# The Proposed Denver Ordinance Banning Animal Slaughter: Implications for the Animal Sector and Economy

**Dawn Thilmany, Jennifer Martin, Robert Delmore, and Rebecca Hill**

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Authors are employed by Colorado State University (CSU). Thilmany is a Professor, Dept. of Agricultural and Resource Economics; Martin is an Associate Professor, Dept. of Animal Sciences; Delmore is a Professor, Dept. of Animal Sciences; Hill is an Extension Professor with CSU Extension.

## Preface

Colorado State University's commitment to its land grant mission includes stewarding agriculture's prosperity through research, education, service, and industry partnerships. Our purpose, rooted in this land grant mission, is to provide future generations with vibrant agriculture, a healthy environment, and thriving communities. With a commitment to cultivating inclusive and respectful conversations, this document informs policy discussions that will shape the future of agriculture.

We acknowledge the diversity and plurality of opinions around the topics that influence this ballot initiative. Our working relationships with livestock producers, farmers, ranchers, and meat processors are significant, longstanding and valued. At the same time, we believe the conclusions of our analysis are independent, data-based and speak for themselves. We encourage the readers and users of this document to consider the multitude of impacts from a slaughterhouse ban in the City and County of Denver.

## Executive Summary

An ordinance banning animal slaughterhouses in the City and County of Denver is proposed for the 2024 election cycle. The ordinance is generating discussion about potential changes to the local food system, workforce, and meat supply chain in Denver as well as broader impacts to the Colorado economy. This policy brief describes the meat slaughter and processing sector in Denver with special attention to lamb processing, which represents nearly all the slaughter in the city and county. Analysis includes evolving consumer preferences for meat, potential disruptions to the livestock supply chain, and estimates of economic impacts to the Denver and Colorado economies. The text that follows fills an existing information gap when considering the impacts of the ordinance if it is enacted in 2024 and implemented in 2026.

The proposed ordinance arrives at a time of change in the food system. Evolving consumer preferences are among the most influential drivers of change. The demand for meat and meat products is strong and growing, while active dialogue encourages continuing innovation in the industry's investments in sustainability and animal welfare.

Stated simply, two viewpoints underly the proposed ordinance:

- Proponents argue that a slaughter ban in the City and County of Denver is better aligned with voter values compared to the status quo. Proponents believe that a policy change is needed to bolster an animal welfare movement and address broader externalities and public impacts from food systems, which might include odors in local neighborhoods.
- Opponents argue that the ordinance does not reflect the preferences of a larger segment of consumers who prefer locally produced meat products and who seek access to these products. Opponents suggest that the ordinance will result in significant negative economic impacts, including a reduction in economic activity, lost wages, and food insecurity. They point to disruption in the meat supply chain as a potential negative consequence that will extend to national markets.

Most economists believe that markets, rather than outright bans, are a more efficient and equitable mechanism for allocating resources and meeting consumer demands. Markets allow consumers and businesses to "vote with their dollars" and purchase products that align with their

values. In this system, public sentiment is revealed with buying behavior. Encouraging consumer choice results in better outcomes.

Voters benefit from readily available information when making a choice at the ballot box. This brief lays out some of the tradeoffs and key issues to consider for this decision.

Summary points of this policy brief include:

- Consumers express strong support for Colorado agriculture[1], individuals believe that producers are managing their animals humanely, and consumers express willingness to buy more of their food from local and regional sources. These consumer segments are sometimes willing to pay significant premiums for meat products created with specific production attributes including accepted humane handling of animals. Serving these markets requires an underlying infrastructure and supply chain so that the identity of these attributes is preserved. The proposed ballot ordinance will have implications for meat supply chain infrastructure. Probable impacts of the ban extend beyond local markets to state and national supply chains because of the significant role that Colorado's processing sector plays in lamb supply chains.
- The meat sector is increasing processing capacity, which in turn is beneficial for local producers and markets. These new facilities tend to be smaller in scale than the status quo and are less cost efficient compared to larger facilities. Local market access is needed for the economic viability of smaller facilities. The proposed ordinance will limit access to important retail markets in Denver.
- Economic analysis considers three scenarios if the ordinance is passed and implemented. Estimated outcomes include:
    - In the most pessimistic scenario, Denver-based processing closes and leaves Colorado, reducing economic activity by more than $861 million and reducing the workforce by more than 2,787 jobs.
    - If half of the Denver area slaughter activity relocates to other parts of Colorado, lost economic activity is greater than $430 million and the labor force is reduced

[1] A 2022 survey of Colorado Public Attitudes that will be referenced in this report occasionally, and that full report is available at: https://ag.colorado.gov/markets/publications/public-attitudes-survey-2022

by 1,394 jobs.

