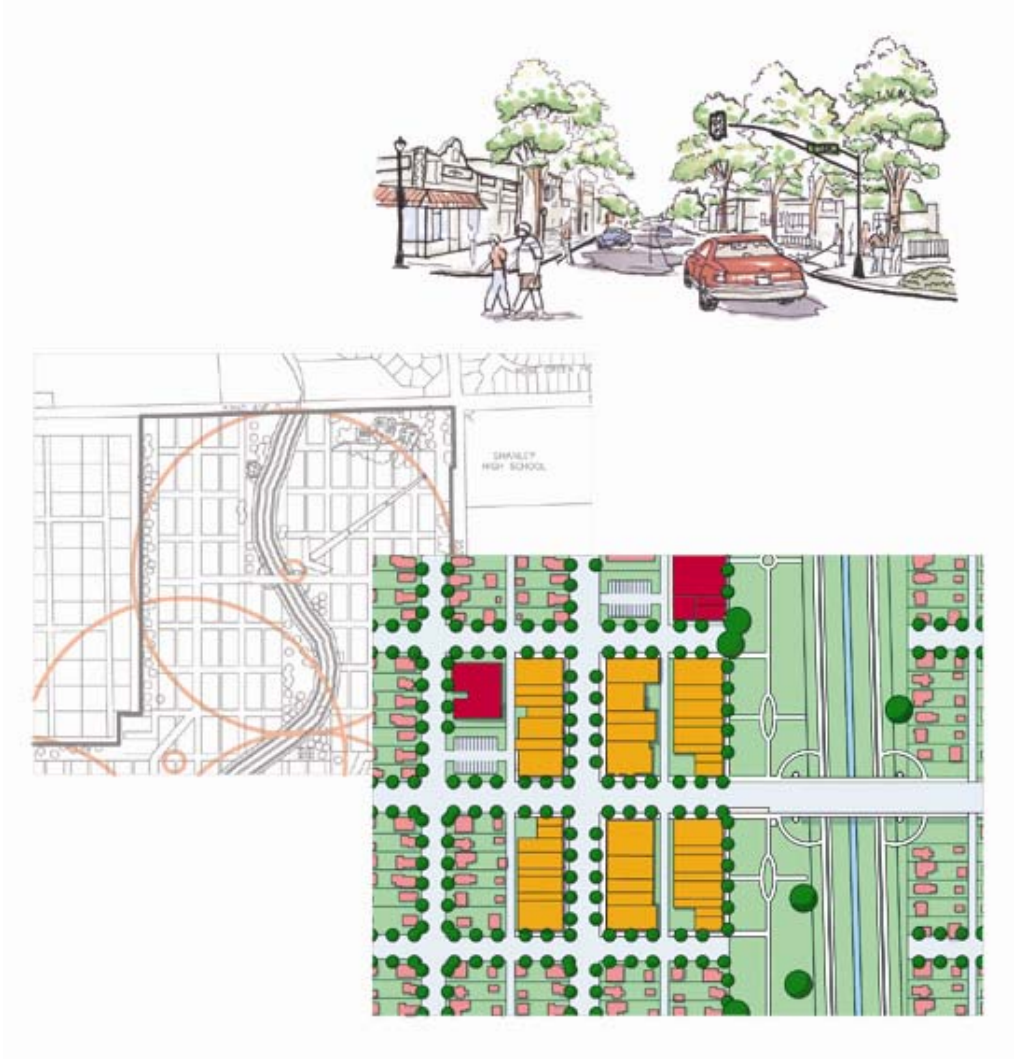
# Georgetown Park:

## A New Urbanist Neighborhood on Fargo's Urban Fringe



Design Thesis Program
May 11, 2005

Greg Stachon

# Georgetown Park: A New Urbanist Neighborhood on Fargo's Urban Fringe

ANUNDERGRADUATE THESIS SUBMITTEDTO
THE DEPARTMENT OF ARCHITECTURE ANDLANDSCAPE ARCHITECTURE
NORTHDAKOTA STATE UNIVERSITY

By

Gregory Stachon

INPARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
BACHELOR OF LANDSCAPE ARCHITECTURE

Joshua Walter, Primary Critic
Professor of Landscape Architecture

Paul Gleye, Secondary Critic
Chair; Architecture and Landscape Architecture

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# Part 1
# Suburban Sprawl

## A Nation of Sprawl

Poorly planned development is threatening our environment, our health, and our quality of life. In communities across America "sprawl" - scattered development that increases traffic, saps local resources and destroys open space - is taking a serious toll. From Connecticut to California sprawl is increasing air and water pollution, devouring wetlands and forests, and burdening our communities with the social and economic costs of unplanned growth.

**Sprawl increases traffic on our neighborhood streets and highways.**

Sprawl lengthens trips and forces us to drive everywhere. The average American driver spends 443 hours per year - the equivalent of 55 eight-hour workdays - behind the wheel. Residents of sprawling communities drive three to four times as much as those living in compact, well-planned areas. Adding new lanes and building new roads just makes the problem worse - studies show that increasing road capacity only leads to more traffic and more sprawl.

**Sprawl pollutes our air and water.**

As sprawl increases our reliance on cars and driving, it makes our air dirtier and less healthy. Cars, trucks and buses are the biggest source of cancer- causing air pollution,


spewing more than 12 billion pounds of toxic chemicals each year, or almost 50 pounds per person. Our wetlands - nature's water filters - are also under attack. Each year more than 100,000 acres of wetlands are destroyed, in large part to build sprawling new developments. Since wetlands can remove up to 90 percent of the pollutants in water, wetlands destruction leads directly to polluted water.

**Sprawl worsens the damage from killer floods.**


Sprawl increases the risk of flooding. Development pressures lead to building on floodplains and the destruction of wetlands, natural flood-absorbing sponges. In the last eight years, floods in the United States killed more than 850 people and caused more than $89 billion in property damage. Much of this flooding occurred in places where weak zoning laws allowed developers to drain wetlands and build in floodplains.

**Sprawl destroys parks, farms, and open space.**

Sprawl destroys more than one million acres of parks, farms and open space each year. This threatens America's productive farmland, and turns our cherished parks and open spaces into strip malls and freeways.

**Sprawl wastes our tax money.**

Our tax money subsidizes new sprawling developments, rather than improving our existing communities. Sprawl costs our cities and counties millions of dollars for new water and sewer lines, new schools, and increased police and fire protection. Those costs are not

fully offset by the taxes paid by the new users. Instead, sprawl forces higher taxes on existing residents and hastens the decline of our urban tax base.

## Local Sprawl

Fargo is a medium sized city that has seen unprecedented growth over the last 30 years. Along with it's increase in population, it's tax base has increased as well.. There have been new companies coming to the area and regional facilities like the Fargodome that can attract national entertainment to our corner of the northern plains. But has all this growth been good?

Fargo's southern fringe

In 1997 our area experienced a 100-year flood. Homes up and down the Red River Valley were flooded and many houses within the city limits of Fargo were bought out. The majority of houses bought out were those on Fargo's south side; expensive single family McMansions that were allowed to be built in the floodplain. Due to the droughts in the 1980's people in our region had forgotten that this area actually floods every once in a while.

This is an example of poor planning, not just because of the sprawling single family houses and their uninspired placeless-ness but because had Fargo developed in a more highly density fashion, the area would not have been developed in the first place.

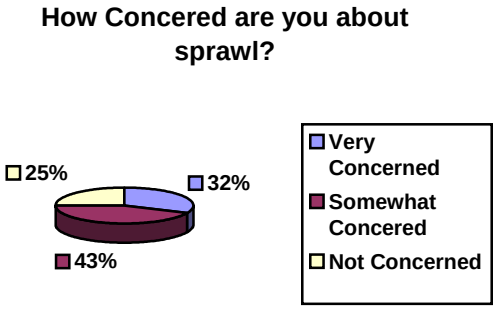
# Local Perceptions of Sprawl

"We have too much of the same, developers should keep natural land features in mind."

Kyle Canda, 35;
Fargo Art Dealer

Deborah Quarve, 56;
Fargo Businessowner

"Fargo has had amazing new growth, the new areas are nice, but we need more walking spaces"




One of the issues that seem to resonate with the public is "urban sprawl."

• Forty-two percent of respondents rated "urban sprawl" as a very serious problem for their community. Seventy-five percent of the public is either "somewhat concerned" or "very concerned" about urban sprawl, with 32 percent "very concerned" (EPIC/MRA 2003, PSC 2002).

• "Loss of open space" is also viewed as a problem by 59 percent of Michiganians (PZC 1999).

• The term "sprawl" evokes negative connotations. Sixty percent of respondents said they perceived this term as negative. (PSC 1997).

The media is a powerful influence in shaping perception. In the absence of first-hand knowledge about land use and other environmental issues, the public relies heavily on the media for information.

• Eighty-three percent of respondents cited "the media" as the source of their news about the environment in the six months preceding the time they were surveyed (PSC 2002).

• Public perception of the most pressing environmental and/or land use issues generally parallels those issues that receive the most attention from media: "water/wetlands," "waste/landfills," "overdevelopment/sprawl" (PSC 1997)

# New Urbanism is the Solution

New Urbanism is a reaction to sprawl. A growing movement of architects, planners, and developers, the New Urbanism is based on principles of planning and architecture that work together to create human-scale, walkable communities.

Some objectives of New Urbanism include the following:

- A discernible center
- Dwellings are within a five-minute walk of the center, an average of roughly 2,000 feet
- Variety of dwelling types
- Shops and offices of sufficiently varied types supply the weekly needs of a household
- A small ancillary building is permitted within the backyard of each house
- An elementary school is close enough so that most children can walk from their home.
- Small playgrounds are not more than a tenth of a mile away
- Variety of pedestrian and vehicular routes to any destination
- Streets are relatively narrow and shaded by rows of trees.
- Buildings are placed close to the street
- Parking lots and garage doors rarely front the street
- Prominent sites are reserved for civic building.

# Part 2
# Case Studies

## Heart of the City: Burnsville, MN

Mixed use development

The 54-acre Heart of the City is a smart-growth based, mixed-use, pedestrian friendly downtown area for Burnsville. The development features a retail shops, business and office space, hotel and training center facilities, a community arts center, community park and low income housing opportunities.

