

FISCAL NOTE
Requested by Legislative Council
01/26/2015

Amendment to: SB 2032

- 1 A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2013-2015 Biennium		2015-2017 Biennium		2017-2019 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues	\$0	\$0	\$0	\$0	\$0	\$0
Expenditures	\$0	\$0	\$300,000	\$0	\$300,000	\$0
Appropriations	\$0	\$0	\$300,000	\$0	\$300,000	\$0

- 1 B. **County, city, school district and township fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

	2013-2015 Biennium	2015-2017 Biennium	2017-2019 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

- 2 A. **Bill and fiscal impact summary:** *Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).*

As amended, establishes the Western Infrastructure Strategy Office to develop/maintain comprehensive strategic plan on current & future infrastructure needs of political subdivisions affected by oil & gas development. \$300,000 is appropriated from the general fund for this purpose.

- B. **Fiscal impact sections:** *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

Section 1 establishes the office, outlines the duties of the office and responsibilities of the director, and contains reporting requirements. To fulfill these responsibilities, it is estimated to cost \$300,000 for staffing and associated expenses.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*

- A. **Revenues:** *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

- B. **Expenditures:** *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

It is estimated that the costs for this new office would be approximately \$300,000 a biennium. This cost would cover the staffing and expenses for the staff to travel for meetings or host meetings with political subdivisions. In addition there will be costs for distributing the plan either electronically or by hard copy.

- C. **Appropriations:** *Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.*

Section 2 includes an appropriation of \$300,000 from the general fund which would be used for retaining a consultant/staff to develop and maintain the plan and for expenses that would be necessary to have meetings and facilitate discussions between political subdivisions. In addition there will be costs for distributing the plan either electronically or by hard copy. This funding was not included in the executive budget.

Name: Justin Dever

Agency: Department of Commerce

Telephone: 701-328-7258

Date Prepared: 01/27/2015

FISCAL NOTE
Requested by Legislative Council
12/20/2014

Bill/Resolution No.: SB 2032

- 1 A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2013-2015 Biennium		2015-2017 Biennium		2017-2019 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues	\$0	\$0	\$0	\$0	\$0	\$0
Expenditures	\$0	\$0	\$0	\$300,000	\$0	\$330,000
Appropriations	\$0	\$0	\$0	\$300,000	\$0	\$330,000

- 1 B. **County, city, school district and township fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

	2013-2015 Biennium	2015-2017 Biennium	2017-2019 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

- 2 A. **Bill and fiscal impact summary:** *Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).*

Establishes Oil & Gas Development Strategic Planning Authority (OGDSPA) overseen by Industrial Commission to develop/maintain comprehensive strategic plan on current & future infrastructure needs of political subdivisions affected by oil & gas development. Funding from OGDSPA Administrative Fund.

- B. **Fiscal impact sections:** *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

17-10-04 establishes the Oil and Gas Development Strategic Planning Authority Administrative Fund which will have a continuing appropriation. One source of funding for this new Administrative Fund will be the Oil and Gas Research Fund. The funding for the staffing of this new Authority will come from the Oil and Gas Research Fund.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*

- A. **Revenues:** *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

Revenues for the newly created Oil and Gas Development Strategic Planning Authority will come from other funds including but not limited to the Oil and Gas Research Fund. Since the revenues come from another special fund the net result is zero for revenues.

- B. **Expenditures:** *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

It is estimated that the costs for this new authority would be approximately \$300,000 a biennium. This amount is based on the costs that are currently being expended by the Industrial Commission through the Oil and Gas Research Fund for contracted labor under another authority overseen by the Commission. This cost would cover the staffing and expenses for the staff to travel for meetings or host meetings with political subdivisions. In addition there will be costs for distributing the plan either electronically or by hard copy.

- C. **Appropriations:** *Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.*

The Oil and Gas Development Strategic Planning Authority Administrative Fund is being established as a continuing appropriation. It is anticipated that the costs for the first biennium will be \$300,000 and the monies would come from the Oil and Gas Research Fund. These costs would be for retaining a consultant/staff to develop and maintain the plan and for expenses that would be necessary to have meetings and facilitate discussions between political subdivisions. In addition there will be costs for distributing the plan either electronically or by hard copy.

Name: Karlene Fine

Agency: Industrial Commission

Telephone: 701-328-3722

Date Prepared: 01/05/2015

2015 SENATE ENERGY AND NATURAL RESOURCES

SB 2032

2015 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources
Fort Lincoln Room, State Capitol

SB 2032
1/8/2015
21768

- Subcommittee
 Conference Committee

Committee Clerk Signature

Katie Oliver

Explanation or reason for introduction of bill/resolution:

Relating to the oil and gas development strategic planning authority; and to provide a continuing

Minutes:

2 Attachments

Chairman Schaible called the committee to order, all members were present.

Tim Dawson was present to present the bill. Mr. Dawson explained the bill in its current state.

Senator Laffen: The planning is restricted to infrastructure?

Tim Dawson: The focus is on infrastructure needs, you can see that in section 2, but it does encompass more than that. There are many studies during the interim by either government entities or the legislature and someone needs to look at those and make sure there isn't overlap between studies.

Al Anderson: See attachment #1.

Chairman Schaible: Can you tell me what we are doing now and why this would be better?

Al Anderson: Over the last few years Vision West was an effort that used \$2,000,000 of state dollars to help communities in their strategic planning. What it didn't do is that is it didn't go farther out to more of the regional impacts and try to pull the different decision makers together.

Chairman Schaible: Would you see this as hindering local entities from making their own decisions?

Al Anderson: The intent was to give resources to those committees to make better decisions. I also had request for additional funding for oil and gas producing counties to expand the Vision West efforts that were not include in the commerce bill.

Ron Ness: North Dakota Petroleum Council and was the Chairman of the subcommittee on infrastructure for the Empower Commission. One of the things that we saw as we put together the value added study for ethanol and natural gas brought it to the legislature but nothing came of it. This study doesn't replace any of the other studies. This is intent on having someone continually think about things. We view the Bakken as a project and the money that you put into infrastructure and getting it right one of the things that I hear is that there is no body that is managing the process throughout the whole region.

Senator Triplett: Can you address how you would see this person working with other departments?

Ron Ness: I think that this person would engage where they are asked to engage and where there is value. It may apply back to housing, healthcare that they maybe only looking at one aspect of. We had a lot of discussions on where you think it can go.

Senator Triplett: How do you see this person to the regional councils?

Ron Ness: I think that this person is willing to engage where directed. That will be determined

Senator Triplett: How do you value this position as to the research?

Ron Ness: One of the suggestions is the discussion of additional funds into the oil and gas funds. This would take funding away from the oil and gas council. We are not a startup entity.

Sandy Tabor: With Kadermas, Lee and Jackson. As you recall one of the first oil and gas studies that was done. I think that during a conversation it came to light that there were numerous, between 13 and 17 studies being done during the interim. How could we avoid duplication of efforts? What we did is talk about the different studies and how they were different. Part of it is that you need to know what they are talking about. The other example is that right after the contracts were awarded they are asked if we can collaborate. It saves the tax payers money in the long run. It is not to control studies it is to try and get everyone to know what others are doing. That is in a nutshell why we thought that everyone needed help.

Senator Triplett: Why would it not be in the governor's office?

Sandy Tabor: the Authority is a known entity. Ultimately that info get to the governor and we are familiar with how both work and we thought the model of the authority.

Senator Hogue: : I wonder if you can help e understand I am wondering if your committee explored expanding the scope or weather creation of this authority could be rolled into this one.

Sandy:

Al Anderson: Part of it I think it was more of a different skill set.

Senator Hogue: Would they make recommendation to the state land board if the legislature continues to land money

Al Anderson: That individual would be directed by the industrial commission. It could be is the best way I can say that.

Senator Triplett: 31:00 it is about a policy structure without regard to

Al Anderson: It was the other side is that I do try to help from the commerce position. It is not my best skillset nor do I have time. You would want planning skillset and that may or may not be the.

Scott D. Zainhofsky: See attachment #2.

Senator Triplett: How many people are in your planning process?

Scott D. Zainhofsky: We have a large number of folks that we engage. We have 3 full time employees that work on planning but we believe it is a collaborative process to we engage as many public and private entities as we can.

There was no further testimony in support or opposition. Chairman Schaible closed the hearing on SB 2032.

2015 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources
Fort Lincoln Room, State Capitol

SB 2032
1/9/2015
22013

- Subcommittee
 Conference Committee

Committee Clerk Signature

Kate Aiser

Explanation or reason for introduction of bill/resolution:

Relating to the oil and gas development strategic planning authority; and to provide a continuing appropriation.

Minutes:

Senator Triplett: I did serve on the Energy Development and Transmission Committee during the interim and I was surprised to learn that bills that come through the Empower Commission do not get a full hearing in the Energy Development and Transmission Committee and that concerned me.

Chairman Schaible: I think that this needs some discussion. I think that the idea is important to carry forward in some fashion.

Senator Murphy: Did the committee notice that the oil producing counties objected to this bill.

Chairman Schaible: I know it was in the paper but I don't believe I heard anything besides that.

Vice Chair Unruh: I would like for Karlene Fine to come down and talk to us about this.

Senator Armstrong: The counties out there do a good job of communicating with each other but with given the fiscal note of this bill and the massive scope of the projects that are being undertaken, if this person figures out one way to combine something between Mountrail and Dunn County that fixes one county road issue it would pay for itself. I think that part of it is that everybody is running at 120% 7 days a week. The problem is you need local buy in.

Senator Triplett: I agree with the principal but with transportation they have 3 full time planners on staffs who have been working in the Department of Transportation. I don't think that supplementing existing state agencies is the intent of the bill. . If there is a problem

with how they are managing their government section then that is an issue for the governor and his head of transportation to deal with.

Chairman Schaible: I would piggyback on that, it can be confrontation or compliment depending on the intent or who is there. We are focusing on roads and this goes beyond that. It is all about intent and is not there to interfere with plans, if somebody wants to do something there is a better way.

Senator Hogue: I thought that we might want to call Lance Gabe down. We have been giving these large appropriations from the state land board. How do they go about funding the state land board? Are they funding on a piece meal basis?

Chairman Schaible: Anyone else you think we should bring?

Senator Triplett: Allen Anderson from the Commerce Department said that he does a little bit of this and since he is the chair from the Empower.

2015 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources
Fort Lincoln Room, State Capitol

SB 2032
1/15/2015
22037

- Subcommittee
 Conference Committee

Committee Clerk Signature

Kate Oliver

Explanation or reason for introduction of bill/resolution:

Relating to the oil and gas development strategic planning authority; and to provide a continuing appropriation.

Minutes:

Alan Anderson: Commerce Commissioner, Department of Commerce.

Vice Chair Unruh: Is there another authority user the Public Service Commission besides the pipeline authority?

Alan Anderson: Besides the pipeline authority there is also the transmission authority as well.

Senator Armstrong: Has there been discussion on amendments?

Alan Anderson: Yes. One of the proposals that was kicked out was if there were support to Empower if instead of having an actual authority set up with the industrial commission if they would consider some contact structure to offer aid, be it this biennium only or ongoing.

Senator Armstrong: Any answers given by Empower

Alan Anderson: Empower couldn't take a full position as there was not a quorum. Next Wednesday we will meet and hope to have a quorum them.

Senator Armstrong: Who is knowledgeable on this?

Alan Anderson: Ron Ness, Sandy Tibor, Karlene Fine

Senator Murphy: Would it be fair to say that they were learning towards coordination?

Alan Anderson: Yes that is correct.

Senator Hogue: CHS proposed plant in Stutsman County and a lot of issues came up about the coordination about the very issues this authority was talking about. Why is there a logical reason to limit this to the oil and gas producing counties?

Alan Anderson: I would have to verify the language as it was not intentionally set for oil and gas counties. The intent was more for infrastructure needs in critical areas. From my standpoint if the \$3,000,000,000 CHS plant goes forward it will put a lot of stress on Stutsman County. Challenges arise when it comes to housing. Empower would be open to infrastructure needs and I will bring that up at our next meeting.

Lance Gabe: Director of Energy Impact Office.

Chairman Schaible: Are we in the right direction?

Lance Gabe: The Energy Impact Office is a branch of the Land Board. Clearly any place that has a plan has been easier for us to deal with their needs. In 2011 HUD provided a grant cost share of \$300,000 for infrastructure planning efforts called Vision West. We take applications from a variety of subdivisions and it would be hard to see how they would react.

Senator Triplett: This concept would be better set inside commerce or is it not your place to say?

Lance Gabe: There are so many components but largely its infrastructure related to housing and water.

There was no further discussion and Chairman Schaible closed the hearing.

2015 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources
Fort Lincoln Room, State Capitol

SB 2032
1/22/2015
22377

- Subcommittee
 Conference Committee

Committee Clerk Signature

Katees Olweh

Explanation or reason for introduction of bill/resolution:

Relating to the oil and gas development strategic planning authority; and to provide a continuing appropriation.

Minutes:

1 Attachment

Senator Armstrong: (See attachment #1) The process is that we got in touch with some Empower people, the governor's office and sat down and coordinated what the goals for this were, what their thoughts on this were and all of the stakeholders involved came to a resolution which lead to this amendment and I think it turns a pretty good idea into a pretty good bill.

Senator Armstrong then went on to explain the amendment that had been created.

There was no further discussion on SB 2032, Chairman Schaible closed the discussion.

2015 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources
Fort Lincoln Room, State Capitol

SB 2032
1/22/2015
22406

- Subcommittee
 Conference Committee

Committee Clerk Signature

Kathy Oliver

Explanation or reason for introduction of bill/resolution:

Relating to the oil and gas development strategic planning authority; and to provide a continuing appropriation.

Minutes:

Chairman Schaible: Discussion?

Vice Chair Unruh made a motion to amend the bill with amendments that were brought by Senator Armstrong with a second by Senator Armstrong.

Chairman Schaible: After talking to the parties that were involved they seemed to be alright with the three corrections that this amendment makes.

Roll was taken, the motion passed with a vote of 6-0-1. Having adopted the amendment Senator Armstrong made a motion for a Do Pass as Amended with a second by Senator Triplett.

Senator Armstrong: The dollar amount involved is such that if they solve one problem then they have recouped their cost.

Senator Triplett: If we are, as a committee, are going to think more deeply on this one thing that we might consider that there is some de facto planning going on already in the process, even though we have not delegated the planning function regarding that money by being a centralized place for all of the grant funds to come in and are analyzed. It appears that there is some level of overview if we take the position that we do not want to grow government that would be an argument in favor of letting this go.

