WYOMING STATE GEOLOGICAL SURVEY
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STRATEGIC

FOUR-YEAR PLAN (FY2003-2006)

for the

WYOMING STATE GEOLOGICAL SURVEY

PREPARED FOR THE GOVERNOR OF WYOMING AND THE

WYOMING STATE LEGISLATURE

BY THE

WYOMING STATE GEOLOGICAL SURVEY

PURSUANT TO WYOMING STATUTES 28-1-115 AND 28-1-116

August 27, 2001

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AGENCY VISION

For a Wyoming where the citizenry is safer through a heightened awareness of geologic hazards and where an improved quality of life is sustained by a diverse economy that includes a thriving mineral and energy industry.

AGENCY MISSION STATEMENT

The Wyoming State Geological Survey is a service-oriented agency that promotes the beneficial and environmentally sound use of Wyoming's vast geologic, mineral, and energy resources while helping protect the public from geologic hazards. By providing accurate information and expanding knowledge through the application of geologic principles, the Geological Survey contributes to economic growth and improvement in the quality of life for Wyoming's citizens.

AGENCY PHILOSOPHY STATEMENT

The Wyoming State Geological Survey is a professional organization that provides responsive, accountable, and dedicated service to the public, to other government entities, and to its own employees. We take pride in providing information that is timely, objective, accurate, and complete. With limited resources, our innovation, creativity, and efficiency continue to be keys to our ongoing success.

SITUATION ANALYSIS

The Wyoming State Geological Survey operates in an environment of changing needs and expectations. The public and the business sectors expect less involvement of the State in regulating their affairs. Government is increasingly being expected to reduce costs, taxes, and any unnecessary regulation and bureaucratic functions. Public servants are being asked to improve their productivity, their efficiency, and to focus on meeting essential societal needs. However, while demanding less government, the public and their representatives are increasingly conscious of the need to make sound use of natural resources, to protect the environment and provide public safety, and to promote economic development. The public is also increasingly quality conscious in its expectations from government. Government agencies are being challenged to operate more like a business with valued customers who deserve quality service at reasonable costs.

The needs for geologists and geologic information are also dynamic and changing. Nationally, there is not only a reduction of geologists within the energy and mineral sectors, but also a shift in the types of services that geologists provide, from more traditional roles in exploration and development to new roles in environmental protection and remediation.

Wyoming is the leading coal-producing state in the nation. While amendments to the Clean Air Act are stimulating more demand for Wyoming coal from the Powder River Basin, markets for higher rank, but more expensive coals in southern Wyoming, are diminishing. Decreasing production of oil, already hastened by low prices, may also be affected by new competition from Canadian oil. Canadian gas also poses a potential threat to the State's natural gas industry, which is growing. Although Wyoming leads the nation in trona and bentonite production, producers of these resources have realized much of their recent growth by developing new uses and (or) new products. Tariffs and subsidies to foreign synthetic soda ash plants continue to plague the export markets for soda ash, which is the primary product from trona. Wyoming is also a significant uranium producer as well as a producer of many other industrial minerals and construction materials, which are always in some demand. Interest in precious and base metals and diamonds continues although there is not yet any commercial production of these commodities.

Difficulties in siting and permitting new mines, quarries, and wells have complicated the continued operation and development of existing industries as well as the start-up of industries wishing to develop yet undeveloped or under-developed mineral and energy resources in Wyoming. Similarly, because two or more mineral or energy resources may overlie one another, there is a need to identify technologies or strategies that might permit the safe and efficient concurrent development of both resources. It is also recognized that value-added or alternative uses for mineral and energy resources can help sustain or enhance the State's economy, which is heavily dependent on the energy and mineral industries.

Due in part to recent events, there is a growing realization that geologic hazards such as earthquakes and landslides do threaten lives and property in Wyoming. Consequently, there is a need to increase the awareness of potential geologic hazards, whether natural or manmade, and incorporate a consideration of them in land management, land-use planning, the siting and design of facilities, as well as emergency preparedness.

Changes in Federal policy are anticipated. The movement to reduce the Federal deficit has led to reduced Federal funding in some areas, which in turn has reduced the availability of grant monies that has funded some of the geological investigations by the Geological Survey. Reductions at the Federal level have also presented opportunities for the Geological Survey. For example, some geologic mapping done by the US Geological Survey has never been published, and the WSGS is in a unique position to perform that function. The Wyoming State Geological Survey has no intention of assuming responsibility for any Federal work or Federal program that is not a priority to Wyoming, nor any activities where adequate funding is not available. Yet, it will look for opportunities that enhance the accomplishment of its goals and objectives for Wyoming, including an increase in our efforts to secure outside funding from private sources.

The changing conditions mentioned above present more opportunities than threats to the Wyoming State Geological Survey. They also present challenges to the Geological Survey in meeting the needs and expectations of its customers with minimal expense.

Customers of the Wyoming State Geological Survey are many and diverse. In addition to meeting the demands of the Governor and Legislature, the Geological Survey serves the general public, industry, consultants, and the geology profession as a whole. It also serves customers in educational institutions and university departments, Wyoming and local government entities, and the Federal government. Its customers are within and outside the State and the nation.

Among the Wyoming State agencies with whom it frequently works are the Oil and Gas Conservation Commission, Department of Environmental Quality, State Engineer, Department of Transportation, University of Wyoming, State Land and Farm Loan Office, Wyoming Business Council, Wyoming Energy Commission, Board of Registration for Professional Geologists, Public Service Commission, Emergency Management Agency, Game and Fish, Economic Analysis Division of the Department of Administration & Information, State Crime Lab, Legislative Services Office, Office of Federal Land Policy, and the Secretary of State.

The Wyoming State Geological Survey has historically prepared and provided geologic information, data bases, maps, and reports as well as technical assistance to its customers. Industry customers have characteristically accessed the information and data bases, used the reports, been guided by the maps, and tapped the expertise of the Geological Survey's professional staff to improve their exploration and development plans. Similarly, consultants, engineering firms, and government entities have used the Geological Survey's information and expertise to help satisfy their planning, siting, and designing needs. The general public has enjoyed the Geological Survey's products and assistance for educational and recreational purposes. Customers have been willing to pay for many of the Geological Survey's products, thus allowing it to generate more than $100,000 a year for deposit into the General Fund. Through its participation on the Consensus Revenue Estimating Group, the Geological Survey has also been a key player in making revenue projections for use by the Governor, the Legislature, and others.

