

WYOMING STATE GEOLOGICAL SURVEY
Gary B. Glass, State Geologist

STRATEGIC
FIVE-YEAR PLAN (FY1998-FY2002)
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 28, 1997

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GEOLOGICAL SURVEY'S 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.

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.

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, is also 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 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 and quarries, as well as oil and gas 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.

More changes in Federal policy are anticipated. The movement to reduce the Federal deficit has already reduced the availability of Federal grant monies that have traditionally helped fund some of the geological investigations by the Geological Survey. Reductions at the Federal level, however, may also present opportunities for the Geological Survey. For example, some national data bases that include data on Wyoming might be made available to the Geological Survey if it would agree to maintain the data bases. The Geological Survey has no intention of assuming responsibility for any data base or Federal program that is not a priority to Wyoming, nor any activities where adequate funding is not included. Yet, it will look for opportunities that enhance the accomplishment of its goals and objectives for Wyoming.

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.

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 other State agencies, the general public, industry, consultants, and the geology profession as a whole. It also serves customers in educational institutions and university departments, local government entities, and the Federal government. Its customers are within and outside the State and the nation.

Among the Wyoming State agencies and entities with whom it frequently works are the Oil and Gas Conservation Commission, Consensus Revenue Estimating Group, Governor's Office, Department of Environmental Quality, State Engineer, Department of Transportation, University of Wyoming, Office of State Lands and Investments, Department of Commerce, Board of Professional Geologists, Public Service Commission, Emergency Management Agency, Economic Analysis Division of the Department of Administration & Information, State Crime Lab, Legislative Services Office, Wyoming State Clearinghouse, 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. To improve their exploration and development plans, 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. 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; 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 the development of heretofore undeveloped mineral and energy resources.

The Wyoming State Geological Survey has been constrained by past staff reductions. Yet, the Geological Survey has probably been just as constrained by the limits it placed upon itself. These self-imposed constraints will now become opportunities as the Geological Survey takes a new look at itself and redefines or "reinvents" itself through this strategic planning process. By being more customer focused, proactive in creating its opportunities, and becoming team players on (interdisciplinary, intra-, and inter-agency) projects, it will increase its beneficial contributions to Wyoming's economic vitality and quality of life.

The Geological Survey's enabling statutes are W.S. 9-2-801 and 9-2-803 through 9-2-810. Additional responsibilities of the State Geologist or the Geological Survey are found in W.S. 30-5-103 and 30-5-104, in W.S. 33-41-106 and 33-41-107, in W.S. 36-6-102, and in W.S. 36-6-105 .

GOALS, OBJECTIVES, AND OUTCOME MEASURES

Appendix A provides a tabulation of projected outcome measures between FY1998 and FY2002.

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.

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 at or above \$3.298 billion (FY1996 is the baseline).

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 before the end of FY2000.

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 FY2000. This refers to a new industry, not new companies within existing industries.

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.

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: 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 no less than 75% 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 beneath the trona patch will begin in this decade and increase annually.

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.

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: The Geological Survey's information, advice, or concerns about geology or geologic hazards will be addressed or incorporated in planning or siting documents no less than 75% of the time.

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

STRATEGIES AND OUTPUT MEASURES

Appendix A provides a tabulation of projected output measures between FY1998 and FY2002.

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.

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: Four or more of these studies will be underway or completed 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 no less than 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: 3,500 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 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: The Geological Survey will address or respond to 1,700 or more contacts from existing mineral and energy industries in Wyoming each fiscal year.

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.

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: Four or more of these studies will be underway or completed 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: 2,750 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 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: The Geological Survey will address or respond to 2,500 or more contacts from exploration companies, consultants, or others looking for undeveloped or under-developed geologic, mineral, and energy resources each fiscal year.

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.

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: Have appropriate policies or rules in place in FY1999.

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.

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: Five or more new titles will be completed each fiscal year.

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

Output Measure:

II.A.2.01: Continuation of the existing seismic networks and the establishment of new stations. Target: Maintain an effective seismic network in Jackson Hole and establish two additional National Seismic Network Stations in Wyoming by FY2002.