Senator Hogue: One example that we heard during the interim is Beulah and Hazen both have separate airports and the absence of comprehensive regional planning. What I have heard from some people is that having the planning doesn't mean the communities won't agree to have their own facilities and this doesn't give anybody authority to control where growth occurs within a region.

Vice Chair Unruh: I think that in the case of the airports specifically if there were a more neutral party trying to organize some type of facility between both of the communities early on and if there had been more proactive approach to that maybe we could have seen development happen a little differently in our communities.

Chairman Schaible: I like the very high altitude look at the process but if we are going to give out hundreds of millions of dollars we need to have a little more oversight in that. The other thing is that I agree we don't need to expand government but if we are we need to be responsible with it.

Senator Triplett: I think that this should be last biennium that we think about this money flowing to western North Dakota as being a special case and that we really need, for the benefit of the whole state, to get back to a more, normalized budgeting practice.

There was no further discussion, roll was taken and the motion for a passed with a 6-0-1 count, Chairman Schaible carrying the bill to the floor and the bill was re referred to the Appropriations Committee.

Done
1/22/15
142

PROPOSED AMENDMENTS TO SENATE BILL NO. 2032

- Page 1, line 2, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"
- Page 1, line 2, replace "a continuing" with "an"
- Page 1, line 7, replace "**Oil and gas development strategic planning authority**" with "**Western infrastructure strategy office**"
- Page 1, line 8, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"
- Page 1, line 8, remove "industrial"
- Page 1, line 9, replace "commission. The industrial commission" with "department of commerce. The department of commerce"
- Page 1, line 9, remove "hire"
- Page 1, line 10, remove "employees or"
- Page 1, line 12, replace "**Oil and gas development strategic planning**" with "**Duties of the western infrastructure strategy office**"
- Page 1, line 13, replace "authority" with "director"
- Page 1, line 20, replace "industrial commission" with "department of commerce, as well as the North Dakota association of oil and gas producing counties"
- Page 2, line 3, replace "industrial commission" with "department of commerce"
- Page 2, line 5, replace "industrial commission" with "department of commerce"
- Page 2, line 8, after "information" insert "and, as requested, coordinate and direct state-funded studies relating to western infrastructure and impacts"
- Page 2, remove lines 10 through 26
- Page 2, line 27, replace "**17-10-05**" with "**17-10-04**"
- Page 2, line 28, replace "authority" with "director"
- Page 2, line 28, replace "its" with "the western infrastructure strategy office's"
- Page 2, line 29, replace "authority" with "western infrastructure strategy office"
- Page 2, line 29, replace "authority" with "director"
- Page 2, line 30, replace "industrial commission" with "department of commerce"
- Page 2, line 31, after the underscored period insert "The director shall provide annual updates to the budget section of the legislative management, the North Dakota association of oil and gas producing counties, and the legislative management."

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$300,000, or

so much of the sum as may be necessary, to the department of commerce for the purpose of establishing the western infrastructure strategy office, for the biennium beginning July 1, 2015, and ending June 30, 2017."

2/2

Renumber accordingly

**2015 SENATE STANDING COMMITTEE
 ROLL CALL VOTES
 BILL/RESOLUTION NO. 2032**

Senate Energy and Natural Resources Committee

Check here for Conference Committee

Legislative Council Amendment Number _____

Action Taken Do Pass as Amended and Re Refer to Approps

Motion Made By Senator Armstrong Seconded By Senator Triplett

Senators	Yes	No	Senators	Yes	No
Chairman Schaible	X		Senator Murphy		
Vice Chair Unruh	X		Senator Triplett	X	
Senator Armstrong	X				
Senator Hogue	X				
Senator Laffen	X				

Total (Yes) 6 No 0

Absent 1

Floor Assignment Chairman Schaible

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

SB 2032: Energy and Natural Resources Committee (Sen. Schaible, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS and BE REREFERRED to the Appropriations Committee (6 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). SB 2032 was placed on the Sixth order on the calendar.

Page 1, line 2, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"

Page 1, line 2, replace "a continuing" with "an"

Page 1, line 7, replace "Oil and gas development strategic planning authority" with "Western infrastructure strategy office"

Page 1, line 8, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"

Page 1, line 8, remove "industrial"

Page 1, line 9, replace "commission. The industrial commission" with "department of commerce. The department of commerce"

Page 1, line 9, remove "hire"

Page 1, line 10, remove "employees or"

Page 1, line 12, replace "Oil and gas development strategic planning" with "Duties of the western infrastructure strategy office"

Page 1, line 13, replace "authority" with "director"

Page 1, line 20, replace "industrial commission" with "department of commerce, as well as the North Dakota association of oil and gas producing counties"

Page 2, line 3, replace "industrial commission" with "department of commerce"

Page 2, line 5, replace "industrial commission" with "department of commerce"

Page 2, line 8, after "information" insert "and, as requested, coordinate and direct state-funded studies relating to western infrastructure and impacts"

Page 2, remove lines 10 through 26

Page 2, line 27, replace "17-10-05" with "17-10-04"

Page 2, line 28, replace "authority" with "director"

Page 2, line 28, replace "its" with "the western infrastructure strategy office's"

Page 2, line 29, replace "authority" with "western infrastructure strategy office"

Page 2, line 29, replace "authority" with "director"

Page 2, line 30, replace "industrial commission" with "department of commerce"

Page 2, line 31, after the underscored period insert "The director shall provide annual updates to the budget section of the legislative management, the North Dakota association of oil and gas producing counties, and the legislative management."

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$300,000, or so much of the sum as may be necessary, to the department of commerce for the purpose of establishing the western infrastructure strategy office, for the biennium beginning July 1, 2015, and ending June 30, 2017."

Renumber accordingly

2015 SENATE APPROPRIATIONS

SB 2032

2015 SENATE STANDING COMMITTEE MINUTES

Appropriations Committee
Harvest Room, State Capitol

SB 2032
2/3/2015
Job # 23045

- Subcommittee
 Conference Committee

Committee Clerk Signature

Devin E. Pines for Alice Delzer

Explanation or reason for introduction of bill/resolution:

A BILL relating to the western infrastructure strategy office.

Minutes:

Testimony #1 -2

Chairman Holmberg called the committee to order on SB 2032. Roll Call was taken. All committee members were present. Becky Deichert, OMB, and Chris Kadrmas, Legislative Council were also present.

Tim Dawson, Legislative Management, neutral, I staff this committee, this bill came through EmPower ND, it has been changed. It establishes a western infrastructure strategy office, in the ND department of commerce, to maintain and develop a current comprehensive strategic plan to identify the current and future regional infrastructure needs. This director will collect and analyze information, create a strategic plan to prioritize current and future impacts, and, as directed by the dept. of commerce shall analyze any changes or additions to funding programs and incentives and make recommendations as to future areas of study. The funding was changed to a general fund appropriation.

Senator Bekkedahl, in support of this bill from the perspective that we have departments in the state that assist the oil and gas counties in this development area and bring to the table a little less politics, more discussion and a true analysis of the impacts. Any tool we can give agencies to assist in development would be helpful as well to some of the smaller subdivisions that don't have access to planning staffs. (4:16-5:12)

Alan Anderson, Commissioner, ND Department of Commerce, Chairman, Empower ND Commission, in favor of SB 2032, written Testimony Attached # 1 This bill was recommended by the Commission, it is one of 6 bills EmPower has put together, all members supported them unanimously. The office would be funded from the oil and gas research council. The \$300K is not included in the executive budget. This will help coordinate the different efforts in regional infrastructure. It would act almost like the pipeline authority does, it is envisioned as a part time person, just to provide periodic updates to the legislature on what is going on. Would work with the energy impact coordinator to understand and pull together the local issues. It would not make decisions only recommendations. (9.21)

Senator Mathern: Vision West, is already doing this?

Alan Anderson: Vision West, has done a great job; they are far from being complete in regional studies. During the buildup of the commerce budget, they asked for money, it did not carry. This is not meant to overlap just to support.

Chairman Bowman and Senator **Sorvaag** asked what would be the objective; information today is accessible much faster than years ago. Most of the information you are talking about we have in our meetings. Where would this assist and benefit the counties?

Alan Anderson the intent is to play in areas where data may not be readily accessible, and making sure everyone is aware where the information is, so to minimize overlap and improve coordination. This would be a single point of contact people can go to. Realize the \$300,000 is maybe a half time person for the 2 years, and a couple of studies. It is not going to make a huge difference.

Senator Carlisle if you are trying to do coordination, why not work with the House on 2103?

Alan Anderson: I am not that familiar with 2103. They wouldn't play with what is already on. There is a lot of self-interest from the community stand point. You can get all points of view from this person.

Senator Gary Lee: the governor had appointed someone to that sort of position. Is that role still active and if it doesn't it fill this void?

Alan Anderson That position is still in existence: energy impact coordinator - Rory Nelson, he spends most of his time listening to county commissions, city commissions understanding what is going on. This would be an expansion of that coordination role, would be more involvement at the regional level.

Ron Ness, ND Petroleum Council, former Chairman, Infrastructure Committee EmPower Commission We spent a lot of time looking at this issue. There are expensive studies before interim committees. Who is looking at those studies to help determine if the monies are being spent in ways that effectively get the job done? We are talking about a conduit to ensure money is not spent duplicating what others have already done, to weave through all the different jurisdictions for the best utilization of resources. The ND pipeline authority has been everybody's knowledge center. What is the smart way to do this? When you look at spending money, here, there, we think we need somebody always there to help advise and consult with. See it as a resource; legislators have done a good job prioritizing what communities want. Now there is that next level of not always collectively prioritizing things. You need a high level expert that can work with communities, assimilate information, process it and share it, thinking from the industry standpoint, seeing the big picture. We support this bill; it could be attached to the bill passed last week. (17:59-23.20)

Senator Heckaman and Senator **Sorvaag** think this is a lot of job for one person, why don't put it into a committee. Why couldn't EMPower do some of this? **Senator Heckaman** said that on line 13 first page, the word "opinions" scares her.

Ron Ness: We see EmPower's job as to come up with big ideas and present them for your consideration at the legislature. This person cannot have other vested interests that may deviate their thoughts. Sometimes, you need be the good cop, others the bad cop and that is not EmPower's role. I can replace it "opinions". I see this person as a coordinator, who would be the eyes and ears that would get the pulse of the community. You've got groups like Vision West, Upper Great Plains Transportation Institute, NDSU doing the workforce studies, etc... Groups this person should be able to engage with and gather information from. Think of the money we save making one or two right decisions vs one or two duplicate ones. The return on investment is pretty immediate.

Sandy Tabor, KLJ, member of EmPower ND Commission gave example of how they envision this. Cited overlap of studies in the 2012 and 2013 interim, there was confusion about who was doing what, taxpayer money was being used. They got groups to start talking with each other. That is part of what we see, hope and envision for this position. (29:05-31:18)

Brent Bolger, ND Association of Oil and Gas Producing Counties, in opposition of this bill the association feels we can do, and have done, some of this work, this is duplicative. The association isn't opposed to working with EmPower, we already work with Vision West, a consortium of 17 counties and communities, and we collaborate with. A number of Oil and Association board members also serve on Vision West. The association has provided some grant money for Vision West to continue their work.

Senator Gary Lee. They must think there is a void in pulling things together and looking at things as a whole. Why?

Brent Bolger I believe that, before I stepped into a role with the association of counties, every commission had worked independently. This past spring the association felt they needed to take a more proactive approach to information gathering. I have my own consulting firm I am not an employee of the association. They asked my firm to gather all of the infrastructure needs and do some analysis of that a study. The Association asked if I would be willing to step in during the legislative session to provide the communications and work with the association.

Senator Gary Lee you see your role as being around the whole development area in the western oil counties and to keep your ears on the ground. What would you do with what you see in terms of resolution or bringing collaborative groups together to solve issues and make a plan?

Brent Bolger my role has been, and will continue to be to gather information is the eyes and ears out in western ND for those communities. As we gather information, we would present it to the various stake holders, (legislators, communities, state agencies, etc...)

Senator Carlisle; right now you are in opposition; you know it takes, a lot of give and take, compromise. What areas you see you could work in with the bill sponsors to make it so that everybody would be somewhat happy? (37.58)

Brent Bolger there are a number of areas, one would be to makes sure that Vision West could have a say on how that position would be filled. We feel now there might be some overlap.

Steve Salwei, Transportation Programs Director for DOT, neutral, testified to provide information on SB 2032, to ensure there is no duplication of efforts (provided Testimony Attached # 2) which includes documents describing some of the transportation effort s DOT has underway or has recently completed

Chairman Bowman: this person's responsibility, would be looking at all needs (medical, quality of life issues, infrastructure needs), you can't have that many new people in the community without it affecting the community. We always leave the little towns out of the studies; smaller towns can have that much effect. If this person could coordinate, have the big picture and help the little cities too, then I would support this bill.

Chairman Holmberg no additional testimony, hearing closed on SB 2032. We'll let you think about this bill. I don't see a reason subcommittee.

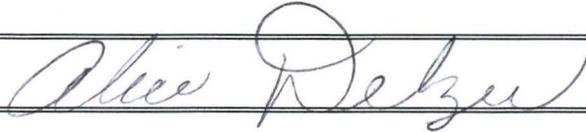
2015 SENATE STANDING COMMITTEE MINUTES

Appropriations Committee
Harvest Room, State Capitol

SB 2032
02-16-2015
Job # 23912

- Subcommittee
 Conference Committee

Committee Clerk Signature



Explanation or reason for introduction of bill/resolution:

A BILL for an Act relating to the western infrastructure strategy office.

Minutes:

"Click to enter attachment information."

Chairman Holmberg called the committee to order on Monday, February 16, 2015 in regards to SB 2032. All committee members were present.

Chris Kadrmas, Legislative Council
Nick Creamer, OMB

Senator Carlisle: Don't some of your folks in your office or the Commerce Department already do this work and do we need this bill?

Andrea Travenick, Senior Policy Advisor for the Governor's Office: This last executive budget, one of our senior policy advisors went with the department of commerce to collect information from the cities and counties in the western part of the state. Al Anderson was there. This came from the EmPower committee. They felt it was very important. I also know that we do have the Department of Commerce that works very closely with our office. Yes the information is being collected right now.

V.Chairman Bowman: asked who the information is collected for. He was told it was gathered for the governor's office.

