

Regional Industrial Development Land Study

County of Grand Forks & Base Realignment Impact Committee



May 2008



TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
BACKGROUND INFORMATION.....	4
INVENTORY OF SITES.....	5
DESCRIPTION OF IMPROVEMENTS	6
INDIVIDUAL SITE ANALYSES	10
Site 1.....	10
Site 2.....	15
Site 3.....	20
Site 4.....	25
Site 5.....	30
Site 6.....	35
Site 7.....	40
Site 8.....	46
Site 9.....	51
Site 10.....	56
Site 11.....	60
PROJECTED INDUSTRIAL LAND NEEDS.....	65

APPENDICES

APPENDIX 1: INDUSTRIAL QUESTIONNAIRE AND SUMMARY OF RESPONSES
APPENDIX 2: HAZARDOUS MATERIALS PLAN, EMERGENCY MANAGEMENT AGENCY, GRAND FORKS COUNTY, ND
APPENDIX 3: PLANNING LEVEL COST APPROXIMATIONS
APPENDIX 4: NEW BUSINESS REVIEW – BUSINESS OPPORTUNITY QUESTIONNAIRE, BNSF RAILWAY
APPENDIX 5: POPULATION TABLE
APPENDIX 6: WEIGHT RESTRICTIONS
APPENDIX 7: GRAND FORKS COUNTY DATA MAPS
APPENDIX 8: CULTURAL AND HISTORICAL RESOURCES
APPENDIX 9: INDUSTRIAL PARK EXPANSION, A WHITE PAPER REGARDING THE PROVISION OF SERVICES TO SITE

Executive Summary

The Regional Industrial Development Land Study has been carried out for the purpose of determining the feasibility and desirability of industrial development at 11 Sites in Grand Forks County, North Dakota. The study provides a body of background information about each of these sites.

This information can be used by Grand Forks County, the City of Grand Forks, business owners, utility companies, property owners, and others to make a variety of decisions related to:

- Land use and zoning,
- Physical characteristics,
- Land purchase and development, and
- Infrastructure extension.

The sites included in this study have been selected by the Base Realignment Impact Committee, Grand Forks County, the City of Grand Forks, and the Grand Forks Region Economic Development Corporation. A brief description of each site is provided below:

Site Number	Site Location	Township	Site Size
1	Thompson/I-29 Interchange	Walle	320 acres
2	Intersection of State Highways 18 and 15	Washington	640 acres
3	Highway 15 North of Northwood	Northwood	640 acres
4	Intersection of State Hwy 18 and US Hwy 2	Elm Grove & Hegton	640 acres
5	Intersection of US Hwy 2 and State Hwy 32	Niagara	320 acres
6	Intersection of County Rd 1 and County Rd 2	Johnstown	640 acres
7	Intersection of US Hwy 2 and County Rd 3	Blooming	640 acres
8	Intersection of DeMers Ave and 69th St	Brenna	635 acres
9	Intersection of 17th Ave and I-29	Grand Forks	520 acres
10	Intersection of 32nd Ave S and RR Tracks	Brenna	320 acres
11	Intersection of US Hwy 2 and County Rd 5	Rye	640 acres

Sites 1 – 7 are, for the most part, under the zoning jurisdiction of Grand Forks County. Sites 8 – 10 are within the City of Grand Forks extraterritorial area and are under the zoning jurisdiction of the City of Grand Forks. Site 11 is partly within the city’s jurisdiction and partly within the county’s jurisdiction.

Several types of information have been gathered for the purpose of analyzing the suitability of these sites for industrial development. The categories of information are listed and described as follows:

1. Proximity to Regional Transportation Facilities

The location of each site is examined to identify its proximity to transportation facilities such as the Grand Forks Municipal Airport, Interstate Highway 29, US Highway 2, and rail facilities.

2. Existing Land Use

Existing and planned land use data have been gathered for each site.

3. Ownership and Availability of Land

Property owners have been contacted and asked to give an indication of their willingness to sell the property for industrial development if the opportunity arose. A summary of property owner input is included for each site.

4. Value of Land

The assessed value for each site is included in the report. Land characteristics that could affect the market value of each site are summarized.

5. Zoning of Property and Surrounding Area

The existing zoning of the property is stated for each site.

6. Natural Features

Each site's natural features are described. In some cases, these features are not necessarily "natural," but involve elements of nature, such as shelterbelts (also known as windbreaks).

7. Distance to Potential Employees

The distance from various population centers around the county is summarized for each site. Population and labor force information is provided in an appendix.

8. Access to Site and Localized Transportation Facilities

Access opportunities and constraints are described for each site, based on the level to which the road jurisdiction has access control, and based on the availability of paved roads.

9. Utilities

Information about electrical, gas, telephone, Internet, water, wastewater, and storm water utilities is provided. Planning level cost estimates for these improvements are included.

10. Cost of Improvements

Certain basic site improvements are required for development of any site. They include the establishment of good site drainage and raising the building pad to an elevation that prevents overland flooding. They also include meeting the storm water management requirements and parking requirements for the development. Planning level estimates for some of these costs have been identified on a per acre or per 10,000 square feet basis. Planning level cost estimates of paving existing dirt or gravel roads around the sites are also provided.

11. Weight Restrictions

The weight restrictions of roadways surrounding the property are summarized in the report.

12. Emergency Service Availability

The providers for ambulance service, fire protection, and law enforcement are described for each site.

13. Soil Characteristics

Soil characteristics are described for each site. While the entire Red River Valley has its own unique soil characteristics, contractors and architects in the region are accustomed to the design features and materials that work best.

14. Cultural and Historical Resources

A Class 1 cultural and historical resource survey was conducted for all 11 sites. This consists of a file search at the State Historic Preservation Office (SHPO). The results of this survey are shown in the report.

15. Drainage Opportunities

Based on physical features of the site and surrounding area, the opportunities for site drainage are discussed for each site.

16. Overland Flooding Characteristics

Overland flooding data is not available for most of the sites. Anecdotal data was requested from property owners. Information and observations were provided by the Grand Forks County Water Resource District. This information is described in the report.

Based on all of the above information, an overall site suitability summary is provided for each of the 11 sites. Generally all of the sites have features that make them suitable for some type of industrial development. One of the primary considerations is the availability of employees within a reasonable distance of the site. Industries that need a large number of employees may prefer locating on the sites that are closest to the Grand Forks – East Grand Forks metropolitan area. However, there are many industries that operate using relatively small numbers of employees. The sites farther away from the metro area may be very suitable for them with respect to the number of potential employees in the vicinity.

The proximity to regional transportation facilities is an extremely important factor in determining the suitability of a site for industrial land use. Sites in proximity to I-29 or US Highway 2 have the advantage of being adjacent to roadways that are already constructed to handle significant truck weights and volumes. On the other hand, state highways and some county roads also provide very satisfactory access to the overall regional transportation system.

Another important factor in considering site suitability is existing land use. Land that is currently being farmed or that already contains an industrial type of land use will face fewer objections than trying to develop land where residential or retail land uses already exist.

Grand Forks County and the City of Grand Forks are in a very good position of having at least 11 sites where industrial development is feasible to varying degrees. Each of these sites is sizeable (minimum of 320 acres). Therefore, it may not be feasible to develop industrial land use on all of the properties for many, many years. In the meantime, preserving land for future industrial development is a very important task for Grand Forks County and the City of Grand Forks to carry out as they plan for the future of their region and their communities.

Background Information

Purpose of Study

The Regional Industrial Development Land Study was initiated for the purpose of examining the feasibility of industrial development on several sites located in Grand Forks County. The County has an interest in promoting industrial development to help replace jobs lost as a result of the realignment of the Grand Forks Air Force Base. To ensure that prime sites remain available for this type of land use, Grand Forks County placed a moratorium on zoning changes at eight sites throughout the County. After further consideration, seven of those sites are included in this study. Four additional sites included in the study are located in the City of Grand Forks extraterritorial area.

In addition to studying the feasibility of industrial development at 11 sites, the study purpose includes an estimate of future industrial acreage needs and a review of Grand Forks County's storm water regulations. The purpose of estimating future industrial land consumption is to assist policy-makers and economic development officials in determining the extent of industrial land use and zoning that is reasonable in both the short and long term. A review of county storm water regulations is intended to identify regulatory improvements that are economically practical, yet will ensure that development is adequately protected from overland flooding.

Questionnaires

Questionnaires regarding the potential for industrial relocation or expansion were sent to thirty-two businesses in the Grand Forks City and County area. The Grand Forks Region Economic Development Corporation identified these industries. The industries were asked if they had plans to relocate or expand their sites at various timeframes in the future. The questionnaire and results from responding industrial companies are included in Appendix 1.

Only 14 industries responded to the questionnaire. Of the 14, one industry indicated it will definitely expand at its existing location, with a need for 10-20 additional acres. Seven industries indicated it is probable that they will expand at their existing location. One of these industries showed a need for approximately 5-10 acres, while six of them showed a need for five acres or less. One business indicated it is not likely for them to expand at their existing location, but stated that they do have plans to expand onto another site in the region within the next five years, on a site of five acres or less.

Types of Industrial Uses

Industrial land use has changed significantly over the years. In the past, industry evoked images of large manufacturing plants with smokestacks, odors, and noise. Over the past 20-30 years, industry has evolved to include a wide variety of land uses, many of which are clean, campus-like, and have the appearance and characteristics of office developments. The following land uses are typical of 21st century industrial development:

- Research and Development
- Heavy Manufacturing
- Light Manufacturing
- Packaging
- Warehousing and Storage
- Self-Storage
- Freight Terminals and Air Cargo Sites
- Laboratories
- Public Works and Utility Buildings
- Construction Contractors – Equipment Storage and Offices
- Office – Showrooms
- Value Added Agricultural Industries

For the purpose of this analysis, industrial development is assumed to consist of any of the above land uses, including the office and outdoor storage areas that are often part of industrial sites.

Inventory of Sites

Inventory of Industrial Development Sites

Eleven sites were studied as part of this project. They are located in and around Grand Forks County, including four sites adjacent to and partly within the City of Grand Forks. Some sites will be more compatible with certain types of industry than others, and portions of some sites are better suited for different use all together. The synopsis of each site is intended to help decide which of the eleven sites is most compatible with a given type of industry. By knowing the type of industry proposed, the site analyses will help determine that industry's best location as well as why or why not one site would be better than another.

Site Number	Site Location	Site Size
1	Thompson/I-29 Exchange	320 acres
2	Intersection of State 18 and 15	640 acres
3	Hwy 15 North of Northwood	640 acres
4	Intersection of State 18 and US 2	640 acres
5	Intersection of US 2 and State 32	320 acres
6	Intersection of County Rd 1 and County Rd 2	640 acres
7	Intersection of US 2 and County Rd 3	640 acres
8	Intersection of DeMers Ave and 69th St	635 acres
9	Intersection of 17th Ave and I-29	520 acres
10	Intersection of 32nd Ave S and RR Tracks	320 acres
11	Intersection of US 2 and County Rd 5	640 acres

The site sizes shown above are a general reflection of the tract of land included in each study area. The total acreage shown above is 5,955. However, after subtracting out existing roadway right-of-way and other land irregularities, the parcels of land included in the study are a total of 5,444 acres. As shown in the

table, the study sites are scattered throughout Grand Forks County. There are three sites immediately west of the City of Grand Forks. They are all south of Demers Avenue between I-29 and 69th Street. Two of the sites are north of 32nd Avenue, and one site is along the south side of 32nd Avenue. In total, these three add up to approximately 2.5 sections of land or about 1,600 acres. There is also another site that is located inside City limits. This site is approximately one section of land or 640 acres and is adjacent to the west side of Grand Forks Regional Airport. These four sites make up those located within the city and/or the city's extraterritorial area, and are Sites 8 – 11 in this study.

Sites 1 – 7 are located along important highways throughout the county. Three of these sites are along US Highway 2, with one site located just east of the Air Force Base along the north side of US Highway 2. Another is located at the intersection of US Highway 2 and State Highway 18. The third site along US Highway 2 is located at State Highway 32 at the westerly edge of Grand Forks County, north of Niagara. In addition, one site is located at the intersection of County Roads 1 and 2 in the northern portion of the county at Johnstown. Three sites are located along State Highway 15. One of these sites is situated along the railroad tracks north of Northwood. Another is at the intersection of State Highways 15 and 18, and the third site is located on the east side of I-29.

Each site is approximately a half to full section of land (320-640 acres). This does not necessarily mean that the entire site would be developed at once, or that two or more industries cannot share the same section. In fact, it is probable that both cases may be true; one site could accommodate a large single industry campus and another could accommodate many smaller industries.

These eleven sites make up the study locations, as shown on the Location Map (Figure 1). Given a certain industry type, one can easily compare the sites and determine which will be most conducive to that industry and the surrounding community.

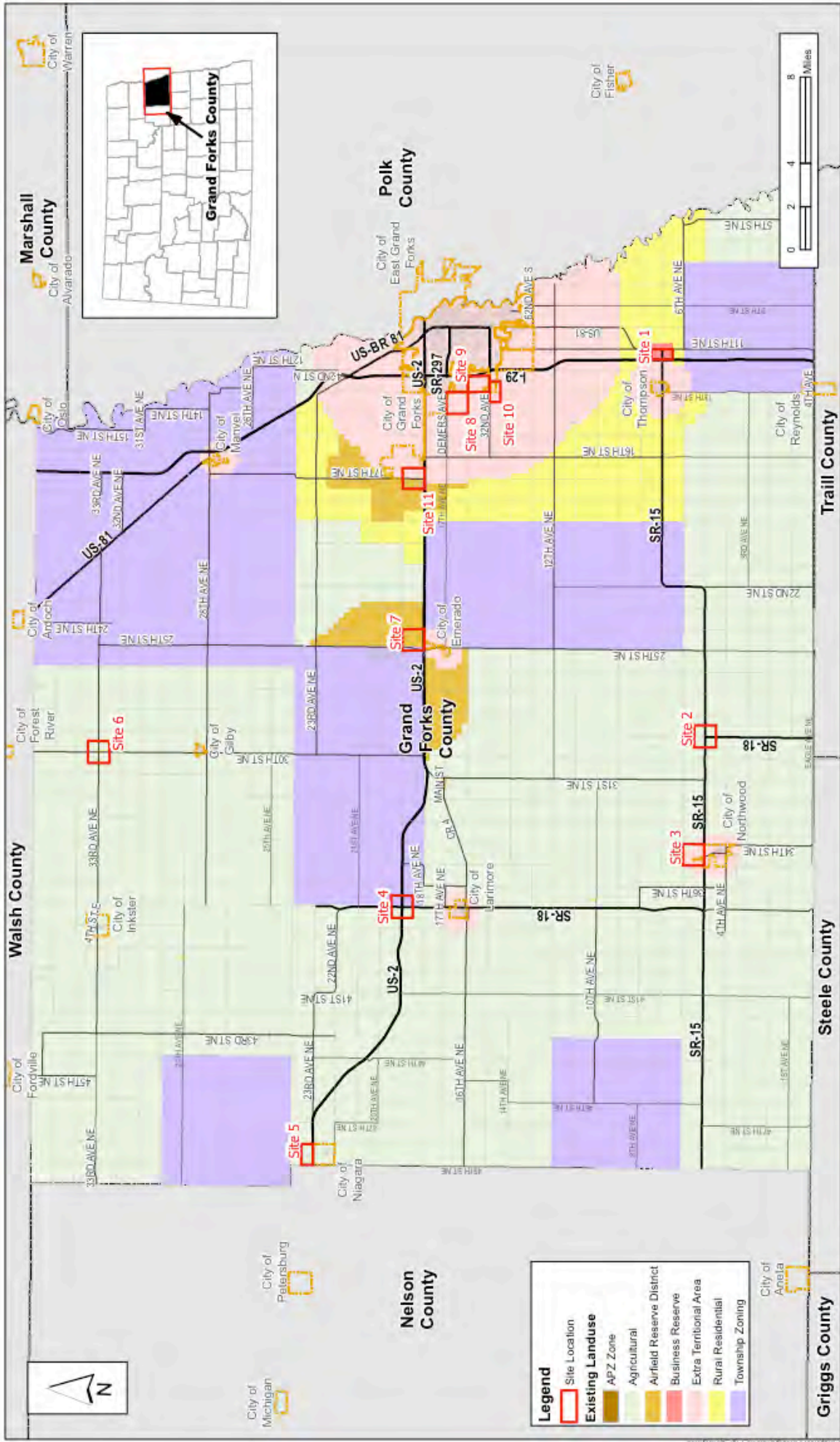


Figure 1
EXISTING ZONING
 REGIONAL INDUSTRIAL DEVELOPMENT LAND STUDY
 BRIC, Grand Forks County, and The City of Grand Forks



Description of Improvements

Utilities Required for Developing Sites

Each of the sites studied will require the provision of basic utilities. The basic utilities and improvements include: electricity, water, gas or propane, sanitary provisions, storm provisions, and communications. In certain cases, these basic improvements can be readily made; in others, the required improvements will necessitate extra effort. Any costs calculated for associated utilities were based on unit costs and lengths to extend a particular utility to the midpoint of the site frontage. For example, if a water line is north of a site, the cost is based on bringing that line south until it comes to the center north-south point of that site. All utility extensions are calculated to the center of public right of way. Due to the variations in which site development can occur, utility extension calculations do not include the cost of extending utilities off the right-of-way and into the site.

Electricity

To serve electricity needs to each of these sites, two providers in the area discussed possible opportunities for connections. Between Nodak Electric Cooperative, and Xcel Energy, it appears that each site could be provided power with no major construction required. All of the sites are located in Nodak's service area. Xcel Energy has the ability to provide electricity to the sites in the City of Grand Forks extraterritorial area, but they are located in what is currently designated as Nodak's service area.

Depending on the required load from the proposed industry, extending electricity to the sites is a matter of installing a feed point and providing service facilities. Nodak electricity at the time of this study is charging approximately \$8.25 for extension of three-phase power depending on site-specific circumstances. The first 600 feet of power line extension is typically at no charge.

When Xcel Energy looks at providing service to a new client, they will conduct an analysis of a three to five year cost justification. The cost justification involves looking at revenues generated from the improvement over three to five years versus the incurred cost of the utility installation. If the cost of installing the utility exceeds the projected revenues, the customer is required to pay the difference over the three to five years. If subsequent development occurs and feeds from the original improvement during the first three to five year cost justification period, any revenue

generated by that new development will then be added to the initial revenue estimate, and applied to the remaining cost of extending the service. The new and original customers would then share any excess cost over and above the revenues generated during that cost justification period. If subsequent development occurs after the cost justification period is over, no monies are returned to the original customer. To understand the cost justification completely, a prospective customer must contact Xcel Energy directly for up-to-date information about their procedures and services.

Gas and Propane

There are four sites that could get gas service from Xcel Energy. They include Sites 8 – 11, which are closest to the City of Grand Forks. There is potential for Site 1, near the Thompson and I-29 Interchange, to be provided gas service also. This site would require a large natural gas user in order to make the service cost effective. Xcel Energy analyzes cost justifications for service extensions just as they do for electricity.

The other alternative to having gas service is propane. There are many propane providers in the region that would be capable of providing this service. There are providers that are capable of leasing and filling up to, and possibly beyond, a 16,000 gallon tank. For the industrial applications where propane will be used, the providers claim to have no limitations on capacity they can provide. Typically there is a relatively small one-time service fee to setup the tank, connect, and double check the system. With most providers, the first year of tank leasing is free and many providers will match prices to stay competitive. A typical tank size is 1,000 gallons but they range from 500 to 16,000 gallons. Current leasing rates on tanks at the time of this study are \$35 - \$50 per month depending on size. Providers will fill tanks to 80% of capacity to allow for expansion, and the customer is responsible for notifying the provider when the tank is at approximately 20% capacity for refilling. Rush fees apply.

