

Amended March 23, 2001

NINE SPRINGS NEIGHBORHOOD

COMPREHENSIVE DEVELOPMENT PLAN

**Sveum Enterprises, Ltd.
2927 S. Fish Hatchery Road
Fitchburg, WI 53711**



Prepared by:

**Schreiber/Anderson Associates, Inc.
Landscape Architecture, Land Planning, Civil Engineering
1435 East Main Street
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Introduction

Sveum Enterprises, Ltd. requests approval of a Comprehensive Development Plan (CDP) for its proposed Nine Springs Neighborhood project. This proposal has been developed over the past nine months in close cooperation with the City of Fitchburg staff and Plan Commission. Prior to this submittal, Sveum Enterprises, Ltd. met with the Plan Commission at two pre-application conferences on July 18, 2000 and October 17, 2000. Sveum Enterprises, Ltd. also met with the East Lacy Road Neighborhood Association on July 5, 2000 and December 7, 2000. Concept plans were presented and discussed at each of these meetings and input received at these meetings was incorporated into the proposed Comprehensive Development Plan.

Project Location

The Nine Springs development site is located at the northwest corner of the intersection of Syene Road and Lacy Road in the City of Fitchburg. The 236 acre site is bordered by Syene Road on the east, Lacy Road on the south, Fitchburg Center to the west and DNR lands to the west and north.

Existing Zoning

The entire subject property is currently zoned agriculture transitional. The entire property falls within the Central Urban Service area east of Fish Hatchery Road.

Surrounding Land Uses

Land uses around the subject property are varied. A DNR Fish and Wildlife Area abuts the property on the north and west. The historic McCoy Farm is located at the northeast corner of the property. Lands owned by Fitchburg Center, currently undeveloped, adjoin the west side of the project. A landscape nursery is located at the southwest corner of the property. McGaw Community Park, a single family subdivision and agricultural lands are located beyond Lacy Road on the south side of the property. The development will surround an existing single-family residence on the south side. A mix of agricultural, conservancy, residential and industrial lands are located across Syene Road, east of the property.

Neighborhood Context

Exhibit 1 shows the relationship of the subject site to the surrounding neighborhood, arterial street patterns, regional trails, and park and open space system. It is important to note that the subject site has a strong relationship to a large open space system that will provide for the recreational needs of the new residents in addition to the park areas provided for in the development plan. The Nine Springs Creek E-way adjoins the north and west boundaries of the site and the site is within the service radius of two community parks, McGaw Park to the south and McKee Farms Park to the west. The subject site will be connected to each of these parks through planned trails and open space corridors. The Capital City Trail passes to the north of the site in the Nine Springs Creek E-Way.

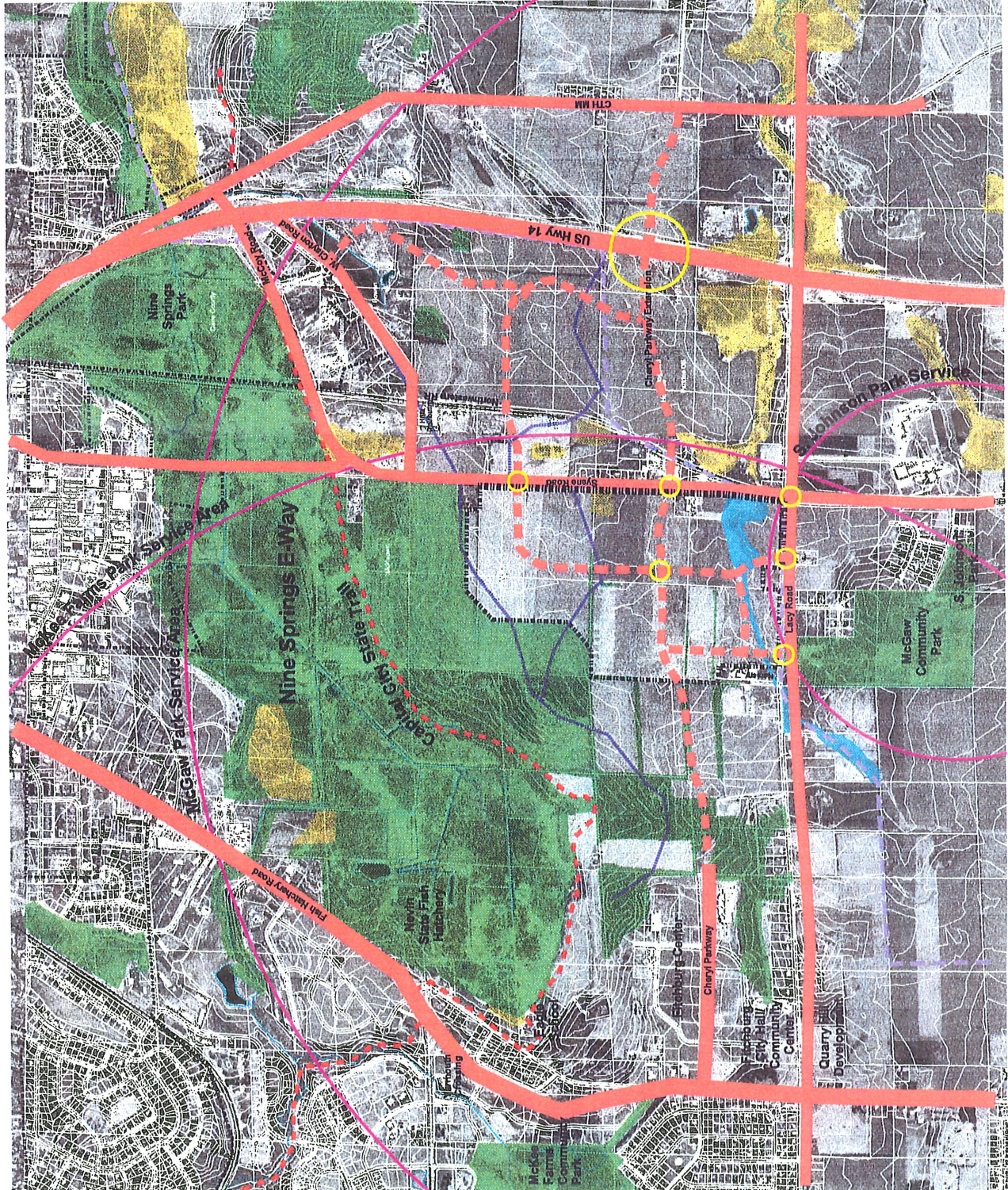
Nine Springs Neighborhood

Prepared for:
Sveum Enterprises
January 30, 2001

NEIGHBORHOOD CONTEXT

Legend

-  Bike Trail/Routes
-  Proposed Drainage Corridors
-  Urban Services Boundary
-  Municipal Boundary
-  Streams
-  Watershed
-  Parks and Open Space
-  Wetland
-  Future Interchange
-  Intersections
-  Proposed Transportation Corridors
-  Existing Transportation Corridors
-  Park Service Areas
-  Development Site Boundary



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EXHIBIT 1

Site Features

Exhibit 2 show aerial photo views of existing conditions on the subject property. The majority of the subject property is currently in agricultural use. Only one significant stand of mature trees exists around a small wetland adjacent to Syene Road. Topography is gently rolling glacial moraines to flat. A regional drainage swale divides the southern portion of the site carrying stormwater to a culvert near the corner of Lacy Road and Syene Road. Drainage on the north side of the site moves to an existing culvert under Syene Road. The northern boundary of the site is just south of a rise of land that divides the Nine Springs Creek watershed to the north from the Swan Creek watershed to the south. All drainage from the site is within the Swan Creek watershed. A 4-acre wetland exists near the center of the site near Syene Road.

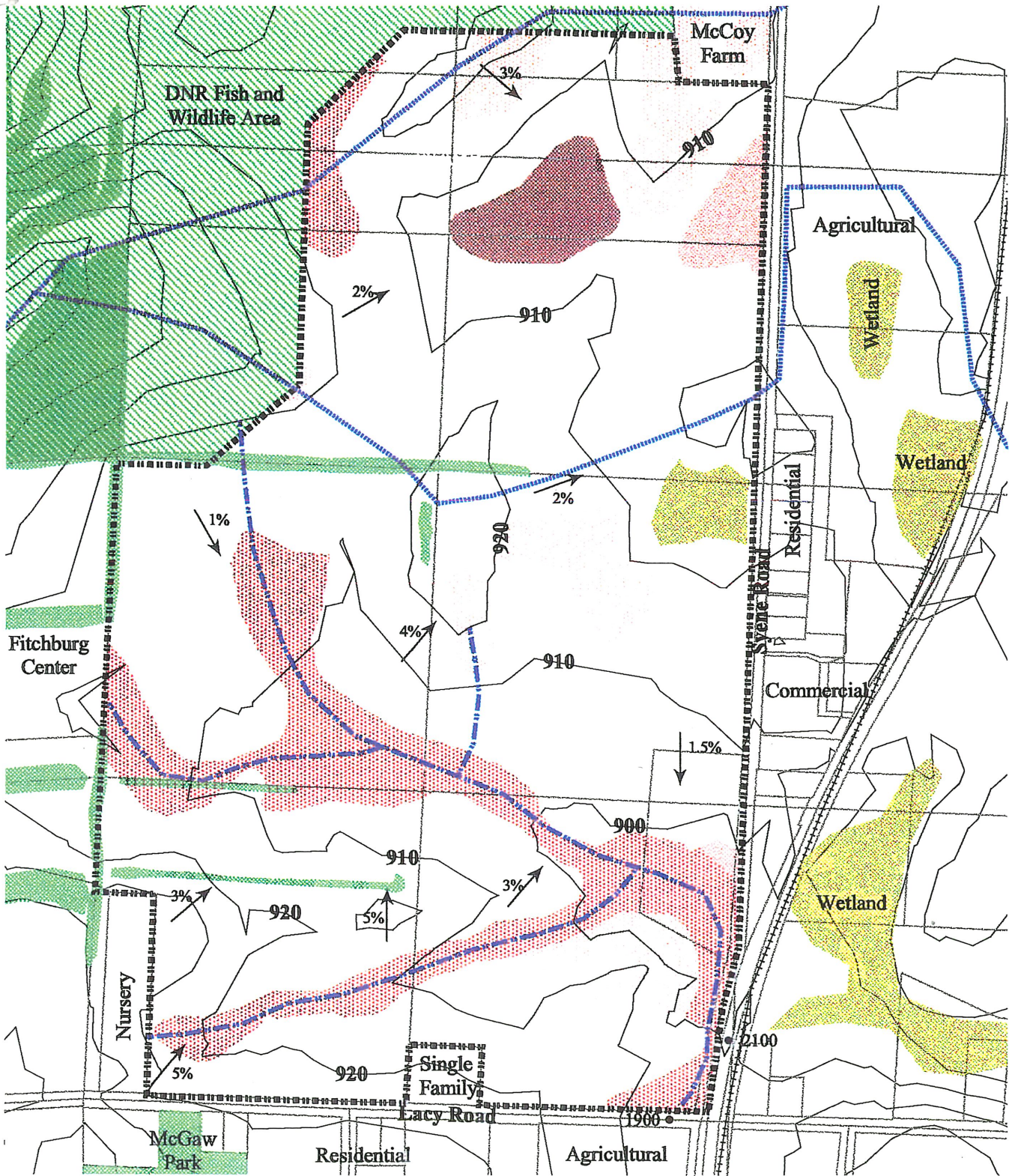
Consistency with the Nine Springs Neighborhood Plan

The Nine Springs Neighborhood Plan was adopted by the City of Fitchburg on December 8, 1998. The adopted plan calls for Cheryl Parkway to be extended from the undeveloped portion of the Fitchburg Center property through the subject site to State Highway 14. A N-S collector street through the subject site was proposed to connect with Syene Road on the north and Lacy Road on the south.

The adopted neighborhood plan calls for predominantly low and medium density residential use with an institutional land use for a potential school site on the proposed development site. The neighborhood plan also envisions new commercial development, a business park and high density residential development east of the development. A commuter rail transit stop was identified for the Chicago Northwestern railroad east of Syene Road.

A guiding principle of the Nine Springs Neighborhood Plan is to protect and preserve the unique environmental characteristics of the Nine Springs Creek E-Way and create a system of open spaces that will provide a continuous link between residential neighborhoods and the E-Way. The City of Fitchburg would also like to encourage the use of new planning concepts in the development of the neighborhood, including neo-traditional development, cluster housing, pedestrian pocket forms, and innovative stormwater and conservation design practices. Some of the desired features include:

- Walking and transit friendly design
- Smaller lots with the potential for reduced front and side yard setbacks
- Ample street frontage and public access to public lands
- Path systems linking the neighborhood and key features of the area.
- Channeling of water from impervious surfaces to infiltration areas
- Limited use of storm pipes
- Natural vegetation in swales and conveyance channels



Nine Springs Neighborhood Plan

Prepared for: Sveum Enterprises

Site Analysis

Legend

- ▬ Site Boundary
- ▬ Drainage Corridors
- ▬ Watershed Boundary
- ← Drainage Flow
- 1800 Traffic Counts (1996)
- ▬ Vegetation/Open Space
- ▬ Wetland
- ▬ Environmental Corridor

Soil Classifications

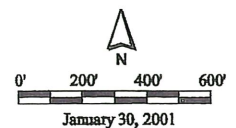
- ▬ Moderate
 - ▬ Moderate to Severe
 - ▬ Severe to Very Severe
 - ▬ Very Severe
- The following soils were classified for shallow excavations, dwellings with basements, roads, parks and open space.