- If businesses in Colorado expand their capacity to 80% of the level once processed in Denver County, Colorado may still lose 697 jobs and over $215 million in economic activity.
- The estimated losses extend to animal production, animal food manufacturing, support activities for agriculture and forestry, grain farming, truck transportation, and wholesale sectors such as grocery.
- Caveats apply to the analysis. The estimates are a snapshot in time, and do not consider multiple year effects that accumulate in the economy. Single year impacts are likely repeated, perhaps at a lower level in subsequent years. Consumers, buyers, and suppliers may adapt their buying/selling behavior to alternatives, such as imported lamb, in the absence of availability from local markets. These adaptations may diminish annual impacts to the economy when considered across multiple years. In addition, reduced access to local meat sources may result in business closures, and this has not been considered in the analysis. Business exit will have negative spillovers in the local economy.

## Description of Proposed Ordinance

An ordinance banning animal slaughterhouses in Denver City and County is proposed for the 2024 election cycle and ballot. The Denver County Clerk and Recorder frames the following language for the Fall 2024 election ballot:

*Under Denver Charter § 8.3.2, the Clerk and Recorder has designated and fixed the following final title:*

> *Shall the voters of the City and County of Denver adopt an ordinance prohibiting slaughterhouses, and, in connection, beginning January 1, 2026, prohibiting the construction, maintenance, or use of slaughterhouses within the City; and requiring the City to prioritize residents whose employment is affected by the ordinance in workforce training or employment assistance programs?*

The proposed ordinance is generating dialogue about changes to the local food system, workforce, and meat value chain in Denver and the Colorado economy. This document describes the meat slaughter and processing sector in Denver with special attention to lamb processing, which represents the vast majority of slaughter activity. The following text considers consumer preferences for meat, examines potential disruptions to the livestock supply chain, and estimates economic and labor impacts to the Denver and Colorado economies. The information that follows fills an existing information gap for voters when considering the impacts of the ordinance that will be voted on in 2024 and, if passed, will be implemented in 2026.

## Scope of this document

The proposed ordinance is of significant interest to residents, as well as the local, regional, and national media[2]. The ordinance mirrors policy considered in other jurisdictions[3] including a recent initiative in South Dakota. Public consideration of agriculture and food issues is common

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[2] Measures to ban slaughterhouses, fur sales in Denver will be on 2024 ballot: https://kdvr.com/news/local/measures-to-ban-slaughterhouses-fur-sales-in-denver-will-be-on-2024-ballot/

[3] Slaughterhouse ban rejected by Sioux Falls voters: https://www.dakotanewsnow.com/2022/11/09/slaughterhouse-ordinance-race-tilting-toward-being-shot-down/

in Colorado, including recent statewide legislation on cage-free eggs and wolf reintroduction. More localized bans are less common. Complex interactions underscore the ballot measures, and passage may generate unintended consequences. Considering a full range of market, economic and community considerations is helpful for prospective voters and citizens.

This policy brief is organized around four main objectives:

**Objective 1**: Share a description of the meat processing sector in Denver, as well as a description of the Denver and Colorado meat supply chains.
**Objective 2:** Frame an economic overview of Colorado animal supply chain dynamics with a particular focus on lamb, as well as evaluating market changes that may arise from the proposed Denver ordinance.
**Objective 3**: Present a broadly framed set of economic scenarios to estimate the Colorado-wide economic implications from passage of the ordinance.
**Objective 4:** Describe selected contextual issues informing the proposed ordinance.

**Objective 1: Share a description of meat processing sector in Denver, as well as a description of the Denver and Colorado meat supply chains.**

The majority of sheep and lambs raised in Colorado are harvested in USDA-inspected facilities or custom-exempt facilities in Colorado. Only USDA-inspected facilities may access domestic and international markets, while custom-exempt facilities are not eligible for commerce and the products must be consumed by the owner of the animal. These differences in market access are described in a publication by the Colorado Food System Advisory Council examining infrastructure capacity and access to processing options in the state (https://cofoodsystemscouncil.org/wp-content/uploads/2021/04/MeatValueChain_4-20-21.pdf).

Colorado lamb producers have their lambs harvested at USDA-inspected facilities so they can access markets. Producers rely heavily on two large slaughter facilities—Superior Farms (Denver, CO; with processing capacity of up to 500,000 head/year) and Colorado Lamb Processors (Brush, CO; up to 165,000 head/year). These two facilities offer just enough capacity to process the lambs raised in Colorado. These federally inspected facilities give robust market access to buyers and consumers, while improving profitability of Colorado lamb producers. The Denver-based Superior Farms facility is particularly important because it exclusively offers fabrication — breaking down of lamb carcasses into smaller, retail-sized cuts — and further processing. The other large USDA-inspected lamb processing facility in Colorado, Colorado Lamb Processors, ships full carcasses to the East Coast for fabrication, further processing, and distribution. Lambs harvested at Colorado Lamb Processors are not distributed within Colorado. Notably, the Superior Farms facility is one of the few large-scale USDA-inspected lamb slaughter facilities in the Mountain West region, and lamb producers from surrounding states transport their lambs to Superior Farms in Denver for harvest.