On-Site Waste Water Treatment

Many of the sites where a municipal sanitary connection is not possible will require a septic system. As with other locations in the Red River Valley, it can be expected that on-site septic systems and drain fields may be somewhat more costly due to soil properties of the sites. The soils in these locations can

support septic systems; however, the drain fields need to be larger than in other areas where the soil is lighter, and they may require more maintenance. The soils are limited due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties.

On-site treatment for small quantities of wastewater resulting from lunchrooms and rest rooms in a single building may be provided by a septic system similar to that installed in a residential application. Typical cost for a system operating in a gravity flow situation and including a septic tank and drain field is estimated to be \$7,000. If soil conditions require an elevated drain field, commonly referred to as a "mound" system, a pumping system must be added. The construction of a sound system, including septic tank, pumping system, and elevated drain field is estimated to be \$14,000. It is advisable to use the estimate for a mound system on the sites within the Red River Valley where heavy clay soils are predominant. It is important to test soils in the process of designing a septic system.

To serve multiple buildings in an industrial complex or to serve a facility with a large number of employees (providing kitchen facilities, showers, custodian work areas, etc.), it will likely be feasible to provide wastewater treatment using one enlarged on-site system. Such a system would consist of two septic tanks, a separate pumping chamber, and an enlarged elevated drain field. The cost of an enlarged on-site system is estimated to be \$50,000.

It is important to note that the on-site systems described above cannot accept wastewater directly from floor drains, because oil and grease may halt the biological activity in the septic tank and plug the drain field. Wastewater from floor drains must be routed through an effective oil/water separator before being discharged to a septic system.

The on-site systems described above are not suitable for large quantities of wastewater or for wastewater with industrial waste constituent materials. Facilities that anticipate industrial wastewater flows will require specialized design of wastewater treatment facilities, which may include ponds or mechanical systems. These costs are not included in the \$7,000 to \$50,000 range cited above.

Communications

There are two communications providers for the study sites. The providers are Qwest and Polar Communications. The incumbent provider for Sites 5 and 6 is Polar, whereas Qwest is the incumbent provider for the other sites.

Qwest has a cost justification method for determining if they need to recuperate costs related to extending or providing services. Each site in Qwest's service area can more than likely be provided basic services of phone and Internet with no additional charges or simple conditioning charges. Conditioning charges relate to the company's efforts to get circuits from their main facility to the development site. Depending on the site location and where development will occur on the site, there may be additional cost related to services like T1 lines or fiber optic. Each case is looked at individually to determine if there will be a cost participation related to the customer. Qwest looks at cost justifications anywhere from two to ten years depending on their current circumstances.

Polar Communications can provide basic services to the two sites in their service area, which are Sites 5 and 6 near Niagara and Johnstown. They also prepare a cost justification analysis, but the results of such an analysis typically result in the service user paying for a portion of any wire needed to extend the service. Often times that is prepayment for services the customer is purchasing and it amounts to prepaying for the service provided. In these cases, depending on the location of the development on the site, there will likely be no additional costs other than normal connection fees.

Water

There are many water providers serving these eleven sites. Throughout the County there are many rural providers with facilities near each site. In some cases, in order to develop a particular portion of a site, the water lines may need to be extended. When figuring costs for these extensions, certain assumptions were made. All costs are based on the installation of 6-inch diameter water lines. Water will not be appropriate for fire protection service, without on-site storage and pumping capabilities incorporated into the industrial development.

Building Pads

Building pad preparation at each site is assumed to consist of including stripping of one foot of topsoil and placing 4 feet of engineered (granular) fill, so building floor elevation is approximately three feet above existing grade. Cost is estimated to be \$30,000 per 10,000 SF of building area.

Access Road Improvements

A paved access road to serve heavy truck traffic is estimated to include a structural section consisting of geotextile fabric, 24 inches of aggregate base, and 8 inches of hot bituminous pavement. Including grading, 4:1 inslopes and a 24-foot finished surface width, the cost of a paved access road is estimated to be \$19,000 per 100 feet of length. Data presented in Appendix 3 shows costs to improve all existing roads around each site to a section strong enough for industrial truckloads.

Cost estimates for aggregate surfaced access roads consist of the same road materials, substituting eight inches of surfacing aggregate for the bituminous pavement. A road of this nature is estimated to cost \$11,000 per 100 feet of length.

Parking Facility Improvements

A paved parking lot to serve employee vehicles (not heavy trucks) is estimated to include a structural section consisting of geotextile fabric, 12 inches of aggregate base, and 5 inches of hot bituminous pavement. Cost of the paved parking lot is estimated to be \$38,000 per 10,000 SF of parking lot area.

An aggregate surfaced parking lot with the same parking lot section as a paved lot, and substituting five inches of surfacing aggregate for the bituminous pavement, is estimated to cost \$19,000 per 10,000 SF of parking lot area.

Airport

The Grand Forks International Airport Master Plan was completed in 2006. The plan identifies three zones surrounding the airport, in which acceptable and unacceptable land uses are described. These zones are based on the proximity of the property to the airport runways, future noise levels, and runway protection zones. Maximum building heights are also identified for each zone. The limitations expressed in the plan are applicable to Site 11 and are described in that section of the report.

Availability of Land

A land use planning study such as this can only address land availability as a snapshot based on the responses of current property owners. Each owner has reasons as to why their land may or may not be available for industrial development. In some cases, land might be available under certain conditions, and not available under other conditions. The status of land availability is reported based on responses received during the preparation of this report. If future interest arises in one of the sites included in the study, it will be important to follow up to ensure that the property owners have not changed their position on this matter. Furthermore, ownership may change for various sites, which will change the make-up of site availability over time.

Storm Water

Assuming that a regional pond is constructed for 160 acres of any given site and the impervious area is 60%, the storage volume is 20 acre-feet (883,556 cu ft). The rate of release is 67 cubic feet per second (cfs). If the storage pond had an average depth of four feet, it would be five acres in size. Construction of a pond this size will require excavation of about 32,500 cubic yards of earth. Assuming cost of excavation to be \$5 per cubic yard, the excavation cost is approximately \$162,500. The pond will require an outlet control structure and pipe to discharge to an existing drainage ditch. An approximate cost for the outlet control structure is \$20,000. If each pond requires 1,000 feet of 48-inch reinforced concrete discharge pipe at 0.22% slope, with an approximate unit cost of \$150 per linear foot, then the approximate total cost of discharge pipe would be \$150,000. Total pond cost for each developed quarter section is about \$332,500, which includes only minimal storm sewer in parking lot configurations.

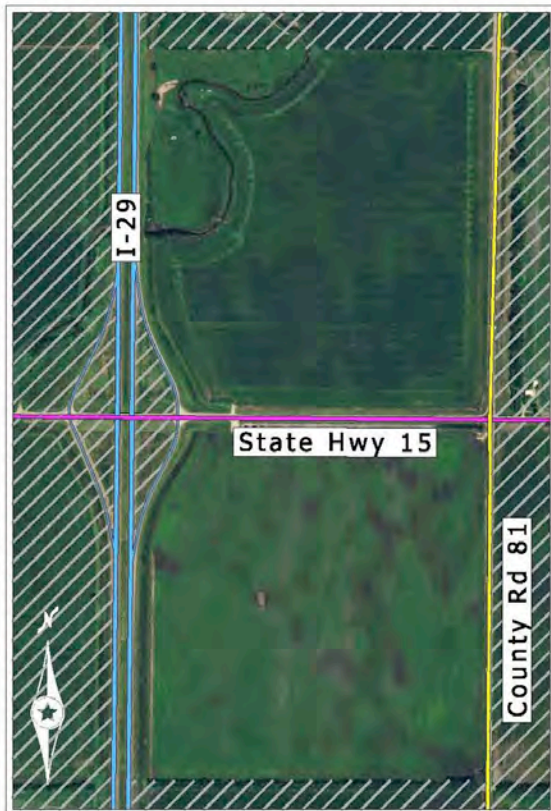
Individual Site Analyses

Site 1

Walle Township

State Highway 15/I-29 Interchange

(SE 1/4 S29-T150-R50, NE 1/4 S32-T150-R50)



Site 1: Thompson / I-29 Exchange

This site is located on the east side of I-29 at State Highway 15. It extends east from the Interstate Highway to County Road 81 and is 320 acres in size, with a quarter section both north and south of State Highway 15.

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

This half section of land is approximately 13 miles south of Grand Forks and 2 miles east of Thompson. The property has extremely good highway access since it is adjacent to I-29, State Highway 15, and County Road 81. The site is located approximately 16 miles from the Grand Forks Regional Airport.

Site 1 does not have direct access to a railroad. Industrial users that desire rail access would need to make arrangements with a business that already has

an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.). An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 73 miles from Site 1.



Looking East on State Highway 15 from the East Ramps of I-29

Existing Land Use

Currently, a majority of the site is being used as agricultural land. The acreage of the property is somewhat reduced due to the I-29/State Highway 15 interchange right of way. A creek winds through the northwest portion of the quarter section north of State Highway 15.

Ownership and Availability of Land

All of the private property in Site 1 is owned by one owner. The owner of the site has not responded to inquiries about the availability of the property during the preparation of this study.

Value of Land

According to Grand Forks County records, assessed value of the land is \$205,500. The assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. The assessed value does not represent actual market value. A number of factors will affect the asking price for this site. Some factors that will affect the value are proximity to utilities, the presence of wetlands or water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Acreage available for purchase after subtracting out interchange right-of-way and state highway right-of-way is assumed to be approximately 300 acres. The market value would be partially based on the proximity to: 1) I-29, 2) the City of Grand Forks, and 3) the City of Thompson. However, the close proximity to Thompson isn't likely to contribute significantly to the market value of the property since it would be extremely costly to extend services from Thompson to the east, through the I-29 right-of-way, to serve the site.

Zoning of Property and Surrounding Area

The entire site is currently zoned Rural Residential Single Family, and is located 5 miles from the Grand Forks Extraterritorial (ET) area and across I-29 from the Thompson ET area, according to the Grand Forks County Zoning Map. This site is within Grand Forks County's zoning jurisdiction.

Natural Features

On both the north and south ends of this site, there are tree rows planted on the quarter section lines. They run east – west and are the only trees on the site. The Elm Coulee flows northeast and crosses the very northwest portion of the site.

Distance to Potential Employees

An industry located here would have the ability to draw workers from a number of communities within the area. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity. Possible complimentary businesses located in each community are also shown.

Site 1 is located in a very good position to draw workers from both larger and smaller communities in the area due to its proximity to I-29 and State Highway 15.

Site 1: Thompson – I-29 Exchange, Proximity to Nearby Towns/Cities	
Thompson	2 mi
Reynolds	9 mi
Grand Forks	13 mi
Manvel	23 mi
Northwood	25 mi
Emerado	25 mi
Gilby	37 mi
Larimore	39 mi
Johnstown	39 mi
Inkster	47 mi
Niagara	49 mi

Access to Site and Localized Transportation Facilities

Access to this site would likely be from County Road 81, on which the allowed access spacing is at intervals of 330 feet. There would also be limited opportunity to access the land from State Highway 15; however, the access on this state highway is more restrictive with intervals of 1,320 feet (1/4 mile) between access points. I-29 provides access to and from State Highway 15. Direct property access to or from I-29 is prohibited.

Utilities

Cost estimates for providing utilities to this site are summarized in Appendix 2. This site, as with the others, is not connected to any utilities. Grand Forks Trall (GFT) Water District provides water service to this area. GFT has a small diameter pipeline running along County Road 81, which is being used to capacity, and no additional hookups are being accepted to the pipeline.

GFT has parallel 6-inch and 4-inch water lines one mile north of the intersection of State Highway 15 and County Road 81, on the east side of the site. It is the recommendation of GFT that a new water line be extended from these pipelines to the site if it is used for industrial development. By making this improvement, the water capacity to site 1 could be approximately 100 gallons per minute (GPM) and 70,000 gallons per day (GPD), based on a 12-hour duration. GFT has permits in place for a ground water appropriation of 1,712 acre-feet. They currently use approximately 1,100 acre-feet.

The cost estimate for bringing water to this site assumes that the source of water is the GFT water line located one mile north of the intersection of State Highway 15 and County Road 81, as described above. The estimated cost to extend the water to the midpoint of the southeast quarter section of section 29 along the County Road 81 frontage is \$75,000. Extending the water line south to the midpoint of the County Road 81 frontage of the northeast quarter section of section 32 will cost an additional \$45,000, for a total estimated cost of \$120,000 to reach section 32.

To provide electricity and gas at Site 1, Xcel Energy could easily run electrical service from a nearby transformer/substation. It is also possible that Xcel could provide the site with gas; however, a cost justification would have to be considered.

The financial feasibility of extending these utilities to Site 1 will depend on the amount of electricity and gas consumption the site will require upon development.

Site 1 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	Xcel Energy will look at cost justification and can easily provide service from lines along County Road 81.
Water	\$120,000
Gas	Xcel Energy will look at cost justification but will only be feasible with a large demand.
Communication	Basic services phone and internet can easily be provided, provider Qwest
Roadway Improvements ^b	\$0

a) Certain areas of the site will see no charges for electricity extensions. Other areas will require line extensions and incur costs

b) Cost shown reflects an existing bituminous section for heavy truckloads. Additional road construction estimated at \$19,000/100 LF (see Description of Improvements Section).

Qwest Communications can provide communications to this site. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics are also possible as well; these services may incur minor conditioning or extension fees.

Site 1 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of wastewater).

b) Cost of pond is based on 20 acre-feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well. Depending on the size and surface, the cost will vary. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

At this location, there is no need to improve any of the localized transportation facilities. Each is already paved and sufficient, unless spring load restrictions hinder a specific industry's trucking operations. In that case, the body governing the specific road in question may consider reconstructing a portion of the road to suit the needs of the developed industry.

Weight Restrictions

The localized transportation facilities for trucking are restricted by the Federal Highway Association (FHWA) permissible gross load regulations for legal weight. In the spring, Class A Load Restrictions applies to County Road 81 to the south of State Highway 15; however, County Road 81 north of State Highway 15 is only governed by legal weight limits. Many other nearby county roads have No. 2 Load Restrictions. More information about Grand Forks County spring load restrictions is shown in Appendix 6 or at <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency service providers in this area are shown below:

- Ambulance Service – Altru Health Systems
- Fire Protection – Thompson Fire District
- Law Enforcement – Grand Forks County Sheriff

Although this site is very close to Thompson, it is outside their city limits and law enforcement jurisdiction falls to the County. If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types ranging from silt and clay loam to very fine sandy loam.

All but 36 acres (about 10%) of this site are considered to be “prime farmland” or “farmland of statewide importance” by the NRCS. The 36 acres that are better suited for non-farming purposes are in section 32, south of Highway 15.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. The site soils have a high potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of corrosion of uncoated steels. Concrete, however, has only a low to moderate risk of corrosion when in contact with these soils.

Given the soil types of this site, all practical development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. The site soils have moderate to slow infiltration rates and water table depths between 1.5 and 5 feet depending on time of year and soil type.

As a source of sand and gravel, this site is poor and would require building materials of that nature as borrow. As a source of topsoil, this site is fair or adequate. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Approximately 90% of Site 1 is considered “prime farmland” by the NRCS.

Environmentally Sensitive Features

The proposed site is located over the Thompson Aquifer that is very large. The aquifer extends west past Thompson and east to just beyond County Road 81. Any development at this location must include containment and protection measures that will ensure no disturbance or contamination of the current state of the aquifer.

The northwest corner of Site 1, near the stream, is partially in a flood zone that follows the natural waterway. Any construction within this area must consider the possibility of high water levels. There are approximately 15 acres along the waterway that are considered in the flood zone.

Site 1 has 0.38 acres of designated Freshwater Emergent wetland in the northwest corner (see National Wetlands Inventory Map, Appendix 7). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. One Class III cultural resource inventory has taken place in this study area. It addressed the area along I-29, and was completed in 2006. No cultural or historical resources were identified along I-29. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Site 1 State Highway 15 - I-29 Interchange	
Quick Facts	
UTILITIES	
Gas Provider	Xcel, Propane
Electricity Provider	Xcel
Water Provider	Grand Forks Traill Water Dist.
Communications Provider	Qwest, Polar Comm.
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	Grand Forks County
POLITICAL	
Ambulance Service	Altru
Fire Service	Thompson
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	200 acres
Topography	Plain to Gentle Slopes
Average Site Elevation	855 ft MSL

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This site is subject to periodic overland flooding, primarily during spring runoff and after heavy rain events. Sources of water are the Interstate 29 highway ditch that conveys water from the south until it breaks out near the Thompson interchange and runs east, and to a lesser extent, the Elm Coulee near the northerly edge of the site. The Flood Hazard Boundary Map (FHBM) shows a small area of flooding along the Elm Coulee. The last observed flooding was in the spring of 2006, when water ran over County Highway 81 for approximately three days. Flooding seemed more acute south of State Highway 15, but areas both north and south of State Highway 15 were under water. Improvements such as cleaning the Elm Coulee, improving ditches draining east from I-29, levees, and/or elevating building sites should be considered when contemplating this site for industrial development.

Overall Site Suitability

This site is very suitable for industrial development. The property is adjacent to I-29, providing excellent access to regional surface transportation facilities. Neither State Highway 15 nor County Road 81 north of State Highway 15 are hampered by seasonal weight restrictions.

The existing land use is agricultural, which presents no conflicting land uses for industrial development. In fact, industrial development is very compatible with the noise levels along an interstate highway. Site access is excellent, with access available along State Highway 15 and County Road 81, provided spacing requirements are met. Since these roads already exist as paved facilities, there would be no roadway construction costs associated with preparing surrounding access roads.

The site has some potential for overland flooding which can be resolved by appropriately raising the building pads to an elevation above the base flood elevation and improving upon drainage opportunities.

Site 2

Washington Township

Intersection of State Highways 15 and 18

(SW 1/4 S4-T149-R53, SE 1/4 S5-T149-R53,
NE 1/4 S8-T149-R53, NW 1/4 S9-T149-R53)



Site 2: Intersection of Highway 15 and Highway 18

Site 2 is located approximately 5 miles east of the City of Northwood on State Highway 15 at its intersection with State Highway 18 in Washington Township. The site includes the four quarter sections of land located in each quadrant of this intersection. The size of the site is approximately 640 acres.

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

This location is fairly accessible to all regional transportation facilities. It is approximately 20 miles west of the I-29 exchange at Thompson, and approximately 15 miles from the US Highway 2 intersection at County Road 2. Site 2 is approximately 26 miles from the Grand Forks Regional Airport.

Site 2 does not have direct access to a railroad. Industrial users that desire rail access would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.). An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is

located in Dilworth, Minnesota, which is approximately 90 miles from Site 2.

Existing Land Use

The northeasterly quarter section of the study area is part of Section 4 of Washington Township. The land use is agricultural. There is one farmstead on this quarter section, located on the southwest corner of the quarter section along 29th Street NE.

The northwesterly quarter section of the study area is part of Section 5. The land use is all agricultural.

The southwesterly quarter section is mostly farmland. On the northwest corner of the quarter section, there is what appears to be an abandoned farmstead and outbuildings. A small tractor dealership is located on the northeast corner of the quarter section. The dealership has access from both state highways.