The Heart of the City project grew from the Partnerships for Tomorrow community visioning project and community feedback that identified the creation of a central meeting area as a community goal. The Heart of the City grew from a simple streetscape project in 1995 to a full-fledged redevelopment effort.

This project was helpful to study because it showed how a major metropolitan area like Burnsville wanted to go in a smart-growth direction. They achieved it by creating sound private, public partnerships and allowing for plenty of open space; something Georgetown Park will accomplish also.

# Clover Ridge:
# Chaska, MN

Clover Ridge is a development in Chaska, MN a town of 17,000 on the twin-city's urban fringe. It's population is expected to double in the next 10 years. Fortunately the city has some vision. They have taken proactive measures to encourage the development of the new urbanist neighborhood, Clover Ridge on the north side of town.

Clover Ridge includes:

- 10,000 square feet of neighborhood retail
  with apartments above;
- 10,000 square foot community building with apartments above; and
- Clover Ridge Elementary School.

This is a successful development because the neighborhood's size is limited by the distance from the edge to the center. 63%of homes within ¼-mile of the center, while 99% of homes are within ½ mile of the neighborhood center.

Additionally, the development has an affordability slant to it and is designed well.

- 65% of houses for sale go for less than $195,000
- High density sites were not put on the worst housing sites, but those with amenities

## Lino Lakes Town Center: Lino Lakes, MN

By bringing together a dynamic mix of shops, offices, entertainment, housing, recreation, and community facilities, Calthorpe Associates' Master Plan for the Lino Lakes Town Center cultivates the best aspects of small town downtowns, while providing strong connections to the natural environment. A village green is the centralizing feature of a portion of Lino Lakes situated south of an interstate. Framed by retail shops, a hotel with a restaurant, and a public recreation building, the green connects to a multiplex cinema via a linear park. Entertainment and retail uses are arranged to enhance community life while being market viable. Small stores, situated between major anchors, benefit from the foot traffic generated between them, while anchors benefit from an adjacency to parking.

Housing, arranged within walking distance from the Town Center, ensures round-the-clock activity and creates important opportunities for seniors and others who value convenience and safety.
The Lino Lakes Town Center is integrated within its local context. Pedestrian walkways connect the Town Center to surrounding residential neighborhoods. This will happen in Georgetown Park too, by conncecting up with existing City of Fargo bike trails.

# Part 3
# Introduction to the Site

## Site Orientation


Tri-State region


Fargo-Moorhead

Georgetown Park is located on the south side of Fargo, ND. It is on a section of land that is being rapidly developed. My New Urbanism development will encompass this area, however the portion I will concentrate on will be Phase I, a ¼ section worth of the total community. It will be characterized as a New Urbanist neighborhood and will be designed in anticipation of the other 3 phases to be completed at a later date.

The area this neighborhood sits in has been highly active. A new elementary school was constructed in 2002. The area is currently a mix of single family residential, apartments, and some larger single family lots. These lots are actually their own town, called Frontier. Interstate highway 29 is less than a ½ mile away also. Let's take a closer look at the site.


South Fargo, Site

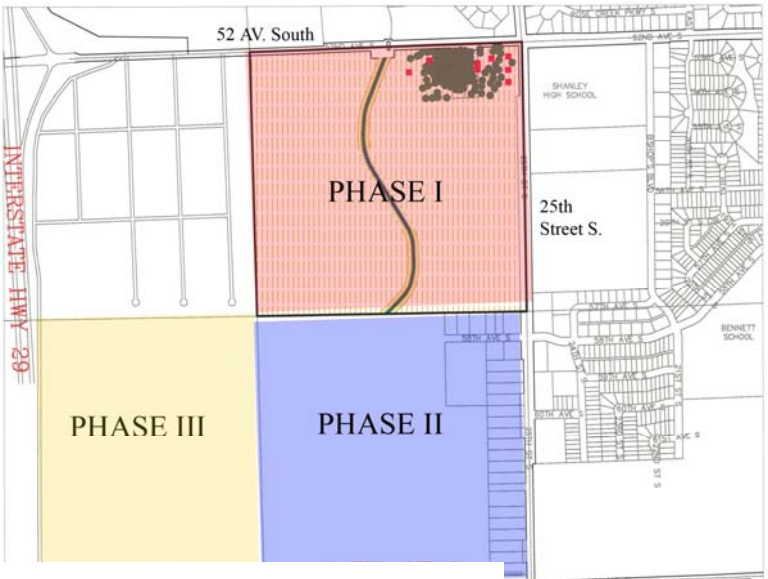
## Aerial Photo

Aerial Photo (PHASE I area)

The following photo shows the site area as it stood in 1999. Although land adjacent to this ¼ section has been developed, namely Shanely School to the east, this site has remained largely undeveloped. One can notice the existing farmstead and buildings on the northeast corner of the site. The drain can be discerned down the middle of the site.

## Site Boundaries

Phase I of Georgetown Park, is just south of 52nd Avenue South. It borders 25th Street South to the east. It is bounded by the incorporated city of Frontier on the west side, with I-29 just a ¼ mile away.




PHASE I will be built first

# Zoning

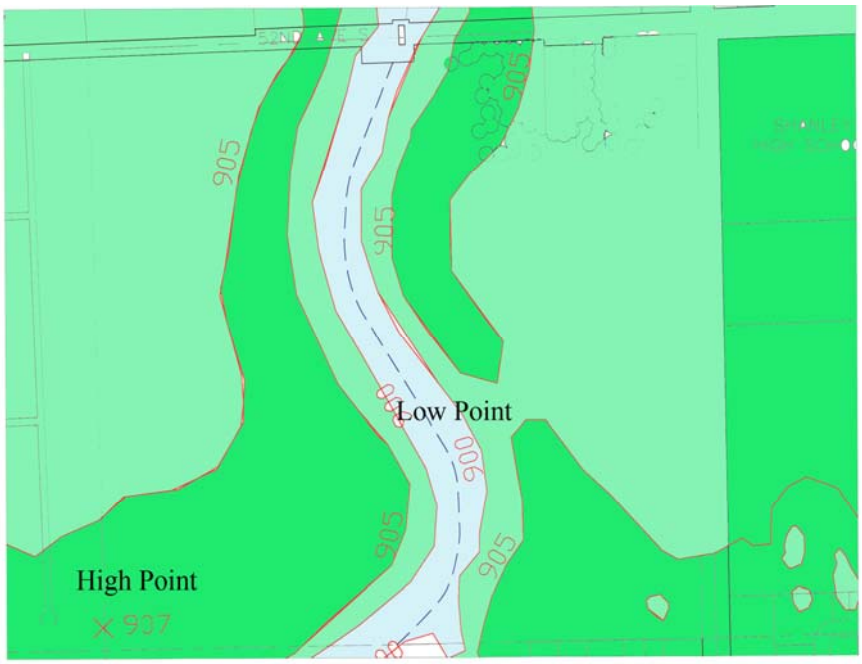
Zoning

Georgetown Park is located on Fargo's urban fringe. It's zone is currently agricultural. It is surrounded by mostly single family dwellings. Shanely school is to the west. The City of Frontier lies to the west. These are bigger lots than even the single family lots to the north. Context will have to be considered in order to transition into a new urbanism neighborhood.

- Agricultural
- Public/ Institutional
- Single Family
- Multi-Family

# Contours

Contours range from a high point of 907' above sea level to a low point of 900' above sea level. A drain runs through the middle of the site which accounts for the low elevation.



## Soils

There are four main soil types on the site

5-Dovray Silty Clay

- Deep, level
- Excess water, spring floods pond for long periods
- Water table fluctuates 1' below to 2' above the surface.
- Too wet for planting if not drained.

36-Fargo Silty Clay

- Deep, level, poorly drained soil on glacial lake plain
- Occasionally flooded
- Suitable for trees and shrubs if drained
- High shrink-swell potential is a limitation for building sites

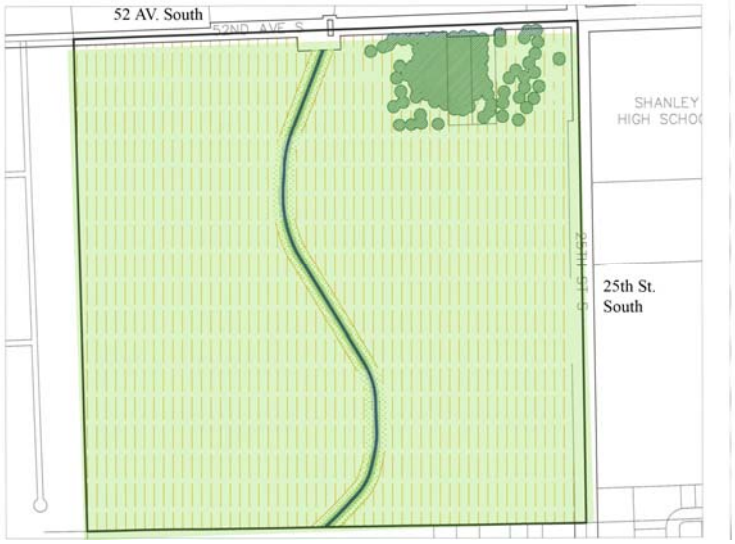
38-Fargo Silty Clay Loam

- Deep, level, poorly drained soil on low ridges and broad flats of glacial lake plains
- Rarely flooded
- Suitable for trees and shrubs if drained
- High shrink-swell potential is a limitation for building sites

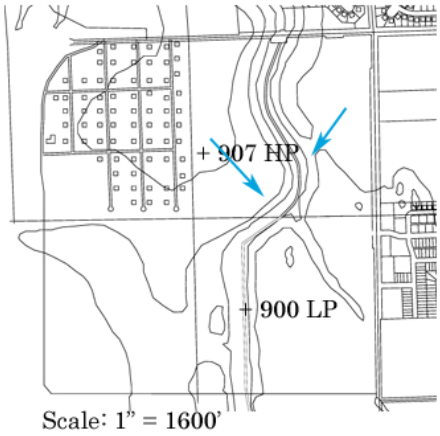
## Existing Vegetation

Ephemeral Stream

90% of this site is undeveloped agricultural land. There is a pocket of trees surrounding an old farmstead in the northeastern extremity of the ¼ section. A ditch runs through the site. It supports wetland vegetation including sedges and cattail. Wild native and introduced grasses buffer the ephemeral stream about 20' on either side.