In the short term, the meat supply chain struggles to accommodate the lost processing capacity. For example, the closure of the Mountain States Rosen lamb slaughter and processing facility in Greeley, CO in 2020 resulted in a shortage of lamb processing capacity across the entire United States. The shortage was addressed only through the construction of new processing facilities in other states (Northern Ag Network, 2020). Another relevant comparison is the loss of beef slaughter capacity resulting from a fire at the Tyson Foods beef processing facility in Holcomb, KS in 2019. At the time, the plant was responsible for 6% of the U.S. beef slaughter capacity. The loss of beef slaughter capacity resulted in significant supply chain disruptions, including reduced profitability for producers, increased prices for consumers, and heightened pressures on other facilities to accommodate harvest-ready cattle. The impacts of the fire are still observed today.

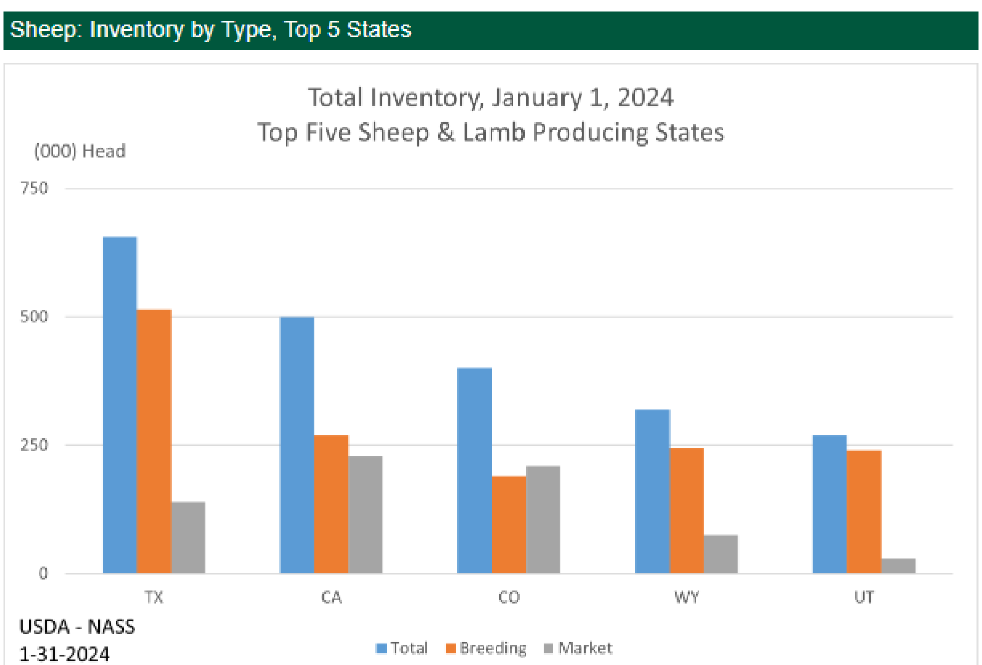
The Superior Farms facility in Denver, CO accounts for 15-20% of the total lamb slaughter capacity in the United States (USDA Livestock Slaughter Reports and Personal Communication with Superior Farms). Shutting down this facility is likely to substantially impact the U.S.-based lamb supply chain.

In total, twenty-one USDA-inspected sheep and lamb slaughter plants operate in Colorado, with a capacity of 400,000 head in 2022 (USDA NASS, 2023). Of the eighteen federally inspected facilities, only two (Superior Farms and Colorado Lamb Processors) have a capacity greater than 100,000 head per year. Superior Farms harvested approximately 300,000 head in Colorado during 2022. The remaining 100,000 head were harvested by Colorado Lamb Processors, or one of the other USDA-inspected facilities in Colorado that currently harvest less than 1,000 lambs per year. A redistribution of 300,000 lambs to other Colorado lamb slaughter and processing faculties would severely strain these existing facilities and reduce the volume of Colorado lamb available for purchase in Colorado.

**Objective 2: Frame an economic overview of Colorado animal supply chain dynamics with a particular focus on lamb, as well as evaluating market changes that may arise from the Denver County ordinance.**

A key challenge for producers, should the ordinance be enacted, is the loss of slaughter capacity in a region with a high concentration of lambs. Lamb production is a stable contributor to agricultural cash receipts (USDA NASS, 2022). Currently, Colorado has the third largest sheep and lamb inventory in the United States, behind only Texas and Wyoming (USDA NASS, 2024; Figure 1). Colorado is second nationally, behind California, in terms of slaughter-ready lamb inventory.