The land use of the southeasterly quarter section is all agricultural.

Ownership and Potential Availability of Land

This site is owned by five separate private owners. Based on conversations with the landowners at the time of the study, there is a mix of willingness to sell. Two of the five owners, at the time of this study, are hesitant to sell their land for development at this time. The rest are all willing to consider sale of their land.

Value of Land

According to Grand Forks County records, assessed value of the land in Site 2 is \$504,800. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the value are presence of conflicting land uses, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Only the south half of the site is adjacent to State Highway 18, while the north half is adjacent to an unimproved roadway (29th Street NE). This site is not adjacent to existing services. While it is only six or seven miles from Northwood, it is relatively distant from major employment centers.

Zoning of Property and Surrounding Area

The site is in the zoning jurisdiction of Grand Forks County. According to the Grand Forks County Zoning map, the entire study area and surrounding areas are zoned agricultural.

Natural Features

Development of this site should take a few of the existing features into consideration. There is a natural waterway, which runs north/south through the two westerly quarter sections. Windbreaks of various levels of maturity and thickness exist in the following locations within this study area:

- Along entire north side of study area,
- Along the east side of the study area north of State Highway 15,
- Running north and south through the middle of the northeasterly quarter section, and along the south side of the southwesterly quarter section.

Distance to Potential Employees

An industry located here would have the ability to draw workers from the communities of Northwood, Thompson, Larimore, Emerado, and Hatton, which are all less than 20 miles from the site. Grand Forks and East Grand Forks, which have a larger work force, are approximately 32 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity.

Site 2 is easily accessible for workers from both larger and smaller communities in the area due to its location along State Highway 15 and its proximity to I-29.

Site 2: Intersection of State 18 and 15, Proximity to Nearby Towns/Cities	
Thompson	18 mi
Reynolds	21 mi
Grand Forks	32 mi
Manvel	42 mi
Northwood	6 mi
Emerado	16 mi
Gilby	26 mi
Larimore	19 mi
Johnstown	30 mi
Inkster	37 mi
Niagara	35 mi

Access to Site and Localized Transportation Facilities

This site is very easily accessed via the state highway system. State Highway 15 divides the north and south half of the study area. State Highway 18 runs north and south, separating the two southerly quarter sections. Both state highways have restrictive access and intersection spacing of one-quarter mile increments (1,320 feet).

Another road providing access to Site 2 is 29th Street NE, which is the north leg of the four-way intersection created by State Highway 15, State Highway 18, and 29th Street NE. The allowed spacing of access points on 29th Street NE is currently 330 feet, although a more restrictive access spacing of 1/8 mile (660 feet) is advisable since this is a mile line roadway, which could carry more traffic at some time in the future.

Utilities

This site, as with the others, is not connected to any utilities. There are some utilities that could easily be provided that are near the site and there are others that would have to be extended to provide service.

Nodak has three-phase power that parallels the highway on the west side of State Highway 18 as well as on the north side of State Highway 15. By adding a feed point and extending the facility to the site, Nodak could provide electricity. There would likely be no charge here for extension of power line facilities. Each area of the site is fairly close to existing power and should require little or no extension fees, only typical service connections.

Site 2 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	minimal
Water	\$20,000
Gas	NA
Communication	Basic services can be provided by Qwest. Conditioning costs would apply.
Roadway Improvements ^b	\$501,600

a) Connection fees would apply. Three-phase power exists along State Highways 15 and 18.

b) Cost shown assumes construction of a bituminous section for heavy truck loads at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

Grand Forks Trill (GFT) Water District serves this area's water needs. GFT has two parallel 8-inch water lines in this location and supplies bulk water to the cities of Hatton and Northwood. GFT estimates an industrial site located here could be provided a capacity of water of 200 gpm and 140,000 gpd based on a 12-hour duration. GFT has permits in place for a ground water appropriation of 1,712 acre feet. They currently use approximately 1,100 acre feet.

GFT has water lines along the north side of State Highway 15 and on the west side of State Highway 18. Therefore most water connections could easily be made with little or no additional cost for extending water lines. Providing water to Section 9, however, will require a bored highway crossing at a cost of approximately \$20,000.

There is no practical gas provider in this area. Any development would need to be setup for propane gas use. Propane can be provided by many different providers that deliver propane to the area. Often propane providers will lease the appropriate size tank and fill it when the customer notifies them the tank is at approximately 20% capacity.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics are also possible as well; these services may incur minor conditioning or extension fees.

Site 2 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of waste water).

b) Cost of pond is based on 20 acre feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site. Depending on the size and surface, the cost will vary. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

Site 2 electricity and water only require connections to existing facilities.

Development at this site would necessitate improvements to 29th Street NE, which is the north leg of the four-way intersection. It is currently a local gravel road. To prevent damage by trucking operations, the first mile north of the intersection should be paved. The approximate cost of this improvement would be \$501,600.

Weight Restrictions on Potentially Affected Roadways

Grand Forks County sets restrictions on the roads around this site in the spring. Spring restrictions on State Highways 15, 18, and US Highway 2 are legal weight limits. Spring restrictions on other nearby county roads are No. 2 Load Restrictions as defined by Grand Forks County. Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight. More information on Grand Forks County spring load restrictions is shown at <http://www.co.graforks.nd.us/highways.html> or in Appendix 6.

Emergency Service Availability

Emergency service providers in this area are shown below:

- Ambulance Service – Northwood Ambulance District
- Fire Protection – Northwood Fire District
- Law Enforcement – Grand Forks County Sheriff

Although this site is very close to Northwood, it is outside their city limits and law enforcement jurisdiction falls to the County. If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types ranging from loam, fine sandy loam and silty loam to silty clay loams. Much of the site is classified as “not prime farmland” or “farmland of statewide importance” by the NRCS. Other areas within Site 2 fall under the classification of “prime farmland if drained.”



Looking North along 29th St NE, North of State Hwy 15

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. The soils in portions of sections 5, 8, and 9 of this site have a moderate to high potential for frost action, which must be considered in the design of any structures. These soils also produce a moderate to high risk of corrosion of uncoated steels and concrete when such materials are exposed.

Given the soil types of this site, all practical

development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. This site’s soils have a complete range of infiltration rates and water table depths. Approximately 33 percent of the site soils, mostly those on the northeast and east portion of the site, have high to moderate infiltration rates with upper limit water table depths between 3 feet and 6 feet depending on time of year and soil type. The remaining soil types onsite have slow to very slow infiltration rates with upper limit water table depths of 0 feet to 3 feet depending on time of year and soil type.

As a source of gravel, this site is poor and would require construction materials of that nature as borrow. This site is rated fair as a source of sand. This means sand is likely to be in or below certain onsite soil types and not easily accessible for construction. As a source of topsoil, the soils onsite are good to fair. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Site 2 Intersection of State 18 and 15	
Quick Facts	
UTILITIES	
Gas Provider	Propane Service
Electricity Provider	Nodak
Water Provider	Grand Forks-Trail Water District
Communications Provider	Qwest
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	Grand Forks County
POLITICAL	
Ambulance Service	Northwood Ambulance District
Fire Service	Northwood Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	4 - 1/4 sections (640 acres)
Topography	Plain to Gentle Slopes
Average Site Elevation	1,080 ft – 1,090 ft MSL

Environmentally Sensitive Features

The northwest quarter section of the proposed site is only a quarter mile away from the Elk Valley Aquifer, which is very large. The aquifer extends west and north all the way up to the north edge of the County and into the next. Any development at this location may need to include containment and protection measures that will ensure no disturbance to the current state of the aquifer or contamination of the aquifer.

Both of the westerly quarter sections have a floodplain near the natural waterway along the west edge of the site (the quarter section line). Any construction within this area must consider the possibility of high water levels.

The site has 0.98 acres of Freshwater Emergent wetland in the southwest quarter section (see Appendix 7, National Wetlands Inventory Map). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. Two Class III cultural resource inventories have taken place in this study area. They addressed the area along State Highway 18 and the area along the existing power transmission line just southeast of the study area. No cultural or historical resources were identified as part of these two inventories. The farmstead site located in the northeast corner of State Highway 15 and 29th Street NE was reviewed in a previous inventory, and was identified as a site that is ineligible for the National Register of Historic Places (NRHP). Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

No drainage problems were observed at this site. The majority of drainage runs southeast to Cole Creek. A natural channel shown as exhibiting flooding by the Flood Hazard Boundary Map (FHBM) drains the westerly area of the northeast quarter of Section 8. However, the flooding area is limited to the land near the channel and should not be detrimental to development of the site provided appropriate site grading is performed.

Site 3
Northwood Township
Highway 15 North of Northwood
(S4-T149-R54)



Site 3: Highway 15 North of Northwood

Site 3 is located directly north of the City of Northwood. The site is adjacent to State Highway 15. The entire proposed site is one section (approximately 640 acres). However, it is anticipated that only 580 acres would be available for further development due to the presence of existing development, the railroad right-of-way, and surrounding roadway right-of-way.

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

Site 3 is fairly accessible to regional transportation facilities. It is approximately 26 miles west of the I-29 interchange at Thompson, and approximately 17 miles from the US Highway 2 intersection at County Road 2. It is approximately 32 miles from the Grand Forks Regional Airport.

A BNSF railroad runs through this site in a NW/SE direction as shown in the aerial photograph above. According to BNSF officials, there are no specific restrictions for the provision of spur lines for industrial uses. Each situation is reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs associated with a spur include the installation of a signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF Railway provides a

New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 96 miles from Site 3.

Existing Land Use

Site 3 is mostly agricultural land. The only other uses include the railroad facility running through the section, a farmstead and some businesses along State Highway 15. The farmstead is on the north side of the property, along 6th Avenue NE, in the northeast quarter section. There are also grain bins located in the approximate center of the southeast quarter section. All of the businesses on the south side of this section are located on the west side of the RR tracks.

Ownership and Availability of Land

Six different property owners own Site 3. Those who own larger portions are willing to discuss the opportunity to sell their land for development.

Value of Land

According to Grand Forks County records, assessed value of the land in Site 3 is \$710,400. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Factors that will affect the value are the ability to construct a spur line from the BNSF railroad, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Since this site is adjacent to Northwood, it has more to offer in the way of services, and is in closer proximity to employees. In addition, the property has already been found to be compatible with industrial development due to the fact that Northwood Mills already occupies part of the property.

Zoning of Property and Surrounding Area

Site 3 is located in the extraterritorial area of the City of Northwood. According to the city, there are 40 acres on which Northwood Mills is located that are zoned Industrial. The remaining area is zoned Agricultural. According to the Grand Forks County Zoning Map, the area surrounding the study area is also zoned Agricultural.

Natural Features

There are no natural features that would impede development. The only onsite features are shelterbelt trees planted around existing development on the south portion of the site.

There are no natural features that would impede industrial development.

Distance to Potential Employees

An industry located here would have a strong ability to draw workers from Northwood. Larimore, a city of over 1,400 people, is only 14 miles to the north. Grand Forks and East Grand Forks, which have a larger work force, are approximately 37 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity.

Site 3 is easily accessible for workers from the near-by cities of Northwood and Larimore. Other communities also have easy access to Site 3, since it is located along State Highway 15, although greater travel distances would be required.

Site 3: Hwy 15 North of Northwood, Proximity to Nearby Towns/Cities	
Thompson	24 mi
Reynolds	27 mi
Grand Forks	37 mi
Manvel	48 mi
Northwood	1 mi
Emerado	22 mi
Gilby	33 mi
Larimore	14 mi
Johnstown	38 mi
Inkster	32 mi
Niagara	30 mi

Access to Site and Localized Transportation Facilities

This site is bordered by roads on all sides. The surrounding roads are local in nature, with the exception of State Highway 15. Railroad tracks traverse the westerly portion of the site at a NW/SE angle.

State Highway 15 runs along the south side of the site. It has restrictive access and intersection spacing of quarter mile increments (1,320 feet). Access points to existing development at this location do not meet the current standard. It is unlikely that any new

development will be allowed access spacing similar to what exists today.

The site is bounded by roads on three sides: 6th Avenue NE on the north, 34th Street NE on the east, and 35th Street NE on the west. These local roads offer the best opportunity for new development access. The allowed spacing of access points is 330 feet.

The RR tracks on this site form a line from just west of the southeast corner of the southwest quarter section to the northwest corner of the northwest quarter section. The locations of the railroad crossing along State Highway 15, as well as the location of the railroad crossing at the intersection of 35th Street NE and 6th Avenue NE, are likely to affect future access locations allowed along these roadways. There is an unimproved road that parallels the east side of the tracks in the southwest quarter section.

Utilities

This site, as with the others, is not connected to any utilities. There are some utilities that could easily be provided which are near the site, and there are others that would have to be extended to provide service. Currently Northwood Mills is served electricity from the City of Northwood because it is annexed to the City.

Nodak has three-phase power that parallels the highway on the north side of State Highway 15. By adding a feed point and extending the facility to the site, Nodak could provide electricity. Given that power already exists in such close proximity, there would be small costs to extend power lines. Depending upon building locations this site would see power line extension fees under \$6,000 at the time of this study. The most significant cost would be extending power to the southeast corner of the site. All other areas would see little to no extension cost.

Site 3 is on the dividing line between Grand Forks Trail (GFT) Water District and Tri County Water District (Tri County). GFT provides bulk water to the City of Northwood through a pipeline one-half mile south of State Highway 15. GFT doesn't have a pipeline along or north of State Highway 15. At the time of this study, there are plans to extend Northwood's water and sewer services to land along the south side of State Highway 15, but nothing further. At such time as there are further development interests north of State Highway 15, the City of Northwood should be contacted to determine most current plans to serve the

area north of the highway. From the point where the city is currently planning to extend the watermain along the south side of Highway 15, it would cost an estimated \$40,000 to extend the city's watermain across Highway 15 to the north side. Extending the watermain east to cross the railroad tracks would cost an estimated \$43,000 for a total estimated cost of \$83,000.

There is service from Tri County, which has a pipeline from the west that serves the businesses on the north and south sides of State Highway 15 west of the railroad tracks. This pipeline presently ends at the CENEX Station. It is a 1.5-inch pipeline that can only provide basic potable water for restrooms, lunch room, etc. The available capacity is estimated at 10 gallons per minute (gpm) or approximately 5,000 gallons per day (gpd), assuming an eight-hour duration. If a larger quantity of water is needed, it is suggested that the City of Northwood be approached to see when city water mains can be extended. After completion of an expansion to their system Tri County will have appropriations for 513 acre feet of permitted water use annually. They currently use 392 acre feet per year.

GFT has a water reservoir 1.5 miles east of the railroad crossing at State Highway 15. Extending a water line from this reservoir to the midpoint of the southeast quarter section of Section 4 on the highway frontage will cost an estimated \$90,000. Continuing the water line west across the railroad tracks to reach the midpoint of the SW quarter would cost an additional \$60,000.

Site 3 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$6,000
Water	\$83,000 - \$150,000
Gas	NA
Communication	Basic service and possibly extended services can be provided by Qwest with possible costs.
Roadway Improvements ^b	\$3,009,600
Total	\$3,165,600

a) Certain areas of the site will see no charges for electricity extensions. Other areas will require line extensions and incur costs.

b) Cost shown assumes construction of a bituminous section for heavy truck loads at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

There is no practical gas provider in this area. Any development would need to be set up for propane gas use. Propane can be provided by many different providers that deliver propane to the area. Often, propane providers will lease the appropriate size tank and fill it when the customer notifies them they are around 20% capacity.

Qwest Communications can provide communications to this site. They are able to easily provide basic services, phone and Internet, as well as a T1 line or fiber optics. This site may see some costs other than normal connection fees for extended services as these services may incur minor conditioning or extension fees.

Site 3 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of waste water).

b) Cost of pond is based on 20 acre feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well. The cost will vary, depending on the size and surface. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

At this site, it would be necessary to improve all local roads surrounding the site except for State Highway 15. They are all currently gravel roads. Once Site 3 is fully developed, these local facilities will see a significant increase in truck traffic. To prevent damage by trucking operations, all roads surrounding the site should be paved. The approximate cost of this improvement would be \$3,009,600.

Weight Restrictions on Potentially Affected Roadways

Spring weight restrictions on the roads around this site are set by Grand Forks County. Spring restrictions on State Highways 15, 18, and US Highway 2 are legal weight limits. Spring restrictions on other nearby county roads are No. 2 Load Restrictions as defined by Grand Forks County. Spring restrictions on County Road 12 are Class A Load Restrictions for the first mile south of State Highway 15. Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight. See <http://www.co.grand-forks.nd.us/highways.html> or Appendix 6 for more information on Grand Forks County spring load restrictions.

If hazardous materials are handled by any industry located at this site, emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of silty clay loam, fine sandy loam, and silty loams. The entire site is classified as "prime farmland" or "prime farmland if drained" by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. The site soils have a high potential for frost action, which must be considered in the design of any structures. These soils also produce a moderate to high risk of corrosion of uncoated steels when exposed to each other. Site 3 soil types present a low risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates onsite are moderate to slow with water table upper limits of 1.5 feet to 6 feet depending on time of year and soil type.

As a source of gravel and sand, this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils onsite are good to fair. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

This entire site is located over the Elk Valley Aquifer. The aquifer extends north nearly as far as Walsh County and south, almost as far as Steele County. Any development at this location must include containment and protection measures that will ensure no disturbance or contamination to the current state of the aquifer.

Site 3 State Hwy 15 North of Northwood	
Quick Facts	
UTILITIES	
Gas Provider	Propane Service
Electricity Provider	Nodak
Water Provider	Grand Forks Traill Water District & Tri County Water Dist.
Communications Provider	Qwest
Sanitary Provider	None Available – On-Site Septic System Required
ZONING	
Zoning Jurisdiction	Grand Forks County/City of Northwood
POLITICAL	
Ambulance Service	Northwood Ambulance District
Fire Service	Northwood Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	One Section (640 acres)
Topography	Plain to Gentle Slopes
Average Site Elevation	1,115 ft MSL

*City of Northwood would provide law enforcement upon annexation.

Emergency Service Availability

Northwood provides emergency services in this area.

- Ambulance Service – Northwood Ambulance District
- Fire Protection – Northwood Fire District
- Law Enforcement – Grand Forks County Sheriff

Although this site is very close to Northwood, it is currently outside their city limits and law enforcement jurisdiction falls to the County. If developed and annexed to the City of Northwood, law enforcement would be provided by the city police department.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No cultural resource inventories have taken place in this study area. There are no known cultural or historical resources identified. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

No drainage problems were observed at this site. Natural drainage from the south and west is cut off by the Goose River. The contributing drainage area at this site is relatively small. The Flood Hazard Boundary Map (FHBM) shows no areas of flooding.



Northwood Mills, located north of State Highway 15

Overall Site Suitability

This site has the advantage of being along a state highway and a rail line. It has the disadvantage of being one of the farthest sites from I-29 and from the Grand Forks Regional Airport. The surrounding land uses are compatible, given the presence of an existing industry, Northwood Mills. Given that the site is adjacent to the City of Northwood, this site is in close proximity to a small community of potential employees.

For the protection of the region's ground water, it will be very important to have a thorough understanding of the materials used at any industrial businesses at this location, since the property is situated over the Elk Valley Aquifer. Measures of protection such as containment features are extremely important in the event of accidental spills or equipment failures, with back-up containment features built into the site and/or surrounding area.

