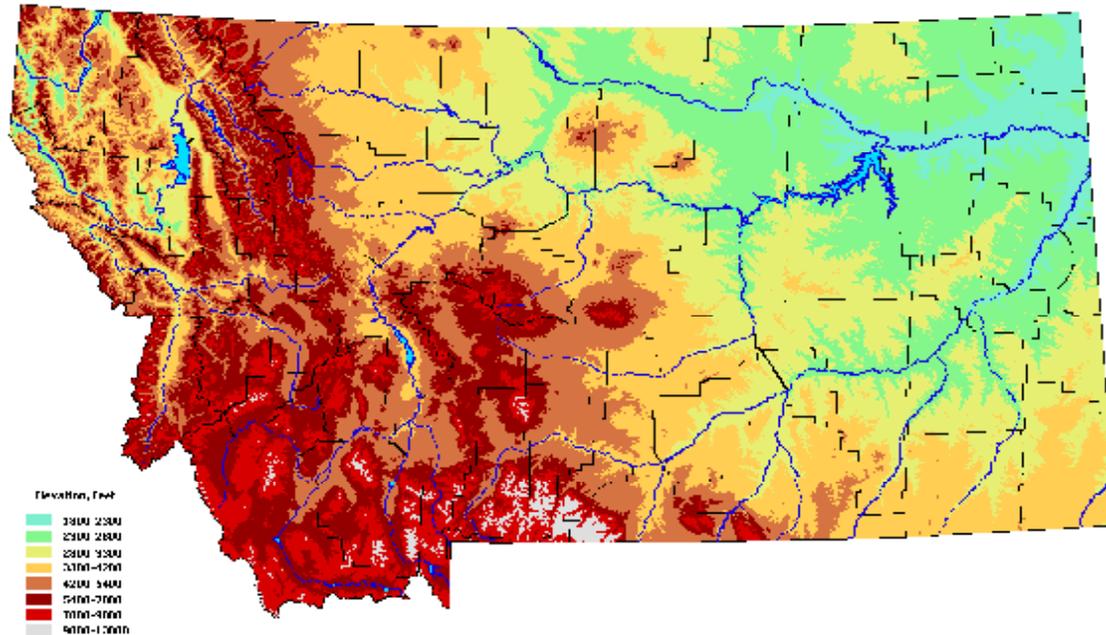


# **Opportunities & Challenges for Montana's Workforce on New Energy Projects**

**Montana Energy Summit  
Montana State University, Bozeman MT  
October 18-19, 2005**

