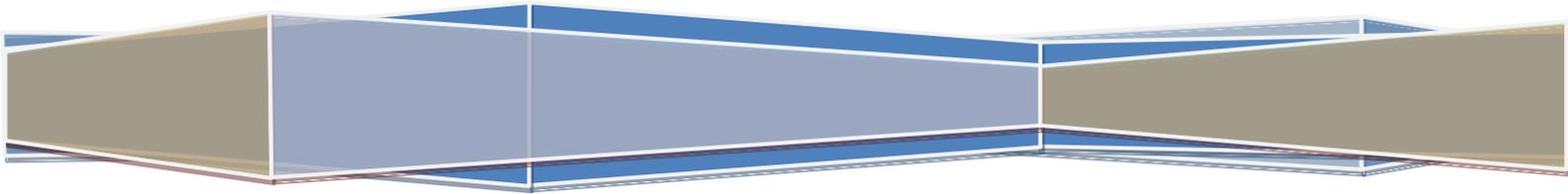


# Edmunds County Rural Development Site Analysis

A Study by  
Planning and Development District III

Funded by the South Dakota Value Added Agriculture Subfund



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## Summary

### Program History

As part of the South Dakota Department of Agriculture's (SDDA) efforts to enhance economic development opportunities and better support local control of development, the County Site Analysis Program (Program) was developed in the summer of 2013. The Program assists participating counties in identifying potential rural properties with site development opportunities. The analysis and subsequent report will provide local leaders with information and research-based resources to foster well informed decisions regarding the future of their respective regions. It also helps identify and plan for potential challenges that may arise should those opportunities be pursued.

In implementing the Program, SDDA is working closely with South Dakota's Planning and Development Districts. The First District Association of Local Governments (First District) and Planning and Development District III (District III) developed a methodology for a feasibility analysis that focuses on identifying locations for rural economic development. The methodology addresses the feasibility of locations for the development of concentrated animal feeding operations, agricultural processing and storage facilities, and other agriculturally-related commercial/industrial development. The analysis takes into consideration local zoning and State permitting requirements along with the availability of infrastructure necessary to accommodate certain rural economic development projects.

The identification of each prospective site's relative advantages and constraints provides decision-makers with useful information for assessing the development potential of each site. The information contained herein has the potential to streamline the marketing process thereby reducing timelines, financial expenditures and labor costs. Local governments, landowners, economic development groups and State agencies such as the Department of Agriculture or Governor's Office of Economic Development all benefit from the rural site development analysis. These entities now have access to a marketing tool based on proactive planning efforts. In addition, the report may assist local governments in updating their comprehensive plans, zoning ordinances and permitting procedures while also increasing local awareness of potential development opportunities.

### Methodology

The methodology developed for this study utilized an established set of criteria deemed critical to further development of the subject properties while specifically addressing the suitability of a site for either a Concentrated Animal Feeding Operation (CAFO) or an Agriculturally-Related Industrial Development (AID). **Table 1** lists the site assessment criteria identified as being necessary to conduct analysis of the potential sites. Minimum thresholds for each criterion were utilized to establish a hierarchy classification of "Good", "Better" and "Best" sites. Those sites designated as "Best" sites were those not limited by any of the criteria considered. Sites not meeting the minimum criteria required of the "Best" sites were subsequently identified as "Better" or "Good".

Specific information regarding the site assessment criteria and methodology utilized for developing the "Good", "Better", and "Best" hierarchy may be found in **Appendices I and II**, respectively.

**Table 1: Site Assessment Criteria**

| <b>CAFO/AID Criteria</b>                     |
|--|
| Access to County and State Road Network      |
| Proximity to Three-Phase Electricity Supply  |
| Proximity to Rural Water System              |
| Capacity of Rural Water System               |
| Location of Shallow Aquifer                  |
| Existing Zoning Districts/Land Use Plans     |
| Buildable Parcel                             |
| County CAFO Zoning Setback Requirements*     |
| Proximity to Rural Residences* & Communities |
| Proximity to Rail**                          |

\*CAFO Assessment Criteria Only

\*\* AID Assessment Criteria Only

### **Limiting Factors**

While this report focuses on the specific sites matching the site assessment criteria standards, it became apparent that each site also possesses its own unique set of site characteristics which present both advantages and constraints. For example, there were many sites in the County which complied with the County's zoning regulations but lacked the necessary infrastructure.

The analysis found that the primary limiting factor(s) in reviewing the development potential of properties within Edmunds County for a "Better" or "Best" CAFO site development is the availability of quality potable water. The same is true with AID developments which also require a reliable water source of not only high quality but also large quantities. Access to a centralized water source such as rural water was a key criterion in the site analysis process. While access to rural water quality water was identified as an impediment, the rural water systems noted that if a significant water user would locate in the county; they would explore ways to provide water to the proposed development. Therefore, the analysis does not conclude the only sites for CAFO/AID development in Edmunds County are relegated to the specific sites identified herein.

In addition to the availability of quality potable water, additional limiting factors such as access to County and State road networks, three phase power, rail, and the County's existing CAFO setback requirements limited the number of potential AID and CAFO sites.

The site assessment process was limited in scope to include undeveloped parcels and did not consider expansion of existing CAFOs or commercial/industrial uses. In addition to this limited scope, minimum values were utilized in ranking each site with regards to zoning requirements and infrastructure demands. No attempt was made to rank each site within the three identified classifications. The uniqueness of each criterion identified in **Table 1** warrants a comprehensive review of the potential impact each may have upon a subject property. This study is intended as the first step of a multi-faceted development process potentially leading to more specific site evaluations such as Phase 1 Environmental Assessments, engineering plans, and development cost analysis.

## **Results**

Identifying and evaluating potential sites for development is the first step in planning for economic development in rural Edmunds County. The findings of this report will assist in determining the potential role each site may play in supporting economic development and should be considered when planning for future projects within Edmunds County.