Utilities are readily available, with some issues to be worked out over water service, depending upon the amount of water needed. If larger amounts of water are needed than the 10 gpm that can be provided by Tri County, the option of extending GFT or City of Northfield water lines will need to be examined. In summary, the site is very suitable for industrial development.

Site 4

Elm Grove and Hegton Townships Intersection of State Highway 18 and US 2 (SW 1/4 S30-T152-R54, SE 1/4 S25-T152-R55, NE 1/4 S36-T152-R55, NW 1/4 S31-T152-R54)



Site 4: Intersection of State 18 and US 2

Site 4 is north of the Turtle River and Larimore Dam Recreation Area at the intersection of State Highway 18 and US Highway 2. The site consists of four quarter sections adjacent to the intersection of the two highways and is approximately 640 acres in size. It is approximately five miles north of Larimore, North Dakota.

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

This location is very accessible to regional transportation facilities. It has immediate access to both State Highway 18 as well as US Highway 2. The site is approximately 26 miles west of the I-29 interchange at Gateway Drive in the City of Grand Forks. Site 4 is approximately 22 miles from the Grand Forks Regional Airport.

A BNSF railroad runs through Larimore, ND, which is approximately five miles south of Site 4 (see Figure 5 in Appendix 7). The same track is also located five miles west of the site, as it curves to the northwest just west of Larimore. According to BNSF officials, there are no specific restrictions for the provision of spur lines for industrial uses. Each situation is

reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs associated with a spur include the installation of a signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF Railway provides a New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 103 miles from Site 4.

Existing Land Use

Most of the land within this study area is agricultural. In the northwest quarter of land, a farmstead is located along State Highway 18 at the north edge of the site. A small mobile home park is located on this quarter section as well, taking access from State Highway 18.

A highway rest area is located at the corner of US Highway 2 and State Highway 18 in the northwest quarter section. A farmstead is located north of the rest area, taking access from State Highway 18.

The southeast quarter section consists of agricultural land.

The southwest quarter section consists of agricultural land with the exception of a potato warehouse operation adjacent to the intersection of US Highway 2 and State Highway 18. A farmstead is located immediately south of the industrial facility.

Industrial land use already exists in the southwest corner of US Highway 2 and State Highway 18, in the form of a potato warehouse.

Ownership and Potential Availability of Land

This site is owned by many different private owners. Based on conversations with the landowners at the time of the study, they are mostly open to discussing the sale of their land for industrial development.

Value of Land

According to Grand Forks County records, assessed value of the land in Site 4 is \$441,200. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the

current agricultural status of the land. It does not represent actual market value. Some factors that will affect the value are presence of conflicting land uses, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

It is anticipated that the future market value of this land will be determined based on the fact that this site is along US Highway 2, which is a major east-west transportation facility, and along State Highway 18, which is a north-south facility. The nature of the property as industrial land has already been set, especially in the southwest quadrant of the study area, where the potato warehousing site is located. In the northwest quadrant, the presence of the residential property and mobile home sites may affect the cost of this property.

Zoning of Property and Surrounding Area

According to the Grand Forks County Zoning Map, the entire area and surrounding areas west of State Highway 18 are zoned agricultural. This area lies within the zoning authority of Grand Forks County. The areas east of State Highway 18 are in Hegton Township, which has retained its zoning authority.

Natural Features

This is a very large site and there are many natural features that could impact industrial development. Each section is outlined with tree lines that are being used to protect crops and existing structures. There are numerous lines of trees on all four quarter sections. The Turtle River, which flows east, divides both of the south quarter sections and a good portion of the southeast corner of this site is a state campground and recreation area. There is a reservoir on the southeast corner as well.

Distance to Potential Employees

An industry located at Site 4 would have a strong ability to draw workers from Larimore, a city of over 1,400 people, which is only three miles south of US Highway 2. Northwood, Emerado, Gilby, Inkster, and Niagara are also less than 20 miles from this site. Grand Forks and East Grand Forks, which have a larger work force, are approximately 28 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity.

Site 4 is easily accessible for workers from the near-by cities and from Grand Forks due to its location along US Highway 2.

Site 4: Intersection of State Highway 18 and US 2, Proximity to Nearby Towns/Cities	
Thompson	37 mi
Reynolds	44 mi
Grand Forks	28 mi
Manvel	37 mi
Northwood	16 mi
Emerado	13 mi
Gilby	16 mi
Larimore	3 mi
Johnstown	22 mi
Inkster	15 mi
Niagara	13 mi

Access to Site and Localized Transportation Facilities

State Highway 18 runs north and south through the site on the section line. US Highway 2 runs east and west through the property, also on the section line. Both highways have restrictive access and intersection spacing of quarter mile increments.

Access to development in any one of these quarter sections will need to be carefully planned and coordinated with the North Dakota Department of Transportation. A rest area located in the northwest quarter section currently has right-in and right-out access to US Highway 2 and full access to State Highway 18. This could further complicate access to the northwest quarter section.

In the absence of any special considerations such as existing access points or limiting physical features, access would be allowed 1/4 mile away from the US Highway 2 and State Highway 18 intersection, and again, 1/2 mile from the intersection, at the edge of the four quarter sections. Ideally, the 1/4 mile locations would consist of either major access points to one large development or shared access points to multiple developments. At the 1/2-mile access spacing, the access can best serve development in the area if it consists of an intersection with a collector street that serves all development within the section.

The property north of US Highway 2 could ultimately have access to section line roadways to the north, east, and west if such internal collector streets are provided. However, the property south of

US Highway 2 will very likely be limited to access to US Highway 2, State Highway 18, and the section line roadways to the east and west of the site, provided the needed internal collector street connections are made. Access to and from the south would be limited by the presence of the Larimore Dam Recreation Area and the Turtle River.

Utilities

This site is not currently connected to utilities. While there are some utilities that could easily be provided due to their close proximity to the site, there are others that would have to be extended to provide service.

Site 4 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$0
Water	\$40,000 - \$80,000
Gas	NA
Communication	Basic service and possibly extended services can be provided by Qwest with possible costs.
Roadway Improvements ^b	\$0

- a) Certain areas of the site will see no charges for electricity extensions other areas will require line extensions and incur costs.
- b) Cost shown reflects an existing bituminous section for heavy truck loads. Additional road construction estimated at \$19,000/100 LF (see Description of Improvements Section).

Nodak would be able to provide electricity to the site. The electrical service provider has existing three phase power facilities at all four corners of the highway intersection. There is little chance the industry would pay extension fees, only service connection fees.

Water needs would be served by Tri County Water District. They have a 6-inch water main in this area. Tri County serves the potato warehouses in the southwest quadrant of the highway intersection. They also serve the NDDOT rest area and other farmsteads in the area. They estimate being able to provide a capacity of approximately 20 gallons per minute (gpm) or 10,000 gallons per day (gpd) assuming an 8-hour duration at this location. After completion of an expansion to their system Tri County will have appropriations for 513 acre feet of permitted water use annually. They currently use 392 acre feet per year.

There is no practical gas provider in this area. Any development would need to be setup for propane gas use. Propane can be provided by many different

providers that deliver propane to the area. Propane providers often lease the appropriate size tank and fill it when the customer notifies them they are at approximately 20% capacity.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics are also possible as well; these services may incur minor conditioning or extension fees.

Site 4 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

- a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of waste water).
- b) Cost of pond is based on 20 acre - feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well, depending on the size and surface the cost will vary. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

At this location, there is no need to improve any of the localized transportation facilities. Each is already paved and sufficient, unless spring load restrictions hinder a specific industry's trucking operations. In that case, the body governing the specific road in question may consider reconstructing a portion of the road to suit the needs of the developed industry.

Weight Restrictions on Potentially Affected Roadways

Grand Forks County sets restrictions on affected transportation facilities around this site in the spring. Spring restrictions on State Highways 18 and US Highway 2 are legal weight limits. Spring restrictions on other nearby county roads are No. 2 Load Restrictions as defined by Grand Forks County. Spring restrictions on parts of County Roads 11, 4, and 20 are Class A Load Restrictions as defined by the County. Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight. Additional information on Grand Forks County spring load restrictions is provided at <http://www.co.grand-forks.nd.us/highways.html> or in Appendix 6.

Emergency Service Availability

Emergency services to this site will come from three sources:

- Ambulance Service – Larimore Ambulance District
- Fire Protection – Larimore Fire District
- Law Enforcement – Grand Forks County Sheriff

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains mostly fine sandy loams. Much of the site is classified as “prime farmland” or “farmland of statewide importance” by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. In most areas the site soils have a low to moderate frost action, which must be considered in the design of any structures. There are small pockets of soil types onsite that have a much higher potential for frost action; although these areas are small they should still be accounted for. The site soils also produce a low to moderate risk of corrosion of uncoated steels and concrete when such materials are exposed.

Given the soil types of this site, all practical development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. This site’s soils have a wide range of infiltration rates from high to slow. The soils onsite have upper limit water table depths of 2 feet to 6 feet depending on time of year and soil type.

As a source of gravel, this site is poor and would require construction materials of that nature as borrow. This site is rated fair as a source of sand. This means sand is likely to be in or below certain onsite soil types and not easily accessible for construction. As a source of topsoil, the soils onsite are good to fair. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Site 4 Intersection of State 18 and US 2	
Quick Facts	
UTILITIES	
Gas Provider	Propane Service
Electricity Provider	Nodak
Water Provider	Tri County
Communications Provider	Qwest
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	GF County/Hegton Twp
POLITICAL	
Ambulance Service	Larimore Ambulance Dist.
Fire Service	Larimore Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	4 – ¼ sections (640 acres)
Topography	See Text
Average Site Elevation	See Text

Environmentally Sensitive Features

All of Site 4 is situated over the Elk River Aquifer, which is quite large. The aquifer extends north almost as far as Walsh County and south nearly as far as Steele County. Any development at this location must include containment and protection measures that will ensure no disturbance or contamination to the current state of the aquifer.

Due to the Turtle River that winds through the area south of the site, there are also impacts of a local floodplain. Any development near the water needs to account for possible flooding to protect the site from the river. Development of this site must be carried out in a manner that protects the river from the impacts of construction and development.

Site 4 has 3.7 acres of Freshwater Emergent wetlands identified in the northeast portion of the study area (see Appendix 7, National Wetlands Inventory Map). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. This is the only site that contains a property that is eligible for the historic register within the 11 study areas. The site is located just north of the Turtle River, in the northwest quarter of Section 31. It is identified as a Cultural Material Scatter (CM Scatter), comprised of obsidian flaking debris, one projectile point, and a pottery shard. The cultural resources inventory identified a site lead, said to be located somewhere in Section 30. No exact location was given, so a site was not shown on the cultural resources map for Study Area 4. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

No drainage problems were observed at this site. The site appears to be very well drained. The Turtle River is located along the southerly edge of the site. The river valley is substantially lower in elevation and does not contribute to flooding at this site.



Intersection of State Highway 18 & US 2 Looking North

Topography and Elevation

The two northerly quarter sections of this site have plain to gentle slopes with no aggressive terrain. The two southerly quarter sections are similar in terrain to the north side of the site, with the exception of the most southerly portion, which begins to slope toward the Turtle River.

The elevation of the two northerly quarter sections is approximately 1,125 feet. The southerly quarter sections are at around 1,125 feet near State Highway 18, tapering down to around 1,115 feet to the east and 1,105 feet to the west.

Overall Site Suitability

This site is very suitable for industrial development. The presence of US Highway 2 facilitates freight movements and employee access to the property. The community of Larimore is only five miles south of the property, providing a number or potential employees in very close proximity as well as others from the rural areas and other small communities in the vicinity.

The existing land uses are, for the most part, compatible with industrial development. The potato warehouse in the SW quadrant of the US Highway 2 and State Highway 18 intersection is already providing value-added agricultural industry in this setting. The residential uses in the northwest quadrant of the intersection may be somewhat incompatible with industrial development, depending on the nature of a particular business. If this area became a large industrial subdivision, it is anticipated that residential property would be purchased and redeveloped.

The terrain of the property is generally flat enough to accommodate large industrial development sites. Most of the utilities are located such that it would be relatively easy to serve the property. Water considerations are perhaps the most tentative, given the fairly limited quantity of water available from Tri County (20 gpm and 10,000 gpd). As such, this site may be most suitable for industrial uses that are not dependent on high volumes of water.

Site 5

Niagara Township Intersection of US Highway 2 and State Highway 32

(SW 1/4 S6-T152-R56, SE 1/4 S6-T152-R56)



Site 5: Intersection of US 2 and State 32

Site 5 is north of the City of Niagara at the intersection of State Highway 32 and US Highway 2. The site consists of the two quarter sections of land on the north side of the intersection of the two highways. The entire proposed site is one half section (approximately 320 acres)

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

Site 5 is readily accessible to certain regional transportation facilities. It has immediate access to both State Highway 32 as well as US Highway 2. The site is approximately 39 miles west of the I-29 interchange at Gateway Drive in the City of Grand Forks. It is approximately 35 miles from the Grand Forks Regional Airport.

Site 5 does not have direct access to a railroad. Rail access may be available approximately one mile south of US Highway 2 in Niagara. Industrial users that desire rail access would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.). An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 122 miles from Site 5.

Existing Land Use

The westerly quarter section has farmsteads on both the west and east sides. A ditch runs along the south edge of the quarter, adjacent to US Highway 2, and the rest is farmland. The easterly quarter section has a farmstead on the southeast corner. A ditch runs along the south edge, adjacent to US Highway 2, as well as a stream and small pond. The remainder of Site 5 is used as farmland.

Ownership and Availability of Land

Site 5 is owned by three separate property owners. Each of the owners is willing to discuss the potential availability of the site. Certain things the owners would want to know upfront are the size and types of development that will be located at the site. One owner is only looking to sell a small portion at this time, and the others are willing to discuss larger portions.

Value of land

Current assessed value of the land is \$143,800, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Although the site is along US Highway 2, it has other characteristics that will also be taken into consideration when determining market value. A swale runs through the southeast corner of the property, severing off approximately 15 acres of buildable land from the land farther to the north. Since access is very limited along US Highway 2, this would result in the construction of either some type of on-site access road, like a frontage road, or a box culvert or bridge over the ditch/creek that runs through the site.

Zoning of Property and Surrounding Area

The property is under the zoning jurisdiction of Grand Forks County. The entire site and surrounding area is zoned agricultural.

Natural Features

Site 5 has natural features that would have to be addressed when considering development. There are shelterbelt trees planted around existing farmsteads as well as tree rows running east to west on the western half section line. The natural waterway, previously mentioned under Environmentally Sensitive Features, would also need to be considered. Any development that needs large acreage would need to locate northwest of the stream, since the available acreage between the stream and US Highway 2 is less than 10 acres.

Site 5 Intersection of US 2 and State 32	
Quick Facts	
UTILITIES	
Gas Provider	Propane Service
Electricity Provider	Nodak
Water Provider	Tri County
Communications Provider	Polar Comm.
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	Grand Forks County
POLITICAL	
Ambulance Service	Niagara Ambulance District
Fire Service	Larimore Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	Approx 320 acres
Topography	Plain to Gentle Slopes
Average Site Elevation	1,425 ft MSL

Distance to Potential Employees

An industry located at Site 5 would have a strong ability to draw workers from Niagara, which is located across US Highway 2 from this property. Larimore, a city of over 1,400 people, is only 16 miles away. The Grand Forks/East Grand Forks metropolitan area has a larger work force and is approximately 42 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity.

Site 5 is easily accessible for workers from the surrounding rural area and from other communities in the vicinity due to its location along US Highway 2.

Access to Site and Localized Transportation Facilities

State Highway 32 runs north and south between the two quarter sections included in the study area. The south boundary of this site consists of US Highway 2, which runs east and west. Both highways have restrictive access and intersection spacing of quarter mile increments.

Site 5: Intersection of US 2 and State 32, Proximity to Nearby Towns/Cities	
Thompson	50 mi
Reynolds	58 mi
Grand Forks	42 mi
Manvel	50 mi
Northwood	29 mi
Emerado	26 mi
Gilby	31 mi
Larimore	16 mi
Johnstown	29 mi
Inkster	20 mi
Niagara	1 mi

There are two other local roads around the site with less restrictive access limitations. The site is bounded both on the east and west sides by local roads: 48th Street NE on the east, and an unimproved section line road on the west. These local roads offer access spacing of 330-foot intervals.

There is a natural waterway that winds across the southeasterly corner of the site. This waterway will limit access opportunities to the site unless culverts or bridges are provided along internal streets.

Utilities

This site is not connected to any utilities. Some utilities could easily be provided due to their existing proximity to the site. Others would need to be extended from a more distant location to provide service.

Site 5 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$17,000
Water	\$0 - \$40,000
Gas	NA
Communication	Basic services (phone and internet) can be provided by Polar Comm.
Roadway Improvements ^b	\$1,003,200

a) Certain areas of the site will see no charges for electricity extensions other areas will require line extensions and incur costs.

b) Cost shown assumes construction of a bituminous section for heavy truck loads at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

Nodak would be able to provide electrical service to the site. They have existing three-phase power lines on the west side of State Highway 32 and on the north side of US Highway 2. The east portion of this site would see power line extension fees under \$17,000 at the time of this study. The most significant cost would be extending power to the east half of the site. The west side could easily be connected with only service fees.

Water needs would be served by Tri County. Tri County has a 20,000-gallon underground concrete water reservoir and pump house nearby on the south side of US Highway 2. They also have a 4-inch water line on the north side of the highway. Capacity is estimated at 30 gallons per minute (gpm) and 15,000 gallons per day (gpd) at this location. After completion of an expansion to their system Tri County will have appropriations for 513 acre feet of permitted water use annually. They currently use 392 acre feet per year.

There is no practical gas provider in this area. Any development would need to be set up for propane gas use. Propane can be provided by many different providers that deliver propane to the area. Often, propane providers will lease the appropriate size tank and fill it when the customer notifies them they are at approximately 20% capacity.

Communications can be provided to this site by Polar Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. There is little possibility for extended services such as T1 line or fiber optics at this location.

Site 5 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on intended function.

b) Cost of pond is based on 20 acre - feet of storage for a 160 acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required for the site to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well. The cost will vary depending on the size and surface. Each site must consider storm water solutions to assure proper storm discharge quality and quantity.

At this site, it may be necessary to improve the local roads east and west of the site. They are all currently gravel roads or unimproved section lines. If the roads would be used by industrial development on Site 5, they should be paved to prevent damage by trucking operations. The approximate cost of this improvement would be \$1,003,200.

Weight Restrictions on Potentially Affected Roadways

Restrictions on affected transportation facilities around this site are set in the spring by Grand Forks County. Spring restrictions on State Highway 32 and US Highway 2 are legal weight limits. Spring restrictions on other nearby county roads are No. 2 Load Restrictions as defined by Grand Forks County. Spring restrictions on parts of County Roads 21 and 16 are Class A Load Restrictions as defined by the County.

There are no spring weight restrictions on US Highway 2 or State Highway 32.

Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight. For further information on Grand Forks County spring load restrictions, see Appendix 6 or: <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency service providers to this are shown below.

- Ambulance Service – Niagara Ambulance District
- Fire Protection – Larimore Fire District
- Law Enforcement – Grand Forks County Sheriff

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of clay loams and loam. A very large portion of the site is classified as “prime farmland” or “farmland of statewide importance” by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. The site soils have a high to moderate potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of corrosion of uncoated steels when exposed to each other. Site 5 soil types present a moderate to low risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates on site are moderate to slow with water table upper limits of 0 feet to 6 feet depending on time of year and soil type.

