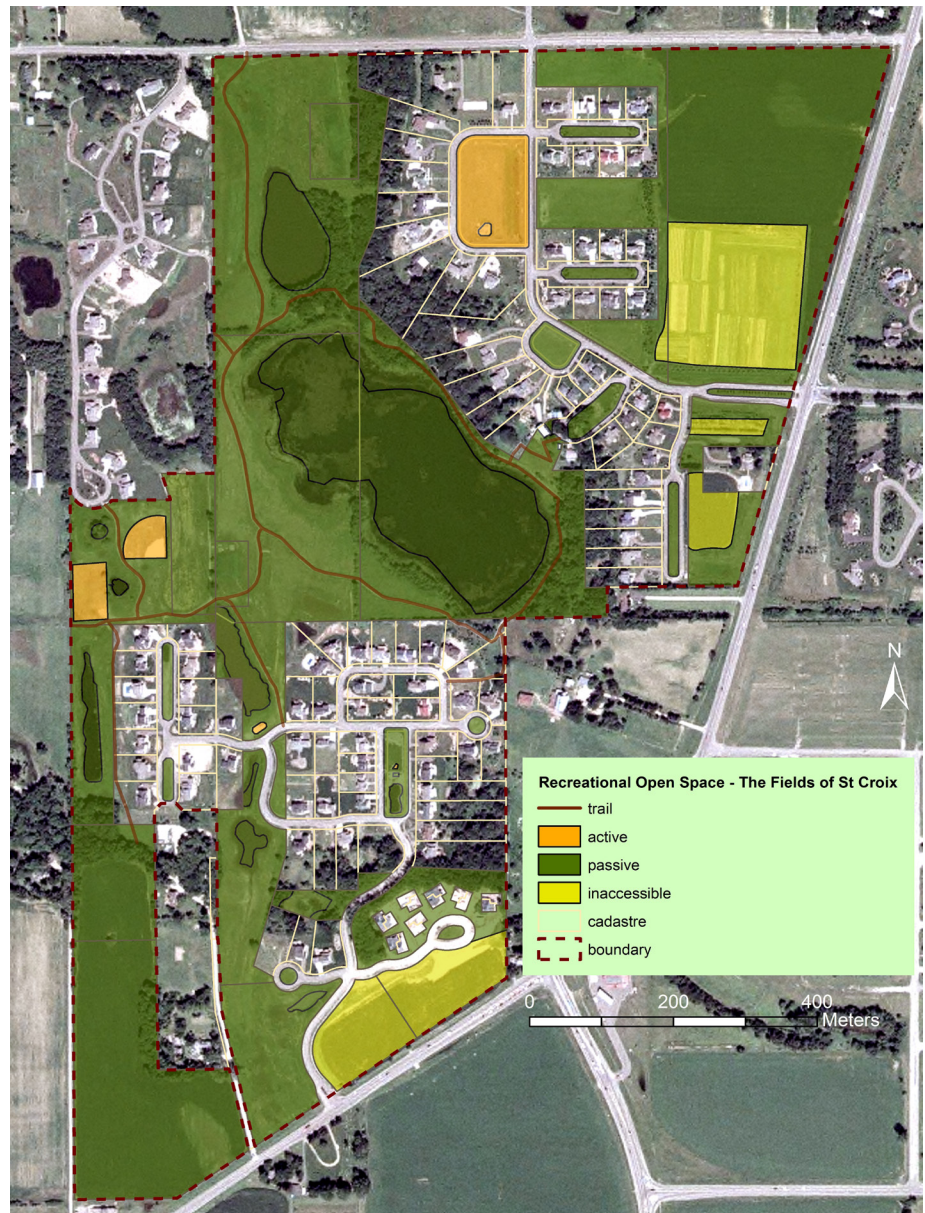


Figure 8: The site has an extensive network of off-road trails through the open space, providing an opportunity for active recreation.

Table 4: Recreational opportunities in the open space center around the trails system and passive enjoyment of the site.

| | <i>Area</i> | | | |
|-------------------|--------------|-----------|------------------------|----------------------------|
| | <i>acres</i> | <i>ha</i> | <i>% of open space</i> | <i>% total development</i> |
| Passive | 149.69 | 60.62 | 86 | 57 |
| Active | 5.59 | 2.26 | 3 | 2 |
| Inaccessible | 18.10 | 7.33 | 10 | 7 |
| Total open space | 173.38 | 70.22 | 100 | |
| Total development | 264.15 | 106.98 | | 66 |
| Trails (m) | 3,257.91 | | | |

Visual quality was defined for the development using two measures: consistency of the street enhancement plantings, and distance to community open space. Only common spaces were rated in this analysis, not the visual quality of private parcels and their impact on the overall visual quality of the community.

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 integrated with the development clusters, the average distance to a greenspace was low at 115.89 meters (380.22 feet). The design of the development allowed for most homes to abut open space on at least one side.

Visual Quality

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

| | | |
|---|-----------------------|-------------------------|
| <i>Consistency of street enhancement plantings</i> | <i>high</i> | |
| <i>Average distance to open space</i> | <i>115.9 m</i> | <i>380.2 ft.</i> |
| Number of parcels | 114 | |
| Maximum distance to open space | 407.1 m | 1,335.7 ft. |