**Figure 1: USDA National Agricultural Statistics Service Inventory of Sheep and Lamb.**




**Potential Market and Producer Impacts of the Slaughterhouse Ban**

*Local Market Analysis*

The size and economic activity of a sector is important when evaluating policy alternatives. Table 1 summarizes the 2022 economic contributions of the Denver animal processing sector according to the categories of *Total Output, Wage and Salary Employment, and Employee Compensation*. *Total Industry Output* is the total revenue generated by an industry. *Wage and Salary Employment* is the total number of wage and salaried employees and self-employed jobs in the industry in the region. *Employee Compensation* represents wages, salary, benefits and all income to workers paid by employers.

**Table 1: 2022 Economic Contributions of the Animal Processing Sectors in Denver**

| Description | Total Output ($) | Wage and Salary Employment (# of full, part and self-employed workers) | Employee Compensation ($) |
|---|---|---|---|
| **Animal, except poultry, slaughtering** | $137,580,177 | 176 | $14,615,455 |
| **Meat processed from carcasses** | $200,472,093 | 346 | $23,377,415 |
| **Rendering and meat byproduct processing** | $44,500,065 | 77 | $6,738,061 |
| **Total** | $382,552,335 | 599 | $44,730,931 |

**Source: IMPLAN data**

Overall, the total annual output of the animal processing sector exceeds $382 million, provides nearly 600 jobs and creates nearly $45 million in employee compensation.

A comparative benchmark is useful to contextualize the information in Table 1. Table 2 offers benchmarks comparing the meat processing sector to other key sectors in the Denver County economy. The data for *Taxes on Production & Imports Net of Subsidies* includes sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes as well as other taxes and special assessments.

**Table 2: Animal Processing Economic contributions relative to other Denver CO sectors (including top six and allied ag/food manufacturing sectors)**

| Description | Total Output ($) | Wage and Salary Employment (# of full, part and self employed workers) | Employee Compensation ($) | Taxes on Production & Imports Net of Subsidies ($) |
|---|---|---|---|---|
| **Oil & gas extraction** | $12,411,077,213 | 2,757 | $1,032,410,145 | $579,571,397 |
| **Other real estate** | $11,775,390,315 | 10,822 | $1,466,166,919 | $140,798,914 |
| **Air transportation** | $10,630,930,003 | 17,826 | $2,565,779,116 | $990,334,702 |
| **Owner-occ. dwellings** | $6,476,173,035 | - | $ - | $ 717,021,411 |
| **Mgmt of companies and enterprises** | $5,297,005,883 | 15,057 | $3,074,957,811 | $37,254,083 |
| **Data processing, hosting & services** | $4,826,263,056 | 5,575 | $1,090,331,225 | $32,809,467 |
| **Cheese mfg** | $274,366,529 | 203 | $39,173,932 | $970,821 |
| **Distilleries** | $268,881,727 | 317 | $21,652,540 | $50,234,922 |
| **Dry pasta mfg** | $268,513,122 | 345 | $34,687,317 | $1,066,859 |
| **Bread and bakery, except frozen, mfg** | $267,364,880 | 1,263 | $82,799,375 | $7,509,128 |
| **Landscape & horticultural services** | $249,643,981 | 1,873 | $116,605,642 | $2,389,428 |
| **Frozen specialty mfg** | $214,642,099 | 505 | $41,105,967 | $607,426 |
| **Fluid milk mfg** | $205,401,689 | 222 | $29,363,908 | $839,921 |
| **Meat from carcasses** | $200,472,093 | 346 | $23,377,415 | $832,038 |
| **Breweries** | $167,017,624 | 496 | $24,760,620 | $9,085,101 |
| **Ice cream/frozen mfg** | $141,556,788 | 302 | $21,457,221 | $637,213 |
| **Animal slaughtering** | $137,580,177 | 176 | $14,615,455 | $662,259 |
| **Rendering and meat byproduct processing** | $44,500,065 | 77 | $6,738,061 | $228,850 |

**Source: IMPLAN data**

### *Aggregate State Market Analysis*

Table 3 expands the information from Denver County to the State of Colorado by reporting statewide economic activity, workforce, and employee compensation for meat processing. Denver is the primary source for lamb processing and at the same time, it represents a relatively small share of the state's animal slaughter and processing economic activity.

