ADVANCING SOUTH DAKOTA’S ECONOMY

Aligning the State’s Economic and Workforce Development & Higher Education Efforts to Advance the 2010 and 2010 Education Initiatives

Supported by a grant from the Ford Foundation
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Report to the South Dakota Board of Regents

ADVANCING SOUTH DAKOTA’S ECONOMY:

Aligning the State’s Economic and Workforce Development & Higher Education Efforts to Advance the 2010 and 2010 Education Initiatives
To assist Governor Mike Rounds in implementing his 2010 and 2010E initiatives, the South Dakota Board of Regents successfully competed for the opportunity to participate in a Ford Foundation-funded project being conducted by the Western Interstate Commission for Higher Education (WICHE). The project – conducted in partnership with the National Center for Higher Education Management Systems (NCHEMS) and the Council for Adult and Experiential Learning (CAEL) – examines how state economic development efforts and higher education could be most effectively aligned to advance the state’s overall public agenda. South Dakota was an ideal state to select for this project because the Governor’s 2010 and 2010E initiatives had already created a joint agenda that placed the state well ahead of most in the nexus between economic and workforce development and higher education within the state.

The WICHE project has been used to supplement other activities imbedded within the 2010 and 2010E initiatives. It did so by collecting data on the demographic and economic trends of the state and by interviewing key stakeholders throughout the state – individuals from business and education, local community leaders, and prominent state policy leaders. These interviews helped to gauge how well these critical actors understand and accept the Governor’s initiatives as the vision for the future of South Dakota and to identify unique challenges that the state may face in working to progress this agenda. Project partners interviewed people from three South Dakota communities: Sioux Falls, Rapid City, and Pierre. (See appendix for interview list and protocol.)

WICHE and its partners extend our sincere thanks to the many individuals who participated in these interviews, both for their valuable time and for their candid and insightful comments.

The Strengths of 2010 and 2010E

Relatively few states have brought the higher education community as actively into the state’s workforce and economic development strategies as South Dakota has.

- The Governor and his cabinet all recognize that higher education must be a critical partner if the state is to achieve the vision of becoming a leading high skill/high wage economy of the future.

- The Regents have actively supported the Governor’s initiatives.

- The state universities have all actively engaged in planning to complement the initiatives.
The strategy also aligns well with the needs and capabilities of the state.

- **Demography.** The 2010 vision recognizes the demographic realities of South Dakota – an aging population, with fewer young adults to enter the workforce and with a larger share of those young adults coming from populations previously disenfranchised. (See Chart 1 for a graphic representation of the population change.)

![Chart 1. Projected Change in South Dakota Population by Age and Race/Ethnicity, 2000-20](chart1.png)

Source: U.S. Census Bureau

- **Workforce.** The strategy involves moving from an agrarian and natural resource-based economy to a knowledge-based economy, recognizing that doing so will require higher levels of educational attainment and increasing amounts of workforce retraining. One person noted that “no one relocates today without looking at education.” (Chart 2 illustrates the relationship between educational attainment and personal income for all 50 states.)

- **Economy.** The 2010 initiative calls for a knowledge-based economy that will demand a highly skilled workforce; much more so than today.
The 2010 and 2010E initiatives provide an appropriate vision and set of challenges. To achieve the vision, leakages in the educational pipeline need to be addressed, especially for previously disenfranchised populations such as Native Americans, and it will be necessary to entice adults to return to school to earn degrees or certificates and upgrade their work skills. (See Chart 3 for an illustration of the student pipeline in South Dakota, compared to the United States overall and to the best-performing states for each measure. See Chart 4, which illustrates South Dakota’s differences in educational attainment by gender and race/ethnicity for 25- to 34-year-olds, compared internationally to the best country.)
Chart 3.
Student Pipeline, 2004

Of 100 9th Graders, How Many…

<table>
<thead>
<tr>
<th></th>
<th>Graduate from High School Within Four Years</th>
<th>Directly Enter College</th>
<th>Still Enrolled Sophomore Year</th>
<th>Graduate Within 150% of Program Time</th>
<th>Age 25-44 with Bachelor's Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Performing State</td>
<td>91</td>
<td>70</td>
<td>57</td>
<td>42</td>
<td>27</td>
</tr>
<tr>
<td>United States</td>
<td>82</td>
<td>57</td>
<td>39</td>
<td>36</td>
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<tr>
<td>South Dakota</td>
<td></td>
<td></td>
<td>42</td>
<td>36</td>
<td>27</td>
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</tbody>
</table>

Source: NCES Common Core Data, NCES IPEDS 2004 Residence and Migration Survey, NCEC IPEDS 2004 Fall Enrollment Survey and Graduation Rate Survey

Chart 4.
South Dakota Educational Attainment by Gender and Race/Ethnicity, 25-34-Year Olds – Indexed to Top Country

<table>
<thead>
<tr>
<th>White</th>
<th>African-American</th>
<th>Hispanic/Latino</th>
<th>Native American/AK Native</th>
<th>Asian/Pacific Islander</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
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<tr>
<td>Female</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
</tr>
</tbody>
</table>

Percent with Bachelor’s Degree or Higher

- Top Country (Norway)
- U.S. Index = 0.86

Percent with Associate Degree or Higher

- Top Country (Canada)
- U.S. Index = 0.77

Source: U.S. Census Bureau, Public Use Microdata Samples (based on 2000 Census); OECD
Achieving these goals of the 2010 and 2010E initiatives will require:

- Better elementary and secondary education.
- Better articulation between education providers at all levels.
- Higher education in alignment with the workforce needs of a knowledge-based economy rich in research.

Some General Observations about South Dakota

Through the interviews, it became clear that while South Dakotans from different regions of the state see many things similarly, they also see other things quite differently from each other.

- In Sioux Falls, most interviewees expressed satisfaction with the local communities’ “energy” toward defining a progressive new future. Although generally supportive of the Governor’s initiatives, a number of the interviewees in this portion of the state knew relatively little about 2010 and even less about 2010E when pressed to describe them. They also felt that “the state” remained too focused on “marketing the state on its past” and present image rather than on the re-envisioned future reflected in Goal 4 of 2010.