The Wyoming State Geological Survey, like other organizations, has strengths and weaknesses that affect its ability to achieve its goals. This plan is designed to help it capitalize on its strengths and overcome its weaknesses. While continuing to provide geologic information of general interest to its customers, the Geological Survey will, during the life of this plan and beyond, actively seek direction from industry, trade groups, government agencies, and other external and internal customers. By asking them and exploring needs and potential opportunities with them, it will identify the information, data bases, and services its customers most want and need; and then, it will respond to those priority needs. The Geological Survey will remain alert to opportunities not previously recognized as potential value-added or alternative uses for Wyoming's rich mineral, energy, and other geologic resources. It will expand its contributions to economic growth in Wyoming through increasing support to the mineral and energy industries. While focusing on its support of current Wyoming operators, it will also seek to attract new firms and development of heretofore undeveloped and under-developed mineral and energy resources.

The Wyoming State Geological Survey has been constrained by past staff reductions, hiring freezes and budget cuts. These constraints can become opportunities for the Geological Survey to take a new look at itself and redefine or "reinvent" our work

products through this strategic planning process. By being more customer focused, proactive in creating its opportunities, and becoming team players in various interdisciplinary and inter-agency projects, it will increase its beneficial contributions to Wyoming's economic vitality and quality of life. The Survey will begin changing its delivery of work products and information to our customers as the internet continues to grow in importance in information delivery, and much of our new work product will be delivered in GIS format to allow full and seamless integration of geologic data with other natural resource and human resource disciplines.

The Geological Survey's enabling statutes are W.S. 9-2-801 through 9-2-810. Additional responsibilities of the State Geologist or the Geological Survey are found in W.S. 30-5-102 and 30-5-104, in W.S. 33-41-106 and 33-41-107, and in W.S. 36-6-102 and 36-6-105.

AGENCY GOALS, OBJECTIVES, AND STRATEGIES

GOAL I: DIVERSIFY AND STRENGTHEN THE STATE'S ECONOMY BY SUPPORTING THE RESPONSIBLE AND INNOVATIVE EXPLORATION AND USE OF WYOMING'S GEOLOGIC, MINERAL, AND ENERGY RESOURCES.[1]

OBJECTIVE I.A **Help the coal, oil and gas, industrial minerals, uranium, and other existing mineral industries in Wyoming to continue their production, exploration, and further development within the State.**

Strategy I.A.1. Assist companies and other entities both in the recognition and understanding of geologic, chemical, physical, and other variations in coal, oil, gas, industrial minerals, uranium, and other currently developed mineral resources, and in the identification and promotion of value-added or alternative uses for extracted mineral and energy resources and(or) products derived from them.

Strategy I.A.2. Maintain or improve the accuracy of forecasting future trends, prices, and production in the mineral and energy industries of Wyoming.

Strategy I.A.3. Enhance and(or) increase the transfer of geologic information or technologies important to existing mineral and energy industries.

OBJECTIVE I.B: **Contribute substantially to attracting new geologic-, mineral, and energy-related industries.**

Strategy I.B.1. Focus on promoting exploration, development, and value-added uses of the State's undeveloped and under-developed geologic, energy, metallic and nonmetallic, and precious stone resources that offer the greatest potential for development, but not to the exclusion of higher risk ventures where the potential payoff is substantial.

Strategy I.B.2. Enhance and(or) increase the transfer of geologic information or technologies important to attracting the development of undeveloped or under-developed geologic, mineral, and energy resources.

OBJECTIVE I.C: Contribute to the identification and prevention of decisions or other actions that would be contrary to the beneficial and wise use of the State's geologic, mineral, and energy resources.

Strategy I.C.1. Help develop methodologies and(or) policies that will assure the safe, concurrent development of trona and natural gas in southwestern Wyoming.

Strategy I.C.2. Evaluate and alert the State to decisions or other actions that could adversely affect the State's mineral interests or its revenues from geologic, mineral, and energy resources.

Strategy I.C.3. Assist in preventing waste of oil and(or) natural gas through the State Geologist's participation on the Oil and Gas Conservation Commission.

Strategy I.C.4. Help protect the public from mineral- and energy-related scams.

Strategy I.C.5. Improve protection of the State's paleontologic resources.

GOAL II: BETTER PROTECT WYOMING'S CITIZENRY, PROPERTY, AND NATURAL RESOURCES FROM HARM OR DAMAGE ASSOCIATED WITH GEOLOGIC PROCESSES OR GEOLOGIC HAZARDS AND INCREASE THE USE OF GEOLOGIC SCIENCE IN MEETING SOCIETAL NEEDS.[2]

OBJECTIVE II.A: Raise awareness, knowledge, and understanding of the State's geology and geologic hazards, emphasizing ways to avoid or mitigate the potential harm or damage that may result as a consequence of living or developing on or near specific geological features, materials, or terrains.

Strategy II.A.1. Define the geology and geologic hazards in Wyoming and explain the geological processes and materials that can have or have had an effect on the State's citizenry, property, and natural resources.

Strategy II.A.2. Improve seismic monitoring in Wyoming.

Strategy II.A.3. Work to incorporate a consideration of geology, geologic hazards, geohydrology, economic geology, and geologic processes in land management, land-use planning, preparedness, and mitigation documents, and in the siting and design of facilities.

Strategy II.A.4. Evaluate and alert the State and others to development activities where there are geologic or topographic aspects that may adversely affect people, property, and natural resources.

Strategy II.A.5. Enhance and(or) increase the transfer of information and technologies related to geology, geologic hazards, protection of the environment, land management, land-use planning, and the siting and design of facilities.

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1 W.S. 9-2-803(c) and (d); 9-2-805, 9-2-808, 30-5-102, 30-5-103(a) and (d), and 30-5-104.