Very Severe
Seasonal high water table, subject to flooding, subject to liquefaction and piping.

Severe to Very Severe
High water table, subject to flooding, low bearing capacity.

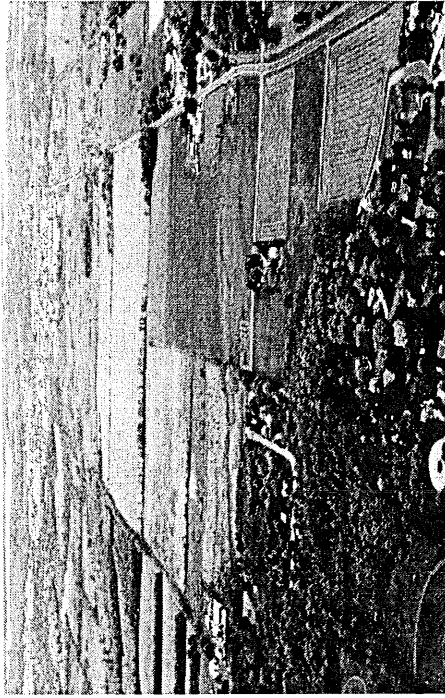
Moderate to Severe
Seasonal high water table, subsoil has low bearing capacity, high frost heave potential.

Moderate
Seasonal high water table, subsoil has low bearing capacity.



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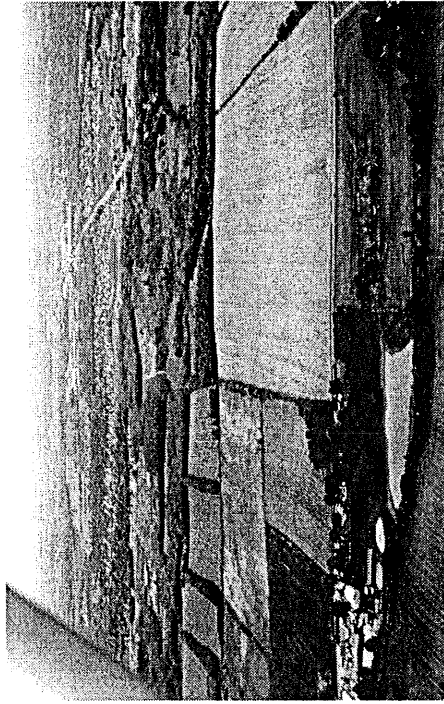
View of the Nine Springs Neighborhood looking north. McGaw Park in the foreground, Syene Rd. on the right.



View of the Southern half of the Nine Springs Neighborhood looking east. Lacy Rd on the right.



View of the Nine Springs Neighborhood looking east. Fitchburg Center in the foreground, Lacy Rd. on the right.



View of the northern half of the Nine Springs Neighborhood looking west. Syene Rd in the foreground. Nine Springs Creek E-way on right.

Comprehensive Development Plan

The Comprehensive Development Plan (CDP) for the Nine Springs Neighborhood project proposes the development of a residential community that is organized around a system of greenways, trails, streets and alleys. A wide variety of housing types and densities are anticipated, offering choices for residents at all stages of the life-cycle, from apartments to starter homes, to move-up family units and senior housing options. The CDP is described in general detail in **Exhibit 3**, and in greater detail in **Exhibit 4**, included as a 24" x 36" attachment with this document. ~~Exhibit 5~~ **Exhibit 4** provides development calculations for the proposed project. The following narrative and graphics describe the proposed project.

Proposed Zoning

The entire Nine Springs Neighborhood project is proposed as a Planned Development District (PDD). General standards and guidelines for the development are presented in the following CDP and will provide the basis for future General Implementation Plan (GIP) and Specific Implementation Plan (SIP) submissions.

Land Use Organization

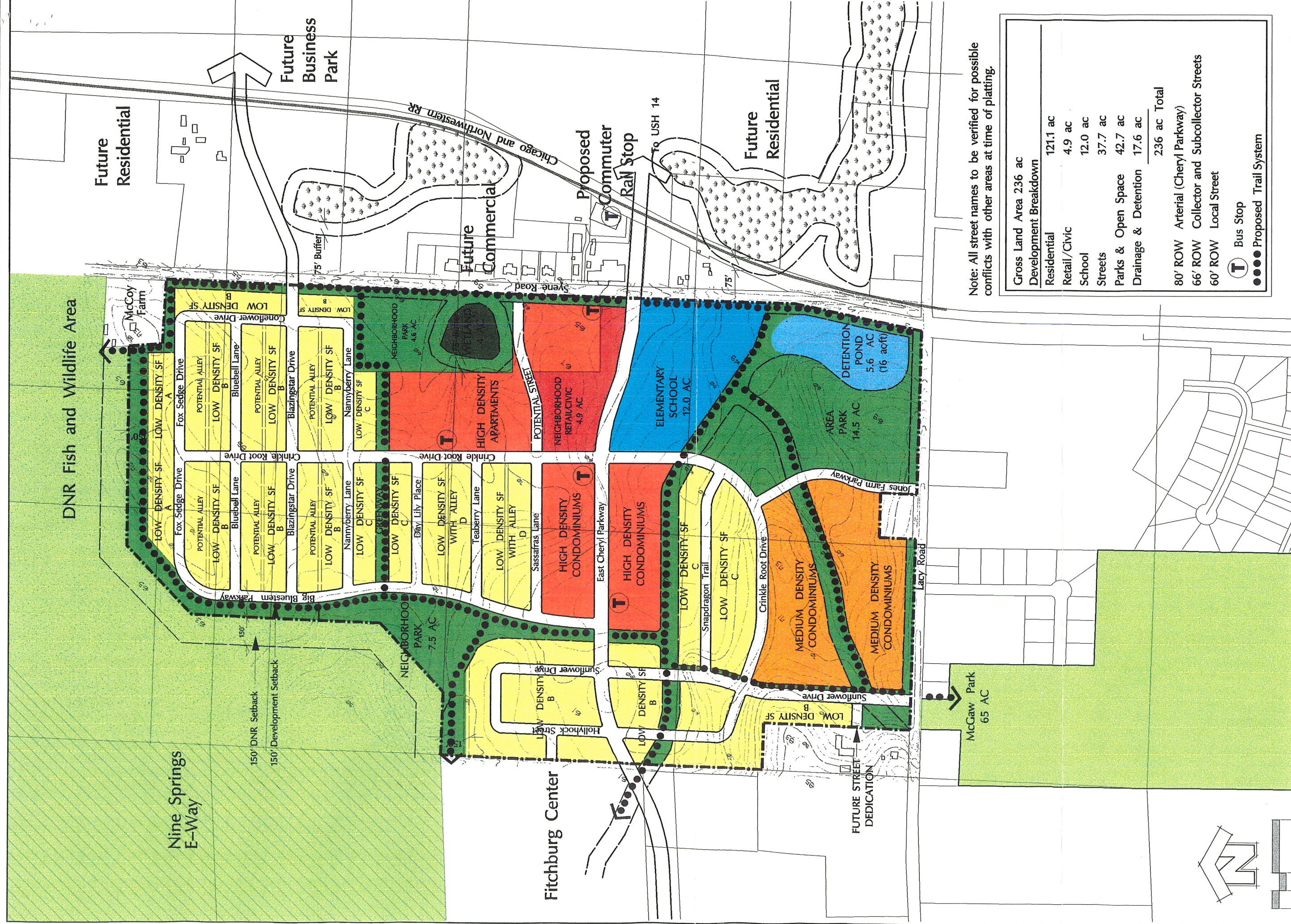
The CDP proposes a total private development area of 138 AC with 98 AC of dedicated public streets, parks, open space and drainage facilities.

The CDP combines aspects of conservation design and traditional neighborhood design. The plan preserves the natural topography and encourages natural stormwater drainage and infiltration. The layout of the public streets, greenways, trails, parks, and open space enhances the connection between all housing areas. The general east-west street layout maximizes solar orientation with southern exposure for most units.

The CDP provides a system of arterial, collector, local streets and alleys in a basic grid pattern that are easy to navigate and bicycle and pedestrian friendly. There are no cul-de-sacs in the plan. The street network promotes easy transit access, with each residence within a quarter-mile walking radius of a bus stop. Street widths have been reduced in size to minimize impervious surface while maintaining efficient traffic flow.

An elementary school is the central feature of the residential neighborhood. The patterns of streets and trails will provide easy access between the school and adjoining neighborhoods, community parks and the E-Way. A small neighborhood serving retail site, which may include civic uses such as a library or post office, will be located near the school and be designed as a town center and architectural focal point for the development.

The plan includes a mix of residential areas at varying density levels. Higher density areas are located near arterial streets (Cheryl, Lacy, and Syene) with the highest density housing adjoining the proposed commercial development east of Syene Road. The lowest density areas are related to the Nine Springs Creek E-Way and the Fitchburg Center property.



Note: All street names to be verified for possible conflicts with other areas at time of platting.

| | |
|--------------------------------------------|-----------------------|
| Gross Land Area 236 ac | |
| Development Breakdown | |
| Residential | 121.1 ac |
| Retail/Civic | 4.9 ac |
| School | 12.0 ac |
| Streets | 37.7 ac |
| Parks & Open Space | 42.7 ac |
| Drainage & Detention | 17.6 ac |
| | 236 ac Total |
| 80' ROW Arterial (Cheryl Parkway) | |
| 66' ROW Collector and Subcollector Streets | |
| 60' ROW Local Street | |
| T | Bus Stop |
| ●●●● | Proposed Trail System |

AMENDED MARCH 23, 2001
NINE SPRINGS NEIGHBORHOOD
COMPREHENSIVE DEVELOPMENT PLAN
EXHIBIT 3

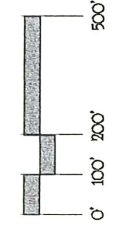
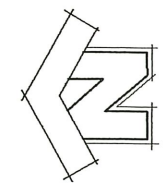
Nine Springs E-Way

150' DNR Setback
 150' Development Setback

Fitchburg Center

FUTURE STREET DEDICATION

McCaw Park
65 AC



SCHREIBER / ANDERSON ASSOCIATES



LANDSCAPE ARCHITECTS
 URBAN DESIGNERS / LAND PLANNERS
 CIVIL ENGINEERS

Exhibit 5 Exhibit 4

Development Calculations Nine Springs Neighborhood Comprehensive Development Plan

Total Site Acreage 236 acres

Residential 121.1 acres

| | | | | (Approximate ISR %) (final ISR% TBD at time of GIP) |
|-----------------------------|-------------|---------|-----------|--------------------------------------------------------|
| Low Density Single Family | (3-6 du/ac) | 77.0 ac | 310 units | 30% - 35% |
| Medium Density Condominiums | (9.4 du/ac) | 18.0 ac | 169 units | 50% - 55% |
| High Density Condominiums | (15 du/ac) | 13.0 ac | 195 units | 50% - 55% |
| High Density Apartments | (18 du/ac) | 13.1 ac | 236 units | 45% - 50% |

Total 121.1 ac 910 units

| | | |
|--------------------|-----------|-----|
| Total Ownership | 674 units | 74% |
| Total Rental | 236 units | 26% |
| Net Density/Acre | 7.5 du/ac | |
| Gross Density/Acre | 3.9 du/ac | |

Retail/Civic 4.9 acres 70% -75%

Elementary School 12 acres (shared use with adjoining area park) 30% - 35%

Total Development Acreage 138.0 acres (58% of total site)

Dedications

| | |
|------------------------------------------|-----------------------------------------------------------------------|
| Public Streets | 37.7 acres |
| 80' wide arterial row | |
| 66' wide collector and sub-collector row | |
| 60' wide local street row | |
| Park Dedications | 26.6 acres |
| Syene Road Neighborhood Park | 4.6 acres |
| West Neighborhood Park | 7.5 acres |
| Southeast Area Park | 14.5 acres (includes trail corridor but excludes drainage corridors.) |
| Trail Corridors and Buffer Strips | 16.1 acres (assume 25' trail corridor) |
| Wetland and Buffer | 4.0 acres (assume 75' buffer) |
| Drainage Corridors | 8.0 acres (assume 75' wide) |
| Detention Pond | 5.6 acres (assume 25' buffer) |

Total Dedication Acreage 98.0 acres (42% of total site)

Impervious surface ratio for entire development subtracting public streets is approximately 32% (Hatchery Hill comparison 53%).

Note: All acreages are approximated based on the conceptual status of the plan.

The CDP has been developed to implement the planning principles of the adopted Nine Springs Neighborhood Plan and the new “smart growth” legislation enacted by the State of Wisconsin. Smart growth principles include:

- Encourage neighborhood designs that support a range of transportation choices.
- Protect natural areas, including wetlands, wildlife habitats, lakes and woodlands, open spaces and groundwater resources.
- Encourage land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state government and utility costs.
- Provide an adequate supply of affordable housing for all income levels throughout each community.
- Balance individual property rights with community interests and goals.
- Provide an integrated, efficient, and economical transportation system that provides mobility, convenience and safety and that meets the needs of all citizens, including transit-dependent and disabled.
- Plan and develop land uses that create or preserve varied and unique urban and rural communities.
- Preserve cultural, historic and archaeological sites.

