

## **Expanding Market Alternatives for Fort Berthold Agricultural Producers**

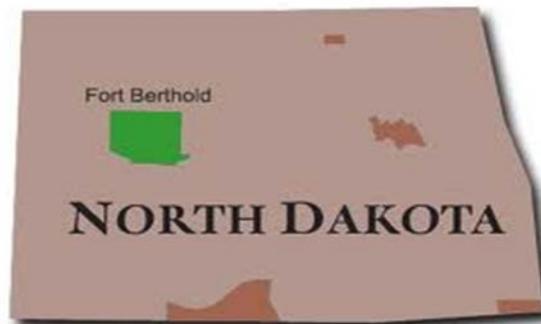
**Rod Sharp and Jeff Tranel**

Fort Berthold Community College  
Beginning Farmer and Rancher Development Program  
**August 1, 2012**



# Fort Berthold Reservation Mobile Harvest Unit (MHU) Feasibility Study

- Funded by:
  - North Central Center for Risk Management Education
  - USDA/National Institute of Food and Agriculture
- Primary objectives:
  - Verify willingness of producers to supply animals
  - Determine the economic and financial feasibility of a mobile harvesting unit (MHU)



# Mobile Harvest Unit Background and Rational

- Mobile Harvest Unit (MHU)
  - Self-contained facilities
  - Provide access to inspected animal harvesting services
  - Typically tractor/trailer unit
  - Can be moved from site to site
    - Convenient host locations
    - Service small producers
  - Typically less expensive to build and operate than fixed-location facilities



# Mobile Harvest Unit Background and Rational

- Mobile Harvest Unit (MHU)
  - Local animal harvesting
  - Most humane approach
    - Less stress on animals
    - Less resistance from the general public
  - Better able to serve the needs for:
    - Forage-fed, natural, organic meats, and other niche/specialty meats



# Mobile Harvest Unit Background and Rational

- Availability and Access to Animal Harvesting Facilities
  - National Trend – Fewer locations under USDA inspection
    - Challenges limited-resource producers who want to direct market their animals
    - Makes it difficult to sell inspected meats in the communities where they are produced
    - Tends to discourage producers from pursuing new alternative marketing strategies



# Mobile Harvest Unit Background and Rational

- Availability and Access to Animal Harvesting Facilities

Major U.S. Beef Packing Companies – USDA  
**Tyson, Cargill, Swift and Co., and  
National Beef Packing Co. –  
produced 83.5 percent of U.S. beef  
as of 2007.**

marketing strategies



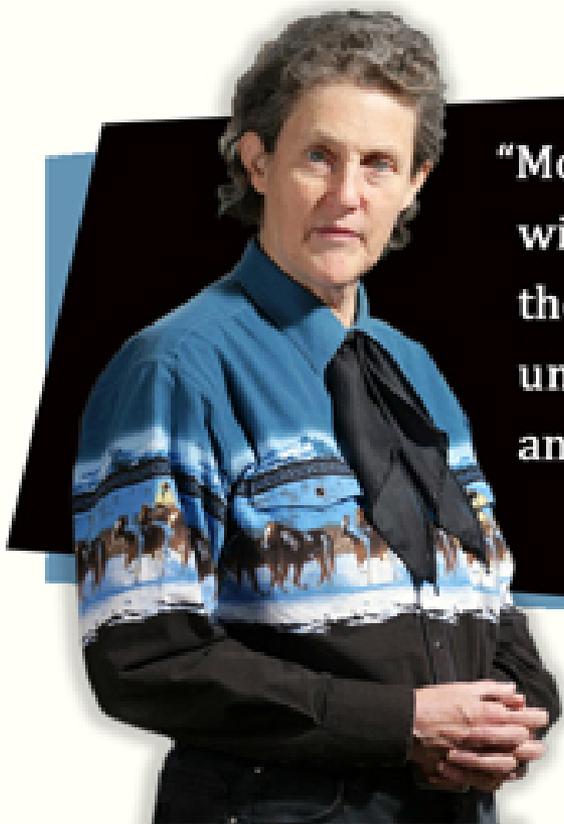
# Mobile Harvest Unit Background and Rational

- Alternative Marketing Opportunities
  - Meat markets are becoming more “consumer driven”
  - Consumers are increasingly more interested in:
    - How their food is raised
    - The production and processing methods
    - The health benefits
  - Many consumers willing to pay a premium

