



NORTH DAKOTA LEGISLATIVE MANAGEMENT CONSULTANT SERVICES

INTERVIEW PRESENTATION
OCTOBER 31, 2013



THE Louis Berger Group, INC.

Presentation Agenda

1. Introduction
2. Our Team
3. Experience with the Oil and Gas Industry
4. Project Understanding
5. Project Approach
6. Why Choose Louis Berger?
7. Questions

The Louis Berger Group

Overview

Louis Berger maintains more than **4,000 multi-disciplined** professionals **worldwide** with an excellent reputation for **objective economic analysis**

THE BERGER FAMILY

- The Louis Berger Group, Inc.
- Ammann & Whitney, PC
- Louis Berger SAS
- Berger/ABAM Engineers, Inc.
- Berger Klohn Crippen Holdings, Ltd.
- CHELBI Engineering Consultants, Inc.
- Grayhawk
- RBA Group
- Louis Berger Services

Louis Berger Expertise

Overview

full spectrum of **integrated A/E/P/E services** including domestic and international projects for government and private clients.

ARCHITECTURE



PLANNING



ENGINEERING



ENVIRONMENTAL

- Design
- Design / Build RFPs
- Construction Documentation
- Value Engineering
- Construction Management & Administration
- Comprehensive Maintenance Planning
- Commissioning Services

- Economic & Fiscal Analysis
- Feasibility Studies
- Site Planning
- Master Planning
- Planning & Funding Documents
- Planning Charrettes
- Landscape Architecture
- Urban Design
- Sustainability
- Green Collar Jobs

- Facility Engineering
- Building Renovation Design
- Utility Upgrades
- Value Engineering
- Geotechnical Engineering
- Site Selection Surveying
- Design Charrettes
- Design Documentation
- O&M Planning
- Cost Estimating

- NEPA Support
- Mitigation Planning
- Environmental Engineering
- Ecosystem Planning
- Stakeholder Consultation
- Environmental Law
- Adaptive Management
- Monitoring Plan Development
- Hazardous Waste Remediation
- Public Outreach
- Regulatory Permitting & Compliance

Louis Berger Economics Practice

Overview

full spectrum of **Economic and Financial Analysis Capabilities**

TECHNICAL CAPABILITIES & SERVICES

Economic impact analysis

Fiscal impact studies

Socioeconomic analysis (including environmental justice and direct, indirect and cumulative impact analysis)

Forecasting (demand and revenue, and demographic)

Market studies

Economic and financial feasibility analysis

Econometric and discrete choice analysis

Cost/benefit studies

Regulatory impact analysis

Risk assessments (program/project cost and revenue uncertainty)