Low Density Single Family Residential

Low density single family housing makes up 310 of the total 910 dwelling units. Lot sizes, building types, building sizes and materials will vary throughout the development to promote affordability variety.

“A” Lots – 100’ x 150’

Minimum Square Footage*

| | |
|-----------|------------|
| Two Story | 2,600 s.f. |
| Ranch | 2,000 s.f. |

Vinyl/aluminum siding restricted to rear elevation. Minimum thickness of .044 for vinyl sidings.
Minimum thickness of .019 for aluminum siding.

“B” Lots– 80’-85’ x 130’

Minimum Square Footage*

| | |
|-------------|------------|
| Two Story | 2,000 s.f. |
| Ranch | 1,500 s.f. |
| Split-Level | 1,350 s.f. |

Vinyl/aluminum siding restricted to rear, sides, and 80% of front elevation. Minimum thickness of 0.042 for vinyl siding. Minimum thickness of 0.019 for aluminum siding.

“C” Lots – 75’-80’ x 125’

Minimum Square Footage*

| | |
|-------------|------------|
| Two Story | 1,400 s.f. |
| Ranch | 1,200 s.f. |
| Split-Level | 1,200 s.f. |

Brick/Stucco accents required on front elevation. Minimum thickness of 0.040 for vinyl siding. Minimum thickness of 0.019 for aluminum siding.

“D” Lots – 50’-60’ x 125’ (with a 28’ r.o.w. for a 16’ private rear alley)

Minimum Square Footage*

| | |
|-------------|------------|
| Two Story | 1,100 s.f. |
| Ranch | 900 s.f. |
| Split-Level | 1,100 s.f. |

Limited brick/stucco accents suggested

**Minimum square footage excludes lower levels whether finished or unfinished, screen porches, garages, etc.*

Type A, B and C lots will be conventional single family lots with garages facing the street. Garages should be set back from the house to mitigate the visual impact of the garage on the street. Type D lots will allow for narrower street frontages by providing private rear alleys. Alleys will be considered for the B lots on the north side of the development based on market acceptance.

General Design Standards

An architectural review committee will be established to review all building and site designs. Design covenants will be established based on the following guidelines:

- Residences should have a minimum be setback of 15’ 20’ from the public street r.o.w. and a maximum 20’ setback. Garages should be set back with garage setbacks an additional 5’ from each residence.
- A minimum rear yard setback of 30’ should be provided for all lots except for lots served by rear alleys.
- A minimum total sideyard setback of 13’ should be provided.
- The residential entrance should be designed as the principal feature of the public street façade, not the garage.
- Pitched roofs shall be provided with a minimum slope of 1:4.

- High quality wood, vinyl or aluminum siding with appropriate colors should be used.
- Attractive landscaping should be provided.
- Rear yards facing public greenways should include attractive screen fences and/or landscaping.

In addition to these guidelines, the following design features will be encouraged:

- Front porches
- Shared driveways with garages entered from the side.
- Rain gardens to promote stormwater infiltration.
- “Green” building and site design (potential buyer discounts)

Medium to High Density Residential

High Density Condominiums

A high density condominium area is proposed for the interior of the development adjoining each side of Cheryl Parkway. This development will provide for approximately 195 ownership housing units on 13 acres with a density of 15 DU/AC. ~~A conceptual development plan (Exhibit 4) illustrates~~ A possible layout for this area. ~~This concept could include~~ include a combination of attached rowhouse buildings and larger multi-unit buildings. Each rowhouse would have private garages under the buildings with a walk-up 2-2 ½ story living space. Each multi-unit building would be 2 stories with enclosed parking under the building. Access to garages and visitor parking would be provided through private streets. The buildings would be arranged to face the public streets with a 30' ~~20'~~ setback and surround common open space at the interior of the parcel. Walkways would be provided to connect each building and common open space with the public street.

This development would provide for a minimum of two parking stalls per unit with at least one enclosed parking space per unit. ~~The development would also provide for a minimum open space area of 40% and a maximum impervious surface area of 60% (buildings, drives, parking and walks) and an impervious surface ratio (ISR) of approximately 50% - 55% (buildings, drives, parking and walks). Final ISR will be set at the time of GIP approval.~~

Medium Density Condominiums

A medium density condominium area is proposed for the south side of the development adjoining Lacy Road. This area is suggested for elderly housing featuring the Life Estate concept. In general, this type of living arrangement is similar to a condominium with a maintenance-free (interior and exterior) lifestyle and providing liquidity for seniors should they pass away or, perhaps, want to relocate to an assisted living arrangement.

The land is owned and developed by a non-profit agency (in conjunction with a for-profit company) and the senior purchases "use" of the condominium home. Upon departure, the senior

is guaranteed 90% of the original sale price, thereby relieving worries of liquidity and being prevented from moving forward with relocation.

Since Life Estate housing developments cannot exceed 10 acres in size, the proposed development would be divided into two parcels, an 8.2 acre parcel north of the drainage corridor and a 9.8 acre parcel south of the drainage corridor. This development will ~~may~~ provide for approximately 169 units (77 units on the north and 92 units on the south) with a density of 9.5 DU/AC. The development will include a combination of single family ranch style attached dwellings with garages in clusters of 3-5 units and two-story multi-unit buildings with garden-style condominium units and enclosed parking. The garden-style units are proposed for ownership but, depending on market demand, may be considered as rental apartments. A ~~conceptual development plan (Exhibit 4) illustrates a possible layout for this area.~~ Private streets will provide access to owner and visitor parking. Buildings and common space would be arranged around the drainage corridor and greenway. Walkways would be provided to connect all units with the common open space. A clubhouse/community center may be provided in combination with the multi-unit buildings. The public trail adjoining the drainage corridor would provide direct access for all units to the area park east of the development.

The development would provide for a minimum of two parking stalls per unit with at least one enclosed parking space per unit. ~~The development would also provide for a minimum open space area of 40%, not including the drainage and trail corridor, and a maximum impervious surface ratio of 60% (buildings, drives, parking and walks) and an impervious surface ratio (ISR) of approximately 50% - 55% (buildings, drives, parking and walks). Final ISR will be set at time of GIP approval.~~

High Density Apartments

A high density apartment area is proposed for the east side of the development adjoining Cheryl Parkway, Syene Road and the N-S collector street. This development will provide for approximately 236 apartments on 13.1 acres with a density of 18 DU/AC. ~~A conceptual development plan (Exhibit 4) illustrates a possible layout for this area. This layout provides for could include a combination of 16 to 20 unit, 2-story 2-3 story buildings with enclosed parking organized around a central private street and open space system. A reduction in density at the north end of the apartment area will be considered to allow a transition to the single family area.~~ The buildings would be arranged to face the public streets with a 30' 20' setback and private streets. Walkways would be provided to connect each building with the public street, common open space, retail/civic area, adjoining neighborhood park and trail system along Syene Road. ~~A possible public street extension of Sassafras Lane to Syene Road will be examined during the GIP phase.~~

This development would provide for a minimum of two parking stalls per unit with at least one enclosed parking space per unit. ~~The development would also provide for a minimum open space area of 40% and a maximum impervious surfaces area of 60% ((buildings, drives, parking and walks) and an impervious surface ratio (ISR) of approximately 45% - 50% (buildings, drives, parking and walks). Final ISR will be set at time of GIP approval.~~

General Design Standards

The conceptual layouts for medium and high density residential areas demonstrate how the Nine Springs Neighborhood project can incorporate an attractive mix of higher density ownership and rental housing that complements the lower density housing areas and the larger Nine Springs Neighborhood. The following general design standards will provide direction for future GIP and SIP submissions to ensure an attractive and coordinated development:

- Provide high quality architectural designs with materials, details and colors that complement the character of adjoining buildings and the surrounding neighborhood.
- Provide building patterns that strengthen the continuity of the public street.
- Provide architectural form and character that breaks up the building mass.
- Provide landscaped open spaces around buildings to provide opportunities for social interaction and resident use.
- Provide building setbacks, landscaping and amenities to enhance the pedestrian scale and character of the street.
- Provide building entrances related to the public street.
- Use topography and landscaping to screen parking lots.
- Provide walkways that connect building entrances and open spaces with the public street.
- Encourage site designs that promote stormwater infiltration, such as rain gardens, porous pavements, etc.
- Encourage the use of porches, balconies and patios.
- Provide bicycle parking for residents and visitors.
- Provide pedestrian scale ornamental lighting for walkways and use areas. The style of lighting should complement the building architecture and street character.
- Provide private streets with attractive lighting and street trees.
- All lighting should be cut-off type fixtures to control glare and light spill.

Elementary School

The elementary school, which is located in the Oregon School District, has been located near Syene Road and Cheryl Parkway. This 12 acre site is beyond the 1700' setback from the DNR hunting area. This site will provide an attractive entrance into the development from Syene Road and create a focal point for the development at the intersection of Cheryl Parkway and the N-S collector street. The site adjoins the proposed area park to provide opportunities for shared recreation facilities. The site is well connected by the proposed street and trail system to

residential and park areas inside and outside the development boundaries. ~~A conceptual development plan (Exhibit 4) illustrates a possible layout for the school site. Sveum Enterprises, Ltd. has provided the Oregon School District with information to assist them in making a decision whether or not to locate a school on this site. If the site is not purchased by the school district within a two-year period, high density apartments at 15-20 DU/AC are recommended as the proposed use.~~