Ed Gorman, President,  
American Community Partnerships  
Washington, DC

# Montana



**POPULATION (2005): 926,865**

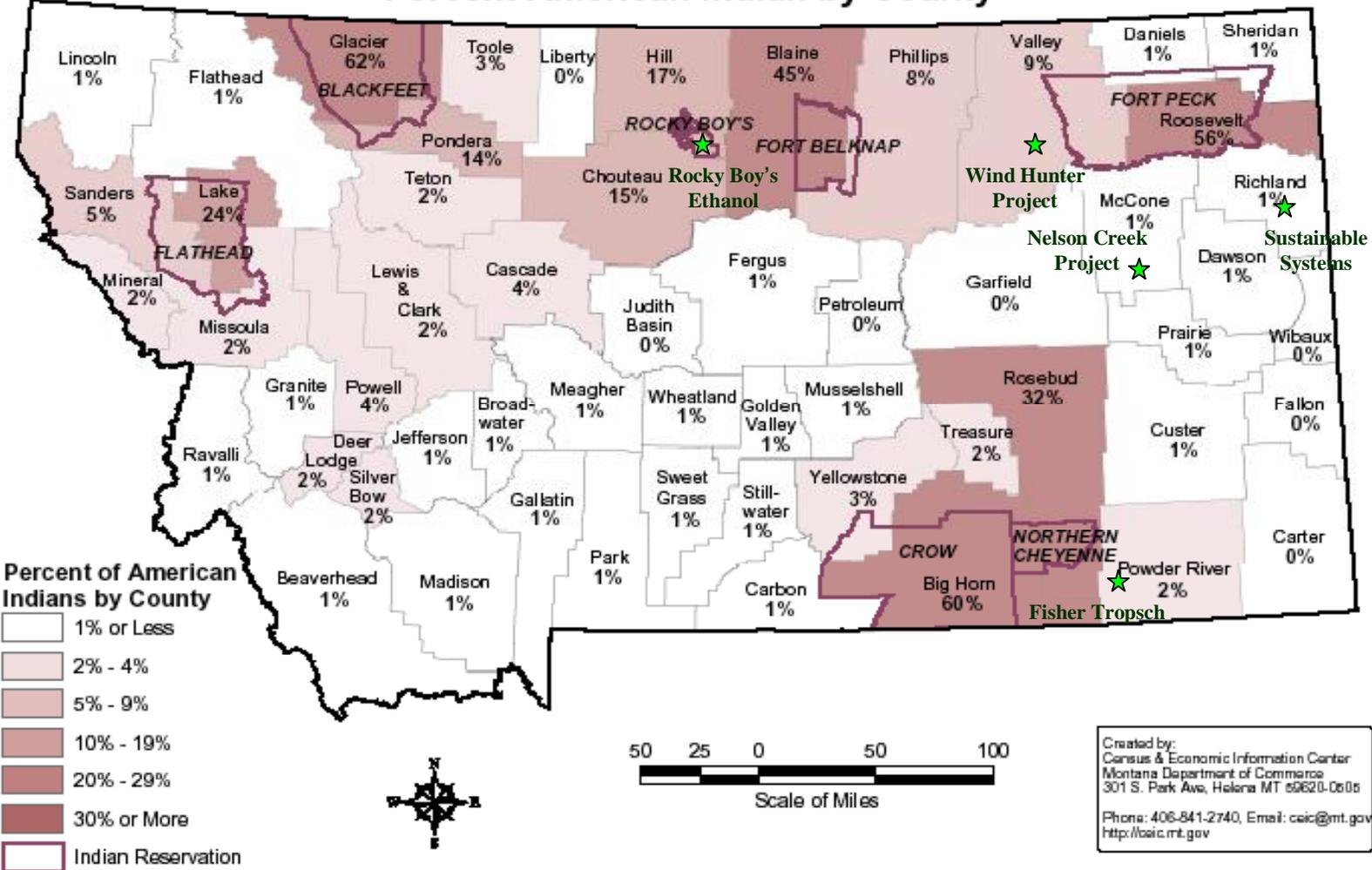
**LAND AREA: 145,552 Square Miles**

**CIVILIAN LABOR FORCE (2005): 