2 W.S. 9-2-803(c) and (d), 9-2-805, 9-2-808, 33-41-106, and 33-41-107.

OUTCOME AND OUTPUT MEASURES

GOAL I: DIVERSIFY AND STRENGTHEN THE STATE'S ECONOMY BY SUPPORTING THE RESPONSIBLE AND INNOVATIVE EXPLORATION AND USE OF WYOMING'S GEOLOGIC, MINERAL, AND ENERGY RESOURCES.

OBJECTIVE I.A: Help the coal, oil and gas, industrial minerals, uranium, and other existing mineral industries in Wyoming to continue their production, exploration, and further development within the State.

OUTCOME MEASURES:

I.A.01: The coal, oil and gas, industrial minerals, uranium, and other existing mineral industries in the State will continue to profitably operate and develop properties in Wyoming, as evidenced by stability or growth in their mineral valuation. Target: Collectively, the mineral valuation of these existing industries will remain stable or increase between FY2003 and FY2006.

I.A.02: The economic health of the coal, oil and gas, industrial minerals, uranium, and other existing mineral industries in the State will be supported by the identification and development of additional value-added or alternative uses for their extracted resources or the products derived from them. Target: At least one value-added or alternative use, promoted by the Geological Survey, will come to fruition between FY2003 and FY2006.

Strategy I.A.1. Assist companies and other entities both in the recognition and understanding of geologic, chemical, physical, and other variations in coal, oil, gas, industrial minerals, uranium, and other currently developed mineral resources, and in the identification and promotion of value-added or alternative uses for extracted mineral and energy resources and(or) products derived from them.

Output Measures:

I.A.1.01: The number of ongoing or completed field and laboratory studies related to the geologic, chemical, physical, and other variations of coal, oil, gas, industrial minerals, uranium, and other currently developed mineral resources. Target: Twenty or more of these studies will be underway or completed between FY2003 and FY2006 (an average of four each fiscal year).

I.A.1.02: The number of value-added or alternative uses for extracted mineral and energy resources and(or) products that are promoted by the agency. Target: Promote four or more value-added or alternative uses for extracted mineral and energy resources and(or) products each fiscal year.

Strategy I.A.2. Maintain or improve the accuracy of forecasting future trends, prices, and production in the mineral and energy industries of Wyoming.

Output Measure:

I.A.2.01: Acceptable accuracy in the Consensus Revenue Estimating Group's (CREG's) forecast of mineral revenues to the General Fund. Target: CREG's forecast of mineral revenues to the General Fund will be within 95% of the actual revenues received each fiscal year.

Strategy I.A.3. Enhance and(or) increase the transfer of geologic information or technologies important to existing mineral and energy industries.

Output Measures:

I.A.3.01: The sale of reports and maps prepared by the agency in support of the existing mineral and energy industries in Wyoming. Target: 16,000 or more copies of the Geological Survey's reports and maps that are designed to assist the existing mineral and energy industries will be sold between FY2003 and FY2006 (an average of 4,000 each fiscal year).

I.A.3.02: The number of inquiries from and informative contacts with the existing mineral and energy industries in Wyoming. Target: Between FY2003 and FY2006, the Geological Survey will address or respond to 6,800 or more contacts from existing mineral and energy industries in Wyoming (an average of 1,700 each fiscal year).

OBJECTIVE I.B: Contribute substantially to attracting new geologic-, mineral-, and energy-related industries.

OUTCOME MEASURE:

I.B.01: New geologic and mineral industries will start up in Wyoming. Target: At least one new geologic or mineral industry, promoted by the Geological Survey, will be developed before the end of FY2006. This refers to a new industry, not new companies within existing industries.

Strategy I.B.1. Focus on promoting exploration, development, and value-added uses of the State's undeveloped and under-developed geologic, energy, metallic and nonmetallic, and precious stone resources that offer the greatest potential for development, but not to the exclusion of higher risk ventures where the potential payoff is substantial.

Output Measures:

I.B.1.01: The number of ongoing or completed field and laboratory studies related to undeveloped or under-developed geologic, energy, metallic and nonmetallic, and precious stone resources. Target: Sixteen or more of these studies will be underway or completed between FY2003 and FY2006 (an average of four each fiscal year).

I.B.1.02: The number of undeveloped or under-developed geologic, mineral, or energy resources that are being promoted by the agency. Target: Actively promote ten or more undeveloped or under-developed geologic, mineral, or energy resources each fiscal year.

Strategy I.B.2. Enhance and(or) increase the transfer of geologic information or technologies important to attracting the development of undeveloped or under-developed geologic, mineral, and energy resources.

Output Measures:

I.B.2.01: The sale of reports and maps prepared by the agency in support of attracting the development of undeveloped or under-developed geologic, mineral, and energy resources in Wyoming. Target: 16,000 or more copies of the Geological Survey's reports and maps that are designed to attract undeveloped or under-developed geologic, mineral, or energy industries will be sold between FY2003 and FY2006 (an average of 4,000 each fiscal year).

I.B.2.02: The number of inquiries from and contacts with exploration companies or others looking for undeveloped or under-developed geologic, mineral, and energy resources in Wyoming. Target: Between FY2003 and FY2006, the Geological Survey will address or respond to 10,000 or more contacts from exploration companies, consultants, or others looking for undeveloped or under-developed geologic, mineral, and energy resources (an average of at least 2,500 contacts each fiscal year).

<u>OBJECTIVE I.C</u>: Contribute to the identification and prevention of decisions or other actions that would be contrary to the beneficial and wise use of the State's geologic, mineral, and energy resources.

OUTCOME MEASURES:

I.C.01: The percentage of times that the agency's information, advice, or concerns about unwise or wasteful uses of the State's geologic, mineral, and energy resources is used and(or) heeded. Target: During FY2003-2006, the Geological Survey's information, advice, and concerns about unwise or wasteful uses of the State's geologic, mineral, and energy resources will be used and(or) heeded by the Office of Federal Land Policy no less than 80% of the time.

I.C.02: Safe, concurrent development of trona and natural gas in southwestern Wyoming. Target: The exploration for and production of natural gas from within the trona patch, which will increase annually.

Strategy I.C.1. Help develop methodologies and(or) policies that will address the safe, concurrent development of trona and natural gas in southwestern Wyoming from both shallow and deep reservoirs.