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 15 committee meetings, workshops, and briefings each fiscal year.

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

Output Measure:

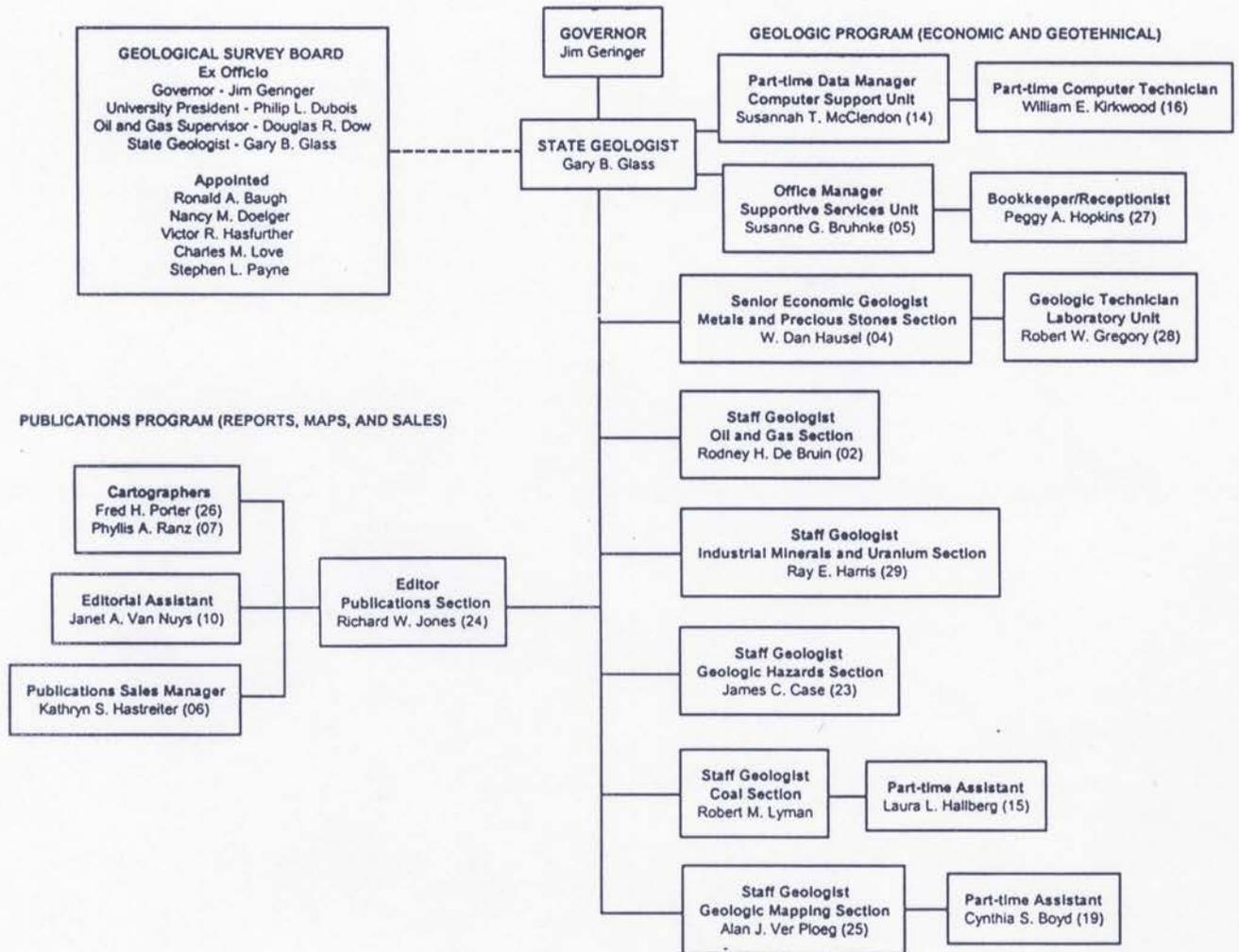
II.A.4.01: The percentage of scoping statements, environmental assessments, environmental impact statements, siting applications, management plans, or other documents that the agency evaluates for any adverse effects they may have on people, property, and natural resources in Wyoming. Target: The Geological 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: The Geological Survey will address or respond to 6,500 or more contacts from entities or individuals seeking information on geology, geologic hazards, or geologic processes 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: 2,400 or more copies of these geologic reports and maps will be sold or otherwise distributed upon request each fiscal year.