Senator Gary Lee: It seems to me that there is at least 4 different agencies or groups working to do the same thing; the governor's office, the Association of Counties, the oil and gas producing counties and EmPower. I am not sure what another person can do

Senator Gary Lee moved a do not pass. 2nd by Senator Carlisle.

Chairman Holmberg: Call the roll on a Do Not Pass on SB 2032. A Roll Call vote was taken. Yea: 12; Nay: 1; Absent: 0.

Senator Gary Lee will carry the bill. The hearing was closed on SB 2032.

Date: 2-16-15
 Roll Call Vote #: 1

**2015 SENATE STANDING COMMITTEE
 ROLL CALL VOTES
 BILL/RESOLUTION NO. 2032**

Senate Appropriations Committee

Subcommittee

Amendment LC# or Description: _____

Recommendation: Adopt Amendment
 Do Pass Do Not Pass Without Committee Recommendation
 As Amended Rerefer to Appropriations
 Place on Consent Calendar
 Other Actions: Reconsider _____

Motion Made By Lee Seconded By Carlisle

Senators	Yes	No	Senators	Yes	No
Chairman Holmberg	✓		Senator Heckaman	✓	
Senator Bowman	✓		Senator Mathern	✓	
Senator Krebsbach	✓		Senator O'Connell	✓	
Senator Carlisle	✓		Senator Robinson	✓	
Senator Sorvaag	✓				
Senator G. Lee	✓				
Senator Kilzer	✓				
Senator Erbele	✓				
Senator Wanzek	✓				

Total (Yes) 12 No 1

Absent 0

Floor Assignment Lee

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

SB 2032, as engrossed: Appropriations Committee (Sen. Holmberg, Chairman)
recommends **DO NOT PASS** (12 YEAS, 1 NAYS, 0 ABSENT AND NOT VOTING).
Engrossed SB 2032 was placed on the Eleventh order on the calendar.

2015 TESTIMONY

SB 2032

1.1

DEPARTMENT OF COMMERCE TESTIMONY ON SENATE BILL 2032
JANUARY 8, 2015, 10:00 A.M.
SENATE ENERGY AND NATURAL RESOURCES COMMITTEE
FORT LINCOLN ROOM
SENATOR DONALD SCHAIBLE, CHAIRMAN

ALAN ANDERSON – COMMISSIONER, ND DEPARTMENT OF COMMERCE

Good morning, Mr. Chairman and members of the committee, my name is Alan Anderson and I serve as the Commissioner for the North Dakota Department of Commerce. As Commerce Commissioner I also have the pleasure of serving as the chairman of the EmPower North Dakota Commission.

The EmPower North Dakota Commission was established by the 2007 legislative assembly and made permanent by the 2009 legislative assembly. Its members are appointed by the Governor. It is an industry lead effort that allows all of our energy industries, both renewable and traditional, to have a voice into the state's energy policy. A copy of the EmPower North Dakota 2014 Policy Updates and Recommendations is provided for your reference.

On behalf of the EmPower ND Commission, I am here today to speak in favor of Senate Bill 2032. This is a bill that was recommended by the Commission and approved by the interim Energy Development and Transmission committee. A complete list of bills recommended and supported by the Commission is below:

- Senate Bill No. 2032 – Oil and Gas Development Strategic Planning Authority.
- Senate Bill No. 2033 – Oil & Gas Tax Trigger Mechanism.
- Senate Bill No. 2034 – Oil Gathering Pipelines Sales Tax Exemption.
- Senate Bill No. 2035 – Value-Added Energy Facility Sales Tax Exemption.
- Senate Bill No. 2036 – Coal Beneficiation.
- Senate Bill No. 2037 – Wind Energy Incentives & New Coal Mine Sales Tax Exemption.

Senate Bill 2032 establishes an Oil and Gas Development Strategic Planning Authority as part of the Industrial Commission. The structure of this planning authority is modeled after the Pipeline and Transmission Authorities, which are both part of the Industrial Commission.

The Oil and Gas Development Strategic Planning Authority would be funded using the Oil & Gas Research Fund, the same mechanism used for the Pipeline Authority. To be clear, you will not see this funding in the executive budget recommendation, just as you would not see the Pipeline Authority funding.

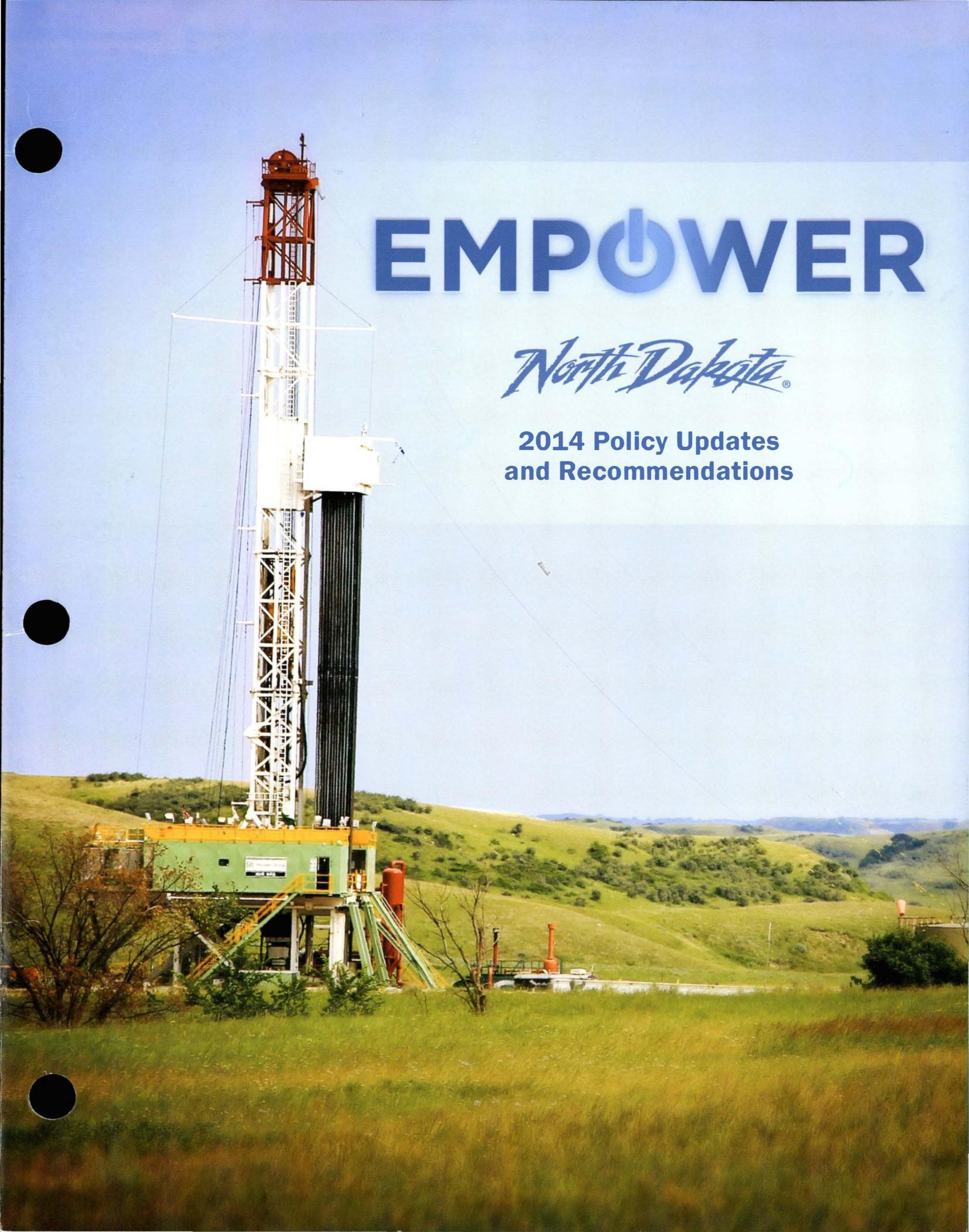
The EmPower ND Commission recommends the creation of this authority focused on regional infrastructure (roads, airports, emergency and medical services, water and waste water, etc.) that will work with communities in coordinating strategic planning efforts in the hub cities of Dickinson, Minot and Williston, and primary Bakken counties of Dunn, McKenzie, Mountrail and Williams. These efforts should:

1.2

- Provide periodic updates and evaluation on the progress of infrastructure development and future needs to the legislature in regards to state and community planning and investments.
- Work in cooperation with the Energy Impact Coordinator to understand local issues and efforts.
- Assist in data gathering and coordination of infrastructure funding, providing recommendations with input from local communities and distributing agencies.

This authority is intended to be a resource for both communities, as well as state policy makers. It will act as a coordinator of studies and information to help identify and address needs associated with oil and gas development. The planning authority will not itself be making any decisions.

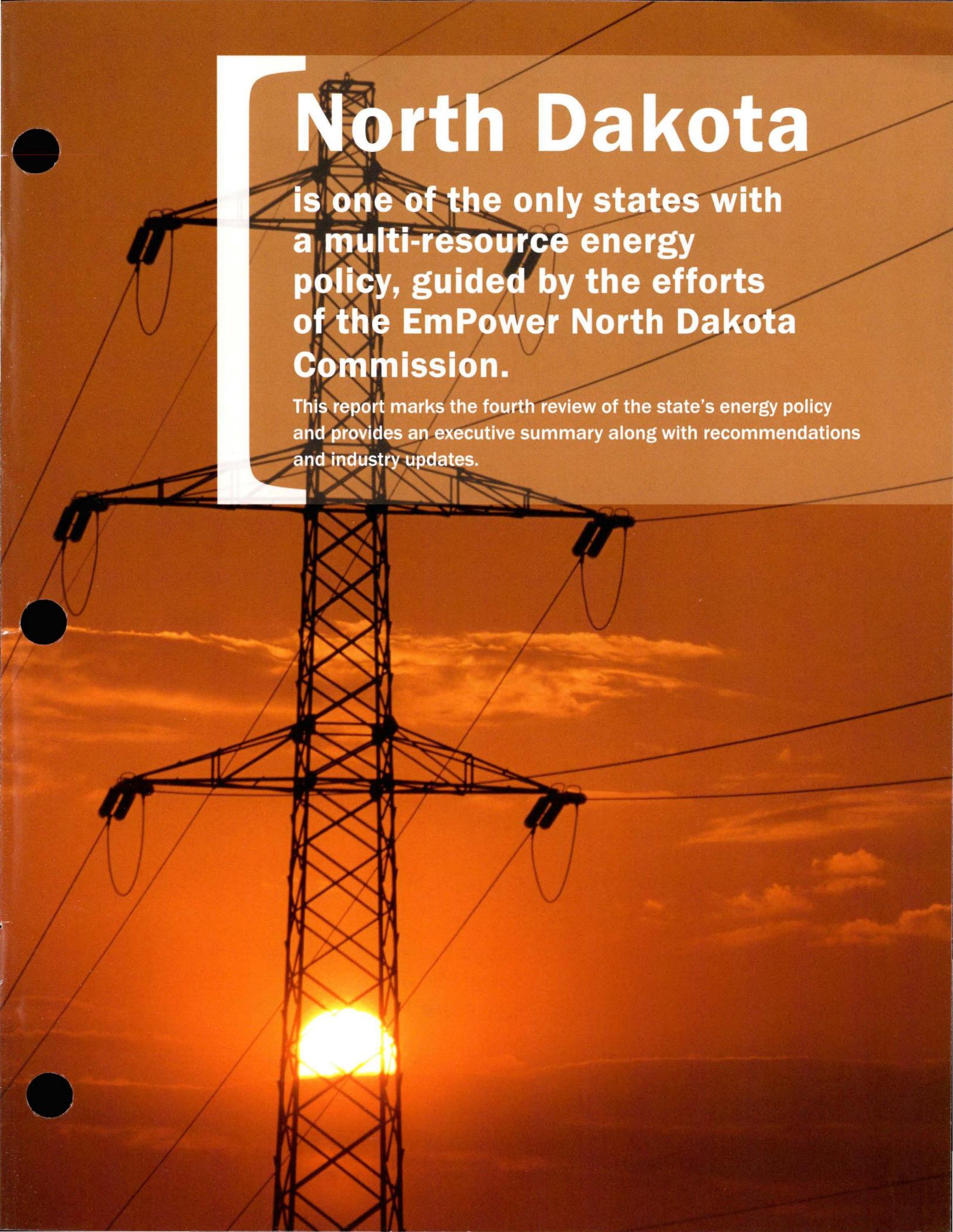
Mr. Chairman and members of the Energy and Natural Resources Committee, I respectfully request your favorable consideration of Senate Bill 2032. That concludes my testimony and I am happy to entertain any questions.

A tall oil drilling rig stands in a grassy field under a clear blue sky. The rig is white with a red top section and a green base. It is surrounded by green hills and a clear sky. The rig is the central focus of the image, with its derrick extending high into the air. The background shows rolling green hills and a clear blue sky. The rig is positioned on the left side of the frame, with its derrick extending towards the center. The base of the rig is green and yellow, and it is surrounded by some smaller structures and equipment. The overall scene is a typical oil field in a rural area.

EMPOWER

North Dakota[®]

**2014 Policy Updates
and Recommendations**



North Dakota

is one of the only states with a multi-resource energy policy, guided by the efforts of the EmPower North Dakota Commission.

This report marks the fourth review of the state's energy policy and provides an executive summary along with recommendations and industry updates.

EmPower North Dakota

2014 POLICY UPDATES AND RECOMMENDATIONS

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[Commission Recommendations

Infrastructure

Workforce

Research and Development

Regulatory Environment

Energy Growth Incentives

page 16

[Energy Sector Updates

Biodiesel

Biomass

Energy Efficiency

Ethanol

Lignite

Natural Gas

Oil

Petroleum Marketing

Refining

Solar, Geothermal, Hydrogen
& Hydro Power

Transmission

Wind

A photograph of an oil pumpjack (jack-o'-lantern) in a grassy field under a clear sky. The pumpjack is a large, dark-colored metal structure with a long arm and a counterweight. The name 'LUPKIN' is visible on the arm. The background shows rolling green hills.

North Dakota

is the 2nd largest oil-producing state in the nation.

Executive Summary

Through the EmPower North Dakota Commission, leaders from all major energy industries in North Dakota meet regularly with one common goal: to be critical thinkers for the development of the state's energy resources.

The strategic partnerships between North Dakota's long-standing and emerging energy industries enable all sectors of the industry to work together as they meet our state's and country's energy needs without government mandates.