Market Sectors

Energy

Transportation

Facilities

Utility Infrastructure

Social Infrastructure

Products

Feasibility Studies

Impact Assessments

Planning Studies

Models/Tools

Due Diligence

Clients

Public Agencies

Industry

Builders/Operators

Lenders

Investors

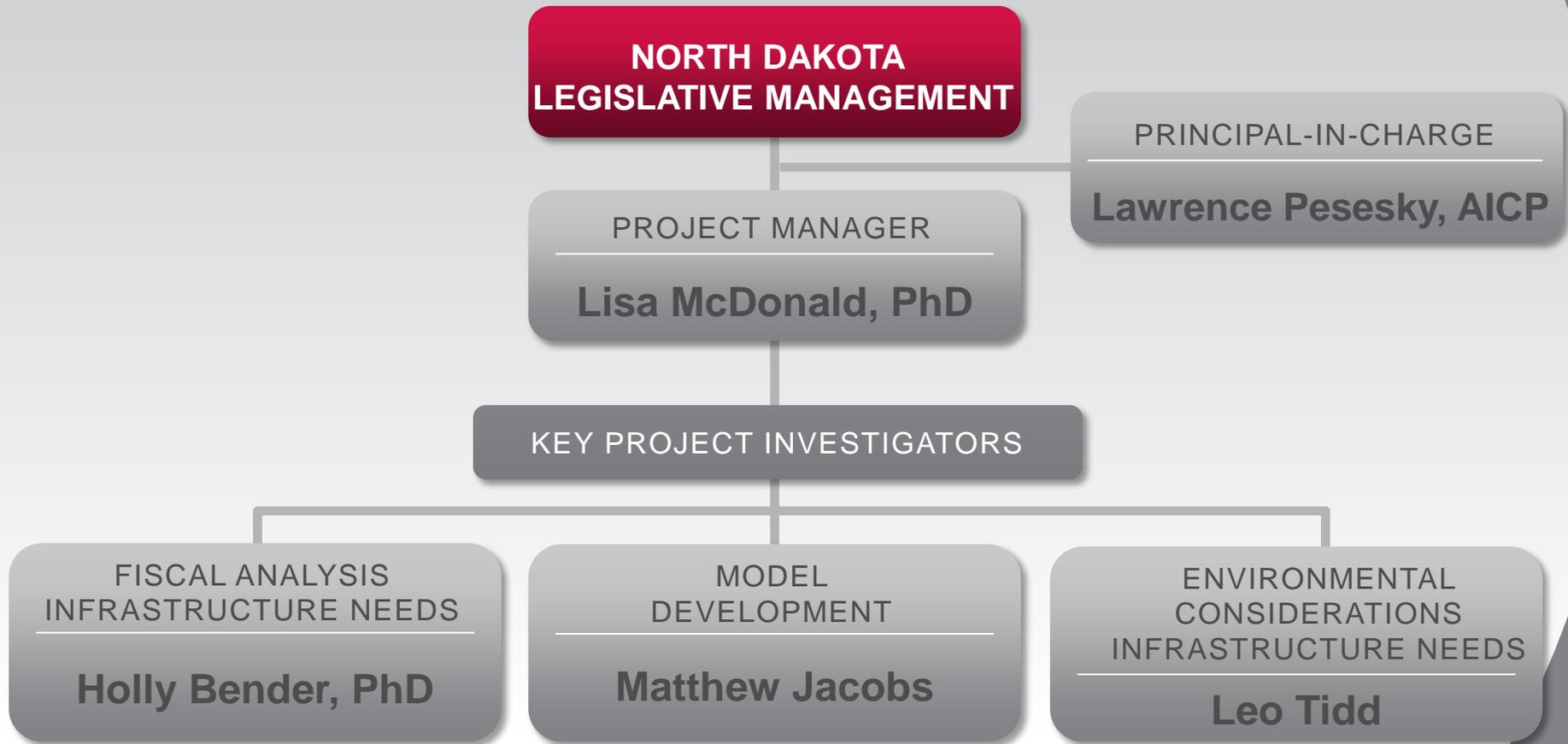
NGOs

Our Team



THE Louis Berger Group, INC.

The Louis Berger Team



Experience with the Oil & Gas Industry



THE Louis Berger Group, INC.

Our Team's Oil & Gas Experience Spans Nearly Two Decades

1990s

Evaluation of Colorado's Oil & Gas Regulations.
Colorado Department of Natural Resources. 1997.

2000s

Socioeconomic Analysis for Resource Management Plans.
Bureau of Land Management; Wyoming, Utah. 2002-2007.

Economic Contribution of Oil & Gas Industry in Colorado.
2007.

Economic Contribution of Oil & Gas Industry in Wyoming.
2009.

2010s

Fiscal Analysis of Enhanced Oil Recovery using Anthropocentric Sources of CO2 in Wyoming.
2013.

Cost Analysis of Proposed Air Regulations for Oil & Gas Operations in Colorado.
Ongoing.

Evaluation of Revised Oil & Gas Rules for the National Park Service.
Ongoing.

Socioeconomic Analysis of Resource Management Plan for Eastern States, Bureau of Land Management.
Ongoing.

