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# **Effects of Petroleum Industry on County Government Costs in North Dakota**

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Report prepared for the North Dakota Association of Oil  
and Gas Producing Counties

## **Objective**

Document how recent increases in oil and gas exploration and production have affected the cost of providing county government services in North Dakota

## **Approach**

- Survey county officials -- ask county officials to document the effects on their individual office
- Use survey results to generate projections of cost increases for oil and gas producing counties

## **Survey**

### **What did we ask?**

- General (non-road) offices
  - Changes in office workload
  - Changes in cost of providing services
  - Ability to offset costs from new/increased fees & charges
- Road departments
  - Information on maintenance, repair, and construction operations on impacted and non-impacted roads

## **Survey Response Rate**

- 72 offices/departments in 15 counties (only Bottineau County absent)
  - 12 road departments
  - 4 or more responses each from offices of auditor, sheriff, treasurer, r. of deeds, social services, & tax equalization
  - equates to about a 33 percent response rate

## **General County Offices**

With respect to only changes in petroleum sector activities in the past 12 months

- 83% of offices reported increased workloads
- Offices internalized the additional workload (added staff, extra hours for existing staff, purchased equipment)
- Increased workload = increased costs (86 percent of offices with increased workloads reported costs increased, compared to 0% of offices without changes in workload)
- Overall, about 72% of general offices reported cost increases

### **General Offices Areas of Additional Expense**

Expenses	Number	Percent
More supplies/inputs	33	76.7
Added equipment	24	55.8
Increased hours for staff	24	55.8
Hired full-time staff	16	37.2
More clients/applicants	14	32.6
Higher wage rates	13	30.2
Hired part-time staff	7	16.3
More training/recruitment	5	11.6

### **General Offices Cost Projections**

- Survey responses stratified based on county-level changes in petroleum output in last two years
  - Do not assume impacts equal in all counties
- Survey responses averaged across all county offices
  - Avoid estimating costs for specific offices

## General Offices Cost Projections

High Impact Counties Burke, Divide, Dunn, McKenzie, McLean, and Mountrail	
Average <u>net cost</u> increase per general office in last 12 months (average of all offices with and without cost increases)	\$32,800
Estimated number of county offices multiplied by average net cost increase per office	\$2,066,000

## General Offices Cost Projections

Moderate Impact Counties	
Average <u>net cost</u> increase per general office in last 12 months (average of all offices with and without cost increases)	\$14,800
Estimated number of county offices multiplied by average net cost increase per office	\$1,557,000

## **General Offices Cost Projections**

Estimate of Cost Increases over Past 12 Months	
High Impact Counties (about \$344,000 per county)	\$2,066,000
Moderate Impact Counties (about \$156,000 per county)	\$1,557,000
All Counties	\$3,623,000

## **Road Departments Unique Challenges**

- Effects in each county are different
  - Miles of roads affected
  - Type, capacities, characteristics of impacted roads
  - Geographic distribution of oil activity within county
  - Intensity of road use / traffic patterns
  - Costs for road operations
- Escalating input costs (e.g., gravel, fuel) not tied to petroleum sector use of roads
- In absence of petroleum industry, still have road maintenance costs

## **Road Departments Unique Challenges**

- Need to evaluate costs over broader time frames  
(majority of road operations not performed on all roads each year)
- Complex problem -- does not lend itself to relying on a single answer from road departments
- A different questionnaire and analysis was used

## **Road Departments Questionnaire**

- County officials provided the following for impacted and non-impacted roads
  - Miles, by road type
  - 12 separate maintenance, repair, and reconstruction/surfacing operations
    - Cost per mile
    - Frequency of need
    - Miles of need in next three years



## **Road Departments Cost Projections**

- Cost of maintaining impacted roads
- Cost in absence of oil industry
  - Applied non-impacted road data to impacted roads
    - Cost per mile by road operation
    - Frequency of need by road operation by road type
    - Miles impacted by road type
- Difference between the two estimates