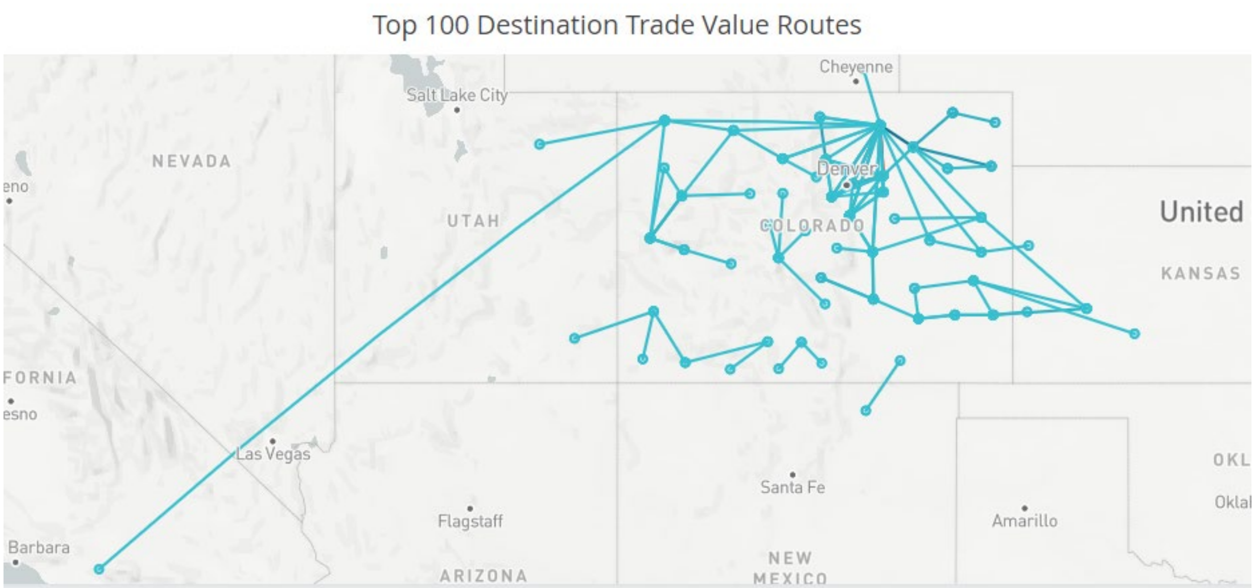
**Table 3: Economic Contributions of the Animal Processing Sectors in Colorado**

| Sector | Total Output ($) | Wage and Salary Employment (# of full, part and self-employed workers) | Employee Compensation ($) |
|---|---|---|---|
| **Animal, except poultry, slaughtering** | $5,277,343,319 | 7,192 | $533,380,735 |
| **Meat processed from carcasses** | $941,296,806 | 1,700 | $111,727,177 |
| **Rendering and meat byproduct processing** | $84,162,249 | 154 | $13,379,479 |

**Source IMPLAN**

The data shared in previous tables establishes the aggregate activity of Denver-based slaughter and processing. A map of regional meat shipments (Figure 2) partially illustrates how consumer markets are impacted. Denver is a key node, and eliminating slaughter facilities will have direct impacts to consumers in regional markets.

**Figure 2 Trade flows for Colorado origin animal products (except Cattle and Poultry),**



**Source IMPLAN maps**

**Broader Supply Chain Implications**

Figure 2 suggests that local and regional markets may suffer from a loss of slaughter and processing capacity in Denver. Consumers may be negatively impacted depending on the opportunities for reasonably priced substitutes. Colorado consumers have repeatedly indicated their desire to purchase high-quality foods from Colorado food producers and the demand is growing, but availability remains a concern to consumers and producers are challenged to navigate the regulatory environment that would allow them to diversify into local markets (Thilmany et al., 2022; Dancer et al., 2019; Thilmany et al, 2008), The federal government has invested more than $1 billion to systematically support and incentivize small and mid-sized meat processors (White House, 2022; USDA, 2021-2023). This investment has notably changed the landscape of meat processing—and in Colorado has resulted in a 20% increase in custom-exempt and federal inspected meat processing facilities (Colorado Department of Agriculture, 2024).

Locating small and medium-sized processors near retail markets matters. Recent data and analyses indicate that small and medium-sized meat processors who operate a retail meat market are more likely to survive (23-48% more likely) in metro areas relative to their counterparts located in non-metro areas—largely due to increased market access (Isley & Low, 2023). The pending ordinance in Denver could significantly discourage agricultural entrepreneurs who are motivated to capitalize on federal incentives for local and regional meat processing from investing in the metro-Denver area and instead shift these economic opportunities to other regions.

**Objective 3: Present a broadly framed set of economic scenarios to estimate the Colorado-wide economic implications from passage of the ordinance.**

Economic activity is often described in terms of direct activity (actual sales), indirect activity (purchases of goods and labor that support direct activity), and induced activity (activity generated from wages spent in the local economy). It’s important to consider all three activity types when gauging economic impacts of policy alternatives.