Project Understanding



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Proposed Study Will Build Off Important Work Completed or Underway

- Western Infrastructure Development Evaluation
- Evaluation of Tax Revenues and Distribution Fund
 - » ND Tax Department and ND Department of Trust Lands
- Vision West ND
- Statewide Housing Study
 - » ND Housing Finance Agency
- 2020 & Beyond
 - » Governor Dalrymple and ND Chamber of Commerce
- Statewide Road Plan
 - » Upper Great Plains Transportation Institute
- School Planning
 - » ND Department of Commerce
- Oil and Gas Development Forecasts
 - » ND Industrial Commission, Oil and Gas Division and ND Department of Commerce



Project Approach



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Tasks

TASK

1

Kick-Off Meeting

TASK

2

Evaluation of Tax Structure for Oil and Gas Operations

TASK

3

Forecast of Oil and Gas Development in North Dakota

TASK

4

Tax Revenue Impact Model

TASK

5

Infrastructure and Social and Public Service Needs

TASK

6

Environmental Considerations

TASK

7

Final Report and Model Development

ADDITIONAL

TASKS

Model Enhancements

TASK

1 Kick-off Meeting

- Review and finalize project approach
- Establish procedures and processes for managing information and work products
- Identify other relevant studies
- Identify industry and government contacts
- Finalize work plan, milestones, and deliverables



TASK 2

Evaluation of Tax Structure for Oil and Gas Operations

- Evaluate current tax policies relevant to oil and gas operations in North Dakota
- Identify distributions and beneficiaries
 - » North Dakota Tax Department and North Dakota Department of Trust Lands
- Develop case studies to compare tax policies in other high production states
 - » Colorado, Wyoming, Montana, Oklahoma

Addressing Rapid-Growth Impacts

The Legislature has appropriated about \$2.5 billion, unprecedented funding to continue addressing the needs that come with rapid growth in North Dakota's oil-producing region. The state's oil counties will receive record funding through an increase in their share of state oil and gas taxes, significant transportation funding and funding from various state agency budgets. Funding to help the state's oil-producing counties manage rapid growth includes:

- About \$590 million in oil and gas gross production tax allocations, an increase of more than 140 percent from the estimated allocation of \$246 million in the current biennium. The funding includes:
 - \$314 million to counties
 - \$198 million to cities
 - \$47 million to school districts
 - \$31 million to townships
- More than \$1.5 billion for highway improvement projects as well as county, township and city road improvements.
- \$10 million from the Strategic Investment and Improvements Fund (SIIF) for critical-access hospitals.
- \$10 million in SIIF funding for law enforcement grants and projects.
- \$240 million from the state's Oil and Gas Impact Grant Fund to target areas of greatest need in western North Dakota. This represents an increase of \$140 million over the current biennium. The grant program includes:
 - \$14 million for the hub cities of Williston, Minot and Dickinson
 - \$60 million for grants to airport authorities
 - \$5 million for counties impacted by oil and gas development
 - \$4 million for higher education grants
 - \$3.5 million for fire protection districts
 - \$7 million for emergency medical services
 - \$25 million for schools
 - \$135.5 million in undesignated funding for competitive grants to address the region's most critical needs in schools and other political subdivisions



TASK
3

Forecast Oil and Gas Development and Production in North Dakota

- Forecast oil and gas production for agreed upon time period (e.g.: 20 years)
- Forecast will consider primary, secondary, and tertiary production under different technologies
- Develop long-term production scenarios
- Thorough literature reviews
- Interviews with experts

Production Tax Revenue (discounted 2015-2035)	Price of Oil		
	\$75	\$85	\$100
Severance Tax – 6%			
7% Discount Rate	\$493.16	\$558.91	\$657.55
11% Discount Rate	\$335.88	\$404.18	\$475.50
Ad Valorem Tax			
7% Discount Rate	\$537.32	\$608.96	\$716.42
11% Discount Rate	\$388.55	\$440.36	\$518.07
Total			
7% Discount Rate	\$1,030.48	\$1,167.87	\$1,373.97
11% Discount Rate	\$724.43	\$844.54	\$993.57