Output Measure:

I.C.1.01: Completion of a technical study on methodologies for safe concurrent development of trona and natural gas and the drafting of policy recommendations in regard to concurrent development. Target: The technical report, which was completed in 1999, will be implemented in a new policy jointly created by the state, industry and BLM by FY 2003.

Strategy I.C.2. Evaluate and alert the State to decisions or other actions that could adversely affect the State's mineral interests or its revenues from geologic, mineral, and energy resources.

Output Measure:

I.C.2.01: The percentage of scoping statements, environmental assessments, environmental impact statements, siting applications, management plans, or other documents that the agency evaluates for their effects on the State's mineral interests or its revenues. Target: The Geological Survey will review all documents submitted by the Wyoming State Clearinghouse, Federal agencies, or other Wyoming State or local entities for their effects on the State's mineral interests or its revenues.

Strategy I.C.3. Assist in preventing waste of oil and(or) natural gas through the State Geologist's participation on the Oil and Gas Conservation Commission.

Output Measure:

I.C.3.01: The percentage of times that the State Geologist is present and voting at Oil and Gas Conservation Commission hearings dealing with alleged waste of oil and(or) gas. Target: The State Geologist will attend and vote at all hearings of this nature.

Strategy I.C.4. Help protect the public from mineral- and energy-related scams.

Output Measure:

I.C.4.01: The percentage of alleged mineral- or energy-related scams that the agency investigates. Target: The Geological Survey will investigate all alleged

mineral- and energy-related scams that it identifies or that are brought to its attention. It will also provide expert testimony where warranted.

Strategy I.C.5. Improve protection of the State's paleontologic resources.

Output Measure:

I.C.5.01: The percentage of the State's fossil removal permits that are reviewed and inspected each year. Target: All of the State's fossil removal permits will be reviewed and inspected each year.

GOAL II: BETTER PROTECT WYOMING'S CITIZENRY, PROPERTY, AND NATURAL RESOURCES FROM HARM OR DAMAGE ASSOCIATED WITH GEOLOGIC PROCESSES OR GEOLOGIC HAZARDS AND INCREASE THE USE OF GEOLOGIC SCIENCE IN MEETING SOCIETAL NEEDS.

OBJECTIVE II.A: Raise awareness, knowledge, and understanding of the State's geology and geologic hazards, emphasizing ways to avoid or mitigate the potential harm or damage that may result as a consequence of living or developing on or near specific geological features, materials, or terrains.

OUTCOME MEASURE

II.A.01: The percentage of times that information, advice, or concerns, which the agency provides on the geology or geologic hazards of a project or area, is utilized in planning, siting, preparedness, or mitigation documents. Target: During FY2003-FY2006, the Geological Survey's information, advice, or concerns about geology or geologic hazards will be addressed or incorporated in planning or siting documents at least 80% of the time.

Strategy II.A.1. Define the geology and geologic hazards in Wyoming and explain the geologic processes and materials that can have or have had an effect on the State's citizenry, property, and natural resources.

Output Measure:

II.A.1.01: The number of new maps and reports completed and made available. Target: Twenty or more new maps and(or) reports will be completed by FY2006 (an average of five new titles each fiscal year).

Strategy II.A.2. Improve seismic monitoring in Wyoming.

Output Measure:

II.A.2.01: Continuation and maintenance of the existing seismic network. Target: Maintain an effective seismic network in Jackson Hole and vicinity.

Strategy II.A.3. Work to incorporate a consideration of geology, geologic hazards, geohydrology, economic geology, and geologic processes in land management, land-use planning, preparedness, and mitigation documents, and in the siting and design of facilities.

Output Measure:

II.A.3.01: The number of committee meetings, workshops, and briefings dealing with land management, land-use planning, preparedness, mitigation, or the siting and design of facilities that the staff actively participates in. Target: Active participation in at least 60 committee meetings, workshops, and briefings between FY2003 and FY2006 (an average of 15 each fiscal year).

Strategy II.A.4. Evaluate and alert the State and others to development activities where there are geologic or topographic aspects that may adversely affect people, property, and natural resources.

Output Measure:

II.A.4.01: The percentage of scoping statements, environmental assessments, environmental impact statements, siting applications, management plans, or other documents that the agency evaluates for any adverse effects they may have on people, property, and natural resources in Wyoming. Target: The Geological Survey will review all documents submitted by the Wyoming State Clearinghouse, Federal agencies, or other Wyoming State and local entities for any adverse effects they may have on people, property, or natural resources.

Strategy II.A.5. Enhance and(or) increase the transfer of information and technologies related to geology, geologic hazards, protection of the environment, land management, land-use planning, and the siting and design of facilities.

Output Measures:

II.A.5.01: The number of inquiries or contacts with citizens, government entities, industry, and others looking for information and advice on geology, geologic hazards, or geologic processes in Wyoming. Target: Between FY2003 and FY2006, the Geological Survey will address or respond to 20,000 or more contacts from

entities or individuals seeking information on geology, geologic hazards, or geologic processes (an average of 5,000 contacts each fiscal year).

II.A.5.02: The sale and distribution of the agency's geologic reports or maps dealing with areal geology, geologic hazards, geologic processes, or geology in land-use planning and management. Target: Between FY2003 and FY2006, 16,000 or more copies of these geologic reports and maps will be sold or otherwise distributed, including downloads of reports and maps from our website. (an average of 4,000 copies each fiscal year).

