Urban Greenway Retrofit
a design for alternative transportation, community, and the environment
How can a greenway strengthen and connect greenspaces and neighborhoods in existing urban fabric?
PROJECT GOALS

Designing for Alternative Transportation
- Connect people to places by providing routes separate from motor vehicle transportation
- Provide routes that connect existing greenspaces and recreational amenities
- Create a safe links between neighborhoods to facilitate use

Designing for Community
- Strengthen social bonds by creating centralized gathering spaces with amenities for all ages
- Improve quality of life and overall health of citizens

Designing for the Environment
- Design multi functioning sites that allows people to engage and interact with the environment
- Develop interventions that improve the quality of the environment and create areas for habitat
**URBAN GREENWAY:**

- Linear, vegetated spaces used for recreation and alternate transportation that also provides multiple ecological benefits within a city.

**BENEFITS OF GREENSPACES AND GREENWAYS**

- **Health Benefits of Physical Activity and Nature**
  - Reduces risk of many health problems
  - Improves wellness
  - Improves quality of life

- **Ecological Benefits**
  - Environmental benefits
  - Protection of natural resources

- **Social Benefits**
  - Unites communities
  - Strengthens social bonds
  - Encourages stewardship

- **Economic Benefit**
  - Increases tourism
  - Can influence where people spend time and money
  - Increase in property value
“Increased use of bike and pedestrian facilities would save infrastructure costs considerably. It takes about $1 million per lane per mile to build an urban arterial roadway and about $135,000 per mile for a multi use path” - FM Metropolitan Bicycle and Pedestrian Plan 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Multi Use Path</th>
<th>One Lane Arterial Roadway</th>
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<tr>
<td>2000</td>
<td>$135,000</td>
<td>$1,000,000</td>
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### 2000 Census

<table>
<thead>
<tr>
<th>Location</th>
<th>Population</th>
<th>% Bike Commuters</th>
<th>% Ped. Commuters</th>
<th>% Total</th>
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<tbody>
<tr>
<td>FM Metro</td>
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<td>2.84%</td>
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<td>14,632</td>
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<td>1.07%</td>
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<td>Dilworth</td>
<td>3,007</td>
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<td>3.71%</td>
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### 1990 Census

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<th>Location</th>
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<th>% Bike Commuters</th>
<th>% Ped. Commuters</th>
<th>Commuters</th>
<th>% Total</th>
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<td>Dilworth</td>
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<td>2.79%</td>
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### Existing Fargo Metro Commute to Work in Minutes

- Less than 5 minutes: 5%
- 5-9 minutes: 18%
- 10-14 minutes: 27%
- 15-19 minutes: 24%
- 20-24 minutes: 10%
- 25-29 minutes: 3%
- 30-34 minutes: 4%
- 35-39 minutes: 1%
- 40-44 minutes: 1%
- 45-59 minutes: 2%
- 60-89 minutes: 2%
- More than 90 minutes: 3%

50% live within 14 minutes and 6 miles of work

Source: Census Bureau
The neighborhoods in Fargo are bounded by arterial roads, creating a disconnect between them. The population of neighborhoods shows the central downtown core has a higher population, and as the city expands, the population of neighborhoods decrease.

Key

- > 1,000
- 1,000-2,000
- 2,000-3,000
- 3,000-4,000
- 4,000-5,000
- 5,000-6,000
- 6,000-7,000
Destinations and Employers

- The web map illustrates where people live and connects them to major employers and major destinations. The darker areas suggest the bike paths are not adequate to where people are traveling.
Greenspaces and Bike Paths

- Parks, excluding golf courses, total approximately 1,300 acres; about 5.25% of Fargo’s total land area. Currently, many of the bike paths are wide sidewalks next to roadways and shared roadways with vehicles.
Property Opportunities

- As the city expands, bike paths and greenways are planned in the developmental process; however, the central core of the city lacks the planning and can lack the available (or “suitable”) land. Alternative under-utilized or undeveloped land can be used as areas for greenways and parks.
Property Opportunities

