

Estimated Economic Effects for The Prospective Fagen Ethanol Project at Central City, Nebraska

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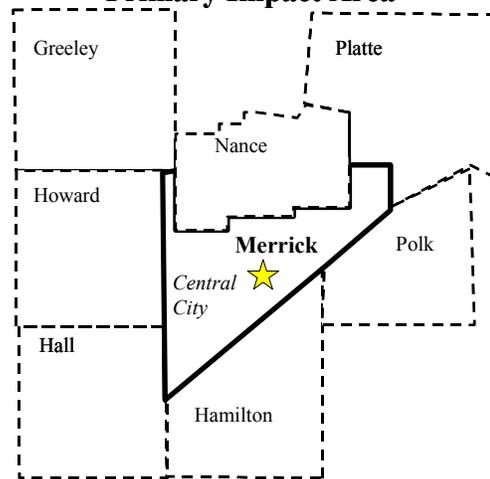
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Introduction

This report presents an analysis of the estimated employment and economic impacts that would be expected to be associated with operation of a prospective ethanol processing facility located at Central City, (Merrick County) Nebraska. The methodology employed to estimate the economic effects of the project utilizes a computerized input/output model constructed for a eight-county area in Central Nebraska, including Merrick County and the contiguous counties (Greeley, Hall, Hamilton, Howard, Nance, Platte, and Polk Counties - see Figure One). This model was developed with the 2000 Micro IMPLAN database and input-output modeling software. The IMPLAN database consists of 21 economic and demographic variables for 528 industrial sectors for each of the 3,000 counties in the United States. Some of these variables include employment, payments to labor (labor income), payments to other factors of production, and output by industry sector, as well as government purchases and household purchases.

Figure One
The Central City (Fagen) Ethanol Project
Primary Impact Area



The IMPLAN modeling software and database has been used to build an input/output model for the primary impact area that identifies inter-industry linkages within the local economy. From this model, multipliers are developed (employment, labor income, other property income and output) that can be applied to assess the anticipated economic and employment effects associated with the operation of the proposed ethanol facility.

Although the prospective ethanol project for which this impact analysis is undertaken would be located in Central City (Merrick County), Nebraska, it is expected that the primary inputs (corn, labor and other inputs) for the project will be obtained from a significant area surrounding Central City. The geographic area included within the primary impact area used in this evaluation includes the multi-county region shown in Figure One.

Direct Economic Effects

Information relating to the operation of the prospective Fagen Ethanol Project in Central City (Merrick County) was provided by the project sponsor. The analysis provided in this report assumes the plant will have the capacity to produce 40 million gallons of

ethanol along with 128,000 tons of distiller’s grains. The plant is expected to provide 33 jobs (FTEs), and the payroll is estimated to \$1,200,000 annually, including benefits and other add-ons.

It is expected that the ethanol production facility will use a dry milling process to prepare the feedstock for conversion to ethanol and other products. Estimates of the direct economic effects associated with the operation of the prospective Central City (Merrick County) ethanol facility are presented in Table One. As the data in the table indicate, the total value of annual production for the facility is estimated at \$60,800,000, including \$48,000,000 for the ethanol and \$12,800,000 for the other product (distiller dried grains). The estimated direct addition to “Other Property Income,” as presented in Table One, is estimated to be \$1,824,000. Other Property Income is defined as payments for rents, royalties, and dividends. Payments to individuals in the form of rents received on property, royalties from contracts, and dividends paid by corporations are included here as well as profits earned by corporations. The estimate for Other Property Income used in this analysis was derived from the IMPLAN input/output model and database for the Central City project study area.

Table One	
Estimated Direct Effects Associated with the Operation of the Fagan Ethanol Project at Central City, Nebraska	
Employees (F.T.E. Number)	33
Employee Payroll with Benefits	\$1,200,000
Other Property Income ^(a)	\$1,824,000
Total Labor & Other Property Income	\$3,024,000
Value of Plant Output	
Ethanol (40,000,000 Gal. @ \$1.20)	\$48,000,000
DDGS (128,000 Tons @ \$100.00)	\$12,800,000
Total Value of Output	\$60,800,000
Indirect Business Taxes ^(b)	\$1,157,600

^(a) Other Property Income consists of payments for rents, royalties, and dividends. Estimated from the IMPLAN Model and Database.

^(b) Indirect Business Taxes include property and other taxes and fees, except taxes on profits or income. Estimated from data provided and from the IMPLAN Model and Database (see text).

Source: Basic data on the operation of the facility provided by the project sponsor. Other data derived from the IMPLAN Model and Database, where noted.

