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# Potential Economic Impact of the Goshen/Gering-Ft. Laramie Tunnel Collapse

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# Cornhusker Economics

## Potential Economic Impact of the Goshen/Gering-Ft. Laramie Tunnel Collapse

Market Report	Year Ago	4 Wks Ago	8/30/19
<b>Livestock and Products.</b>			
<b>Weekly Average</b>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight. . . . .	*	*	*
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb. . . . .	176.47	183.34	164.59
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb. . . . .	163.87	155.53	149.86
Choice Boxed Beef, 600-750 lb. Carcass. . . . .	212.03	213.96	234.35
Western Corn Belt Base Hog Price Carcass, Negotiated . . . . .	36.84	*	*
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean. . . . .	64.72	86.19	72.92
Slaughter Lambs, woolled and shorn, 135-165 lb. National. . . . .	145.99	159.96	154.20
National Carcass Lamb Cutout FOB. . . . .	382.78	396.31	397.06
<b>Crops.</b>			
<b>Daily Spot Prices</b>			
Wheat, No. 1, H.W. Imperial, bu. . . . .	4.80	3.87	3.31
Corn, No. 2, Yellow Columbus, bu. . . . .	3.28	4.09	3.66
Soybeans, No. 1, Yellow Columbus, bu. . . . .	7.28	7.67	7.68
Grain Sorghum, No.2, Yellow Dorchester, cwt. . . . .	5.00	6.34	5.51
Oats, No. 2, Heavy Minneapolis, Mn, bu. . . . .	2.90	2.99	2.99
<b>Feed</b>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton. . . . .	185.00	*	*
Alfalfa, Large Rounds, Good Platte Valley, ton. . . . .	100.00	115.00	110.00
Grass Hay, Large Rounds, Good Nebraska, ton. . . . .	102.50	105.00	105.00
Dried Distillers Grains, 10% Moisture Nebraska Average. . . . .	139.00	136.50	131.50
Wet Distillers Grains, 65-70% Moisture Nebraska Average. . . . .	41.50	10.50	44.00
* No Market			

Note: Since this analysis was completed, the USDA Risk Management Agency determined that crop losses caused by this event would be covered by federal crop insurance, which will decrease the economic impact of this event.

Some surface-water irrigators along the North Platte River in Goshen County, WY, and Scotts Bluff County, NE lost their irrigation water supply due to a partially collapsed tunnel on the Goshen/Gering-Ft. Laramie Canal. The water disruption affected 107,325 acres of cropland in these two counties. A recent report by the University of Wyoming and University of Nebraska-Lincoln estimated the economic impact of this event.

### Background

Goshen and Scotts Bluff Counties reside in the High Plains and receive less than 16 inches of average annual precipitation. This low precipitation makes surface-water irrigation a critical component of modern agriculture in this area. Farmers in these counties produce irrigated alfalfa hay, corn, sugar beets, and dry edible beans, as well as other hay and crops.

Groundwater is also used for irrigation in this area. Groundwater refers to water pumped by high capacity wells from below-ground aquifers. Some farms have access to both surface water and ground water. However, the majority rely on just one source.

*Surface-water* refers to water derived from melted snow that is delivered through a series of dams and canals from the mountains of Colorado and Wyoming along the North Platte River. This infrastructure, often referred to as “The North Platte Project,” was built by the Department of Interior and Bureau of Reclamation in the early 1900s. The North Platte Project has supplied surface-water to 368,433 acres of farmland in Nebraska and Wyoming for over a century.

The canals and structures are a part of the North Platte Project and are operated and maintained by irrigation districts in Nebraska and Wyoming, including the Goshen Irrigation District (Wyoming) and the Gering-Ft. Laramie District (Nebraska), which share a canal. The Goshen/Gering-Ft. Laramie Canal delivers surface water to farmers south of the North Platte River. The Goshen/Gering-Ft. Laramie canal is 130 miles long, with three tunnels, and provides surface water to 107,325 acres of cropland in Goshen and Scotts Bluff counties.