OUTCOMES	OUTPUTS	FY2003	FY2004	FY2005	FY2006	COMMENTS
I.A.01		≥Mineral Valuation in FY2002	≥Mineral Valuation in FY2003	≥Mineral Valuation in FY2004	≥Mineral Valuation in FY2005	Mineral valuation for each fiscal year [≥preceeding FY].
I.A.02					At least one promoted value-added or alternative use comes to fruition this FY.	A value-added or alternative use for a geologic or mineral resource, promoted by the Geological Survey, comes to fruition.
	I.A.1.01	≥4	≥4	≥4	≥4	Number of these studies underway or completed [≥4 each fiscal year.
	I.A.1.02	≥4	≥4	≥4	≥4	Number of value-added or alternative uses for extracted mineral and energy resources actively promoted by the Geological Survey [≥4 each fiscal year].
	I.A.2.01	≥95%	≥95%	≥95%	≥95%	Percent accuracy of CREG's forecast mineral revenue [≥95%].
	I.A.3.01	≥4,000	≥4,000	≥4,000	≥4,000	Number of copies of perti-nent reports and maps sold [≥4,000 each fiscal year].
	I.A.3.02	≥1,700	≥1,700	≥1,700	≥1,700	Number of pertinent inquiries and contacts responded to [≥1,700 each fiscal year].
I.B.01					A new industry, promoted by the Geological Survey, starts up or expands by FY2000.	A new industry, promoted by the Geological Survey, starts up or expands by FY2000.
	I.B.1.01	≥4	≥4	≥4	≥4	Number of pertinent studies underway or completed [≥4 each fiscal year].
	I.B.1.02	≥10	≥10	≥10	≥10	Number of undeveloped or under-developed geologic, mineral, or energy resources actively promoted [≥10 each fiscal year].

OUTCOMES	OUTPUTS	FY2003	FY2004	FY2005	FY2006	COMMENTS
I.A.01		≥Mineral Valuation in FY2002	≥Mineral Valuation in FY2003	≥Mineral Valuation in FY2004	≥Mineral Valuation in FY2005	Mineral valuation for each fiscal year [≥preceeding FY].
I.A.02					At least one promoted value-added or alternative use comes to fruition this FY.	A value-added or alternative use for a geologic or mineral resource, promoted by the Geological Survey, comes to fruition.
	I.A.1.01	≥4	≥4	≥4	≥4	Number of these studies underway or completed [≥4 each fiscal year.
	I.A.1.02	≥4	≥4	≥4	≥4	Number of value-added or alternative uses for extracted mineral and energy resources actively promoted by the Geological Survey [≥4 each fiscal year].
	I.A.2.01	≥95%	≥95%	≥95%	≥95%	Percent accuracy of CREG's forecast mineral revenue [≥95%].
	I.A.3.01	≥4,000	≥4,000	≥4,000	≥4,000	Number of copies of perti-nent reports and maps sold [≥4,000 each fiscal year].
	I.A.3.02	≥1,700	≥1,700	≥1,700	≥1,700	Number of pertinent inquiries and contacts responded to [≥1,700 each fiscal year].
I.B.01					A new industry, promoted by the Geological Survey, starts up or expands by FY2000.	A new industry, promoted by the Geological Survey, starts up or expands by FY2000.
	I.B.1.01	≥4	≥4	≥4	≥4	Number of pertinent studies underway or completed [≥4 each fiscal year].
	I.B.1.02	≥10	≥10	≥10	≥10	Number of undeveloped or under-developed geologic, mineral, or energy resources actively promoted [≥10 each fiscal year].

OUTCOMES	OUTPUTS	FY2003	FY2004	FY2005	FY2006	COMMENTS
I.A.01		≥Mineral Valuation in FY2002	≥Mineral Valuation in FY2003	≥Mineral Valuation in FY2004	≥Mineral Valuation in FY2005	Mineral valuation for each fiscal year [≥preceeding FY].
I.A.02					At least one promoted value-added or alternative use comes to fruition this FY.	A value-added or alternative use for a geologic or mineral resource, promoted by the Geological Survey, comes to fruition.
	I.A.1.01	≥4	≥4	≥4	≥4	Number of these studies underway or completed [≥4 each fiscal year.
	I.A.1.02	≥4	≥4	≥4	≥4	Number of value-added or alternative uses for extracted mineral and energy resources actively promoted by the Geological Survey [≥4 each fiscal year].
	I.A.2.01	≥95%	≥95%	≥95%	≥95%	Percent accuracy of CREG's forecast mineral revenue [≥95%].
	I.A.3.01	≥4,000	≥4,000	≥4,000	≥4,000	Number of copies of perti-nent reports and maps sold [≥4,000 each fiscal year].
	I.A.3.02	≥1,700	≥1,700	≥1,700	≥1,700	Number of pertinent inquiries and contacts responded to [≥1,700 each fiscal year].
I.B.01					A new industry, promoted by the Geological Survey, starts up or expands by FY2000.	A new industry, promoted by the Geological Survey, starts up or expands by FY2000.
	I.B.1.01	≥4	≥4	≥4	≥4	Number of pertinent studies underway or completed [≥4 each fiscal year].
	I.B.1.02	≥10	≥10	≥10	≥10	Number of undeveloped or under-developed geologic, mineral, or energy resources actively promoted [≥10 each fiscal year].