Retail/Civic

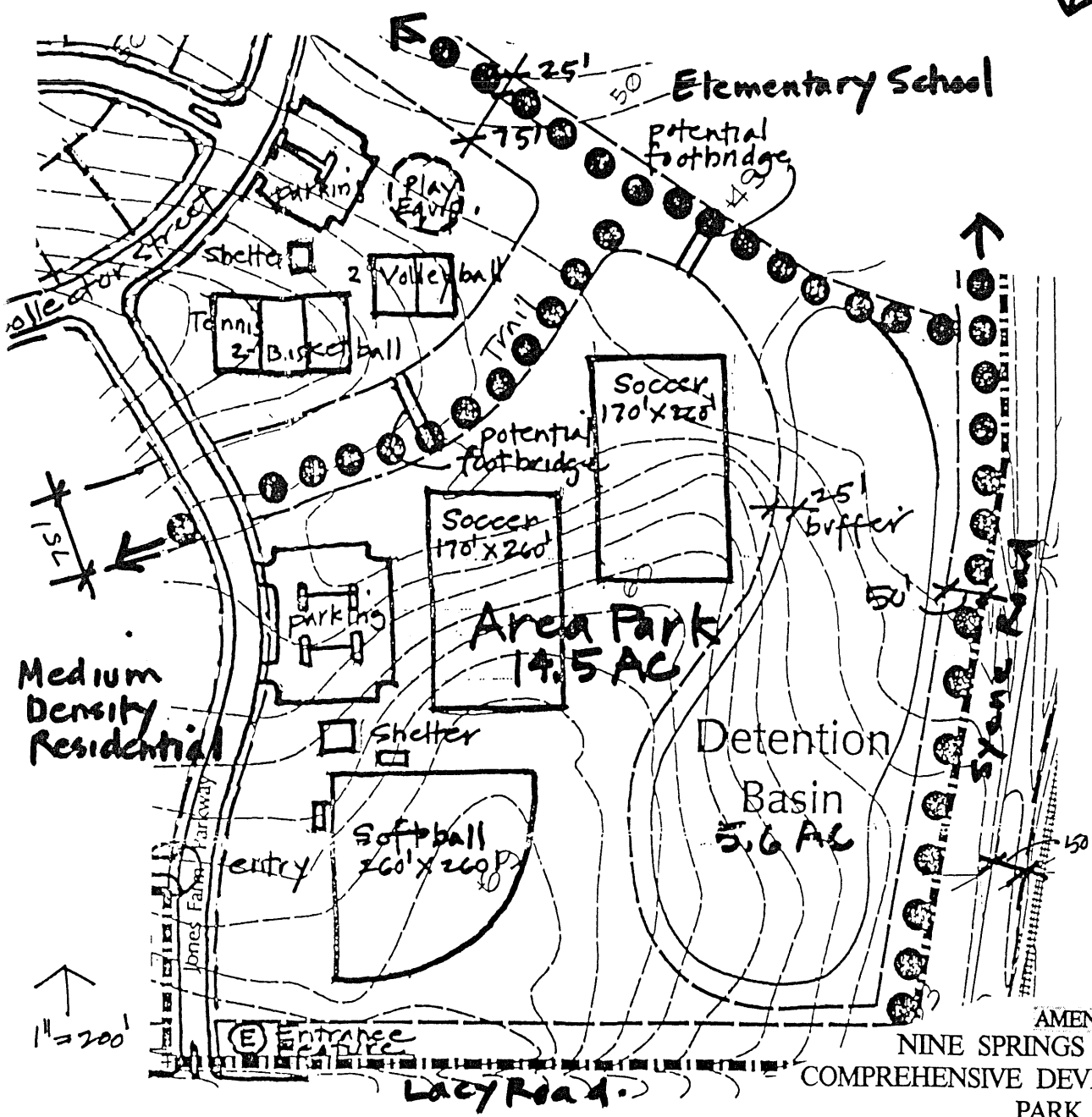
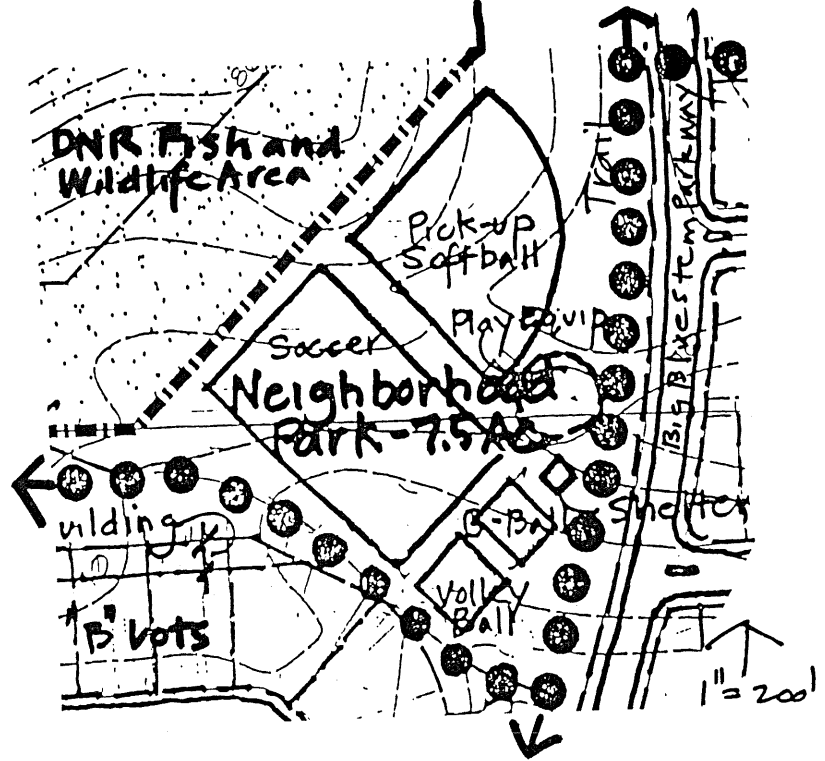
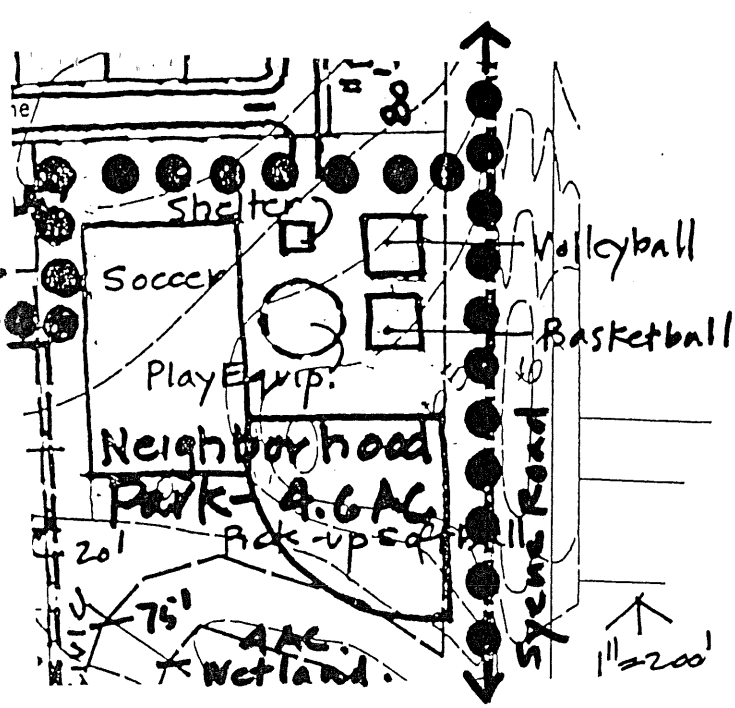
~~A 4.9 acre retail/civic development is recommended for the northeast corner of the East Cheryl Parkway frontage between the and N-S collector street intersection and Syene Road. A conceptual development plan (Exhibit 4) illustrates a possible layout for this area. Two story buildings are proposed to include office or neighborhood-serving retail uses on the ground floor with residential or office uses on the second floor. The potential for civic uses such as a library, post office or community space will be explored to be integrated with retail uses. A gas station/convenience store may be considered as a possible retail use for the Syene Road intersection. The retail/civic development will be designed as a town center and architectural focal point for the Nine Springs Neighborhood. The following general design standards for the retail/civic area will provide direction for future GIP and SIP plan submissions:~~

- High quality architecture with materials, colors and detailing that complements the adjoining neighborhood and promotes a pedestrian character.
- Attractive landscaped areas and open spaces for resident and customer use such as outdoor dining.
- Wide walkways with landscaping and lighting that complement the architectural design.
- Parking lots screened from the public streets.
- Site design that promotes stormwater infiltration.
- Bicycle parking.
- Walkway connections to the neighborhood park and school site.

Parks, Open Space and Greenways

Approximately 60 acres of the 236 acre development will be dedicated as permanent open space. This total includes 26.6 acres of parks; 16.1 acres of trail corridors, wetlands and buffer strips; and 17.6 acres of stormwater drainage corridors and detention basins.

An area park of 14.5 acres has been located at the southeast corner of the site next to the proposed elementary school. An area park in this location will provide easy access and create an attractive view to the development from Lacy Road and Syene Road. The detention pond, drainage corridors and trails in this area will enhance the character and layout for the park. A concept sketch of the area park ~~(Exhibit 4)~~ (Exhibit 5) shows how the city's desired park facilities can be organized on the site. The proximity to the elementary school provides an opportunity for shared facilities between the park and the elementary school



Two neighborhood parks are also proposed. A 7.5 acre neighborhood park is located on the west, adjoining the Nine Springs Creek E-Way. A 4.6 acre neighborhood park is located on the east side of the development adjoining an existing 4 acre wetland. Concept sketches for the proposed neighborhood parks (~~Exhibit 4~~) (~~Exhibit 5~~) shows how the city's desired park facilities can be organized on each site.

All parks will be interconnected by a system of off-street pedestrian and bicycle paths located adjacent to drainage corridors, buffer strips and some streets. 50' wide buffer strips will be provided along Lacy Road and Syene Roads and the historic McCoy Farm property. A 75' buffer strip will be provided around the existing 4 acre wetland. Sveum Enterprises, Ltd. has also reached an agreement to split a 300' setback between residential areas and DNR hunting areas. This agreement will result in a 90' to 120' buffer strip on the north and west sides of the property.

In addition to the park and open space areas, stormwater drainage channels and detention basins will also contribute to the open space and aesthetic character of the development.

As mentioned previously, the Nine Springs development site adjoins McGaw Community Park and the Nine Springs Creek E-way, which will provide additional open space and active and passive recreational opportunities for new residents. The entire development falls within the McGaw Park service area and the development plan provides for direct connections through streets, greenways and trails to McGaw Park and the E-Way.

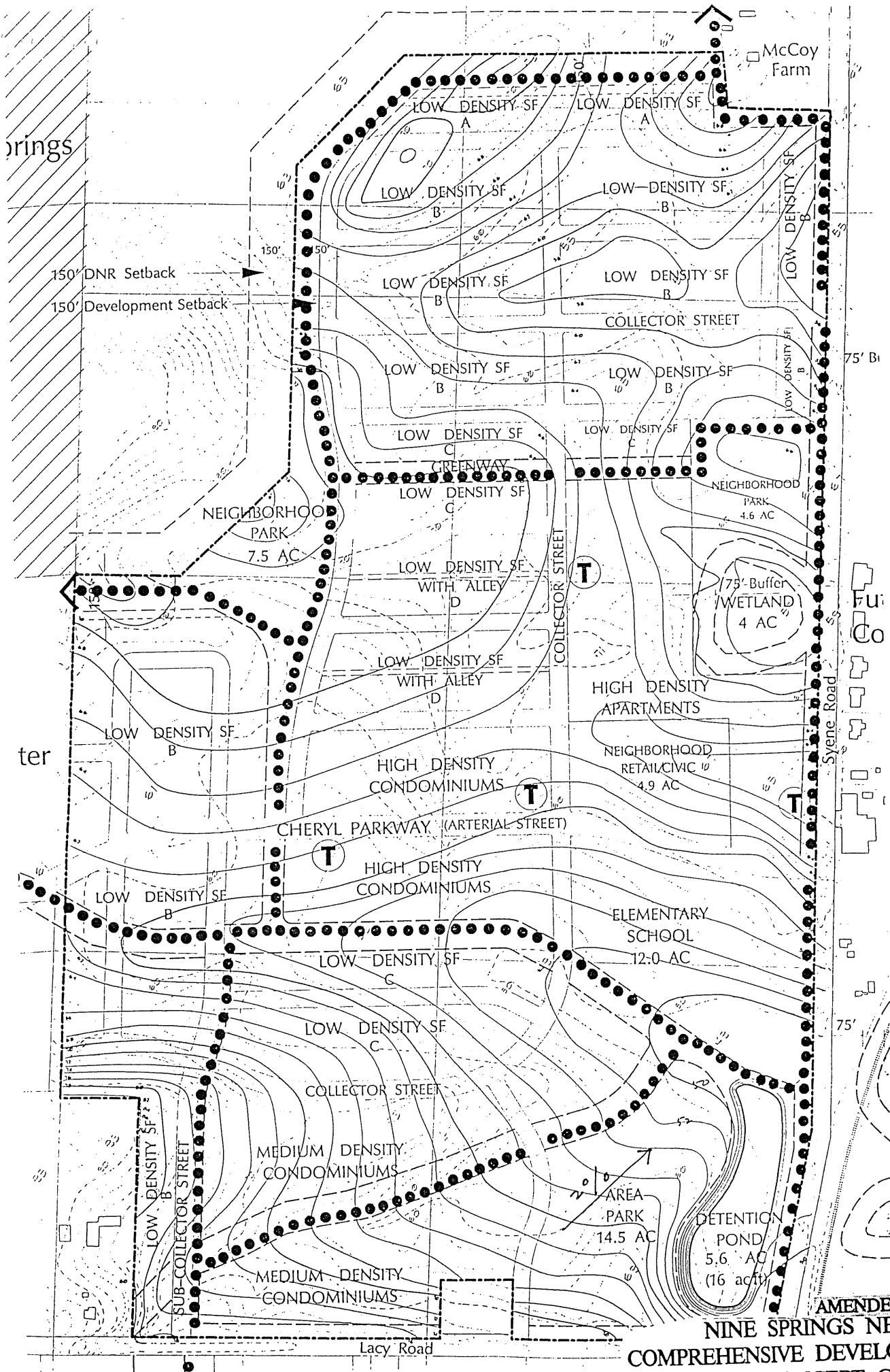
Site Grading and Stormwater Management

One of the challenges on this site is to provide adequate site drainage in order to maximize the use of overland and greenway drainage as opposed to storm sewer. This allows us to grade out some of the steeper slopes to fill in the lower flat areas. The concept grading plan (~~Exhibit 6~~) shows how we propose to grade the site to maintain a minimum slope of 2% for positive drainage.

The stormwater management system for the site will be designed to integrate the built environment with the natural environment and promote conservation design practices.

Stormwater from the development site addresses the need to improve water quality, minimize water quantity, and improve aesthetic character. Detention is provided to address increased stormwater as a result of the development. Because the detention basins are designed as "wet" basins, they will also improve water quality. Overland flow and swales will be provided throughout the development to allow additional infiltration and sediment reduction. In addition, these greenways will have native natural plantings with deep root systems to further enhance infiltration. Traditional storm water piping is provided in areas that cannot be served by overland flow. Several measures will be incorporated in the development to reduce storm water runoff and promote infiltration at the source. These include "deep tilling" of lots following construction of the infrastructure and the possible use of "rain gardens" on individual lots to promote infiltration from downspouts and rooftops.

The proposed development involves three distinct and separate drainage basins. The major drainage basin is the southern area (sub watershed "E" in the Vierbicher study) consisting of 270



AMENDED MARCH 23, 2001
NINE SPRINGS NEIGHBORHOOD
COMPREHENSIVE DEVELOPMENT PLAN
CONCEPT GRADING PLAN
EXHIBIT 6

acres. A good portion of this drainage area is outside our development area. In the Vierbicher study, the potential detention storage for this area was estimated at 17 ac/ft for the 100-year storm event. Our analysis, based on the proposed development, estimates 16.6 ac/ft of storage for the 100-year storm event. The Appendix contains our analysis computations for comparison (Table 2). A typical cross section of the detention basin design is shown in Exhibit 6 Exhibit 7. The area of the detention basin is approximately 5.5 acres with a 25 foot buffer strip around the perimeter. The basin will have a minimum depth of 4 feet and a maximum depth of 8 feet. The outer edge of the pond will have a shallow "safety shelf" to minimize hazards. The water level will be controlled by an outlet structure at Syene Road. The basin is adjacent to the park and will be landscaped with natural grasses and plantings.

The detention basin has several side slope designs. The area under permanent water is at a 3 to 1 slope. A safety ledge and planted buffer around the permanent pool is provided and the slope for the pond storage area is at a 4 to 1 slope.