- In Rapid City and nearby communities, interviewees enthusiastically supported 2010 and 2010E, without exception. They knew the vision well and were prepared to “change” for the new South Dakota of the future.

- Consistent with goals 4C and 4D of the 2010 initiative, everyone is concerned about how to incorporate rural South Dakota into the future knowledge-based economy of the state and committed to finding a way to do so, though some were also pessimistic about the prospects of doing so.

- These differences led to different perspectives about how the state should pursue the various goals of the 2010 initiative. Respondents called variously for the state to promote new business, to expand existing business, to re-envision agriculture and natural resources, and to develop a robust research and development infrastructure.

- Even devotees of 2010 and 2010E tended to understand some components of the plan better than others.
• Most people understood and accepted the major drive toward developing a stronger research focus in South Dakota, but relatively few tied this back to the workforce needs of the future.

• Most accepted the vision within 2010 and 2010E for greater inclusion of previously disenfranchised populations, particularly Native Americans, but most saw this as an equity issue rather than as a critical component of building a viable, high-skill workforce for South Dakota’s future. Indeed, some seemed to unwittingly relegate these populations to the low-skill sector of South Dakota’s future economy – to service-worker jobs in the recreation industry, to low-skill work in food production, and to service-sector positions (gardeners, cleaning staff, nannies, etc.) that support the professional class.

The Higher Education Connection

With respect to the 2010 initiative itself, the higher education connection is real and positive. More so than in many other states with whom project partners have worked, higher education is perceived to be actively engaged in South Dakota’s efforts to move from its historic agrarian and industrial economy to a high-skill/high-wage new world economy. People could identify, by name, key leaders within South Dakota higher education and within the Regents who were moving this agenda forward, and these individuals were held in high regard. In addition, there was general recognition that articulation efforts between the state universities and the postsecondary technical institutes had improved greatly. Interviewees identified some issues:

• The postsecondary technical institutes have not yet been engaged actively in fashioning an educational strategy for responding to the challenges of preparing the high-skill workforce of the future. Indeed, South Dakota’s technical institutes and community colleges excel in performance nationally, awarding the highest number of credentials as a percent of enrollment in 2002 (see Chart 5).

• Perhaps because of the local governance structure that ties these institutions to local K-12 systems, these institutions are often not even considered part of the postsecondary fabric of the state.

• Except in the allied health fields, technical institutes are not envisioned as key to the high-tech workforce of the future, even though future research-intensive efforts will require many technologists prepared at the sub-baccalaureate level.
As a remnant of the past, non-educators do not see the various state universities as being on the same team but rather as competitors bent on beating the other. While it is clear that the Regents have worked hard to create a spirit of teamwork, the perception that this occurred has not yet permeated much of the outside community, rightly or wrongly.

- Awareness with regard to the need for research and development is very high and broadly supported. Supporting data indicate that in 2002 at $42.4 South Dakota was the lowest of the fifty states in per capita research and development expenditures at doctoral granting institutions. South Dakota was also quite low with only 2.4 doctorates per 1,000 workers in science and engineering in 2002 (Source: Development Report Card for the States, Corporation for Enterprise Development). In 2004/2005 only 3.4 patents were issues in the state per $1,000 of gross state product (Source: Indiana Chamber 2004/2005 Economic Vision 2010 Report Card).

The people interviewed:
- Knew this was the major point of the Governor’s 2010 initiative.
- Knew that South Dakota lagged the rest of the country in research and development.
- Agreed that this should be a major piece of the vision for the future economic development of the state.

- Awareness with regard to the need for educational success was generally less well understood, and the extent of the challenge was broadly underestimated.

- Many of the interviewees viewed the educational component of the research and development goals of 2010E as simply the development of Ph.D. programs. While Ph.D. programs must be an integral component of such a strategy, success in this R&D domain will also require substantial change and expansion of specific curricula within secondary and higher education, particularly with respect to preparing students in science and math.

- Most respondents perceived the “pre-employment education and training” provided to traditional-age late adolescents/young adults as the dominant educational strategy.

- Few recognized that the best efforts with these prospective students would still leave the South Dakota workforce undersupplied, thus requiring the state to substantially ramp up its education to adults returning for additional workforce training. While this challenge is expressed clearly in 2010E (goals 3A&B), few interviewees could articulate how state universities or postsecondary technical institutes cooperate in the education of adults in South Dakota.

- Continuing professional education was more often recognized as an increasing need.

  - Interviewees agreed that continuing professional education for employed individuals would be necessary; South Dakota will need this to accomplish both 2010 goal 2A – “Promote the creation and development of new businesses that will contribute $6 billion to the GSP” – and goal 2B – “Promote the growth/expansion of existing businesses that will contribute $4 billion to GSP.”

  - Interviewees noted that tuition payment plans are widely offered by employers. Their comments indicate that people utilizing these tuition payment plans tend to be from larger cities and attend part time.

  - Specific needs in health occupations (for clinical staff) and middle management (in all areas of business) were identified but no specific occupations were named.

  - Several interviewees championed teacher education (particularly in math and science) as a field worthy of special attention in economic development. Teaching as a profession is today the largest high-skill area of employment in South Dakota’s workforce and will remain so in the future, and is critical to building all other high-skill sectors of employment.

  - Some people perceived the challenge facing South Dakota in this particular area to be a function of low teacher salaries (among the lowest in the U.S.) rather than the ability to produce enough teachers.
Interviewees also named the importance of Citibank and ADP and others in forming financial service clusters. These two companies need workers with various financial skills and are willing to train people for their jobs; these individuals then recycle back into the economy.