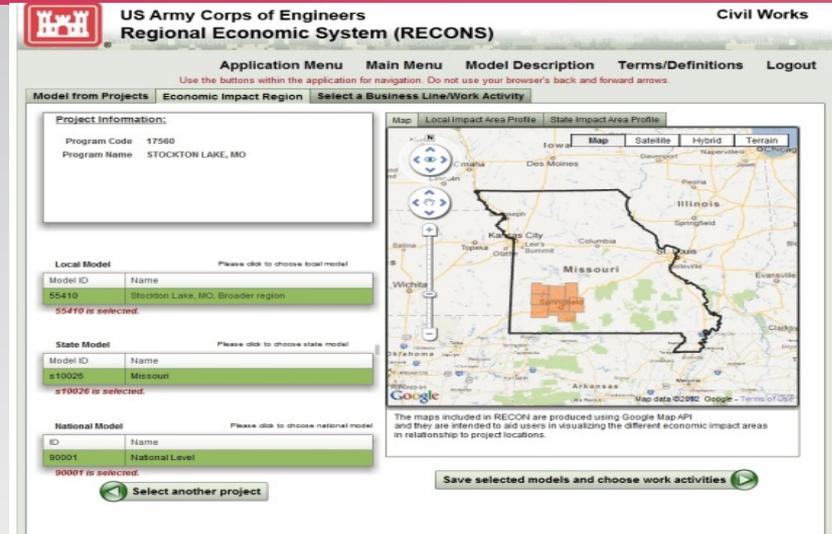
A recent project for Denbury Resources analyzed the potential for EOR production by CO2 injection, as well as the production and property tax receipts associated with EOR deployment.

TASK

4

Tax Revenue Impact Model

- Integrate results of Tasks 2 and 3
 - » Production scenarios
 - » Tax policies
- Model will allow users to run tax revenue scenarios changing certain parameters
 - » Production levels
 - » Tax rates and credits
- Model could include option to review different distribution scenarios
- User-friendly interface in Microsoft Excel
- Facilitate on-going use by ND Legislative Management



RECONS interface allows for mapping of study areas.

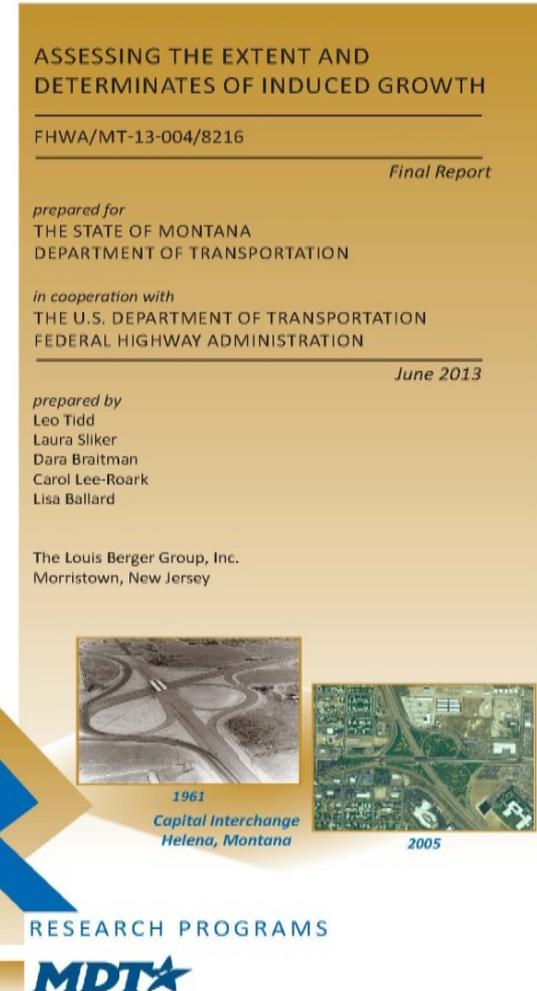


RECONS was awarded the 2010 IWR Product of the Year Award.