North Dakota is proactive and aggressive in addressing energy development and serves as a model for America in fostering innovative, long-term energy strategies to meet our nation's growing energy demand and need for energy security in an environmentally responsible manner.

The state's diverse energy landscape celebrates many successes:

- North Dakota is the second largest oil-producing state in the nation and would be the 20th largest producing country in the world with production of one million barrels per day as of April 2014. The industry has over 10,100 producing oil wells, employs 65,000 direct and indirect jobs, has a \$30 billion economic impact, and contributes \$11 million per day to the state and political subdivisions in oil production taxes.
- Utility companies produce 4,000 megawatts of lignite and other coal generation at seven locations providing low cost, reliable electric power to two million customers in North Dakota, South Dakota, Minnesota, Montana and Iowa. North Dakota is one of the country's top 10 coal-producing states, mining approximately 30 million tons every year since 1988, which results in an annual economic impact of \$3 billion.



Executive Summary (continued)

- North Dakota leads the nation in the production of 10 different agricultural commodities including two commodities used for liquid fuels. Several additional crops provide feedstock for successful and developing bio-refining industries in North Dakota.
- Between 2007-2012 North Dakota increased its energy production by 179.7 percent.
- North Dakota has gone from 1.0 percent of the U.S. energy production to 2.7 percent and from being 23rd to 12th among U.S. states between 2007-2012.
- North Dakota continues to develop a thriving ethanol industry, which ranks 9th in the nation. It contributes more than \$640 million annually to the economy and supports more than 10,000 direct and indirect jobs. The state has established itself as a national leader in flex fuel pump infrastructure and has seen a 50 percent increase in flex fuel vehicles over the past three years with 98,100 currently on the road.
- There are 22 natural gas processing plants operating in western North Dakota. The oil and gas industry is investing over \$6 billion in infrastructure to capture natural gas, and four additional new or expanded plants are planned to come online by 2016. Natural gas gathering systems connected to 2,020 wells in 2013, up 113 percent from 949 wells in 2011.
- In 2013, North Dakota ranked 12th in the nation in installed wind energy capacity. The North Dakota Public Service Commission has permitted over 1,672 megawatts of wind generation.
- The state's only operating oil refinery has expanded to 70,000 barrels per day. In addition, a 20,000 barrels per day diesel topping refinery is under construction with an expected completion by December 2014. A number of other refineries are in various stages of planning and permitting.



Future Vision

North Dakota's future is one where many of the energy sectors have the potential to not only grow, but also develop new economies based on value-added opportunities related to energy resources. In order to move forward, the state needs to address several key areas crucial to the expansion of energy production and extraction. North Dakota needs to work with the industry to begin exploring ways to capture opportunities to develop raw resources into new products, including petrochemicals, plastics, nanofibers, manufactured products or materials yet to be discovered.

The EmPower North Dakota Commission has identified five critical components for continuing to grow energy production and new energy-related industries:

- 1. Infrastructure** – Up-to-date infrastructure is the foundation for continuing existing development and expanding into new areas.
- 2. Workforce** – As the energy industry expands, the workforce must be available to meet the demands.
- 3. Research and Development** – Research and development serves as the bridge for industry to move from concepts to new development and commercialization.
- 4. Regulatory Environment** – A regulatory environment, at both the federal and state levels, that encourages economic growth while ensuring environmentally-responsible development of natural resources is essential.
- 5. Energy Growth Incentives** – New and continued incentives are needed to capitalize on development opportunities across North Dakota's energy sectors.

EmPower ND Commission Members

In 2007, the North Dakota Legislature formalized energy policy and created the 16-member EmPower Commission which includes representatives from across the energy industry. Their insights provide the substance for this updated EmPower North Dakota Comprehensive State Energy Policy.



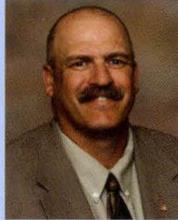
Al Anderson
North Dakota Department
of Commerce, chairman



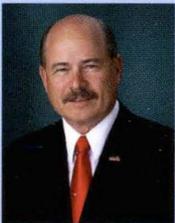
Jason Bohrer
Lignite Energy Council,
lignite coal



Mark Bring
Otter Tail Power
Company, ex officio



Ron Day
Tesoro, refining or
gas-processing



Terry Goerger
farmer, agriculture



Margaret Hodnik
Allete, Inc., ex officio



Eric Mack
Archer Daniels Midland,
biodiesel



Ron Ness
North Dakota Petroleum
Council, oil and gas



Dale Niezwaag
Basin Electric Power Cooperative,
generation and transmission
electric cooperatives



Mark Nisbet
Xcel Energy, wind



Mike Rud
North Dakota Petroleum
Marketers Association,
petroleum marketers



Randy Schneider
North Dakota Ethanol
Producers Association,
ethanol



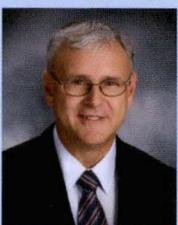
Jay Skabo
Montana-Dakota Utilities Co.,
investor-owned utilities



David Straley
North American Coal
Corporation, lignite coal
producing industry



Sandi Tabor
KLJ, ex officio



John Weeda
Great River Energy,
biomass



Julie Voeck
NextEra Energy Resources,
LLC., ex officio



Commission Recommendations

INFRASTRUCTURE

Adequate infrastructure – such as water pipelines, roads, oil and natural gas pipelines, railroads, electric transmission lines, power generation and affordable housing – is key to the efficient and effective development of North Dakota's energy resources. While most current infrastructure needs are related to oil and gas development in western North Dakota, all energy sectors benefit from similar infrastructure support throughout the state. Infrastructure provides the backbone for North Dakota's energy industry to export products to the rest of the nation, and perhaps the world. In addition, this component is critical to the growth of communities, the minimization of development impacts, and enhanced public safety.

The 2013 Legislative Assembly made substantial progress towards meeting the critical infrastructure needs of the state with an investment of \$2.5 billion in oil and gas impacted areas, nearly double the amount appropriated in 2011. However, continued growth of our energy industry and the state's economy are leading to infrastructure shortfalls and more must be done to assist communities in closing the gap.

The EmPower North Dakota Commission receives regular updates from the North Dakota Department of Commerce staff regarding continued western

Adequate infrastructure is key to the efficient and effective development of North Dakota's energy resources.

needs. Of the many concerns raised by local leaders, infrastructure issues were identified as critical to maintaining North Dakota's quality of life. In order to meet the growing demands of western North Dakota, the state needs to continue to make a long-term commitment of capital to address the acute infrastructure shortfalls related to the significant growth of oil and gas production, processing and transportation facilities.

Transportation infrastructure development includes construction and upgrading of roads and bridges on state, county and township systems. In 2013, western North Dakota experienced a 25 percent increase in vehicle miles traveled. As oil and gas activities continue, as well as agricultural movement, this increased traffic will create greater need and frequency for repairs and replacement. The Upper Great Plains Transportation Institute's 2014 study

In 2013, western North Dakota experienced a 25 percent increase in vehicle miles traveled.

INFRASTRUCTURE (continued)

of county, township and tribal transportation infrastructure needs estimates the following state investment is needed for the 2015-2017 biennium:

- Unpaved roads - \$548 million
- Paved roads - \$377 million
- Bridges - \$70 million

New methods to provide adequate funding to address these critical areas must be designed. Without a new approach, local governments and communities will continue to fall behind resulting in continued impact on development and quality of life. Concerns related to environmental issues like increased dust from trucks, proper storage of waste water, and others must also be addressed. Challenges also exist in the construction of necessary infrastructure as landowners become reluctant to grant easements on their property.

In light of the issues facing infrastructure related to energy development in the state, the Commission urges the State of North Dakota to:

- Support the passage of legislation within the first 30 days of the 2015 legislative session providing infrastructure funding to oil and gas impacted areas to ensure early availability of adequate funding to allow bidding processes to occur and result in timely use of the 2015 construction season.
- Support changes to the gross production tax distribution formula to provide additional funding

to assist with local infrastructure needs.

- Support a transportation funding level that meets the needs identified by the Upper Great Plains Transportation Institute.
- Recommend the immediate creation of an authority focused on regional infrastructure (roads, airports, emergency and medical services, water and waste water, etc.) that will work with communities in coordinating strategic planning efforts in the hub cities of Dickinson, Minot and Williston, and primary Bakken counties of Dunn, McKenzie, Mountrail and Williams. These efforts should:
 - Provide periodic updates and evaluation on the progress of infrastructure development and future needs to the legislature in regards to state and community planning and investments.
 - Work in cooperation with the Energy Impact Coordinator to understand local issues and efforts.
 - Assist in data gathering and coordination of infrastructure funding, providing recommendations with input from local communities and distributing agencies.
- Create a trigger mechanism that will make additional funds available to oil impacted communities from the state share of the oil tax revenue when revenue exceeds certain thresholds.
- Support expansion of existing water systems to provide capacity to meet growing community and commercial needs.
- Support the State Water Commission's efforts to increase access to Lake Sakakawea water for community and commercial needs to alleviate pressure on other water sources, reduce local truck traffic and improve road safety.
- Monitor the railroad infrastructure upgrade plan within North Dakota to ensure there is adequate ability to meet the export demand of all commodities to market.



WORKFORCE

North Dakota has one of the best business climates in the country fueling unprecedented growth, leading to a shortage of workers in virtually every industry and every corner of our state. As a result, securing skilled workforce to meet the needs of the state's business community is a high priority. As the state's demand for workers continues to grow, there needs to be greater focus on training and retaining our youth, as well as promoting opportunities to attract workers from outside the state.

The need to recruit and retain a permanent workforce is evident in the following statistics:

- 25,000 jobs are currently open across North Dakota.

25,000 jobs are currently open across North Dakota. Over 60 percent of these exist outside the oil and gas counties.

- North Dakota is expected to add over 76,000 jobs between 2010 and 2020.
- Healthcare, construction, energy, manufacturing, transportation, public services, agriculture, tourism and retail all report significant workforce shortages.

The State's workforce needs are not just limited to the oil and gas industry.

- About 35 percent of all current job openings are energy related.
- About 85 percent of private jobs in the state are not oil and gas related.
- The Fargo area has the most job openings in the state, followed by Bismarck.

As workforce needs continue to grow, the funding sources that support infrastructure and community development must be enhanced. Companies and private investors are working to address housing shortages throughout the state by providing crew camps, apartments, single- and multi-family homes. Single family housing is very important to attract the high-demand, high-skilled workforce the energy industry needs long-term. The state must continue to support the key infrastructure that supports the ease of development in many of our western communities.



WORKFORCE (continued)

Many of the state's new families also have unique financial needs. The Housing Incentive Fund, administered by the North Dakota Housing Finance Agency, is working to meet the need for affordable housing, but greater enhancements are necessary.

One of the challenges impacting the energy industry's ability to attract qualified employees is the lack of knowledge about the tremendous opportunities for young people in the energy industry. Many high-demand positions in several energy sectors rely heavily on skills in science, technology, engineering and mathematics (STEM). Incorporating STEM courses at an earlier age and educating career counselors and parents about high-demand careers will facilitate the long-term growth of the energy workforce talent pool. To improve the overall situation, the energy industry and research councils supported the development of curriculum for grades 4 and 8 which will be rolled out in Fall 2014. Discussions with officials at the Department of Public Instruction were initiated to understand how best to develop high school curriculum. These efforts are on-going. Curriculum development, however, is only part of the puzzle. Energy representatives also met with representatives from Valley City State University to discuss STEM education initiatives and the opportunity for energy curriculum development to train students pursuing teaching degrees. While great strides have been made in curriculum development, the needs for securing a stable funding source for curriculum maintenance and continued development is critical.

The current workforce landscape has many vocational or technical degree openings that can provide well paying, life-long careers (i.e., welders, linemen, electricians, boilermakers and mechanics). Many of the current energy-related workforce needs could be filled by individuals with vocational or technical skills.

Industry and education groups need to continue to work together to bring awareness to career and specialized training opportunities in North Dakota. The State of North Dakota and the energy industry must continue to strengthen existing partnerships to educate students of all ages about the wide variety of vocational and technical degree openings. Focus on this effort has proven successful; for example, at the recently expanded diesel mechanic program at North Dakota State School of Science in Wahpeton, most graduates leave with a North Dakota-based position in-hand as the school partners with business to meet critical workforce needs. The development of more training programs focused on meeting growing workforce requirements will need continued support by the legislature, EmPower North Dakota Commission and others. Adequate funding must be available for these important educational programs that support energy-related careers.

Also supporting the industry is TrainND, which provides customized training programs such as CDL and safety training, and employee development initiatives across the state. These training programs give North Dakota businesses an edge to better

WORKFORCE (continued)

compete on a local, national and international level. Continued support for programs such as TrainND and Operation Intern, which match youth with businesses while supporting long-term workforce growth in North Dakota, are critical.

In an effort to assist with workforce demand, the North Dakota Economic Development Foundation has launched the Find the Good Life in North Dakota campaign, a workforce recruitment effort. It is a private/public sector funded program designed to help solve the greatest challenge facing our business community: workforce development, recruitment and retention. The fundraising goal of \$2.5 million will fund a comprehensive two-year campaign focused on increasing workforce within North Dakota and securing out-of-state workers and students to fill high-demand careers. The campaign works with North Dakota companies and industry organizations to promote jobs through strategies such as out-of-state job fairs, veteran recruitment and other efforts.

The energy industry looks to the Governor's Workforce Development Council and Job Service North Dakota to better identify energy workforce needs and how North Dakota can maximize resources to meet those needs into the future. These efforts will ensure that Governor Dalrymple and the legislature receive the information necessary to sustain the long-term growth of the energy sector in North Dakota.

In light of the issues facing workforce related to energy development in the state, the Commission urges the State of North Dakota to:

- Continue support of the Housing Incentive Fund to the level suggested by the North Dakota Housing Finance Agency to meet market conditions, and consider a trigger on an annual basis for additional funds.
- Increase efforts to educate North Dakota's youth about the state's natural resources by funding the development, implementation and sustainability of curriculum at the elementary and

high-school level to encourage interest in energy careers through the North Dakota Department of Public Instruction.