ORGANIZATIONAL CHART FOR THE GEOLOGICAL SURVEY IN FY1998

APPENDIX A

**PROJECTION OF OUTCOME MEASURES AND OUTPUT
MEASURES FOR FY1998-FY2002**

PROJECTION OF OUTCOME MEASURES AND OUTPUT MEASURES FOR FY1998 - FY2002

OUTCOMES	OUTPUTS	FY1998	FY1999	FY2000	FY2001	FY2002	COMMENTS
I.A.01		Mineral Valuation ≥\$3.298 billion	Mineral Valuation ≥\$3.298 billion	Mineral Valuation ≥\$3.298 billion	Mineral Valuation ≥\$3.298 billion	Mineral Valuation ≥\$3.298 billion	Mineral valuation each fiscal year [FY96 is the baseline].
I.A.02				At least one value-added or alternate use occurs before the end of this fiscal year.			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	≥4	Number of pertinent studies underway or completed.
	I.A.1.02	≥4	≥4	≥4	≥4	≥4	The number and description of value-added or alternative uses for a geologic or mineral resource, actively promoted by the Geological Survey.
	I.A.2.01	≥95%	≥95%	≥95%	≥95%	≥95%	Percent accuracy of CREG's forecast mineral revenue.
	I.A.3.01	≥3,500	≥3,500	≥3,500	≥3,500	≥3,500	Number of copies of pertinent reports and maps sold.
	I.A.3.02	≥1,700	≥1,700	≥1,700	≥1,700	≥1,700	Number of pertinent inquiries and contacts responded to.
I.B.01				At least one new mineral industry by this fiscal year.			A new industry, promoted by the Geological Survey, starts up or expands.
	I.B.1.01	≥4	≥4	≥4	≥4	≥4	Number of pertinent studies underway or completed.
	I.B.1.02	≥10	≥10	≥10	≥10	≥10	Number and description of undeveloped or underdeveloped geologic or mineral resources actively promoted.

PROJECTION OF OUTCOME MEASURES AND OUTPUT MEASURES FOR FY1998 - FY2002

OUTCOMES	OUTPUTS	FY1998	FY1999	FY2000	FY2001	FY2002	COMMENTS
	I.B.2.01	≥2,750	≥2,750	≥2,750	≥2,750	≥2,750	Number of copies of pertinent reports and maps sold.
	I.B.2.02	≥2,000	≥2,000	≥2,000	≥2,000	≥2,000	Number of pertinent inquiries and contacts responded to.
I.C.01		≥75%	≥75%	≥75%	≥75%	≥75%	Percentage of times the Geological Survey's information, advice, or concerns are used or heeded.
I.C.02			Exploration for natural gas is allowed on or before this fiscal year	Natural gas production begins	Production increases	Production increases	Production of natural gas from beneath the trona patch begins.
	I.C.1.01	Complete technical report and draft policies or rules to allow exploration for natural gas	Appropriate policies or rules for natural gas exploration are in place				Completion of a technical report and draft policies or rules for gas production in the trona patch.
	I.C.2.01	100%	100%	100%	100%	100%	Percentage of planning and development documents reviewed.
	I.C.3.01	100%	100%	100%	100%	100%	Percentage of Oil and Gas hearings that the State Geologist attends.
	I.C.4.01	100%	100%	100%	100%	100%	Percentage of alleged mineral scams investigated by the Geological Survey.
	I.C.5.01	100%	100%	100%	100%	100%	Percentage of State's fossil permits reviewed and inspected each fiscal year.