Table 4's output multipliers reflect the relationships between the primary sectors and the remainder of the economy most likely affected by the ordinance banning slaughterhouses. Output multipliers are a frequently used metric for describing economic activity that results from direct, indirect, and induced spending. The multiplier for an economic sector indicates the overall economic impact resulting from an additional dollar being received by a sector. For example, an additional dollar of revenue or sales reported by the animal slaughter sector, except poultry, in Colorado generates a total economic impact of $2.41 (Table 4, second line), and similarly, the output multipliers are 2.21 and 1.92 for the meat processed from carcasses, and the rendering and meat byproduct processing sectors, respectively.

**Table 4. Economic multiplier for Animal Product Sectors**

| **Sector** | **Output Multiplier** |
|---|---|
| Animal, except poultry, slaughtering | 2.41 |
| Meat processed from carcasses | 2.21 |
| Rendering and meat byproduct processing | 1.92 |

**Source IMPLAN data and modeling**

Output multipliers can be used to describe the economic impact of reductions in sales. More specifically, a dollar of lost sales to the animal slaughter sector, except poultry, results in a $2.41 decrease in overall economic activity in the Colorado economy.

Care should be taken when interpreting the values in Table 4, as they represent a snapshot of the local economy in 2022 rather than an actual forecast of what will happen if the size of these sectors were altered. For example, these output multipliers may not account for the cumulative impacts to an economy over time, or the exit of business and the entry of new businesses. The output multipliers fail to fully reflect the adaptation of businesses who observe the changes in the economy and seek business strategies to compensate for lost opportunities. Adaptation is likely to mitigate some of the lost economic activity if businesses can remain in operation.

The multipliers detailed above, and the underlying relationships that they represent, are central to conducting economic scenario analysis revealing the potential economy-wide impacts of a reduction in meat processing and slaughter in Denver.

**Economic Scenario Analysis**

Three scenarios of reduced economic activity in Denver-based meat processing and slaughter are considered. The scenarios differ in how the processing sector responds to the Denver ordinance:

*Scenario 1:* Economic activity generated by slaughterhouses in Denver County is not relocated to other areas of the state and ultimately exits Colorado.

*Scenario 2:* Businesses adapt and one-half of the lost economic activity is retained elsewhere in Colorado. One example of this adaptation is shifting lamb slaughter to an existing plant in Morgan County.

*Scenario 3:* This scenario assumes that 80% of Denver's lost economic activity remains in Colorado.

**Table 5: Economic Implications by Scenario**

| | **Direct Employment Impact (Total Employment)** | **Direct Output Impact ($)** | **Total (Direct, Indirect and Induced) Employment Impact** | **Total (Direct, Indirect, and Induced) Output Impact** |
|---|---|---|---|---|
| **Scenario 1** | -629 | $ (382,552,335) | -2,787 | $ (861,070,346) |
| **Scenario 2** | -314 | $ (191,276,168) | -1394 | $ (430,535,173) |
| **Scenario 3** | -157 | $ (95,638,084) | -697 | $ (215,267,587) |

**Source IMPLAN data and modelling**

Table 5 summarizes results of the three scenarios according to employment and economic activity impacts. Unsurprisingly, Colorado's economic activity and employment[4] decline. The

[4] When interpreting the results from these scenarios it is important to take into account the economic assumptions about technical relationships and business behavior that are inherent in an Input-Output (IO) analysis. First the analysis assumes constant returns to scale, which implies that the production of goods and services are scalable. This assumption generally holds in economic analysis for short run periods and for incremental changes. Economic IO models also assume that there are no supply constraints. With this assumption an industry has limitless access to raw materials at a fixed price and industry output is limited only by the demand for its products. Studies that look at industry contraction, rather than expansion, tend to make this "limiting inputs" assumption less of a concern. These models also assume a fixed commodity input structure, which implies that price changes do not cause a firm to buy substitute goods and that changes in the economy will affect the industry's output but not the mix of commodities and services it requires to make that product. Because of this assumption the model is static and should not be used to forecast much beyond one year. Lastly, of importance is the assumption of homogenous sector output which implies that the proportions of all the commodities produced by an industry remain the same, regardless of total

size of the economic impact is significant ranging from more than $861 million dollars in *Scenario 1* and to more than $215 million in the more conservative *Scenario 3*. Employment losses range from 2,787 to 697jobs in the three scenarios.