As a source of gravel, and sand this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils on site are a good to fair source. For more detailed information,

see United States Department of Agriculture Natural Resources Conservation Service Soil Map.



Looking Northwest from US Highway 2 and 48th Street NE

Environmentally Sensitive Features

This site has a small natural waterway on the southeast corner, running through the site in a northeast/southwest direction. This site also has 4.09 acres of designated Freshwater Emergent wetland on the eastern half of the site (see attached National Wetlands Inventory Map). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. There are no identified cultural or historical resources located on Site 5. However, the only inventory that has taken place on or adjacent to the site is a Class III survey along US Highway 2 in 1998. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This site appears well drained. No observed drainage problems were noted. The Flood Hazard Boundary Map (FHBM) shows no areas of flooding on the site. Natural drainage courses pass through the site draining from west to east. These natural channels should be considered in the configuration of the development and incorporated into the site grading and drainage plan. A land owner commented that minor spring runoff issues are encountered, but felt such issues could easily be resolved during construction of the site improvements by elevating buildings and constructing drainage channels as needed.

Overall Site Suitability

This site is suitable for industrial development from the standpoint of access to regional surface transportation facilities, drainage, lack of overland flooding potential, availability of electricity, topography and existing land uses. It may also be suitable for industrial development from the standpoint of water availability, depending upon the need for water by a given industrial user. The available volume of 30 gpm is significantly lower than some of the other sites included in the study. Therefore, this site is suitable for industrial development with low water usage. If there is a desire for a business with higher water use to occupy this site, discussions would need to take place with Tri County to determine if increasing the water volume is feasible and cost effective.

One drawback to this site is the distance to employment centers. Any industry that locates on Site 5 may need to consider their potential need for employees and the ability to attract those employees from the very small communities in the vicinity.

Site 6

Johnstown Township

Intersection of County Rd 1 & County Rd 2

(SW 1/4 S16-T154-R53, SE 1/4 S17-T154-R53, NE 1/4 S20-T154-R53, NW 1/4 S21-T154-R53)



Site 6: Intersection of County Rd 1 and County Rd 2

Site 6 includes the community of Johnstown, which is not an incorporated city. It is located at the intersection of County Road 1 and County Road 2. The site includes four quarter sections adjacent to the intersection of the two county roads. The entire site is four quarter sections of land (approximately 640 acres).

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

This location is fairly accessible to regional transportation facilities. It has immediate access to both County Road 1 and County Road 2. The site is approximately 14 miles west of the I-29 interchange at County Road 1. Site 6 is about 10 miles from US Highway 81 and is approximately 28 miles from the Grand Forks Regional Airport.

A BNSF rail line runs through this site along the east side of County Road 2 in a north/south direction as shown in the aerial photograph above. According to BNSF officials, there are no specific restrictions for the provision of spur lines for industrial uses. Each situation is reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs associated with a spur include the installation of a

signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF Railway provides a New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

Industrial users that desire rail access but cannot construct a spur would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 111 miles from Site 6.

Existing Land Use

The northwest quarter section is mostly agricultural farmland except for one farmstead along County Road 2.

The northeast quarter section is all farmland except for a small business on the southwest corner. There are also railroad tracks that travel north and south on the very west edge of this section.

The southeast quarter section is all farmland except for the first roughly 700 feet on the west edge of the quarter section. This is the development that makes up the community of Johnstown. Johnstown has a grain elevator, homes, and storage buildings located along the east side of the railroad tracks.

The southwest quarter section is all farmland except for a residence on the southeast corner of the quarter section.

Ownership and Availability of Land

Site 6 is owned by many separate property owners. Most of the owners are willing to discuss the potential availability of the site. A few exceptions include property owners that have owned the land for generations or believe it would be better suited for a different type of development. Each of the owners would want to know the size and nature of development prior to any land sales.

Value of land

Current assessed value of the land is \$758,600, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It

does not represent actual market value. Some factors that will affect the value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

The site is along two paved county roads, but these typically do not offer as much flexibility as US highways as far as weight allowances are concerned. The site has the advantage of a railroad, but also has a complicating factor of existing development.

Site 6 Intersection of CR 1 and CR 2	
Quick Facts	
UTILITIES	
Gas Provider	Propane Service
Electricity Provider	Nodak
Water Provider	Agassiz
Communications Provider	Polar Comm.
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	Grand Forks County
POLITICAL	
Ambulance Service	Altru/Larimore
Fire Service	Gilby Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	4 – 1/4 sections (640 acres)
Topography	Plain to Gentle Slopes
Average Site Elevation	870 ft MSL

Zoning of Property and Surrounding Area

According to the Grand Forks County Zoning Map, the entire study area and the surrounding areas are zoned agricultural. The zoning authority of this site is Grand Forks County.

Natural Features

This site contains many natural features that should be considered in conjunction with industrial development. Each section has at least one row of tree lines, or a shelterbelt of trees that are being used to protect crops and existing structures.

The northwest quarter section is bordered by tree lines along the north side. Trees also surround existing structures.

The northeast quarter section has a tree line running north to south along the east side.

The southeast section has two tree lines running west to east. One is located approximately 1/3 mile south of County Road 1, and the other is long the south side of the quarter section. There are also shelterbelts around existing structures.

The southwest quarter section also has a tree line on the south border of the site.

Distance to Potential Employees

An industry located at Site 6 would have the ability to draw workers from Johnstown, Gilby, Inkster, Manvel, Emerado and the surrounding rural area. The Grand Forks/East Grand Forks metropolitan area, which has a larger work force, is approximately 31 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity.

Site 6: Intersection of CR 1 and CR 2, Proximity to Nearby Towns/Cities	
Thompson	40 mi
Reynolds	47 mi
Grand Forks	31 mi
Manvel	16 mi
Northwood	37 mi
Emerado	21 mi
Gilby	5 mi
Larimore	24 mi
Johnstown	1 mi
Inkster	8 mi
Niagara	34 mi

Access to Site and Localized Transportation Facilities

County Road 2 is classified as a collector road, which runs north and south through the site on the section line. County Road 1, also classified as a collector road, runs east and west on the section line. Both roads have access spacing restrictions of eighth mile (660-foot) increments, which include existing roads.

Eventually, the four quadrants of this site could gain access to the section line roadways located to the east and south if internal local or collector street connections are provided.

In the southeasterly quarter section, the community of Johnstown has development along the highway. This development presents constraints to County Road 2 access that may vary from the 1/8 mile spacing limitation. A BNSF railroad track runs north and south along the east side of County Road 2. Permission to cross railroad tracks with a driveway or street must be granted by the railroad company, which is BNSF in this case. For safety reasons, the railroad authority strictly limits at-grade crossings.

Utilities

This site is not connected to any utilities. There are some utilities that could easily provide services due to their close proximity to the property. Some are already serving the community of Johnstown. Other utilities would have to be extended a significant distance to provide service.

All utilities are available on this property with the exception of natural gas.

Water needs would be served by Agassiz Water Users (Agassiz). Agassiz has two separate permitted water sources. The primary water source is the Inster Aquifer. From this source, Agassiz has a permitted annual appropriation of 600 acre-feet. Actual maximum annual use has been 400 acre-feet. The maximum withdrawal rate from this source is 600 gallons per minute (gpm). The second water source is the Mekinock Aquifer, from which an annual appropriation of 200 acre-feet is allowed, at a maximum withdrawal rate of 750 gpm. This source is presently unused. It was developed primarily as a backup water source for the Grand Forks Air Force Base, but is also available for other purposes.

Agassiz has a reservoir in the northwest corner of the county road intersection, supplied by parallel 6-inch and 3.5-inch pipelines. They estimate they could provide a capacity in the range of 75 gpm and 72,000 gallons per day (gpd) assuming a 16-hour duration. Since they have water lines in all four sections of the site, there would be minimal costs, if any, to provide water service.

There is no practical gas provider in this area. Any development would need to be setup for propane gas use. Propane can be provided by many different providers that deliver propane to the area. Often propane providers will lease the appropriate size tank and fill it when the customer notifies them they are around 20% capacity.

Communications can be provided to this site by Polar Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. There is little possibility for extended services such as T1 or fiber optics at this location.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required for the site to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes.

Site 6 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$17,000
Water	minimal
Gas	NA
Communication	Basic services (phone and internet) can be provided by Polar Comm.
Roadway Improvements ^b	\$0
Total	\$17,000

a) Certain areas of the site will see no charges for electricity extensions other areas will require line extensions and incur costs.
 b) Cost shown reflects an existing bituminous section for heavy truck loads. Additional road construction estimated at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

Nodak would be able to provide electricity to the site. They currently have three-phase lines running east and west along the north side of County Road 1 and into Johnstown. Nodak has single phase lines running north of the County Road 1 and County Road 2 intersection as well as on the west side of County Road 2. Depending upon building locations, this site would see power line extension fees under \$17,000 at the time of this study. The most significant cost would be extending power to the north and south portions of the site along County Road 2. Development along County Road 1 would see no extension cost.

Site 6 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of waste water).

b) Cost of pond is based on 20 acre feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

A parking facility is necessary for the developed site as well. The cost will vary, depending on the size and surface. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

At this location, there is no need to improve any of the localized transportation facilities. Each is already paved and sufficient, unless spring load restrictions hinder a specific industry's trucking operations. In that case, the body governing the specific road in question may consider upgrading a portion of the road to suit the needs of the developed industry.

Weight Restrictions on Potentially Affected Roadways

Restrictions on affected transportation facilities around this site are set in the spring by Grand Forks County. Spring restrictions on State Highway 18 and US Highway 2 are legal weight limits. Spring restrictions on county roads are No. 2 Load Restrictions as defined by Grand Forks County. Spring restrictions on County Roads 1, 2, and 33 are Class a Load Restrictions as defined by the County, with the exception of County Road 1 from County Road 3 to State Highway 81. Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight.

For further information about Grand Forks County spring load restrictions, see Appendix 6 or go to <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency service providers to this site are shown below.

- Ambulance Service - Altru (east of County Road 2) and Larimore Ambulance District (west of County Road 2)
- Fire Protection - Gilby Fire District
- Law Enforcement - Grand Forks County Sheriff

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains mostly fine sandy loams and silt loams. Much of the site is classified as "prime farmland" or "prime farmland if drained" by the NRCS.



Looking South on County Road 2 at the Intersection with County Road 1

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. In most areas, the site soils have a moderate to high potential for frost action, which must be considered in the design of any structures. The site soils also produce a moderate to high risk of corrosion of uncoated steels when the two are in contact. The soils have a low risk of corrosion to concrete when such materials are exposed.

Given the soil types of this site, all practical development areas of the site are limited by the soil in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. This site's soils have a range of infiltration rates from moderate to slow. The soils on site have upper limit water table depths of 2 feet to 6 feet depending on time of year and soil type.

As a source of gravel and sand, this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils on site are good to fair. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

This site has 0.84 acres of designated Freshwater Emergent wetland on the southeast quarter section of the site (see attached National Wetlands Inventory Map). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. There are two site leads in the southwesterly portion of Study Area 6 which would need further investigation to determine if they exist, and if so, their eligibility status for National Register of Historic Places (NRHP) listing. Both site leads are former U.S. Post Office locations. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

The Flood Hazard Boundary Map (FHBM) shows no flooding at this site, likely because no well-defined drainage courses of substantial size exist at this site. Local observations differ and indicate overland flooding has occurred to the west of County Road 2 in Sections 17 and 20. Storm water naturally drains to the north and east in this area. County Road 2 and the railroad grade are impediments of drainage to the east, thereby forcing drainage to the north. When industrial development is considered, drainage improvements in a larger area than just the site should be considered. For example, drainage could be potentially diverted north to the Forest River from a mile west of the site. The site areas east of County Road 2 appear well drained and of less concern.

With any option chosen to deal with drainage and flooding issues, the site grading should include elevating building sites and providing positive drainage to the north and or east.

Overall Site Suitability

This property is suitable for industrial development from the standpoint of rail and highway access, provided that Class A Load Restrictions do not hamper business operations. Existing land uses are compatible with industrial development, as is the relatively flat terrain of the land. Utilities are already available adjacent to the property with the exception of natural gas, which can be substituted with propane if needed. On site development costs would be comparable with the other sites in terms of elevating building pads and constructing internal circulation facilities, parking, etc.

Water use of industries locating in this study area would need to be in line with the available supply from Agassiz, which is estimated at 40,000 gpd, assuming an eight-hour duration.

Industries choosing to locate on Site 6 should consider the number of employees they will need, as the surrounding communities have grown quite small. The site is 31 miles from Grand Forks, which is the largest source of employees in Grand Forks County.

Site 7
Blooming Township
Intersection of US 2 and County Rd 3
(S31-T152-R52)



Site 7: Intersection of US 2 and County Rd 3

Site 7 is north of the City of Emerado and directly east of the Grand Forks Air Force Base. It consists of the section of land on the northeast corner of the intersection of US Highway 2 and County Road 3. The proposed site is approximately one section of land (approximately 640 acres).

Proximity to Regional Transportation Facilities (Air, Rail, and Interstate Highway)

This location is very accessible to regional transportation facilities. It has immediate access to both County Road 3 as well as US Highway 2. The site is approximately 13 miles west of the I-29 exchange at Gateway Drive in the City of Grand Forks. Site 7 is about 9 miles from the Grand Forks Regional Airport.

There is no direct access to rail service on Site 7. Industrial users that desire rail access would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 96 miles from Site 7.

Existing Land Use

The majority of the site is being used as agricultural land. Four commercial or light industrial business sites are located along a frontage road paralleling County Road 3.

On the southeast corner of the site, there are what appear to be outbuildings for the farmstead across 24th Street NE. There is also a farmstead on the east side of the site located 1/2 mile north of US Highway 2.

The Grand Forks Air Force Base is located immediately west of this site, across County Road 3. North of the section, the land use consists of Air Force Base housing and farmland. Northeast of the site, there are wastewater lagoons for the base. The City of Emerado is located directly south of US Highway 2 along the east side of County Road 3.

Ownership and Availability of Land

Site 7 is owned by two separate property owners. Both of the owners are willing to discuss the potential availability of the site. Their concerns about selling revolve around the type of industry that would locate on site.

Value of land

Current assessed value of the land is \$200,200, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the market value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Important features that will affect the market value of this land include the wetland and pond acreage, combined with the acreage of existing development. Considering these features, the total available acreage of the site results in less than a full section. The attractiveness of the property for development is high in that the Grand Forks Air Force Base and the community of Emerado are in the immediate vicinity. In particular, the presence of the Air Force Base results in the possibility for related businesses and generally in a higher level of business activity in the vicinity. The

community of Grand Forks is relatively close, at approximately 16 miles away on US Highway 2. The site is already occupied by a small number of commercial/industrial properties at the southwest corner of the property, which helps establish the compatibility of industrial zoning on this site. It is important to keep in mind that property access is still hampered by unimproved roadways along the north and east sides of the property, and access to US Highway 2 and County Road 3 are somewhat limited.

The presence of the Air Force Base increases opportunities for related businesses on this site.

Zoning of Property and Surrounding Area

According to the Grand Forks County Zoning Map, the entire section is zoned Airfield Reserve District. The area west of County Road 3 is the Grand Forks Air Force Base and is under Mekinock Township zoning authority.

Natural Features

Site 7 has natural features that would have to be addressed when considering development. There are shelterbelt trees planted around existing farmsteads as well as tree rows throughout the section. The north half of the section is outlined with trees. Tree lines run north to south in the northeast quarter section protecting cropland. There are also many trees near the farmstead on the east side. The south half of the section has trees around existing structures and a natural wetland and creek that are on part of the southeast quarter section.

Distance to Potential Employees

An industry located at Site 7 would have a strong ability to draw workers from Emerado, Gilby, and Larimore, all of which are less than 20 miles away. In addition, the Grand Forks/East Grand Forks metropolitan area, which has a larger work force, is only 16 miles from the site. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity. Site 7 is easily accessible for workers due to its location along US Highway 2.

Site 7: Intersection of US 2 and CR 3, Proximity to Nearby Towns/Cities	
Thompson	25 mi
Reynolds	32 mi
Grand Forks	16 mi
Manvel	24 mi
Northwood	30 mi
Emerado	3 mi
Gilby	17 mi
Larimore	16 mi
Johnstown	21 mi
Inkster	29 mi
Niagara	27 mi

Access to Site and Localized Transportation Facilities

Site 7 is surrounded by roads with varying degrees of access constraints, consisting of a US highway, a county road, and two local roads.

County Road 3 forms the easterly boundary of the site. The south boundary of this site consists of US Highway 2, which runs east and west. Both facilities have restrictive access spacing. US Highway 2 has restricted access points and intersections of quarter mile increments. County Road 3 allows access increments of eighth mile (660-foot) spacing.

There are two local roads around the perimeter of the site with greater access flexibility. The site is bounded both on the east and north sides by local roads 24th Street NE and 19th Avenue NE respectively. These local roads offer spacing constraints of 330 feet, which are less restrictive for new development access.

A short frontage road provides access for the existing businesses just east of County Road 3 on the west side of the site. This facility presents additional access opportunities.

Site 7 Intersection of US 2 and County Rd 3	
Quick Facts	
UTILITIES	
Gas Provider	Xcel, Propane
Electricity Provider	Xcel
Water Provider	Possibly City of Emerado
Communications Provider	Qwest
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	City of Grand Forks
POLITICAL	
Ambulance Service	Altru
Fire Service	Emerado Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	640 Acres
Topography	Flat
Average Site Elevation	880 ft MSL

A likely constraint to access along the north side of this site is a large drain that parallels the south side of 19th Avenue. There is currently a field access at the quarter-quarter line. Additional permission to cross the drain would need to be provided by the drain owner, after a hydraulic study is completed. Due to the size of the drain, the added cost to cross it could be significant.

Utilities

This site is not connected to any utilities. However, some utilities could easily be provided because they serve sites in close proximity. Other utility providers would have to be extended significant distances to provide service.

Nodak would be able to provide electricity to the site. They currently have three-phase lines located on the east side of County Road 3 and on the south side of US Highway 2. Depending upon building locations this site would see power line extension fees up to \$17,000 at the time of this study. The most significant cost would be extending power to the southeast corner of the site. Extension costs increase as development approaches the northeast corner.

Site 7 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$17,000
Water	\$90,000 - \$140,000
Gas	NA
Communication	Basic service and possibly extended services can be provided with possible costs, provider Qwest
Roadway Improvements ^b	\$2,006,400

a) Certain areas of the site will see no charges for electricity extensions other areas will require line extensions and incur costs.
 b) Cost shown assumes construction of a bituminous section for heavy truckloads at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

There are different options for providing the site with water. The Air Force Base is served by three water sources and there is potential for a fourth source.

The primary potable water source for the Grand Forks Air Force Base is the City of Grand Forks. Water is supplied via a 16-inch pipeline from the City to the Air Force Base, routed along the north side of US Highway 2. From the Grand Forks Regional Airport to the Air Force Base, the pipeline is owned by the Air

Force and its use is strictly dedicated to the Air Force with no other connections allowed.

Agassiz Water District is a backup source of water to the Air Force Base. They connect to the AFB water system in one location at the north end of the AFB. They are prepared to supply up to 600 gallons per minute (gpm) to the Base if necessary. Agassiz is available to supply water to Site 7 at an approximate capacity of 250 gpm and 360,000 gallons per day (gpd), assuming a 24-hour duration. A pipeline extension will be necessary to reach the site. Agassiz has developed a capacity of 600 gpm to serve the Grand Forks Air Force Base. The largest quantity ever purchased by the Base is 350 gpm. Therefore, with appropriate notice to the Air Force, Agassiz would make the excess capacity available for industrial development.