- Encourage and enable the energy industry to collaborate with the North Dakota University System, Governor's Workforce Development Council, Job Service North Dakota and other agencies to:
 - Encourage industry interaction with teachers and guidance counselors to grow youth knowledge and interest in energy careers and to better retain youth for high-demand career options.
 - Provide greater accessibility to career and technical education programs, especially through adequate training facilities. Career examples include, but are not limited to:
 - Science, technology, engineering, and mathematics (STEM) education
 - Industrial equipment supplier supported programs
 - Commercial driver's license (CDL) training sites
 - Emergency medical services
 - Technical trades/internships
 - Energy careers
 - Workforce safety careers
- Support increased funding for workplace safety and training. Examples of efforts include:
 - Training workforce safety professionals
 - New-hire training
 - Back-to-work efforts
- Support legislation which recognizes the role distance learning will play in the future of education and improve access to technology for students using distance learning programs.



RESEARCH AND DEVELOPMENT

A key component to assuring the use of our valuable natural resources now and into the future is research and development (R&D). The state has been a leader in fostering R&D partnerships between private industry, higher education and research facilities. As R&D funding is reduced at the federal level, the state's role along with its partners is even more critical in finding ways to utilize North Dakota's vast energy resources. Through existing R&D programs, the state has the potential to allow R&D to undertake a new role in understanding the synergies between renewable and traditional energy resources.

For traditional fuels like lignite, oil and natural gas, R&D provides a road map for the development of new technologies that will provide fewer emissions and cleaner energy in the exploration stage or in the energy conversion process. For instance, lignite R&D projects are examining new ways to lower mercury, nitrogen oxide and sulfur dioxide emissions. The lignite R&D is focused on preserving the existing fleet of lignite based plants by developing new options for control of criteria pollutants such as NO_x, metals like mercury and CO₂ capture and sequestration. In addition, new technologies for options to produce low cost energy based on lignite that can meet the environmental challenges under today's regulatory climate are under development. Approximately \$8 million is available each biennium to fund the lignite

Through existing R&D programs, the state has the potential to allow R&D to undertake a new role in ensuring the future prosperity of North Dakota's vast energy resources.

R&D program. The funding is derived from two cents per ton R&D tax, a dedicated percentage of the Coal Trust Fund and for a limited time a portion of the coal conversion tax. A portion of this funding is also used by the North Dakota Transmission Authority to work on transmission issues which can limit energy development opportunities in the state.

The potential opportunities for secondary oil and gas recovery in North Dakota are in the very early stages of development. The importance of pursuing these opportunities is demonstrated by what is currently being done at the Dakota Gasification Company's plant in Beulah where CO₂ is captured and delivered by pipeline to the Weyburn oil field in Saskatchewan, Canada. It is estimated that the CO₂ being injected will extend that field's productive life for 25 years and result in production of as much as 130 million barrels

RESEARCH AND DEVELOPMENT (continued)

of oil that might otherwise have been abandoned. More research and technology development needs to occur to better understand how CO₂ injection or other methods of enhanced oil recovery can be applied in North Dakota's oil shale play.

The phenomenal growth over the past few years in oil and gas production is primarily due to the utilization of new technologies and practices. Research and development is needed to foster enhanced oil recovery in the Bakken and Three Forks Formations as well as other legacy formations. Other potential formations are currently being studied and wait for that "key" to unlock these natural resources for production. Through the Bakken Optimization Program, the oil and gas R&D program – in partnership with industry, the Energy and Environmental Research Center and higher education – is looking for the best methods to capture the oil and gas resources that remain underground and to do it with minimum impact to the land. This program includes research on waste minimization and utilization, spill remediation and land reclamation. Funding for the oil and gas R&D program is appropriated indirectly from the oil and gas production taxes at \$10 million per biennium. A portion of this funding is used to provide staff for the Pipeline Authority and to carry on the Authority's work on oil and gas transportation issues.

The renewable R&D program is funded at \$3 million per biennium from the state's Resources Trust Fund. This program promotes the growth of North Dakota's renewable energy industries through research, development, marketing and education. Funded projects have included the development of new renewable feedstocks, as well as technologies to process renewable energy.

As all our energy resources are developed, these research programs can play a critical role in advancing value-added processing and manufacturing across the state. The IHS study commissioned by the legislature is one step in that process. Now the work must continue in identifying

Similar to the tremendous growth witnessed in value-added agriculture, North Dakota can become a leader in value-added manufacturing related to oil and gas development.

the specific opportunities that the state can partner with the private sector to continue to grow the state's economy for years to come. Similar to the tremendous growth witnessed in value-added agriculture, North Dakota can become a leader in value-added manufacturing related to energy development.

In light of the issues and opportunities needing research and development related to energy resources, the Commission urges the State of North Dakota to:

- Continue to support existing R&D programs to ensure the development and implementation of new technologies and promote new growth for all energy resources. Consider increasing the funding level for lignite research and oil and gas research programs.
- Support the additional appropriation of research dollars to be used by the lignite and oil and gas research councils to support R&D activities to resolve the technical problems associated with the commercial deployment of carbon capture technologies, seek additional incremental improvements in the recovery of oil through enhanced oil recovery using CO₂ or other gases, and develop and fund a FEED study to identify commercial opportunities associated with the beneficial capture and use of CO₂ as well as the need to meet the region's growing energy demand.
- Create and implement a strategy to assist North Dakota in developing viable petro- and bio-chemical industries.



REGULATORY ENVIRONMENT

Current EmPower North Dakota Commission goals and policy statements reflect concerns regarding the existing federal regulatory climate that often fails to provide for reasonable, responsible and cost-effective regulations over many facets of the energy industry. The Commission's goals and policies can be summarized as stated below:

The federal government should provide a fair and responsible regulatory environment based on sound science and the capacity of current technology to ensure future energy development. Federal regulations must be cost-effective and include sufficient lead time for industry to adapt to new statutory requirements affecting production or products. Federal regulations must be structured in ways to minimize placing new barriers on investment and development.

The current federal regulatory environment incorporates a "one-size-fits-all" policy that fails to take into account the unique nature of each state. North Dakota should encourage federal agencies to recognize unique environmental issues and to work with the state to develop regulations that are flexible,

sensible and allow for state agencies to have primacy in the program.

Understanding the economic impact of federal regulations on the state's economy is also important. The energy industry can serve as a valuable ally in helping the state identify and analyze the impact of federal regulations on the citizens of North Dakota, as well as the energy industry. Simply understanding the impact of federal regulations, however, is only one part of the equation. Providing input to federal regulators on particularly onerous proposed regulations is a crucial part of the overall strategy to protect the state's interest. Equally important are communications with the North Dakota congressional delegation on federal regulations of importance to the state.

North Dakota must also recognize both the growth of all energy sectors and the additional burdens new regulations place on state regulatory agencies. Appropriate regulatory programs are a necessary part of ensuring that North Dakota can maintain its clean environment in conjunction with a healthy business environment. Staff and resources for state regulatory agencies need to expand to manage federal regulatory requirements and to ensure North Dakota retains primacy over these regulatory programs.

REGULATORY ENVIRONMENT (continued)

In light of the issues facing federal regulatory assessment related to energy development in the state, the Commission urges the State of North Dakota to:

- Encourage federal agencies to recognize environmental issues unique to North Dakota and work with state agencies to develop regulations that are flexible, sensible and allow for state primacy.
 - Encourage state agencies to provide regular updates on energy-related issues to the Commission and identify ways in which the Commission can support agency efforts on federal issues.
 - Establish new venues for state and federal regulatory agencies to collaborate on federal rulemaking efforts in ways that address individual state issues.
- Use the EmPower North Dakota Commission to better understand the economic impact of federal regulatory proposals on North Dakota.
 - Comment on proposed federal regulations with significant potential impact on the
- Recognize the additional burdens new energy development and regulations are placing on state regulatory agencies and provide adequate funding and staffing levels for the North Dakota Department of Health, North Dakota Department of Mineral Resources, North Dakota Public Service Commission, and North Dakota State Water Commission to ensure that each will be able to properly manage their respective programs.
 - Support legislative solutions which allow state agencies to design competitive compensation and benefit packages in order to attract and retain experienced employees in the disciplines related to energy development.
- Encourage the State of North Dakota to identify North Dakota-based solutions to manage waste generated from energy production.

state's economy and engage the North Dakota Congressional delegation to actively challenge the implementation of final regulations posing a threat to North Dakota's economy.





ENERGY GROWTH INCENTIVES

North Dakota's energy industry growth has been phenomenal. While overall production of various forms of energy is at an all-time high, the state is on the brink of moving to the next level of production – adding value to each of our energy resources. The first steps in this journey were realized with the natural gas and ethanol value-added studies conducted during the present biennium. The EmPower North Dakota Commission guided these studies and supports the recommendations of each. These studies, however, reflect just the beginning of a number of initiatives lead by various energy sectors focused on discovering new ways to bring value to existing and new resources.

As the State and industry teamed together in these efforts, a key component that should not be lost is maintaining North Dakota's business friendly environment. While new initiatives will mean hundreds of millions of dollars of new investment in North Dakota, industry has always been able to rely on the State's willingness to offset a portion of the initial investment through tax incentives.

In light of the opportunities related to the next phase of energy development, the Commission urges the State of North Dakota to:

- Support incentives to expand value-added energy opportunities.
 - Provide a sales tax exemption for value-added energy facilities including both equipment and building materials, similar to the existing incentive for value-added agriculture.
- Support incentivizing or enhancing CO₂ capture, storage and enhanced oil recovery opportunities.
- Support an extraction tax credit on oil extraction for the development of technologies for beneficial use of drill cuttings.
- Support incentivizing or enhancing remote natural gas capture technology to minimize flaring.
- Support incentives to expand natural gas or liquid natural gas markets.
- Ensure tax certainty for wind to encourage future investment in renewable wind resources, recognizing the strategic role wind will play in continuing to enhance North Dakota's diverse energy portfolio.
- Support incentivizing the co-location of energy-related infrastructure in the same right-of-way.
- Support removing the beneficiation tax for coal conversion facilities that are subject to coal conversion tax.
- Support removing the sunset on the severance tax exemption for beneficiated coal used in agricultural commodity processing facilities.
- Remove the sunset on the sales tax exemption for beneficiated coal when used in agricultural processing facilities.
- Support a sales tax exemption for oil gathering lines.

Energy Sector Updates

BIODIESEL

North Dakota biodiesel production uses about 65 percent of the state's canola production, or about 700,000 acres worth of canola.

BIOMASS

Researchers at North Dakota State University continue the development of hybridized biomass in pellet form for use in manufacturing processes. Biocomposite pellets could replace up to 40 percent of petroleum-based plastics used in manufacturing.

ENERGY EFFICIENCY

Energy conservation efforts helped weatherize over 4,000 homes for low-income individuals across North Dakota.

ETHANOL

The ethanol industry contributes more than \$640 million annually to the state's economy and supports more than 10,000 jobs.

LIGNITE

North Dakota's lignite industry generates 4,000 megawatts of electricity to 2 million customers and an economic impact of over \$3 billion.

NATURAL GAS

The oil and gas industry is investing over \$6 billion in infrastructure to capture natural gas, and four additional new or expanded plants are planned to come online by 2016.

OIL

North Dakota's oil industry generates more than \$30 billion of economic activity and supports 35,000 direct workers and more than 65,000 indirect jobs across all sectors of the economy.

PETROLEUM MARKETING

Over 500 million gallons of diesel fuel are being used annually in oil activity, in comparison to annual consumption across the state of 1 billion gallons.

REFINING

In addition to Tesoro Mandan Refinery, North Dakota's second refinery - Dakota Prairie Refinery, LLC - is scheduled for start-up in December 2014.

SOLAR, GEOTHERMAL, HYDROGEN & HYDRO POWER

The Garrison Dam on the Missouri River, with a capacity of 583 megawatts, is North Dakota's 5th largest plant in electricity generation capacity.

TRANSMISSION

Basin Electric Power Cooperative, Inc. received approval from the North Dakota Public Service Commission for their 200-mile 345 kV line from the Antelope Valley Station to a substation located near Tioga.

WIND

Since 2012, the North Dakota Public Service Commission has approved wind projects with total investments estimated at \$1.33 billion.

BIODIESEL

Biodiesel is a clean burning alternative fuel produced from renewable domestic resources that can help narrow the energy supply and demand gap. In North Dakota, biodiesel is primarily produced from canola oil feedstock, but can be made from any vegetable oil as well as from animal fats or used frying oils from restaurants and/or food manufacturing plants. The biodiesel industry is still in the defining stages of development in the United States. The volatile U.S. Biodiesel Blenders Credit has made it difficult for smaller plants to stay in business over the past few years. Currently, there is one biodiesel production facility operating in North Dakota, ADM Velva. Limited demand for biodiesel from within the state of North Dakota will limit the possibility of any new production plants in the state.

Highlights include:

- North Dakota biodiesel production uses about 65 percent of the state's canola production, or about 700,000 acres worth of canola.
- Each bushel of canola can produce 2.9 gallons of biodiesel.
- The ADM Velva plant brings jobs and new tax base into the area.
- The North Dakota State Research Center in Minot has been operating a field plot tractor fueled by B100 canola biodiesel for ten years with no mechanical issues.
- Since the canola biodiesel plant was built, North Dakota canola farmers have enjoyed historically high canola seed prices.
- State funding through the Centers of Excellence initiative has fostered a partnership between North Dakota State University and Monsanto to increase acreage and oil content of canola. The release of this new canola line in the near future will expand acreage and yields, increasing the available feedstock for biodiesel production in North Dakota.
- Investments in the Renewable Energy Development Fund have enabled the Energy and Environmental Research Center to develop a bio-based diesel with traits identical to petroleum-based diesel. The Biofuels PACE Program remains available as a financing incentive for new biofuel production facilities in North Dakota.



**Each bushel of canola
can produce 2.9 gallons
of biodiesel.**



BIOMASS

North Dakota's biomass industry has potential for significant contribution to the state's economy as it evolves. Both North Dakota State University and the Energy & Environmental Research Center, University of North Dakota, have numerous projects underway for biomass utilization. These projects include a wide variety of uses from gasification technology to nanofibers. In addition, there are industry efforts underway to use crop residues and wood waste for ethanol or other energy applications. Commercial application is yet to be achieved as the state works to grow support for biomass as a viable industry in North Dakota.