**"Mobile Slaughterhouses  
Help Meat Go Local", the  
Huffington Post,**

**"Have Knife, Will Travel: A  
Slaughterhouse on Wheels  
'Custom Butcher' Gives Small  
Farms New Option to Sell Local  
Produce" Wall Street Journal**

**"Mobile Slaughterhouse Helps Wash. State  
Farmers Meet Demand for Local Food", PBS  
Newshour**



**“Mobile slaughter units provide ranching families with both affordable and local facilities for processing their animals. I support the use of these affordable units to help local ranchers develop niche markets and reduce transportation stress on their animals.”**

**~ Dr. Temple Grandin  
TempleGrandin.com**

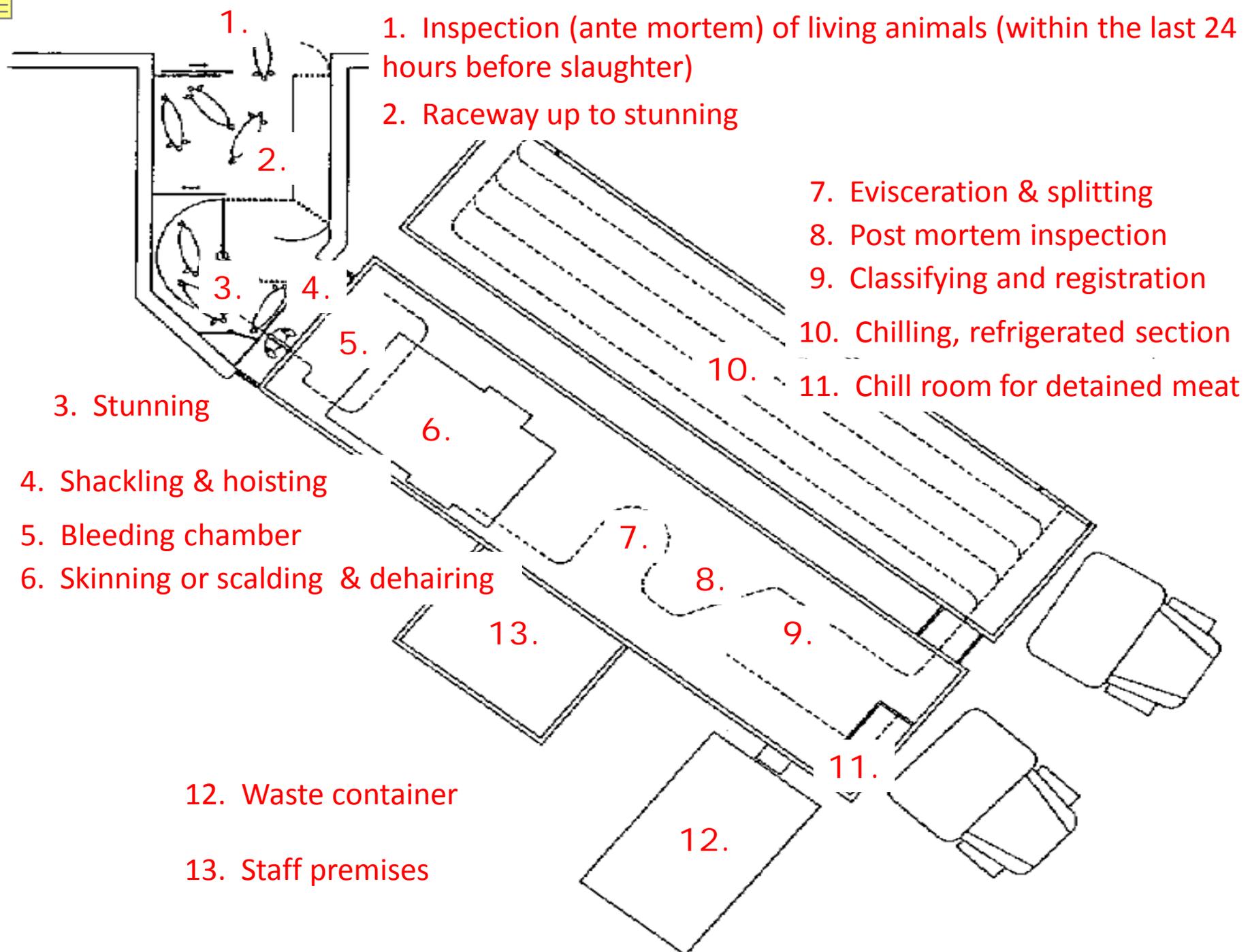
USED WITH PERMISSION FOR MOBILEMEATPROCESSING.COM

# Mobile Harvest Unit









1. Inspection (ante mortem) of living animals (within the last 24 hours before slaughter)

2. Raceway up to stunning

7. Evisceration & splitting

8. Post mortem inspection

9. Classifying and registration

10. Chilling, refrigerated section

11. Chill room for detained meat

3. Stunning

4. Shackling & hoisting

5. Bleeding chamber

6. Skinning or scalding & dehairing

12. Waste container

13. Staff premises

## Existing MHU in U.S.

- Bow, Washington
  - Harvesting and cut and wrap facility combined, owned by 50 producers
- Kentucky/New York/Vermont
  - Poultry processing units
- Central Coast Region, California
  - Owned by producer coop, but leased to small butcher shop
- Tacoma, Washington
  - Non-profit owned by ranchers, butchers, restaurant owners, and others
- Taos County, New Mexico
  - \$200,000 from State Legislature to support project
  - Combined with cut/wrap facility



## New Mexico MHU





# New Mexico Cut/Wrap Facility

**USDA** United States Department of Agriculture  
National Institute of Food and Agriculture

# Meat Inspection



- Federal Inspection - USDA/Food Safety and Inspection Service (FSIS)
  - Responsible for ensuring safety, wholesomeness, and correct labeling of meat, poultry, and egg products
  - Federally inspected products can be shipped across state lines and internationally to many countries
  - Examine animals before and after slaughter
  - Test for the presence of harmful pathogens and residues



# Meat Inspection

- North Dakota State Meat Inspection
  - Required by law to be “at least equal to federal inspection”
  - State inspected only meat cannot be sold across state lines (restricted to intrastate commerce)



# Meat Inspection

- Retail Exempt