Grand Forks Trail Water District (GFT) also serves as a backup for the AFB. They are prepared to supply up to 7 million gallons per month, or an average of 230,000 gpd to the Base. GFT connects to the AFB water system in one location near the South Gate. GFT also supplies all of the potable water for the City of Emerado. This water is supplied on a bulk basis for distribution by the City's water distribution system. GFT does not have any pipelines north of US Highway 2 adjacent to Site 7, so a service extension would be needed to provide such a connection. To extend a water line from this location to the midpoint of the westerly line of Section 31, it will cost approximately \$140,000.

Emerado's service area does extend north of US Highway 2, supplying water to J&G Landscaping, a church, and possibly other customers on the north side of US Highway 2 and could potentially serve water to Site 7.

The City presently provides water to a number of customers north of US 2; however, water is supplied via a private water line paid for by the customers. Emerado does not have any municipal water lines north of US 2 but would consider selling water to additional customers north of the highway, after a study of available capacity. If this is possible, a water line could be extended across US Highway 2 and continued to the midpoint of the southerly line of Section 31 at a cost of approximately \$90,000.

Xcel Energy has a 12-inch steel gas line in very close proximity, and it is possible that a connection could be made to Site 7. A cost justification would have to be completed and considered by Xcel. They will look at

projected revenues resulting directly from the anticipated development over a 3-5 year period, as compared to the estimated cost to place their utility. Xcel will look to the customer to pay any shortfall in revenue to cover the cost of service installation. The feasibility of extending these utilities to the site will depend on the energy consumption of development that is placed on the site.

If gas service is not financially practical, site developments would need to be set up for propane gas use. Propane can be provided by many different providers that deliver propane to the area. Often propane providers will lease the appropriate size tank and fill it when the customer notifies them they are at approximately 20% capacity.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics are also possible as well; these services may incur minor conditioning or extension fees.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required for the site to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well, depending on the size and surface the cost will vary. Each site must consider storm water solutions to assure proper storm discharge quality and quantity.

Site 7 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of wastewater).

b) Cost of pond is based on 20 acre-feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Eventually, the development of this site would make it necessary to improve the local roads north and east of the site. They are all currently gravel roads and partially unimproved section lines. When the site is fully developed, these roads could experience a significant increase in truck traffic. To prevent damage by trucking operations, 24th Street NE on the east and 19th Avenue NE on the north should be paved. The approximate cost of this improvement would be \$2,006,400.

Weight Restrictions on Potentially Affected Roadways

Grand Forks County sets restrictions on affected transportation facilities around this site in the spring. Spring restrictions on State Highway 18 and US Highway 2 are legal weight limits. Spring restrictions on other nearby county roads are No. 2 Load Restrictions as defined by Grand Forks County. Normal maximum loads allowed on these facilities are determined by FHWA Permissible Gross Load figures for legal weight. For further information on Grand Forks County spring load restrictions, see Appendix 6 or <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency services to this site are shown below.

- Ambulance Service - Altru Health Systems
- Fire Protection - Emerado Fire District
- Law Enforcement - Grand Forks County Sheriff

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of clay loams, silty clay loams, sandy clay loams, and loam. Approximately 60% of the site is classified as "prime farmland" or "farmland of statewide importance" by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. Overall the site soils have a high to moderate potential for frost action, which must be considered in the design of any structures. These soils

also produce a high risk of corrosion of uncoated steels when exposed to each other. Site 7 soil types present a moderate to low risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates onsite are moderate to slow with water table upper limits of 0 feet to 6 feet, depending on time of year and soil type.

As a source of gravel and sand, this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils onsite are a fair source. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

Site 7 has a small amount of designated Freshwater Emergent wetlands onsite in the southwest portion of the study area, near the interchange of US Highway 2 and County Road 3 (see Attached National Wetland Inventory Map). A small freshwater pond is located on the easterly portion of the property near the half section line. If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

There are no aquifers or any other sensitive features onsite. Residential land use exists south of US Highway 2. It is important to consider the effects of industrial land use on near-by residents.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No structures or sites eligible for the National Register of Historic Places (NRHP) were identified on this property. Future work involving

federal funding should have a Level III Cultural Resource Inventory performed within the project area.



Looking West from 24th Street NE at a Drainage Feature of Site 7

Drainage Opportunities

There is a large ditch that runs east/west on the north edge of the site. There is also a small drainage way and lake/pond that runs east/west on the north half of the south quarters. Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This site appears well drained. A large man made drainage channel is located at the north edge of Section 31, and a well-defined natural channel runs through the southern half of the section. Both of these drainage courses carry storm water runoff to the east. No observed flooding was indicated and the Flood Hazard Boundary Map (FHBM) shows no areas of flooding. Site improvements should incorporate drainage to the existing channels with appropriate water quality and quantity features at points of connections to the channels.

Overall Site Suitability

This site has excellent suitability for industrial development. Regional transportation access is available with the presence of US Highway 2 and County Road 3. The Grand Forks Airport is only nine miles to the east. I-29 is approximately 16 miles to the east via US Highway 2. Rail service is not available on the site, but other arrangements could be made with industrial sites in Grand Forks.

Electricity and gas are available on the site and in the case of water, more than one provider would be available if provisions were made to extend water lines from south of US Highway 2.

Weight restrictions are not an issue for County Road 3 or US Highway 2. Improvements to the section line roads along the north and east edges of the site could be made as development warrants their construction. In the early stages of development, it is assumed that site access needs could be met via a local or collector street intersection along County Road 3 or US Highway 2, provided the NDDOT intersection spacing requirements are met.



Looking East from County Road 3 along the North Side of Site 7

The site is not known to have poor drainage or overland flooding characteristics. It has the advantage of being comparatively close to larger employment centers such as Grand Forks, East Grand Forks, and Thompson. It also has the advantage of being adjacent to the Air Force Base, creating the potential for related businesses to locate on this site.

Site 8
City of Grand Forks and Grand Forks
Extraterritorial Area
Intersection of DeMers Ave and 69th St S
(S12-T151-R51)



Site 8: Intersection of DeMers Ave and 69th

Site 8 is located between 69th Street S and the railroad tracks and between DeMers Avenue and 17th Avenue S. The size of this study area is almost one full section of land. However, land available for development is approximately 580 acres given the presence of an electrical substation, a city water facility, street right-of-way and railroad right-of-way.

Proximity to Regional Transportation Facilities

This section of land is on the west edge of the City of Grand Forks. The property has very good access to I-29 and US Highway 2. Both the I-29/DeMers interchange and the I-29/US Highway 2 interchange are less than two miles from the site. For air travel or air cargo needs, the Grand Forks Regional Airport is less than four miles from the site.

The easterly edge of site 8 is adjacent to a BNSF rail line as shown in the aerial photograph above. However, without cooperation from Minnkota Power and/or the City of Grand Forks, it would be extremely difficult to develop a spur at this location. In the event that construction of a spur becomes feasible, it is important to note that there are no specific restrictions for the provision of spur lines for industrial uses. Each situation is reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs

associated with a spur include the installation of a signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF Railway provides a New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

Industrial users that desire rail access but cannot construct a spur would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 85 miles from Site 8.

Existing Land Use

A majority of the site is being used as agricultural land. There are two small farmsteads and an electrical substation on the site. The electrical substation is approximately 10 acres in size, and is located in the southeasterly portion of the site. The entire quarter-quarter section (40 acres) on which the substation is located is owned by Minnkota Power, as well as the 40 acres to the north. The City of Grand Forks owns approximately 40 acres that are being used for municipal purposes. A water reservoir is located on approximately 1/4 of the property owned by the City.

Ownership and Availability of Land

Site 8 is owned by six different property owners. Each of the owners has a willingness to discuss the potential availability of the site. None of them had feelings of not wanting to sell.

Value of Land

Current assessed value of the land is \$352,900, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the market value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

The value of the land will be affected by the extent to which access is facilitated. Access to the northerly portion of the site is more direct than access to the southerly portion of the site due to the presence of DeMers Avenue and its interchange with I-29. Access to the southerly portion of the site is from 17th Avenue, and is less accessible at this time. An electrical substation and city-owned property in the northeast portion of the site already consume acreage adjacent to the BNSF railroad tracks.

Site 8 Intersection of DeMers and 69th	
Quick Facts	
UTILITIES	
Gas Provider	Xcel
Electricity Provider	Nodak
Water Provider	City of Grand Forks
Communications Provider	Qwest, GF Wireless
Sanitary Provider	City of Grand Forks
ZONING	
Zoning Jurisdiction	City of Grand Forks
POLITICAL	
Ambulance Service	Altru
Fire Service	City of Grand Forks*
Law Enforcement	City of Grand Forks*
PHYSICAL	
Site Size	635 acres
Topography	plain to gentle slopes
Average Site Elevation	838 ft MSL

*City of Grand Forks would provide fire protection and law enforcement upon annexation.

Zoning of Property and Surrounding Area

This site is in the City of Grand Forks extraterritorial area, meaning the zoning and subdivision authority lies with the City. Only a small portion of the property along the east side of the site has been annexed at this time. With the exception of the city-owned property and the Minnkota substation, which are designated for Public/Semi-Public land uses, the city's 2035 Land Use Plan designates this section of land for future industrial land use. It is anticipated that the zoning will be changed accordingly before development is initiated.

Natural Features

There are no limiting natural features on this site that would be considered impediments to construction or demolition. Perhaps the most challenging natural feature is the site's flatness, which is ideal for industrial development, but somewhat challenging for site drainage and storm sewer design.

Distance to Potential Employees

An advantage of this location is the close proximity of the City of Grand Forks, with its large workforce from which to draw. An industry located here would have the access to numerous potential workers including college graduates from the University of North Dakota. Population data provided in Appendix 5 shows populations of surrounding communities. The location of Site 8 has the potential of attracting employees from a number of population centers in the area in addition to Grand Forks and East Grand Forks.

Access to Site and Localized Transportation Facilities

The site is bounded on three sides by future city streets and on the east by railroad tracks. Access to this site would likely be from 69th Street S, which is considered a future arterial. Current access to the Minnkota Power substation and the City parcel could be improved or relocated to allow entry from 17th Avenue S or DeMers Avenue. Both avenues on the north and south sides of the site have fewer access opportunities, but there are options for limited access points, provided they meet the city's intersection spacing requirements. Suggested spacing on these minor arterials is one half-mile increments.

Utilities

Site 8 would require infrastructure improvements because it is not connected to any utilities at this time. Various city and private services should be extended to the site to serve future development.

This area can easily be served with electricity. The site is located in Nodak's service area, and providing service is feasible. It is also possible that Xcel Energy could provide the site with gas service; however, a cost justification would be completed and considered. Xcel Energy will look at projected revenues for gas resulting directly from the anticipated development over a 3-5 year period, as well as the estimated cost to place their utility. Xcel will look to the customer to pay any costs not covered by the anticipated 3-5 year revenue projection. The feasibility of extending these utilities to the site will depend on the projected energy consumption of the developed site.

The City of Grand Forks Engineering Department recently studied the feasibility of extending water, sanitary sewer, and storm sewer services into this property. Their analysis also included the construction of a paved local street into the site (58th Street S) and a paved collector street into the site (62nd Avenue S).

Improvements were split up into two phases. Typically, the City would special assess the cost of some of all of the improvements to the benefiting properties. The assessments for these development costs are generally spread over a 20-year timeframe.

Site 8 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$0
Water	\$590,000
Gas	Xcel Energy will conduct cost justification and can easily provide service.
Communication	All services can be provided by Qwest with no anticipated costs.
Sanitary Sewer	\$2,300,000
Storm Sewer	\$1,650,000
Roadway Improvement ^b	\$1,700,000

a) No service extension costs are anticipated provided the site develops in an orderly manner.

b) Cost shown assumes 1/2 mile construction of 58th Street S and 62nd Street S between DeMers Avenue and 11th Avenue S.

Watermain extension into the property is expected to cost \$190,000 in the first phase and \$400,000 in the second phase.

The Phase 1 extension of sanitary sewer into the site is estimated to cost approximately \$500,000 if extended into the site along 11th Avenue S. However, this alternative is only feasible if development in the area generates low wastewater volumes. If more wastewater capacity is needed, a lift station would also be needed, at an expected cost of \$1.5 million. In Phase 2, sanitary sewer lines could be extended for approximately \$300,000. If wastewater volumes were low enough in the initial developments, the \$1.5 million lift station could be put in with Phase 2 instead of Phase 1. In addition to the 600 acres of property included in Site 7, the lift station would be designed to accommodate the development of another 300 to 400 acres.

Storm water handling for the northerly portion of Site 7 is expected to consist of a holding pond that discharges into the storm sewer along DeMers Avenue via a pump station and forcemain. The estimated cost is \$450,000. The southerly portion of the site will drain to the south, via a large pond, which will drain into legal drain 9. A small pump station would be

installed to accommodate high water conditions. The estimated cost for this portion of the storm sewer improvements is \$1.2 million.

Street construction is anticipated to include the construction of 1/2 mile of 58th Street S from DeMers Avenue to 11th Avenue S at an estimated cost of \$850,000. This would constitute the first phase. The second phase of street construction would include the construction of 1/2 mile of 62nd Street from DeMers Avenue to 11th Avenue S at an estimated cost of \$850,000.

Communications can be provided to this site by Qwest Communications. This is a very easy site to serve for Qwest. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics are also available and at the time of this study would most likely not see any fees other than normal service fees.

Cost of Improvements

As described above in the Utilities section of this analysis, providing municipal services to this property will result in significant costs that total up to an estimated \$6.24 million. In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures to the level required by the City of Grand Forks. A parking and on-site circulation facilities are necessary for any developed site as well. Depending on the size and surface, the cost will vary.

Site 8 Estimated Site Improvement Costs	
Improvement	Cost
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

Weight Restrictions

This location is very close to designated city truck routes on both DeMers Avenue and 32nd Avenue S. The localized transportation facilities for trucking are restricted by the Federal Highway Administration (FHWA) permissible gross load regulations for legal weight. It is possible that industrial uses on this site may have freight interaction with the rural portion of the Grand Forks County, especially if they are manufacturing or processing agricultural products.

Many nearby county roads are governed in the spring by No. 2 Load Restrictions. The springtime load restrictions in the city are the legal weight limitations that apply year round; the city also imposes size limitations. For further information on Grand Forks County spring load restrictions, see Appendix 6 or <http://www.co.grand-forks.nd.us/highways.html>.

This entire site is within the City of Grand Forks' line of flood protection.

Emergency Service Availability

Emergency service providers to this site are shown below.

- Ambulance Service – Altru Health Systems
- Fire Protection – Thompson Fire District
- Law Enforcement – Grand Forks County Sheriff

Once the site is annexed, fire protection and law enforcement will be provided by the City of Grand Forks.

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with those found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site is mostly silty clay loam. This type of soil is less than ideal farmland.

As with the other sites, development of the property requires careful consideration of the structural and corrosive properties of the soil. The site soils have a high potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of uncoated steels to corrode as well as a moderate risk of corrosion to concrete when in direct contact.

Given the soil types of this site, all practical development areas of the site are very limited in terms of sewage disposal. This is common in many areas of the region. Due to water movement through the soil, depth of saturated zones, and soil flooding properties, it can be expected that septic systems in these soils

will have additional installation costs, less effectiveness, and require more maintenance. For this site to function most efficiently, it would require the use of city sanitary sewer service. The site soils have slow to very slow infiltration rates and water table depths between less than one foot and 5 feet depending on time of year and soil type.

As a source of sand, gravel, and topsoil, this site is poor and would require building materials of that nature as borrow. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

This site has 3.77 acres of Freshwater Emergent wetlands onsite (see Attached National Wetland Inventory Map). If the wetlands cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No structures or sites eligible for the National Register of Historic Places (NRHP) were identified on this property. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

As the site is developed, it will be necessary for storm sewer improvements and connections to the City's existing system. There are practical connection points located along DeMers Avenue and legal drain 9. All storm sewer infrastructure must meet the City of Grand Forks standards for storm sewer construction and design, which are summarized in Appendix 7.

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This entire site is within the City of Grand Forks' line of flood protection. The City of Grand Forks requires that the lowest opening of any buildings be a minimum of 1.5 feet above base flood elevation. Despite these minimum elevations, flooding is not a major concern due to the City's flood protection features. The site is well drained and protected from overland flooding by the English Coulee Diversion.

Overall Site Suitability

This site is extremely suitable for industrial development. The presence of the city water facility and the Minnkota substation, combined with the presence of other industrial land uses in the vicinity make industrial development very compatible. The land use plan has set the course for industrial zoning designation. The flatness of the site is ideal for industrial uses of any kind, particularly those that require an extremely flat research and development or processing facility. There are no environmentally sensitive features that will be time consuming or costly to overcome. Furthermore, the property benefits from the investments that have been made to protect the City of Grand Forks from overland flooding.

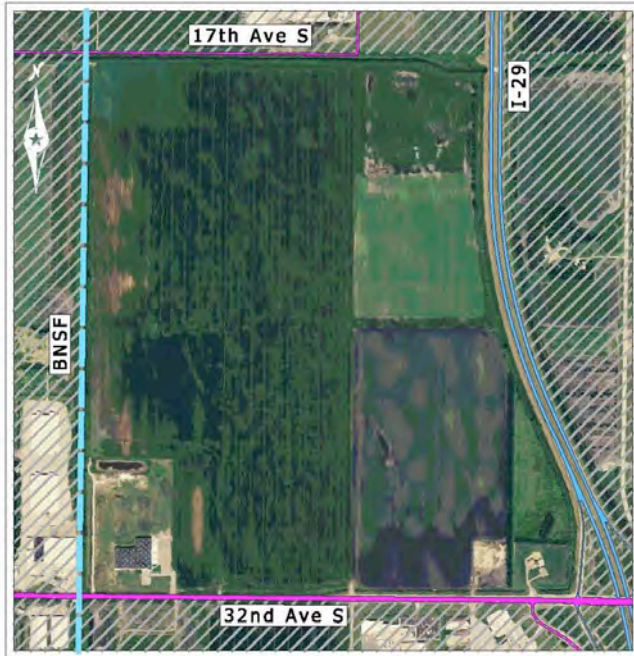
The City of Grand Forks has completed an analysis of the most feasible and cost effective way to extend services into the site, which will facilitate the detailed design of these facilities.

Site 9

City of Grand Forks and Grand Forks Extraterritorial Area

Intersection of 17th Ave and I-29

(NW 1/4 S18-T151-R50, W 1/2 OF NE 1/4 S18-T151-R50, NW 1/4 OF SE 1/4 S18-T151-R50, N 1/2 OF SW 1/4 S18-T151-R50)



Site 9: Intersection of 17th Ave and I-29

Site 9 is located between 17th Avenue S, 32nd Avenue S, BNSF railroad tracks, and I-29. The size of this site is approximately 520 acres.

Proximity to Regional Transportation Facilities

This section of land is on the west edge of the City of Grand Forks. The property has very good access to I-29 and US Highway 2. Both the I-29/DeMers interchange and the I-29/32nd Avenue S interchange are less than two miles from the site. For air travel or air cargo needs, the Grand Forks Regional Airport is less than six miles from the site.

The westerly edge of Site 9 is adjacent to a BNSF rail line as shown in the aerial photograph above. There are no specific restrictions for the provision of spur lines for industrial uses. Each situation is reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs associated with a spur include the installation of a signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF

Railway provides a New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

Industrial users that desire rail access but cannot construct a spur would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 83 miles from Site 9.