- Properties include:
  City, County, School and Park District Land
  Railroad, City Drains, Electrical Easements
  Developers, Private Property

Drain
Builders MGMT & Investment Co
John and Tom Brunsdale
City of Fargo
Fargo Parks District
Cass County
Private
BNSF
Railroad
Van Raden Properties
West Acres Development
T Sloan Properties
BC Investments & Leasing
Brandt Crossing
W. Fargo Public School District
Fargo Public School District
Great Plains Software & Private
Mills Supply
Ulteig Engineers
U-Tag Investments
\textbf{MASTER PLAN}

- 21 miles long
- 15 mile loop
- 9 mile stretch of minimal interruptions
- Increases park space by 15%
- Connects 20 existing parks, 2 proposed

\textbf{Designing for Alternative Transportation}

\textbf{Designing for Community}

\textbf{Designing for the Environment}

\textbf{KEY}

- \textcolor{green}{Greenway Trail}
- \textcolor{green!50!black}{Park}

\textbf{CONDITIONS}

- \textcolor{green!50!black}{Existing or Proposed Park}
- \textcolor{green!25!black}{Narrow Corridor}
- \textcolor{green!25!black}{Existing Bike Path}
- \textcolor{green!25!black}{Biking on Roadway}
- \textcolor{green!50!blue}{Road Crossing}
- \textcolor{green!50!blue}{Special Condition}
Road Crossing
Existing/Proposed Park
Special Condition
Bike Lane on Roadway
Existing Bike Path
Narrow Corridor

Roads:
- Interstate-29
- Interstate-94
- 40th Ave s
- 52nd Ave s
- 32nd Ave s
- 25th st
- 13th Ave s
- University Ave
- Milwaukee bike path
- 12th Ave
- Main Ave
- 13th Ave S
- 32nd Ave S
- 25th St
- 40th Ave S
- 45th St
- 52nd Ave S

JOHNSON PARK: NDSU Campus

Roosevelt/NDSU neighborhood
3,358 people

Parks and Amenities
- Johnson Soccer Complex
  Soccer Fields
- Roosevelt Park
  Playground equipment
  Hockey in winter

Conditions
- Existing Park
- Road Crossing
- Special - Rail Road Crossing
Located just south of NDSU campus, this area serves as a central hub, which it currently lacks. This area will allow opportunities for social interaction between the neighborhood residents, including students. The bike trail connects from campus, through the site, and over the tracks. The stormwater channel with a gradual slope creates a natural feel while creating habitat. The shade structure and play equipment creates an opportunity for neighborhood gatherings. The walking path, soccer fields and open turf are opportunities for recreation.
Johnson Park
QUALITY AND CHARACTER

View of the Gathering Space

- Rock Amphitheater
- No Mow Line
- Boardwalk
- Shade Structure
- Play Area
- Planting Bed
- 20’ Stained Concrete Walk

Detail of Gathering Space
Section of Rock Amphitheater, Boardwalk and Shade Structure

- Low Mow Grass
- 3'-4' Large Boulders, Inset
- 10' Bike Path
- Dark Aggregate
- Small Ornamental Signal Trees
- Existing Sidewalk
- Bump out/Road Narrows
- Speed Table
- Crossing a Collector Roadway
- Corten Steel
- Wood Posts
- 14' Max.
- 8' Min.
- 10' Typ.
- Stained Concrete Patio
- Boardwalk - Recycled Material

QUALITY AND CHARACTER

- Johnson Park
Jefferson/Carl Ben neighborhood
6,476 people

Parks and Amenities
- Teamsters Park
- Jefferson West Park
  - Walking/Running Path
  - Playground equipment
- Soccer
- McCormick Park
  - Playground Equipment
  - Basketball Courts