  - Retail business purchases federal or state inspected meats to sell at a retail counter
  - Retail products must be fully labeled
  - Still subject to periodic inspections (FSIS/State)
  - Also inspected by the North Dakota Department of Health



# Meat Inspection

- Custom Exempt
  - Can only slaughter and process livestock for the exclusive use of the owner(s)
  - The facilities are subject to periodic, risk-based inspection by USDA FSIS and/or state authorities
    - Inspections are conducted less frequently
    - Expected to meet the same requirements as federal/state inspections



# Fort Berthold Reservation Livestock Producer Interest

- Town Hall Meetings – July 10-11, 2012
  - Meetings held in Twin Buttes, Mandaree, New Town, and White Shield
  - Meeting were not well attended
  - Participants (primarily beef producers) showed interest in a MHU
  - Meetings did not provide enough support to determine the number of animals that might be available to support a MHU
  - We recommend further investigation before any action is taken

# Mobile Harvesting Unit Economic Feasibility

- Projected Start-Up Costs

<b>Mobile Harvest Unit, Trucks, and Associated Equipment</b>	
Item and Description	Estimated Cost
MHU Trailer	\$154,000
Semi Truck or Similar Vehicle	75,000
Refrigerated Truck	60,000
Sales Tax on Trailer, Semi, and Refrigerated Truck	10,115
Livestock Panels	2,625
Saws, Knives, Etc.	2,500
Barrels	1,500
<b>Total Initial Investment in MHU and Equipment</b>	<b>\$305,740</b>

# Mobile Harvesting Unit Economic Feasibility

- Projected Start-Up Costs

<b>Business Formation and Office Start-up.</b>	
Item and Description	Estimated Cost
Office Space Deposit	\$3,000
Legal and Filing Fees	3,000
Computer	6,000
Telephone System & Cell Phones	2,500
Office Furniture	10,000
Copying Machine	5,000
MHU Testing/HACCP Plan	5,000
Staff Training	4,500
Miscellaneous	3,000
<b>Total Initial Investment in MHU and Equipment</b>	<b>\$42,000</b>

# Mobile Harvesting Unit Economic Feasibility

- Projected Start-Up Costs
  - MHU and Associated Equipment \$305,740
  - Business Formation and Office 42,000
  - Total \$347,740**

# Mobile Harvesting Unit Economic Feasibility

- Projected Revenues

**Table 2. Projected Gross Revenues Generated Per Year Via a Mobile Harvest Unit.**

Harvest Days Per Month	16
Beef Equivalents Harvested Per Day	8
Beef Equivalents Harvested Per Month	128
Beef Equivalents Harvested Per Year	1,536
Rate Per Beef Equivalent Harvested	\$85.00
<b>Gross Revenues Per Year</b>	<b>\$130,560</b>