501,221**

**UNEMPLOYMENT (2005): 19,183**

# CENSUS 2000: MONTANA

## Percent American Indian by County



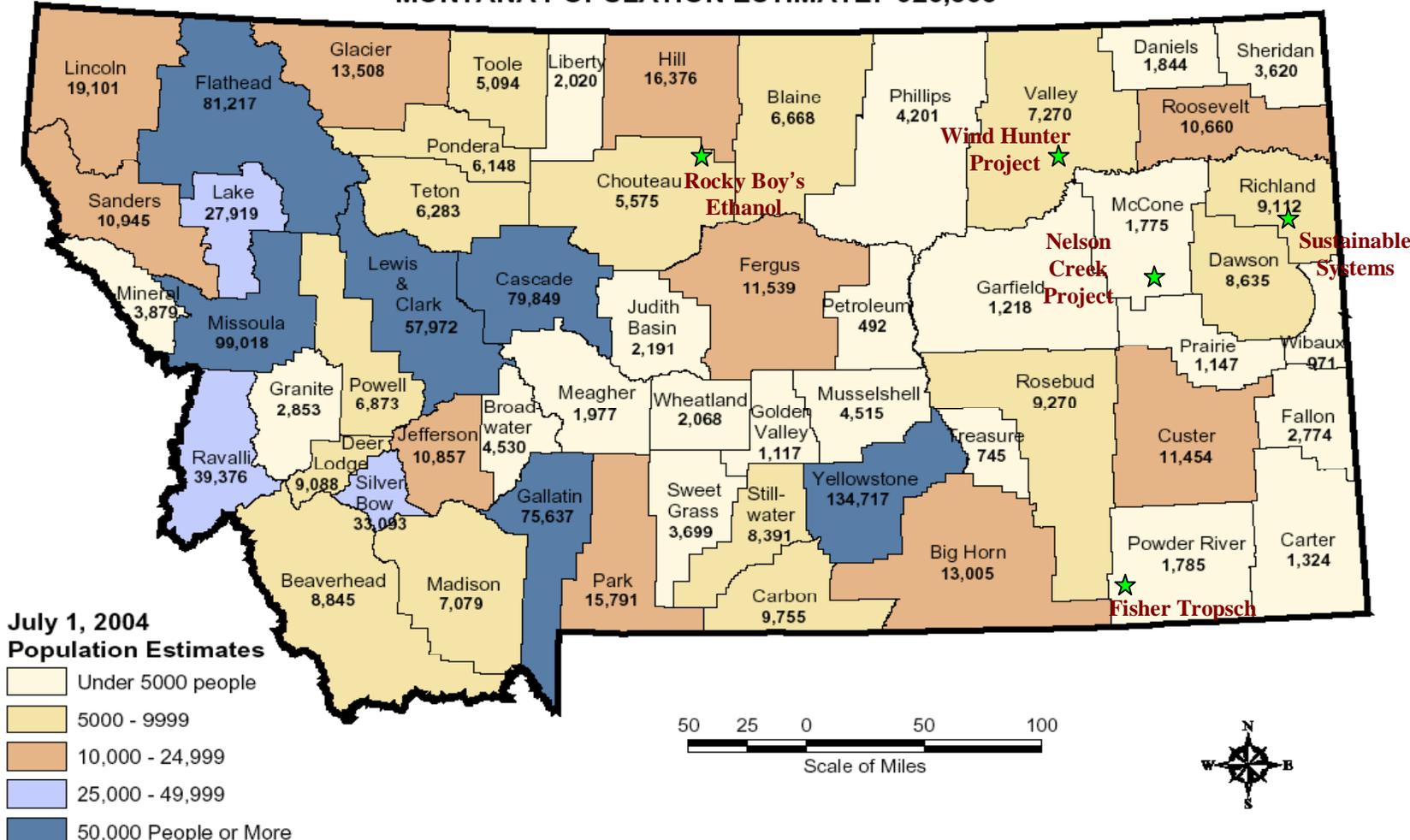
Source: U.S. Census Bureau, Census 2000; Summary File 1, Table P3 - Race.