Utilizing Geographic Information System (GIS) technology, Planning and Development District III identified **163** sites within Edmunds County that met the minimum site assessment standards of the CAFO analysis, **Table 2**; and **216** sites that met the minimum standards of the AID analysis, **Table 3**. These sites complied with local zoning ordinances and were in close proximity to infrastructure necessary to support the previously identified economic development activities. A unique variation within Edmunds County is the strip zoning adjacent to US Highway 12. The Highway 12 corridor is zoned Highway Commercial (HC) with **86** of the **163** identified CAFO sites located within this area. Although, CAFO's are identified as a conditional use within a Highway Commercial District thereby enabling development of CAFO's in accordance with the County's conditional use process. Of these **86** sites; **58** are rated Best, **13** at Better, and **15** as Good for both High Water Use and Low Water Use CAFO sites.

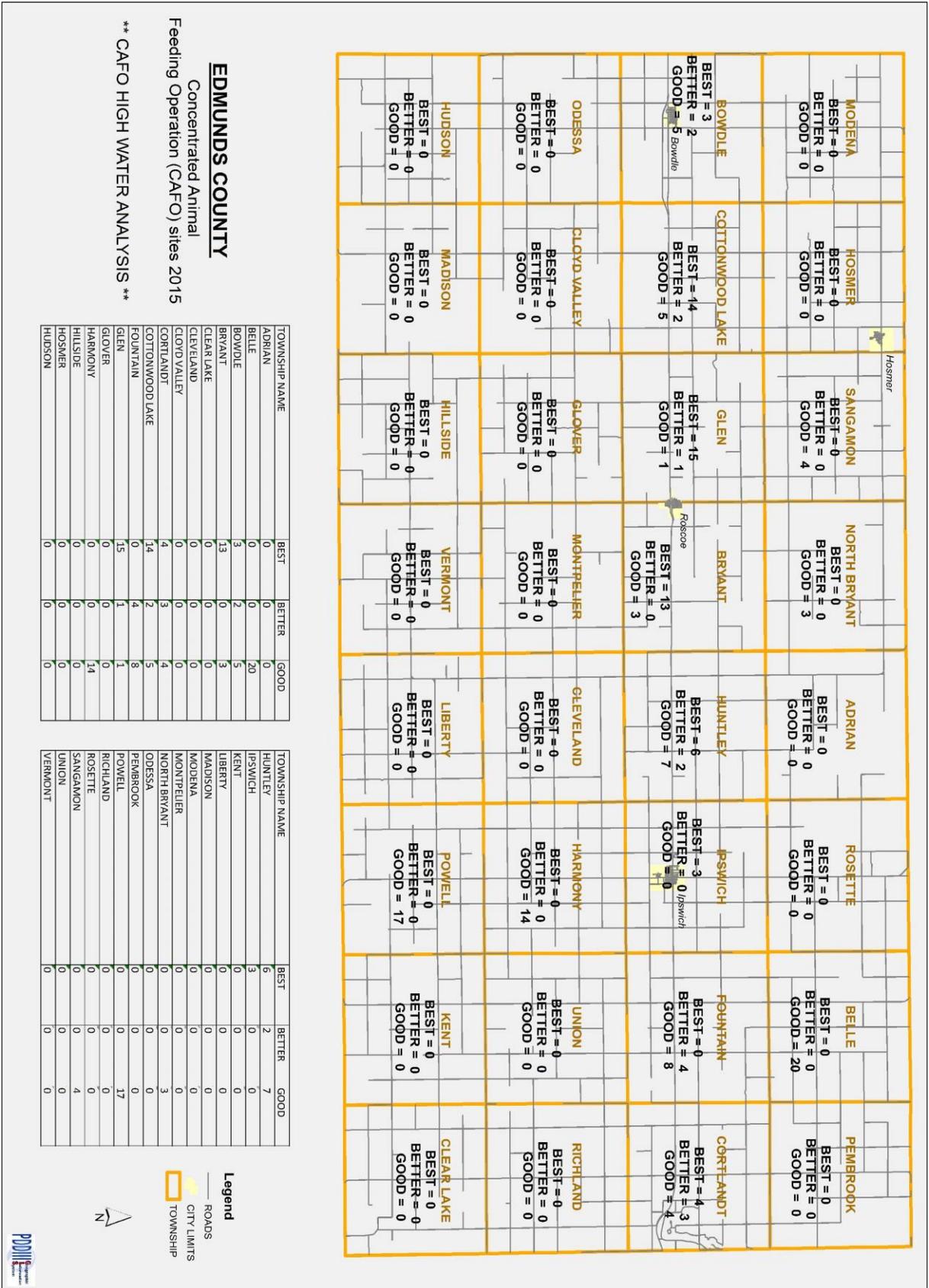
The CAFO and AID Analysis Maps further detail High Water Use (HWU) and Low Water Use (LWU) CAFO and AID sites. HWU CAFO sites are those locations which require 150,000 gallons of water per day. This amount of water is necessary to support, for example, a 3,000 head dairy. LWU CAFO sites are those locations which require 30,000 gallons of water per day, a volume necessary to support either a 600 head dairy or 5,000 head sow operation. HWU AID sites are those locations which require water at levels necessary to support high water uses such as food processing or ethanol production. The water requirement for a HWU AID site is 410,000 gallons of water per day. LWU AID sites are those locations which require water at levels necessary to support most agriculturally-related commercial/industrial development, 30,000 gallons per day. The analysis identified **163** sites which could be used for either a High Water Use or Low Water Use CAFO and **0** High Water Use and **216** Low Water Use AID sites. The following maps provide information at a township level regarding the number of "Good", "Better", and "Best" CAFO and AID sites.