PROJECTION OF OUTCOME MEASURES AND OUTPUT MEASURES FY1998- FY2002

OUTCOMES	OUTPUTS	FY1998	FY1999	FY2000	FY2001	FY2002	COMMENTS
II.A.01		≥75%	≥75%	≥75%	≥75%	≥75%	Percentage of times the Geological Survey's information, advice, or concerns are used or heeded.
	II.A.1.01	≥5	≥5	≥5	≥5	≥5	Number of pertinent new maps or reports completed.
	II.A.2.01	Jackson Network remains; new station installed in Star Valley	Jackson Network remains	Jackson Network remains	Jackson Network remains	Jackson Network remains. Another new station on line.	Jackson network remains and two stations are added.
	II.A.3.01	≥15	≥15	≥15	≥15	≥15	Participation in pertinent committees, workshops, and briefings.
	II.A.4.01	100%	100%	100%	100%	100%	Percentage of planning and development documents reviewed.
	II.A.5.01	≥6,500	≥6,500	≥6,500	≥6,500	≥6,500	Number of pertinent contacts addressed or responded to.
	II.A.5.02	≥2,400	≥2,400	≥2,400	≥2,400	≥2,400	Number of copies of pertinent reports and maps sold or distributed.

APPENDIX B
RESPONSES TO FIVE QUESTIONS IN W.S. 28-1-115

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

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

- (I) The specific purpose of each program, function, and activity of an agency.
- (II) The specific public benefit that does or should result from each program, function, or activity.
 - (1) Whether a program, function, or activity could be implemented more effectively by another level of government or by a private entity.
 - (2) Whether there is sufficient public benefit to justify the funding necessary for the program, function, or activity.
- (IV) The consequences of discontinuing any program, function, or activity.
- (V) 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 five 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 the other attached appendix provide additional 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 and 9-2-803 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 which assists in formulating and directing policies and programs of the agency. The Board consists of the Governor, 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 Professional Geologists (W.S. 33-41-107).

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

GEOLOGIC PROGRAM

In FY98, the Geologic Program consists of 10 full-time and 4 part-time employees. From an organizational standpoint, the program is separated into six sections and three units. The sections are: (1) Coal, (2) Geologic Hazards, (3) Geologic Mapping, (4) Industrial Minerals and Uranium, (5) Metals and Precious Stones, and (6) Oil and Gas. The three units are: Supportive Services, Computer Support, and Laboratory.

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

The Supportive Services Unit provides the truly administrative support for both the Geologic and the Publications Programs. The unit is comprised of the State Geologist, an office manager, and an administrative secretary, who is also the receptionist and bookkeeper. All three are full-time employees. The Supportive Services Unit handles payroll, personnel matters, purchasing, budgeting, and other fiscal activities of the agency.

The new Computer Support Unit is now comprised of two part-time positions. This unit was created in FY95 by reclassifying a part-time bookkeeping position to a computer technician, and then enhanced in FY97 with a data manager, by reclassifying a part-time stockworker position. The unit manages the agency's networked computers and is tasked with providing the Geological Survey's staff and clientele with enhanced, user-friendly, computerized data and other products, as well as improving the agency's electronic delivery systems.

The six sections conduct the Geological Survey's geologic, mineral, and energy resource activities. These geologic sections are each comprised of one geologist or professional geologist. The part-time geologic assistants attached to the Coal and Geologic Mapping Sections are partially funded by outside grants.

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. This unit, which consists of one full-time geologic technician, is currently providing support to all the geologic sections

both in the field as well as in the laboratory. The major activities of the Laboratory Unit now involve field geology; the preparation of samples going out to commercial laboratories for analysis; rock and mineral identification; in-house analysis of samples by x-ray diffraction; and the cataloguing, preparation, and curation of paleontological specimens.

(II) 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 a role in satisfying the needs of tourist, general interest, educational, and scientific audiences interested in Wyoming's geology, landforms, minerals, and energy resources.

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

Yes. There is a growing 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 a very fast pace, especially in regard to the needs of the agency's business, industry, and government clientele.

(1) 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, and 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 and consultants, as well as Federal, State, and local agencies need for planning and for making evaluations of more site-specific projects.

(2) 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. Collectively, in FY1996 and FY1997, the State Geologist and the six geologic sections responded to more than 20,590 inquiries. These inquirers were located within and outside the State and the nation. In addition to inquiries from the general public, the staff of 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 last five fiscal years for which there is complete data (FY93-FY97), 32% of the inquiries directed to the Geologic Program were from business and industry; 19% from the general public; 19% from agencies of the Federal government, other states, or foreign entities; 16% from State and local agencies within Wyoming; and 14% from universities.

