



WORK SESSION #1

Prepared by:

HDR | HLB Decision Economics Inc.





Agenda

- Introductions
- Objectives of the Study
- The Study Area
- Work Plan
- Assessment of Existing Conditions
- Economic Development Opportunities and Transportation Improvements
- Data Collection Plan
- Discussions and Q&A



Objectives of the Study

Primary Objective:

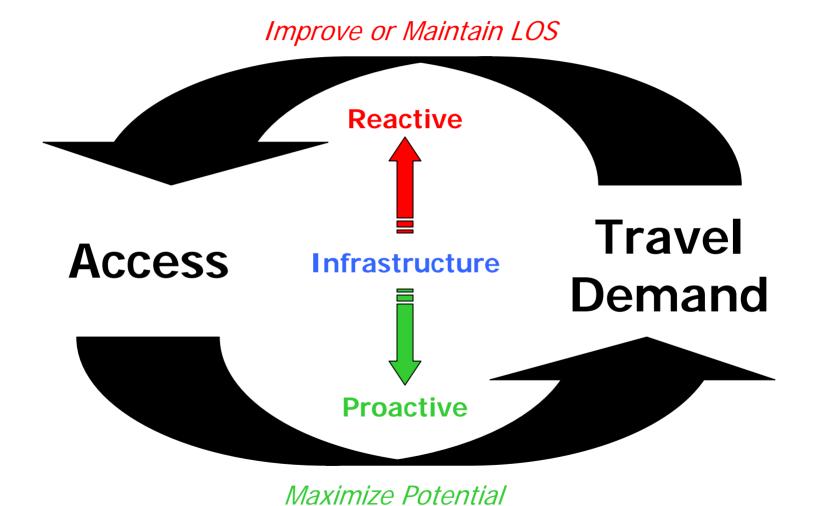
➤ Identify what economic, or regulatory, or operational changes would result in traffic and safety conditions that would warrant building a 4-lane on the Theodore Roosevelt Expressway in Montana.

Secondary Objectives:

- Assess existing regional economic conditions and development opportunities;
- Develop traffic growth forecast and freight volume projections under existing development plans and regional economic opportunities;
- Develop traffic growth forecast and freight volume projections with induced economic development and travel demand;
- Conduct sensitivity analysis and risk analysis to facilitate consensus building; and
- Engage local stakeholders and the general public.



Demand for Transportation Dynamics





The Study Area, Level 1

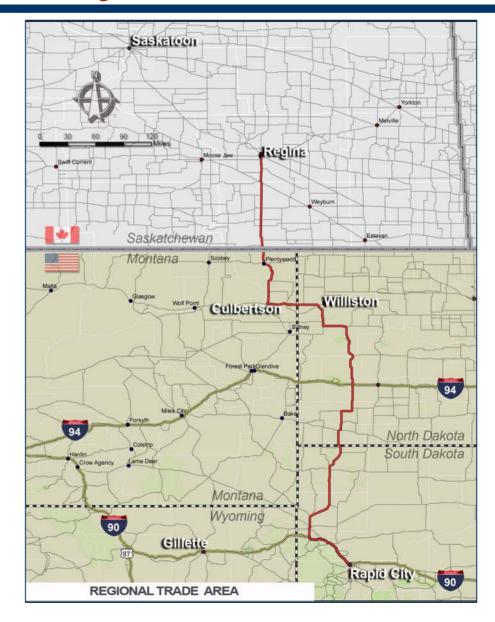




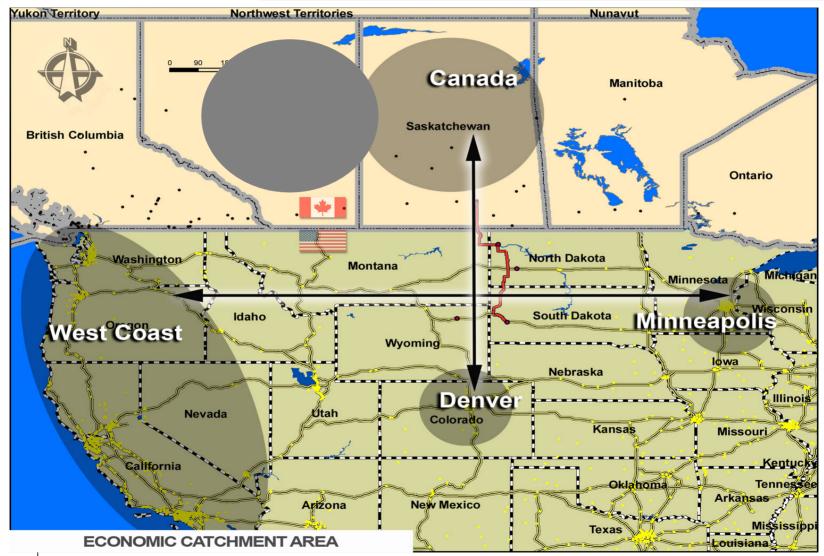


The Study Area, Level 2





The Study Area, Level 3





Work Plan

Information Review

➤ Review of regional, state and local socioeconomic trends and projections, regional economic studies and industry profiles.

Collection of Survey Data and Interviews

- ➤ Site visits: corridor and study area, major production and distribution centers, population and employment centers, principal tourist attractions, etc.
- ➤ Interviews with local and regional developers and planners, representatives from the grain, oil and tourism industries, business owners, freight forwarders and carriers, etc.
- Mail and/or telephone surveys.