August 2005 IndianByCounty2.mxd

# MONTANA COUNTY POPULATION

## July 1, 2004 Population Estimates

### MONTANA POPULATION ESTIMATE: 926,865

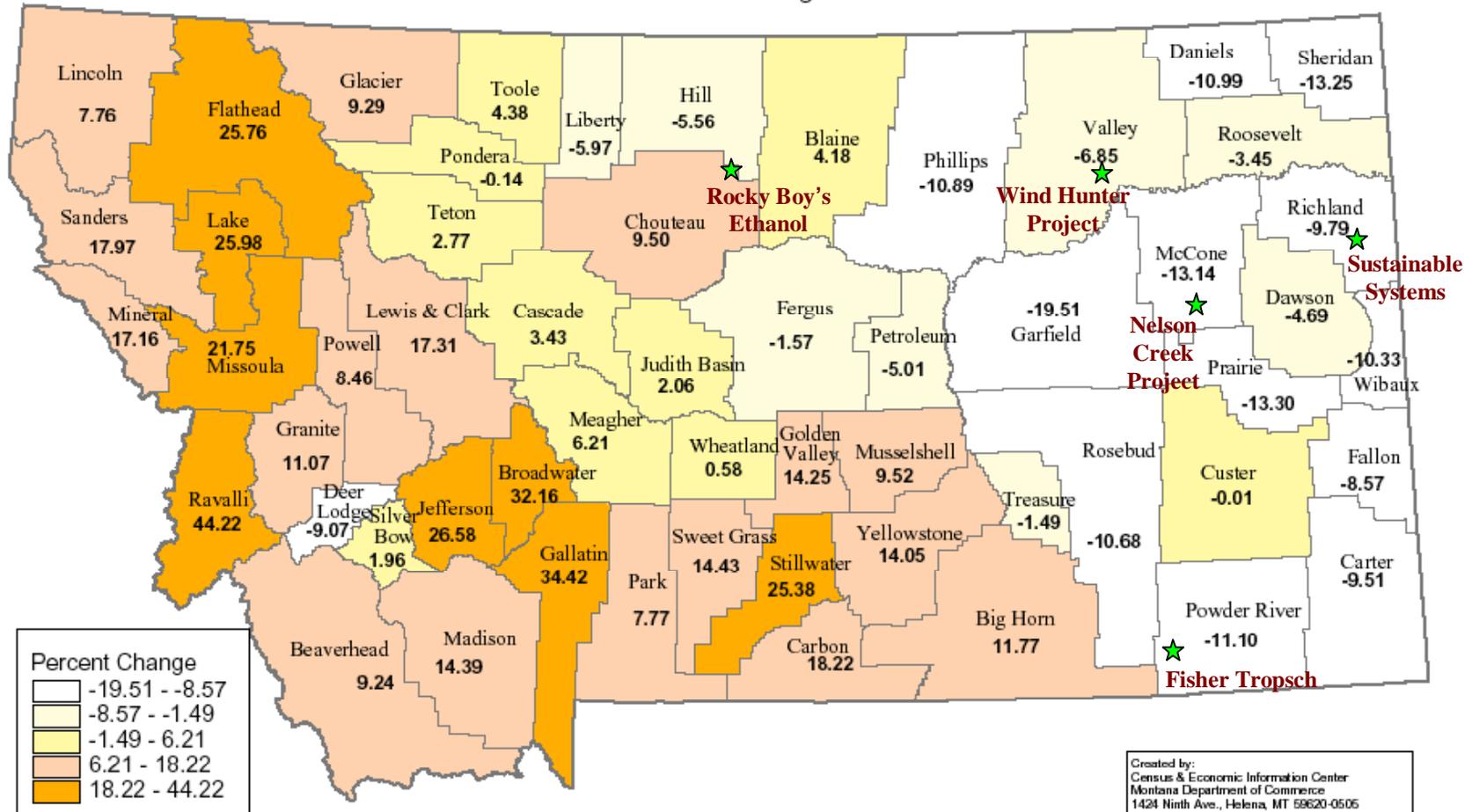


Source: Population Division, U.S. Census Bureau, Table 2: Cumulative Estimates of Population Change for Counties of Montana and County Rankings: April 1, 2000 to July 1, 2004 (CO-EST2004-02-30), Release Date: April 14, 2005  
 Graphic by: Census & Economic Information Center, Montana Department of Commerce, 301 S. Park Ave, Helena, MT 59620-0505, 406-841-2740, ceic@mt.gov, http://ceic.mt.gov/Data\_Maps.html - county\_pop\_est\_nos04.gif or pi

# Montana County Population

Percent Change 1990 to 2000

Montana's Percent Change: 12.9%



Source: U.S. Bureau of the Census, Public Law 94-171 data. March 2001.