- Awareness of the size of the challenge facing the state was generally absent. For example, the Governor’s 2010E initiative calls for an increase of 20 percent in the number of baccalaureate recipients, an ambitious goal but one derived from legitimate estimates of the numbers required to support the knowledge-based workforce envisioned in the 2010 initiative. This 20 percent increase will need to occur within a state that, all else being equal, will see a nearly 10 percent decline in the number of high school graduates projected over the next decade. As a result South Dakota will need to:
  - Graduate a larger share of students from high school.
  - Send a larger share of those high school graduates on to college.
  - Graduate a larger share of those students who do go on to college, particularly in science, technology, engineering, and math (STEM) fields.
  - Entice a larger share of those college graduates to remain in South Dakota after graduation.
  - Convince a larger share of adults to return to postsecondary education for degrees or certificates.
  - Improve the success rates of historically disenfranchised populations, particularly Native Americans whose educational attainment levels substantially lag those of the rest of the population at all stages of this educational pipeline.

Individually, each of these is a significant challenge; combined they represent a huge challenge but one that the state must meet if it is to achieve the Governor’s 2010 vision. Yet our perception is that relatively few of the leaders in the state, particularly non-governmental leaders, fully appreciate both the size of the challenge or its gravity.

Next Stages for 2010: Challenges and Opportunities

**Spreading the good word.** While everyone that the project partners spoke with claimed to know about the 2010 initiative, few, with the exception of people in the Rapid City area and within the Governor’s cabinet, could clearly articulate anything more about the initiative than its research and development piece; and many were quite unaware of the components of 2010E.

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Hopefully, spreading the good word will also broaden the base of “strong” support. While the Regents have demonstrated very strong support for the initiatives, the K-12 community, at least at the local levels, does not appear to have made the same level of commitment. While certainly not opposed to the initiative, they have not yet embraced their critical role in its future success, particularly with regard to better preparing all students in math and science for success in the future knowledge-based economy. Likewise, the postsecondary technical institutes must become much more engaged, and recent efforts to develop articulation agreements between these institutions and the state universities need to be expanded.

Organizing for success. The state has adopted a number of very forward thinking organizational activities that will help ensure success. The state’s research and commercialization council, which includes private and public sector participation and support, is a great example of the type of collaborative activity that will help secure the future success of the initiative. The efforts of Forward Sioux Falls and similar efforts in Rapid City and Watertown to generate capital for ventures within their communities are further examples, though sustaining these kinds of support in the future will require a way of identifying the most successful strategies and a willingness to accept some failure. And as one interviewee mentioned to us, that is difficult for South Dakota’s culture, in which there are very strong taboos against failure.

Without doubt, many of the efforts within higher education to enhance the link between research and local economic development will contribute substantively to realizing the 2010 vision. The efforts of the Black Hills regional economic development center, the Sioux Falls center, the incubator on the School of Mines and Technology campus, and the potential of the Deep Underground Science Lab give considerable momentum to this direction for higher education.

Policy audit. A logical next step in this visioning process may be to consider auditing existing policies within South Dakota to determine whether they consistently support the 2010 vision or not. Such a policy audit could help determine which current state economic development, workforce, and higher education policies support the vision and which potentially create barriers to moving forward.

Enhance coordination. Despite these many efforts, there remains less coordination than might be necessary to maximize the impact of the Governor’s initiatives. Improved coordination would take two forms: PK-20 coordination, through which greater alignment between the public schools and postsecondary institutions has the potential to reduce leakage in the educational pipeline; and coordination between the technical institutes and the state universities, which could ensure more proactive responses to workforce needs. For instance, projections indicate that the demand for nurses will continue to grow, and higher education needs incentives to respond rather than pressures to limit growth in such programs. A more coordinated effort would also help in the efforts to spread the good word. One way to establish such a coordinated effort would be to establish a group composed of all the major stakeholders in this venture – a roundtable, of sorts – charged with advancing the Governor’s public agenda for linking economic development, workforce development, and higher education together. Today, Governor Rounds, through his leadership, has established the vision. Sustaining
this into the future, however, will require new efforts to cement the collaboration that has recently been fashioned; a roundtable process would be one mechanism for doing so.

**Build on the basis of evidence.** Many state and community economic development efforts in the past have failed because they based their vision on a presumption that “if we build it, they will come.” A much safer approach is to build on the basis of evidence. One of the strengths of the 2010 and 2010E initiatives is that they are built on a visionary, but appropriate and achievable, future for the state. The plan factors in the demography, economics, culture, and assets (human and natural) of the state. Indeed, much has been predicated on the work of the Governor’s Office of Economic Development and its needs analysis of existing and future workforce needs. These efforts need to be reconciled with the perceptions of local communities and business leaders.

**Continue data use.** Those areas identified as targets of opportunity and need for South Dakota’s near term future include: South Dakota is experiencing labor shortages in nearly all industries despite being consistently among the nation’s lowest unemployment rates. The decrease is particularly acute in health care and teaching, due primarily to population decline. The labor shortage is less critical in the urban areas but is a major problem in rural areas. Interviewees perceived that the largest shortages occur in trades, mid-level technology jobs, and low-skill jobs, such as those offered by call centers. Areas of strength and growth were biomedical/biodiversity, mail-order pharmacy operations, and security.

**Evaluate progress.** In addition to maintaining a strong capacity to predict future workforce demands, it will be necessary to develop the capacity to evaluate in a non-judgmental way what has worked and what has not. This would allow the state and local communities to discontinue strategies that do not achieve expected outcomes and to replicate successful models from urban areas for adoption in rural areas and vice versa. It is not necessary to forge entirely new ground in this domain. Georgia, Kentucky, and North Dakota are states that have already developed such strategies.