Assessment of Existing Economic Conditions

Overview of the region, population trends, employment and other socio-economic characteristics, regional economic activity by sector, freight movements and traffic conditions

Assessment of Economic Opportunities

> Review of existing development plans, opportunities and contingencies by economic sector



Work Plan, Continued

Development of Traffic and Freight Volume Projection Model

- Calibrated under two scenarios for US2: upgraded two-lane configuration (baseline) and four-lane configuration
- Output: volume of freight diverted from other routes and corridors, volume of freight diverted from other modes, and net growth in national and international freight movements

Sensitivity Analysis

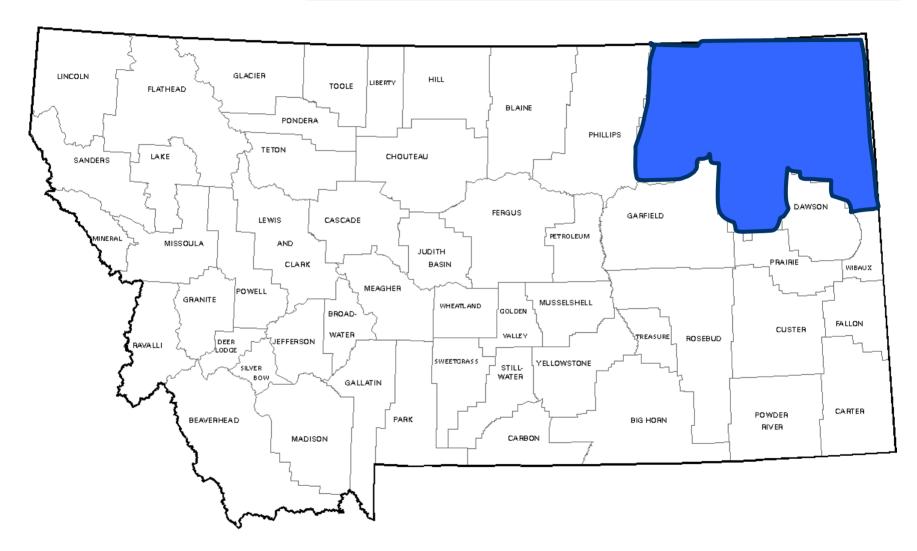
➤ Test the <u>impact</u> on traffic growth and freight volume projections of changes in truck size and weight regulation within Montana and along the TRE in the study area, in truck hours of operation for trucks entering the US at the Port of Raymond; in rail-related operations (including the consolidation of grain shipments into shuttle facilities); in crude oil exploration costs; and others.

Risk Analysis

- ➤ Use Monte Carlo simulation techniques to derive probability distributions for US 2 total traffic, truck traffic, and LOS forecasts.
- ➤ Evaluate the probability that future traffic will be high enough to justify a 4-lane configuration.
- Conclusions and Recommendations



Assessment of Existing Conditions, MT Counties





Assessment of Existing Conditions, Population

Population in Montana and Study Area

Population Count and Growth Rate	Montana	Study Area Total	McCone	Valley	Daniels	Sheridan	Roosevelt	Richland
Population, 2004 estimate	926,865	34,281	1,775	7,270	1,844	3,620	10,660	9,112
Population, percent change, 2000-2004	2.7%	-4.9%	-10.2%	-5.3%	-8.6%	-11.8%	0.4%	-5.7%
Population, 2000	902,195	36,061	1,977	7,675	2,017	4,105	10,620	9,667
Population, percent change, 1990- 2000	12.9%	-8.1%	-13.1%	-6.8%	-11.0%	-13.3%	-3.4%	-9.8%

Source: U.S. Census Bureau, 2000 Census and 2004 Population Estimates

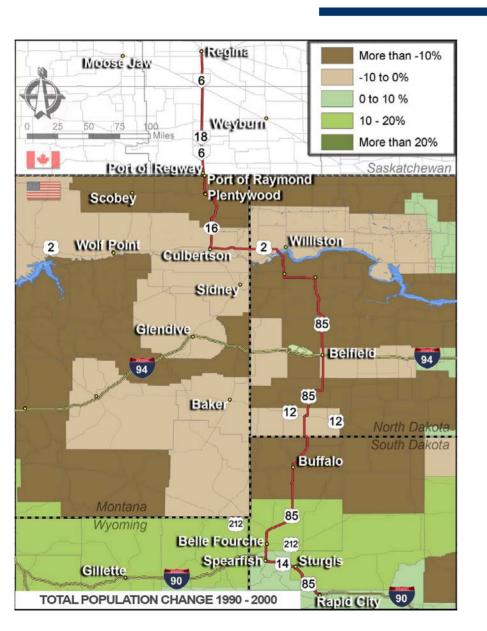
Population Projections for Montana and Study Area

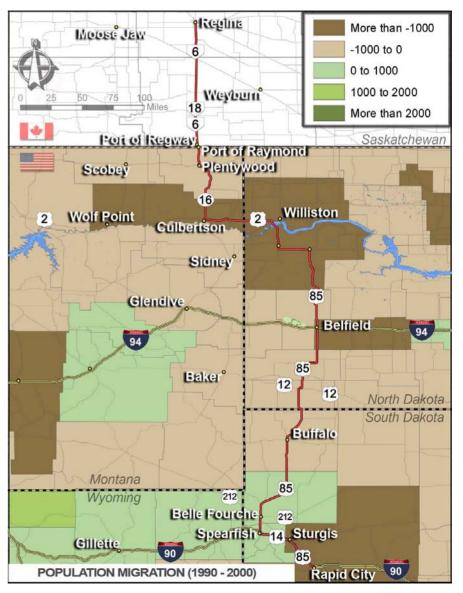
County	2004	2010	2020	2025	Average Annual Rate of Growth 2004-2025	Total Change 2004-2025
Montana	926,865	988,874	1,090,686	1,148,162	1.0%	23.9%
Study Area Total	34,281	34,681	35,518	36,586	0.3%	6.7%
Daniels	1,844	1,890	1,877	1,910	0.2%	3.6%
McCone	1,775	1,780	1,767	1,771	0.0%	-0.2%
Richland	9,112	9,561	9,966	10,362	0.6%	13.7%
Roosevelt	10,660	10,920	11,553	11,992	0.6%	12.5%
Sheridan	3,620	3,680	3,635	3,750	0.2%	3.6%
Valley	7,270	6,850	6,720	6,801	-0.3%	-6.5%