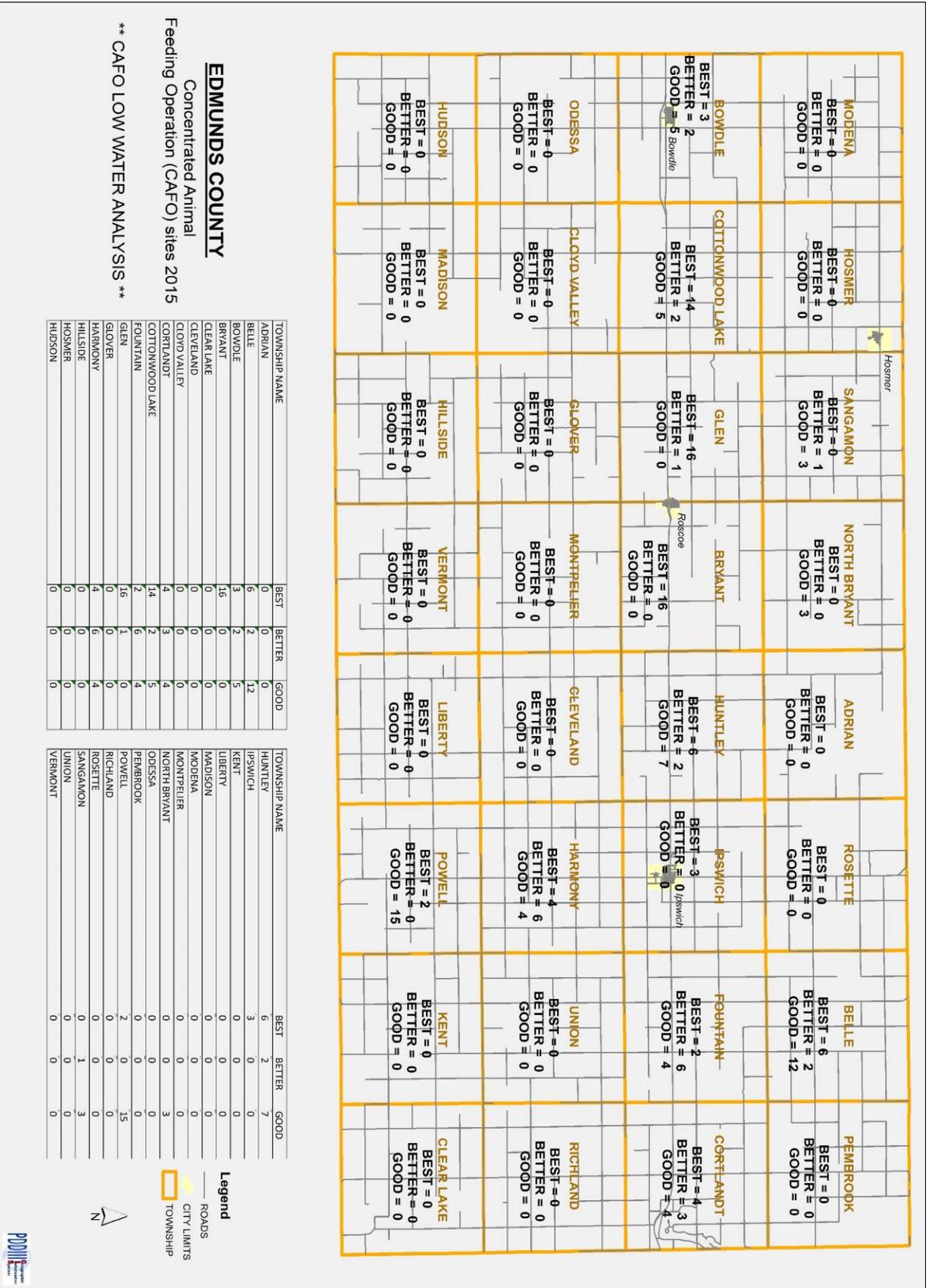
**Table 2:  
Edmunds County CAFO Sites by Hierarchy Classification**

| <b>CAFO Site Classification</b> | <b>Good Sites</b> | <b>Better Sites</b> | <b>Best Sites</b> |
|---------------------------------|-------------------|---------------------|-------------------|
| Low Water CAFO                  | 62                | 25                  | 76                |
| High Water CAFO                 | 91                | 14                  | 58                |

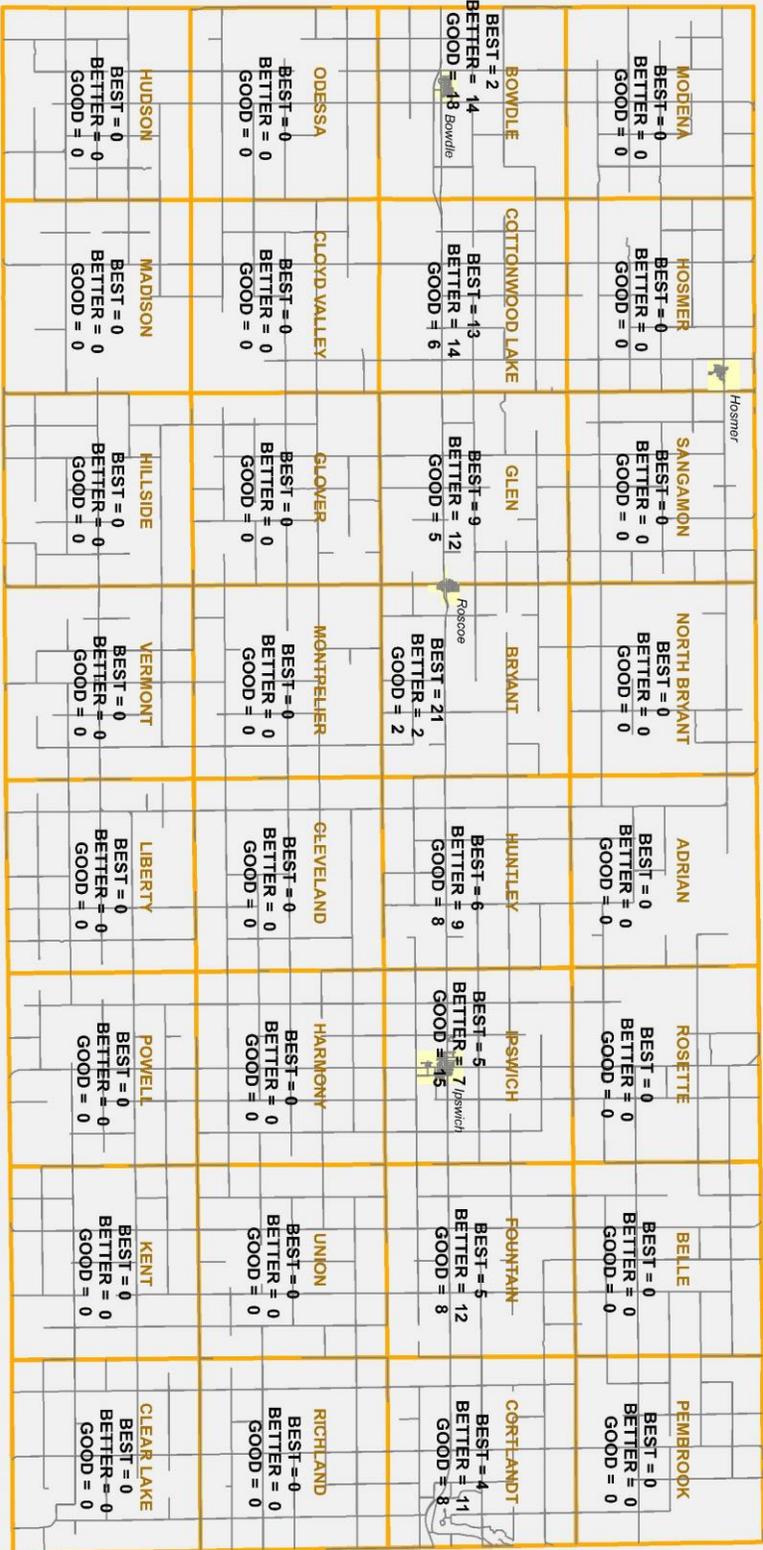
**Table 3:  
Edmunds County AID Sites by Hierarchy Classification**