Governor Rounds 2010 vision for South Dakota – of a state bent on succeeding intentionally in the knowledge-based global economy of the future – offers the prospect of an exciting future for the state. It is already demonstrating promising results, both in terms of the positive energy throughout the state and with regard to fledgling economic development and expanded workforce opportunities. To assure that this vision is realized, however, and that it is realized for the citizens of South Dakota and not interlopers from elsewhere, will require smart, intentional, coordinated, and sustained action. A key to success will be having state economic development, workforce development, and higher education development policy in sync. All of the project partners hope the interview responses and data analyses will help move that vision for 2010 forward.
Slide Presentation Made at the November 16, 2006 Roundtable Meeting
Higher Education and the Future of South Dakota
Economic and Workforce Development

Presented to the
Roundtable on Workforce Development and Education—Pierre, South Dakota

November 16, 2006
Document Summary: ADVANCING SOUTH DAKOTA – What We Heard and Surmise

- The Strength of and Commitment to Governor Round’s 2010 Initiatives
  > The are no serious naysayers
  > Aligned well with South Dakota’s
    » Demography (Aging & Diversifying)
    » Workforce (from Brawn to Brain)
    » Economy (moving to high-skilled/high wage)
  > Recognizes The Challenges Ahead
    » To repair a leaky pipeline
      ■ Through College
      ■ Disenfranchised Populations
Document Summary Continued:

> 2010 Vision Identifies the Required Actions

» Better Elementary & Secondary Education

» Better Articulation

» Aligning higher education with needs of a knowledge based, research intensive economy
Document Summary Continued: “BUT”

» While buy-in is substantial, real knowledge of the 2010 vision varied greatly; many couldn’t articulate what that meant

» And perceived “effective strategies” varied greatly
  ■ Promote new business
  ■ Attract new business
  ■ Expand existing business
  ■ Re-envisioning Ag and Natural Resources
  ■ R&D as the driver

» Both Urban and Rural recognized as key drivers
Document Summary Continued: “BUT”

» Two significant disconnects between Governor’s 2010 vision and what we heard

1. Few tied research and workforce development together

2. Inclusion of Disenfranchised populations (Native Americans, in particular) seen as an equity agenda, rather than as a workforce issue.
Document Summary Continued: The Higher Education Connection

» Real & Positive
  ■ Improving articulation
  ■ R&D as a centerpiece universally understood and accepted
  ■ Continuing Professional Development needs recognized (health & teacher ed in particular)

» The Challenges
  ■ Postsecondary technical institutes not fully appreciated nor engaged.
    • Not discussed as major partners in high-skilled future (except allied health)
    • Not always considered part of higher education
  ■ Substantial progress in Regents work to build a team not recognized by many in the community
  ■ Substantial pipeline challenges acknowledged in 2010 not recognized by many respondents
The Governor’s Goal: 20 percent more Bas

The demographic environment: 10 percent fewer high school graduates

Requirements:
- Graduating more from high-school
- Sending more to college
- Graduating more of those who do go to college
- Keeping those graduates in South Dakota
- Convincing former South Dakotans to return
- Improving the success of previously disenfranchised
Document Summary Continued: Next Stages of 2010 Development

» Spread the good word -- bring K-12 and postsecondary technical colleges more into the fold

» Organize for success
  ■ Great activity underway today
  ■ Policy Audit to discern logical next steps
  ■ Enhance coordination
    ● PK-20 coordination
    ● University/tech institutes coordination

» Build your vision on a culture of evidence
  ■ Measure success -- high-skill or low-wage/your choice
  ■ Evaluate progress – and be willing to correct course
Document Summary Continued:

The Vision for South Dakota’s Future: Bent on intentionally building a knowledge-based global economy for the future

The Way to South Dakota’s Future:

Smart, Intentional, Coordinated, Sustained ACTION

Aligning economic development, workforce development, and higher education development
Higher Education and the Future of South Dakota
Economic and Workforce Development

Presented to the
Roundtable on Workforce Development and Education—Pierre, South Dakota

November 16, 2006
## 2010 and 2010e—Selected Goals

<table>
<thead>
<tr>
<th>Year</th>
<th>Goal</th>
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<tbody>
<tr>
<td>2010</td>
<td>2A Promote Creation and Development of New Business</td>
</tr>
<tr>
<td></td>
<td>2B Promote Growth/Expansion of Existing Businesses</td>
</tr>
<tr>
<td></td>
<td>2C Promote Agriculture and Natural Resource Development</td>
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<tr>
<td>2010</td>
<td>3 Become a Recognized Leader in Research and Technology Development</td>
</tr>
<tr>
<td>2010e</td>
<td>2 South Dakota Will Be First in U.S. for Percentage of Students</td>
</tr>
<tr>
<td></td>
<td>Going on to College, Technical School, or Advanced Training</td>
</tr>
<tr>
<td>2010e</td>
<td>3 The Postsecondary Education System Will Fully Meet the Needs of</td>
</tr>
<tr>
<td></td>
<td>the State’s Changing Economy and Its Citizens</td>
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<td></td>
<td>3B Expand Number of Citizens with Postsecondary Education and Training</td>
</tr>
<tr>
<td></td>
<td>3C Support Postsecondary Education Designed to Enhance State’s</td>
</tr>
<tr>
<td></td>
<td>Long-Term Economy</td>
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</table>
Role of Higher Education

- Economic/Workplace Development
  - Research
  - Other Activities

- Workforce Development
  - More Degrees
  - In Appropriate Fields
  - Continuing Education
Relationship Between Educational Attainment and Personal Income by State, 2000

R² = .6348

Source: U.S. Census Bureau, 2000 Census
Per Capita Personal Income as a Percent of U.S. Average—South Dakota, 1960-2000

Source: U.S. Census Bureau
Per Capita Personal Income, 2003

South Dakota = $28,856
Source: Bureau of Economic Analysis
Educational Attainment and Rank Among States—
South Dakota, 2000 (Percent)

Age 18-24 with HS Diploma: 78.2% (19th)
Age 25-64 with HS Diploma: 90.1% (10th)
Age 25-64 with Associate Degree: 8.6% (12th)
Age 25-64 with Bachelor’s or Higher: 24.5% (31st)
Age 25-64 with Graduate/Prof. Degree: 6.5% (46th)

Source: U.S. Census Bureau, 2000 Census
Projected Change in South Dakota Population by Age and Race/Ethnicity, 2000-20