The pond outlet structure for the smaller storm events can be placed at the lower end of the basin. The 100 year weir overflow structure will be placed at the current culvert outlet. This would allow reduced sediment velocities for the storm events up to 100 years.

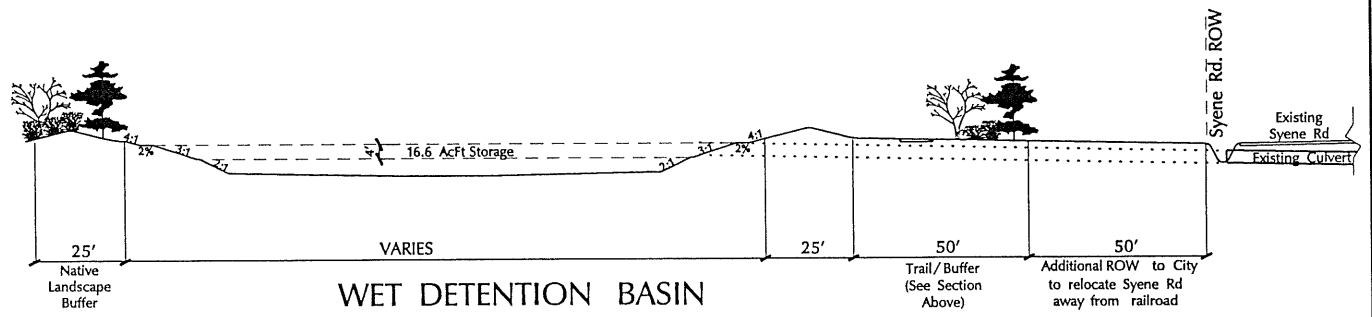
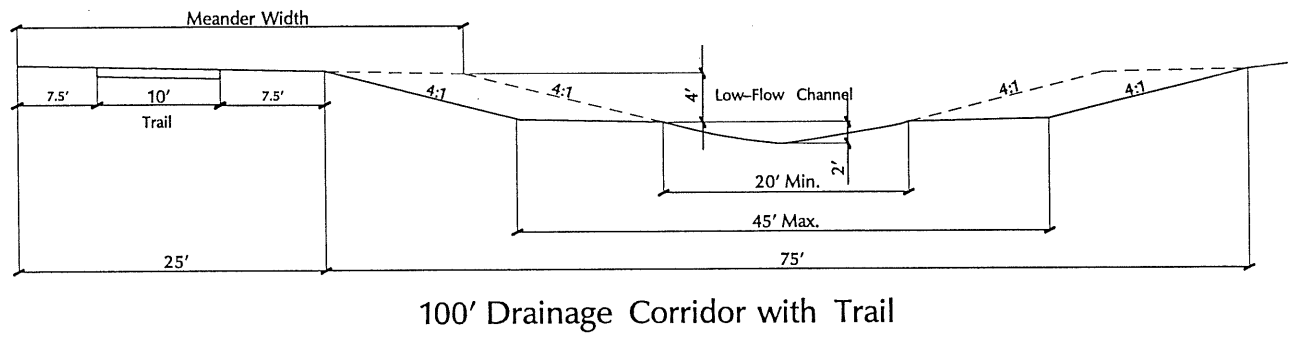
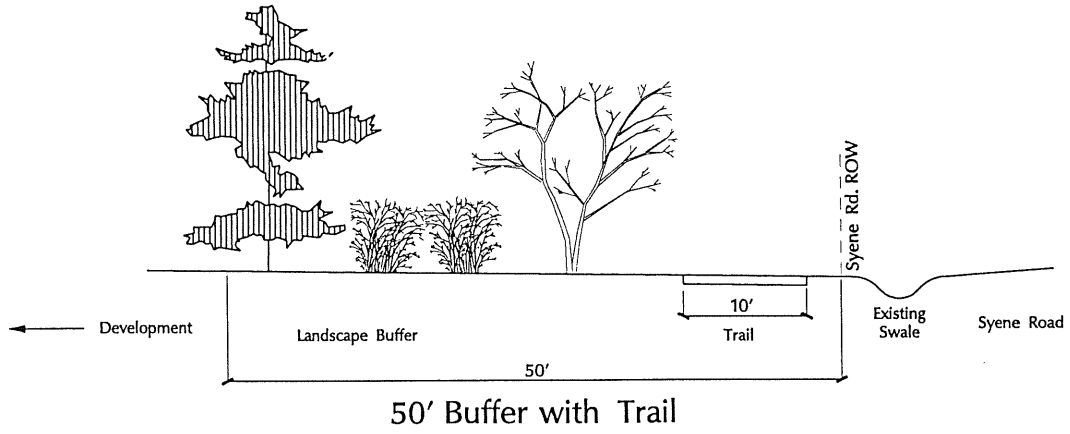
A second drainage basin contains 76 acres and is located in the northern part of the development and referred to as sub watershed "F" in the Vierbicher study. Based on our analysis for that area, the storage requirements for the 100-year storm event is 4.8 ac/ft. The stormwater from this area will be collected in a storm sewer before it is carried over to the east side of Syene Road. In the future, a regional detention basin will be constructed on this east side of Syene Road to detain the stormwater prior to its discharge into the wetland area to the south.

The third drainage area is actually a sub-basin of the major basin sub-watershed "E" in the Vierbicher Study. It consists of approximately 15 acres including an existing wetland area of 4 acres, which has yet to be delineated. We are recommending that this small closed basin be allowed to flow overland into the wetland area to retain its integrity. The wetland will have a 75 foot buffer strip around the perimeter. The buffer strip and wetland edge will be planted with native grasses and plantings. Both the wetland and buffer strip will encourage infiltration and water quality. An overflow structure will regulate the water level of the wetland and provide an overflow from the wetland area to the east side of Syene Road.

There are two major drainage corridors traversing the site. These corridors are 100 feet wide and will function both as a conduit for overland stormwater flow as well as a bikeway corridor. Approximately 75 feet of corridor is for a drainage swale and 25 feet is for a bicycle/ pedestrian path. A cross section of a typical drainage corridor is shown in Exhibit 6 Exhibit 7. The two drainage corridors converge to link with the large on-site detention basin. These corridors not only transport on-site stormwater, but also connect to large off-site drainage areas to the west.

The drainage channels shown are based on information in the Vierbicher study and Dane County GIS topography data.

In addition to these drainage corridors, there are several additional greenways and buffer areas around all sides of the site. These greenway and buffer areas will contain natural plantings and provide additional infiltration opportunities.



Plant selection, design, installation and recommended management practices for native landscape applications in drainage corridors and greenway buffer areas is included in Appendix 1.

Transportation

The proposed development provides for multi-modal transportation. The street system has been designed in a grid pattern to evenly distribute traffic volumes and provide transit service. A series of interconnected greenways with off-street pathways provide for pedestrian and bicycle usage.

Automobile

The primary means of transportation will be by private automobile. The development will generate approximately 8,000 8,715 vehicles per day. Projected traffic volumes and distribution assumptions are shown in Exhibit 8. The current (1999) average daily traffic counts on the existing major street system in the area are shown in Exhibit 9. In addition, the directional split of traffic generated by the development is also shown in Exhibit 9. Because of the grid system, traffic will be distributed more evenly over the street network. The primary transportation corridors are Syene Road, Lacy Road and Cheryl Parkway. A secondary system of collector streets connect the primary corridors with the local streets. The developer will pay his proportionate share of a regional traffic analysis, that may be prepared by the City to address traffic improvements for Syene Road at Lacy Road.

Proposed street cross-sections are shown in Exhibit 7 Exhibit 10. The CDP proposes variances to Fitchburg's standard street sections to reduce the area of impervious surface and promote a traditional neighborhood design. The proposed street system consists of four typical cross sections. Cheryl Parkway will be a two-lane, 40-foot arterial boulevard with on-street parking in an 80-foot right of way. The curvilinear nature of the street, on-street parking and boulevard section will provide traffic-calming measures. The collector will be 36 feet wide and provide on street parking and two travel lanes within a 66-foot right of way. The local streets, which are the majority of the neighborhood streets, will be 30 feet wide with two travel lanes and parking on one both sides within a 60-foot right of way. There is also a parkway section that will run along the west edge of the development adjacent to the WDNR lands that will be 32 feet wide with two travel lanes and parking on each side within a 60-foot right of way.

Sight distance measurements were evaluated for the two entryways into the development on Syene Road and the two entryways on Lacy Road. Based on existing speed limits, the stopping sight distance minimums are met at the locations of each of the four entryways (see Table 1 in Appendix 3). Entrance features and signage will be provided at all entryways into the development.

Public streets will include a minimum 8' terrace for street trees and lighting. We recommend that the city provide pedestrian scale ornamental lighting for all local residential streets to enhance the character of each neighborhood area. Street names have been suggested to identify prairie plantings that will be used in drainage corridors, buffer areas and public open spaces throughout the site. Native perennial plantings will be provided at the entrance to each neighborhood street.

Exhibit 8

Nine Springs Development Traffic Volume and Distribution

8,715 Total trip ends per day with full development

2,976 trips low density residential
1,014 trips medium density residential
2,825 trips high density residential
1,000 trips retail
380 trips office
500 trips school

Assume 50% inbound and 50% outbound
Assume 60% trips westbound
30% trips eastbound
10% trips southbound

70% retail trips are internal (700 trips)
50% school trips are internal (250 trips)

Westbound trips

75% on Cheryl Parkway

1,748 trips each direction

25% on Lacy Road

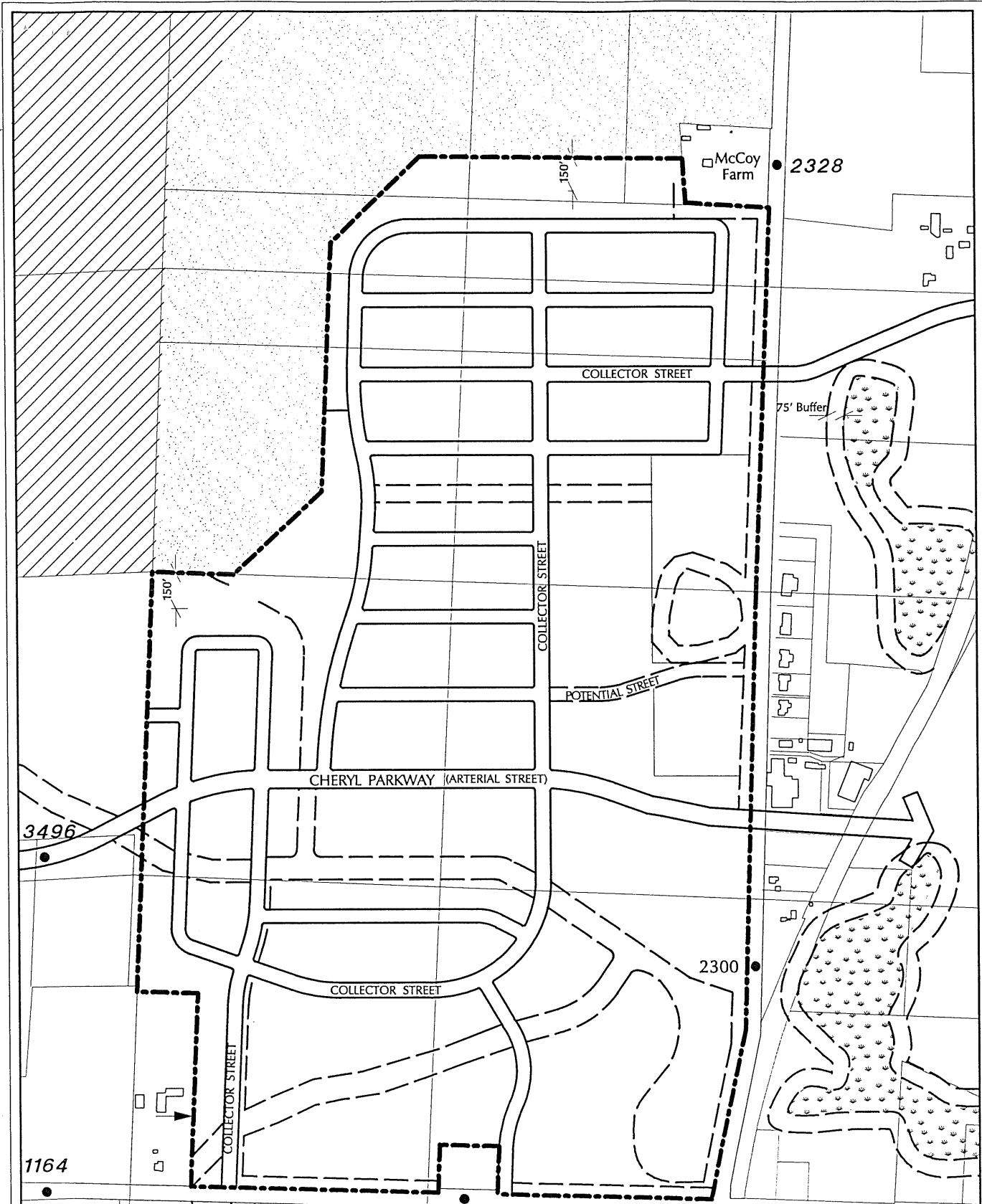
582 trips each direction

Eastbound Trips

1,164 trips each direction on Syene Road north

Southbound trips

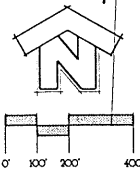
388 trips each direction on Syene Road south