Site is primarily agricultural; tilled monoculture



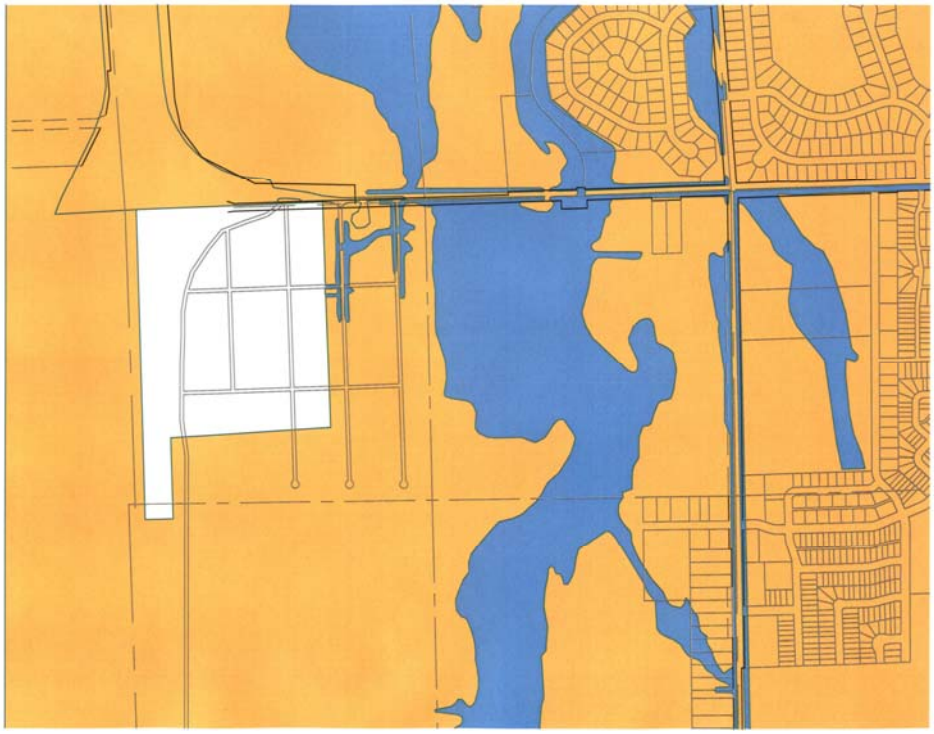

## Hydrology

The stream that runs the length of the site would be characterized as ephemeral as it can not be counted on for water. According the the USGS, the water level in this area fluctuates from 1' below to 2' above the surface. Drainage is generally toward the center of the site. When filled with water, the ditch flows in a southerly direction.

Water drains toward center and south

# Floodplain

A major constraint to this site is that 100% of it lies within the 500 or 100 year floodplain. This is no joke, as the area has been inundated as lately as 5 years ago. Steps must be taken to ensure good foundations and the construction of basements will not be recommended. In order to alleviate flooding, the development will aim to ensure that surfaces are mostly permeable. This will allow for more water to seep into the ground and prevent flash-flooding.



Site lies within 100, 500 yr. floodplain

100-year floodplain

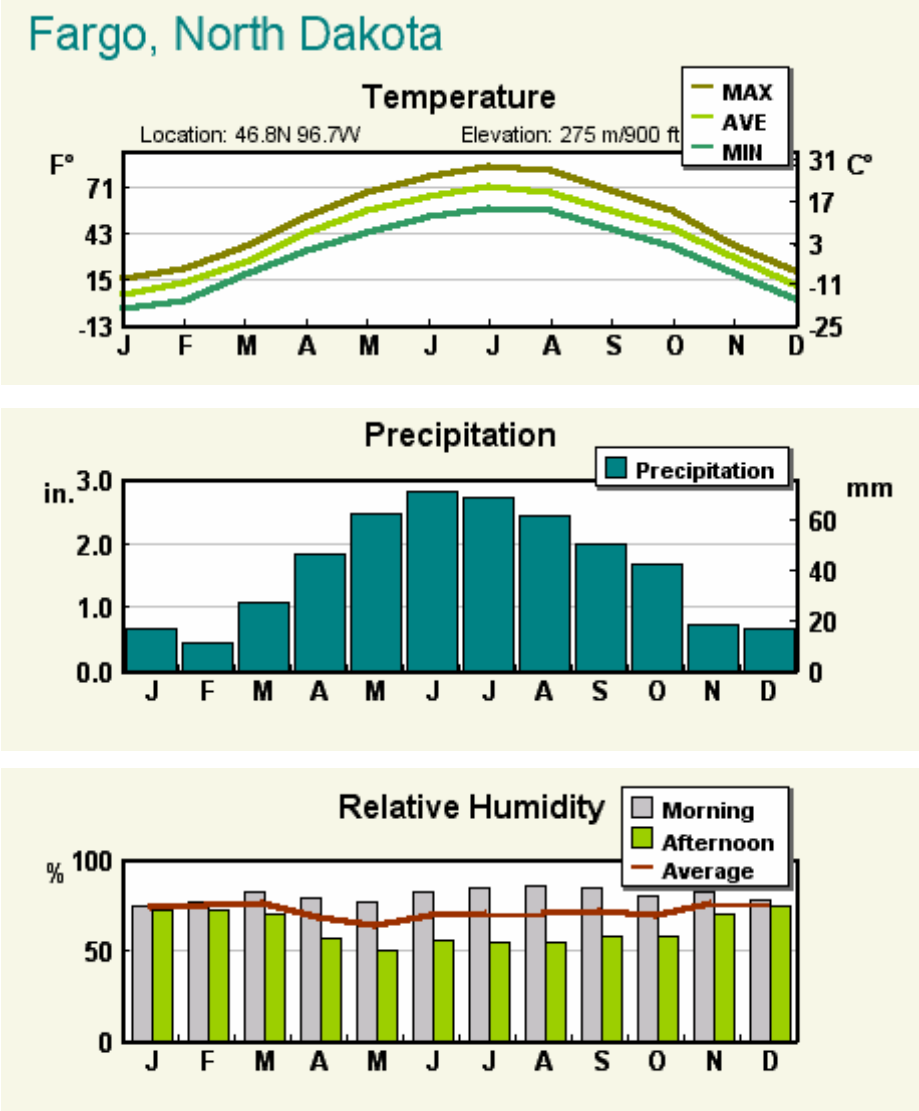
500-year floodplain

No Data- City of Frontier

# Climate

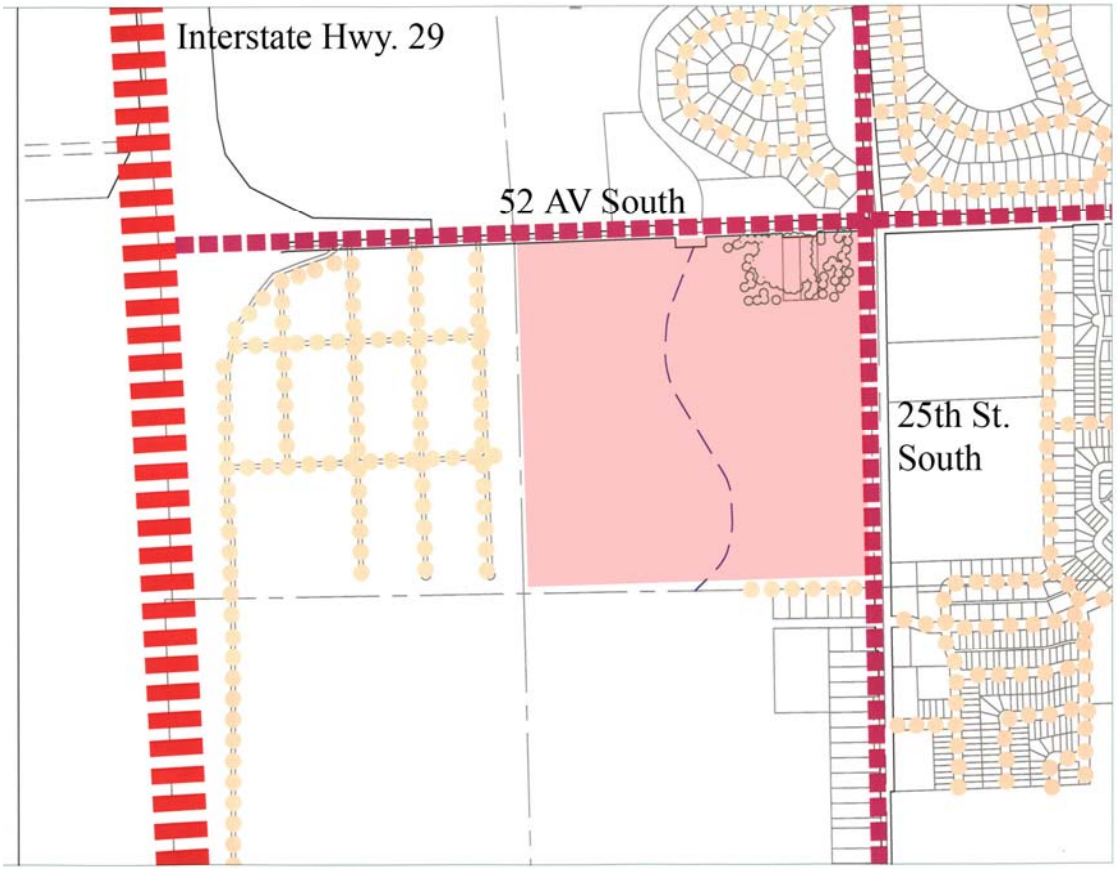
Fargo's climate is a continental one, characterized by: wide temperature swings. High temperatures hover around 15 degrees in January to 84 degrees Farenheit in our area's warmest season, July. Precipitation ranges from a low of 1/3 inch in January to a high of 7.5 inches of precipitation in May.