A 2,200’ tunnel on the Goshen/Gering-Ft. Laramie canal collapsed July 17, 2019. Diversions of water to the Goshen/Gering-Ft. Laramie Canal were stopped for six weeks in order to inspect and temporarily repair the damage. The disruption of water during this critical period of crop growth was detrimental to crop yield.

Crop insurance provides protection against *unavoidable, naturally occurring events*. At the time of the collapse, it was unclear if crop insurance would cover the crop loss caused by this event. Several factors may have contributed to the tunnel collapse. According to a report by the National Weather Service in Cheyenne “precipitation has been upwards of 200-300% above normal for the past water year (1 Oct. 2018 to present).” However, the tunnel in question was built in 1917 by the Bureau of Reclamation, which owns the structure. The Goshen Irrigation District and Gering-Fort Laramie Irrigation District were responsible for the operation and maintenance of the tunnel.

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<sup>2</sup> The North Platte Project is also used for hydroelectric power generation, flood control, recreation, municipal and industrial water supplies, sediment retention, pollution abatement, protection of endangered species and wildlife habitat.

## **Analysis**

A recent report by the University of Wyoming and University of Nebraska-Lincoln examined the potential annual economic impact of the Goshen/Gering-Ft. Laramie Tunnel Collapse. This analysis assumed a total loss of corn, dry edible beans and sugar beets in the affected region and a one third loss of alfalfa production, with no compensation for yield loss by federal crop insurance. Other hay and other crops could not be estimated by this analysis due to a lack of historical information regarding acreage, yield and price.

Production of irrigated crops is critical to these two rural counties. The production and processing of irrigated agriculture goods has both direct and re-spending effects.

A direct effect measured the economic impact of the loss of irrigated crop production in each county. Agricultural production statistics maintained by the United States Department of Agriculture (USDA) were used to estimate irrigated crop production in the affected area. The direct impact is the primary impact on the two counties’ economies.

There is also a re-spending impact, which measures the money generated, or in this case lost, by the production and sale of irrigated crops as it circulates further within the regional economy and is exported out of the region. For example, farmers purchase goods and services, and the employees (and their households) of grain processors and other businesses linked to farming spend their paychecks throughout the economy on household purchases, including housing, food, other retail items, entertainment, health care, insurance, and the like. These additional revenues beget more opportunities and spending, which beget another round. These rounds are not infinite; the amount of economic activity diminishes due to savings and other leakages. Re-spending impacts are estimated using an IMPLAN model<sup>3</sup>.

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<sup>3</sup> IMPLAN is a regional economic analysis software application that is designed to estimate the impact or ripple effect (specifically backward linkages) of a given economic activity within a specific geographic area through the implementation of its Input-Output model. Studies, results, and reports that rely on IMPLAN data or applications are limited by the researcher’s assumptions concerning the subject or event being modeled.

Although most economic activity related to irrigated crop production would happen in the in Goshen and Scotts Bluff Counties, the economic impact of this collapse is not confined by county boundaries. Table 1 shows the direct economic impact to the two affected counties, the re-spending impact, and the total two state impact. This analysis assumed a total loss of corn, dry edible beans and sugar beets in the affected region and the one third loss of alfalfa production **with no compensation for yield loss by federal crop insurance.**

The total potential annual economic impact of this tunnel collapse is \$89.13 Million. Since this analysis was completed, the USDA Risk Management Agency determined that crop losses caused by this event would be covered by federal crop insurance, which would decrease the economic impact of this event.

To view the full economic report, and latest information about the canal collapse visit: [go.unl.edu/canal](http://go.unl.edu/canal)

**Table 1. Total Impact of the Goshen/Gering-Ft. Laramie Canal Collapse**

Measure	Direct impact <sup>4</sup>	Re-spending Impact	Total Impact <sup>5</sup>
Labor Income (Millions \$)	11.71	2.16	25.27
Value-Added (Millions \$)	17.92	2.21	39.56
Output (Millions \$)	51.9	1.72	89.13

Source: University of Wyoming Extension, Roger Coupal-State Community Development Specialist

<sup>4</sup> Direct Impact in two county region.

<sup>5</sup> Total Impact in two state region.

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