Within each 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 other inquiries about the geologic, mineral, and energy resources of the State through the published and disseminated reports and maps prepared by its staff. These reports and maps reside in all of Wyoming's county libraries, as well as libraries in all the other states and many foreign countries.

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 21% between FY93 and FY97. And the number of inquiries in FY97 were 75% greater than they were in FY87. This is an average increase of 7.5% a year over the last 10 fiscal years.

(IV) 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 Department of Commerce's Division of Economic and Community Development, the Department of Environmental Quality, the Wyoming State Clearinghouse, the Governor's Office, the Oil and Gas Conservation Commission, the Office of State Lands and Investments, the Emergency Management Agency, and the Board of 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. And 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.

(V) 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.

PUBLICATIONS PROGRAM

In FY98, the Publications Program consists of 5 full-time employees. From an organizational standpoint, the program functions as a single section.

(I) 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 supporting the agency's stated goals and objectives, which it publishes.

The Publications Program is organized as a stand-alone section, called the Publications Section. This section is headed by the Editor, who is a geologist. The section includes the Cartographic Unit, the Editorial Unit, and the Publication Sales Unit. The two full-time cartographers in the Cartographic Unit put all illustrative materials (drawings, maps, charts, and graphs) into publishable form and make proof copies and printer-ready negatives.

The two full-time employees in the Editorial Unit are the editor and his assistant. They edit and put all manuscripts into printer-ready formats, write printing specifications, and see that reports are satisfactorily printed by a commercial print shop.

The Publication Sales Unit consists of one full-time sales manager. This unit sells publications over-the-counter, by mail, and by phone; keeps an inventory of publications; and mails exchange publications.

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.

(II) 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 FY95-96 Biennium, the sale of reports and maps produced \$179,627 in revenue to the General Fund or an amount equal to 11% of the agency's total biennial expenditures. Sales will be an estimated \$200,000 in the FY97-98 Biennium or 11% of that biennial budget request. Sales tax collections for these bienniums were or will be

\$4,624 and \$5,500, respectively (these collections are included in the \$179,627 and the \$200,000 revenues mentioned above).

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

Probably not at this time. The agency did try to recruit a part-time technician familiar with computer drafting to assist in shortening the learning curve for its cartographers, who are now for the most part drafting everything on their computers, except large oversize maps. The recruiting effort was unsuccessful because the job was only part-time, and the agency could not afford to offer a competitive salary.

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

No. There is no other state agency 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 that is a geologist familiar with Wyoming's geology and mineral resources. 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 in-house capabilities of all, but some large out-of-state publishers and even those publishers could not provide the technical editing.

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 profit motive would of necessity decrease the revenues below what this program now returns to the General Fund each year.

There are, however, aspects of the program that might be done more efficiently by a private entity. These aspects are already under investigation by the Program Head as part of the Geological Survey's efficiency plan. In addition, the agency opted to quit preparing and publishing tourist-related and general interest publications, which are in competition with private vendors. This will free up time and resources that can now be directed to the more technical publications that are needed to support the agency's goals and objectives.

(2) 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 the FY97-98 Biennium, personnel in the Publications Program will respond to an estimated 14 customer contacts each day and receipt about 7,000 publication sales transactions. Inquiries about publications of the Geological Survey come from all over the State, from all the other states, and from numerous foreign countries.

Based on the past five fiscal years for which there is complete data (FY93-FY97), 61% of the clientele of the Publications Program were from the general public;

29% from business and industry; 6% from universities; 3% from State and local agencies within Wyoming; and 1% 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 and during hunting season.

In FY97, at least 16,508 copies of maps and reports were sold and distributed, providing \$104,709 in revenue to the State. The revenue this program returns to the General Fund each year is routinely equivalent to 10-12% of the agency's annual expenditures.

(IV) 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, businesses, and tourists 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 \$400,000 in revenue from the sale of reports and maps.

(V) 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. This program has no regulatory functions.