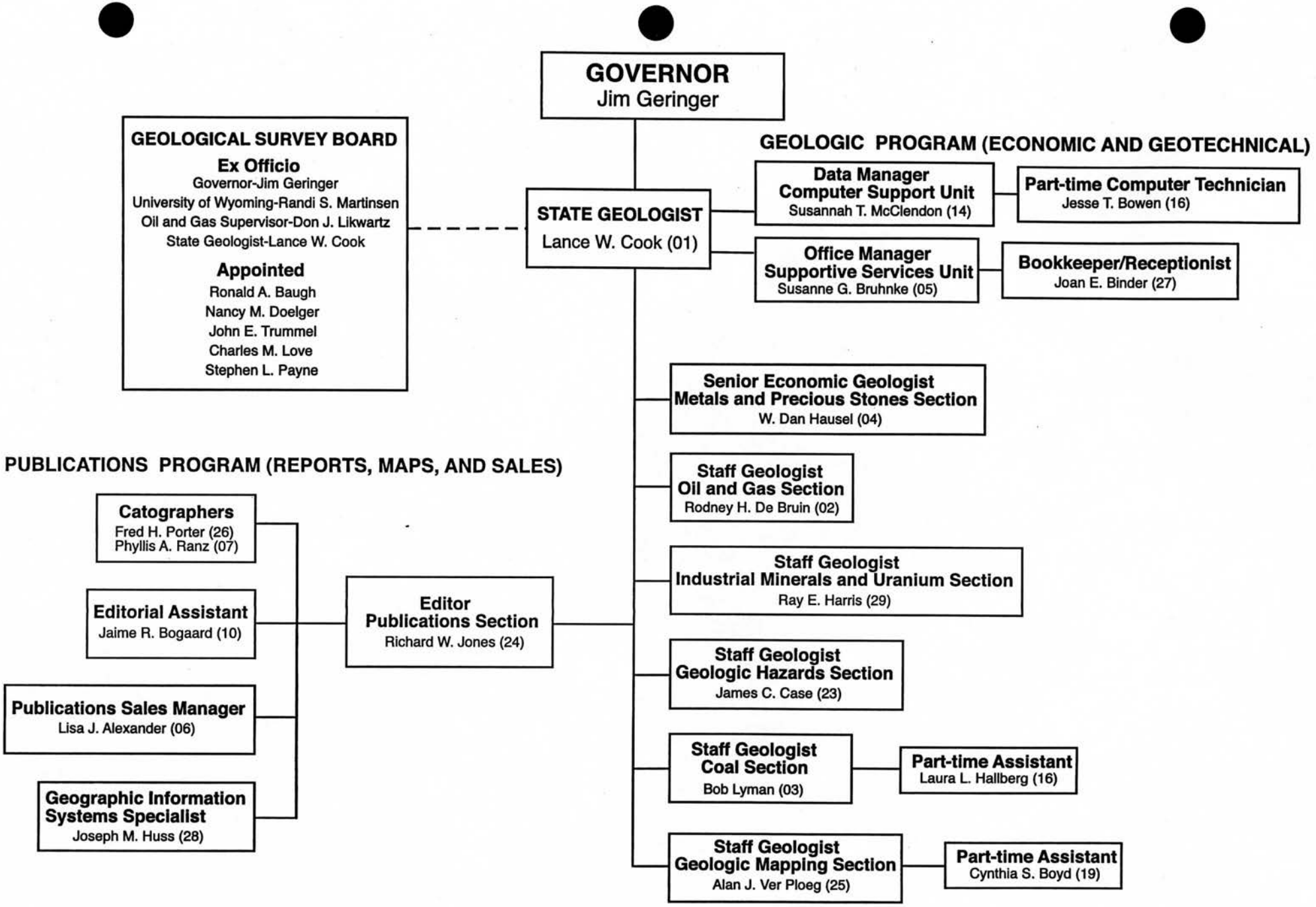

Figure 1. Organizational chart for the Geological Survey in FY 2002.

RESPONSES TO SEVEN QUESTIONS IN W.S. 28-1-115

In W.S. 28-1-115, the Legislature asked each agency to provide sufficient information for an evaluation of the following queries:

(1) The specific purpose of each program, function, and activity of an agency.

(2) The specific public benefit that does or should result from each program, function, or activity.

(3) Alternative courses of action that would result in administration of the same program, function, or activity in a more efficient or effective manner.

(4) Whether a program, function, or activity could be implemented more effectively by another level of government or by a private entity.

(5) Whether there is sufficient public benefit to justify the funding necessary for the program, function, or activity.

(6) The consequences of discontinuing any program, function, or activity.

(7) Whether the methods, rules, and policies employed by the agency to implement a program, function, or activity are cost-effective, efficient, and consistent with law and impose a minimum of regulatory burden.

The Geological Survey's response to these queries begins with an overview of the agency. This is followed by descriptions of the Geological Survey's two programs. The seven legislative concerns are addressed in the discussion of each of these programs. Although the following information is meant to address these legislative concerns, the main body of the Wyoming State Geological Survey's Strategic Five-Year Plan as well as other attached appendices provide additional and pertinent information.

OVERVIEW OF THE GEOLOGICAL SURVEY

The Wyoming State Geological Survey is a Separate Operating Agency working under the Executive Branch of State Government (W.S. 9-2-801 through 9-2-810). The Geological Survey's purposes are (1) to study, examine, and seek an understanding of the geology, mineral resources, and physical features of the State; (2) to prepare, publish, and distribute (free or for sale) reports and maps of the State's geology, mineral resources, and physical features; and (3) to provide information, advice, and services related to the geology, mineral resources, and physical features of the State. The agency's stated mission is *to promote the beneficial and environmentally sound use of Wyoming's vast geologic, mineral, and energy resources while helping protect the public from geologic hazards. By providing accurate information and expanding knowledge through the application of geologic principles, the Geological Survey*

contributes to economic growth and improvement in the quality of life for Wyoming's citizens.

The Geological Survey has a Board that assists in formulating and directing policies and programs of the agency. The Board consists of the Governor, a University of Wyoming member appointed by the President of the University of Wyoming, the State Oil and Gas Supervisor, the State Geologist, and five appointed members.

In addition, the State Geologist serves as a Commissioner on the Wyoming Oil and Gas Conservation Commission (W.S. 30-5-103) and as a Board member and the Secretary/Treasurer of the Wyoming Board of Registration for Professional Geologists (W.S. 33-41-107). The State Geologist also is the state representative to the Coalbed Methane Coordination Coalition Joint Powers Board.

The Geological Survey is organized under two Appropriation Organizations or Programs: Geologic and Publications.

GEOLOGIC PROGRAM

The Geologic Program consists of 10 full-time and 3 part-time employees. From an organizational standpoint, the program is separated into seven sections. These sections are: (1) Coal, (2) Geologic Hazards, (3) Geologic Mapping, (4) Industrial Minerals and Uranium, (5) Metals and Precious Stones, (6) Oil and Gas, and (7) Supportive Services. Each of these sections has only one to three employees in it, and the sections all work collectively to accomplish the goals, objectives, and strategies of the agency.

(1) What are the specific purposes for the Geologic Program?

The Supportive Services Section in this program provides the truly administrative support for both the Geologic and the Publications Programs. This section handles payroll, personnel matters, purchasing, budgeting, and other fiscal activities of the agency. The section is comprised of the State Geologist, an office manager, and an administrative secretary, who is also the receptionist. In addition, this latter position also provides some word-processing support and sales counter support to the Publications Program.

The other six sections conduct the Geological Survey's geologic, mineral, and energy resource activities. These geologic sections are headed by professional geologists. While the Geologic Hazards Section has one half-time geologic assistant, the Geologic Mapping and Oil and Gas Sections share another half-time geologic assistant between them.