LEGEND

- 776 ● PROJECTED ADT FROM DEVELOPMENT to 1999 ADT
- 1300 ● 1999 ADT

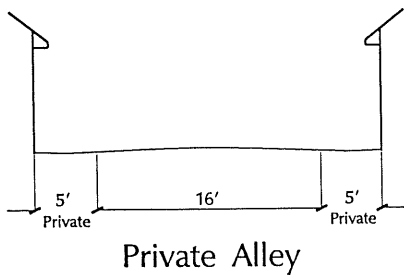
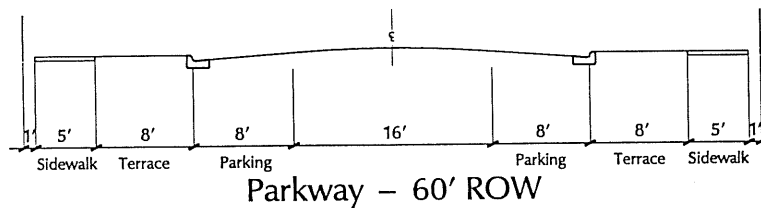
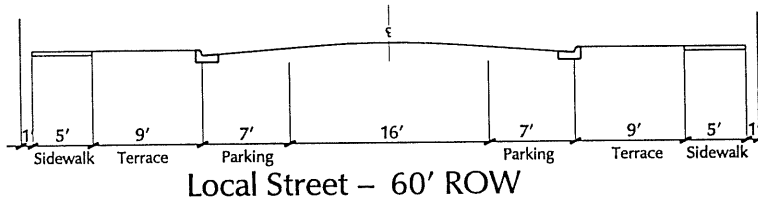
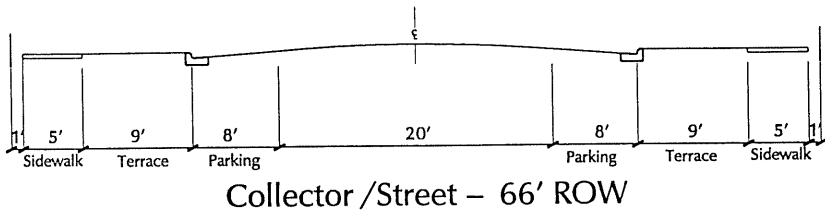
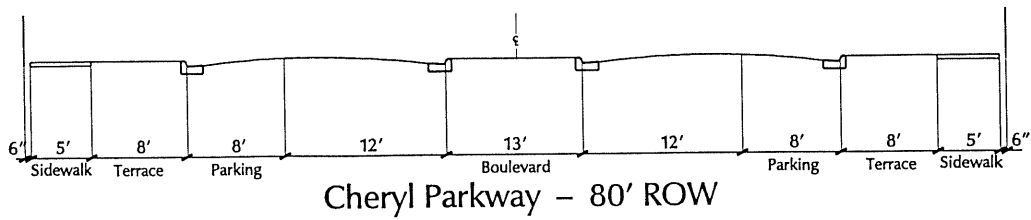
- 776 ●
- 1300 ●



SCHREIBER / ANDERSON ASSOCIATES

LANDSCAPE ARCHITECTS
URBAN DESIGNERS / LAND PLANNERS
CIVIL ENGINEERS

MARCH 23, 2001
**NINE SPRINGS NEIGHBORHOOD
 COMPREHENSIVE DEVELOPMENT PLAN
 PROJECTED TRAFFIC VOLUME AND DISTRIBUTION
 EXHIBIT 9**



Street design features such as landscaped islands, medians, traffic circles, bulbed intersections and special paving for pedestrian crosswalks, etc. will provide traffic calming and speed reduction measures and enhance the pedestrian and bicycle friendly character of the development. Typical street intersections are illustrated in **Exhibit 8** **Exhibit 11**.

Pedestrian and Bicycle

An interconnecting system of off-street paths in greenway corridors and along Syene Road and the collector street will promote pedestrian-bicycle access throughout the development. This path system will also provide connections to the Capital City Trail system to the north, the Fitchburg Center bike trail system to the west, and McGaw Community Park on the south. All streets in the development will have sidewalks on both sides of the street to promote pedestrian circulation to all parts of the development.

Transit

Exhibit 4 **Exhibit 3** shows the location of potential transit turn out bays on Cheryl Parkway and the N-S collector street. These transit stops may include a shelter or bench and signage. Additional transit stops without turn-out bays may also be provided to ensure that each dwelling unit is within a quarter mile walking radius of a bus stop.

Utilities

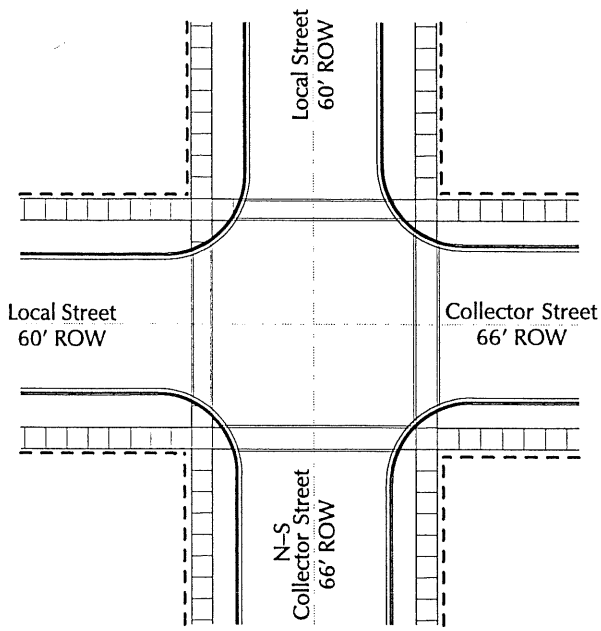
The proposed layout of sanitary and water service is shown in **Exhibit 9** **Exhibit 12**.

The sanitary sewer system serving the development will connect to a manhole on the west side of the Syene Road near the detention basin that will be installed as a part of the city of Fitchburg's Syene interceptor project scheduled for completion in the spring of 2001. As a part of this project, the 12-inch interceptor will be extended southwest along a 100-foot greenway to Lacy Road. A 10-inch sewer will be extended north to Cheryl Parkway. From Cheryl Parkway, the development will be served by an 8-inch sanitary sewer that follows the street right of way.

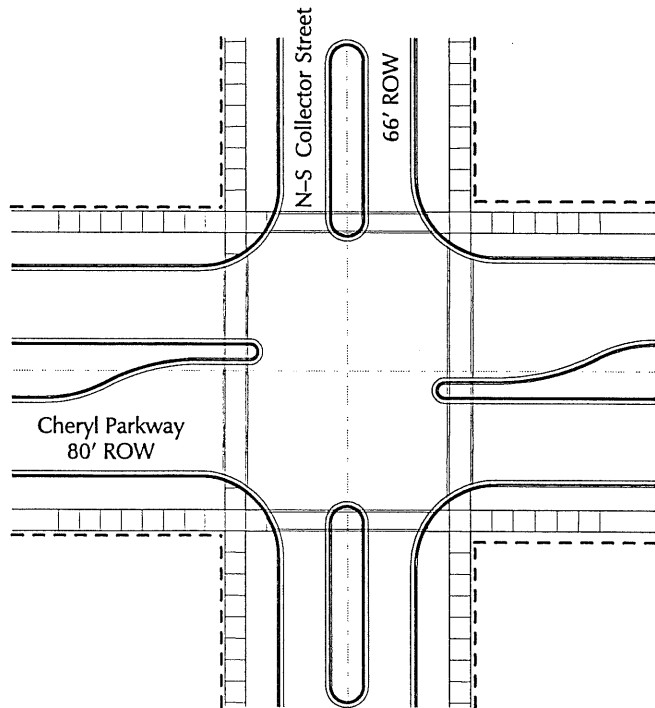
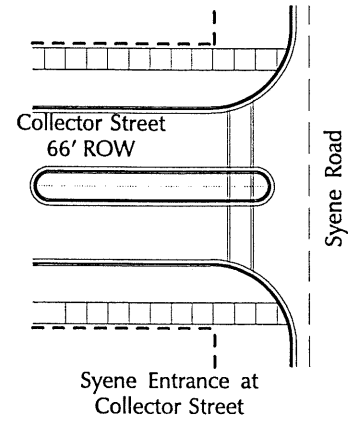
There is a small area adjacent Fitchburg Center development that will need to be served by the Syene Interceptor. This will be done by extending an 8-inch sanitary sewer line on East Cheryl Parkway to the west. The majority of the Fitchburg Center development will be served by the Woods Hollow Interceptor.

Based on our calculations, an 8-inch sanitary sewer, at minimum grade, can serve up to 1300 housing units. The proposed development of approximately 910 dwelling units can be connected to 8-inch sewer at slopes well above the minimum.

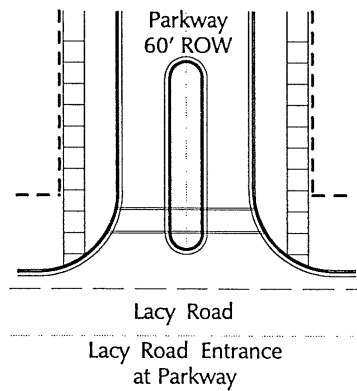
Water service for the development will be provided from a 12-inch water main extending to the east through the Fitchburg Center property. This water main will be brought to the western edge of the development within the Cheryl Parkway right of way by the summer of 2001. The 12-inch water main will be extended easterly through the development along Cheryl Parkway to Syene Road. At a future date, the water main will be extended north to McCoy Road and the Rimrock Neighborhood area. It will also be extended east of Syene Road along the future extension of

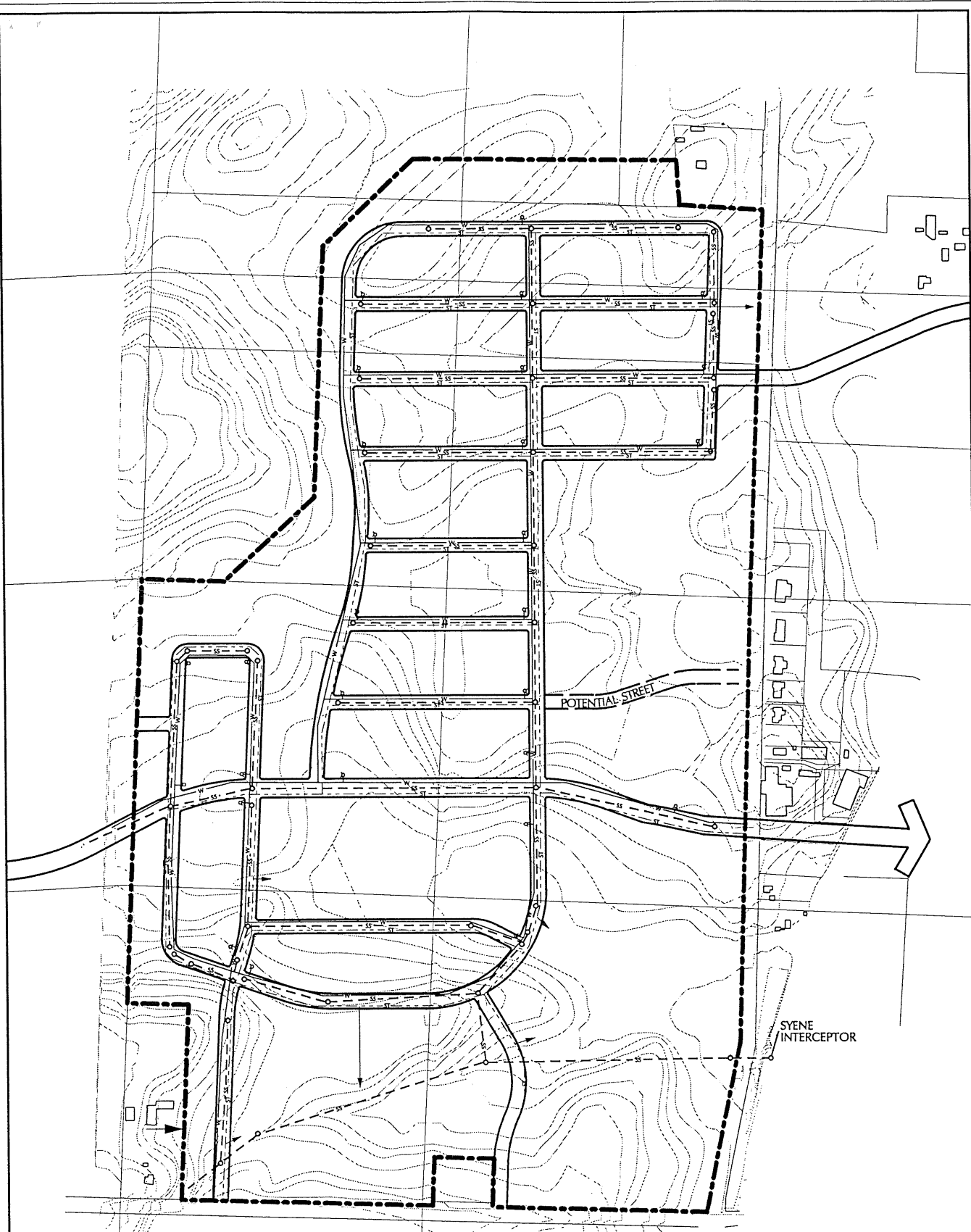


N-S Collector Street
at Local Street

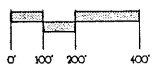


Cheryl Parkway
at N-S Collector Street





- Legend
- w — Water Main
 - - - ss - - Sanitary Sewer
 - - - sr - - Storm Sewer



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AMENDED MARCH 23, 2001
**NINE SPRINGS NEIGHBORHOOD
 COMPREHENSIVE DEVELOPMENT PLAN
 CONCEPT UTILITY PLAN
 EXHIBIT 9 EXHIBIT 12**

Cheryl Parkway. This extension will connect to a future water storage facility on the east side of U.S.H. 14.