The growing season is an average of 140 days. The last freezing temperature in Spring is generally around the middle of May, while the first freezing Fall temperature tends to be toward the end of September.



## Circulation

Major circulation routes lie adjacent to the site. I-29 is a well traveled interstate highway and a major north-south corridor for Fargo. 25th Street is a major corridor as well. It will be experiencing increased pressure from the surrounding developments from all of the collector roads.




Interstate Highway

Major Arterial

Collector Street

Site

## Wildlife

Deer feed on native plants as well as crops

Gophers make their homes on dry plains

Wildlife on the site is most abundant around the ditch. The Dovray soils area is considered a good soil for wetland plants, so naturally attracts wetland wildlife.

The rest of the site was originally grassland and is generally poor for shrubs or wetland plants. The lower plain is best suited for herbaceous plant material, thus attracting small rodents and the like. Prairie dogs will most likely be found on the higher ridges.

Because the site is primarily agricultural, it attracts deer as well as birds that like to feed on leftover crops. The trees in the northeast side provide an attractive habitat to many animals.

## Off-Site Destinations

When planning a community, one must consider the needs of the residents. Keeping in mind the site's location, common destinations might include the following:

- Mini-Mart
- West Acres Mall
- Post Office
- Dentist
- 32nd Avenue and 25th Street shopping
- South High School
- Discovery Junior High School
- Bennett Elementary
- Hornbacher's grocery store

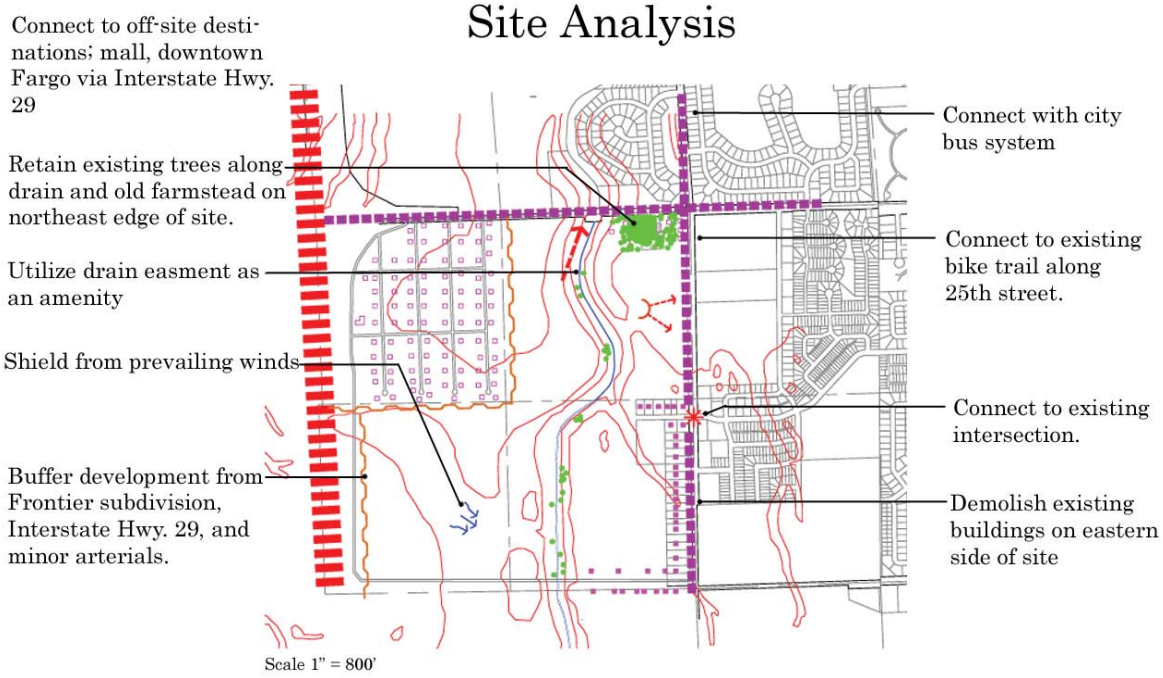
# Site Pictures

Field was cultivated in soybeans last fall

Looking north toward 52nd Av. South, Farmstead

Looking north at culvert under 52nd Av. South

# Site Analysis




The analysis has several things that were taken into consideration. First, one can notice the drain running down the middle of the site. It was my goal to keep the drain functional as well as to use it as an amenity. There are a nice stand of mature oak trees on the northeast side of the site. Those were made into a regional park.

In addition to vegetation and hydrology, I considered the political boundaries of the site; the interstate, the incorporated town of Frontier; just west of the site. Circulation worth considering included: existing roads, bike paths and creating buffers from those areas as well as connecting to them.

# Part 4
# A New Urbanist Solution

## Program

The programming requirements are meant to be implemented in PHASE I of the development. PHASE I will have a little of everything that will be found throughout the rest of the site. The location of structures will also take into consideration the fact that this is a three phase project. My goal is to create a new urbanist neighborhood that is reflective of something larger.

Housing Goal

- Variety of housing in numerous styles
- Houses with character will be prominent
- De-emphasize garages at the street level
- All residential homes should be within 3,000 ft. of the community center

Open Space Goal

- 20% open space
- Emphasize shared open space
- Connect to multi-use city paths
- Native plant material
- Select plants that positively manage storm water runoff
- Utilize drain as an amenity

Street Development Goal

- Divided boulevards
- 24' streets with 10' on either side for off-street parking
- Multi-use paths @ 6' minimum
- Street trees line streets
- Alternate routes of travel

Commercial Development Goal

- Retail within 5 min. walk of residential
- Retail developments should include 10,000-20,000 square feet
- Heights of structures no more than 4 stories @ 12' per story
- Parking preference given the rear of the building
- Include stores for daily use as well as offices.

Retail Programming Requirements

- Grocery Store @ 10,000 sq. feet
- Restaurant @ 10,000 sq. feet
- Barber shop @ 3,000 sq. feet
- Laundry @ 5,000 sq. feet
- Record Store @ 5,000 sq. feet

Housing programming Requirements

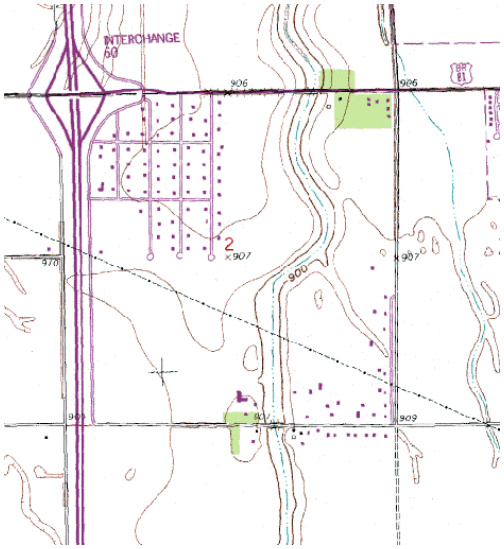
- Townhouse A @ 1,500 sq. feet
- Townhouse B @ 1,700 sq. feet
- Apartment A @ 800 sq. feet/ unit
- Apartment B @ 1,100 sq. feet/ unit

# Project Schedule

| | | |
|---|---|---|
| M | 08 OCT | Thesis proposal due (2 copies)<br>Research related material<br>Focus on:<br>Storm water management<br>Mixed use development<br>Medium density residential development<br>GIS city data |
| W | 11 OCT | Students and faculty return preference slips |
| R | 12 OCT | Primary and secondary critics announced |
| T | 28 OCT | Last day of AR/LA 561 class |
| M | 01 NOV | Collect Site Information |
| F | 01 DEC | Organize research material |
| T | 10 DEC | Assemble Program |
| F | 14 DEC | Thesis Program due to thesis critic |
| M | 16 DEC | Last day of classes |
| T | 17 DEC | Finals week |
| T | 09 JAN | Classes begin |
| M | 15 JAN | Schematic drawings, start weekly reviews with critic until February |
| M | 01 FEB | Start modeling existing site |
| M | 05 MAR | Mid-semester project reviews |
| M | 12 MAR | Spring Break |
| M | 19 MAR | Begin composing final presentation material |
| M | 02 APR | Work on final presentation material |

| | | |
|---|---|---|
| F | 13 APR | Easter Holiday |
| M | 23 APR | Thesis Projects Due |
| T | 24 APR | Draft of final thesis document due to primary critic |
| F | 06 MAY | Last Day of Classes |
| S | 13 MAY | Commencement |

# Design Development




USGS map

I began by creating an AutoCAD basemap using a USGS map. This was accomplished by scanning in the USGS map and tracing over it in AutoCAD then making the drawing to scale. Once this was done, I came up with some ideas for the general arrangement of spaces. These were done by tracing over the base map on trash paper.

At first, I played with the organization of the tion system. Radial, grid, and a hierarchy of systems and combinations of the above were all considered. I settled on the grid pattern because it was the most efficient way to use the space. Curving roads with cul-de-sacs have their advantages; low density traffic, nice quiet places for housing, but they don't lend themselves toward density, and density was what I was going for here. The grid system also makes alleyways efficiently implemented.


A 5 min. walking distance (2,000 ft.)

Another aspect of my design development was including my commercial area. I knew I wanted a commercial area that people could walk to and that this area would serve as the community center, or focal point. I decided on placing it in the south-central portion of the site so that it would be fully within the development (not bordering Frontier) and that it also might be a walkable distance from residential areas of the site.

# Current Patterns of Development

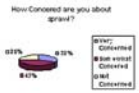
## Would you want to live here?

Poorly planned development is threatening our environment, our health, and our quality of life. In communities across America "sprawl" - scattered development that increases traffic, saps local resources and destroys open space - is taking a serious toll. From Connecticut to California sprawl is increasing air and water pollution, devouring wetlands and forests, and burdening our communities with the social and economic costs of unplanned growth.

South Fargo scenery

Fargo is a medium sized city that has seen unprecedented growth over the last 30 years. Along with it's increase in population, it's tax base has increased as well.. There have been new companies coming to the area and regional facilities like the Fargodome that can attract national entertainment to our corner of the northern plains. But has all this growth been good?

