Problem Statement

How can a small city in the Midwest prepare and accommodate for current and future population growth, while maintaining long term community viability?

Project Emphasis

The main goal for this project is to research and determine the effect that an oil boom can have on a community and help it better accommodate for current and future change. This project will examine the city of Dickinson and the people who live there, how the boom has impacted the city, and how the city is coping with the change. Understanding the history of Dickinson will provide insight into how the city can thrive during an oil boom and maintain long term viability.

It is also important to identify the growing needs of a community, while still maintaining its small town values.
In the last 8 years, the population of Dickinson has been steadily increasing. The 2010 census shows that the population has grown to about 18,000 - up 2,000 people from the year 2000. The average age of individuals living in the city is 35. This means that Dickinson has a young population, meaning people are moving to the city.

Dickinson was established in 1881 after the construction of the North Pacific Railroad in 1880. It is a small, friendly city with a shared sense of community.
The Bakken Shale Formation is located in the Williston Basin Formation in the northern part of the United States. It occupies North Dakota, Montana and part of Canada. Geologists have known about this shale formation for quite a few years now, but until recently has there been any reason to drill in this location. Until recently, natural gas and oil have been made readily available to consumers, and at low prices. In 2008, oil reached $145 a barrel, hitting all time high, (bakkenshale) This is when oil corporations started moving their companies to the Midwest in search of the mineral rights to the land to begin drilling.

The Bakken Formation is a deposit of shale deep below the Earth’s surface that contains oil and natural gas. The shale consists of sedimentary rock that is made of solid kerogen material. These kerogen materials, when heated are transformed into a liquid state. The Bakken Oil Shale, like all the other shale deposits in the World, were formed millions of years ago. They were formed by organic material and silt left behind by seas and other bodies of water.

The Bakken Shale is predicted to contain billions of barrels of oil. This makes it the largest oil discovery in the United States next to the Arctic National Wildlife Refuge in Alaska. (oilshale)

Within the next 30 – 40 years, the Bakken Shale is predicted to become the largest available oil reserve in the World. (oilshale)

Currently, new wells are being implemented every day. North Dakota has one of the lowest unemployment rates in the nation in the country because the shale is creating millions of new, high paying jobs in the area. It is also bringing many new people to the area.
How has a population increase affected Dickinson and other communities in Western North Dakota?

Increased business and revenue in the community + the need for more jobs
North Dakota has one of the highest employment rates in the Nation
The added business in the community has made Dickinson a growing city

Increased assaults
Increased traffic volumes
Need for more law enforcement, child care, and medical personnel
Inflated prices

Increased business and revenue in the community = the need for more jobs

North Dakota has one of the highest employment rates in the Nation

The added business in the community has made Dickinson a growing city

Butte, Montana  [A Similar Situation]

Butte was settled in the 1860's.

By 1901 the population had grown over 100,000.

In the 1950's, when the mining began to slow, the population started to decrease.

Butte is still a mining town. Currently, the population of Butte is 34,000.

What are my design goals?

Maintain the future viability of the city of Dickinson

Circulation

Create destination areas & greenway connections

Address community tension

Establish a historic character / identity
Important Streets

- Villard
- Sims Street
- Main Street

+Highest traffic and pedestrian circulation
+Existing plaza and vegetation
+Highest retail and restaurant density

Limited space for infill

Main thoroughfares

-Highest traffic and pedestrian circulation
-Existing plaza and vegetation
-Highest retail and restaurant density

Limited Space for parking

Infill

-Private housing and added retail
-Redevelop currently unused spaces
-Create a better streetscape

High cost to build

Time vs. need

Distances

-Both Dickinson State University and The Heart River are less than 1 mile from the corner of Sims and 1st Ave.

Possible design intervention for safe crossing of railroad

.78 miles

.39 miles

78.78 miles

39.39 miles

Crossing of railroad and busy streets

Crossing of railroad and busy streets
New 3 story, mixed-use buildings offer affordable housing, shopping and job opportunities for people to live, work and play in the area.

Villard Street is now more narrow to provide a safe pedestrian environment.

The water feature in the courtyard adds aesthetic value and sound to drown out the noise from the street.

Courtyard provides views of Sims Avenue, relaxation and shade.