| <b>AID Site Classification</b> | <b>Good Sites</b> | <b>Better Sites</b> | <b>Best Sites</b> |
|--------------------------------|-------------------|---------------------|-------------------|
| Low Water AID                  | 70                | 81                  | 65                |
| High Water AID                 | 0                 | 0                   | 0                 |





**No High Water AID Map – Page Left Blank**



**EDMONDS COUNTY**  
 Agriculturally - related  
 Industrial Development (AID) sites 2015

\*\* AID LOW WATER ANALYSIS \*\*

| TOWNSHIP NAME   | BEST | BETTER | GOOD |
|-----------------|------|--------|------|
| ADRIAN          | 0    | 0      | 0    |
| BELLE           | 0    | 0      | 0    |
| BOWDLE          | 2    | 14     | 18   |
| BRYANT          | 21   | 2      | 2    |
| CLEAR LAKE      | 0    | 0      | 0    |
| CLEVELAND       | 0    | 0      | 0    |
| CLOYD VALLEY    | 4    | 11     | 8    |
| CORTLANDT       | 13   | 14     | 6    |
| COTTONWOOD LAKE | 5    | 12     | 6    |
| FOUNTAIN        | 9    | 12     | 5    |
| GLEN            | 0    | 0      | 0    |
| GLOVER          | 0    | 0      | 0    |
| HARMONY         | 0    | 0      | 0    |
| HILLSIDE        | 0    | 0      | 0    |
| HOSMER          | 0    | 0      | 0    |
| HUDSON          | 0    | 0      | 0    |

| TOWNSHIP NAME | BEST | BETTER | GOOD |
|---------------|------|--------|------|
| HUNTER        | 5    | 9      | 8    |
| IPSWICH       | 5    | 7      | 15   |
| KENT          | 0    | 0      | 0    |
| LIBERTY       | 0    | 0      | 0    |
| MADISON       | 0    | 0      | 0    |
| MORENA        | 0    | 0      | 0    |
| MONTPELIER    | 0    | 0      | 0    |
| NORTH BRYANT  | 0    | 0      | 0    |
| ODESSA        | 0    | 0      | 0    |
| PEMBROOK      | 0    | 0      | 0    |
| POWELL        | 0    | 0      | 0    |
| RICHLAND      | 0    | 0      | 0    |
| ROSETTE       | 0    | 0      | 0    |
| SANGAMON      | 0    | 0      | 0    |
| UNION         | 0    | 0      | 0    |
| VERMONT       | 0    | 0      | 0    |

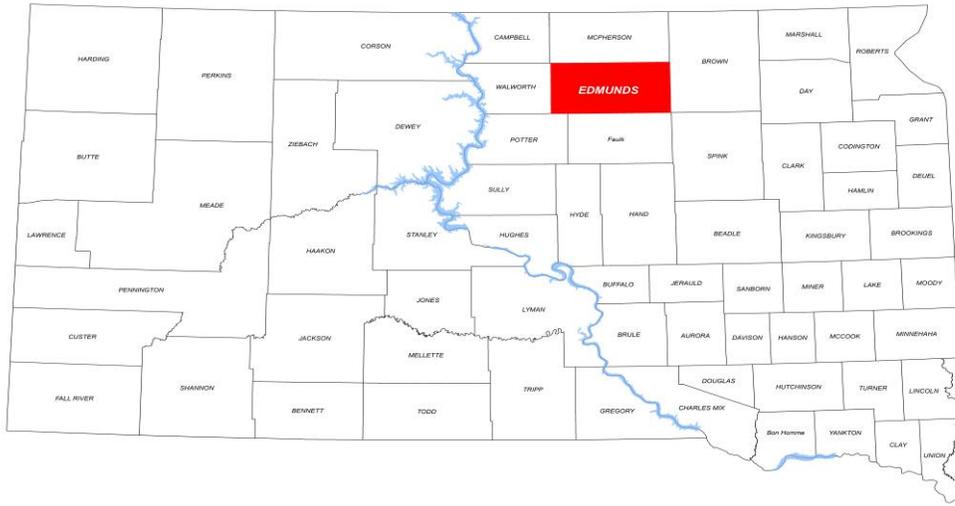
**Legend**

- ROADS
- CITY LIMITS
- TOWNSHIP



## APPENDIX I: SITE ASSESSMENT CRITERIA

### Edmunds County Location Map



The methodology developed for this study utilized an established set of criteria deemed critical to further the development of the subject properties while specifically addressing the suitability of a site for either a CAFO or an AID.