## What Does the Public Think?




So do people really care about suburban sprawl? Will people pay for something better? I found an interesting survey done by the Michigan State University in 2002. They asked people how concerned they were about sprawl: Very Concerned, Somewhat, or Not at all. 757 of respondents were either "somewhat or very concerned". So at least most people are concered about sprawl. But what do people right here in Fargo think? I hit the streets to find out.

"We have too much of the same, developers should keep natural land features in mind."

Kyle Cando, 35
Fargo Art Dealer

Deborah Quarve, 26
Fargo Businesswoman

"Fargo has had amazing new growth, the new areas are nice, but we need more walking spaces"

"If someone wants to build a big house they should be able to as long as it looks good in the neighborhood."

Collins Mutegi, 21
Fargo College Student

# Georgetown Park:
A New Urbanist Neighborhood on Fargo's Urban Fringe


# New Urbanism: The Solution

## What is New Urbanism?

New Urbanism is a reaction to sprawl. A growing movement of architects, planners, and developers, the New Urbanism is based on principles of planning and architecture that work together to create human-scale, walkable communities.

## Objectives of New Urbanism

A discernible center.

Dwellings are within a five-minute walk of the center, an average of roughly 2,000 feet.

Variety of dwelling types.

Shops and offices of sufficiently varied types supply the weekly needs of a household.

A small ancillary building is permited within the backyard of each house.

An elementary school is close enough so that most children can walk from home.

Small playgrounds are not more than a tenth of a mile away.

Variey of pedestrian and vehicular routes to any destination.

Streets are relatively narrow and shaded by row trees.

Variety of pedestrian and vehicular routes to any destination.

Buildings are close to the street.

Parking lots and garage doors rarely front the street.

Prominent sites are reserved for civic buildings.


Map illustrates 2,000 feet or a five-minute walk. This is also a good distance for bus-stop placement.

Townhouses in Chaska, Minnesota. These form a strong relationship with the street.

A neighborhood playground.

# Case Studies

## Clover Ridge: Chaska, Minnesota

Clover Ridge (by Lender Group LTD)

Houses are close and have front porches

Clover Ridge is a development in Chaska, Minnesota: a suburb on the Twin Cities' urban fringe. It's population is expected to double in the next 10 years, so fortunately the city has had some vision. They have taken proactive measures to encourage the development of a new urbanist neighborhood, Clover Ridge. This is a successful development because the neighborhood's size is limited by the distance from the edge to the center. 63% of homes are within 1/4 mile of the center, while 99% of homes are within 1/2 mile of the neighborhood center. Additionally, the development has an affordability slant. 65% of houses for sale go for less than $195,000.

## Georgetown: Washington D.C.

Georgetown was formally established in 1751, making it one of the older cities in the U.S. It was named after King George II and orginally flourished as a shipping center. The town is actually incorporated into Washington and was affected by the development of the new U.S. capitol, yet Georgetown retained it's own feel.

Townhouses Georgetown, D.C.

What we see today is a city that retains it's colonial charm, this makes it a good example for us to study. It's streets are narrow and lined with trees. It's sidewalks are brick and well-used by pedestrians. The houses have character and are generally brick done in the Federal style. There is also plenty of open space including the 27 acre public park, Dumbarton Oaks. Georgetown is an excellent community which is why my site in South Fargo takes it's namesake.

Commercial area Georgetown, D.C.

*Project Introduction: Board 1/7*

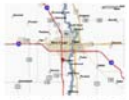
Final Boards

# Introduction to the Site





## Orientation


Scale: 1" = 1800'

Georgetown Park is located on the south side of Fargo, ND. It is on a section of land that is being rapidly developed. The City of Frontier exists on the northwest ¼ section and my New Urbanist development encompasses the other ¾ of that section

The area this neighborhood sits in has been highly active. A new elementary school was constructed across the street to the east in 2002. The area is currently a mix of single family residential, apartments, and some larger single family lots. These lots are actually their own town, called Frontier. Interstate highway 29 is less than a ½ mile away also. Let's take a closer look at the site.

## Inventory


Scale: 1" = 1600'

## Hydrology

The stream that runs the length of the site would be characterized as ephemeral because it can not be counted on for water. According the the USGS, the water level in this area fluctuates from 1' below to 2' above the surface. Drainage is generally toward the center of the site. When filled with water, the ditch flows in a southerly direction.

## Topography

Contours range from a high point of 907' above sea level to a low point of 900' above sea level. A drain runs through the middle of the site which accounts for the low elevation.

## Soils

There are four main soil types on the site

5-Dovray Silty Clay

- Deep, level
- Excess water, spring floods pond for long periods
- Water table fluctuates 1' below to 2' above the surface.
- Too wet for planting if not drained.

36-Fargo Silty Clay

- Deep, level, poorly drained soil on glacial lake plain
- Occasionally flooded
- Suitable for trees and shrubs if drained
- High shrink-swell potential is a limitation for building sites

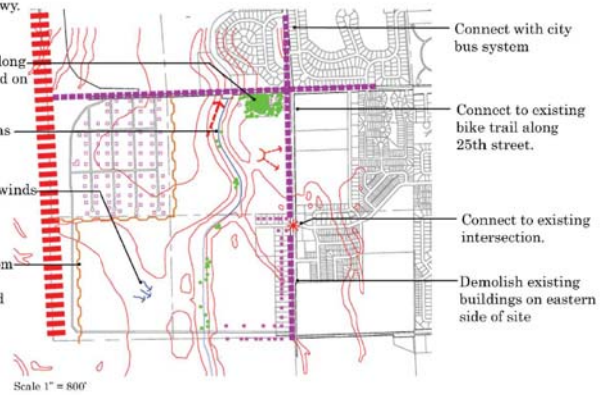
38-Fargo Silty Clay Loam

- Deep, level, poorly drained soil on low ridges and broad flats of glacial lake plains
- Rarely flooded
- Suitable for trees and shrubs if drained
- High shrink-swell potential is a limitation for building sites

## Climate

Fargo's climate is a continental one, characterized by: wide temperature swings. High temperatures hover around 15 degrees in January to 84 degrees Farenheit in our area's warmest season, July. Precipitation ranges from a low of 1/3 inch in January to a high of 7.5 inches of precipitation in May.
The growing season is an average of 140 days.

## Site Analysis




Scale 1" = 800'

## Circulation

Scale: 1" = 1800'

- Interstate Hwy.
- Minor Arterial
- Collector
- Site

## Floodplain

- 100 yr. floodplain
- 500 yr. floodplain

Scale: 1" = 1600'

A major constraint to this site is that 100% of it lies within the 500 or 100 year floodplain. This is no joke, as the area has been inundated as lately as 5 years ago. Steps must be taken to ensure good foundations and the construction of basements will not be recommended. In order to alleviate flooding, the development will aim to ensure that surfaces are mostly permeable. This will allow for more water to seep into the ground and prevent flash-flooding.

# Georgetown Park:

A New Urbanist Neighborhood on Fargo's Urban Fringe


*Inventory and Analysis Board 2/7*

## Master Plan


## A New Urbanist Neighborhood

Georgetown Park is named after Georgetown in Washington D.C. It's inspiration comes from Georgetown's historic style of architecture and the relationship of buildings, pathways, and open space. Inspiration also comes from sites I visited: new urbanist communities in Minneapolis-St. Paul and right here in the older areas of Fargo. The site is organized under the grid system; #1 because it is an efficient way to make use of the land, and #2 because it is a return to the tradition of city planning in the pre-WWII era. This development pattern has not been used in Fargo for 50 years but there are several virtues I hope to prove that are worth returning to.

Today's developments lack character, open space, and have poor circulation if one plans on walking or biking somewhere. My plan adresses all kinds of travel with the same importance. Utilitarin bike paths are designated on the two minor arterials on my site, alongside vehicular traffic. A leisure path runs along the 100' drain easement near the middle of the site. The easement creates an uninterupted open space where native plants flourish, and form a natural stormwater management system. There is a large park on the north end of the site as well as smaller neighborhood pocket parks and playgrounds sprinkled throughout. One will also notice on the plan a substantial buffer zone around the entire site that mitigates traffic noise and stormwater runoff.

In order to serve the daily needs of Georgetown Park's residents, a commercial area is located on the south end of the site. This area has wide sidewalks where pedestrians experience a lively atmosphere with it's sidewalk cafes and pedestrian promenade just to the east. Georgetown's use of alleyways, street trees, open space, and buildings with character reflect the tenants of New Urbanism and will hopefully have a place in Fargo's future, not just it's past.

### Legend

- Commercial/ Residential
- Multi-Family Residential
- Single-Family Residential
- Off-Street Parking
- Open Space

A: Buffer Zone
B: Small Park
C: Commercial/ Residential
D: Pedestrian Promenade
E: Pocket Park
F: Drain Greenway and Leisure Bike Paths
G: Farmstead Park