Highlights include:

- Research sponsors and North Dakota State University continue to work actively toward finalizing a business plan and developing the first energy beet to ethanol commercial installation. Energy beet field trials are being conducted at five regional locations across North Dakota in an effort to study productivity and sustainability. Beet and juice storage studies are also being conducted.
- North Dakota State University has also developed the biomaterials used in the "bio-boom," a hybrid of 20 to 30 percent renewable biomaterials, flax fiber and fiberglass used in a crop sprayer manufactured by AGCO Corporation.
- Midwest AgEnergy is constructing Dakota Spirit AgEnergy at Spiritwood, with the intent of producing 65 million gallons per year of ethanol. Once the backbone conventional ethanol facility is in operation, potential use of biomass at the facility will be evaluated again.
- North Dakota State University researchers are collaborating with several companies, including Composite Innovations Centre in Winnipeg, Manitoba. The research studies renewable biomaterials – canola, soybeans, flax and more – in combination with petroleum-based polymers and plastics for an array of products.
- Researchers at North Dakota State University continue to research the development of hybridized biomass in pellet form for use in manufacturing processes. Biocomposite pellets could replace up to 40 percent of petroleum-based plastics used in manufacturing.



ENERGY EFFICIENCY

Energy efficiency continues to be a high priority in homes and public buildings around the state. Over 11,000 energy efficiency and renewable energy rebates were given out to North Dakota residents and businesses resulting in \$3.4 million in energy cost savings.

Highlights include:

- The 2013 Legislature provided for a transfer of one-half of one percent in the oil extraction tax deposited in the Resources Trust Fund to the energy conservation fund for public buildings, not to exceed \$1.2 million per biennium.
- Using State Energy Plan funding, the North Dakota State University (NDSU) Agricultural and Biosystems Engineering Department and NDSU Extension Service provided education and technical assistance on energy efficiency and conservation through programs such as Home Energy 101, home builders educational seminars, 4-H leader training on the importance of home energy, and energy savings opportunities related to grain drying.
- Energy conservation efforts helped weatherize over 4,000 homes for low-income individuals across North Dakota.
- North Dakotans' received 3,800 rebates (at \$150 each) for ENERGY STAR refrigerators, saving approximately 2 million kilowatt hours annually.

Over \$900,000 annually will be saved from the implementation of energy savings measures in 19 North Dakota state facilities such as the State Capitol, North Dakota State School of Science and University of North Dakota.

- Approximately 197 local government buildings in 120 communities have been retrofitted through the Energy Efficiency and Conservation Block Grant (made possible with ARRA funding), annually saving over \$1.1 million.
- Over \$900,000 annually will be saved from the implementation of energy savings measures in 19 North Dakota state facilities such as the State Capitol, North Dakota State School of Science and University of North Dakota.
- The state building code now encompasses the 2009 International Energy Conservation Code and the International Residential Code energy efficiency requirements.



ETHANOL

The ethanol industry contributes more than \$640 million annually to the state's economy and supports more than 10,000 jobs. North Dakota's ethanol plants employ nearly 200 workers directly in positions such as chemists, engineers, accountants, managers and support staff. The average annual wage for an ethanol plant employee in North Dakota is approximately \$64,000.

Highlights include:

- North Dakota ranks 9th in the nation for ethanol production.
- North Dakota's ethanol industry has the capacity to produce:
 - 400 million gallons of ethanol, more than 10 times the amount produced in 2005.
 - 1.3 million tons of dry distillers grains, a high-value livestock feed.
 - 6 million gallons of corn oil, used in the biodiesel industry.
- Each North Dakota ethanol plant is located in a community with a population of less than 2,500 and contributes an average of 49 jobs and an average annual payroll of \$3.3 million to the community.
- Approximately nine percent of the 400 million gallons of ethanol produced annually in North Dakota is blended with gasoline and sold within the state.
- North Dakota ethanol plants use approximately 140 million bushels of corn annually with more than 80 percent of the corn purchased from North Dakota farmers.
- North Dakota is a national leader in the establishment of flex fuel pumps and was the ninth state to offer E15. There are also 98,100 flex fuel vehicles (FFV), more than a 50 percent increase since 2011.
- Ethanol is blended with nearly 85 percent of the taxable fuel sold in North Dakota, which is a nearly 30 percent increase from 2012.
- The ethanol industry partnered with the state's corn growers and the Renewable Energy Program to implement a two-year ethanol marketing campaign. Over the life of the campaign, there was a 36 percent increase in statewide ethanol sales from 2010 to 2013.
- A bio-refinery is under construction near Jamestown. It is a 65-million gallon per year conventional dry mill ethanol plant and is projected to be completed in the spring of 2015.
- North Dakota's ethanol industry is reviewing the results of the Study to Evaluate Value-Added Market Opportunities for Ethanol Produced in North Dakota conducted by IHS Chemical and considering future opportunities.

LIGNITE

North Dakota's lignite industry is a vital part of the state's economy with an economic impact of more than \$3 billion. The state supports 4,000 megawatts of lignite and other coal generation at seven locations providing low cost, reliable and clean electric power to two million customers in North Dakota, South Dakota, Minnesota, Montana and Iowa. North Dakota is one of the country's top 10 coal-producing states, mining approximately 30 million tons every year since 1988.

Nearly 80 percent of the lignite coal mined annually is used to generate electricity. About 13 percent is used to make synthetic natural gas that is delivered to 400,000 homes and businesses in the eastern United States, and seven percent is used to produce fertilizer products containing anhydrous ammonia and ammonium sulfate.

Highlights include:

- The 99 megawatts Spiritwood Station near Jamestown was commissioned in 2011. The plant is currently awaiting completion of the adjacent steam host to allow the plant to generate with the economics of a combined heat and power plant as designed.
- The Great Plains Synfuels Plant (Synfuels Plant), owned by Dakota Gasification Company (Dakota Gas), is the only commercial-scale coal gasification plant in the U.S. manufacturing natural gas. Average daily production of natural gas is about 153 million cubic feet, the majority of which is used in the eastern United States.
- The Synfuels Plant supplies carbon dioxide to the world's largest carbon capture and storage project in the world in Saskatchewan, Canada, for use in enhanced oil recovery. Dakota Gas currently captures between 2.5 and 3 million metric tons of CO₂ per year.
- Dakota Gas exports about 152 million cubic feet per day of CO₂ to Canada – about 50 percent of the CO₂ produced when running at full rates. As of 2013, Dakota Gas has captured almost 25 million metric tons of CO₂.
- Through 2013, more than 27,000 acres of mined land in North Dakota have gone through final bond release, equivalent to over 42 square miles.
 - A portion of reclaimed land has been devoted to public use such as Harmony Lake and Coal Lake which can now be used for hunting, fishing, photography, birding, canoeing, boating and other outdoor activities.
 - Basin Electric Power Cooperative's Glenharold mine received its final bond release in 2012. Over its 30 year productive life the mine won three national awards for its reclamation work.
- As of 2014, the Lignite Research Council is participating in 20 research and development projects worth over \$180 million. Many of these projects focus on ways to reduce, capture and store CO₂.

Nearly 80 percent of the lignite coal mined annually is used to generate electricity.



NATURAL GAS

North Dakota produced 347 billion cubic feet of natural gas, processed 233 billion cubic feet of natural gas and paid \$22 million in production taxes in 2013. Natural gas gathered and captured in North Dakota heats over 4.8 million homes in the U.S. Over the past two years, North Dakota's natural gas industry has worked hard to connect more than 3,800 new wells to gas plants.

There are 22 natural gas processing plants operating in western North Dakota. The oil and gas industry is investing over \$6 billion in infrastructure to capture natural gas, and four additional new or expanded plants are planned to come online by 2016. These plants will add more than 400 million cubic feet of gas processing capacity and create hundreds of high-paying jobs in rural communities.

Highlights include:

- Natural gas gathering systems were connected to 2,020 wells in 2013. This is up 113 percent from 949 wells connected in 2011.
- The North Dakota Industrial Commission, through the Oil and Gas Research Program in partnership with private parties, has invested more than \$10 million in research for new technologies to produce, capture and use natural gas at well sites. The results are intended to encourage and promote the use of new technologies that have a positive economic and environmental impact on oil and gas exploration. Examples include:

- A \$450,000 grant awarded to the Energy & Environmental Research Center to use for enhanced recovery of oil and natural gas in North Dakota.
- An \$8 million grant awarded to the Energy & Environmental Research Center to use for optimizing oil and natural gas production in North Dakota.
- An \$873,300 grant awarded to Bakken Express, LLC to use toward a \$3 million natural gas capture initiative.
- A \$750,000 grant awarded to Energy & Environmental Research Center to use toward a \$1.9 million natural gas capture initiative.
- A \$375,000 grant awarded to Blaise Energy, Inc. to use toward a \$7.475 million natural gas capture initiative.
- Natural gas liquids present many opportunities for value-added energy. A study on value-added opportunities relating to natural gas liquids and ethanol was commissioned by the North Dakota Department of Commerce and was published in May 2014.
- As of 2012, North Dakota is the 14th largest natural gas producing state.

OIL

North Dakota's oil industry generates more than \$30 billion of economic activity and supports 35,000 direct workers and more than 65,000 indirect jobs across all sectors of the economy. The necessary job skills continue to broaden as industry moves from the exploration phase towards the development phase.

As more new wells begin producing, more technical, permanent jobs will result. The average annual wage for an oil industry employee in North Dakota in 2012 was approximately \$97,841, which is 118 percent above the statewide average wage of \$44,914.

Highlights include:

- North Dakota is the second largest oil-producing state in the nation and would be the 20th largest producing country in the world.
- In April 2014, there were over 10,100 oil wells producing 1 million barrels of oil per day.
- Oil production taxes in 2013 exceeded \$2.9 billion. Monthly oil tax collections exceeded \$300 million in March 2014.
- Oil and gas production taxes accounted for 50 percent of North Dakota's total revenue collections in 2013.
- At \$100 and 1 million BOPD, the industry contributes \$11 million per day to the state and political subs (from the two oil taxes). Of this, \$1 million per day goes to the counties/cities/schools/townships.
- In May 2014, North Dakota's Legacy Fund, which receives 30 percent of the oil tax revenue, has a balance of more than \$2 billion dollars.



PETROLEUM MARKETING

North Dakota petroleum marketers are dedicated to providing quality product, great customer service and continue to be strong community leaders and supporters. Consumer demand always has and always will dictate what a petroleum retailer offers its customers.

The unprecedented economic growth in the state has been very good for the retail petroleum industry. One of the major challenges amidst all the prosperity has been finding adequate supplies of diesel, gas and even propane, particularly during peak demand seasons for the industrial and agricultural sectors. Workforce availability remains a major concern in the retail service arena with strong, high paying jobs developing across the state in all sectors of the economy.

Highlights include:

- There are roughly 500 petroleum marketers in North Dakota. There are also about 750 convenience stores/truck stops across the state. This number has grown significantly in the past few years as the state's economy continues to prosper and expand. These operations deal in every aspect of refined petroleum and renewable fuel products ranging from wholesale and supply to the numerous retail outlets scattered across the state.
- From April 2013 to April 2014, retail petroleum dealers sold about 500 million gallons of taxable gasoline in the state as well as close to one billion gallons of taxable diesel fuel. This figure does not take into account the roughly 900 million gallons of diesel fuel sold for non-highway use vital to agricultural, industrial and energy sectors within the state. Over 500 million gallons of diesel fuel are being used annually in oil activity alone.
- North Dakota petroleum marketers continue to support research and development of renewable fuels as viable sources of alternate energy.
- North Dakota gas retailers have been among the nation's leaders in promoting the sale of renewable fuels. North Dakota installed more than 220 flex fuel pumps, but as of December 2013 study that number has decreased to about 100 due to a number of factors. The North Dakota petroleum retailers and ethanol industry continue to work together to address these issues.





REFINING

North Dakota's refining capacity continues to expand with the continued growth of the Bakken Oil production. Several new refinery projects are being evaluated statewide.

Highlights include:

- North Dakota currently has one refinery in operation, Tesoro Mandan Refinery, with a crude operating capacity of 70,000 barrels per day.
- A second facility, Dakota Prairie Refinery, LLC, is under construction and is scheduled for start-up in December 2014. The Dakota Prairie Refinery will have a crude capacity of 20,000 barrel per day and will produce 7,000 to 10,000 barrels per day of diesel and other byproducts. It is the first refinery built in the U.S. since 1976.

- Several other diesel topping plants and refinery projects are currently being evaluated. These projects include a 20,000 barrel per day diesel topping plant near Trenton (Dakota Oil Processing) and a 15,000 barrel per day refinery near Makoti [Mandan, Hidatsa, and Arikara (MHA) Nation]. These projects are in various planning stages.

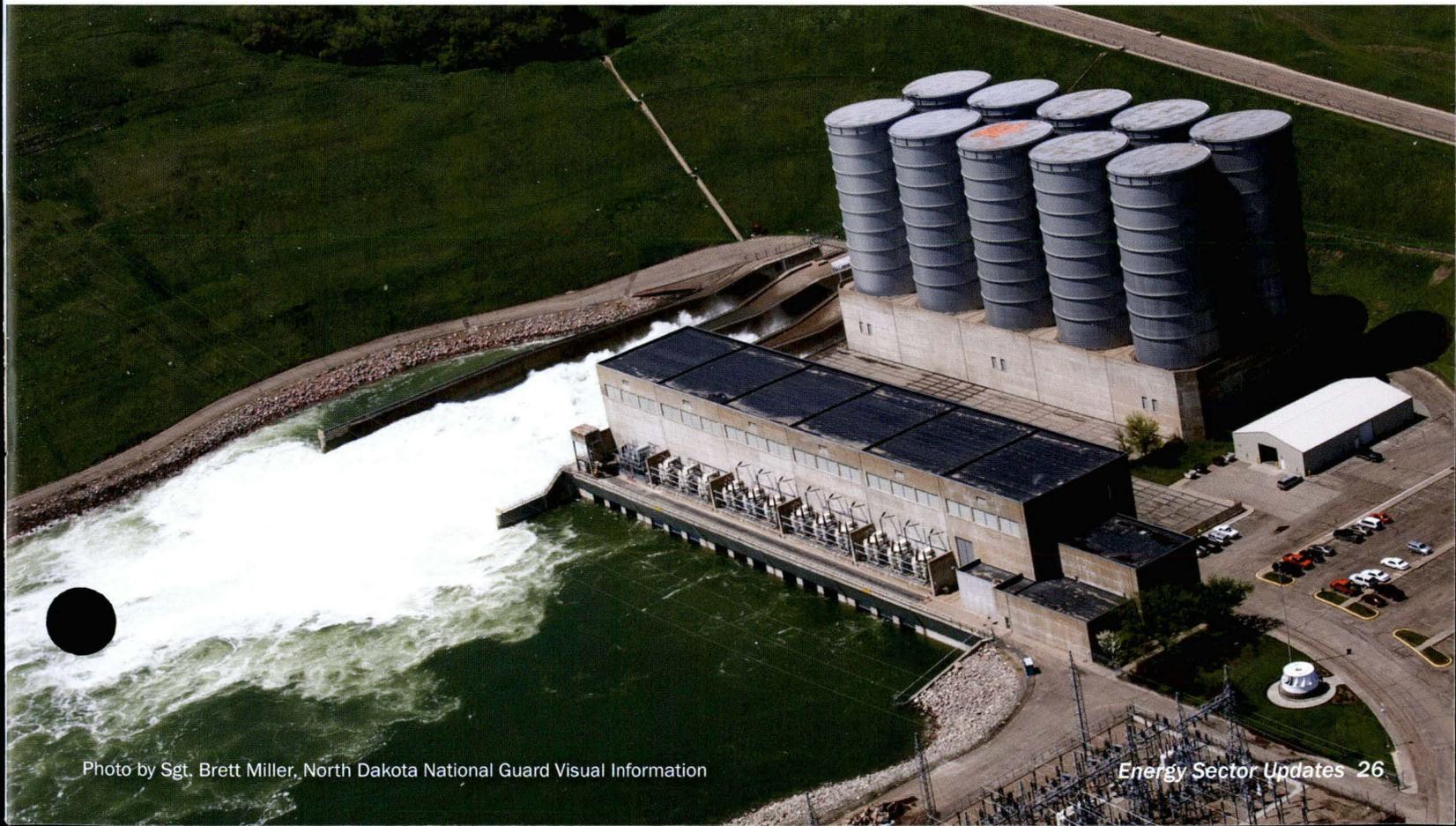
The Dakota Prairie refinery is the first refinery built in the U.S. since 1976.