Source: U.S. Census Bureau
South Dakota Educational Attainment by Gender and Race/Ethnicity, Age 25-34—Indexed to Top Country

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<td>Asian/Pacific Islander</td>
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</tbody>
</table>

Percent with Bachelor’s Degree or Higher

Percent with Associate Degree or Higher

Source: U.S. Census Bureau, Public Use Microdata Samples (based on 2000 Census); OECD
Percent of Civilian Population Participating in the Workforce, 2000

South Dakota = 67.9%
Source: U.S. Census Bureau
South Dakota Civilians Age 25-64 in the Workforce by Education Attainment, 2000

<table>
<thead>
<tr>
<th>Education Attainment</th>
<th>In Civilian Workforce</th>
<th>Not in Civilian Workforce</th>
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<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Less than High School</td>
<td>22,970</td>
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<tr>
<td>High School Diploma or GED</td>
<td>97,776</td>
<td>82.4</td>
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<td>Some College, No Degree</td>
<td>74,349</td>
<td>83.4</td>
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<tr>
<td>Associate Degree</td>
<td>26,698</td>
<td>87.6</td>
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<tr>
<td>Bachelor's Degree</td>
<td>58,773</td>
<td>89.3</td>
</tr>
<tr>
<td>Graduate or Professional Degree</td>
<td>21,810</td>
<td>92.7</td>
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</tbody>
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Source: Integrated Public Use Microdata Series 5% sample, South Dakota Population Center; www.ipums.org
Median Earnings by Degree Level

Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample Files
Difference in Median Earnings Between a High School Diploma and an Associate Degree, 2000

Source: U.S. Census Bureau's Public Use Samples, based on 2000 Census
Difference in Median Earnings Between a High School Diploma and a Bachelor’s Degree, 2000

Source: U.S. Census Bureau’s Public Use Samples, based on 2000 Census
The Education Pipeline
Key Transition Points in the Education Pipeline

- Complete High School
- Enter College
- Finish College
- Enter the Workplace
Projections of High School Graduates to 2018
By Race/Ethnicity—South Dakota

Source: WICHE Projections of High School Graduates
Projected Change in High School Graduates, 2005-15

South Dakota = 863
Source: South Dakota Department of Education
Student Pipeline, 2004

Of 100 9th Graders, How Many…

- Graduate from High School Within Four Years: 91, 70, 82
- Directly Enter College: 57, 39, 56
- Still Enrolled Sophomore Year: 42, 27, 36
- Graduate Within 150% of Program Time: 28, 18, 28
- Age 25-44 with Bachelor's Degree: 39, 27, 25

Source: NCES Common Core Data, NCES IPEDS 2004 Residence and Migration Survey, NCEC IPEDS 2004 Fall Enrollment Survey and Graduation Rate Survey
High School Graduation Rates—Public High School Graduates as a Percent of 9th Graders Four Years Earlier, 2002

Source: Tom Mortenson, Postsecondary Opportunity
College-Going Rates—First-Time Freshmen Directly Out of High School as a Percent of Recent High School Graduates, 2002

Source: Tom Mortenson, Postsecondary Opportunity
Part-Time Undergraduates as a Percent of Population
Age 25-44, 2004

Source: NCES, IPEDS Fall 2004 Enrollments; U.S. Census Bureau 2004 Population Estimates
Associate Degrees Awarded per 100 High School Graduates
Three Years Earlier, 2003

Source: NCES-IPEDS Completions Survey, WICHE
All Credentials Awarded (Two-Year and Less) at Two-Year Colleges as a Percent of Enrollment, 2002

Source: NCES-IPEDS Completions Survey, Enrollment Survey
Bachelor’s Degrees Awarded per 100 High School Graduates
Six Years Earlier, 2004

Source: NCES-IPEDS Completions Survey, WICHE
Net Migration of Residents Age 22-29 with a College Degree (Associate or Higher), 1995-2000

Source: U.S. Census Bureau, Public Use Microdata Samples, 2000
Net Migration by Degree Level and Age Group—South Dakota

Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample (PUMS) Files
South Dakota Occupations with High Net Imports and Exports, 1995-2000—Residents Age 22-29 with College Degrees

Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample (PUMS) Files
South Dakota Occupations with High Net Imports and Exports, 1995-2000—Residents Age 30-64 with College Degrees

Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample (PUMS) Files
Development Report Card for the States, 2005

South Dakota

Weaknesses (Bottom 10 Rank)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>Industrial Diversity</td>
</tr>
<tr>
<td>40</td>
<td>Technology Industry Employment</td>
</tr>
<tr>
<td>40</td>
<td>Disparity between Rural &amp; Urban Areas</td>
</tr>
<tr>
<td>41</td>
<td>Homeownership Rate</td>
</tr>
<tr>
<td>43</td>
<td>Urban Mass Transit</td>
</tr>
<tr>
<td>43</td>
<td>PhD Scientists and Engineers</td>
</tr>
<tr>
<td>43</td>
<td>Recycling Rate</td>
</tr>
<tr>
<td>44</td>
<td>Average Teacher Salary</td>
</tr>
<tr>
<td>44</td>
<td>Strength of Traded Sector</td>
</tr>
<tr>
<td>45</td>
<td>Royalties and Licenses</td>
</tr>
<tr>
<td>45</td>
<td>Charitable Giving</td>
</tr>
<tr>
<td>45</td>
<td>Change in Business Closings</td>
</tr>
<tr>
<td>46</td>
<td>Five Year Change in New Companies</td>
</tr>
<tr>
<td>46</td>
<td>Venture Capital Investments</td>
</tr>
<tr>
<td>47</td>
<td>Health Professional Shortage Areas</td>
</tr>
<tr>
<td>48</td>
<td>New Companies</td>
</tr>
<tr>
<td>48</td>
<td>Private Research and Development</td>
</tr>
<tr>
<td>49</td>
<td>Change in Poverty Rate</td>
</tr>
<tr>
<td>49</td>
<td>Academic Research and Development</td>
</tr>
<tr>
<td>49</td>
<td>Average Annual Pay</td>
</tr>
<tr>
<td>49</td>
<td>Federal Research and Development</td>
</tr>
<tr>
<td>50</td>
<td>Change in Homeownership Rate</td>
</tr>
<tr>
<td>50</td>
<td>Manufacturing Investment</td>
</tr>
</tbody>
</table>