Sites possessing all of the criteria identified as critical within the analysis will be those most sought by potential developers. The occurrence of these sites may be somewhat rare. Therefore, sites under consideration for either a CAFO or AID may meet the majority of criteria, but may also be lacking in several specific areas. Any sites not meeting all the criteria may be burdened with a limitation thus requiring more specific analysis. In these cases, the feasibility of developing the site is highly dependent upon the identified limitation(s).

A limiting condition could be the availability of water volume at an identified potential CAFO site. For example, the water demand for a 3,000 head dairy is approximately five times greater than the needs of a 5,000 head sow operation even though each operation could generally be subject to similar zoning regulations. In this situation, the lack of water at a volume necessary for a dairy may lend the site to be more likely identified as a possible location for a swine facility. It should be noted that neither this example nor the analysis explores potential alternatives to the absence of adequate rural water volume such as upsizing water distribution infrastructure or securing an alternative water source, all of which hold the potential to mitigate this constraint thereby facilitating the proposed development. Rather, the analysis recognizes upgrading infrastructure identified as necessary to support rural economic development projects may increase the number of developable sites within the County. In other cases, however, failure to meet certain criteria, such as access to a quality road network, may result in a situation where development of the site becomes economically unfeasible.

The site assessment criteria, depending upon whether or not the site is for a CAFO or AID project, have been divided into the three major categories to include: **Land Use Regulations**, **Environmental Constraints** and **Infrastructure**.

## **LAND USE REGULATIONS**

Economic development planning in Edmunds County must be conducted in concert with the County's overall economic development goals. All development activities, including those specifically related to agriculture need to be accomplished within the parameters set forth in local and regional planning documents. Land use or development guidance is traditionally provided via local documents such as comprehensive plans, zoning ordinances, policies, mission statements, and other local economic development plans and initiatives. The analysis reviewed these documents to determine cohesiveness with potential CAFO and AID development. The following is a synopsis of Edmunds County's statements and policies regarding development.

### **Comprehensive Land Use Plan**

Edmunds County's most recent Comprehensive Plan was developed in 1998. The plan does not specifically address agricultural development such as animal feeding or agricultural product processing activities; although, the plan does identify five land development policies to include:

1. Edmunds County land is vulnerable to detrimental land development activities.
2. Development is basically desirable and inevitable and must be accommodated.
3. Uncontrolled growth is eventually destructive and disruptive.
4. Sound land development can avert land use conflicts and ensure enhancement of the total county environment.
5. Planned growth in conjunction with sound and fair development controls is more desirable than unplanned and uncontrolled growth.

### **Zoning**

Ideally, economic developers seek sites that are zoned and eligible for specific uses. The need to pursue a zoning change or conditional use permit introduces an additional step in the development process thus increasing development timeframes and costs. These steps or requirements also increase the uncertainty of approval given zoning changes are referable. Another issue is the super majority voting requirement necessary for a County's Board of Adjustment to approve a conditional use permit.

While the rural areas of Edmunds County are reserved for agricultural uses, certain agricultural uses may require a case by case review. Generally speaking, concentrated animal feeding operations are one of the aforementioned uses. It is important to emphasize agricultural producers must maintain flexibility in their operations. Grain farmers are now choosing to spread their expenses over more acres to generate a small return over more acres. Like grain farmers, numerous livestock producers are choosing to accept smaller gains over larger numbers of animals to remain solvent. Edmunds County's leadership recognizes a diverse agricultural industry, relying on cash crop and animal agriculture, promotes a sustainable, balanced agricultural economy. Concentrated animal feeding operations further these goals as they create a demand for crops grown in the area, provide fertilizer for surrounding land, and yield a raw product which is, in some cases, directly sold to local residents.

### General CAFO Policies in the Edmunds County Zoning Ordinance:

- Edmunds County supports the creation and expansion of concentrated animal feeding operations in rural areas.
- All CAFOs are required to comply with applicable state and federal regulations.
- CAFOs of greater than 1,000 animal units should meet minimum requirements of the South Dakota DENR General Permit.
- Edmunds County does not prohibit the location of a CAFO over the shallow aquifer within the ordinance but does consider depth of the aquifer in the site review and conditional use permit process.

### Concentrated Animal Feeding Operation Setbacks

Edmunds County utilizes graduated setback requirements based upon the size of the CAFO. For example, a 3,000 head dairy is required to observe a minimum setback of **one-half mile** from established residences, schools, churches, and businesses. This setback is further increased by one foot for each additional animal unit over 2,000 animal units. As for setbacks from municipalities and Mina Lake, the same 3,000 head dairy can be no closer than **one mile**. This setback is also increased 1,000 feet for each 1,000 animal units over 2,000 animal units. The analysis also used a 5,000 head sow operation for the purposes of a low water use CAFO. The setback requirements for the 5,000 head sow operation are identical to the 3,000 head dairy operation. Both the dairy and swine operations would also be required to be located at least **500 feet** from lakes, rivers and streams considered fisheries. Further all CAFO's are **prohibited in a designated 100 year flood plain**.

GIS point data for churches and schools was not readily available effectively removing them from the analysis. While it is possible that some of the sites identified in the analysis as “good”, “better”, or “best” may be impacted by the location of a church or school within one-half mile of a proposed CAFO site, it is believed this potential is minimal. 77 CAFO sites in the analysis are currently zoned agricultural and either each of the individual identified parcels or a portion thereof meet setback and lot area requirements. 86 CAFO sites in the analysis are currently zoned Highway Commercial and either each of the individual identified parcels or a portion thereof meet setback and lot area requirements.

### Commercial/Industrial Development

There is very little concentrated or clustered commercial/industrial activity at the county level. Edmunds County's commercial and industrial properties are generally singular and adjacent to County and State hard surface roads. Commercial and industrial activities located in rural areas are generally not conducive to municipal or populated locales.