## **Road Departments General Findings**

- Impacted vs non-impacted roads
  - Frequency of need is substantially higher (i.e., how often a particular operation is required)
  - Greater disparity with the most costly operations (e.g., reconstruction, resurfacing)
  - Many road operations more expensive (\$/mile) to perform on impacted roads than on non-impacted roads



## Road Departments Cost Projections 2010 through 2012

		Avg Cost Analysis		Ratio Analysis	
Counties*	Impacted Roads (8,600 miles)	Non-impacted Status	Net Cost Increase	Non-impacted Status	Net Cost Increase
	----- 000s of 2010 dollars -----				
Total**	232,900	70,230	162,670	77,350	155,550
Avg Annual	77,600	23,410	54,223	25,783	51,850
Avg Annual Per County	6,469	1,951	<b>4,519</b>	2,149	<b>4,321</b>

\*Counties with useable data from survey were Billings, Bowman, Burke, Dunn, Golden Valley, McKenzie, McLean, Mountrail, Renville, Slope, Stark, and Williams.

\*\*Does not include snow removal, weed control, or mowing.

## Summary Annual Cost Projections 2010 through 2012

Costs	Low Estimate	High Estimate
Roads*	\$51.8 million	\$54.2 million
General Offices	\$3.6 million	\$3.6 million
Total (2010 \$)	\$55.4 million	\$57.8 million

\* Does not include impacts in Bottineau, Divide, McHenry, or Ward Counties.

## **Conclusions**

- Expansion of oil and gas sector has led to increased workload for majority of county offices
- Increased workloads = increased costs
- Financial impacts of oil and gas on maintenance of rural roads are substantial

## **Acknowledgements**

- Numerous county officials who took time to fill out the questionnaires
- Vicky Steiner, ND Association of Oil and Gas Producing Counties
- Dan Brosz, Brosz Engineering, Inc., Bowman, ND

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OIL AND GAS IMPACTED COUNTY ROAD COST SURVEY						
COUNTY ROAD INVENTORY						COUNTY
Item No.		TOTAL MILES				
		ASPHALT	GRAVEL			
1	COUNTY COLLECTORS (Federal Aid and others that serve as major collectors)					
2	MINOR COUNTY COLLECTORS (Most roads leading to the County and State Collectors)					
3	OTHER COUNTY ROADS ( Secondary roads that are like township roads)					
MAINTENANCE COSTS and FREQUENCY						MILES OF NEED NEXT 3 YEARS
		COST		FREQUENCY		
5	ASPHALT OVERLAY (1-1/2" or less will be considered maintenance)	per mile	every	years		
6	ASPHALT CHIP SEAL ( Include oil, chips, equipment and labor to complete)	per mile	every	years		
7	ASPHALT REPAIR (include cold mix, patching and crack sealing)	per mile	every	years		
8	BLADING GRAVEL ROADS (include equipment, labor, fuel and repairs)	per mile		per month		
9	GRAVEL SURFACING REPAIRS (spot graveling, 2" or less for maintenance)	per mile	every	years		
10	GRAVEL CRUSHING (include equipment, fuel, labor, testing and royalty)	per ton/CY	<-Circle ton or CY			
11	GRAVEL HAULING AND LAYING (Based on average haul miles in County)					
	(Include loading, hauling, laying and all other costs)	per ton/CY	<-Circle ton or CY			
RECONSTRUCTION COSTS and FREQUENCY						MILES OF NEED NEXT 3 YEARS
		COST		FREQUENCY		
12	MINE AND BLEND REHAB. (Includes Milling, 0" to 2" Graveling, and Chip Seal)	per mile	every	years		
13	ASPHALT SURFACE TREATMENT (Includes 3" or Thicker Graveling and Chip Seal)	per mile	every	years		
14	ASPHALT OVERLAY (Includes milling and 2" to 3" overlay)	per mile	every	years		
15	NEW HOT BIT. PAVING (Includes 3" to 5" for new pavement)( Specify thickness in notes)	per mile	every	years		
16	GRAVEL RESURFACING (3" to 4")(Based on average haul miles in County)					
	(Include loading, hauling, laying and all other costs)	per mile	every	years		
17	NEW GRAVEL SURFACING (4" to 6"-Specify)(Based on average haul miles in County)					
		per mile	every	years		
18	ROAD RECONSTRUCTION(Needed to improve safety/widening to accommodate surfacing)					
	(Cost for Dirt Work, Culverts, Erosion Control, etc., do not include surfacing)	per mile				