Source: Corporation for Enterprise Development (CFED)

Strengths (Top 10 Rank)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Measure</th>
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<tbody>
<tr>
<td>1</td>
<td>Change in Renewable Energy</td>
</tr>
<tr>
<td>1</td>
<td>Air Quality Non-Attainment</td>
</tr>
<tr>
<td>2</td>
<td>Change in Income from Dividends, Interest &amp; Rent</td>
</tr>
<tr>
<td>2</td>
<td>Change in New Companies</td>
</tr>
<tr>
<td>2</td>
<td>Change in Private Research and Development</td>
</tr>
<tr>
<td>2</td>
<td>Crime Rate</td>
</tr>
<tr>
<td>3</td>
<td>Business Closings</td>
</tr>
<tr>
<td>3</td>
<td>Unemployment Rate</td>
</tr>
<tr>
<td>5</td>
<td>Loans to Small Businesses</td>
</tr>
<tr>
<td>5</td>
<td>Involuntary Part-Time Employment</td>
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<tr>
<td>6</td>
<td>Income from Dividends, Interest and Rent</td>
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<tr>
<td>6</td>
<td>Renewable Energy</td>
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<tr>
<td>6</td>
<td>Mass Layoffs</td>
</tr>
<tr>
<td>7</td>
<td>Sewage Treatment Needs</td>
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<td>7</td>
<td>High School Completion</td>
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<tr>
<td>8</td>
<td>Working Poor</td>
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<td>8</td>
<td>Change in Toxic Release Inventory</td>
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<tr>
<td>8</td>
<td>Highway Performance</td>
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<tr>
<td>8</td>
<td>Income Distribution</td>
</tr>
<tr>
<td>9</td>
<td>Voting Rate</td>
</tr>
<tr>
<td>9</td>
<td>High School Attainment</td>
</tr>
</tbody>
</table>
Overall State Scores on Measures of Innovation Assets

Note: Score is calculated as sum of rankings on ten separate 0 scores.

Source: Development Report Card for the States, CFED
Number of Doctorates per 1,000 Workers—Science and Engineering, 2002

Source: Development Report Card for the States, CFED
Per Capita R&D Expenditures at Doctoral Granting Institutions, 2002

Source: Development Report Card for the States, CFED
Number of Patents Issued Per $1,000 GSP

Performance Relative to Total Funding per FTE—State Higher Education Systems

Undergraduate Credentials Awarded (2001-02) per 100 FTE Undergraduates, Fall 2001

Undergraduate Credentials Awarded
(2001-02) per 100 FTE Undergraduates,
Fall 2001

Total Funding per FTE
(State, Local, Tuition & Fees, State Financial Aid—
Adjusted for COL and Faculty Salaries)
Performance Relative to Total Funding per FTE—State Higher Education Systems

PhDs per 1,000 Degrees Awarded (Baccalaureate and Above), 2000-01

PhDs per 1,000 Degrees Awarded (Baccalaureate and Above), 2000-01

Total Funding per FTE (State, Local, Tuition & Fees, State Financial Aid—Adjusted for COL and Faculty Salaries)
Performance Relative to Total Funding per FTE—State Higher Education Systems

Federal and Industry R&D per Capita, 2001

Total Funding per FTE (State, Local, Tuition & Fees, State Financial Aid—Adjusted for COL and Faculty Salaries)
Performance Relative to Total Funding per FTE—State Higher Education Systems

Bachelor’s Degree as a Percent of High School Graduates Six Years Earlier, 2002

Bachelor’s Degree as a Percent of High School Graduates Six Years Earlier, 2002

Total Funding per FTE (State, Local, Tuition & Fees, State Financial Aid—Adjusted for COL and Faculty Salaries)
The Challenges Facing South Dakota

Workforce Development

- More Students:
  - Completing High School
  - Entering College
  - Completing College
    (Especially Baccalaureate)

(continued)
The Challenges Facing South Dakota (cont.)

- Bringing Adults without Higher Education Degrees Back into the Pipeline
  - Dropouts
  - Those Who:
    - Got a High School Diploma but Went no Further
    - Attended College but Didn’t Complete

- Specific Attention to Participation and Success of Native Americans

(continued)
The Challenges Facing South Dakota (cont.)

Workplace Development

- Creating High-Wage/High-Skill Jobs that Will Keep College Graduates in the State

- The Importance of:
  - Research and Development
  - Entrepreneurship
  - Rapid Response to Employer Needs
Summary of the November 16, 2006 Roundtable Meeting and Next Steps
Summary of the November 16, 2006 Roundtable Meeting and Next Steps

On November 16, 2006, Governor Mike Rounds convened a gathering of significant South Dakota policymakers in Pierre to discuss how the state could move his 2010 and 2010E initiatives forward by fostering greater coordination between the state’s institutions of higher education and its workforce development strategies. This roundtable was supported through a grant from the Ford Foundation to the Western Interstate Commission for Higher Education (WICHE), working in partnership with the National Center for Higher Education Management Systems (NCHEMS) and the Council for Adult and Experiential Learning (CAEL). WICHE had selected the South Dakota Board of Regents to participate in a grant to link higher education and workforce development planning; South Dakota was one of two states chosen through a competitive bidding process.

Participating in the meeting were the Governor, members of his staff, members of his cabinet, key legislators, higher education leaders including the members and staff of the Board of Regents, and business leaders. Many of these participants had also participated in interviews conducted by WICHE and its partners over the course of the preceding year to help provide the basis for an informed and structured discussion at this meeting. The discussion was facilitated by Dennis Jones, president of NCHEMS, and David Longanecker, executive director of WICHE.