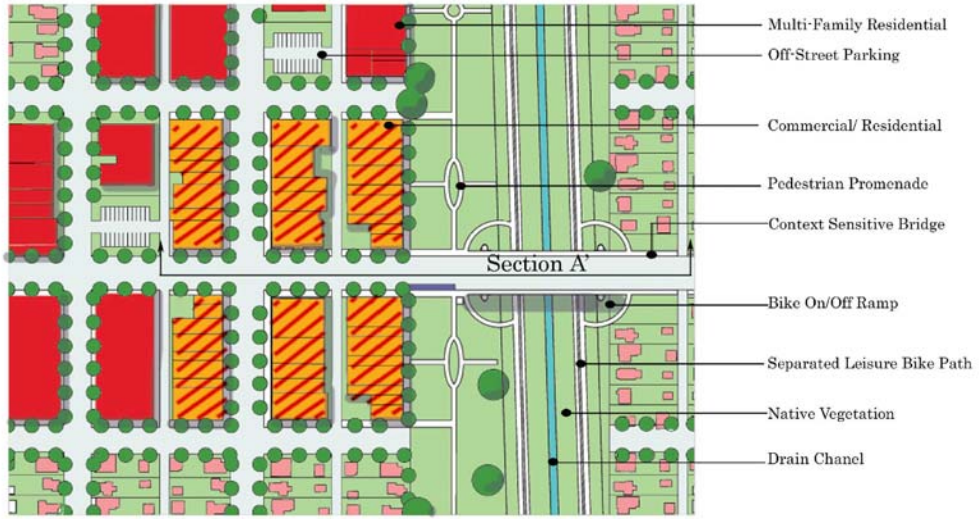
# Georgetown Park

A New Urbanist Neighborhood
on Fargo's Urban Fringe

N

*Master Plan Board 3/7*

## Commercial Plan




*Scale: 1" = 100'*

### Commercial Sidewalk

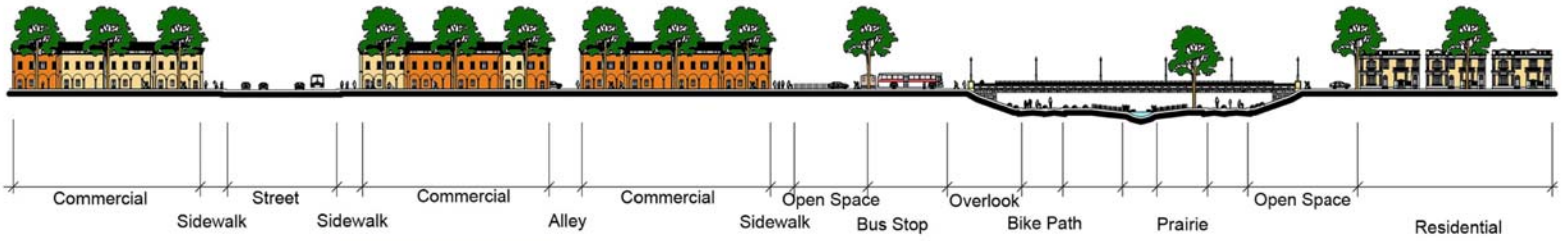
Georgetown Park's commercial area is busy with people sitting at sidewalk cafes and taking care of the daily errands.

### Commercial Streetscape

Tree-lined streets shade passers by as they walk safely through the commercial area.

## Section A'

*Scale: 1"= 40'*




# Georgetown Park:

A New Urbanist Neighborhood
on Fargo's Urban Fringe

N

*Commercial Board 4/7*

## Residential Plan


Scale: 1" =60'

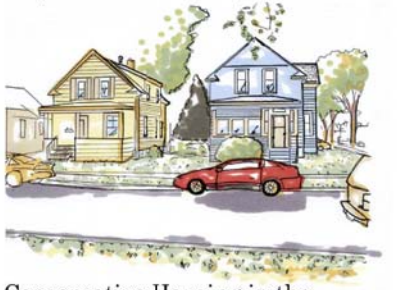
## A Hierarchy of Socialization

Georgetown Park's residential area is organized into blocks 300 x 300' with lots 45' wide and 135' long. There is a 15' city right-of-way with a sidewalk and street trees. Garages are placed in the back of the house. This is a tenant of New Urbanism, because it reinforces a strong streetscape and also allows for a 'front porch culture' to develop. People are more likely to become neighborly with increased social interaction caused by the front porches. Their porch is connected to the sidewalk and their sidewalk connects to the bike path along the minor arterial which in turn connects to the commercial center of the site. This is a hierarchy of circulation but one may also call it a hierarchy of socialization; as the closer one gets to one's home, the more acquaintences Citizen Jim or Jane will run into. This will create a strong sense of community cohesion; a major objective for this plan.

One will notice the minor arterial on this planview. It has four lanes in addition to two that are designated for bikes only. It's access is somewhat limited as the green median spans most local street intersections. This is a residential area, so the speed limit is 25 mph.

Residential Front Porches

Front porches encourage social interactiion leading to an enhanced sense of community

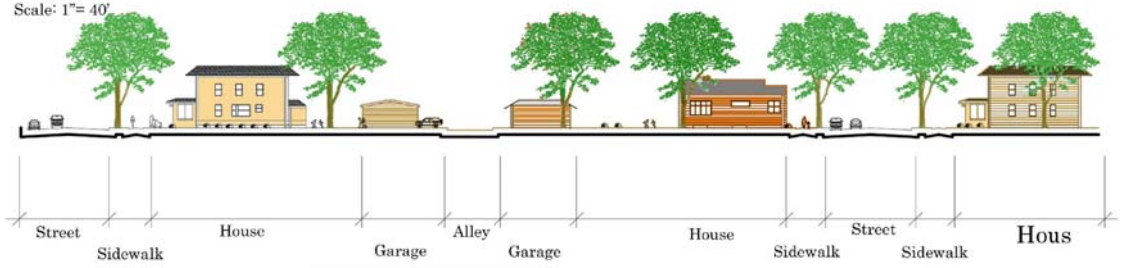


Conservative Housing in the Farm Style

Housing character is no great departure from existing homes in the older parts of Fargo. This type will be more palatable to the consumer.

## Section B'

Scale: 1"= 40'




# Georgetown Park:

A New Urbanist Neighborhood
on Fargo's Urban Fringe

N

*Residential Board 5/7*

Typical Neighborhood
Children's Park

## Street Trees

Extensive street trees are used on the site. They are primarily Ash (Fraxinus pennsylvanica). Trees are used to define and organize the street. They provide unity and scale while creating a sense of enclosure. Bicyclists and cars alike benefit from their cooling canopies. In addition to shade and cooling, they are used as a buffer on the edges of the site, screening the view of the interstate as well as diminishing traffic noise.

## Parks are Important

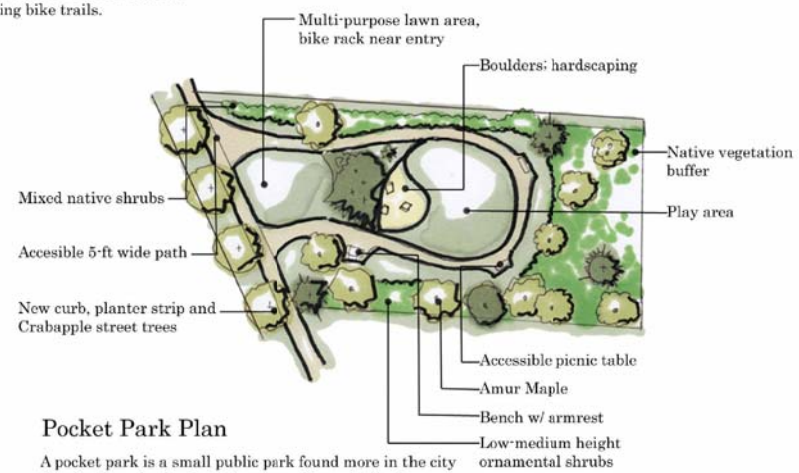
Open space is an integral part of a neighborhood. It is used for recreation, preservation of natural features, or simply for visual relaxation from the built environment. Because my plan is denser than most developments, I wanted to create plenty of shared open space. The open spaces form a hierarchy with the pocket parks and block-size parks being more on the neighborhood scale, while Farmstead Park and the drain easement are more community-scaled. The recreatinal bike path for example, may draw people from all over Fargo since it connects with the city's existing bike trails.

Pocket Park Perspective


Farmstead Park

Scale: 1" = 100'

This green space was preserved with a larger park in mind. The existing trees are large Oaks. It is set on a former farmstead. Although not as large, it is the 'Dumbarton Oaks' of my site. Tennis courts, a skate park, and playground give everyone something to do.




Pocket Park Plan

A pocket park is a small public park found more in the city than in the suburbs. It can be as small as a lot in size. This one is about 3 lots big. Although it does have a designated active area, this park is mainly passive in nature. It features accessible benches and would make a great place to have lunch or just a conversation. The dense evergreens at the park entrance make it a little more secluded feeling than most parks, the small scale also adds to the intimacy.

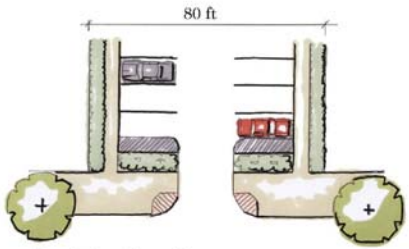
# Georgetown Park:

A New Urbanist Neighborhood
on Fargo's Urban Fringe

N

*Open Space Board 6/7*

## Vehicular




### Parking Lot Between Buildings

Small parking lots are concentrated mainly in the commercial area to alleviate any congestion, as there is no on-street parking in the commercial zone.

Buses are another tool for moving people around. They are efficient because they use less fuel per individual. With a higher density population and frequent stops along the route, they can be a successful part of the transportation mix.

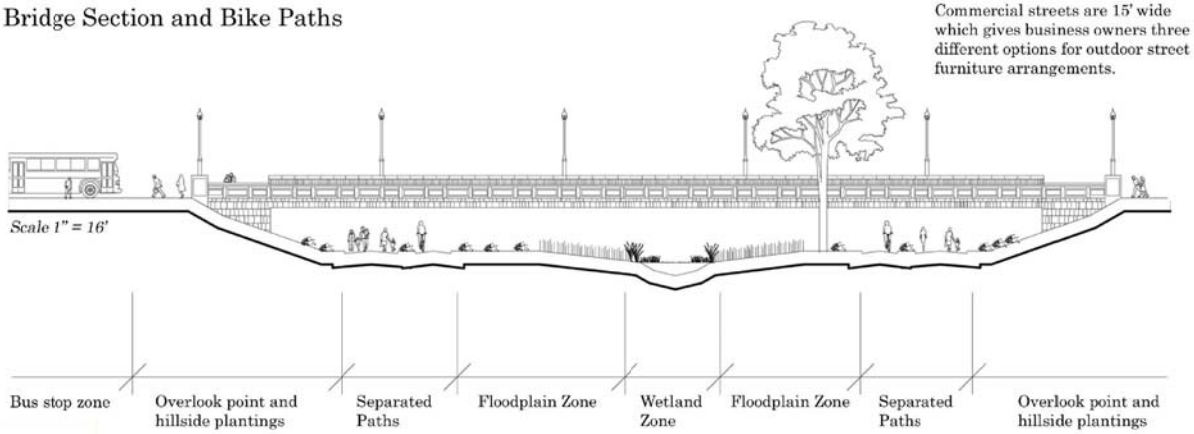
### Bus Stop

## Bicycle

### Alleyway and Bike Lane

Alleyways don't have to be ugly, they are paved and also function as service roads for residential waste pickup. See also the bike lane, it is marked by a yellow thermoplastic stripe.