Existing Land Use

A majority of the site is being used as agricultural land and there are commercial businesses on the south side of the site along 32nd Avenue S, consisting of Tractor Supply and a veterinarian clinic. There is also a small pump house on the south side of the site. Industrial land uses exist along both sides of 32nd Avenue S just west of this site. A large truck stop/travel center has been developed south of 32nd Avenue S along I-29. A power transmission line angles through the site in a NW/SE direction.

Ownership and Availability of Land

Site 9 is owned by four different property owners. Each of the owners is willing to discuss the potential availability of the site.

Value of land

Current assessed value of the land is \$464,300, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the market value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Although the site is approximately 520 acres, only around 500 acres are available for development as a result of the I-29 right-of-way, the I-29/32nd Avenue S interchange, and the acreage of the sites that are already developed along 32nd Avenue S.

Zoning of Property and Surrounding Area

This site is in the City of Grand Forks' extraterritorial area, meaning the zoning and subdivision authority lies with the City. The property has not been annexed at this time. The entire site is currently designated as Office Park in the city's 2035 Land Use Plan. However, city officials have expressed interest in considering a Land Use Plan amendment to change the designation to Industrial land use, due to concerns over the feasibility of developing an office park of approximately 500 acres. Including the site in this analysis may facilitate that amendment. If the land use plan is amended, the next logical step would be to zone the property for industrial development.

Site 9 Intersection of 17th Ave and I-29	
Quick Facts	
UTILITIES	
Gas Provider	Xcel
Electricity Provider	Nodak
Water Provider	City of Grand Forks
Communications Provider	Qwest
Sanitary Provider	City of Grand Forks
ZONING	
Zoning Jurisdiction	City of Grand Forks
POLITICAL	
Ambulance Service	Altru Health Systems
Fire Service	Thompson Fire Dist.*
Law Enforcement	GFC Sheriff*
PHYSICAL	
Site Size	520 Acres
Topography	Plains to Gentle Slopes
Average Site Elevation	837 ft MSL

*City of Grand Forks would provide fire protection and law enforcement upon annexation.

Distance to Potential Employees

An advantage of this location is the close proximity of the City of Grand Forks, with its large workforce from which to draw. An industry located here would have the access to numerous potential workers including college graduates from the University of North Dakota. Population data provided in Appendix 5 shows populations of surrounding communities. The location of Site 9 has the potential of attracting employees from a number of population centers in the area in addition to Grand Forks and East Grand Forks.

Access to Site and Localized Transportation Facilities

Site 9 is outlined by a variety of transportation facilities.

The north side of the site is adjacent to 17th Avenue S

and the south side is adjacent to 32nd Avenue S. Both are minor arterials and are limited to half-mile access and intersection spacing. There are planned extensions of existing streets into the site. A minor arterial, 48th Street, is to extend through the property to 32nd Avenue S. Also, 24th Avenue S, a collector, is planned to extend into the property between the northwest and southwest quarter sections.

The only access constraint at this site is around the railroad tracks along the west side of the site. At-grade railroad track crossings are determined by the railroad authority and are limited for safety reasons.

Utilities

Site 9 would require infrastructure improvement because it is not currently connected to any utilities. Various city and private services should be extended to the site for development. Nodak would be able to service the site with electricity. It is also possible that Xcel Energy could provide the site with gas service; however, a cost justification would be completed and considered by Xcel. The feasibility of extending gas service to the site will depend on the energy consumption of the developed site.

Water main exists through the center of this area on the alignment of future S 48th Street. East/west water main connections are also in place along 32nd Avenue S and the future 24th Avenue S. No additional costs are necessary for extension of trunk water mains, only service connections.

Site 9 Estimated Utility & Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$0
Water	minimal
Gas	Xcel Energy will conduct cost justification & can easily provide service.
Communication	Basic service and possibly extended services can be provided by Qwest with possible costs.
Sanitary Sewer	Minimal for initial development
Storm Sewer	\$3,000,000 to \$7,000,000
Roadway Improvement ^b	\$5,900,000

a) No service extension costs are anticipated provided the site develops in an orderly manner.

b) Cost shown assumes a bituminous section for heavy truckloads at \$19,000/100 LF (see Description of Improvements Section). Cost is to improve all existing facilities around site.

An existing temporary lift station is located at the intersection of 32nd Avenue S and the future S 48th Street. This lift station will provide wastewater service on a limited basis to initial development in the area. The City of Grand Forks has plans in place to install a future lift station, trunk sanitary sewer lines, and wastewater forcemain when warranted by future development.

Several options are being considered by the City of Grand Forks for future drainage of storm water in this study area. Thoughtful planning is very important, as drainage from the area three miles to the south must pass through this corridor to reach the English Coulee. Drainage options include a storm water pipe system with a retention pond, an open drainage channel, and an underground box culvert system. Cost estimates range from approximately \$3 million to \$7 million, with the alternatives having varying land requirements and capabilities of accommodating future drainage needs. Approximately \$2 million of federal aid funding could apply if storm drainage improvements are constructed with the paving of S 48th St.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Depending on where development occurs will determine if extended services such as a T1 line or fiber optics would also be available. Extended services may incur minor conditioning or extension fees and in some cases may not be possible at all.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required for the site to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well, and cost will vary depending on the size and surface. Each site must consider storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

The primary street necessary to serve this site is S 48th Street from 17th Avenue to 32nd Avenue S. This is the first north-south arterial street west of I-29. The City is presently in the process of developing a Project Concept Report to secure Federal-aid Urban funding toward the installation of this important transportation route. Estimated project cost is

approximately \$4.9 million, with \$3.7 million to come from federal funds and \$1.2 million from local funding sources.

At this site, it also would be necessary to improve 17th Avenue, the local road north of the site. It is currently a gravel road and in an effort to prevent damage by trucking operations, it should be paved. The approximate cost of this improvement would be \$1,003,200. Typically, the City would special assess the cost of some or all of the improvements to the benefiting properties. The assessments for these development costs are generally spread over a 20-year timeframe.

Site 9 Estimated Site Improvement Costs	
Improvement	Cost
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

Weight Restrictions

This location is very close to designated city truck routes on both DeMers and 32nd Avenues. The localized transportation facilities for trucking are restricted by the Federal Highway Administration (FHWA) permissible gross load regulations for legal weight. In the event that Site 9 has freight interaction with the surrounding rural areas, many nearby Grand Forks County roads are governed in the spring by No. 2 Load Restrictions. However, there are no separate springtime load restrictions in the city other than the normal legal weight restrictions. The city does have regulations pertaining to size of vehicles on their roadway system. For further information on Grand Forks County spring load restrictions, see Appendix 6 or refer to Grand Forks’ County’s website at <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency service providers to this site are shown below.

- Ambulance Service – Altru Health Systems
- Fire Protection – Thompson Fire District
- Law Enforcement – Grand Forks County Sheriff

Once the site is annexed, fire protection and law enforcement will be provided by the City of Grand Forks.

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of silty clay loams. Almost the entire site is classified as "prime farmland" by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. Overall the site soils have a high to moderate potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of corrosion of uncoated steels when exposed to each other and a low risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of septic system sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates onsite are slow with water table upper limits of 1.5 feet to 5 feet depending on time of year and soil type.

As a source of gravel and sand, this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils onsite are a fair source. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

This site has 0.25 acres of designated wetlands onsite (see Attached National Wetland Inventory Map). If the wetland cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination

would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No structures or sites eligible for the National Register of Historic Places (NRHP) were identified on this property. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.



Looking Northwest at Site 9 from 32nd Avenue S

Drainage Opportunities

Natural drainage is routed to Legal Drain 9 along 17th Avenue S. The City of Grand Forks Perimeter Drainage Study presents options for future drainage in this area. Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This entire site is within the City of Grand Forks' line of flood protection. The City of Grand Forks requires that the lowest opening of any buildings be a minimum of 1.5 feet above base flood elevation. Despite these minimum elevations, flooding is not a major concern due to the city's flood protection features. The site is well drained and protected from overland flooding by the English Coulee Diversion.

Overall Site Suitability

This site is very suitable for industrial development. The existing land uses along 32nd Avenue S are either industrial uses or are compatible with industrial uses. The presence of I-29 along the east side of the site also makes this property compatible with industrial uses. The rail line along the west side of the property presents opportunities for a rail spur. The flatness of the site is very compatible with industrial development, especially for research and development and manufacturing uses that require extremely level facilities.

The flatness of the property increases the challenges and costs associated with providing sanitary and storm sewer services. However, these costs are similar in most areas of the Red River Valley, and are not expected to vary significantly from typical costs on this property.

Site 10

City of Grand Forks and Grand Forks Extraterritorial Area Intersection of 32nd Ave S and RR Tracks (NW 1/4 S19-T151-R50, NE 1/4 S24-T151-R51)



Site 10: Intersection of 32nd Ave and RR Tracks

Site 10 is located along the south side of 32nd Avenue S both east and west of the BNSF railroad tracks. The site is 1/2 mile west of I-29. The size of this site is one half section of land (320 acres). The site is currently in the City of Grand Forks ET area.

Proximity to Regional Transportation Facilities

The property has very good access to I-29. Both the I-29/DeMers interchange and the I-29/32nd Avenue S interchange are less than two miles from the site. For air travel or air cargo needs, the Grand Forks Regional Airport is less than six miles from the site.

A BNSF rail line runs through the middle of this site, as shown in the aerial photograph above. There are no specific restrictions for the provision of spur lines for industrial uses. Each situation is reviewed on a case-by-case basis to ensure relatively free flow of rail traffic on the mainline. Costs associated with a spur include the installation of a signal on the mainline track, at a cost of \$300,000. Additional track costs \$150 to \$200 per linear foot under optimal conditions and without the need for drainage structures. BSNF Railway provides a New Business Review – Business Opportunity Questionnaire on their website (see Appendix 4).

Industrial users that desire rail access but cannot construct a spur would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 83 miles from Site 10.

Existing Land Use

A majority of the site is being used as agricultural land and there are industrial businesses on the north side by 32nd Avenue near the railroad tracks. There are electrical transmission lines that cut diagonally through the property from northwest to southeast.

Ownership and Availability of Land

Site 10 is owned by four different property owners. Each of the owners is willing to discuss the potential availability of the site.

Value of land

Current assessed value of the land is \$630,000, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the market value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, the extent to which the site has already been zoned and subdivided, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

Due to the 32nd Avenue S right-of-way, railroad right-of-way, and the developed property in the westerly portion of the site the developable acreage of the site is estimated at 300 acres.

Zoning of Property and Surrounding Area

This site is within the City of Grand Forks extraterritorial area, meaning the zoning and subdivision authority for the entire site lies with the City. The city's 2035 Land Use Plan designates the westerly portion of this property as Mixed Use. The easterly portion is designated as Office Park. A land use plan amendment has also been discussed by city officials for this site due to concerns that office park

may be too restrictive and may not be feasible given the large amount of acreage under that designation. The Mixed Use land use is a concern due to the existing industrial uses and the presence of the rail line. Including the property in this analysis will help the City to determine if they want to follow through with the land use plan amendment. The logical next step would be to zone the property to allow industrial development.

Access to Site and Localized Transportation Facilities

At this time, Site 9 is only adjacent to one road – 32nd Avenue S on the north side of the site. It is designated as a minor arterial and has half-mile access and intersection spacing increments. The only other access constraint at this site is the railroad tracks. At-grade railroad track crossings are determined by the applicable railroad authority, which in this case is BNSF, and are limited for safety reasons.

Utilities

This site would require infrastructure improvements because it is not currently connected to any utilities. Various city and private services need to be extended to the site to accommodate development.

Site 10 Intersection of 32nd Ave S and RR Tracks	
Quick Facts	
UTILITIES	
Gas Provider	Xcel
Electricity Provider	Nodak
Water Provider	City of Grand Forks
Communications Provider	Qwest
Sanitary Provider	City of Grand Forks
ZONING	
Zoning Jurisdiction	City of Grand Forks
POLITICAL	
Ambulance Service	Altru
Fire Service	Thompson Fire District* & City of Grand Forks
Law Enforcement	GFC Sheriff* and City of Grand Forks
PHYSICAL	
Site Size	320 Acres
Topography	Plain to Gentle Slopes
Average Site Elevation	840 ft MSL

* City of Grand Forks would provide fire protection and law enforcement upon annexation.

Natural Features

There are no limiting natural features onsite that would create impediments to construction or demolition. Perhaps the most challenging natural feature is the site's flatness, which is ideal for industrial development, but somewhat challenging for site drainage and storm sewer design.

Distance to Potential Employees

An advantage of this location is the close proximity of the City of Grand Forks, with its large workforce from which to draw. An industry located here would have the access to numerous potential workers including college graduates from the University of North Dakota. Population data provided in Appendix 5 shows populations of surrounding communities. The location of Site 10 has the potential of attracting employees from a number of population centers in the area in addition to Grand Forks and East Grand Forks.

Site 10 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$0
Water	\$210,000
Gas	Xcel Energy will look at cost justification and can easily provide service.
Communication	Basic service and possibly extended services can be provided by Qwest with possible costs.
Sanitary Sewer or Interim Septic Systems	\$45,000 (Sanitary extension to east side of Site 10), \$1,500,000 (lift station to serve west side of Site 10), \$7,000 - \$50,000 (interim septic systems)
Storm Sewer	
Roadway Improvement	\$0

a) No service extension costs are anticipated provided the site develops in an orderly manner.

This area can easily be served with electricity from a number of utility owners, depending on internal territories. This site is in Nodak's service area, and Nodak would be able to service the site with electricity. It is also possible that Xcel Energy could provide the site with gas service; however, a cost justification would have to be completed and considered by Xcel. Xcel will look at projected gas revenues resulting directly from the anticipated development over a 3-5 year period, as well as the estimated cost to place their utility. Xcel will look to the customer to pay any difference. The feasibility of extending these utilities

to the site will depend on the energy consumption of the developed site.

Water is available to the adjacent property across 32nd Avenue S on Site 9. As shown above, costs associated with extending water service to Site 10 would be approximately \$210,000. Existing industrial uses in this study area are served by GFT. It is anticipated that the City of Grand Forks will choose to provide water and other municipal services to this site. Typically, the City would special assess the cost of some of all of the improvements to the benefiting properties. The assessments for these development costs are generally spread over a 20-year timeframe.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. The location of development will determine if extended services such as a T1 line or fiber optics would also be available. Extended services may incur minor conditioning or extension fees and in some cases may not be possible at all.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required for the site to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well, depending on the size and surface, the cost will vary. Each site must consider storm water solutions to assure proper storm discharge quality and quantity.

At this location, there is no need to improve any of the localized transportation facilities. There is only one access road and it is already paved and can sufficiently handle industrial traffic.

Site 10 Estimated Site Improvement Costs	
Improvement	Cost
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

Weight Restrictions

This location is very close to designated city truck routes on both DeMers and 32nd Avenues. The localized transportation facilities for trucking are restricted by the Federal Highway Administration (FHWA) permissible gross load regulations for legal weight. In the event that industrial development on this property generates freight interaction with the rural area, freight haulers will be impacted by spring weight restrictions. Many nearby Grand Forks County roads are governed in the spring by No. 2 Load Restrictions. There are no separate load restrictions in the city other than typical legal weight limits. The city only imposes size limitations. For information on Grand Forks County spring load restrictions, see Appendix 6 or refer to the Grand Forks County website at <http://www.co.grand-forks.nd.us/highways.html>.



Looking West at an Existing Industrial Land Use along the West Side of the Railroad Tracks and North of 32nd Avenue S.

Emergency Service Availability

Emergency services to this site are shown below:

- Ambulance Service - Altru Health Systems
- Fire Protection - Thompson Fire District (in ET area) and City of Grand Forks (in City)
- Law Enforcement - Grand Forks County Sheriff (in ET area) and City of Grand Forks (in City)

Upon annexation, fire protection and law enforcement will be provided by the City of Grand Forks.

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of silty clay loams. The entire site is classified as "prime farmland" by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. Overall the site soils have a high potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of corrosion of uncoated steels when exposed to each other and a low risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of septic system sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates onsite are slow with water table upper limits of 1.5 feet to 5 feet depending on time of year and soil type.

As a source of gravel and sand, this site is poor and would require construction materials of that nature as borrow. As a source of topsoil, the soils onsite are a fair source. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Environmentally Sensitive Features

No environmentally sensitive features have been identified for this site.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No structures or sites eligible for the National Register of Historic Places (NRHP) were identified on this property. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

The City of Grand Forks Perimeter Drainage Study presents options for future drainage in this area. Site improvements should include filling at building pads to

appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This entire site is within the City of Grand Forks' line of flood protection. The City of Grand Forks requires that the lowest opening of any buildings be a minimum of 1.5 feet above base flood elevation. Despite these minimum elevations, flooding is not a major concern due to the City's flood protection features. The east portion of the site is well drained and protected from overland flooding by the English Coulee Diversion. There have been slight drainage problems in the past west of the railroad tracks.

Overall Site Suitability

Due to the presence of existing industrial uses, access to 32nd Avenue S, and the presence of a rail line, this property seems very well suited for industrial land use. Municipal service issues would need to be worked, and priorities would need to be established as to where the city's services will be most successful at attracting industrial development.

The truck stop located east of this property in the southwest quadrant of the I-29/32nd Avenue S interchange is also a very compatible use with industrial development.

Site 11
City of Grand Forks Extraterritorial Area and Rye Township
Intersection of US 2 and County Rd 5
(W 1/2 S33-T152-R51, E 1/2 S32-T152-R51)



Site 11: Intersection of US 2 and County Rd 5

This site is located just west of the Grand Forks Regional Airport at the intersection of US Highway 2 and County Road 5. Site 11 is 640 acres in size.

Proximity to Regional Transportation Facilities

The property has very good access to US Highway 2 and County Road 5. The I-29/Gateway Drive interchange is less than five miles from the site. For air travel or air cargo needs, the Grand Forks Regional Airport is adjacent to the site.

There are no rail lines at this site. Industrial users that desire rail access would need to make arrangements with a business that has an existing rail spur that can handle whatever type of materials are being shipped or received (palettes, crates, tanks, etc.).

An intermodal terminal, where semi trailers are loaded and off-loaded onto rail cars, is located in Dilworth, Minnesota, which is approximately 89 miles from Site 11.

Existing Land Use

A majority of the site is being used as agricultural land and there are commercial-industrial businesses on the south side of the site adjacent to US Highway 2. The

Grand Forks Regional Airport is located immediately to the east of this property. There is a platted residential development on the southwest quarter of the study area. Combined with the commercial developments along US Highway 2, existing or planned development occupies approximately 160 acres of this site, although there are vacant sites between existing businesses along US Highway 2.

Ownership and Availability of Land

Site 11 is owned by three different property owners. Each of the owners is willing to discuss the potential availability of the site.

Value of Land

Current assessed value of the land is \$115,500, according to Grand Forks County records. As previously stated, the assessed value is not a representation of what one would expect to pay for this site. It is a relative value based on a formula that considers the current agricultural status of the land. It does not represent actual market value. Some factors that will affect the market value are presence of conflicting land uses, the ability to assemble a parcel of adequate size, proximity to utilities, the presence of wetlands or other water features on the property, proximity to larger communities, the extent to which the site has already been zoned and subdivided, proximity of major transportation facilities, property access, flooding potential, and the extent of site preparation such as grading and fill.