### Joint Jurisdiction

Edmunds County does not share zoning jurisdiction with any communities. While the CAFO setback from communities precludes the siting of a CAFO within the prescribed areas of communities, it is possible that with cooperation of a participating municipality, AID sites could be located within these areas.

## Buildable Parcel

One criterion deemed necessary to facilitate development of either a CAFO or an AID was land area. A parcel of 40 buildable acres was set as the minimum for consideration within the analysis. In order to be considered, the property must have consisted of 40 contiguous acres and able to support development upon all 40 acres. Parcels without 40 buildable acres were not considered in the final analysis.

## Proximity to Communities

The AID analysis also considered sites within one mile of a community or at specific locations identified by the County. This was done because many communities and counties have established growth plans for economic development within certain proximities of communities or at locations with existing infrastructure such as paved roads. Also since the parameters of the original AID analysis excluded all AID sites within counties without access to rail, the criterion of “proximity to a community” was defined as an adequate alternative for counties lacking rail facilities.

## **ENVIRONMENTAL**

The location of shallow aquifers in relation to potential development sites was included in the analysis. In reviewing shallow aquifers, it is critical to note that they are included in the analysis for two distinct and very different reasons. Shallow aquifers may be utilized as a potential water source to support development. These same aquifers are also vulnerable to pollution due to their proximity to the surface and may be required to be protected via setbacks and development limitations.

While the potential exists for individuals to protest CAFO and AID developments locating over aquifers, Edmunds County has not enacted nor currently enforces aquifer protection regulations more restrictive than the State of South Dakota. Therefore, sites situated over the shallow aquifer were considered eligible for development.

The analysis did consider local zoning setbacks from waters identified as fisheries by the State of South Dakota.

Prior to or contingent upon acquiring a parcel, it is assumed other environmental factors potentially affecting the property would be addressed via a Phase I Environmental Assessment or similar process. It is recommended that developers consider undertaking such an inquiry prior to executing a major commitment to a particular location.

## **INFRASTRUCTURE**

The term infrastructure is broad though in the context of property development the term includes essential services such as water, sewer, electrical, telecommunications and roads. With regards to the rural site analysis process; access to quality roads, electrical capacity and water supply were deemed essential and identified as site selection criteria.

## Transportation

Access to quality roads was identified as critical to determining the development potential of a parcel. As such, the proximity of a potential development site to either a State or County road was established as one of the parameters in conducting the rural site analysis. In addition to utilizing the South Dakota Department of Transportation's road layer to identify roads and surface types, local experts were consulted to assist in identifying the road network. District III requested the Edmunds County Highway Superintendent to identify segments of the county road system inadequate to support a CAFO or AID. Sites accessed only by township roads that were located further than one mile from the intersection of a County or State hard surface road were eliminated from the analysis.

A potential development site's proximity to certain road types impacted its designation. Those parcels abutting hard surface roads were consistently ranked higher than those served by gravel roads. In reviewing CAFO and AID sites, parcels adjacent to a County or State hard surface roads were designated "Better" or "Best" for transportation resources. Parcels within one mile of an intersection with a County or State road were designated "Good" for CAFO sites. Parcels within one mile of an intersection with a County or State hard surface road were designated "Good" for CAFO sites.

Access to rail was also considered to be an important factor in locating an AID site. Parcels adjacent to rail facilities were designated "Best". Parcels within one-half mile of rail were designated "Better" and those parcels within one mile of rail were designated "Good". The analysis also considered potential AID sites without rail within one mile of a community or at locations identified by the County. Those parcels within one mile of a municipality or at locations identified by the County are designated as "Good" or "Better".

## Electric Supply

Access to three-phase power was designated as a site characteristics criterion for both CAFO and AID development. Planning and Development District III contacted the primary provider of electricity in the rural areas, FEM (Faulk, Edmunds, and McPherson) Electric Association, to obtain the location and capacity of the three-phase infrastructure within the county. All potential CAFO or AID developable parcels adjacent to a three-phase power line were designated "Best" for electricity resources. Whereas, parcels within one mile of a three-phase power line were designated "Better" and those within two miles of a three-phase power line were designated "Good".

## Water Supply

The ability to secure specific information regarding a rural water system's operations to include storage, distribution, and capacities proved to be the most complex and difficult component of the infrastructure analysis. Due to this, water resources were evaluated differently than transportation and electric infrastructure. While transportation and electric infrastructure were classified based primarily upon location and availability of three-phase power, the analysis of rural water systems first required the evaluation of the water system, specifically, each system's supply and distribution capacities.

Development sites were then selected upon the proximity to water service. The classifications with regards to water supply and their respective criteria are as follows:

## 1. “Best” Classification

### a. CAFO

- i. High Water Use CAFO Site - If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to provide 150,000 gallons per day, the site area was designated as “Best” for water resources.
- ii. Low Water Use CAFO Site - If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to provide 30,000 gallons per day, the site area was designated as “Best” for water resources.

### b. AID

- i. High Water Use AID Site - If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to provide 410,000 gallons per day, the site area was designated as “Best” for water resources.
- ii. Low Water Use AID Site - If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to capacity to provide 30,000 gallons per day, the site area was designated as “Best” for water resources.

## 2. “Better” Classification

### a. CAFO

- i. High Water Use CAFO Site - If the site was within an area where a rural water system had either a sufficient supply **or** distribution capacity to provide 150,000 gallons per day, the site area was designated as “Better” for water resources.
- ii. Low Water Use CAFO Site - If the site was within an area where a rural water system had either a sufficient supply **or** distribution capacity to provide 30,000 gallons per day, the site area was designated as “Better” for water resources.

### b. AID

- i. High Water Use AID Site - If the site was within an area where a rural water system had either a sufficient supply **or** distribution capacity to provide 410,000 gallons per day, the site was designated as “Better” for water resources.
- ii. Low Water Use AID Site - If the site was within an area where a rural water system had either a sufficient supply **or** distribution capacity to provide 30,000 gallons per day, the site area was designated as “Better” for water resources.