The Coal, Industrial Minerals and Uranium, Metals and Precious Stones, and Oil and Gas Sections are primarily involved with the economic geology of the State's mineral and energy resources, and the effects that mineral and energy development has on the economy of Wyoming. The Geologic Hazards Section is most involved with

identifying potential geologic hazards and working to mitigate the dangers these features present to the citizenry of Wyoming as well as to the State's natural resources and economy. The work of the Geologic Mapping Section overlaps that of all the other sections, but its major emphasis is currently directed at providing maps that will assist land-use planning by counties and cities. To accomplish the agency's goals and objectives related to geology, mineral, and energy resources, personnel in this program (1) provide information, advice and assistance, (2) prepare geologic reports and maps based on office, field, and laboratory investigations, and (3) compile and maintain pertinent files and data bases.

The Geologic Program also has a Laboratory Unit and Computer Support Unit. The Laboratory Unit, which previously consisted of one full-time geologic technician, is currently unstaffed. The headcount was transferred to the Publications Program to allow hiring of a full-time GIS specialist. The Laboratory Unit is supposed to support all of the geologic sections, both in the field as well as in the laboratory. The major activities of this unit, which have involved field geology; the preparation of samples going out to commercial laboratories for analysis; rock and mineral identification; analysis of samples by x-ray diffraction; preparation of samples for coal petrography; and the cataloguing, preparation, and curation of paleontological specimens, are currently being performed within each section.

The Computer Support Unit is comprised of one full time and one half-time position. The unit manages the agency's networked computers and is tasked with providing the Geological Survey's clientele with enhanced, user-friendly, computerized data and other products, and maintaining the Survey's user-friendly technology for serving map and geologic data via the internet.

(2) What are the specific public benefits derived from the Geologic Program?

The Geologic Program is helping Wyoming's coal, oil and gas, industrial minerals, uranium, and other existing mineral and energy industries to continue their production, exploration, and development; it is contributing substantially to attracting new mineral- and energy-related industries to Wyoming; it contributes to the identification and prevention of unwise or wasteful uses of the State's geologic, mineral, and energy resources; it helps protect Wyoming's citizenry, property, and natural resources from harm or damage associated with geologic processes or geologic hazards; and it plays an integral role in satisfying the needs of tourist, general interest, educational, and scientific audiences interested in Wyoming's geology, landforms, minerals, and energy resources.

(3) Are there alternate courses of action that would result in more efficient or effective administration of the Geologic Program?

Yes. There is an acute need for additional personnel and funding. Gradual reductions in staff and relatively level funding have taken their toll. The demand for information and services continues to increase each year. There is a limit, however, to how long the agency can endure these kinds of increasing demands and remain efficient and

effective. In response, the Geological Survey has emphasized the computerization of data, and is now working to improve its data delivery systems. Enhancements to the transfer of information and data are hampered by a shortage of human resources as well as inadequate funding to upgrade the agency's computers and software. Demand for electronic transfer of data is increasing at too fast a pace, especially in regard to the needs of the agency's business, industry, and government clientele. The Survey is being asked for technical support by other state agencies, and we find that human resource shortages are preventing us from meeting their needs. As a result of our closing the Lab Unit position, our section heads must perform functions previously handled by the Lab Unit.

(4) Could the Geologic Program be administered more effectively by another level of government or a private entity?

No. There is no other existing State agency or level of government that could administer this technical and applied geologic program for Wyoming. The University of Wyoming is much more academically and research oriented, and does not have the resources to perform the Survey's functions. This unique program is too regional in scope to be profitable for a private entity. It does, however, provide the kinds of baseline or reconnaissance studies that companies, consultants, as well as Federal, State, and local agencies need for planning and for making evaluations of more site-specific projects.

(5) Is there sufficient public benefit to justify the funding necessary for the Geologic Program?

Yes. The Geologic Program's large and diverse clientele and the increasing demands for its information and services are good indications that it is providing enough public benefit to justify its funding. The State Geologist and the six geologic sections responded to more than 25,000 inquiries in FY99 and FY2000. These inquirers were located within and outside the State and the nation. In addition to inquiries from the general public, the Geologic Program answered inquiries from business, industry, consultants, and the geology profession as a whole. It also responded to clientele in State, local, and Federal agencies as well as individuals in educational institutions and university departments.

Based on the past fiscal years, 33% of the inquiries directed to the Geologic Program were from business and industry; 21% from the general public; 18% from agencies of the Federal government, other states, or foreign entities; 14% from State and local agencies within Wyoming; and 14% from universities.

Within a biennium, a local agency or official from nearly every Wyoming county, most of the State's larger cities, and many of the smaller towns requests information or assistance from the Geologic Program. While the University of Wyoming is the most frequent academic inquirer, queries from the education community also come from the State's community colleges, schools, other states, and foreign countries. Ten Federal agencies also routinely seek information and assistance.

In addition to the direct assistance the Geologic Program provides through personal contacts, phone calls, or letters, it indirectly answers countless additional inquiries about the geologic, mineral, and energy resources of the State through the published and disseminated reports and maps prepared by its staff.

The demand for the Geologic Program's information, expertise, and services continues to increase. As an indication, inquiries directed to the State Geologist and the six geologic sections increased 60% between FY96 and FY2001. This is an average increase of 12% a year over the last 5 years.

(6) What are the consequences of discontinuing the Geologic Program?

The kinds of information, data, and services provided by the Geologic Program would no longer be available. The Geologic Program has routinely provided assistance to more than 15 State agencies. Most notable are the Consensus Revenue Estimating Group, the Wyoming Business Council, the Department of Environmental Quality, the Governor's Clearing House, the Governor's Office, the Oil and Gas Conservation Commission, the State Land and Farm Loan Office, the Emergency Management Agency, and the Board of Registration for Professional Geologists. There are also the thousands of inquirers from the general public, business, industry, consultants, local and Federal agencies, and universities, who contact the agency each year.

There would likely be less exploration dollars spent by existing or new companies. As a result, awareness, knowledge, and understanding of potentially harmful or damaging geologic processes and geologic hazards in Wyoming would diminish, translating into less protection for Wyoming's citizenry, property, and natural resources.

(7) Are the methods, rules, and policies employed by the agency to implement the Geologic Program cost-effective, efficient, consistent with law, and imposing a minimum of regulatory burden?