Conditions
- Bike Lane on Road
- Road Crossing
This pocket park is just south of Jefferson Park. This area is where the bike trail diverges in two directions; biking on the street with a buffer, and continuing the path to the south. The passive space allows people to interact with the landscape by taking a path to the waters edge or crossing to get to the boulder seating in the shade.
Jefferson South Park
QUALITY AND CHARACTER

Perspective of Seating Area

Stone Cap - Earth Tone
Stacked Rock Wall - Earth Tone
Light Stained Concrete - Natural Color
Dark Aggregate Rock

Native Grasses indicative of Great Plains
Large Dark Flagstone

Section of Wall and Path
Jefferson South Park
QUALITY AND CHARACTER

Boulevard Tree - Traffic Calming
Dark Brown Solar Bollard - Motion Activated
Short Grasses - No Mow
Narrowed Roadway - 26'
Curb Median
Concrete Bike Path
Turf Buffer
Existing Sidewalk

Typical Section of Bike Path on Roadway
**Milwaukee Trail Park**

Southpointe neighborhood
4,179 people

**Parks and Amenities**

- South Point Park
  Playground Equipment
- Milwaukee Trail Mini Park #1, 2, 3
  Playground Equipment
- Discovery Park
  School Park Amenities

**Conditions**

- Existing Bike Trail
- Narrow Corridor
- Existing Park
- Road Crossing (local)
This park is along the Milwaukee Bike Trail. It is unique, since it is situated between private property. This area serves as a destination point for those using the bike trail as well as a gathering area for the neighborhood. Bike traffic is directed around the central gathering area.
MILWAUKEE TRAIL PARK
QUALITY AND CHARACTER

Perspective View of Gardens

Detail Plan of Gathering Area

Bike Path
Raised Berm
Retaining Wall
Planters
Sculpture
Water Feature
Tree Allee
Natural Playground
Pathway
Wildflower Patch
MILWAUKEE TRAIL PARK
QUALITY AND CHARACTER

Light colored Rock Facade
stained concrete - Light, natural color

Flowers, plants, Agriculture
Growing Medium 12”+
Fabric Liner
Concrete Base for Planter
Light Colored Rock Facade
Stained Concrete - Light, Natural Color

SECTION OF TREE ALLEE

Medium Sized Fine Textured Tree
“Steppable” Planting
Dark Aggregate Paving
Dark Metal Tree Grate

MILWAUKEE TRAIL PARK
QUALITY AND CHARACTER

Flowers, plants, Agriculture
18” Stacked Rock Facade Planter
Stacked Rock Facade Planter
Stained Concrete - Light, Natural Color

SECTION OF PLANTING BEDS

Concrete Cap - Light, Natural Color
Wildflower Patch

0’ 5’ 10’ 15’ 0’ 5’ 10’ 15’
Osgood Neighborhood
New neighborhood

Parks and Amenities

- Osgood School Park
- Playground equipment
- Osgood Park
- Soccer Field
- Playground equipment

Conditions

- Existing Bike Trail
- Narrow Corridor
- Special
Large power lines, mown turf and a straight channel run along this site currently. This design exemplifies how the site can be an amenity for the area while still actively protecting from stormwater.
Perspective from Bridge

Dark brown solar bollard - Motion Activated

Native Grasses

Stacked Rock Facade - earth Tone colors

Concrete Flood wall

Dark stained concrete

Short Grasses - No Mow

Prairie Grasses indicative of Great Plains

5'0"

3'

3'

10' Typ.

OSGOOD CORRIDOR
QUALITY AND CHARACTER

Typical Section along Bike Path

Dark Brown Solar Bollard - Motion Activated

Native Grasses

Stacked Rock Facade - Earth Tone Colors

Concrete Flood Wall
Urban Greenway Retrofit

a design for alternative transportation, community, and the environment

Landscape Architecture Design Thesis 572
Maegin Rude
This map illustrates the master greenway plan with the web maps of neighborhoods, destinations, and major areas of work.
This map illustrates the master greenway plan with and the existing bike lanes.
This map shows the master greenway plan with transit routes. The greenway fills some voids left in south Fargo.