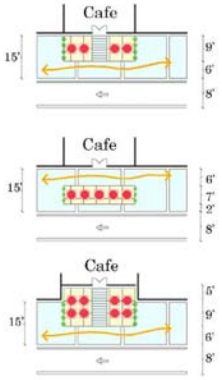
### Bridge Section and Bike Paths




## Pedestrian

### Bike and Pedestrian Underpass

In order to ensure safe travel of pedestrians and bicyclists, two underpasses were created. The underpass on the north end of the site connects directly with a spiritual center while the one at 58th Avenue South connects with an elementary school.




### Sidewalk Cafe Options

Commercial streets are 15' wide which gives business owners three different options for outdoor street furniture arrangements.

# Georgetown Park:

A New Urbanist Neighborhood
on Fargo's Urban Fringe

N

*Circulation Board 7/7*

# Part 5
# Additional Information

## Bibliography


Minnesota Department of Natural Resources. (1998). Land Protection Options:A Handbook for Minnesota Landowners (2nd ed.). St. Paul, Minnesota. Division of Ecological Services.

Minnesota Department of Natural Resources. (2000). A guide to Aquatic Plants. St. Paul, Minnesota. Division of Ecological Services.

United States Department of Agriculture. Soil Survey of Cass County Area NorthDakota. Washington, DC: U.S. Government Printing Office.

Lynch, Kevin & Hatch, Gary. (2000). Site Planning. (12th ed.). Cambridge, Mass: The MIT Press.

Harris, Charles W. , & Dines, Nicholas T. (1998). Time Saver Standards forLandscape Architecture (2nd ed.). New York: McGraw-Hill Publishing Company.

Marsh, William H. (1997). Landscape Planning: Environmental Applications. New York: John Wiley & Sons.

## Statement of Intent

# Fargo land values study and High density subdivision

I propose as a thesis project, the design of a high-density subdivision; the research for which will show that land values are not directly related to population density. This fact is the underlying premise of the design.

There is a perception in the Fargo community that a lower population density is correlated with higher land values. A group in Fargo called the 'Citizens for Responsible Growth' are in this camp. They are against higher density housing being constructed next to them, as they fear it will lower the value of their land. The research will prove this is not so; that land values are not directly correlated with population density. I will show that a development can be several times the density of Rose Creek and still be assessed at a higher value per square foot than Rose Creek or Timberline, some of Fargo's premiere low density residential developments.

In order to explore my hypothesis, I will use data supplied by the City of Fargo. The data is a GIS file which includes: parcel dimensions, size, assessed value, and other info. I will query this data to create several maps. The maps will show land value in relation to population density. The maps will be roughly quarter sections, encompassing both high and low density residential areas in Fargo. The areas will differ in age, lot size, and of course location.

The second part of my thesis project is a quarter section residential development just west of Bennett Elementary in south Fargo. Responding to the research, it will incorporate medium to high density housing with common areas of open space. Based on my projected population density and open space in the development, I will be able to determine a rough land value for the site. I hope to prove that a development can of higher density and still have land values comparable to the premiere and very expensive low density developments in Fargo.

Greg Stachon,

5th year Landscape Architecture

Submitted 23 September, 2004

# Thesis Proposal

A. User/ Client Description

The client for my site is Adam's Development, LLC. A local development company out of Fargo, ND. The user for the development will be townhouse residents, condo residents, restaurant patrons, and office park workers. They each have their own requirements, however they all need: water, electricity, sewage, parking (variable amounts), and open space.

**Townhouse residents**: 25 units with one off-street parking stall per townhouse.

**Condo residents**: 75 units with 1.5 off-street parking stalls per unit; a total of 112 stalls.

**Restaurant patrons:** 3,000 square foot facility with 30 employees.

**Office park workers:** 100,000 square foot facility with 500 workers, 500 off-street parking stalls.

B. Major Project Elements

- Townhouse rows
- Condos
- Office with restaurant
- Off-street parking
- Ravine
- Ravine pathway
- Garden seating area next to restaurant
- Passive use park
- Active use park

C. Site Information

Site is located in south Fargo on the edge of a fast growing city of approximately 90,000 persons. Specifically, the site is located in the northeast quarter section of section 1384902, Stanley Township, North Dakota. It is bordered by 25$^{th}$ street to

the east and I-29 to the west. It is just south of 52 Avenue south and runs to 58 avenue south where there is a line of single family homes bordering 58th av. South on both sides. It borders Frontier subdivision on the east, and there is an old farmstead on the northwest side. In addition to the man-made borders, there is a county drain easement that cuts the site roughly 1/3 to 2/3. The drain is a ditch with standing water up to 12" and some submergent vegetation, like cattails. The ditch easement is 100' wide. The site is currently zoned agriculturally and is being cultivated with beans. There are stands of trees bordering Frontier to the east and a good clump of trees surrounding the old farmstead. The site is generally flat, but has slopes approaching 7% to the north, and 3-5% slopes towards the middle ravine area. Soil is a silty clay and has a very fertile topsoil layer. Prevailing winds come from the northwest and should be blocked due to the cold winters.

D. Project Emphasis

**High density development**

Higher density residential and commercial buildings instead of low-density suburban sprawl. Buildings will reflect a human scale and emphasis will be placed on incorporating off-street parking while maintaining curb appeal.

**Storm water management**

Minimize impervious runoff. Keep ditch's use and utilize as an amenity. Use vegetation and buffer zones to deal with majority of runoff.

**Mixed use design**

Incorporate residential, commercial, and open space into a harmonious whole. Provide interest at street level to enhance pedestrian walking experience. Orient buildings to the street.

E. Plan for Proceeding

Through the use of data from the City of Fargo, I will prepare a set of GIS maps that reflect land values for low and high density areas in Fargo. This will set a premise for my higher-density mixed use development. I intend to use case studies of existing high density mixed use developments both outside and within the Fargo-Moorhead area. For example I plan to study a development in Edina called Centennial Lakes. I plan on using their townhouses and condos as a precedent for my buildings' typologies. I will need to research building materials, lighting, pathways, mixed use development, as well as storm water management for dealing with my ditch easement on site.

F. Realization of the Design Method in the Design Process

The realization of the method I am proposing will occur in the multiple analyses of different projects of similar typology. These analyses will help in guiding my decision making processes in the design of a high-density, mixed-use office park and residential development.

G. Schedule

| | | |
|---|---|---|
| M | 08 OCT | Thesis proposal due (2 copies)<br>Research related material |

Focus on:
Storm water management
Mixed use development
Medium density residential development
GIS city data

| | | |
|---|---|---|
| W | 11 OCT | Students and faculty return preference slips |
| R | 12 OCT | Primary and secondary critics announced |
| T | 28 OCT | Last day of AR/LA 561 class |
| M | 01 NOV | Collect Site Information |
| F | 01 DEC | Organize research material |
| T | 10 DEC | Assemble Program |
| F | 14 DEC | Thesis Program due to thesis critic |
| M | 16 DEC | Last day of classes |
| T | 17 DEC | Finals week |
| T | 09 JAN | Classes begin |
| M | 15 JAN | Schematic drawings, start weekly reviews with critic until February |
| M | 01 FEB | Start modeling existing site |
| M | 05 MAR | Mid-semester project reviews |
| M | 12 MAR | Spring Break |
| M | 19 MAR | Begin composing final presentation material |
| M | 02 APR | Work on final presentation material |
| F | 13 APR | Easter Holiday |
| M | 23 APR | Thesis Projects Due |
| T | 24 APR | Draft of final thesis document due to primary critic |
| F | 04 MAY | Last Day of Classes |

S 12 MAY Commencement

H. Documentation of the Design Process

Documentation of research will be recorded or copied into a binder that will be organized by topic (storm water management, mixed use development, high-density development). Documentation of design will be kept in order and dated. Sketching will be a day to day task that will be kept in a sketchbook. Designing outside of the sketchbook will be kept in a binder and/or folder and will be dated.

I. Bibliography


Minnesota Department of Natural Resources. (1998). Land Protection Options: A Handbook for Minnesota Landowners (2nd ed.). St. Paul, Minnesota. Division of Ecological Services.

Minnesota Department of Natural Resources. (2000). A guide to Aquatic Plants. St. Paul, Minnesota. Division of Ecological Services.

United States Department of Agriculture. Soil Survey of Cass County Area North Dakota. Washington, DC: U.S. Government Printing Office.

Lynch, Kevin & Hatch, Gary. (2000). Site Planning. (12th ed.). Cambridge, Mass: The MIT Press.

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Marsh, William H. (1997). Landscape Planning: Environmental Applications. New York: John Wiley & Sons.


J. Previous Design Studio Experience

**2nd Year**

Fall: Tim Kennedy

- Ideal Landscape

- Six Pack Design
- Precedents Study
- Plains Art Museum Terrace

Spring: Dennis Colltion

- Camp Wilderness Amphitheatre
- Devil's Lake Open Space & Park Development
- NDSU Fountain Plaza

**3rd Year**

Fall: Josh Walter

- Car Park
- Sheyenne National Grasslands Campground

Spring: Tim Kennedy

- Pool Perspective
- Camp Cormorant
- Upper Landing Housing Development
- Masonry Competition

**4th Year**

Fall: Josh Walter, Mark Barnhouse

- Downtown Fargo Urban Development

Spring: Angela Hansen

- Broadway Square
- Fort Totten Historic Preservation
- Stone Competition

**5th Year**

Fall: Josh Walter

- Fergus Falls River Walk

# New Urbanism Notes

What is Community?