Source: Montana Department of Commerce

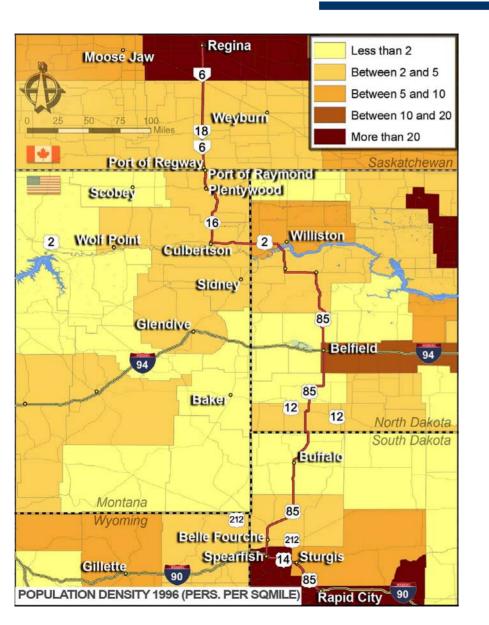


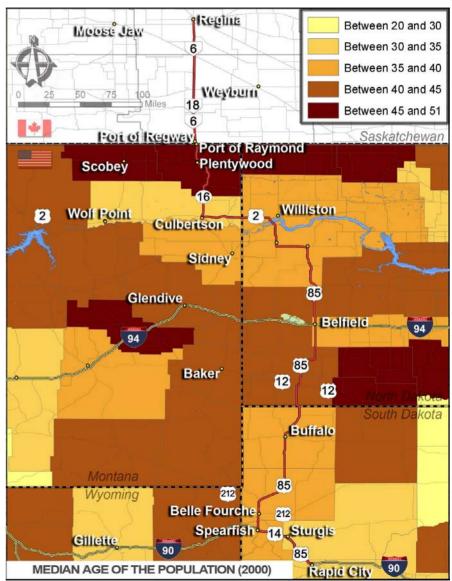
Assessment of Existing Conditions, Population





Assessment of Existing Conditions, Population





Assessment of Existing Conditions, Income Levels

Household Income Distribution, Percent of Households in Income Bracket

Income Bracket	Study Area Total	Montana	United States
Less than \$10,000	14.0%	11.3%	9.5%
\$10,000 to \$14,999	10.0%	8.9%	6.3%
\$15,000 to \$24,999	18.9%	17.1%	12.8%
\$25,000 to \$34,999	16.0%	15.4%	12.8%
\$35,000 to \$49,999	17.6%	18.2%	16.5%
\$50,000 to \$74,999	15.0%	17.1%	19.5%
\$75,000 to \$99,999	4.7%	6.4%	10.2%
\$100,000 to \$149,999	2.6%	3.6%	7.7%
\$150,000 to \$199,999	0.6%	0.9%	2.2%
\$200,000 or more	0.6%	1.0%	2.4%
Less than \$35,000	58.9%	52.7%	41.4%
\$75,000 or more	8.5%	11.9%	22.5%

Poverty Status

Poverty Measure	Study Area Total	Montana	United States
Families below Poverty Level, Percent of Total	14.7%	10.5%	9.2%
Individuals below Poverty Level, Percent of Total	18.9%	14.6%	12.4%



Assessment of Existing Conditions, Employment

Employment by Industry in Percent of Total Employment, Year 2000

Industry	Study Area Total	Montana	United States
Agriculture, forestry, fishing and hunting, and mining	19.7%	7.9%	1.9%
Construction	5.6%	7.4%	6.8%
Manufacturing	2.6%	6%	14.1%
Wholesale trade	2.9%	3%	3.6%
Retail trade	11.2%	12.8%	11.7%
Transportation and warehousing, and utilities	5.8%	5.4%	5.2%
Information	1.9%	2.2%	3.1%
Finance, insurance, real estate, and rental and leasing	3.6%	5.5%	6.9%
Professional, scientific, management, administrative, and waste management services	2.8%	6.5%	9.3%
Educational, health and social services	23.1%	21.7%	19.9%
Arts, entertainment, recreation, accommodation and food services	7.8%	10.4%	7.9%
Other services (except public administration)	5.3%	5.3%	4.9%
Public administration	7.7%	5.9%	4.8%

Source: U.S. Census Bureau, 2000 Census



Assessment of Existing Conditions, Oil Production

Production of Oil in Montana, North-eastern Montana and Study Area (Millions of Barrels)

Geographic Area	2000	2001	2002	2003	2004
Montana	15.7	16.3	17	19.4	24.7
Northeastern Montana	12.6	13.4	14.3	16.8	22.1
Study Area	5.87	6.27	6.68	8.39	13.23
Richland County	2.6	3	3.4	5.3	10.2
Roosevelt County	1.5	1.4	1.5	1.4	1.4
Sheridan	1.6	1.7	1.6	1.5	1.5
Valley County	0.17	0.17	0.18	0.19	0.13
Production in Study Area as Percentage of All of Montana	37.4%	38.5%	39.3%	43.2%	53.6%
Rate of Growth of Production in Study Area, in Percent		6.8%	6.5%	25.6%	57.7%

Source: Montana Oil and Gas. Annual Review, various issues, Montana Board of Oil and Gas