## 3. “Good” Classification

- a. In the event the Rural Water System had **neither** supply **nor** distribution capacity to serve either a Low or High Water Use CAFO or a Low or High Water Use AID as defined above a “Good” designation was applied to those locations located within two miles but no closer than one-half mile of a shallow aquifer. The designation as “Good” for water resources was not applied to High Water Use AID sites due to the water volume requirements of High Water Use AID sites and the lack of available data regarding the capacity of shallow aquifers. Therefore High Water Use AID sites without a water

resource designation of “Better” or “Best” were deemed unusable for the purpose of the analysis.

The site analysis sought to address whether the rural water system serving the region had excess water treatment capacity (supply) as well as their ability to serve potential properties (distribution). In order to address the issue of supply, Planning and Development District III requested location and capacity information from the WEB Water Development Association. WEB is the primary rural water system for the county. WEB was requested to provide information regarding their available treated water capacity. In addition, WEB was requested to notate, on maps, those geographic areas where distribution capacities of 30,000, 150,000, and 410,000 gallons per day were available.

WEB Water Development Association noted limitations with capacities whether supply of distribution; thereby, limiting their ability to meet the minimum requirements of the analysis. While WEB stated that the system may have an adequate supply of water depending upon the actual location of a proposed CAFO or AID; WEB further noted that only portions of their system had the necessary distribution infrastructure to deliver the minimum volumes. WEB identified zero sites where 150,000 gallons per day, the high water user CAFO “Best” requirement, could be provided. Although, there were numerous sites to which the minimum low water user CAFO “Best” requirement of 30,000 gallons per day was available.

Similar to the CAFO sites, there were also no locations within the WEB distribution system where the high water user AID site “Best” requirement of 410,000 gallons per day could be met. However, WEB did identify numerous sites that could to which they could provide water service of 30,000 gallons per day thus meeting the Low Water AID requirement.

WEB also identified areas within the system that presently could not meet the CAFO or AID water requirements without further evaluation by their engineer and/or infrastructure upgrades. Any costs associated with an engineering analysis would be borne by the applicant while potential system upgrades would require financing alternatives.

## APPENDIX II: RESEARCH AND METHODOLOGY

This section describes the methodology utilized to evaluate the suitability of potential CAFO or AID development sites.

### Step 1: Identification of Site Assessment Criteria

**Table A1** lists the site assessment criteria identified as being necessary to conduct an analysis of potential sites. Utilizing these criteria as a guide, a variety of research methods were employed to compile the GIS data sets utilized within the analysis. Research efforts included the examination of local, regional, and state planning documents along with existing GIS data layers.

**Table A1: Site Assessment Criteria**

| CAFO Criteria                               | AID Criteria                                |
|---|---|
| Access to County and State Road Network     | Access to County and State Road Network     |
| Proximity to Three-Phase Electricity Supply | Proximity to Three-Phase Electricity Supply |
| Proximity to Rural Water System             | Proximity to Rural Water System             |
| Capacity of Rural Water System              | Capacity of Rural Water System              |
| Location of Shallow Aquifer                 | Location of Shallow Aquifer                 |
| Buildable Parcel                            | Buildable Parcel                            |
| Existing Zoning Districts/Land Use Plans    | Existing Zoning Districts/Land Use Plans    |
| Proximity to Rural Residences & Communities | Proximity to Communities                    |
| County CAFO Zoning Setback Requirements     | Proximity to Rail                           |

### Step 2: Evaluation of Site Assessment Criteria

After developing the data sets in **Table A1**, the analysis identified those site locations that:

1. Complied with zoning guidelines; and
2. Were in close proximity to infrastructure necessary to support either CAFO or AID development.

### **Concentrated Animal Feeding Operation (CAFO) Analysis**

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State road.
2. Were not within two miles of three phase electric power;
3. Did not meet the (county specific i.e. half mile) setback from (county specific uses i.e. - existing residences, churches, businesses and commercially zoned areas);
4. Did not meet the (county specific i.e. half mile) setback from municipalities; and
5. Were situated over the shallow aquifer (if a county has aquifer protection regulations).
6. Did not meet the minimum standards for available water.
7. Did not contain a buildable footprint of at least 40 acres.

After applying the local zoning and buildable footprint requirements to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A2** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” for **CAFO development**.

**Table A2: CAFO Hierarchy Classification Requirements**

| Location Criteria       | Description  | Good | Better | Best |
|-------------------------|--|------|--------|------|
| <b>Roads</b>            | Site is <u>adjacent</u> to County/State hard surface road  |      | X      | X    |
|                         | Site is within <u>one (1) mile</u> of an intersection with a County/State road   | X    |        |      |
| <b>Water</b>            | Site is <u>adjacent</u> to rural water system area that has both supply <u>and</u> distribution capacity to provide 150,000 gallons per day or 30,000 gallons per day  |      |        | X    |
|                         | Site is <u>adjacent</u> to or within rural water system area that has either supply <u>or</u> distribution capacity to serve either 150,000 gallons per day or 30,000 gallons per day  |      | X      |      |
|                         | Site is within <u>two (2) miles</u> but no closer than <u>½ mile</u> of shallow aquifer in those counties <u>with</u> aquifer protection regulations<br>or<br>Site is within <u>two (2) miles</u> of shallow aquifer and may be located over shallow aquifer in those counties <u>without</u> aquifer protection regulations | X    |        |      |
| <b>Electricity</b>      | Site is <u>adjacent</u> to three phase power   |      |        | X    |
|                         | Site is within <u>one (1) mile</u> of three phase power  |      | X      |      |
|                         | Site is within <u>two (2) miles</u> of three phase power   | X    |        |      |
| <b>Zoning</b>           | Site meets county zoning setback requirements  | X    | X      | X    |
| <b>Aquifer</b>          | Site meets county aquifer protection regulations (if applicable)   | X    | X      | X    |
| <b>Buildable Parcel</b> | Site contains buildable area of at least forty <u>(40) acres</u>   | X    | X      | X    |

## **Agriculturally-related Industrial Development (AID)**

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State hard surface road.
2. Were not within two miles of three phase electric power;
3. Were not within one mile of rail, if applicable;
4. Were not within one mile of a community or at locations identified by the county
5. Were situated over the shallow aquifer (if a county has aquifer protection regulations).
6. Did not meet the minimum standards for available water.
7. Did not contain a buildable footprint of at least 40 acres.