TASK
5

Infrastructure, Social and Public Service Needs

- Team will evaluate the unique relationship between oil development and changes in:
 - » Population growth
 - » Transportation and infrastructure needs
 - » Housing
 - » Educational resources
 - » Public services
 - » Law enforcement and emergency services
 - » Other public infrastructure needs
- Greater social and public service needs than conventional oil extraction
- Interview state agencies, review reports and literature to identify needs and relationship to oil development and production



Environmental Considerations

- Evaluate current and future environmental concerns
- Describe and quantify, if possible:
 - » Current and future water requirements for oil development and production
 - » Drilling and production waste disposal
 - » Air emissions from production facilities and mobile sources
 - » Potential for CO₂ EOR for carbon capture and storage
 - » Wildlife habitat fragmentation
 - » Other land use impacts
- Evaluate potential mitigation strategies



TASK

7

Final Report and Model Deployment

- Draft and final reports
 - » Incorporates 4 technical memorandums
- Final presentation
- Model transfer and training
 - » methodology and user guide



OPTIONAL
TASK

Model Enhancements

- Incorporate commodity price forecasts
 - » EIA price forecasts
- Allows for sensitivity analysis considering
 - » Different production forecasts
 - » Tax revenues
- 28 cases/scenarios available
 - » Prices
 - » Economic growth
 - » Reserve growth
 - » Exports/imports

Total Energy Supply, Disposition, and Price Summary, Reference case
(quadrillion Btu, unless otherwise noted)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
Production																									
Crude Oil and Lease Condensate	11.99	12.16	12.38	12.61	12.93	13.30	13.70	14.12	14.56	15.01	15.47	15.94	16.41	16.88	17.35	17.82	18.29	18.76	19.23	19.70	20.17	20.64	21.11	21.58	22.05
Natural Gas (Plant condensate)	2.78	2.88	2.98	3.07	3.16	3.24	3.31	3.38	3.44	3.50	3.55	3.60	3.64	3.68	3.72	3.75	3.78	3.80	3.82	3.84	3.85	3.86	3.87	3.88	3.89
Dry Natural Gas	21.82	22.51	23.44	24.53	24.38	24.56	24.69	24.79	24.84	24.89	24.93	24.96	24.98	25.00	25.01	25.02	25.03	25.04	25.04	25.04	25.04	25.04	25.04	25.04	25.04
Coal 1/	22.04	22.21	22.05	21.89	21.80	21.70	21.60	21.50	21.47	21.44	21.41	21.38	21.35	21.32	21.29	21.26	21.23	21.20	21.17	21.14	21.11	21.08	21.05	21.02	20.99
Nuclear/ Uranium 2/	8.43	8.26	8.03	8.10	8.24	8.37	8.50	8.63	8.76	8.89	9.02	9.15	9.28	9.41	9.54	9.67	9.80	9.94	10.07	10.20	10.33	10.46	10.59	10.72	10.85
Hydropower 3/	2.54	2.57	2.54	2.45	2.30	2.16	2.03	1.90	1.78	1.65	1.52	1.40	1.28	1.16	1.04	0.92	0.80	0.68	0.56	0.44	0.32	0.20	0.08	-0.04	-0.16
Biomass 3/	4.00	4.02	3.97	3.90	3.84	3.77	3.70	3.63	3.56	3.49	3.42	3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.86	2.79	2.72	2.65	2.58	2.51	2.44
Other Renewable Energy 4/	1.21	1.26	1.27	1.25	1.20	1.12	1.03	0.94	0.85	0.76	0.67	0.58	0.49	0.40	0.31	0.22	0.13	0.04	-0.05	-0.14	-0.23	-0.32	-0.41	-0.50	-0.59
Other 5/	0.76	1.20	0.90	0.88	0.74	0.76	0.79	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Total	79.31	79.02	79.48	80.85	82.23	83.46	84.70	85.98	87.24	88.51	89.78	91.05	92.32	93.59	94.86	96.13	97.40	98.67	99.94	101.21	102.48	103.75	105.02	106.29	107.56
Imports																									
Crude Oil	20.14	19.46	18.75	17.70	16.06	14.08	12.00	10.00	8.00	6.00	4.00	2.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Liquid Fuels and Other Petroleum 6/	5.24	5.24	4.13	4.35	5.34	5.63	5.66	5.55	5.52	5.53	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56
Natural Gas 7/	3.83	3.94	3.93	3.94	3.93	3.93	3.97	3.93	3.94	3.94	3.94	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93
Other 8/	0.26	0.40	0.41	0.24	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Total	29.75	28.66	26.56	25.73	25.30	25.30	24.85	24.65	24.60	24.60	24.60	24.60	24.60	24.60											
Exports																									
Liquid Fuels and Other Petroleum 9/	4.85	6.00	5.87	5.77	5.17	5.04	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Natural Gas 10/	1.15	1.57	1.53	1.59	1.75	1.89	1.99	2.15	2.44	2.92	3.40	3.87	4.35	4.83	5.31	5.79	6.27	6.75	7.23	7.71	8.19	8.67	9.15	9.63	10.11