Internally, the development will be served by a series of 8-inch watermain service loops.

Phasing Plan

The Nine Springs Neighborhood project is anticipated to be developed over a 10-year time frame. The suggested development phases include:

- Phase One – 2001 to 2004 – Area south of Cheryl Parkway
- Phase Two – 2004 to 2007 – Area between Cheryl Parkway and Greenway
- Phase Three – 2007 to 2010 – Area north of Greenway

These phases are conceptual. Variations may occur depending on market demand and availability of infrastructure.

Estimated Assessed Valuation at Build-Out

| | <u>Estimated Assessed Value</u> |
|---------------------------------------------------------------------------------|---------------------------------------|
| 11 SF Homes @ \$250,000 (“A” lots) | \$ 2,750,000 |
| 180 SF Homes @ \$200,000 (“B” lots) | \$ 36,000,000 |
| 61 SF Homes @ \$160,000 (“C” lots) | \$ 9,760,000 |
| 58 SF Homes @ \$130,000 (“D” lots) | \$ 7,540,000 |
| 236 Apartments @ \$50,000 | \$ 11,800,000 |
| 195 condominium Homes @ \$110,000 | \$ 21,450,000 |
| 113 Life Estate condominium Homes @ \$120,000 (school tax exempt) | \$ 13,560,000 |
| 56 Life Estate Garden Style condominium Units @ \$75,000 (school tax exempt) | \$ 4,200,000 |
| Retail/Civic (60,000-75,000 s.f.) @ \$50 | \$ 3,000,000 - <u>\$ 3,750,000</u> |
| Total Estimated Assessed Value | <u>\$110,060,000-\$110,810,000</u> |

Notes:

1. The 169 Life Estate condominium homes are projected to be for elderly housing, owned by a non-profit organization.
2. Apartments are projected to be a mix of one and two bedroom units.
3. The 195 condominium homes are projected to be two bedroom plus loft-style units.

NATIVE LANDSCAPING OF THE NINE SPRINGS DEVELOPMENT'S DRAINAGE CORRIDORS

Advantages of Native Landscaping

Native landscaping refers to the design, construction, and maintenance of landscapes that use native (indigenous) plants. Native plants are the plants that historically grew in an area prior to the arrival of European settlers. Because these plants have been growing and evolving in the same geographical area for as long as tens of thousands of years they are extremely well adapted to local soil types, light conditions, weather patterns, insects, diseases, and animals. Their high level of adaptation makes them ideal species for low input, low maintenance landscapes.

When used to vegetation grass waterways located in drainage corridors native species offer several advantages over the more frequently used agricultural grasses. First, native grasses and forbs (wildflowers) have very deep root systems, often exceeding ten feet (Figure 1). When a root dies the area it occupied becomes a small to large size pore after the root decomposes. These pores allow the rapid infiltration of storm water, often to deep depths. Grasses typically have a very fine, fibrous root system, while forbs are more likely to have a coarse root system. The mixture of fine and coarse roots produce a wide variety of pore sizes which is important because small pores drain most of the water during minor rain events while large pores drain most of the water during major rain events.

Secondly, the prairie's extensive root system and dense above ground foliage remove large quantities of water from the soil, drying it relatively quickly. Thus, prairie plants increase the amount of time a soil is dry and able to absorb water.

Third, prairie plants are very efficient builders of soil structure. Soil structure is the aggregation of sand, silt, and clay particles into larger clusters. A soil with good structure is able to absorb much more water than a soil that lacks structure. Prairie grasses are especially efficient structure builders.

Other advantages offered by native plants include: **reduced installation costs**—the addition of top soil, fertilizer, and other soil amendments is unnecessary; **reduced maintenance costs**—mowing, fertilizing, watering, and herbicide applications are unnecessary; **increased biodiversity**—birds, butterflies, and other wildlife are

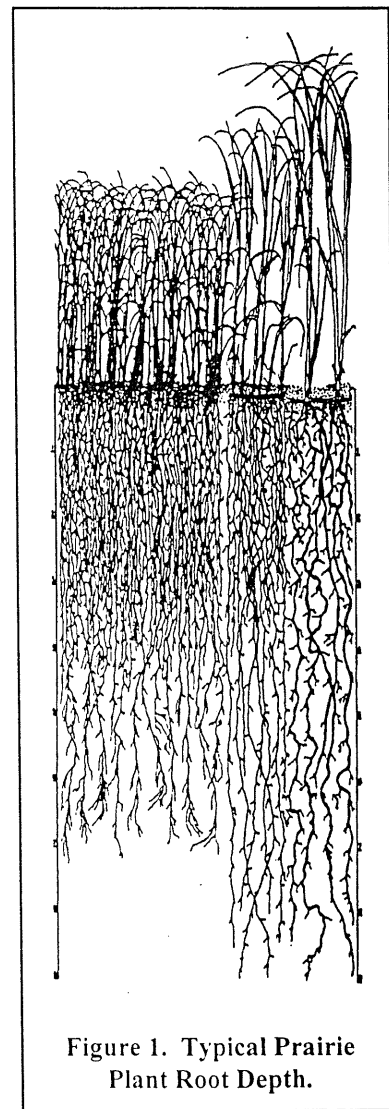


Figure 1. Typical Prairie Plant Root Depth.

attracted to native landscapes; **educational and recreational opportunities**—native landscapes are outdoor laboratories providing hands-on educational experiences for students as well as opportunities for bird and butterfly watching, photography, walking, and quiet contemplation; **improved aesthetics**—native landscapes change appearance throughout the growing season and from year to year.

Recommended Species

Species recommendations are provided for two distinct planting areas—the bottoms of the drainage corridors and the side slopes of the drainage corridors (Figure 2). These areas require different species because they have different environmental conditions, especially soil moisture. Tables 1 and 2 provide a preliminary list of recommended species for each planting area. The following criteria were used to select species:

1. Native to the Fitchburg, Wisconsin, area.
2. Appropriate for the anticipated soil moisture conditions, e.g., species selected for drainage corridor bottoms must be able to tolerate wide fluctuations in soil moisture.
3. Appropriate for the anticipated light conditions (nearly full to full sun).
4. Commercially available as seed.
5. Species selected will provide a diversity of flowering times, colors, heights, and textures.
6. Species that have thorns or “stick-tight” seeds were avoided.
7. Rare, threatened, and endangered species were not included to avoid potential legal and ethical complications.

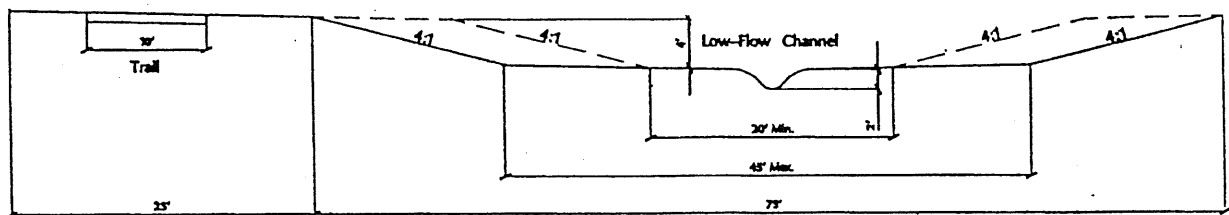


Figure 2. 100' Drainage Corridor Cross Section.

(adapted from Schreiber /Anderson Associates, 2001)

Scale 1"=10'-0"

Table 1. Recommended Species for Drainage Corridor Bottoms.

| Grasses, Sedges, Rushes | Height | Comments |
|------------------------------------------------|--------|----------------------------------------------------------------|
| <i>Andropogon gerardi</i> Big bluestem | 3-8' | Tall; some times aggressive; purple tinged foliage |
| <i>Carex comosa</i> Bottlebrush sedge | 1-2' | Short stature; spring bloomer |
| <i>Carex vulpinoidea</i> Fox sedge | 2-3' | Very adaptable; tolerates some shade; tolerates drying |
| <i>Elymus canadensis</i> Canada wild rye grass | 3-6' | Large, curly seed head; cool season; quick to establish |
| <i>Glyceria striata</i> Fowl manna grass | 2-5' | Fine texture; good wildlife food and cover; tolerates drying |
| <i>Juncus torreyi</i> Torrey's rush | 1-2' | Pioneer species; spikey seed heads in spring; tolerates drying |
| <i>Panicum virgatum</i> Switch grass | 3-6' | Aggressive; burns very hot |
| <i>Scirpus atrovirens</i> Dark-green bulrush | 3-5' | Dark green color; tinker toy like seed head |

| Forbs (wild flowers) | Color | Bloom Time A M J J A S O | Height | Comments |
|-----------------------------------------------------|---------|-----------------------------|--------|----------------------------------------------------------------|
| <i>Asclepias incarnata</i> Red milkweed | Pur-red | J J A | 3-4' | Butterfly attractor; very showy; larval food source of monarch |
| <i>Anemone canadensis</i> Canada anemone | Wht | M J | 1-2' | Interesting foliage |
| <i>Aster novae-angliae</i> New England aster | Pur | A S O | 2-5' | Very showy; butterfly attractor |
| <i>Aster puniceus</i> Swamp aster | Pur-lav | A S O | 2-6' | Robust plant |
| <i>Aster simplex</i> Panicked aster | Wht | J A S O | 3-4' | Rhizomatous |
| <i>Aster umbellatus</i> Flat topped aster | Cream | A S O | 2-5' | Produces large flat flower clusters |
| <i>Cacalia atriplicifolia</i> Pale Indian plantain | Wht | J A S | 3-6' | Interesting foliage is white underneath |
| <i>Eupatorium maculatum</i> Joe Pye weed | Pur | J J A | 4-6' | Butterfly plant; very showy |
| <i>Eupatorium perfoliatum</i> Boneset | Wht | J A S | 3-4' | Entire plant hairy; stem pierces leaves |
| <i>Helenium autumnale</i> Sneezeweed | Yel | A S O | 2-5' | Very showy; does not cause sneezing |
| <i>Hypericum pyramidatum</i> Saint John's wort | Yel | J A | 2-6' | Very large golden yellow flowers |
| <i>Liatris pycnostachya</i> Blazing star | Pur | J A S | 2-4' | Very showy; highly recommended |
| <i>Lobelia cardinalis</i> Cardinal flower | Red | J A S | 2-5' | Brilliant red flowers; hummingbird plant |
| <i>Lobelia siphilitica</i> Great blue lobelia | Blue | J A S O | 1-2' | Easy to grow; freely flowering |
| <i>Physostegia virginiana</i> Obedient plant | Pink | J A S O | 2-5' | Rhizomatous |
| <i>Pycnanthemum virginianum</i> Mtn. mint | Wht | J J A S | 2-5' | Minty foliage; rhizomatous |
| <i>Rudbeckia laciniata</i> Grn. headed coneflower | Grn-yel | J A S O | 3-10' | Interesting foliage; rhizomatous |
| <i>Silphium perfoliatum</i> Cup plant | Yel | J A S | 3-8' | Leaves form a natural bird bath; butterfly and bird plant |
| <i>Silphium terebinthinaceum</i> Prairie dock | Yel | J J A S | 2-10' | Another prairie giant; butterfly and bird plant |
| <i>Solidago graminifolia</i> Grass leaved goldenrod | Yel | J A S | 1-4' | Rhizomatous |
| <i>Solidago rigida</i> Stiff goldenrod | Yel | A S O | 1-5' | Showy; gray-green foliage |
| <i>Thalictrum dasycarpum</i> Meadow rue | Cream | J J | 5-6' | Very delicate texture; foliage has bluish cast |
| <i>Verbena hastata</i> Blue vervain | Blue | J A S | 1-3' | Easy to grow; inexpensive |
| <i>Veronica fasciculata</i> Ironweed | Pur | J A | 4-6' | Very showy flowers; tall plant |
| <i>Veronicastrum virginicum</i> Culver's root | Wht | J J A | 3-6' | Elegant; tall spikes of white flowers |
| <i>Zizia aurea</i> Golden Alexander | Yel | A M J | 1-3' | Short stature; quick to establish |

Table 2. Recommended Species for Drainage Corridor Side Slopes. .