After applying the required location based site assessment criteria to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric, rail and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A3** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” **for AID development**.

**Table A3: AID Hierarchy Classification Requirements**

| Location Criteria | Description   | Good | Better | Best |
|-------------------|---|------|--------|------|
| Roads             | Site is <u>adjacent</u> to County/State hard surface road   |      | X      | X    |
|                   | Site is within <u>one (1) mile</u> of an intersection with a County/State hard surface road   | X    |        |      |
| Rail              | Site is <u>adjacent</u> to rail facility  |      |        | X    |
|                   | Site is within <u>one half ½ mile</u> of rail facility  |      | X      |      |
|                   | Site is within <u>one (1) mile</u> of rail facility   | X    |        |      |
| Water             | Site is <u>adjacent</u> to or within rural water system area that has <u>either</u> supply <u>or</u> distribution capacity to serve 410,000 gallons per day or 30,000 gallons per day   |      |        | X    |
|                   | Site is adjacent to or within <u>one (1) mile</u> of rural water system area that has <u>either</u> supply <u>or</u> distribution capacity to serve 410,000 gallons per day or 30,000 gallons per day   |      | X      |      |
|                   | Site is within <u>two (2) miles</u> but no closer than <u>one half (½) mile</u> of shallow aquifer in those counties <u>with</u> aquifer protection regulations<br>or<br>Site is within <u>two (2) miles</u> of shallow aquifer and may be located over shallow aquifer in those counties <u>without</u> aquifer protection regulations | X    |        |      |
| Electricity       | Site is <u>adjacent</u> to three phase power  |      |        | X    |
|                   | Site is within <u>one (1) mile</u> of three phase power   |      | X      |      |
|                   | Site is within <u>two (2) miles</u> of three phase power  | X    |        |      |
| Zoning            | Site is zoned for commercial/industrial development   |      |        | X    |
|                   | Site is identified in land use plan for commercial/industrial development   |      | X      |      |
|                   | Site is neither identified or zoned for commercial/industrial development   | X    |        |      |
| Proximity         | Site is within <u>one (1) mile</u> of community   | X    | X      |      |
| Aquifer           | Site meets county aquifer protection regulations (if applicable)  | X    | X      | X    |
| Buildable         | Site contains buildable area of at least forty ( <u>40</u> ) acres  | X    | X      | X    |

### Step 3: Site Development Recommendations

Based on the analysis, **163** sites were classified as Good, Better, or Best for CAFO development (**Table A4**) and **216** sites were classified as Good, Better, or Best for AID development (**Table A5**). Although, as noted earlier, the Highway 12 corridor is zoned Highway Commercial (HC) with **86** of the CAFO sites located within this area. Location within a Highway Commercial District does not prohibit development; the required conditional use process may delay or derail development

While this study only identifies those sites that met the required criteria for the analysis, it should be noted that other sites within the county may be satisfactory for CAFO and AID development. Sites not within the specified distance of a hard surfaced county or state road or does not have desired infrastructure (rail, water, power) within close proximity does not necessarily negate its development potential.

**Table A4:  
Edmunds County CAFO Sites by Hierarchy Classification**

| <b>CAFO Site Classification</b> | <b>Good Sites</b> | <b>Better Sites</b> | <b>Best Sites</b> |
|---------------------------------|-------------------|---------------------|-------------------|
| Low Water CAFO                  | 62                | 25                  | 76                |
| High Water CAFO                 | 91                | 14                  | 58                |

**Table A5:  
Edmunds County AID Sites by Hierarchy Classification**

| <b>AID Site Classification</b> | <b>Good Sites</b> | <b>Better Sites</b> | <b>Best Sites</b> |
|--------------------------------|-------------------|---------------------|-------------------|
| Low Water AID                  | 70                | 81                  | 65                |
| High Water AID                 | 0                 | 0                   | 0                 |

## APPENDIX III: CONTACT INFORMATION

### **Planning & Development District III**

Executive Director: Greg Henderson  
GIS Coordinator, GISP: Harry Redman  
Community Development Specialist: Brian McGinnis  
Phone: (605) 665-4408

### **First District Association of Local Governments**

Executive Director: Todd Kays  
GIS Coordinator: Ryan Hartley  
Phone: 605-882-5115

### **Northeast Council of Governments**

Executive Director: Eric Senger  
Phone: 605-626-2595

### **Edmunds County**

Director of Equalization: Sandra Northrop  
Phone: (605) 426-6841  
Planning and Zoning Director: Annette Jones  
Phone: (605) 426-6841  
Highway Superintendent: Lenny Uhrich  
Phone: (605) 426-6761

### **Rural Water Systems**

WEB Water Development Association  
Steve Harper  
Email: [sharper@webwater.org](mailto:sharper@webwater.org)  
Phone: (605) 229-4749

### **Electric Providers**

FEM (Edmunds, Edmunds, McPherson) Electric Association, Inc.  
Scott Moore  
Email: [info@femelectric.coop](mailto:info@femelectric.coop)  
Phone: (605) 426-6891

Northern Electric  
Char Hager  
Email: [chager@northernelectric.coop](mailto:chager@northernelectric.coop)  
Phone: (605) 225-0310

### **Other Resources - Aquifer**

First Occurrence of Aquifer Materials in Edmunds County, South Dakota  
Department of Environment and Natural Resources  
Division of Financial and Technical Assistance  
Geological Survey Aquifer Materials Map 31  
Layne D. Schulz and Kyle N. Smith, 2011  
[http://www.sdgs.usd.edu/pubs/pdf/AM-31\\_20110706.pdf](http://www.sdgs.usd.edu/pubs/pdf/AM-31_20110706.pdf)