# Mobile Harvesting Unit Economic Feasibility

- Projected Expenses - Personnel

Personnel Costs in Year 1				
Position	Initial Salary	Benefits	Payroll Taxes	Total
Manager/Harvester	\$80,000	\$6,120	\$20,000	\$106,120
Harvester (Butcher)	60,000	4,590	15,000	79,590
Administrative Assistant	40,000	3,060	10,000	53,060

Total Personnel Costs in Year 1 through Year 5 (3% annual increase)					
	Year 1	Year 2	Year 3	Year 4	Year 5
Personnel Costs	\$238,770	\$245,933	\$253,311	\$260,910	\$268,738

# Mobile Harvesting Unit Economic Feasibility

- **Manager/Harvester (\$80,000 per year):**
  - Responsible for managing the MHU business
  - Primary liaison with livestock producers
  - Lead the sales efforts
  - Travel with the MHU
    - License to drive large vehicles (CDL)
    - Assist with animal harvesting
    - Overall care of the equipment
      - Maintenance and cleanliness

Personnel Costs	\$238,770	\$245,933	\$253,311	\$260,910	\$268,738
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# Mobile Harvesting Unit Economic Feasibility

- **Harvester (\$60,000 per year):**
  - Responsible for harvesting the animals
    - Meat harvesting/processing skills and experience
  - Travel with the MHU
    - Commercial Drivers License
    - Overall care of the equipment
      - Maintenance and cleanliness

- Maintenance and cleanliness

Personnel Costs	\$238,770	\$245,933	\$253,311	\$260,910	\$268,738
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# Mobile Harvesting Unit Economic Feasibility

- **Administration Assistant (\$20 per hour):**

- Responsible for general office management
  - Receptionist duties
  - Record keeping
  - Invoicing and payments
  - Coordination of MHU site locations
    - Animal harvesting and movements to processing facilities
    - Distributions to meat vendors

Personnel Costs	\$238,770	\$245,933	\$253,311	\$260,910	\$268,738

# Mobile Harvesting Unit Economic Feasibility

- Projected Expenses - MHU

Fuel	16,585	16,917	17,255	17,601	17,953
Insurance	24,000	24,480	24,970	25,469	25,978
Vehicle Licenses & Taxes	1,000	1,020	1,040	1,061	1,082
Water & Water Purification	600	612	624	637	649
Equipment (knives, saws, etc.)	600	612	624	637	649
Generator Fuel	1,440	1,469	1,498	1,528	1,559
Offal Disposal	0	0	0	0	0
MHU & Truck Repairs/Maintenance	6,000	6,120	6,242	6,367	6,495
Inspector	0	0	0	0	0
Supplies	1,200	1,224	1,248	1,273	1,299
<b>Subtotal</b>	<b>51,425</b>	<b>52,454</b>	<b>53,503</b>	<b>54,573</b>	<b>55,665</b>

# Mobile Harvesting Unit Economic Feasibility

<ul style="list-style-type: none"> <li>● <b>Fuel (\$16,585):</b> <ul style="list-style-type: none"> <li>● Mileage estimates for MHU and Refrigerated Truck                             <ul style="list-style-type: none"> <li>● MHU - 400 miles per month <span style="float: right;">17,953</span></li> <li>● Refrigerated truck – 2,150 per month <span style="float: right;">25,978</span></li> </ul> </li> </ul> </li> </ul>					
Water & Water Treatment	0	0	0	0	649
Equipment (knives, saws, etc.)	600	612	624	637	649
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# Mobile Harvesting Unit Economic Feasibility

<b>Insurance (\$24,000):</b>					
• Liability and vehicle					17,953
• Refrigerated truck – 2,150 per month					
					1,082
					649
Equipment (knives, saws, etc.)	600	612	624	637	649
Generator Fuel	1,440	1,469	1,498	1,528	1,559
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# Mobile Harvesting Unit Economic Feasibility

- Projected Expenses - Administration

Office Rent	18,000	18,360	18,727	19,102	19,484
Office Utilities	4,800	4,896	4,994	5,094	5,196
Office Supplies	2,400	2,448	2,497	2,547	2,598
Telephone/Internet	7,200	7,344	7,491	7,641	7,794
Business Travel	6,000	6,120	6,242	6,367	6,495
Accounting & Tax Preparation	7,750	7,905	8,063	8,224	8,389
Licenses & Fees	1,000	1,020	1,040	1,061	1,082
Insurance	6,000	6,120	6,242	6,367	6,495
Other	3,000	3,060	3,121	3,184	3,247
Subtotal	56,150	57,273	58,418	59,587	60,779