Drilling Productivity Report
New approach to assessing the productivity of oil and gas drilling operations.

Today in Energy
Waste fuels are a significant energy source for U.S. manufacturers.
Waste fuel accounted for 20% of U.S. manufacturing fuel use in 2010, according to EPA's Industrial Energy Consumption Survey. Waste fuels are usually byproducts of existing production processes, most from steel-making, and are generally not able to be economically transported. Waste fuels accounted for 4.160 trillion British thermal units in 2010, and were used in a wide variety of manufacturing industries.

What's New
Electricity Monthly Update, October 24
Drilling Productivity Report, October 22
U.S. Energy-Related Carbon Dioxide Emissions, 2012, October 27

Coming Up
The Availability and Price of Petroleum and Petroleum Products Produced in Countries Other Than U.S., October 27
U.S. Energy-Related Carbon Dioxide Emissions, World Oil Transit Challenges, October 27

Features
Oil Emissions, World Oil Transit Challenges, October 27

Data Highlights
WTI crude oil futures price: \$97.11/bbl
Natural gas futures price: \$3.02/bbl
Weekly coal production: 101,920,113, 95,148 million bbls
Natural gas inventories: 102,420,113, 23,429 million bbls
Crude oil inventories: 102,021,113, 278.8 million bbls

OPTIONAL
TASK

Model Enhancements

- Develop a module that will predict population changes based on employment trends
- Model would incorporate industry and occupational employment
 - » Oil industry spending and jobs
 - » Direct employment (residential and non-residential)
 - » Indirect and induced employment
 - » Employment by industry and occupation
- Population changes are a driver for other induced/indirect impacts



Why Louis Berger?