| Grasses | Height | Comments |
|------------------------------------------------|--------|---------------------------------------------------------|
| <i>Andropogon gerardi</i> Big bluestem | 3-8' | Tall; sometimes aggressive; purple tinged foliage |
| <i>Andropogon scoparius</i> Little bluestem | 2-3' | Fine texture; feathery seed head |
| <i>Bouteloua curtipendula</i> Sideoats grama | 2-3' | Fine texture; purple and orange flower parts |
| <i>Elymus canadensis</i> Canada wild rye grass | 3-6' | Large, curly seed head; cool season; quick to establish |
| <i>Panicum virgatum</i> Switch grass | 3-6' | Aggressive; burns very hot |
| <i>Sporobolus heterolepis</i> Prairie dropseed | 2-4' | Forms arching mounds; elegant; fragrant; expensive |
| <i>Sorghastrum nutans</i> Indian grass | 3-6' | Rich golden brown feather-like seed head |

| Forbs (wild flowers) | Color | Bloom Time A M J J A S O | Height | Comments |
|------------------------------------------------------|------------|-----------------------------|--------|----------------------------------------------------------------|
| <i>Amorpha canescens</i> Lead plant | Pur & gold | J J A | 30-40" | Butterfly attractor; shrub |
| <i>Asclepias incarnata</i> Red milkweed | Pur-red | J J A | 3-4' | Butterfly attractor; very showy; larval food source of monarch |
| <i>Asclepias tuberosa</i> Butterflyweed | Org | J J A | 2-3' | Butterfly attractor; very showy; larval food source of monarch |
| <i>Aster azureus</i> Sky blue aster | Blu | A S O | 1-4' | Butterfly attractor; outstanding color |
| <i>Aster laevis</i> Smooth aster | Blu | A S O | 3-5' | Butterfly attractor; foliage is smooth |
| <i>Aster novae-angliae</i> New England aster | Pur-blu | A S O | 2-5' | Very showy; butterfly attractor |
| <i>Aster ptarmicoides</i> White aster | Wht | J A S O | 2-5' | Long bloom period; fine texture |
| <i>Baptisia leucantha</i> White baptisia | Wht | J J | 3-4' | Tall; bushy; unique seed pods |
| <i>Cacalia atriplicifolia</i> Pale Indian plantain | Wht | J A S | 3-6' | Unique foliage is white underneath |
| <i>Coreopsis palmata</i> Prairie coreopsis | Yel | J J A | 18-30" | Butterfly attractor; rhizomatous |
| <i>Desmodium canadense</i> Tick-trefoil | Pur | J A | 2-5' | Nitrogen fixer; rhizomatous |
| <i>Desmodium illinoense</i> Illinois tick-trefoil | Pur | J A | 3-6' | Nitrogen fixer |
| <i>Eryngium yuccifolium</i> Rattlesnake master | Wht | J A S | 3-5' | Unique seed head; butterfly attractor |
| <i>Helianthus grosseserratus</i> Saw tooth sunflower | Yel | A S O | 4-12' | Bird feeder; rhizomatous |
| <i>Heliopsis helianthoides</i> Ox-eye sunflower | Yel | J J A S | 2-5' | Butterfly attractor; natural bird feeder |
| <i>Helianthus occidentalis</i> Western sunflower | Yel | J A S | 2-3' | Short stature sunflower |
| <i>Lespedeza capitata</i> Roundheaded bush clover | Grn-crm | A S | 30-48" | Interesting winter texture; nitrogen fixer |
| <i>Liatris aspera</i> Rough blazingstar | Pur | J A S O | 2-3' | Very showy; butterfly attractor |
| <i>Liatris pycnostachya</i> Prairie blazingstar | Pur | J A S | 2-4' | Very showy; butterfly attractor |
| <i>Monarda fistulosa</i> Bergamot | Lav | J A S | 2-4' | Flowers first year; aromatic |
| <i>Penstemon digitalis</i> Smooth penstemon | Wht-pur | J J | 2-3' | Butterfly attractor |
| <i>Petalostemum candidum</i> White prairie clover | Wht | J J A S | 1-3' | Butterfly attractor |
| <i>Petalostemum purpureum</i> Purple prairie clover | Pur | J A S | 1-3' | Butterfly attractor |
| <i>Pycnanthemum virginianum</i> Mountain mint | Wht | J J A S | 2-3' | Aromatic; butterfly attractor |
| <i>Ratibida pinnata</i> Yellow coneflower | Yel | J A S | 3-5' | Aromatic seed head |
| <i>Rudbeckia hirta</i> Black eyed Susan | Yel-org | J J A S O | 1-3' | Biennial; good early color |
| <i>Rudbeckia subtomentosa</i> Brown eyed Susan | Yel | A S O | 3-5' | Long lived; showy |
| <i>Sambucus canadensis</i> Elderberry | Wht | J J A | 3-9' | Edible clusters of purple-black fruit |
| <i>Silphium integrifolium</i> Rosin weed | Yel | J A S | 2-6' | Tall; coarse; butterfly attractor |
| <i>Silphium laciniatum</i> Compass plant | Yel | J J A S | 3-10' | Prairie giant; awesome; butterfly and bird plant |
| <i>Silphium perfoliatum</i> Cup plant | Yel | J A S | 3-8' | Leaves form a natural bird bath; butterfly and bird plant |
| <i>Silphium terebinthinaceum</i> Prairie dock | Yel | J A S | 3-10' | Prairie giant; butterfly and bird plant |
| <i>Solidago rigida</i> Stiff goldenrod | Yel | A S O | 1-5' | Showy; gray-green foliage |
| <i>Tradescantia ohiensis</i> Spiderwort | Blu | M J J | 2-4' | Butterfly attractor |
| <i>Verbena stricta</i> Hoary vervain | Blu | J A S | 2-5' | Long flower stalk |
| <i>Veronicastrum virginicum</i> Culver's root | Wht | J J A | 3-6' | Elegant; tall spikes of white flowers |
| <i>Zizia aptera</i> Heart leaved golden Alexander | Yel | A M | 1-3' | Unique foliage; butterfly attractor |

Design, Installation, and Management Recommendations

Native landscaping typically begins with a site analysis, proceeds to site preparation, and then planting. Management begins after the site has been planted. Each of these steps, with specific recommendations important for the Nine Springs Development, is discussed in detail below.

I. Site Analysis

A thorough site analysis is the first step of the native landscaping process because the information it provides directs all of the activities which follow. More specifically, the information gathered during the site analysis determines which species are most suitable for the site, the best site preparation method, the best planting technique, and suggests which management activities will be needed.

A thorough site analysis evaluates:

- Existing vegetation to determine what should be preserved or removed.
- Existing light conditions, which will strongly influence species selection.
- Soil fertility and moisture, which will strongly influence species selection.
- Slope (steepness of the land), which will strongly influence the selection of erosion control techniques.
- Adjacent land use.
- Appropriate fire break locations.
- Views to be screened or preserved.

Site Analysis Recommendations for the Nine Springs Development

1. Assess vegetation type(s) in the DNR Fish and Wildlife Area and use this information to select complimentary vegetation for areas of the Nine Springs Development abutting the Wildlife Area. This will avoid abrupt transitions and habitat fragmentation.
2. Laboratory analysis of soil samples for fertility is recommended to help select appropriate species.
3. Planning the location of fire breaks in advance will improve safety and save money.

II. Site Preparation

- Site preparation is preparing the soil for planting
- Poor site preparation is the most common reason plantings fail
- Two goals: 1) remove undesirable vegetation that will compete with the seeds or plants you plant and 2) prepare a suitable seed bed

Site Preparation Recommendations for the Nine Springs Development

1. Avoid compacting the soil during construction; compacted soil severely inhibits water infiltration and plant vigor. If compaction occurs consider using subsoil tillage to relieve compaction.

2. Avoid exposing clay subsoil during construction. Clay subsoil is prone to compaction and has a low infiltration rate.
3. In areas requiring fill, avoid the use of soil with a high clay content or highly fertile soil. High clay content soils are prone to compaction and have a low infiltration rate, high fertility soils promote rampant weed growth at the expense of the slower growing native plants.
4. Prohibit all motor vehicle traffic after an area has been site-prepped.
5. Consider constructing all of the drainage corridors at the beginning of the project, rather than in stages. This will allow more time for site preparation of the drainage corridors that will be used during later phases of the development, thereby increasing the ease of establishing native vegetation.

III. Planting

- There are two planting periods—spring plantings, which are done during the growing season, and fall plantings which are a dormant season planting.
- Fall plantings typically have better forb germination than spring plantings because cold winter temperatures are needed to release seed dormancy in many species.
- Most grasses do not require a cold period to release their dormancy and can be planted during the spring or fall with equally successful results.
- Use of a nurse crop, such as annual rye or oats, is recommended on erosion prone sites. On weedy sites a nurse crop is often unnecessary because the weeds act as the nurse crop.
- Mulching with clean straw after seeding will increase germination and survival rates because it helps the soil remain moist.

Planting Recommendations for the Nine Springs Development

1. The use of seeds is preferred to the use of transplants. Transplants are prohibitively expensive, may require watering several times a week during their establishment period, interfere with weed control during the first growing season, and provide less initial erosion protection than a properly done seeding.
2. The use of local ecotype seeds and plants is strongly urged for all landscaping applications.
3. Use of a nurse crop, such as annual rye or oats, is recommended in all planting areas with the potential for erosion. Erosion matting, such as Curlex, is recommended for high flow areas, for areas that will carry runoff shortly after seeding, and near all lateral inlets and outfall areas.
4. Drainage corridors should be planted as far in advance as possible of the date they are first expected to carry runoff. This is important because many native plants require an extended period to become established.
5. Planting the drainage corridors that won't be used until later phases of the development during the first phase of the project will allow them to be planted with less costly and less technology-intensive methods because erosion concerns will be minimal.

6. Plant seed mixes with a high proportion of forbs during the fall, whenever possible. Grass dominated mixtures may be planted during mid–spring to mid–summer or during the fall.
7. There should be a two to three foot wide strip of mowed grass along both sides of all pedestrian paths to prevent tall vegetation from leaning over the path. These areas should be planted with a turf grass seed mix.
8. Areas adjacent to trails should not be planted with vegetation that has thorns or sharp edges to avoid injuries.
9. Avoid planting fire intolerant landscape plants, such as conifers and maples, in areas that require periodic burning.

IV. Evaluation and Management

- Keep your first year expectations low—most native plants are slow growers because they establish an extensive root system before beginning upward growth. Also, many native plants won't bloom until they are three or more years old (but they may live 50 or more years).
- Mowing to control fast growing weeds is typically the most important first year management need. Mowing prevents the weeds from suppressing prairie seedlings and from setting seeds. Expect to mow at least three times during the first growing season.

Evaluation and Management Recommendations for the Nine Springs Development

1. Provide Nine Springs residents and businesses with prairie restoration information so they will understand and appreciate what they are seeing. For the same reasons, consider posting explanatory signs alongside trails and in other conspicuous locations.
2. Naming planting areas, e.g., Nine Spring Prairie or Hilltop Prairie, will promote the recognition and acceptance of the prairie.
3. Failure to mow in a timely manner will put the plantings at risk of failure.
4. Mowing when the ground is wet can cause ruts and erosion and should be avoided.

Table 1

**NINE SPRINGS NEIGHBORHOOD
SIGHT DISTANCES**

| | | |
|--------------------------------------------|-------------------------------------------------------------------------|-----------------------|
| Lacy Road - 35 MPH Speed Limit | Assumed Speed Condition 36-40 MphMin. Sight Distance 275', Desired 300' | |
| | | |
| Southwest Intersection-Subcollector | | |
| Traveling East Towards Syene Rd. | | Sight Distance 714' |
| Traveling West Towards Fish Hatchery Rd. | | Sight Distance 1300'+ |
| | | |
| Southeast Intersection-Parkway | | |
| Traveling East Towards Syene Rd. | | Sight Distance 1200'+ |
| Traveling West Towards Fish Hatchery Rd. | | Sight Distance 420' |
| | | |
| Syene Road - 45 MPH Speed Limit | Assumed Speed Condition 44-50 MphMin. Sight Distance 350', Desired 450' | |
| | | |
| Cheryl Parkway Intersection | | |
| Traveling North Towards McCoy Rd. | | Sight Distance 1200'+ |
| Traveling South Towards Lacy Rd. | | Sight Distance 400' |
| | | |
| North Intersection-Collector | | |
| Traveling North Towards McCoy Rd. | | Sight Distance 750' |
| Traveling South Towards Lacy Rd. | | Sight Distance 880' |

Table 2

**NINE SPRINGS NEIGHBORHOOD
STORM WATER ANALYSIS
LAND USE COMPARISON**

| Land Use | Previous Report | | Current Development | |
|----------------------------------------|-----------------|------|---------------------|------|
| | Acres | % | Acres | % |
| Low Density Residential | 122 | 45 | - | - |
| Open Space (woods/park/wetland) | 27 | 10 | 54 | 20 |
| Medium Density Residential | 121 | 45 | 162 | 60 |
| Impervious Areas (streets, parking) | - | - | 54 | 20 |
| | 270 | 100% | 270 | 100% |

STORAGE REQUIREMENTS

| Storm Frequency | Previous Report | Current Analysis |
|-----------------|-----------------|------------------|
| | Acre/Ft | Acre/Ft |
| 2 | 6.7 | 5.1 |
| 10 | 10.6 | 9.8 |
| 25 | 12.7 | 11.2 |
| 100 | 17 | 16.6 |