Assessment of Existing Conditions, Agriculture

2004 Agricultural Production in Montana and Study Area

Agricultural Crop Montana		Study	Study Area as Percentage of	Change in Production, 2000 – 2004, Percent		
Agricultural Grop	Wontana	Area	Montana	Montana	Study Area	
Wheat, Millions of Bushels	173.1	52.5	30.3%	27.9%	13.6%	
Barley, Thousands of Bushels	48,970.0	3,513.0	7.2%	28.9%	69.2%	
Oats, Thousands of Bushels	2,400.0	693.0	28.9%	-7.7%	-13.8%	
Sugar Beets, Thousands of Tons	1,131.0	383.2	33.9%	-14.3%	-20.5%	

Source: United States Department of Agriculture, National Agricultural Statistics Service

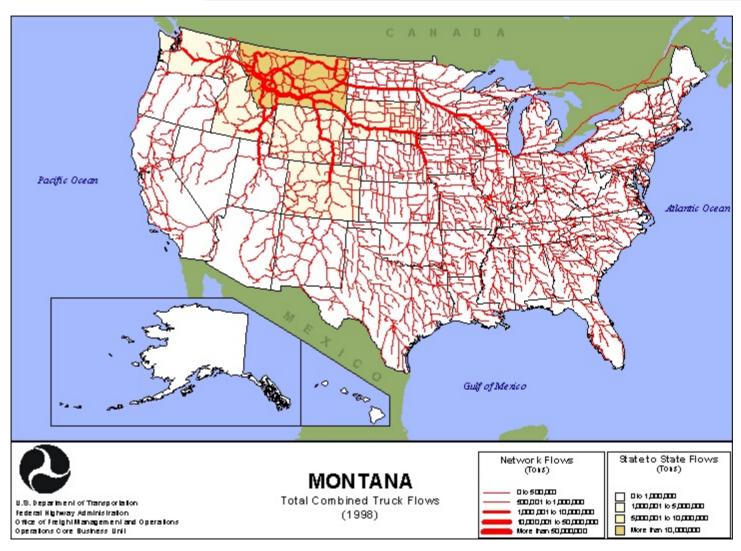
Change in Number of Farms and Land in Farms in the Study Area and Montana, 1997 to 2002, in Percent

Agricultural Statistic	Montana	Study Area
Number of Farms	14.8%	9.0%
Land in Farms (millions of acres)	1.7%	5.5%

Source: Based on Source: United States Department of Agriculture, 1997 Census of Agriculture and 2002 Census of Agriculture

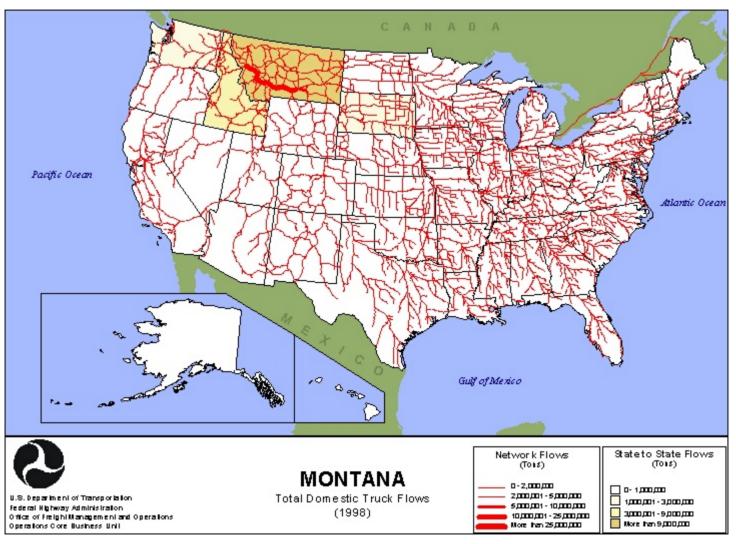


Assessment of Existing Conditions, Total Truck Flows





Assessment of Existing Conditions, <u>Domestic</u> Truck Flows





Assessment of Existing Conditions, Rail Flows





Assessment of Existing Conditions, Commodities Shipped

Top 15 Commodities Shipped in Montana by Weight, <u>Domestic</u> Shipments with Montana Origin, Thousands of Short Tons

	Oletiere	;	Shipments b	oments by Mode				
Commodity	Total	Cumulative Percentage	Pipeline & Unknown	Rail	Truck	Other		
Coal	55,920.6	42.7%	13,998.5	39,841.3	1,639.3	441.6		
Coal, n.e.c.	21,456.3	59.1%	18,715.4	1,070.9	1,670.1	0.1		
Cereal grains	10,857.0	67.3%	0.0	1,661.9	9,195.0	0.0		
Gasoline	6,032.2	71.9%	1,100.8	499.2	4,432.2	0.0		
Crude petroleum	5,189.8	75.9%	4,602.9		586.9	0.0		
Logs	4,403.2	79.3%			4,403.2	0.0		
Wood products	3,892.9	82.2%	16.3	1,359.2	2,489.8	27.6		
Nonmetallic minerals	3,846.1	85.2%		2,805.2	993.1	47.8		
Fuel oils	2,933.5	87.4%	5.8	34.5	2,893.2	0.0		
Gravel	2,485.0	89.3%		0.0	2,485.0	0.0		
Waste / scrap	1,997.3	90.8%			1,997.3	0.0		
Nonmetal mineral products	1,970.3	92.3%	0.7	432.7	1,536.0	0.9		
Unknown	1,556.5	93.5%	0.0		1,556.5	0.0		
Natural sands	1,325.6	94.5%			1,325.6	0.0		
Other foodstuffs	918.3	95.2%	4.0	96.6	817.7	0.0		
Live animals/fish	905.9	95.9%			905.9	0.0		
Mixed freight	696.0	96.5%	0.1		694.6	1.3		
Fertilizers	610.6	96.9%	0.0	415.1	195.6	0.0		
Other commodities	4,027.1	100.0%	57.9	596.8	3,327.7	44.7		
Total	131,024.3		38,502.3	48,813.4	43,144.6	564.0		

Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration



Assessment of Existing Conditions, Shipments by Mode

Shipments from and to Montana, by Mode, in Percentage of Total for Geographic Shipment Category

Coomentie Cotonomy of Chinmonto	Total Tonnage of Shipments			Total Value of Shipments				
Geographic Category of Shipments	Rail	Truck	Pipeline	Other	Rail	Truck	Pipeline	Other
Domestic Shipments Originating in Montana	37.3%	32.9%	29.4%	0.4%	6.0%	64.3%	25.8%	3.9%
Cross-border Shipments Originating in Montana	55.6%	35.2%	8.5%	0.7%	26.4%	66.2%	6.5%	0.9%
Overseas Shipments Originating in Montana	94.8%	2.6%	0.0%	2.6%	73.1%	13.3%	0.0%	13.5%
Total Shipments Originating in Montana, by Mode	38.9%	32.2%	28.4%	0.5%	6.7%	64.0%	25.4%	3.9%
Domestic Shipments with Montana Destination	7.9%	63.3%	28.6%	0.2%	0.8%	81.8%	7.0%	10.3%
Cross-border Shipments with Montana Destination	6.2%	14.3%	79.5%	0.0%	0.8%	81.8%	7.0%	10.3%
Overseas Shipments with Montana Destinations	0.6%	97.9%	0.3%	1.3%	0.1%	95.4%	0.3%	4.2%
Total Shipments with Montana Destinations, by Mode	7.7%	57.4%	34.7%	0.2%	1.1%	79.3%	10.1%	9.5%

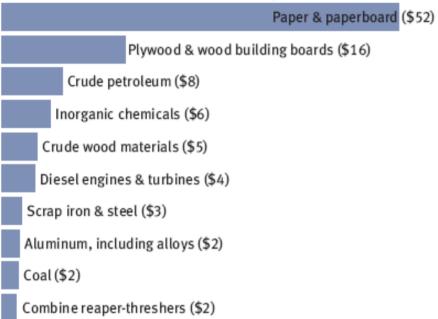
Source: Extracted from 2002 Freight Analysis Framework (FAF) Database for Montana, Federal Highway Administration



Assessment of Existing Conditions, Trade with Canada

Montana's Leading Exports to Canada

2004, in millions of U.S. dollars



Montana's Leading Imports from Canada

Petroleum & coal products (\$198)

Softwood lumber (\$112)

Natural gas (\$88)

Fertilizers (\$53)

Motor vehicle parts* (\$19)

Prefabricated buildings & structures (\$18)

Mining machinery (\$13)

Oil seed cake & meal (\$12)

Containers (\$10)

Total Montana exports to Canada: \$276 million

Total Montana imports from Canada: \$2.9 billion



Economic Development Opportunities

Agriculture

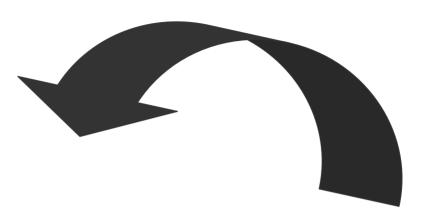
- **➤** Loading facilities
- Dairy farms
- Crop diversification
- Organic products
- Bio-diesel and ethanol

Energy

- Oil and gas exploration
- Oil refinery
- Wind energy
- Coal facility

♦ Tourism

- Dinosaur trail
- Montana cowboy hall of fame
- National and state parks



Transportation Improvements



Data Collection Plan

- Populations: farmers and ranchers; truckers and freight forwarders; tourism representatives; energy sector representatives; etc.
- Sample Size: approximately 20 30 respondents within each survey group.
- Possible Survey Methods:
 - In-person interviews;
 - Workshops;
 - Phone surveys; and
 - > Mail surveys.
- Questionnaire Development
- Data Collection



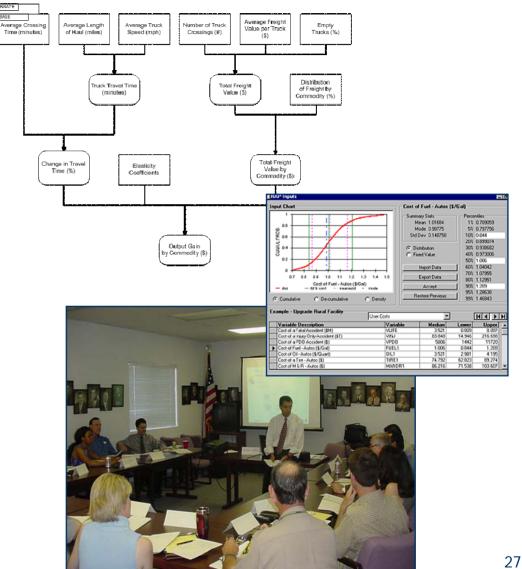
Sample Survey Questions

- Now assume the alterations to the road transportation network described below have been completed. On a scale of one to five how would you respond to the following statements?
 - FARMERS & RANCHERS I believe that the renovations and expansions along MT-16 and US-2 will be beneficial to my farming or ranching operation.
 - 1) Strongly Agree
 - 2) Mildly Agree
 - 3) Neutral
 - 4) Mildly Disagree
 - 5) Strongly Disagree
 - > {TRUCKERS} I would be inclined to use sections of this route, including the section that traverses north-eastern Montana, if it was the most direct path for my shipment.
 - 1) Strongly Agree
 - 2) Mildly Agree
 - 3) Neutral
 - 4) Mildly Disagree
 - 5) Strongly Disagree
 - > {TRUCKERS} I would be inclined to use sections of this route, including the section that traverses north-eastern Montana, even if it was NOT the most direct path for my shipment.
 - 1) Strongly Agree
 - 2) Mildly Agree
 - 3) Neutral
 - 4) Mildly Disagree
 - 5) Strongly Disagree