A new parking lot will provide majority of the parking for the area. The parking lot incorporates a rain garden to collect any excess water.

Because Dickinson State University is less than a mile away from downtown, a pedestrian greenway connection has been established. Unique trees, [Amur maples] with different color foliage, will connect the downtown area to the university.

Outdoor seating areas for local cafes and restaurants will provide increased business revenue for merchants and provide people with a unique outdoor experience.

New street trees provide shade and a safe barrier from the street.

The courtyard leads to a possible greenway connection for a safe railroad crossing. It would connect to the existing park trail system.
This image shows the building and street relationship of Villard Street. This street is occupied with restaurants, bars, and stores. The wide sidewalk allows people to walk comfortably away from traffic. Street lights provide way finding when it is dark and seating is provided for those who want to rest.

Viewing West - Clove (Villard) Street.
Circulation
Create destination areas & greenway connections
Address community tension
Establish a historic character / identity

Curb & Gutter
Pavement
Soil Mix
Mulch
Sub Grade

Detail of Rain garden in parking lot.

50'       0'        50'        100'      200'
Create destination areas & greenway connections

- Extra wide boulevard provides angled parking and opens views to the existing plaza on the corner of Sims and Villard.
- Existing Plaza

New 3-story mixed-use buildings incorporate affordable housing, shaping & park rejuvenation.

- Unique paving patterns at all intersections provide pedestrianized, safe crossing areas. The block pattern reflects the historical character of the buildings in the area.

Villard Street - view Sims Avenue

- Outdoor seating areas for local cafes and restaurants will provide a safe pedestrian environment.

- Unique paving patterns at all intersections provide pedestrianized, safe crossing areas. The block pattern reflects the historical character of the buildings in the area.

- Sims Ave. is now more narrow to provide a safe pedestrian environment.

- New street trees provide shade and a safe barrier from the street.

- Extra wide boulevard provides angled parking and opens views to the existing plaza on the corner of Sims and Villard

Establis a historic character / identity

- Existing Plaza

The downtown area will be used during all seasons. The wide boulevard provides an open view to the existing plaza. Because the plaza is no longer hidden by parked cars, it will be a popular destination. The boulevard will also serve as an area to deposit large amounts of snow during colder months.

- Viewing south - down Sims Avenue.
Create destination areas & greenway connections

Address community tension

Estabolish a historic character / identity

Alternating Linden and Amur Maple trees will be used to signify the greenway connection from Sims to Dickinson State University.
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<thead>
<tr>
<th>Month</th>
<th>Event</th>
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<tbody>
<tr>
<td>JAN</td>
<td>St. Benedict's Candle Light Dinner</td>
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<td>FEB</td>
<td>Spring Blizzard Blender</td>
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<tr>
<td>MAR</td>
<td>Spring Parade / Dance</td>
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<tr>
<td>APR</td>
<td>Dakota Street Fair</td>
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<tr>
<td>MAY</td>
<td>Carnival</td>
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<td>JUN</td>
<td>Holiday Craft Show</td>
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<td>JUL</td>
<td>Yuletime with a Twist</td>
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<td>AUG</td>
<td>Charity Ball</td>
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<td>SEP</td>
<td>Hunting Festival</td>
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<td>OCT</td>
<td>Sampling of Sicily</td>
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<tr>
<td>NOV</td>
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**Calander of Events**
Establish a historic character / identity

- Sims Street

Different types of seating allow the pedestrian to rest, out of the line of traffic.

Street trees provide shade and aesthetics to the street scape.

Paving patterns resemble the historic brick building.

http://www.google.com/imgres?q=paving+materials&um=1&hl=en&sa=N&biw=1439&bih=780&tbm=isch&tbnid=80GK18OOG7GK9M:&imgrefurl=http://www.google.com/imgres?q=paving+materials&um=1&hl=en&sa=N&biw=1439&bih=780&tbm=isch&tbnid=80GK18OOG7GK9M:&docid=80GK18OOG7GK9M&resized=1439x780&w=1439&h=780&ei=40w3UXoNIcGq2AQV7QYH&ved=0ahUKEwiXO66X1d3LAhVrY2QIHRo_T5w4UwAFCg0&uact=5

http://www.centralparknyc.org/donate/honor-someone-special/adopt-a-bench.html