In addition to the three meat processing sectors listed in Table 5, reduced economic activity occurs in several allied industries including:

- Animal production (~2% of total output impact)
- Other animal food manufacturing (~2% of total output impact)
- Support activities for agriculture and forestry. (~0.4% of total output impact)
- Grain farming (~1% of total output impact)
- Truck transportation (~5% of total output impact)
- Wholesale sectors such as grocery (~4% of total output impact)

**Limitations and Key Topics for Community Conversations**

The previous analysis is limited by its reliance on past surveys, secondary data, and uncertainty about how several key agricultural and economic sectors would respond to passage of the ordinance. Additional research and data collection can provide more precise estimates. However, the additional research is unlikely to change the general outcome of lost economic activity and jobs.

**Objective 4: Describe selected contextual issues informing the proposed ordinance.**

As voters consider the ordinance, it may be helpful for community leaders to engage in a dialogue that informs the public and encourages respectful, deliberative processes. The following are important issues that might be discussed with affected communities, agricultural producers, consumers, and buyers who participate in meat markets.

**Issue 1: Animal welfare discussions**

Consumers are increasingly interested in knowing how their food is produced. The food industry

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output. This means that the model assumes an industry won't increase the output of one product without proportionately increasing the output of all its other products. In general, this has been found to be a reasonable assumption for the agricultural sector.

is continuing to innovate its animal welfare practices and stating its responsibility for humane treatment of animals. The proposed ordinance suggests a share of Colorado citizens want to dialogue more about animal agriculture, which in turn leads to community conversations.

These community conversations benefit when considering impacts to producers. For example, Caputo et al. (2023) found that egg producers were concerned about how cage-free regulations would increase production costs, reduce the ability to access capital and decrease environmental sustainability. Costumer demand is expected to decline with increasing prices. For the proposed meat processing ban, similar pros and cons are important discussion points for community conversations. Key differences exist. The cage-free egg regulation focuses on live-animal production and a vertically integrated supply chain. The animal welfare concerns addressed by the regulation were appropriately focused on those producing eggs. Conversely, the proposed meat processing ban for Denver County does not address sheep or lamb production and discredits the rigorous federal animal welfare standards that exist at USDA-inspected meat processing facilities.

**Issue 2: Consumer Demand and Food Security**

While it is important to align public interests with community goals, the proposed ordinance is counter to key attitudes shared by Coloradans. Recent surveys show that Coloradans want to buy more locally-sourced Colorado products, and USDA investments in processing capacity recently addressed the barrier to regional meat supply chains through new investments in processing capacity.

Moreover, the U.S. is already experiencing issues with food security (USDA ERS, 2022)[5] due to inflation. A policy action that unintentionally elevates the price of food should be carefully considered. If a processor is removed from the market, and all producers must transport their animals further to be slaughtered, then all else equal, the average cost for meat will increase. The price increase will be most detrimental to those at the lowest levels of income, and this change is likely to disproportionately fall on the most food-insecure groups during a period of already high

[5] Household Food Security in the United States in 2022: https://www.ers.usda.gov/publications/pub-details/?pubid=107702

inflationary pressure.

Consumer or supply chain research on how a slaughterhouse ban would affect prices and/or align with demand is not available; however, recent requirements for cage-free eggs can be informative. In their research on “The Transition to Cage Free Eggs”, Caputo et al. (2023) shared that consumers are willing to pay $1.31 for cage-free eggs over conventional eggs, but if prices increase significantly, a large share of consumers (25%) will opt-out of the marketplace due to a high-degree of price sensitivity.

**Issue 3: Financial implications for Colorado producers and localization efforts**

The ban significantly reduces Colorado and United States lamb slaughter capacity. Impacts include increasing lamb prices for consumers, decreasing demand for lamb products and a subsequent decrease in lamb inventory. In the short term, imported lamb from Australia and New Zealand will become a more costly substitute. Long range changes are more complex to forecast, and one outcome may be irrevocable harm the United States lamb industry.

Colorado has 21 USDA-inspected facilities which harvest lamb, with most harvesting fewer than 1,000 head each year. These small and very-small processing facilities generally serve local communities and producers. These multi-species facilities generally do not have the ability, physical infrastructure, or financial capacity to expand slaughter capacity. Moreover, if the policy environment is perceived as “riskier” in the eyes of those considering processing investments, it is unlikely that investors considering adding new capacity will choose to locate in Colorado for fear of future bans.

Arguably, the increased costs and risks to lamb producers would impose a significant strain on a stressed industry. Lamb producers in the United States face significant competition from other countries that import lamb into the United States. More than two-thirds of the lamb consumed in the United States is imported from other countries. The shift to foreign markets has resulted in a significant decline in domestic lamb production in the past several decades (USDA ERS, 2023). In short, any additional reduction to slaughter capacity in the United States would accelerate the lost market share and further reduce the lamb inventory in the U.S, while also increasing dependency on imports.