- ☐ Group sharing a physical space
- ☐ Group sharing a common trait
- ☐ Group with shared identity
- ☐ Common culture
- ☐ Social cohesion

Community Planning

- ☐ Human vs. Automobile scale
- ☐ Time-Distance relationships
- ☐ ↑ social interaction
- ☐ Address citizen's values
- ☐ Functional movement
- ☐ Health, Safety, Welfare
- ☐ Adaptability

Building Blocks of Community Design

- ☐ Path
- ☐ Edge
- ☐ District
- ☐ Node
- ☐ Landmark

Principles of Design

- ☐ Harmony
- ☐ Gradation
- ☐ Contrast
- ☐ Unity

Tools of Community Design

- ☐ Axial
- ☐ Hierarchy
- ☐ Transitional Elements
- ☐ Dominant Features
- ☐ Sense of Enclosure

Spatial Components

- ☐ Circulation
- ☐ Open Space
- ☐ Structures

# Building Types

Housing Type A

Housing Type B

Apartment Type A

Apartment Type B

# South Fargo Sprawl


# Plants for Storm Water Management

## Plants for Stormwater Management

*May the Avalability codes be noted as follows:
N/A = Not Available
L = Limited Availability
W = Widely Available

**SUBMERGENT ZONE** 3-6' of water, plants may float free in water or root in the pool bottom; stems/leaves stay underwater. Plants increase wildlife habitat. Many not available in nurseries

| VEGETATIVE GROUP | QUANTITY | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| Forbs & Ferns | N/A | *Brasenia schreberi* | Water shield | Oval-shaped leaves sit on water surface; small purple flowers emerge from water on a stalk | N/A |
| | N/A | *Nymphaea orderata* | White water-lily | Round, floating leaves. Pinkish-white petals appear June- Aug. in the sunshine only | N/A |
| | N/A | *Spirodela polyrchiza* | Giant duckweed | Small floating plant, grows in dense colonies | N/A |
| | N/A | *Woffia columbiana* | Watermeal | Tiny plants .3-1mm long; associated with duckweed family | N/A |

**EMERGENT ZONE** 0-18" of water. Plants are important for wildlife, evapotranspiration, habitat for phytoplankton.

| VEGETATIVE GROUP | | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| Shrub | 4 | *Cephalanthus occidentalis* | Buttonbush | Nectar source, attracts insects, hummingbirds, tolerates flooding up to 45 days | W |
| Forbs & Ferns | 10 | *Acorus calamus* | Sweet flag | Roots form a mat in upper 4-8" of soil; stabalizes soil | W |
| | 9 | *Pontedria cordata* | Pickerelweed | Prefers water 12-18" deep; has been used for backwater areas | W |
| | 800 | *Typha latifolia* | Broadleaf cattail | Blooms May-June. A cool season soil stabalizer | L |
| | 300 | *Carex retrosa* | Retrose sedge | Likes full sun, food source for most waterfowl, beaver, muskrat | L |
| | 150 | *Scirpus acutus* | Hardstem bulrush | Prefers deeper water (depths to 5'). Excellent buffer, helps limit cattail | W |

**WET MEADOW ZONE** Constantly moist area, can become inundated. Vulnerable to erosion.

| VEGETATIVE GROUP | | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| Forbs & Ferns | 41 | *Aster lucidulus* | Swamp aster | Pale blue-lavendar blooms Aug.-Oct. | W |
| | 20 | *Euporium maculatum* | Joe-pye weed | 3-5' tall, prefers calcerous soils, attracts butterflies, bees | W |
| | 30 | *Liatris pychnostachya* | Prarie blazing star | Blooms purple July-mid Sept. attracts butterflies, good for cut flowers | W |
| | 15 | | Blue lobelia | Blue-white flower; blooms July-Oct. Nectar for song birds | W |
| | 52 | *Osmunda regalis* | Royal fern | Prefers inundation 3" or less; Good buffer for wetlands. Slow rate of spread | W |
| Grasses, sedges, rushes | 63 | *Andropogon gerardii* | Big bluestem | Slows surface runoff, adds fall-winter color; tolerant for 2 days flooding | W |
| | 75 | *Panicum virgatum* | Switchgrass | Ideal winter wildlife cover; airy-looking head. Good space filler | W |

**FLOODPLAIN ZONE** Normally dry, but may flood during snowmelt and after large storms. Vegetation can handle extremes in hydrology.

| VEGETATIVE GROUP | | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| Trees & Shrubs | 24 | *Acer saccharinum* | Silver maple | shade tree, branches can be weak; a floodplain tree | W |
| | 67 | *Cornus sericea* | Red-osier dogwood | Creamy white flowers May-Aug. Tolerates flooding 30 days+ | W |
| | 41 | *Fraxinus pennsylvanica* | Green ash | Tough, grows easily, 2,4-D resistant, tolerates 10-day flood | W |
| | 63 | *Physocarpus opulifolius* | Ninebark | Easy to maintain, popular foundation shrub; food for small mamals | W |
| | 25 | *Populus deltoides* | Eastern Poplar | Good floodplain tree | W |
| | 9 | *Quercus bicolor* | Swamp white oak | Resistant to soil compaction, acorns eaten by a variety of wildlife | W |
| | 22 | *Viburnum lentago* | Nannyberry | 1/2" long bluish-black fruit. Small white flower May- | |
| Forbs & Ferns | 41 | *Aster lucidulus* | Swamp aster | Pale blue-lavendar blooms Aug.-Oct. | W |
| | 45 | *Lobelia siphilitica* | Prarie blazing star | Blooms purple July-mid Sept. attracts butterflies, good for cut flowers | W |
| | 10 | *Potentilla palustris* | Marsh cinquefoil | Loose clusters of dark purple, red flowers | N/A |
| | 14 | *Veronia fasiciculata* | Ironweed | Up to 5' tall, deep purple, flat-topped flowers. A butterfly attractor | W |
| Grasses, sedges, rushes | 50 | *Elymus virginicus* | Virginia wild rye | Tan flower June-Oct. Wideleaf w/smooth sheath, dries well for arrangements | W |
| | 52 | *Panicum virgatum* | Switchgrass | Ideal winter wildlife cover; airy-looking head. Good space filler | W |
| | 56 | *Spartina paniculata* | Prarie cordgrass | Gracefull, arching leaves turn red to straw-yellow in fall. Seed @ 2 lbs./ acre | W |

**UPLAND ZONE** Seldom or never inunudated; includes prarie and forest plant communities

| VEGETATIVE GROUP | | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| Trees & Shrubs | 6 | *Abies concolor* | White fir | Silvery-grey foliage; better disease resistance than Colorado spruce | W |
| | 3 | *Juniperus scopulorum* | Medora juniper | North Dakota native, distnictive columnar form | W |
| | 8 | *Eleangus angustifolia* | Russian olive | Tough tree, branches can get weak | W |
| | 11 | *Populus tremuloides* | Quaking aspen | Shallow roots form broad communities, pioneer qualities | W |
| | 15 | *Picea pungens* | Colorado spruce | Bluish-grey foliage | W |
| | 12 | *Quercus bicolor* | Swamp white oak | Resistant to soil compaction, acorns eaten by a variety of wildlife | W |
| Forbs & Ferns | 25 | *Artemisia ludovicana* | Prarie sage | Silvery-grey foliage, good ground-cover for sunny, dry slopes. Aromatic, spreads quickly. | W |
| | 23 | *Aster laevis* | Smooth aster | 1" lavendar blooms; Aug.-Oct. | W |
| | 36 | *Aster lanceolatus* | Panicle aster | White-yellow panicles bloom Aug.-Oct. | W |
| | 23 | *Monarda fistulosa* | Wild bergamot | Lavendar flowers July-Aug. Used in mint tea | W |
| | 152 | *Ratibida pinnata* | Yellow coneflower | Stabalizes ditches. Grey foliage makes for good contrast; adapted to clay soils | W |
| | 116 | *Solidago ridellii* | Riddell's goldenrod | Blooms Sept.-Nov. A butterfly favorite | W |
| Grasses, sedges, rushes | 170 | *Andropogon gerardii* | Big bluestem | Slows surface runoff, adds fall-winter color; tolerant for 2 days flooding | W |
| | 150 | *Panicum virgatum* | Switchgrass | Ideal winter wildlife cover; airy-looking head. Good space filler | W |
| | 42 | *Parthenocissus tricuspidata* | Boston Ivy | Clings to built materials | W |
| | 47 | *Sorghastrum nutans* | Indian grass | Golden brown panicles Aug.-Sept. | W |

**PLANT MIXES**

Plant mixes to be used in various locations on the site

| VEGETATIVE GROUP | | LATIN NAME | COMMON NAME | COMMENTS | AVAILABILITY |
|---|---|---|---|---|---|
| MIX 1: UNDERSORY WILDFLOWERS | 23 | *Artemisia ludovicana* | Prarie sage | Silvery-grey foliage, good ground-cover for sunny, dry slopes. Aromatic, spreads quickly. | W |
| | 56 | *Aster laevis* | Smooth aster | 1" lavendar blooms; Aug.-Oct. | W |
| | 140 | *Aster lanceolatus* | Panicle aster | White-yellow panicles bloom Aug.-Oct. | W |
| | 200 | *Monarda fistulosa* | Wild bergamot | Lavendar flowers July-Aug. Used in mint tea | W |
| MIX 2: PERENNIAL GRASSES | 145 | *Andropogon gerardii* | Big bluestem | Slows surface runoff, adds fall-winter color; tolerant for 2 days flooding | W |
| | 130 | *Panicum virgatum* | Switchgrass | Ideal winter wildlife cover; airy-looking head. Good space filler | W |
| MIX 3: PERENNIAL GRASSES | 120 | *Spartina paniculata* | Prarie cordgrass | Gracefull, arching leaves turn red to straw-yellow in fall. Seed @ 2 lbs./ acre | W |
| | 140 | *Elymus virginicus* | Virginia wild rye | Tan flower June-Oct. Wideleaf w/smooth sheath, dries well for arrangements | W |
| | 150 | *Sorghastrum nutans* | Indian grass | Golden brown panicles Aug.-Sept. | W |
| MIX 4: MEADOW WILDFLOWERS | 104 | *Ratibida pinnata* | Yellow coneflower | Stabalizes ditches. Grey foliage makes for good contrast; adapted to clay soils | W |
| | 120 | *Solidago ridellii* | Riddell's goldenrod | Blooms Sept.-Nov. A butterfly favorite | W |
| | 140 | *Artemisia ludovicana* | Prarie sage | Silvery-grey foliage, good ground-cover for sunny, dry slopes. Aromatic, spreads quickly. | W |

# Personal Photo

Greg Stachon