# Mobile Harvesting Unit Economic Feasibility

- Debt Repayment

- Initial Investment           \$347,740
- Interest Rate                7.00%
- Term                            20 Years

Principal	25,169	26,930	28,815	30,833	32,991
Interest	24,342	22,580	20,695	18,678	16,520
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Subtotal	49,510	49,510	49,510	49,510	49,510
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# Mobile Harvesting Unit Economic Feasibility

- Projected Profit or Loss

## Projected Pre-Tax Profits or Losses in Year 1 Through Year 5

	Year 1	Year 2	Year 3	Year 4	Year 5
Gross Revenues	\$130,560	\$130,560	\$130,560	\$130,560	\$130,560
Total Cash Outflows	<u>395,856</u>	<u>402,783</u>	<u>409,848</u>	<u>417,055</u>	<u>424,406</u>
<b>Pre-Tax Profits/Losses</b>	<b>(\$265,296)</b>	<b>(\$272,223)</b>	<b>(\$279,288)</b>	<b>(\$286,495)</b>	<b>(\$293,846)</b>

# Mobile Harvesting Unit Sensitivity Analysis

## Profits or Losses Associated With Harvest Capacity

Capacity	Year 1	Year 2	Year 3	Year 4	Year 5
100%	(\$265,296)	(\$272,223)	(\$279,288)	(\$286,495)	(\$293,846)
90%	(\$281,616)	(\$288,543)	(\$295,608)	(\$302,815)	(\$310,166)
80%	(\$297,936)	(\$304,863)	(\$311,928)	(\$319,135)	(\$326,486)
50%	(\$330,576)	(\$337,503)	(\$344,568)	(\$351,775)	(\$359,126)

# Mobile Harvesting Unit Sensitivity Analysis

Breakeven Harvest Prices					
	Year 1	Year 2	Year 3	Year 4	Year 5
Capacity (beef equivalents)	~ Harvest Price Per Beef Equivalent ~				
100% (1,536)	\$258	\$263	\$267	\$272	\$277
90% (1,344)	\$295	\$300	\$305	\$311	\$316
80% (1,152)	\$344	\$350	\$356	\$363	\$369
50% (768)	\$516	\$525	\$534	\$544	\$553

# Mobile Harvesting Unit Sensitivity Analysis

**Table 10. Beef Equivalents to Be Harvested Per Day at Alterative Harvest Rates.**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Total Expenses	395,856	402,783	409,848	417,055	424,406
<i>Harvest Price</i>	<i>Beef Equivalents to Be Harvested Per Day</i>				
\$35	59	60	61	62	63
\$50	41	42	43	43	44
\$85	24	25	25	26	26
\$100	21	21	21	22	22
\$125	16	17	17	17	18
\$150	14	14	14	14	15
\$175	12	12	12	12	13
\$200	10	10	11	11	11
\$225	9	9	9	10	10
\$250	8	8	9	9	9
\$275	7	8	8	8	8
\$300	7	7	7	7	7

# Mobile Harvesting Unit Summary

- Limited producer interest
  - Year round supply of harvest ready animals
    - MHU must operate at or near full capacity
  - Producer willingness to modify production practices
    - Breeding seasons
    - Stage of marketing
    - Risks associated with retained ownership and animal feeding

# Mobile Harvesting Unit Summary

- Not economically feasible
  - Significant Start-Up Costs
    - Look for alternative sources of funds (grant funds, state/federal support, tribal support, cooperative, partner with processing/retail businesses, etc.)
    - Use existing facilities/equipment
  - High Personnel Costs – energy development impacts on salaries and wages
  - Fuel Costs – fuel prices and distances for harvesting and transporting
  - Insurance Costs

# Mobile Harvesting Unit Summary

- Other considerations
  - Three new jobs created
  - MHU helps small, new/beginning, and reservation livestock producers reach into alternative markets
    - Grass fed, Natural, Local, Certified Organic, Lean, Native American
    - May turn price takers into price makers
  - Fill local niche markets
    - Consumer demand for specific characteristics
    - Service local restaurants, school cafeterias, other retail outlets

# Thank You !



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