March 21, 2001

0 25 50 Miles

Created by:  
 Census & Economic Information Center  
 Montana Department of Commerce  
 1424 Ninth Ave., Helena, MT 59620-0505  
 406 444-2896 ceic@state.mt.us  
<http://ceic.commerce.state.mt.us>  
 census\_2000.apr

## Proposed Montana Energy Projects

Project	Estimated Energy Output	Estimated Employment	Estimated Costs
<b>Rocky Boy Ethanol</b> Dry mill ethanol production facility, Rocky Boy's Reservation, NE MT	§ 40 or 60 million gallons/year (MMGY) ethanol, distiller's grains and solubles § Potentially wheat gluten	<u>Operation:</u> § 43 FT (40 MMGY) § 46 FT (60 MMGY) § Ave. Wage: ~\$40,000/yr	§ \$84.6 million (40 MMGY) § \$107.75 million (60 MMGY) § Direct labor & benefits: \$1.8 million
<b>Fisher Tropsch</b> Coal liquefaction facility Otter Creek Coal Tracks, SE MT	§ 80,000 barrels/day synthetic fuels	<u>Operation:</u> § 2,000 PFT § Ave. Wage: \$19-25/hr <u>Construction:</u> § 4,000	§ \$6 billion for construction over 5 years
<b>Montola/Sustainable Systems</b> Biodiesel refinery, NE MT, near Culbertson	§ 15 million gallon/yr	<u>Operation:</u> § 31 FT § Ave. Wage: \$14/hr	§ \$10-12 million § Total salary wages ~\$1.5 million
<b>Nelson Creek Project</b> 500 MW circulating fluidized bed (CFB) clean coal technology and coal-fired mine mouth plant Just west of Circle, MT	§ 500 MW electric power	<u>Operation:</u> § 150 PFT § Ave. Wage: \$60,000/yr <u>Construction:</u> § Peak: 1,200	§ \$900 million construction costs
<b>Wind Hunter Project</b> aka Valley County Wind Energy Project (VCWEP), north of Glasgow, MT	§ Total 334 wind turbines generating 500 MW power § Built in 4 phases, and available by 2008-2016	<u>Operation:</u> § 89 FTE <u>Construction:</u> § 618 FTE <u>Ave. wage:</u> § \$28,800/employee/yr	<u>Construction:</u> § \$546.45 million inc. \$20.21 million wages § \$2.26 million in employee taxes <u>O&amp;M:</u> § \$4.98 million/yr in wages § \$685,786/yr taxes