To set an appropriate context for the discussion, Dr. Longanecker presented the major findings of WICHE’s process of discovery, which were included in a paper entitled “Advancing South Dakota’s Economy: Aligning the State’s Economic and Workforce Development and Higher Education Effort to Advance the 2010 and 2010 Education Initiatives” (Attachment I). Mr. Jones followed the summary of this document with a presentation on the economic and demographic circumstances facing South Dakota today and in the future (Attachment II). This evidence was used to guide the discussion of what strategies the state should use to better coordinate future planning and action with regard to both higher education and workforce development.

It was generally agreed that the 2010 and 2010E initiatives have provided an appropriate framework for future planning. It was also agreed that while these initiatives have already begun to reap substantial benefits for the state, the unique demographic and economic challenges of South Dakota still warrant a sense of urgency and even enhanced activity with regard to developing the state’s future workforce. Recognizing that the Governor’s leadership has been an essential component of moving this agenda forward, one of the issues addressed in this forum was how to sustain focus on this in the future. While this will not likely be an issue during the Governor’s second term in office, the agenda will need to be sustained further into the future and thus needs a sufficiently strong foundation and evident success to continue beyond Governor Round’s tenure in office. It was realized that this would only occur through systemic planning and change – that is, by breaking down the traditional silos in which such activity has been pursued in the past and finding new ways for various stakeholders, public and private, to work more effectively together.
**What Must Be Achieved**

Within higher education, it was clear from the evidence provided and the discussion that ensued that South Dakota needs to focus on doing a better job at three points in the educational pipeline.

First, the state must prepare its youth better for the knowledge-based economic participation envisioned in the 2010 initiatives. As indicated in the 2010 initiatives, a much larger share of South Dakota’s high school graduates will need to go on to college and succeed in completing their college education, and to do so in areas of study that align with a high-skill/high-wage economy. Such an economy will require that tomorrow’s students learn much higher levels of math, science, and communications skills. This will require two key changes from the status quo. First, teachers must be prepared to teach advanced courses and there must be enough teachers, prepared in the appropriate fields. Second, students and their parents must be convinced that these skills are necessary; today, too many do not fully appreciate the need for a more rigorous curriculum than that currently offered in many South Dakota schools.

Beyond better preparing South Dakota school children for further education, however, South Dakota higher education must also do a better job of retaining their college students to graduation. In addition, they need to assure that these students graduate in fields of importance to South Dakota’s desired high-skill/high-wage economy of the future.

South Dakota will not be able to achieve either of these goals, however, if it does not greatly increase its success with two previously disenfranchised populations of prospective students. First, Native American and Hispanic citizens must be more fully incorporated into the desired future for South Dakota. They, in fact, are the only populations increasing in size in South Dakota, and thus their greater success in education is essential if South Dakota is to produce the high-skilled workforce necessary to create and sustain the desired knowledge-based economy. Second, South Dakota must do much better at enhancing the skills of its incumbent workers, or those who are currently in the workforce. In the past, South Dakota has not done a good job at providing educational opportunities for adult non-traditional students. Yet most of tomorrow’s workers are already in the workforce; thus the desired shift in the nature of that workforce will require shifting/increasing the skills of incumbent workers.

Improving access to and success within higher education will provide the necessary workforce in South Dakota, but it alone will not produce the desired economic future. As important as workforce development is to South Dakota’s future, equally important is workplace development. Already it is apparent that South Dakota exports a disproportionate share of its best-educated citizens, either because jobs in South Dakota simply are unavailable in the fields in which those who leave were educated or because the state’s comparatively low wage structure makes other states more competitive for South Dakota’s best and brightest.

The Governor’s 2010 and 2010E initiatives’ focus on enhancing South Dakota’s research productivity will contribute substantially to improving the workplace environment in the state. Not only will research activities themselves bring more high-skill/high-wage jobs to South Dakota, but spin-off businesses from these research activities will create more high-value jobs. So South Dakota is already on the right track.
In addition, South Dakota higher education needs to develop a rapid response capability to address emerging workforce development needs, assuring existing and prospective employers of the qualified workforce they will require for ongoing expansion or development. South Dakota also needs to foster a stronger entrepreneurial spirit, much of which can be developed within the higher education system. Some have argued that the risk-averse nature of the Midwestern culture mitigates against entrepreneurship. That may well have been the case in the past, but it cannot continue if South Dakota is to succeed in radically changing its economy. Change does not come without risk. As South Dakota shifts from a dominant theme of attracting outside employers to the state to a new theme of growing its own businesses, far more college-educated individuals will need to become entrepreneurs. Both the educational system and workplace environment will be called upon to assist in changing the business climate and culture to embrace such entrepreneurship.

Achieving the ambitious but appropriate goals of the 2010 and 2010E initiatives will certainly require staying the course on the strategies already imbedded in them. The discussion on November 16 highlighted some additional activities that would help promote the future that South Dakota hopes to achieve. Each of the individuals and groups represented at the meeting have a logical role in progressing this agenda.

- **The Governor:** Perhaps the Governor’s greatest tool is the bully pulpit. His broad-based popularity, perceived equanimity throughout both the urban and rural sectors of the state, and persuasive personal presentation style make him a very effective spokesman for the case. Though virtually all participants in this roundtable are “on board” with the program, many South Dakotans have yet to receive and internalize the message. Furthermore, the message needs to be expanded from the focus almost exclusively on research to include more prominently the agenda on preparing a high skill/high wage workforce for a high-skill/high-wage workplace, with all three elements requiring intentional intervention to be successful.

- **Infrastructure Development:**
  - The state – both its system of higher education and the relevant state government departments – must develop data systems adequate to support the policy development, implementation, and monitoring necessary to identify the support necessary and to measure the effectiveness of the effort. The legislature will need to provide the needed support, financial and otherwise, to make these data resources possible.
  - Consistent with the bullet above, the various relevant departments of state government must work collaboratively to develop appropriate indicators to monitor progress toward goals and be prepared to make adjustments when the evidence indicates that course corrections are necessary.
  - The state needs to conduct a policy audit – of its laws, regulations, and practices – throughout all of government to discern how state laws can be improved, through deletion and addition, to reinforce the desired direction of activity.
  - The Governor, legislature, and leaders of state operations, including higher education, need to develop a subsidy structure that reinforces positive actions in
support of this public agenda. Today, for example, many state funding practices within higher education and other state agencies reinforce the status quo more than they do the agenda for change reflected in the discussion of November 16.