SOLAR, GEOTHERMAL, HYDROGEN & HYDRO POWER

North Dakota has invested in research for hydrogen, solar and geothermal applications. This includes \$2.5 million for a Centers of Excellence project at the Energy & Environmental Research Center's National Center for Hydrogen Technology, which is attracting hydrogen-based business to the state; funding for research at University of North Dakota for commercial application of geothermal; and funding for solar energy research at North Dakota State University.

Highlights include:

- Several electric cooperatives offer a program to help ranchers install solar powered stock pond watering pumps in rural areas where it is uneconomical to construct electric transmission lines. As an example, Verendrye Electric Cooperative has provided support for over 300 solar pumps and avoided building about 300 miles of distribution line at a savings of about \$30,000 per mile.
- Whiting Oil uses solar PV systems at oil well sites to power pump jacks in isolated areas in which electrical services is not available.
- The Geothermal Laboratory at the University of North Dakota is conducting a geothermal power demonstration project in North Dakota in collaboration with the U.S. Department of Energy, Continental Resources, Inc., Slope Electric Cooperative and Access Energy, LLC. Start-up is scheduled for Summer 2014. The objective of the project is to demonstrate and test the technical and economic feasibility of generating electricity from non-conventional, low-temperature geothermal resources using Organic Rankine Cycle (ORC) technology.
- The Garrison Dam on the Missouri River, with a capacity of 583 megawatts, is North Dakota's fifth largest plant in electricity generation capacity.



TRANSMISSION

The development of new transmission in North Dakota continues as companies construct lines to support new load growth as well as to connect new generation to the electric grid. Studies to identify impacts of new load on existing transmission systems and identify new lines needed for the future continue at individual companies and at regional transmission planning entities.

Highlights include:

- North Dakota Transmission Authority conducted a study of the impact of oil and gas development in the Williston Basin on electric load growth and transmission infrastructure.
- Basin Electric Power Cooperative, Inc. received approval from the North Dakota Public Service Commission for their 200-mile 345 kV line from the Antelope Valley Station to a substation located near Tioga. Construction will begin in Fall 2014 once federal approvals are received. This new line will help meet increasing regional electric demand and improve the reliability of the existing system, strengthening the electric infrastructure throughout the region.
- Basin Electric Power Cooperative and the Western Area Power Administration are moving forward with plans to join the Southwest Power Pool (SPP) Regional Transmission Organization. Final approvals will be sought in 2014 and, if successful, the two organizations will begin actual operations with SPP in 2015.
- Minnkota Power Cooperative is constructing a 345-kV transmission line that will stretch 250 miles from Center to Grand Forks, to be completed by August 2014.
- CapX2020 is a group of 11 Midwest-based utilities constructing more than 700 miles of new 345 kV transmission lines in the upper Midwest. One of the proposed routes is a 210-mile line that starts west of Fargo and stretches east to St. Cloud, Minnesota. The line is expected to be in service in 2015 and will support growing regional power demand and improve access to renewable energy.
- Otter Tail Power Company and Montana-Dakota Utilities Co. have jointly proposed the Big Stone South to Ellendale (BSSE) Transmission Line, a 345-kV line from Ellendale to a substation near Big Stone City, South Dakota. The project, which will be approximately 150 to 170 miles in length, is anticipated to cost between \$270 and \$390 million and will be in service in 2019.
- ALLETE and its subsidiary ALLETE Clean Energy have proposed an energy corridor with a backbone following an existing 465-mile path that contains a direct current transmission line running between Center and Duluth, Minnesota. The energy corridor would expand a pathway along strategic portions of the existing right of way to minimize land use and optimize energy delivery infrastructure development within North Dakota. It is envisioned that various lengths of the corridor would be used for movement of natural gas, wastewater, petroleum and other products.
- Transmission costs vary depending on voltage, terrain type, conductors, length, right-of-way costs and many other factors. Many sources around the country report that average transmission costs for a new 345 kV line can be between \$1 and \$2 million per mile, depending on design and environmental conditions.

Many sources around the country report that average transmission costs for a new 345 kV line can be between \$1 and \$2 million per mile, depending on design and environmental conditions.

WIND

Over the last few years, many of the region's utilities completed construction of wind facilities in order to comply with renewable portfolio standards in states surrounding North Dakota, meet internal policies related to diverse energy portfolio standards, secure a fixed price energy source, or to meet other business goals. Since 2008, the wind industry in North Dakota has found itself in a state of transition. Driven by a number of factors, including the economic slowdown caused by the 2008 recession and the resulting decrease in demand for electricity, prices for electric power have fallen significantly and regional congestion on the transmission system has impacted the construction of new wind facilities. In addition to these industry challenges, the uncertain future of Production Tax Credit (PTC), which Congress has yet to extend beyond December 2013, lingers as well. Yet, in spite of these issues, the capacity of the wind industry grew during the last year, but at a much lower rate than in recent years.

Despite the various challenges, wind energy prices have decreased significantly over the past seven years. Efficiencies in technology and market pressures have driven wind energy prices down over 50 percent to meet market demands.

Highlights include:

- Since 2012, the North Dakota Public Service Commission has approved wind projects with total nameplate capacity of over 700 MW. If these approved projects are constructed, the total investment associated with the projects is estimated at \$1.33 billion.
- More than 990 wind turbines are operating in 26 North Dakota counties.

More than 990 wind turbines are operating in 26 North Dakota counties.

- There are currently 700 megawatts of wind under construction in 2014.
- North Dakota ranked twelfth in the nation in wind capacity at the end of 2013, with 1,672 megawatts of wind in service.
- In the last two years, installed wind capacity in the state grew by only 104 megawatts, compared to 250 MW in the prior two-year period.

Demand for wind is anticipated to be strong with wind energy being a scalable, cost-effective, emission-free renewable resource in the region. Recent wind energy prices have made wind more attractive to many utilities, regulators and end users. There is also federal regulatory pressure moving the energy generation industry towards cleaner, renewable resources like wind energy.

The Midcontinent Independent System Operator, Inc. (MISO) is responsible for operation of the transmission grid across all or parts of 15 states, (including portions of North Dakota) and the Canadian province of Manitoba. The upgraded MISO transmission system has improved reliability and allows for additional wind energy to be connected to the grid. The expansion of the grid will allow for additional amounts of new wind energy on the regional transmission system.

North Dakota is well-positioned to develop additional wind energy and become a larger exporter of wind energy.



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**Senate Energy and Natural Resources Committee
January 8, 2015 – 10 a.m. – Fort Lincoln Room**

**North Dakota Department of Transportation
Scott D. Zainhofsky, PE - Director, Planning/Asset Management Division**

SB 2032

Mr. Chairman and members of the Committee, my name is Scott Zainhofsky. I serve as the Planning/Asset Management Division Director for the North Dakota Department of Transportation (DOT).

I am here today on behalf of the Department to provide information pertinent to SB 2032, a bill that would establish an oil and gas development strategic planning authority.

The DOT supports the concept of additional planning for the entire state of North Dakota. Our intent, today, is to provide information to you to ensure there is no duplication of efforts, should you decide to establish the subject planning authority. Per Century Code 24-01-01, the DOT is charged with working with local governments to ensure an integrated transportation system is established. The DOT has a long, successful history of multi-modal transportation planning throughout North Dakota. Examples of recent planning projects include:

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- Various city and county transportation and comprehensive plans
- Statewide Local Road Safety Plans
- Among many others

We have a good process in place that prioritizes improvement projects from a statewide perspective. The DOT works with local authorities to program transportation projects into the Statewide Transportation Improvement Program (STIP) for bidding and construction. Additionally, the DOT is coordinating project bidding and timing with local government authorities to ensure construction effort and public disruption are reduced to the extent practical.

In order to provide you with additional information on DOT planning programs we have attached documents describing some of the transportation planning efforts the NDDOT has underway or recently completed.

Thank you for attention. At this time, I would be glad to answer any questions.

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NDDOT Statewide Planning Initiatives

The NDDOT has utilized performance management to assist in the management of the State's transportation assets since the early 2000s with the adoption of the Highway Performance Classification System (HPCS). The HPCS is comprised of a five level classification system with varying performance expectations from each classification. The levels include: Interstate; Interregional; State Corridors; District Corridors; and District Collectors (see Figure 1). Generally, the HPCS is utilized in consideration of the physical design of roadways, establishing maintenance priorities, establishing expected or desired functional service characteristics, and informing investment decisions. Recently, the NDDOT has been working to enhance the existing performance management concept. To this end the Department is working to develop an enhanced set of measures to evaluate the performance of the State's rural transportation system in areas such as: pavement and bridge condition; safety; freight and traveler operational conditions; and operational reliability.

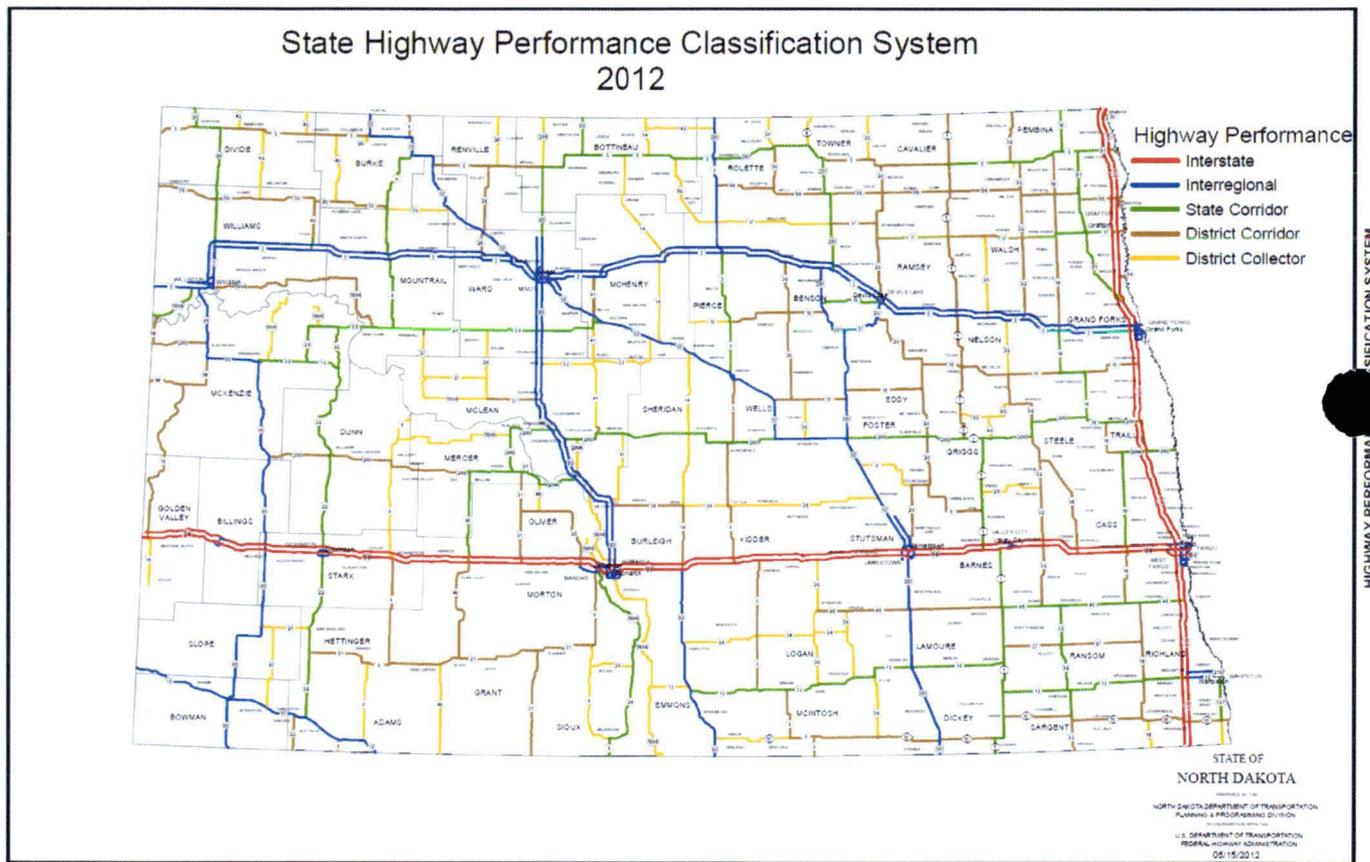


Figure 1. HPCS Map

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The NDDOT and Upper Great Plains Transportation Institute (UGPTI) are finalizing a variety of studies to identify the resources necessary to adequately address existing and projected demand on the states multimodal transportation system. A statewide needs analysis assesses the State's roadway network, as well as roadway infrastructure needs for North Dakota's urban areas. A short-line rail needs study evaluates the 1,085 miles of in-service rail line operated by the State's three largest short-line railroads including: Red River Valley and Western; Dakota Missouri Valley and Western; and Northern Plains Railroad. Additionally, a statewide transit study assesses the existing and projected capital needs of the rural and urban transit providers.