Annual property taxes for the prospective Fegan ethanol project in Central City (Merrick County) are expected to be \$988,711, which are included in the category, indirect business taxes, shown in Table One. The estimated indirect business taxes (\$1,157,600) shown in Table One include the estimate of \$988,711 for property taxes, and also an

estimate of \$168,900 for additional indirect business taxes, including additional excise, property taxes, fees, licenses and sales and other taxes paid during the course of the normal operation of a business. It is important to recognize, however, that these indirect business taxes do not include taxes on profits or income.

Economic Impact Analysis

To analyze the potential economic effects associated with the operation of the prospective Fegan ethanol facility, an input-output model for the study area was constructed utilizing the Micro IMPLAN database and input-output modeling software. The methodology employed to estimate the economic effects of the project utilizes the computerized input/output model constructed for a eight-county area in Central Nebraska, including Merrick County and the contiguous counties (Greeley, Hall, Hamilton, Howard, Nance, Platte, and Polk Counties - see Figure One). This model was developed with the 2000 Micro IMPLAN database and input-output modeling software.

The estimate of the secondary (indirect and induced) economic effects results from an evaluation of the capacity of the study area economy to supply the increased demand for goods and services resulting from the operation of the prospective ethanol facility. In the case of the Central City study area economy (Merrick County and the contiguous counties), much of the project-dependent local demand for corn and other raw material inputs will be provided from the study area and will have positive effects on the study area that are not explicitly addressed in this analysis. For example, the increased demand for corn (and other feedstock inputs) will have a positive effect on prices paid to producers. These effects are not captured in the analysis of the impacts associated with the operation of the prospective ethanol project. In the case of the increased demand for other goods and services created by the operation of the ethanol plant, a portion will be provided by the local economy with the balance of these goods and services needing to be imported from outside of the study area.

Estimated Economic Effects Associated with the Prospective Fegan Ethanol Facility

As the data provided in Table One indicated, the analysis of the economic effects associated with the operation of the prospective Fegan ethanol project in Merrick County starts with the direct employment, output, and labor income and other payments to the factors of production that this facility is estimated to generate. The data presented in Table One provided basic data on the direct employment, labor and other property income, the value of output, and indirect business taxes associated with the operation of the subject ethanol facility. Using these estimates, in conjunction with the multiplier values derived from the IMPLAN input/output model, estimates of the indirect and total employment and economic effects associated with the operation of the prospective ethanol facility have been derived. The estimates of the secondary (indirect and induced) and total economic and employment effects associated with the ethanol facility are presented in Table Two.

Table Two
Estimated Employment, Personal Income and Output and Related Tax Effects
Associated with the Fagen Ethanol Project at Central City, Nebraska,
(Annual Estimates)

Employment Effects	Ethanol Project	Households	Total
Direct Employment (FTE)	33.0	0.0	33.0
Indirect (1.9030 of Direct)	62.8	0.0	62.8
Induced (0.9545 of Direct)	0.0	31.5	31.5
Total Employment (FTE)	95.8	31.5	127.3
Personal & Other Property Income Effects			
Direct Personal & Property Income	\$3,024,000	\$0	\$3,024,000
Indir. Pers. & Prop. Inc. (0.5238 of Direct)	\$1,583,827	\$0	\$1,583,827
Induced Pers. & Prop. Inc. (0.2056 of Direct)	\$0	\$621,695	\$621,695
Total Personal & Other Property Income	\$4,607,827	\$621,695	\$5,229,522
Indirect Business Taxes Effects			
[Direct] Indirect Business Taxes	\$1,157,600	\$0	\$1,157,600
[Indirect] Indirect Bus. Taxes (0.1821 of Dir.)	\$210,788	\$0	\$210,788
[Induced] Indirect Bus. Taxes (0.0721 of Dir.)	\$0	\$83,426	\$83,426
Total Indirect Business Taxes	\$1,368,388	\$83,426	\$1,451,814
Output Effects			
Direct Output	\$60,800,000	\$0	\$60,800,000
Indirect Output (0.2828 of Direct)	\$17,197,219	\$0	\$17,197,219
Induced Output (0.0858 of Direct)	\$0	\$5,214,846	\$5,214,846
Total Output	\$77,997,219	\$5,214,846	\$83,212,065

Source: Computed from the data presented in Table One and from the IMPLAN Input/Output Model constructed for the Central City Ethanol Project Study Area economy (see text).

- Employment Effects

As indicated by the data presented in Table One, the annual employment directly related to the operation of the prospective Fagen ethanol production facility in Central City (Merrick County) is expected to be 33 employees (FTEs). The direct, secondary (indirect and induced), and total employment effects resulting from the increase in economic activity associated with the operation of the facility are presented in Table Two. As these data indicate, the total employment effects for the Central City ethanol project impact area are estimated to be 127.3 jobs (33 direct F.T.E.s and 94.3 secondary, or 62.8 indirect and 31.5 induced jobs).