Yes. Within this program, only the State Geologist has any regulatory responsibilities. These regulatory responsibilities result from the State Geologist's participation on the Oil and Gas Conservation Commission and the Board of Professional Geologists.

PUBLICATIONS PROGRAM

The Publications Program consists of 6 full-time employees. From an organizational standpoint, the program functions as a single section.

(1) What are the specific purposes for the Publications Program?

The Publications Program is the publishing arm of the Geological Survey. It is responsible for editing, publishing, disseminating, and selling the reports and maps that the Geologic Program prepares to communicate knowledge and information about the State's geology and mineral and energy resources. The program also (1) sells topographic maps and other publications that it purchases for resale, (2) prepares some manuscripts on its own volition, and (3) solicits outside manuscripts on geologic subjects of general interest, which it publishes. In addition, the Publications Program is responsible for the timely issuing of all press releases prepared by itself or by personnel in the Geologic Program.

The Publications Program is organized as a stand-alone section, called the Publications Section. The Editor, who is a registered professional geologist, heads this section. The section includes the Cartographic Unit, the Editorial Unit, and the Publication Sales Unit. The three-person Cartographic Unit puts all illustrative materials (drawings, maps, charts, and graphs) into publishable form and makes proof copies and printer-ready negatives. The Cartographic Unit also includes the Survey's GIS specialist, who directs data mapping and database construction.

The two-person Editorial Unit edits and puts all manuscripts into printer-ready formats, writes printing specifications, and sees that reports are satisfactorily printed by a commercial print shop. The administrative secretary from the Geologic Program is currently assisting the Editorial Unit with word processing.

The Publication Sales Unit consists of one full-time sales manager, who doubles as a stock worker and sales clerk. This unit sells publications over-the-counter, by mail, and by phone; keeps an inventory of publications; and mails exchange publications. The administrative receptionist and assistant editor provide back-up to this critical position.

To enhance the public availability of the Geological Survey's publications, the Publications Section provides complimentary copies of many of the agency's publications to city, county, and college libraries across the State, to the State Library, to other State agencies, and to 18 Federal libraries across the nation. The agency's publications are also exchanged with 51 agencies in other states and 31 foreign countries. In exchange, these entities provide copies of their publications, which are forwarded to the University of Wyoming's library system.

(2) What are the specific public benefits derived from the Publications Program?

Because the Publications Program enhances the transfer of geologic information prepared by the Geologic Program, it is helping Wyoming's coal, oil and gas, industrial minerals, uranium, and other existing mineral and energy industries; it is helping to attract new mineral- and energy-related industries to Wyoming; it is helping to protect Wyoming's citizenry, property, and natural resources from harm or damage associated with geologic processes or geologic hazards; and it is playing an integral role in satisfying the needs of tourists and recreationists, as well as general interest, educational, and scientific audiences interested in Wyoming's geology, landforms, minerals, and energy resources.

In the FY2000-FY2001 time period, the routine sale of reports and maps produced $230,000 in revenue to the General Fund or an amount equal to 45% of the program's expenditures during that time. Sales tax collections for these two years were about $6,000.

(3) Are there alternate courses of action that would result in more efficient or effective administration of the Publications Program?

There are not any additional steps to be taken at this time. Since the last Strategic Plan Update, we have hired a full-time GIS specialist who will bring greater efficiency to our generation of digital maps and integration of geologic data, and should enhance our productivity.

(4) Could the Publications Program be administered more effectively by another level of government or a private entity?

No. While the Department of Administration and Information has a Central Printing Division, that division is not set up to do the technical editing, cartography, or specialized printing demanded by the relatively unique publications produced by the Publications Program. Technical editing of the program's maps and reports requires an editor who is a geologist. Many of the publications require skills in the preparation of large, oversize, and complex geologic and mineral resource maps, which require four to six color press runs. These requirements far exceed the capabilities of the Central Printing Division and lie outside their area of customer service.

It would not be practical or efficient for a private entity to take on all the responsibilities and tasks of this program. First, the profit motive required by a private entity would eliminate the publication of some highly valued types of reports and maps such as bibliographies and geologic maps, which are now published to meet a public or government need and not to make a profit. Secondly, the distribution of free educational and informational materials, as well as the exchange of geologic data, would encounter conflict within a profit-driven program.

(5) Is there sufficient public benefit to justify the funding necessary for the Publications Program?

Yes. The large and diverse clientele of the Publications Program and the steady demand for the reports and maps that it sells are good indications that it is providing enough public benefit to justify its funding. During FY2001, personnel in the Publications Program responded to an estimated 24 customer contacts per day and receipted about 6,145 publication sales transactions. Inquiries about publications of the Geological Survey come from all over the State, from the 49 other states, and from numerous foreign countries.

Based on FY2001, 40% of the clientele of the Publications Program were from the general public; 48% from business and industry; 8% from universities; 4% from State and local agencies within Wyoming; and 2% from agencies of the Federal government, other states, or foreign entities. The sale of topographic maps accounted for a large percentage of the sales to the general public, as these are very popular during the summer months and during hunting season.

In FY2001, at least 47,825 copies of maps and reports were sold and distributed, providing $116,308 in revenue to the General Fund. The revenue this program returns to the General Fund each year is routinely equivalent to 40-45% of the program's annual expenditures.

(6) What are the consequences of discontinuing the Publications Program?

Because this is a major communication arm of the Geological Survey, the transfer of information, data, and knowledge assembled by the Geologic Program would be severely curtailed if the Publications Program were discontinued. Consequently, the promotion of Wyoming's geologic, mineral, and energy resources would be greatly diminished, making it more difficult to attract mineral and related industries, tourists, and businesses to the State. Similarly, awareness, knowledge, and understanding of potentially harmful or damaging geologic processes and geologic hazards in Wyoming would diminish, translating into less protection for Wyoming's citizenry, property, and natural resources.

In the next four fiscal years, the State would also lose an estimated $450,000 in revenue from the sale of reports and maps.

(7) Are the methods, rules, and policies employed by the agency to implement the Publications Program cost-effective, efficient, consistent with law, and imposing a minimum of regulatory burden?

Yes. The program has no regulatory functions.