## Proposed Montana Energy Projects

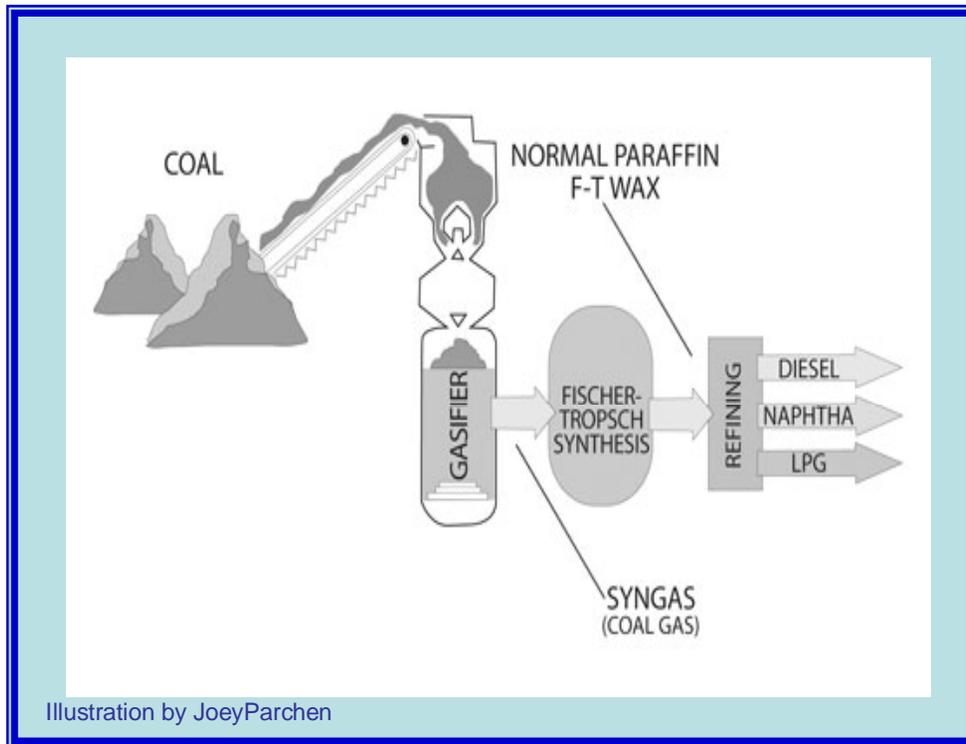
Project	Estimated Employment	Educational Institutions In Region	Surrounding Counties
<b>Rocky Boy Ethanol</b>	<u>Operation:</u> § 43 FT (40 MMGY) § 46 FT (60 MMGY) § Ave. Wage: ~\$40,000/yr	§ Stone Child College: Box Elder, Rocky Boy's Reservation § Ft. Belknap College: Harlem, Ft. Belknap Reservation § MSU Northern: Havre, MT § MSU Great Falls College of Technology: Great Falls, MT § University of Great Falls (Private): Great Falls, MT	§ Chouteau § Hill § Blaine § Cascade § Daniels
<b>Fisher Tropsch</b>	<u>Operation:</u> § 2,000 PFT § Ave. Wage: \$19-25/hr <u>Construction:</u> § 4,000	§ Chief Dull Knife College: Lame Deer, Northern Cheyenne Reservation § Little Big Horn College: Crow Agency, Crow Reservation § MSU-Billings and the Billings College of Technology: Billings, MT § Miles City Community College: Miles City, MT § Rocky Mountain College (Private): Billings, MT	§ Powder River § Big Horn § Rosebud § Custer § Yellowstone
<b>Sustainable Systems</b>	<u>Operation:</u> § 31 FT § Ave. Wage: \$14/hr	§ Ft. Peck Community College: Poplar, Ft. Peck Reservation § Dawson Community College: Glendive, MT	§ Richland § Dawson § McCone § Roosevelt
<b>Nelson Creek Project</b>	<u>Operation:</u> § 150 PFT § Ave. Wage: \$60,000/yr <u>Construction:</u> § Peak: 1,200	§ Ft. Peck Community College: Poplar, Ft. Peck Reservation § Dawson Community College: Glendive, MT	§ McCone § Dawson § Prairie § Roosevelt § Garfield
<b>Wind Hunter Project</b>	<u>Operation:</u> § 89 FTE <u>Construction:</u> § 618 FTE <u>Ave. wage:</u> § \$28,800/employee/yr	§ Dawson Community College: Glendive, MT § Ft. Peck Community College: Poplar, Ft. Peck Reservation § Ft. Belknap College: Harlem, Ft. Belknap Reservation	§ Valley § Roosevelt § McCone § Garfield § Dawson