- Labor Income and Other Income Effects

The employment and economic activity generated by the operation of the prospective Fagen ethanol facility in Central City (Merrick County) will add a significant amount of labor and other property type income to the economy of the project impact study area. The estimate of the direct effects on total employment and labor income were obtained from the project sponsors and, in the case of the other property-type income, from the Micro IMPLAN database (See Table One). As the data presented in Table One indicated, the direct employment in the prospective ethanol facility will result an estimated direct addition of \$1,200,000 in labor income (including benefits) to the economy of the project impact study area, along with an estimated \$1,824,000 in other

property-type income. In the case of the other property-type income, this consists of payments for rents, royalties, and dividends. Utilizing the multiplier values from the IMPLAN input/output model constructed for the Central City (Merrick County) study area, the total income effects (labor income plus other property-type income) for the prospective Fagen ethanol facility are estimated to be \$5,229,522. This represents the estimate of the annual income effects in the study area associated with the facility, stated in constant dollars.

- Total Output Effects

Total output (value of output) directly associated with the operation of the prospective ethanol facility was estimated at \$60,800,000 annually (See Table One). Using this as the direct output component, the total output effects associated with the prospective ethanol facility shown in Table Two, including the direct and secondary effects, are estimated to be \$83,212,065.

- Indirect Business Taxes Effects

Indirect business taxes (IBT) expected to be paid by the prospective ethanol facility are estimated to be \$1,157,600 (see Table One), and include an estimated \$988,711 of direct property taxes on the plant and equipment. The indirect business taxes, in addition to the property taxes on the plant itself, include taxes on other property, excise taxes, fees, licenses, sales tax, and other taxes that occur during the normal operation of businesses, but do not include taxes on profits or income. As the data presented in Table Two indicate, the total indirect taxes for the prospective Fagen ethanol project are estimated at \$1,451,814 annually, including the direct and secondary indirect business taxes effects.

- Retail Sales Effects

Among the significant economic impacts that the operation of the prospective Fagen ethanol facility in Central City (Merrick County) would have on the local economy are positive effects on assessed property valuation, growth in property tax revenues, and an increase in sales tax revenues and retail sales. While this analysis has captured a portion of these positive tax effects, in terms of the indirect business taxes, this section considers the probable positive effects of the facility on retail sales for the Central City (Merrick County) project study area.

Table Three presents data on total personal income and retail sales for Nebraska portion of the primary impact area (Merrick County and the contiguous counties) for the period, 1990-2000. As these data indicate, retail sales in the area have averaged 38.2 percent of total personal income during this period.

Given these data, the derivation of an estimate of the retail sales impact associated with the operation of the prospective Fagen ethanol facility in Merrick County is made by assuming that retail sales generated by the economic activity associated with the facility would equal 38.2 percent of the increase in personal income associated with the prospective facility. For the purposes of this analysis, we assume that the personal income associated with the operation of the ethanol facility will equal the total labor income associated with the facility of \$2,633,480 and 50 percent of the total other

property-type income (.5 x \$2,596,040 = \$1,298,020) for a total of \$3,931,500. Given the estimated addition to personal income in the study area, the retail sales associated with the prospective Fagen ethanol facility in Merrick County are estimated to be \$1,501,830 annually (38.2% x \$3,931,500).

Table Three
Total Personal Income and Retail Sales,
Central City Ethanol Project Impact Area^(a), 1990-2000

Year	Total Personal Income (\$1,000)	Total Retail Sales (\$1,000)	Retail Sales as % of T.P.I. (%)
1990	1,929,637	767,718	39.8
1991	2,021,492	787,611	39.0
1992	2,114,167	817,353	38.7
1993	2,134,133	837,285	39.2
1994	2,289,205	900,103	39.3
1995	2,371,906	924,120	39.0
1996	2,628,093	945,540	36.0
1997	2,640,379	991,691	37.6
1998	2,748,888	1,038,066	37.8
1999	2,840,635	1,046,132	36.8
2000	2,926,295	1,084,210	37.1
2001	N/A	1,098,584	N/A
Average, 1990-2000			38.2

N/A - Not Available.

^(a) Project Primary Impact Area includes Merrick County and the contiguous counties (Greeley, Hall, Hamilton, Howard, nance, Platte, and Polk Counties).

Sources: Total personal income: U.S. Dept. of Commerce, Bureau of Economic Analysis.

Retail sales data: Nebraska Dept. of Revenue.

If further information about this analysis is desired or if the reader has questions about any aspect of this report, please contact:

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