The State's long range transportation plan (TransAction III) provides guidance and direction for the development of North Dakota's transportation system. Development of the plan relies heavily on transportation-stakeholder and public involvement to establish the State's values related to transportation. The plan seeks to develop goals and objectives to address existing and projected transportation issues and needs related to North Dakota. This plan is typically updated on a five-to-seven (5-7) year cycle, with the last update published in late 2012.

The State's Strategic Highway Safety Plan (SHSP) provides guidance for a multi-disciplinary approach to highway safety, with the ultimate goal of eliminating fatal and serious-injury crashes on all public roads in the state of North Dakota. The current SHSP was published in September 2013, after an extensive outreach effort involving state, federal, local, and tribal governmental entities, private sector foundations and associations, law enforcement, emergency-services personnel, transportation engineers, and the public, among others. The resulting document was branded with the tag-line "Code for the Road" and identified six (6) emphasis areas resulting from an analysis of the leading contributing factors to fatal and serious injury crashes in the state. The SHSP also documents recommended proven-effective strategies to mitigate those factors. The six emphasis areas are (in descending order of 2007-'11 crash correlation): Lane departure; Unbelted vehicle occupants; Alcohol; Speeding/Aggressive driving; Younger drivers (under 21); and Intersections. Additionally, the SHSP process identified that about half of fatal and serious injury crashes were occurring off the state system and on the local road system. As a result, the NDDOT initiated the Local Road Safety Program which deploys a systemic safety analysis using geometric and traffic characteristics as surrogates for risk. Local road safety plans identifying road segments and proven-effective safety solutions are being developed for all 53 counties, as well as the 12 urbanized areas (cities with a population of 5000 or more), four tribes, and a national park. The plans are being used by local and state personnel to assist with project-level safety-investment decisions.

North Dakota's current rail plan was developed in 2007. The environment influencing rail transportation, since the current plan was developed, has changed significantly in recent years. Therefore, this plan is due to be updated.

NDDOT employs a sophisticated process of project selection to develop the Statewide Transportation Improvement Program (STIP). The Programming Division develops the STIP using a variety of tools and input (both internal and public); these inputs include: District project nominations, pavement management information, bridge management information, traffic volume data, Highway Performance Classification System guidelines, maintenance information, public and governmental entity comments, geographic workload distribution, distribution of work types to support and align with industry resources, and the available funding, among others.

Many of these processes and plans are highly influenced by federal regulations tied to various funding eligibility.

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Local Planning Initiatives

As the Committee is aware, many of North Dakota's local jurisdictions have experienced dramatic population change in recent years. Rural areas once experiencing slow population decline are now experiencing rapid population growth, bringing with it unique land use and transportation challenges and opportunities. The NDDOT supports local jurisdictions in sound planning to achieve quality jurisdictions, as well as safe and efficient state and local transportation systems. The NDDOT has been engaged in a variety of planning efforts to address challenges the State and local jurisdictions are facing and advance goals they seek to attain.

Across the state the NDDOT has participated with local partners, in a variety of local planning efforts. Following is a sampling of local plans and studies in which the NDDOT has been directly involved or is in the process of developing in partnership with the appropriate local jurisdiction(s):

- Dickinson Transportation Master Plan (completed 2013)
<http://www.dickinsongov.com/Documents/Information%20Documents/Community%20Development/Dickinson%20Transportation%20Plan%20Final.pdf>
- Jamestown Area Land Use and Transportation Plan (in progress)
<http://rdgusa.com/crp/jamestown/>
- Minot Long Range Transportation Plan (in progress) <http://transplan2035.minotnd.org/>
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- Watford City Area Future Land Use and Long Range Transportation Plan (in progress)
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Additionally, the NDDOT is working on an integrated State and local transportation study in the four county area of Dunn, McKenzie, Mountrail, and Williams counties. Staff from the NDDOT, Upper Great Plains Transportation Institute, as well as staff and county officials from the four county area are working cooperatively to identify a safe and efficient integrated transportation network between the local and state transportation systems.

All of these initiatives are highly influenced by existing state and local laws and ordinances regarding land-use planning and zoning powers and authorities.

Local Planning Resources

The NDDOT is in the process of developing a variety of local planning resources which may offer information and technical support to assist jurisdictions. The NDDOT reallocated an existing position to add a staff member in western North Dakota to assist local jurisdictions in dealing with local transportation and land use issues. The NDDOT field planner is located in the Williston District Office and began working with the NDDOT in 2013. His professional focus has been community planning, with 30 years of experience working as a public- and private-sector planner in Colorado and North Dakota.

In early 2015 the NDDOT, in partnership with the Federal Highway Administration (FHWA), will be conducting a Land Use and Transportation Planning webinar. Staff from the NDDOT, FHWA, and local North Dakota jurisdictions will provide information on land use and transportation planning experiences and tools which local jurisdictions may consider.

In addition to the webinar, the NDDOT is also developing a *Local Planning Resource Guide*. This document is intended to serve as an informational resource to local jurisdictions which may engage in the planning process to address issues they are facing or goals they seek to attain. It contains a variety of land use and transportation examples, concepts, and tools which local jurisdictions may consider. The document, as well as links to other land use and transportation resources which local jurisdictions may find useful can be found at the following website:

<https://www.dot.nd.gov/divisions/planning/land-use-transportation-planning.htm>

PROPOSED AMENDMENTS TO SENATE BILL NO. 2032

Page 1, line 2, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"

Page 1, line 2, replace "a continuing" with "an"

Page 1, line 7, replace "**Oil and gas development strategic planning authority**" with "**Western infrastructure strategy office**"

Page 1, line 8, replace "oil and gas development strategic planning authority" with "western infrastructure strategy office"

Page 1, line 8, remove "industrial"

Page 1, line 9, replace "commission. The industrial commission" with "department of commerce. The department of commerce"

Page 1, line 9, remove "hire"

Page 1, line 10, remove "employees or"

Page 1, line 12, replace "**Oil and gas development strategic planning**" with "**Duties of the western infrastructure strategy office**"

Page 1, line 13, replace "authority" with "director"

Page 1, line 20, replace "industrial commission" with "department of commerce as well as the North Dakota association of oil and gas producing counties"

Page 2, line 3, replace "industrial commission" with "department of commerce"

Page 2, line 5, replace "industrial commission" with "department of commerce"

Page 2, line 8, after "information" insert "and, as requested, coordinate and direct state-funded studies relating to western infrastructure and impacts"

Page 2, remove lines 10 through 26

Page 2, line 27, replace "17-10-05" with "17-10-04"

Page 2, line 30, replace "industrial commission" with "department of commerce"

Page 2, line 31, after the first underscored period insert "The director shall provide annual updates to the budget section of the legislative management, the North Dakota association of oil and gas producing counties, and the interim energy development and transmission committee."

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$300,000, or so much of the sum as may be necessary, to the department of commerce for the purpose of establishing the western infrastructure strategy office pilot project, for the biennium beginning July 1, 2015, and ending June 30, 2017."

Renumber accordingly



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DEPARTMENT OF COMMERCE TESTIMONY ON SENATE BILL 2032
FEBRUARY 3, 2015, 8:30 A.M.
SENATE APPROPRIATIONS COMMITTEE
SENATOR RAY HOLMBERG, CHAIRMAN

ALAN ANDERSON – COMMISSION, ND DEPARTMENT OF COMMERCE

Good morning, Mr. Chairman and members of the committee, my name is Alan Anderson and I serve as the Commissioner for the North Dakota Department of Commerce, as well as chairman of the EmPower North Dakota Commission.

On behalf of the EmPower ND Commission, I am here today to speak in favor of Senate Bill 2032. This is a bill that was recommended by the Commission and approved by the interim Energy Development and Transmission committee. A complete list of bills recommended and supported by the Commission is below:

- Senate Bill No. 2032 – Oil and Gas Development Strategic Planning Authority.
- Senate Bill No. 2033 – Oil & Gas Tax Trigger Mechanism.
- Senate Bill No. 2034 – Oil Gathering Pipelines Sales Tax Exemption.
- Senate Bill No. 2035 – Value-Added Energy Facility Sales Tax Exemption.
- Senate Bill No. 2036 – Coal Beneficiation.
- Senate Bill No. 2037 – Wind Energy Incentives & New Coal Mine Sales Tax Exemption.

As amended by the Senate Energy & Natural Resources Committee, Senate Bill 2032 establishes a Western Infrastructure Strategy Office which would be overseen by the Department of Commerce. The EmPower ND Commission originally had this as part of the Industrial Commission, similar to the Pipeline and Transmission Authorities. The Department of Commerce did not request this new office, but would do our best to administer it if the legislature approves this bill.

As amended, SB 2032 would be funded with \$300,000 from the general fund, which was not included in the executive budget recommendation.

The EmPower ND Commission recommends the creation of this office focused on regional infrastructure (roads, airports, emergency and medical services, water and waste water, etc.) that will work with communities in coordinating strategic planning efforts. The Commission's focus is primarily in the hub cities of Dickinson, Minot and Williston, and the core Bakken counties of Dunn, McKenzie, Mountrail and Williams. These efforts should:

- Provide periodic updates and evaluation on the progress of infrastructure development and future needs to the legislature in regards to state and community planning and investments.

/ - /

- Work in cooperation with the Energy Impact Coordinator to understand local issues and efforts.
- Assist in data gathering and coordination of infrastructure funding, providing recommendations with input from local communities and distributing agencies.

This office is intended to be a resource for both communities, as well as state policy makers. It will act as a coordinator of studies and information to help identify and address needs associated with oil and gas development. The strategy office will not itself be making any decisions.

Mr. Chairman and members of the Appropriations Committee, I respectfully request your favorable consideration of Senate Bill 2032. That concludes my testimony and I am happy to entertain any questions.

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Senate Appropriations Committee
February 3, 2015 – 8:30 a.m. – Harvest Room

North Dakota Department of Transportation
Steven S. Salwei, P.E. - Office of Transportation Programs Director

SB 2032

Mr. Chairman and members of the Committee, my name is Steve Salwei. I serve as the Transportation Programs Director for the North Dakota Department of Transportation (DOT).

I am here today to provide information pertinent to SB 2032 as amended, a bill that would establish a western infrastructure strategy office within the Department of Commerce.

The DOT supports the concept of additional planning for the entire state of North Dakota. Our intent, today, is to provide information to you to ensure there is no duplication of efforts, should you decide to establish the subject planning authority. Per Century Code 24-01-01, the DOT is charged with working with local governments to ensure an integrated transportation system is established. The DOT has a long, successful history of multi-modal transportation planning throughout North Dakota. Examples of recent planning projects include:

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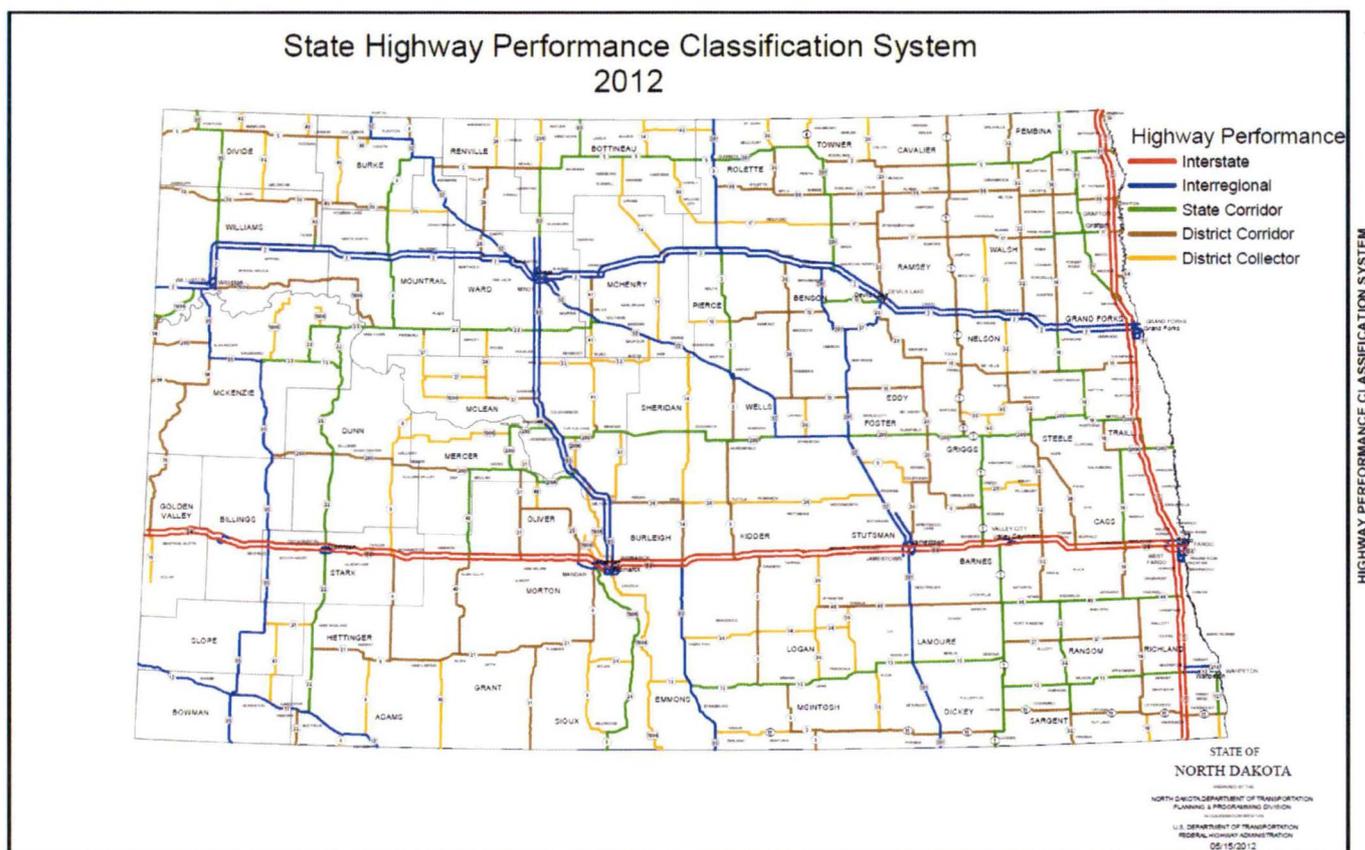


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