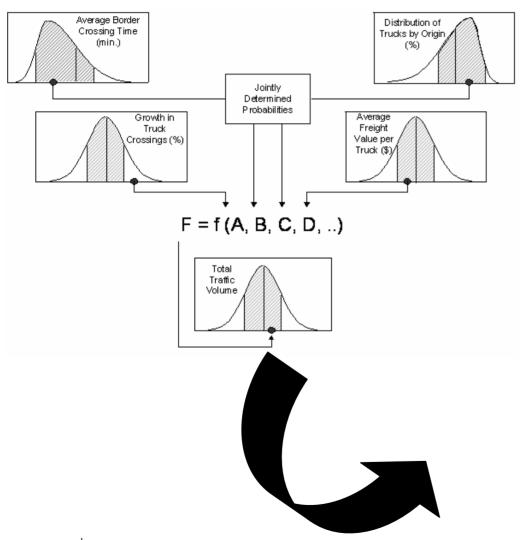


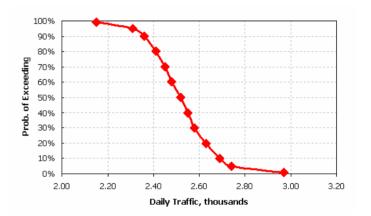
Risk Analysis Sessions

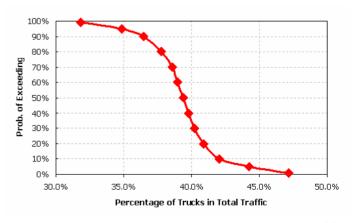
- Review all structure and logic models and forecasting assumptions with a panel consisting of:
 - > Local experts (land use, transportation, socio-economics, demographics, etc.);
 - > Transportation Planners;
 - Land owners and developers;
 - Economists; and
 - Others.
- Revise logic and parameter assumptions through the session, designed to facilitate consensus.



Risk Analysis Outcomes









Outreach Efforts

- Three public involvement "open house" meetings:
 - Study objectives and initial assessment of existing regional economic conditions and opportunities
 - > Economic analysis outcomes
 - Conclusions and recommendations
- Two stakeholder workshops (risk analysis sessions):
 - Model development and economic analysis
 - Study findings, conclusions and recommendations
- Two executive briefings:
 - Study objectives, methodology and work plan
 - Study findings, conclusions and recommendations

Discussion Points

- Suggested data sources;
- Additional persons or organizations to contact;
- Recent socio-economic trends;
- Economic development opportunities;
- Role of transportation improvements in fostering development; and
- Next study phases.

TRED - Transportation Regional Economic Development

Project Schedule

					JECT DURA				
TASKS	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
Tack 1 Accompany of Evipting Regional Economic	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06
Task 1 – Assessment of Existing Regional Economic Conditions and Opportunities									
1.1 Project Initiation, Initial Data Collection and Information									
Review									
Annotated Bibliography / Technical Memorandum									
1.2 Study Kick-off Meetings									
Executive Briefing Outline		\triangleright							
1.3 Collection of Survey Data and Interviews									
Data Collection Plan / Dataset and Documentation				•					
1.4 Assessment of Existing Economic Conditions: Data Analysis and Reporting									
Working Paper #1									
1.5 Assessment of Economic Opportunities: Data Analysis and									
Reporting Working Paper #2									
1.6 Public Involvement Meeting, "Open House"									
Support Material					••				
Task 2 – Economic Analysis					, ,				
•									
2.1 Model Development									
Working Paper #3									
2.2 Traffic Growth Forecasts and Freight Volume Projections									
under Existing Development Plans and Regional Economic									
2.3 Traffic Growth Forecasts and Freight Volume Projections with									
Induced Economic Development and Travel Demand									
Working Paper #4									
2.4 Stakeholder Workshop									
Reference Book and Work Book							<u> </u>		
2.5 Sensitivity Analysis and Risk Analysis									
Working Paper #5							•		
2.6 Economic Analysis Public Involvement "Open House".									
Support Material						•	> (
Task 3 – Conclusions and Recommendations									
2.4 Paparting									
3.1 Reporting									
Draft Final Reports 3.2 Stakeholder Workshop							33333330000		
3.2 Stakenolder worksnop Work Book]				7	
				 					
3.3 Executive Briefing Executive Briefing Outline								5	
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3.4 Public Involvement Meeting, "Open House" Support Material									
3.5 Revisions and Distribution			 	1				 	
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Final Reports Legend:				l				l	

- Expected completion date:
 October 2006
- Assessment of existing conditions: February – June
- Model development: April July
- Sensitivity analysis and risk analysis: July August
- Conclusions and recommendations: October
- Public involvement meetings:
 Late June, Mid-August and Early
 October
- Stakeholder workshop: Early August and Late September

Questions?





WORK SESSION #1

Prepared by:

HDR | HLB Decision Economics Inc.





Appendices

Agriculture Production in Eastern Montana

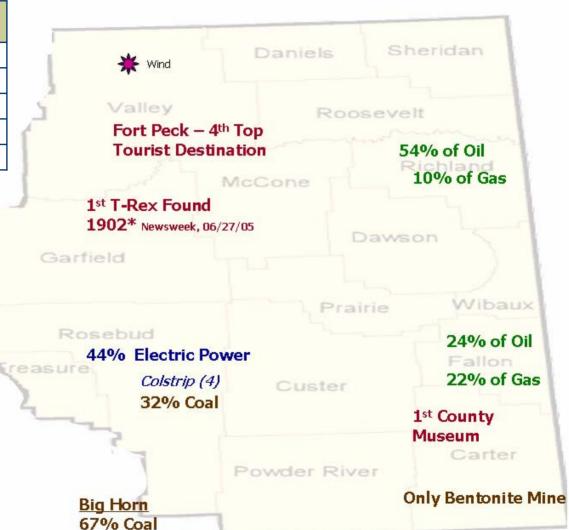
PRODUCT	U.S. RANK	% of U.S.	% EASTERN MT
Durum	2 nd	20%	95%
Spring	3 rd	16%	47%
Lentils	3 rd	24%	95%
Dry Peas	3 rd	11%	78%