**Issue 4: Potential shift of the lamb supply chain to rural Colorado**

Should the ordinance pass, opportunities to shift capacity to rural Colorado are limited because current meat processing plants are far from Denver, at capacity, and/or have substantial waiting lists for new customers to access their services. If Colorado lamb producers lost the ability to harvest lambs at Superior Farms, the majority of producers would be required to ship their lambs to other states for harvest in order to maintain an equivalent level of market access.

The proposed ban would come at a time in which meat supply chain dynamics are shifting to local, regional and small to mid-sized meat processors, as signaled by an over $1 billion investment from the federal government to support increased capacity in that sector. In a competitive marketplace, new meat processing facilities near metro areas are a lower risk investment when compared to meat processing facilities in rural areas. The proposed ordinance discourages agricultural entrepreneurs from investing in meat processing capacity in the city and county of Denver, and most likely in adjacent counties, if there is a perceived risk of additional ballot initiatives, effectively stifling innovation in one of the U.S.'s largest ag- and food-incubator regions.

If successful, the proposed ordinance will lead to longer transportation distances, which in turn is counter to the livestock industry's commitment to reduce emissions and enhance animal wellbeing (Greger, 2007). Transportation to out-of-state processing facilities would result in significant increases in costs (Speer et al., 2001), and increase the risk of injury and/or illness associated with long-haul transportation prior to harvest (Krawczel, 2004). In each case, the economic impacts would be noticeable to lamb producers and consumers.

Despite the decline in US lamb production, consumption of lamb has increased in the United States in the last half-decade. The increase is concurrent with a growing interest by Colorado consumers to purchase Colorado-raised products as reported in the Colorado *Public Attitudes Survey*. Elimination of lamb processing capacity would run counter to Colorado's ability to capture growing market opportunities for Colorado lamb producers, as well as the desires expressed by Colorado consumers. Small producers are disadvantaged further processing facilities are located from the Denver consumer/retail market.

## Concluding Remarks

An ordinance banning animal slaughterhouses in the City and County of Denver is proposed for the 2024 election cycle. This document considers potential impacts should the ordinance pass and be implemented. Attention is directed to the local food system, workforce, and meat value chain in Denver County. The document fills an information gap existing in the current dialogue.

If the ordinance passes, consequences are likely to include:

**Some local businesses will suffer significantly:** The meat slaughter and processing sector in Denver County directly generates more than $382 million annually supporting nearly 600 jobs and $44.7 million in employee compensation. This economic activity will cease with passage of the ordinance. The sector is intertwined with other businesses based on its direct, indirect and induced purchase of goods and services. In addition, some Denver and Front Range businesses rely on the meat slaughter and processing sector for inputs in their own enterprise. It is unclear how these businesses may adapt to the significant loss of meat products and processing capacity, and some business closure is likely.

The human capital and infrastructure of the meat slaughter and processing sector is not readily substitutable to other sectors. For this reason, adapting the local economy to the ban will be long lasting and costly. While the focus of the ordinance appears to be a single facility, economic spillovers will reverberate throughout the regional economy because of the transport of goods and services to and from the Denver location.

**The ordinance runs counter to demonstrated consumer preferences:** Evidence suggests that consumers prefer local sourcing of food. Similarly, some consumers prioritize products whose identity can be attributed to innovations in sustainability and certification of animal welfare. The ordinance will eliminate the only substantive, local source of meat slaughter and processing. It removes critical infrastructure for producers engaged in direct marketing of food products with specific credence attributes to consumers and buyers.

**The ordinance reduces consumer choice and limits business opportunities.** The ordinance will close a local supplier for meat products, and few substitute sources exist. Sales of domestic products are likely to be replaced by imported products. The ban has a disproportionate impact on lamb, which has a steady and growing demand among consumers. Lamb is an important ingredient in some ethnic markets and cuisine. The ban will likely increase the price and reduce the availability of lamb to these markets.

New startups in the growing food industry will face more difficult circumstances because they will not have nearby access to Denver retail markets, and investment capital may be restricted or come at a higher cost. This impact is felt across all livestock species, not just lamb.

**The ordinance reduces the resilience of the meat supply chain**. Recent federal initiatives encourage investments enhancing the resilience of the food system including developing small and medium sized slaughter facilities. The purpose is two-fold: improving food security in times of disruption (e.g., a pandemic or emergency) and enhancing the competitiveness of small and medium-sized livestock operations. These slaughter facilities provide services for livestock operations that may otherwise be unavailable especially when marketing a branded product directly to consumers. The proposed Denver ordinance reduces the resilience of the meat supply chain and increases costs for small and medium sized livestock producers who are unlikely to find alternatives.

This policy brief is not a comprehensive view of the ballot issues. It fills a critical information gap in the current dialogue. Interested parties are encouraged to consider a wholistic view of slaughterhouse ban in the City and County of Denver when forming their opinions.

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