Survey Goal ¶

→ The purpose of this survey is to gather insights into how increased oil and gas exploration and production have affected the provision and cost of county government services. This is not an in-depth analysis, but rather the survey is designed to provide a cursory or periphery assessment of the impacts of increased activity in the petroleum industry on local governments in western North Dakota. ¶

Survey Instructions ¶

(1)\*\* Please limit your assessment of the effects of oil and gas activity to the last 12 months. We are not concerned about effects that may have happened more than 1 year ago. ¶

(2)\*\* To the best of your ability, please consider all of your responses with respect to just the effects of increased activity in the petroleum industry. We recognize that the provision of public services and the costs to provide those services change over time, so again, try to only describe those changes that are a result of the additional business activity associated with oil and gas exploration and production in your county. ¶

(3)\*\* Please call Vicky Steiner (701-290-1339) if you have any questions. ¶

(4)\*\* Please complete the questionnaire by February 8, 2008. ¶

(5)\*\* Please return this form to your county Auditor's Office. The county auditor will collect the forms and mail them to NDSU for analysis. ¶

Please fill in the following information. ¶

County..... ¶

Office or Department..... ¶

Your name and Position..... ¶

(1) Has there been an increase in services provided or change in workload in your office/department due to increases in oil and gas exploration and extraction in your county? (Please circle and check all that apply) ¶

..... Yes..... If yes, how has your office/department handled the increased workload? ¶  
 ..... added additional staff ¶  
 ..... more hours for existing staff ¶  
 ..... purchased more equipment ¶  
 ..... outsourced some of the workload

(2) Have increases in oil and gas exploration and production in your county changed the cost of providing public services in your office or department? (Please circle) ¶

..... Yes..... Please estimate the approximate cost increase over the past 12 months \$ .....  
 ..... No..... Please skip to Question 4. ¶  
 ..... Don't Know..... ¶

(3) What would be the reasons for increases in your office/department's operating costs due to increased oil and gas activity in your county? (Please check all that apply) ¶

..... increased wage rates for office personnel  
 ..... more hours for existing personnel  
 ..... hired additional part-time employees  
 ..... hired additional full-time employees  
 ..... had to incur increase in training and recruitment expenses due to higher than normal employee turnover or additional hiring  
 ..... purchase/lease/acquire additional equipment or upgrade existing equipment  
 ..... sooner than expected (please clarify)  
 ..... had to purchase more supplies and inputs than normal (e.g., fuel, electricity, paper, computer services, communications, etc.)  
 ..... costs went up because of an increased number of customers and/or servicing a larger population base and/or more applicants for our programs  
 ..... other reasons (please specify)  
 ..... don't know

(4) Has your office or department offset cost increases in the last year by increasing rates/fees or by adding new/additional fees? (Please circle) ¶

..... Yes..... Please estimate the approximate revenue increase due to higher fees or new fees added over the past 12 months \$ .....  
 ..... No..... Our office or department has not increased existing fees or added any new fees  
 ..... Don't know

(5) Please comment on any other fiscal effects on your office or department that are a direct result of increased oil and gas activity in your county (add additional sheets if necessary).

THANK YOU—please return this form to the County Auditor's Office.