Energy Production and Tourism in Eastern Montana

PRODUCT	Montana U.S. RANK
Coal Reserves	1 st
Bentonite	2 nd
Wind Energy Potential	5 th
Coal	6 th
Petroleum (Daily Output)	12 th





Eastern Montana Agriculture and Energy

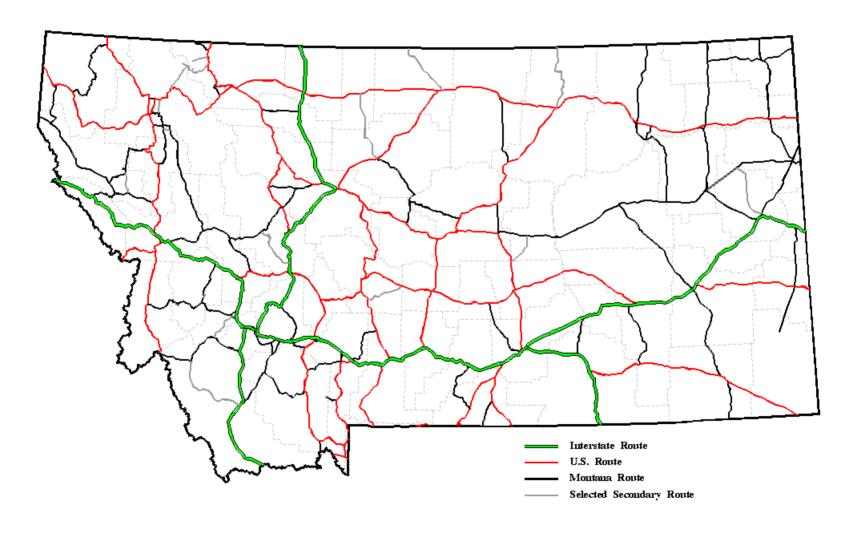
Product	County/Region	% Total	Rank
Cash Receipts	Eastern Montana	30%	2
Durum	Sheridan	54%	1
Spring	Valley	11%	1
	Roosevelt	11%	2
Lentils	Sheridan	50%	1
Dry Peas	Valley	25%	1
	Sheridan	17%	2
	Roosevelt	17%	3
Canola	Daniels	32%	1
Corn – Grain	Treasure	19%	1
	Richland	10%	4
Sugar Beets	Richland	30%	1
Flaxseed	Sheridan	42%	1
	Valley	30%	2
Pinto Beans	Prairie	14%	3
	Dawson	13%	4
Safflower	Richland	26%	1
	Dawson	15%	2
Sheep and Lambs	Carter	14%	1
Cattle	Valley	307%	5
	Rosebud	3.4%	6
	Custer	2.7%	11

Product	County/Region	% Total	Rank
Oil	Richland	54%	1
	Fallon	24%	2
Natural Gas	Fallon	22%	1
	Richland	10%	5
	Eastern Montana	36%	2
Oil & Gas Tax	Richland	25%	1
	Fallon	23%	2
Coal	Rosebud	32%	2
Electricity	Rosebud – Colstrip	44%	1

NOTE: Eastern Montana ranks first in all of the above except where noted.