- **System Changes:** Sustained leadership will be key to accomplishing these agendas. The progress to date would never have occurred without Governor Rounds’s visionary leadership. It is always a challenge, however, to sustain a vision after its champion has left the scene. Therefore, intentional efforts must begin now in order to imbed the 2010 initiatives into the fabric of public and private agendas so that the effort is sustained after Governor Rounds leaves office.
  - Absolutely key to creating this sustainability is the creation of a statewide *P-20 Council*. This group is essential if the critical steps identified in the November 16 meeting regarding needed changes in the preparation of teachers and the alignment of standards between high school and college are to gain traction and become imbedded. There must be a structure in which the entire system, even though its institutions are governed somewhat differently, can still take joint action where it is necessary to move the change agenda forward.
  - *Native Americans*, represented both through the tribal governments and through the Native American communities existing outside the reservations, need to be actively recruited to this initiative. South Dakota cannot succeed without the engagement of these communities and without substantial improvement in the educational and workforce success of these South Dakotans.
  - *Non-traditional students*, particular older adults, must receive much more attention from the state because their skills will have to be substantially enhanced for them to be effective in the high-skill/high-wage economy envisioned in the 2010 initiatives. South Dakota higher education has not traditionally served these students well, be it in the technical institutes or in the state universities. Clearly, support for the urban higher education centers will need to be enhanced, and the articulation between technical institutes and state universities will need to be improved. These changes will require financial resources, potential governance changes, and changes in state policy and practice.

- **Workplace Changes:** Both the evidence presented at the November 16 meeting and the discussion that ensued made it clear that changing the workforce alone would not be sufficient to achieve the vision of 2010, but that the workplace in South Dakota must change as well. A significant change will be focusing more on growing the state’s own businesses, rather than raiding firms from other states. Yet “growing your own” requires venture capital to support business development and willing entrepreneurs. A number of the cities have developed modest venture capital funds, but much more will be needed, and the current business community can help in this arena. Its members should work collaboratively to attract more federal R&D and to develop a privately financed venture capital fund to support local business development because working independently puts them at a distinct disadvantage.

The positive energy during and after the November 16 meeting bodes well for South Dakota. The challenge now is to follow Governor Rounds’s admonition not to let this positive energy
dissipate, but rather to embrace the opportunity to help shape a new future for South Dakota. That energy should not focus on the state’s mounting demographic challenges but on fostering enthusiastic optimism and action based on South Dakota’s assets. Those assets are considerable, including a manageable size, a strong higher education system, and a clear head start over many other states in blending the higher education and economic development agendas into a public agenda that will lead to a globally competitive economy for the future.
Appendices
Interview Topics and Sample Questions
Sioux Falls, South Dakota
June 26, 2006

Linking economic development, workforce development, and education
- What are the key elements for economic development?
- Who is responsible for economic development? Who are the players?
- Is there something about state policies that is in the way of better linkages?
- Is South Dakota’s higher education community meeting the needs of the current economy?
- How is the workforce changing?
- Are your employees working in the field for which they were trained?

Collaboration across agencies
- Are the players working effectively together?
- What enhances or detracts from effective collaboration?
- How can collaboration be improved?

Special populations
- Are there people or parts of the population in South Dakota or Sioux Falls that are at risk of being left out?
- How do you identify and incorporate the talent of special populations to help them?

Looking ahead
- What is the vision 10 years in the future for South Dakota? What are the barriers to achieving this vision? What are the strengths?
- What are most important three or four things that are part of the state’s strategy to achieve this vision?
- What do you expect from the state’s higher education institutions in the near future – 10 years?
List of Sioux Falls Interviewees

Judy Blauwet
Senior Vice President, Business Development
Avera McKennan Hospital and University Health Center

Neal Eddy
Vice President for Learning and Strategic Integration
Evangelical Lutheran Good Samaritan Society

Wanda K. Harris
Vice President and Human Resources Manager
Wells Fargo

Pamela Homan
Superintendent
Sioux Falls School District

Bill McLean
Senior Vice President for Human Relations
Avera McKennan Hospital and University Health Center

Mary Medema
Director of Workforce Development
Sioux Falls Development Foundation

Dean Mertz
Vice President for Human Resources
Evangelical Lutheran Good Samaritan Society

Evan Nolte
President and Chief Executive Officer
Sioux Falls Area Chamber of Commerce

Eddie J. Sullivan, Ph.D.
Chief Operating Officer
Hematech, Inc.

Mel Ustad
Director of Commercialization
Governor’s Office of Economic Development
Department of Tourism and State Development

Jim Wilcox
XCEL Energy
Linking economic development, workforce development, and education

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- What are most important three or four things that are part of the state’s strategy to achieve this vision?
- What do you expect from the state’s higher education institutions in the near future – 10 years?
List of Rapid City Interviewees

Jim Mirehouse  
Chief Executive Officer  
Black Hills Development Center

Tom Morrison  
Manager  
J.C. Penney

Tom Zeller  
President  
RESPEC Consulting and Services

Pete Cappa  
President  
Wells Fargo Bank

Tom Nelson  
Mayor  
Lead, South Dakota

Chuck Ruch  
President  
South Dakota School of Mines and Technology

Peter Wharton  
Superintendent  
Rapid City Area Schools

Bob DeMersseman  
President  
Black Hills Economic Development

Jim Shaw  
Mayor  
Rapid City

Lynn Kading  
President  
Hills Material Company
List of Telephone Interviewees

Pamela Roberts
Secretary of Labor

Richard Benda
Director
South Dakota Economic Development