1

RESOURCES OF
A MULTI-
DISCIPLINARY
CONSULTING
FIRM

2

NATIONAL
REPUTATION FOR
TRUSTED, POLICY-
SUPPORTIVE
ECONOMIC
ANALYSIS

3

ABILITY TO
PROVIDE
OBJECTIVE
PERSPECTIVE
WITH EXPERTISE
GAINED FROM
SIMILAR WORK IN
OTHER STATES

4

OUTSTANDING
TEAM LED BY PHD
RESOURCE
ECONOMISTS
WHO
THOROUGHLY
UNDERSTAND
THE ISSUES

EQUALS

SERVICE AND
VALUE TO
THE NORTH
DAKOTA
LEGISLATIVE
MANAGEMENT

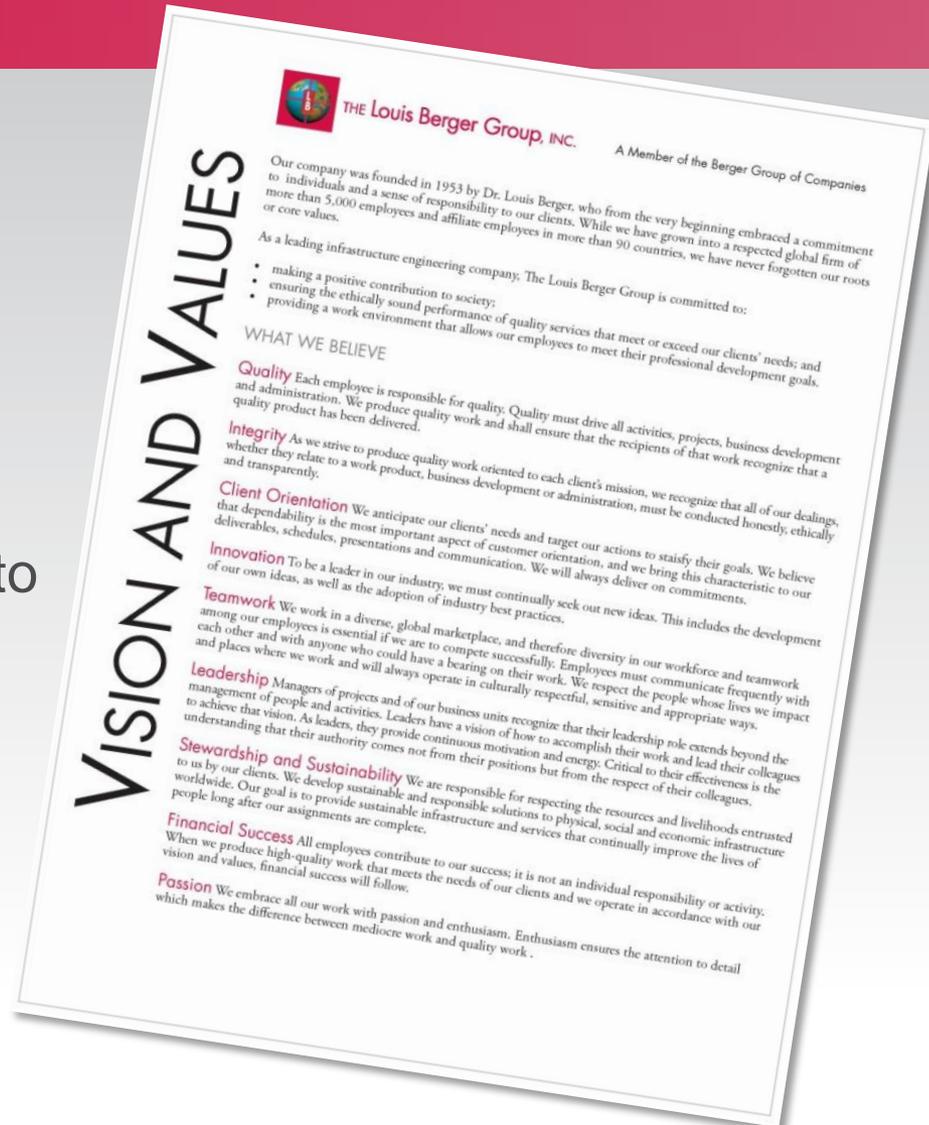


The Louis Berger Group

Vision and Values



“We will **embrace** all the work **we perform with passion**. Without enthusiasm, the attention to detail which is the difference between mediocre work and **quality work** will be absent.”



Questions?



THE Louis Berger Group, INC.