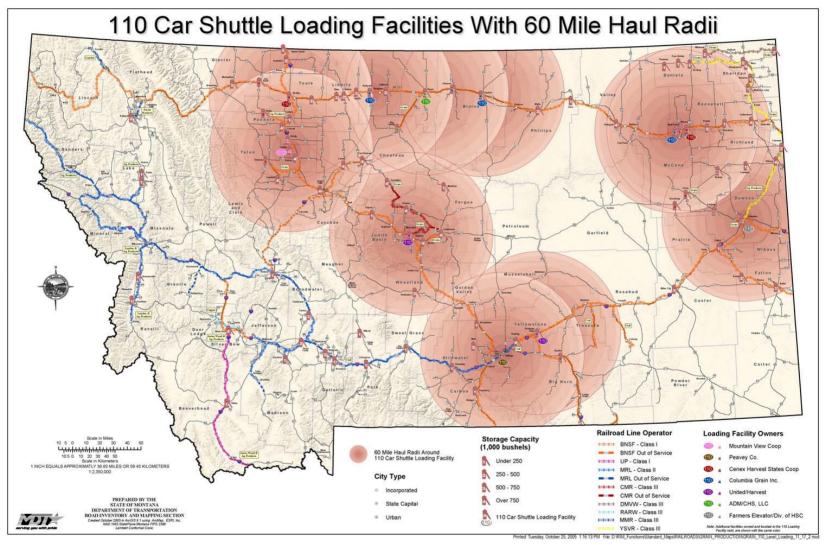


Montana Road Network



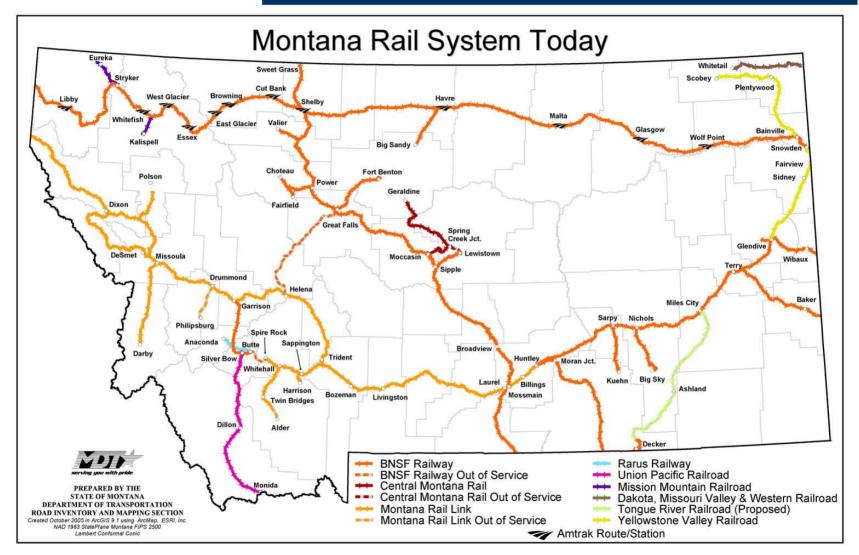


Montana Loading Facilities



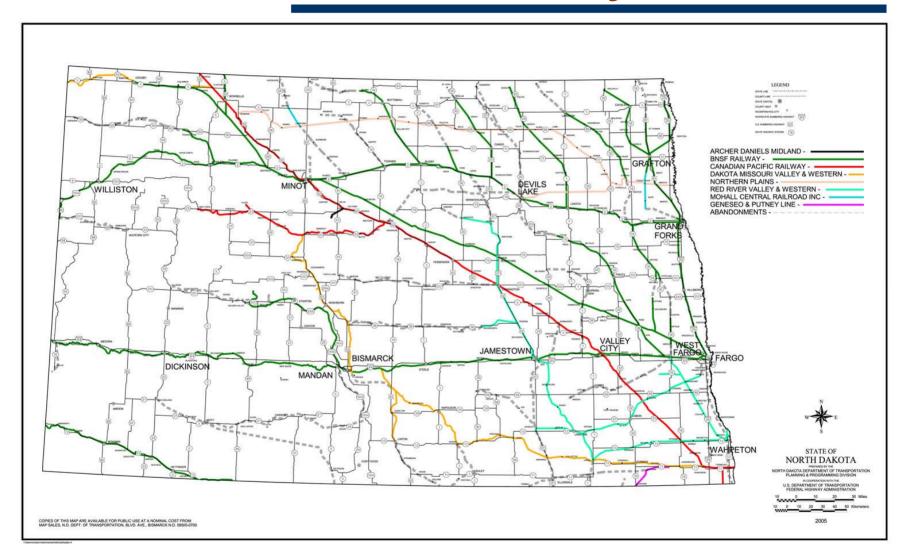


Montana Rail System



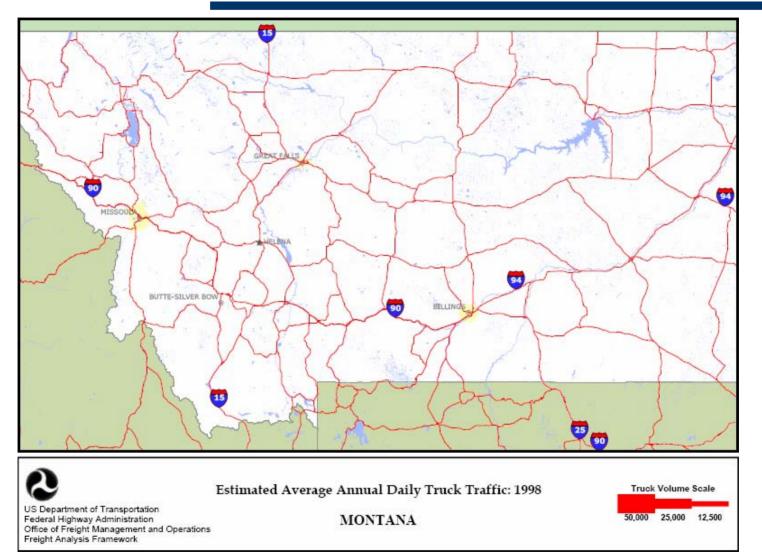


North Dakota Rail System



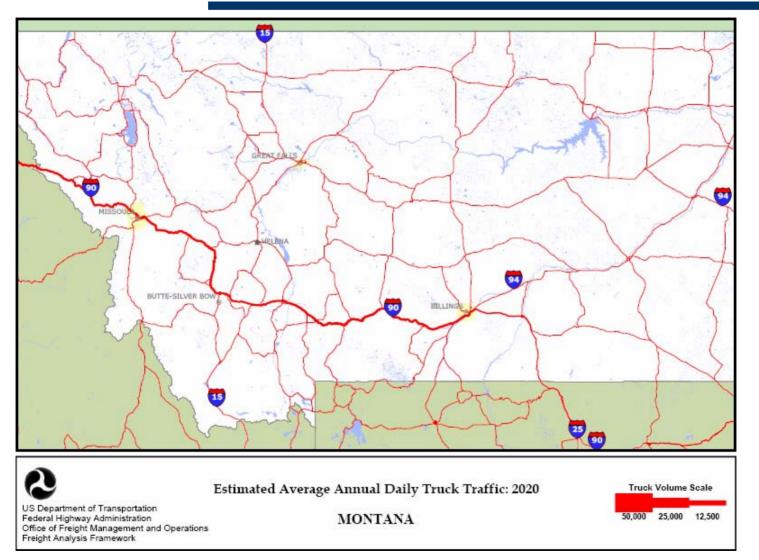


Assessment of Existing Conditions, AADT Growth





Assessment of Existing Conditions, AADT Growth





Annotated Bibliography, Research Papers

- ♦ Cambridge Systematics with Economic Development Research Group, ICF Consulting, and Short Elliot Hendrikson, "Montana Highway Reconfiguration Study," May 2005, p. 3-27 − 3-33
- Economic Development Research Group, Inc. and Dye Management Group, Inc., "Montana Tran Plan 21 Update Economic Development Issues and Recommendations," 2002; retrieved from: http://www.edrgroup.com/edr1/library/lib_trans_roads/P076-Montana-tranplan-21.shtml
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