## Project Employment Compared to Adjacent County and Reservation Employment

Project	Est. Project Employment	Adjacent Counties, Reservations	Total Population*	Civilian Labor Force (2004)	Employment (2004)	Unemployment (2004)
<b>Rocky Boy Ethanol</b>	43-46 FTE (Operation)	Chouteau, Hill, Blaine, Cascade, Daniels	110,312	53,599	51,345	2,254
		<i>Rocky Boy's, Ft. Belnap</i>	5,635	1,789	1,553	236
<b>Fisher Tropsch, Otter Creek</b>	2,000 FTE (Operation) 4,000 (Construction, Peak)	Powder River, Big Horn, Rosebud, Custer	35,514	16,072	15,118	954
		<i>N. Cheyenne, Crow</i>	11,364	4,146	3,666	480
<b>Montola/Sustainable Systems</b>	31 FTE (Operation)	Richland, Dawson, McCone, Roosevelt	30,182	14,391	13,749	642
<b>Nelson Creek Project</b>	150 FTE (Operation) 1,200 (Construction, Peak)	McCone, Dawson, Prairie, Roosevelt, Garfield	23,435	10,690	10,174	516
		<i>Ft. Peck</i>	10,321	3,902	3,590	312
<b>Wind Hunter Project</b>	89 FTE (Operation) 618 (Construction)	Valley, Roosevelt, McCone, Garfield, Dawson	29,558	13,885	13,238	647
		<i>Ft. Peck, Ft. Belnap</i>	13,280	4,799	4,384	415

\* Total population for adjacent counties is estimated 2004 data. Reservation population is from 2000 Census

# Fischer Tropsch at Otter Creek Coal Tracks



**Coal Liquefaction Facility**

**Est. 80,000 Barrels/Day  
Synthetic Fuels**

**Construction Costs:  
\$6 Billion Over 5 Years**

**Construction Jobs: 4,000**

**Est. Plant Jobs: 2,000 FTE**

**Ave. Wage \$19-25/hr**

Source: John Adams, "Coal Rush" Missoula Independent, 10/6/2005

## Montana Employment Selected Industries

	Employment <sup>1</sup>	Ave. Monthly Earnings <sup>2</sup>
<b>Montana Total</b>	<b>385,093</b>	<b>\$2,366.50</b>
Mining	5,831	\$4,166.50
Utilities	3,541	\$5,124.00
Construction	23,967	\$2,660.00
Manufacturing	19,645	\$3,001.50

*Source: Montana Dept. of Labor & Industry*

*Notes: <sup>1</sup> Average for 2004 Q1-3. <sup>2</sup> Average for 2004 Q1-2.*

## Clean Coal Projects—Adjacent Counties Employment Characteristics

Project	Est. Project Employment	Adjacent Counties/ <i>Reservations</i>	Employment (2004)	Unemploy- ment (2004)	Construction Employment (2004*)
<b>Fisher Tropsch, Otter Creek</b>	2,000 FT (Operation) 4,000 (Construction, Peak)	Big Horn, Custer, Powder River, Rosebud	15,118	954	427
		Yellowstone	74,473	2,710	4,273
		<i>N. Cheyenne, Crow</i>	3,666	480	N/A
<b>Nelson Creek Project</b>	150 FT (Operation) 1,200 (Construction, Peak)	Dawson, Garfield, McCone, Prairie, Roosevelt	10,174	516	250
		<i>Ft. Peck</i>	3,590	312	N/A

Source: Montana Dept. of Labor & Industry

Note: \*Average for Q3 2004 +3 prior quarters

## Clean Coal Projects—Adjacent Counties Employment Characteristics

Project	Est. Project Employment	Adjacent Counties/ <i>Reservations</i>	Employment (2004)	Unemployment (2004)	Construction Employment (2004*)
<b>Fisher Tropsch, Otter Creek</b>	2,000 FT (Operation) 4,000 (Construction, Peak)	Big Horn	4,602	457	78
		Custer	5,524	232	265
		Powder River	895	37	16
		Rosebud	4,097	228	68
		Yellowstone	74,473	2,710	4,273
		<i>N. Cheyenne</i>	1,292	190	N/A
		<i>Crow</i>	2,374	290	N/A
<b>Nelson Creek Project</b>	150 FT (Operation) 1,200 (Construction, Peak)	Dawson	4,134	171	146
		Garfield	639	23	0
		McCone	996	29	26
		Prairie	541	27	3
		Roosevelt	3,864	266	75
		<i>Ft. Peck</i>	3,590	312	N/A

Source: Montana Dept. of Labor & Industry

Note: \*Average for Q3 2004 +3 prior quarters