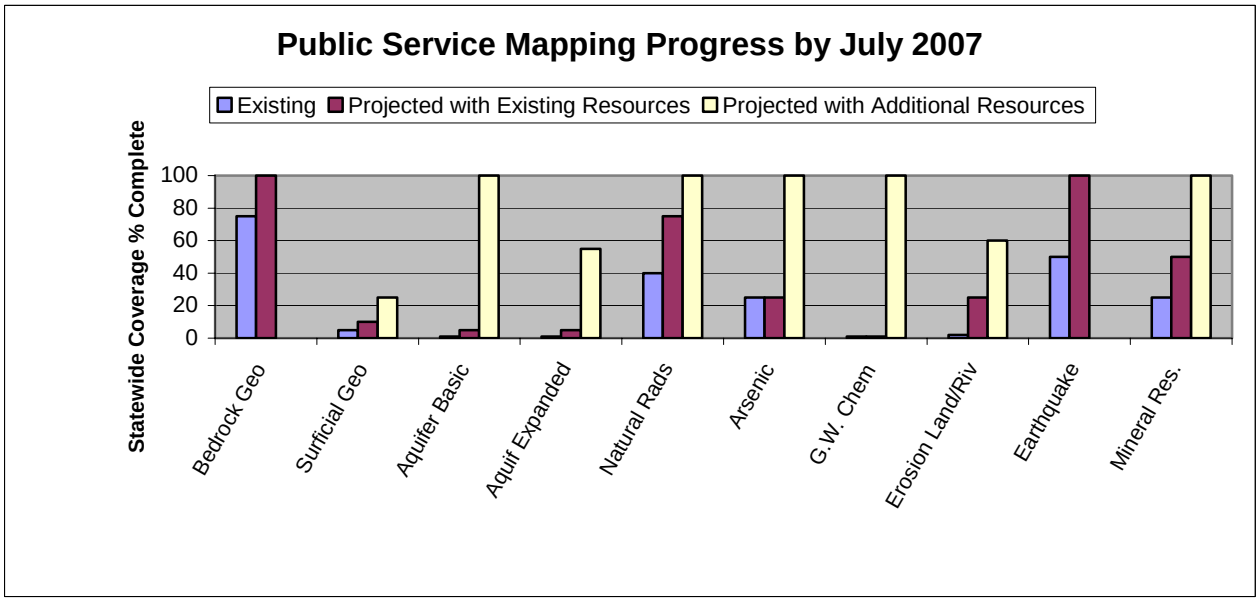
Results: Geologic principles are employed for wise monitoring and balanced use of Vermont's land, water, and earth-based resources. As per statute, surveys and research of the geology, mineral resources and topography of the state provide a base for applied studies, education and information for government, industry, consultants, educators, and the citizens of the state.

Key Indicators



Story behind the base line performance

Geologic information compliments economic development for resource identification and provides guidance to avoid unnecessary costs when land use decisions are made. The tool for resource and environmental planning are public service maps that include basic geologic data and issue specific presentations to assist in the protection of public health and safety. The indicator above is Public Service Mapping Progress by July 2007. Both bedrock and surficial geologic maps constitute base information. Aquifer and groundwater recharge maps are to identify the higher yield groundwater resources and to protect the resource. A January 2003 report to the legislature defines levels of aquifer mapping effort that include basic, expanded, and premium phases with appropriate timetables. The expanded level of effort would include town scale aquifer, groundwater recharge and fracture maps. Naturally occurring radionuclides and arsenic maps are tools to protect public health. In addition, general ground water chemistry (G.W. Chem) is to identify other constituents well users may encounter when drilling a well including priority pollutants. To protect the physical safety of property and lives, landslide, slope instability, river erosion and earthquake risk maps are applied to town planning. Mineral resources in regards to dimension stone; crushed rock; sand and gravel are part of any planning process. There is the potential to encounter natural gas as a mineral resource and hazard in Vermont. Not shown on the graph are State lands management maps and information that show the geologic underpinning of State property, mineral resources, and the physical basis for biodiversity

Information requests are increasing for basic geologic data and for the ways the information is applied to environmental/resource problems or educational matters. The Division is expending considerable

time and energy in two areas where mapping and research are used as a base for applied (derivative) maps to address health and safety concerns. Framework bedrock mapping is applied to understanding naturally occurring contaminants of concern such as radionuclides to inform citizens of potential risks to health. Framework surficial geologic mapping and fluvial geomorphology studies are applied to developing physical hazard maps that will indicate the potential for erosion as a safety concern. This trend will continue as both bedrock and surfical geologic studies are planned to address ground water contamination and aquifer identification that are fundamental to maintaining the health and well being of Vermonters. An example is a new study of nitrate contamination in domestic wells near a large farm in Central Vermont

Strategies/ Performance Measures / Proposed Accomplishments

Number Of Information Requests

Education and Technical Assistance

Performance Measure	"P"=Projected and A"=Actual Values	996	997	998	999	000	001	002	003	004	005	006
Number of Information Requests Received Includes Outreach as a Result of Certain Requests.	P	500	600	600	650	650	700	700	1000	2000	3000	4000
	A	500	600	1080	1500	2450	3000	4000	6825			

Proposed Accomplishments - The Division will continue to develop new publications and maps and distribute published information to the general public. The Division will continue to meet requests to explain how geology and the earth sciences apply to the solution of many environmental and natural resource problems. The requests and follow up that are intended meet the indicator of increasing the application of the earth sciences through the use of public service maps. Developing the web site is increasing contact while making for more efficient operation by disseminating information rapidly and in a form users are coming to expect. The Division maintains paper publications for sale, but will increase our posting of scanned maps and reports to advance this web-based trend and distribute data on CD-ROM when appropriate.

Number of Basic (Mapping/Research) and Applied Scientific Studies

Monitoring and Assessment

Grants and Contracts

Performance Measure	"P"=Projected and A"=Actual Values	996	997	998	999	000	001	002	003	004	005	006
Number of mapping and applied studies EPA will support ed an applied study in State FY04	P	4	9	5	5	5	5	5	5	5	5	5
	A	4	9	5	5	4	5	5	5	5		

Proposed Accomplishments – The Division will continue to conduct basic mapping and research that applies to naturally occurring constituents of concern in the environment and physical hazards such as landslides and riverine erosion. New research will develop in aquifer mapping and groundwater contamination issues such as nitrates in the vicinity of large farms.

Highlight - The Montpelier quadrangle is complete and is now a base for studies of nitrates in domestic wells next to a large farm and for understanding radionuclides in drinking water from wells. The Mad River Watershed surfical geology and fluvial geomorphology mapping is complete and is a base for a developing prototype erosion potential map