At this time, it appears that the acreage that is actually available for development is 470 acres. This is a reflection of the fact that the southwest quarter of the section is either developed or subdivided for residential development. There are two commercial developments along US Highway 2 west of County Road 5. A residential subdivision called Airport Estates has been platted north of these commercial businesses and west of County Road 5. Construction of streets and houses has been initiated, with at least one house already complete. The acreage of 470 also reflects right-of-way for US Highway 2 and County Road 3. The market value will be a reflection of the close proximity to Grand Forks and the airport, and the fact that the property is relatively unhampered for industrial development, even with the limitations imposed by the Airport Master Plan.

Zoning of Property and Surrounding Area

The east half-section is currently zoned industrial and A1 agricultural, according to the City of Grand Forks Zoning Map. The west half-section is zoned Airfield Reserve District by Grand Forks County.

If this area develops, annexation of the property into the City of Grand Forks may be desirable. Adjacency would exist due to the fact that the Grand Forks Airport is currently inside city limits.

Natural Features

The south sides of both half sections have tree lines that go from east to west. Other than shelterbelt trees, there are no limiting natural features onsite. There are no impediments to construction or demolition.

Distance to Potential Employees

An industry located at Site 11 would have a strong ability to draw workers from Grand Forks and East Grand Forks in addition to other small communities such as Thompson, Emerado, and the surrounding rural area. Information provided in Appendix 5 shows populations of all townships within Grand Forks County and of communities in the vicinity. Site 11 is easily accessible for workers from the near-by cities and from Grand Forks due to its location along US Highway 2.

Access to Site and Localized Transportation Facilities

Site 11 is split by County Road 5 and bounded on the south by US Highway 2. This section also has access from 19th Avenue on the north.

County Road 5 is a collector which runs north and south on the section line that separates the east and west halves of the site. The south boundary of this site is marked by a principal arterial, US Highway 2, which runs east and west. Both facilities have restrictive access spacing. US Highway 2 restricts access points and intersections to quarter mile increments. County Road 5 allows access increments of eighth mile (660') spacing. The other local roads around the site with less access restrictions are unimproved section line roads.



Looking West from County Road 5 toward an Area on Site 11 that is Platted for Residential Development

Utilities

This site would require infrastructure improvements because it is not currently connected to any utilities. Various city and private services need to be extended to the site to accommodate development.

This area can easily be served with electricity by Nodak Electric Cooperative, which has three-phase overhead power available in this location. Depending upon building locations, this site would see power line extension fees up to \$17,000 at the time of this study. The most significant cost would be extending power to the east and west from County Road 5. Areas closest to County Road 5 would see little to no extension cost.

It is also possible that Xcel Energy could provide the site with gas service; however, a cost justification would have to be completed and considered by Xcel. The feasibility of extending these utilities to the site will depend on the energy consumption of the developed site.

Site 11 Estimated Utility and Roadway Improvement Costs	
Improvement	Cost
Electricity ^a	\$17,000
Water	\$140,000 - \$210,000
Gas	Xcel Energy will conduct cost justification and can easily provide service.
Communication	All services can be provided by Qwest with possible costs for fiber optic lines.
Roadway Improvement ^b	\$1,003,200

- a) Certain areas of the site will see no charges for electricity extensions other areas will require line extensions and incur costs.
- b) Cost shown assumes a bituminous section for heavy truck loads at \$19,000/100 LF (see Description of Improvements Section) Cost is to improve all existing facilities around site.

Grand Forks Trill Rural Water (GFT) has a 4-inch water line in this area to serve 38 units in the Dubuque Subdivision (Airport Estates). The full capacity of this line is committed to this subdivision, so an additional water line would need to be extended from the intersection of County Highways 4 and 5, a distance of 2 miles, to provide water for industrial use. The cost to extend a water line to the midpoint of the US Highway 2 frontage of the southwest quarter section of Section 33 is estimated to be \$160,000. Continuing a water line to the northwest corner of the southwest quarter section will cost an additional \$50,000. This results in a total of \$210,000 to service the entire site.

The volume of water that could be provided by GFT is estimated at 100 gallons per minute (gpm) and 70,000 gallons per day (gpd), assuming a 12-hour duration.

As an alternative, the City of Grand Forks has water available at the entrance to the airport on US Highway 2, which is one mile close closer to the site and could reduce the cost of water lines by \$70,000. However, the site would have to be annexed to the City in order to receive City water service. Typically, the City would special assess the cost of some of all of the improvements to the benefiting properties. The assessments for these development costs are generally spread over a 20-year timeframe.

Communications can be provided to this site by Qwest Communications. They are able to easily provide basic services, phone and Internet, with no foreseeable extension costs other than normal connection fees. Extended services such as a T1 line or fiber optics would also be available. Extended services may incur minor conditioning or extension fees and in some cases may not be possible at all especially if the customer is looking for fiber optic.

Site 11 Estimated Site Improvement Costs	
Improvement	Cost
Sanitary ^a	\$7,000 - \$50,000
Storm Water Pond ^b	\$332,500
Total	\$339,500 - \$382,500
Building Pad	\$30,000/10,000 SF
Paved Parking Facility	\$38,000/10,000 SF
Total	\$68,000/10,000 SF

a) Septic systems will have a wide range of cost depending on specific industrial use (volume and content of wastewater).

b) Cost of pond is based on 20 acre-feet of storage for a 160-acre site, \$20,000 outlet control, and \$150,000 for 1,000 LF of 48" RCP.

Cost of Improvements

In addition to any utility improvements, this site would incur costs for other construction required to properly function for any given industry. Building pads would need to be constructed to elevate structures and protect from occasional flooding and meet certain building codes. A parking facility is necessary for the developed site as well, depending on the size and surface, the cost will vary. Each site must consider

storm water solutions to assure proper storm discharge quality and quantity. These costs are approximated and are covered in the Description of Improvements section of this report.

At this site, it would be necessary to improve 19th Ave, the local road north of the site. It is currently an unimproved section line and in an effort to prevent damage by trucking operations, it should be paved. The approximate cost of this improvement would be \$1,003,200.

Weight Restrictions on Potentially Affected Roadways

Grand Forks County sets restrictions on affected transportation facilities around this site in the spring. Spring restrictions are not applied to US Highway 2, which is simply limited to legal weight regulations. Spring restrictions on other nearby Grand Forks County roads are the No. 2 Load Restrictions as defined by Grand Forks County. Normal maximum loads allowed on these facilities are determined by the Federal Highway Administration (FHWA) Permissible Gross Load figures for legal weight. For information on Grand Forks County spring load restrictions, see Appendix 6 or refer to the Grand Forks County website at <http://www.co.grand-forks.nd.us/highways.html>.

Emergency Service Availability

Emergency services to this site are shown below.

- Ambulance Service – Altru Health Systems
- Fire Protection – Emerado Fire District
- Law Enforcement - Grand Forks County Sheriff

Upon annexation, fire protection and law enforcement will be provided by the City of Grand Forks.

If hazardous materials are handled by any industry located at this site, the emergency HAZMAT services would be provided from a County emergency HAZMAT team located in the City of Grand Forks. The Hazardous Materials Plan (Emergency Management Agency, Grand Forks County) is included as Appendix 2.

Soil Characteristics

Soil types at this site are consistent with what is found at other sites up and down the Red River Valley. According to the Natural Resources Conservation Service (NRCS), the site contains soil types consisting of silty clay, loam, and silty clay loams. Much of the site is classified as "prime farmland" by the NRCS.

In order to develop this site, certain structural and corrosive properties of the soil must be taken into consideration. Overall, the site soils have a high potential for frost action, which must be considered in the design of any structures. These soils also produce a high risk of corrosion of uncoated steels when exposed to each other and a low to moderate risk of corrosion to concrete when the two are in direct contact.

Given the soil types of this site, all practical development areas of the site are limited in terms of septic system sewage disposal. This is common in many areas of the region. Due to slow water movement, depth of saturated zones, filtering capacity, seepage, and soil flooding properties, it can be expected that septic systems will have additional installation costs, less effectiveness, and require more maintenance in these soils. Most infiltration rates onsite are slow with water table upper limits of 1.5 feet to 5 feet depending on time of year and soil type.

As a source of gravel, sand, and topsoil, this site is poor and would require construction materials of that nature as borrow. For more detailed information, see United States Department of Agriculture Natural Resources Conservation Service Soil Map.

Site 11 Intersection of US 2 and CR 5	
Quick Facts	
UTILITIES	
Gas Provider	Xcel, Propane
Electricity Provider	Nodak
Water Provider	Grand Forks Trill
Communications Provider	Qwest
Sanitary Provider	Septic System
ZONING	
Zoning Jurisdiction	City of Grand Forks and Grand Forks County
POLITICAL	
Ambulance Service	Altru
Fire Service	Emerado Fire District
Law Enforcement	GFC Sheriff
PHYSICAL	
Site Size	640 Acres
Topography	Plain to Gentle Slopes
Average Site Elevation	840 ft MSL

Environmentally Sensitive Features

The only environmentally sensitive feature of this site is a residential development that is currently taking place along the west side of County Road 5, just north of the tree line and commercial-industrial businesses along the north side of US Highway 2. There are also 0.55 acres of designated wetland on this site (see attached National Wetland Inventory Map). If the wetlands cannot be worked into the development plan, there may be a desire to fill or drain it. Filling or draining of wetlands may require mitigation. The wetland would need to be delineated by a wetland delineator and certified soil scientist. A determination would need to be made as to which agency has jurisdiction over the wetland – US Army Corps of Engineers, or Natural Resource Conservation Service. The need for mitigation will depend upon the status of the wetland (size, depth, amount of time the wetland is under water, etc.). Mitigation is generally accomplished by constructing new wetlands or purchasing wetland mitigation credits.

Cultural and Historical Resources

A summary of cultural and historical resources is provided in Appendix 8. No structures or sites eligible for the National Register of Historic Places (NRHP) were identified on this property. Future work involving federal funding should have a Level III Cultural Resource Inventory performed within the project area.

Drainage Opportunities

Site improvements should include filling at building pads to appropriate elevation. Storm water facilities should include ponds or other appropriate measures to meet water quality standards and attenuate peak flows to appropriate levels.

Overland Flooding Characteristics

This site's topography is very flat. Storm water drains to the north, but drainage occurs slowly and drainage channels are not well defined. The site is protected from overland flooding by the grade of US Highway 2 to the south. No observed flooding was indicated and the Flood Hazard Boundary Map (FHBM) shows no areas of flooding. Site improvements should incorporate drainage to the existing channels with appropriate water quality and quantity features at points of connections to the channels.

Land Use Compatibility Plan for the Grand Forks International Airport

The Land Use Compatibility Plan for the Grand Forks International Airport (July 2006) sets forth Compatibility Zones on land surrounding the airport. Based on the characteristics of airports relative to noise, vibration, and safety related matters, appropriate land uses and maximum numbers of people per acre are established for each zone. The east half of Site 11 is closer to the airport, and as such, is in Zone B. Zone B is described as having high noise levels, and is within the inner approach/departure zone.

Maximum site occupancies in Zone B are 40 people per acre on average, with a single acre maximum of 100 people per acre.

No new dwellings are allowed in this zone, except on existing legal lots. Other unacceptable uses include schools, day care centers, libraries, hospitals, nursing homes, churches, buildings with more than two aboveground occupied floors, aboveground bulk storage of hazardous materials, highly noise-sensitive outdoor uses (even if non-residential), and hazards to flight, which include tall objects, visual and electronic forms of interference, and land uses that may cause the attraction of birds.

Aside from the prohibited land uses listed above, further restrictions include a requirement that structures be located as far as possible from the extended runway centerline on any given development size within Zone B, the use of noise level reduction features, airspace review for objects taller than 35 feet, and dedication of a navigation easement.

Most industrial land uses would be considered compatible with Zone B, provided they meet the requirements shown above.

Zone C applies to the westerly half of Site 11. This zone is described as the Flight Corridor Zone. Single-family residential development is limited to minimum parcel sizes of greater than or equal to 40 acres in size. Prohibited land uses include schools, day care centers, libraries, hospitals, nursing homes, buildings with more than three aboveground habitable floors, highly noise-sensitive outdoor uses (even if non-residential), and hazards to flight, such as development features that attract birds.

For safety reasons, the density of human population is limited within Zone C. The maximum average number of people per acre within Zone C is 100. On a single acre, the maximum number of people is 250.

In Zone C, the aboveground bulk storage of hazardous materials is generally unacceptable. Airspace review is required for objects more than 70 feet tall. A disclosure regarding airport proximity is required in real estate transactions involving residential property (referred to as deed notice).

Most industrial land uses are compatible with Zone C, provided they meet the requirements and limitations described above.

Overall Site Suitability

Due to the presence of the airport, this site is very suitable for industrial uses. In fact, two developments that are industrial in nature are already located along the north side of US Highway 2 west of County Road 5. Most industrial uses would have no problem meeting the density and height limitations of Zone B or Zone C as designated by the Airport Master Plan.

The flatness of the property is suitable for industrial development. Services are readily available, and access to the site from Highway 2 is excellent. This property is far more suitable for industrial development than the residential development that has begun to take place west of County Road 5. The presence of this subdivision could cause compatibility issues in the future; especially once more homes are constructed. However, if properly buffered through landscaped areas and land use transitions (such as less intense industrial uses); residential and industrial land uses can be compatible uses.

Projected Industrial Land Needs

Over the past 11 years, Grand Forks has experienced industrial development that has consumed an average of just over 17 acres per year. This figure is based on the size of previously undeveloped parcels on which building permits were issued. The average of 17 acres per year does not include the infrastructure acreage that is also consumed when development takes place. The acreage of street right-of-way and other land needed for public infrastructure, such as storm water detention/retention, generally uses another 25 percent of the development acreage. This brings the annual acreage consumption for industrial development up to approximately 21 acre per year from 1997 to 2007.

These figures were considered to be somewhat on the low side, considering that it was during several of these years that the community was cleaning up and rebuilding after the 1997 flood. Efforts were probably focused more on redevelopment of the downtown area and rehabilitating of damaged homes than they were on industrial development. Nevertheless, a number of significant industrial developments have taken place during the last 11 years, and the complete listing of building permits indicates there were also a number of expansions to existing industrial properties that weren't included in the land consumption calculation.

Two approaches were taken to project industrial land needs. In each approach, a low, medium, and high projection was made. The low projection starts out with 15 acres per year, and remains at 15 acres per year through the year 2030 in the "simple" approach. In the stratified approach, the acreage consumption was increased by five percent in each year of the five-year increments between 2015 and 2030.

The same approaches were used for the medium and high projections. The starting point for the medium projections is a consumption rate of 20 acres per year. The starting point for the high projection is 25 acres per year.

In all cases, 25 percent was added to the acreage to reflect the amount of land that would actually need to be subdivided, with street dedications, storm water facilities, and so forth.

While 15 acres per year does not sound like a significant amount of development, it is significant when one takes a close look at the relationship between acreage and the amount of building square footage typically constructed on industrial sites. Industrial developments generally have a floor area ratio (FAR - the ratio of the building square footage to the size of the site) of 0.2 to 0.3. In other words, 20 to 30 percent of the site is covered with a one-story building in a simple example of FAR. One acre would accommodate a building of approximately 8,700 to 13,100 square feet. Fifteen acres would accommodate 130,500 to 196,500 square feet. This is a significant amount of development on an annual basis.

The medium and high projections are a reflection of the synergy that happens in communities where certain types of industry take hold and expand at a higher rate than experienced in the past. In the Grand Forks area, this could be the case with the industrial sectors of agriculture, medical related industries, aeronautics, and other industries that could be attracted to the area to take advantage of existing industries and possible recruiting relationships with the University of North Dakota.

The total industrial land needs for the short, medium, and long-range timeframe are shown in the tables on the next page.

Industrial Acreage Consumption

Grand Forks Historical Industrial Development	
Year	Growth (ac)
1997	26.7
1998	5.3
1999	64.4
2000	21.3
2001	4.6
2002	4.5
2003	29.8
2004	0.0
2005	13.2
2006	8.9
2007	12.4
Total	191.1
Average per Year Consumption	17.4
With Infrastructure	
Total	238.9
Average per Year Consumption	21.7

Grand Forks Stratified Projections of Industrial Development						
Year	Industrial Needs Only Growth (ac)			Industrial and Infrastructure Growth (ac) ^a		
	Low	Medium	High	Low	Medium	High
	2008	15.0	20.0	25.0	18.8	25.0
2009	15.0	20.0	25.0	18.8	25.0	31.3
2010	15.0	20.0	25.0	18.8	25.0	31.3
2011	15.0	20.0	25.0	18.8	25.0	31.3
2012	15.0	20.0	25.0	18.8	25.0	31.3
2013	15.0	20.0	25.0	18.8	25.0	31.3
2014	15.0	20.0	25.0	18.8	25.0	31.3
2015	15.0	20.0	25.0	18.8	25.0	31.3
Sub-Total	120.0	160.0	200.0	150.0	200.0	250.0
5% Increase over 2008-2015						
2016	15.8	21.0	26.3	19.7	26.3	32.8
2017	15.8	21.0	26.3	19.7	26.3	32.8
2018	15.8	21.0	26.3	19.7	26.3	32.8
2019	15.8	21.0	26.3	19.7	26.3	32.8
2020	15.8	21.0	26.3	19.7	26.3	32.8
Sub-Total	78.8	105.0	131.3	98.4	131.3	164.1
5% Increase over 2016-2020						
2021	16.5	22.1	27.6	20.7	27.6	34.5
2022	16.5	22.1	27.6	20.7	27.6	34.5
2023	16.5	22.1	27.6	20.7	27.6	34.5
2024	16.5	22.1	27.6	20.7	27.6	34.5
2025	16.5	22.1	27.6	20.7	27.6	34.5
Sub-Total	82.5	110.5	138.0	103.5	138.1	172.5
5% Increase over 2021-2025						
2026	17.3	23.2	29.0	21.7	29.0	36.2
2027	17.3	23.2	29.0	21.6	29.0	36.3
2028	17.3	23.2	29.0	21.6	29.0	36.3
2029	17.3	23.2	29.0	21.6	29.0	36.3
2030	17.3	23.2	29.0	21.6	29.0	36.3
Sub-Total	86.5	116.0	202.5	108.2	145.0	181.2
Total	367.8	491.5	671.7	460.1	614.3	767.7

^a Infrastructure needs are estimated to add 25% to required acreages

Grand Forks Simple Projections of Industrial Development			
Year	Industrial Needs Growth (ac)		
	Low	Medium	High
2008	15.0	20.0	25.0
2009	15.0	20.0	25.0
2010	15.0	20.0	25.0
2011	15.0	20.0	25.0
2012	15.0	20.0	25.0
2013	15.0	20.0	25.0
2014	15.0	20.0	25.0
2015	15.0	20.0	25.0
2016	15.0	20.0	25.0
2017	15.0	20.0	25.0
2018	15.0	20.0	25.0
2019	15.0	20.0	25.0
2020	15.0	20.0	25.0
2021	15.0	20.0	25.0
2022	15.0	20.0	25.0
2023	15.0	20.0	25.0
2024	15.0	20.0	25.0
2025	15.0	20.0	25.0
2026	15.0	20.0	25.0
2027	15.0	20.0	25.0
2028	15.0	20.0	25.0
2029	15.0	20.0	25.0
2030	15.0	20.0	25.0
Sub-Total	345.0	460.0	575.0
Total^b	431.3	575.0	718.8

^b An additional 25% is was added to account for infrastructure needs.