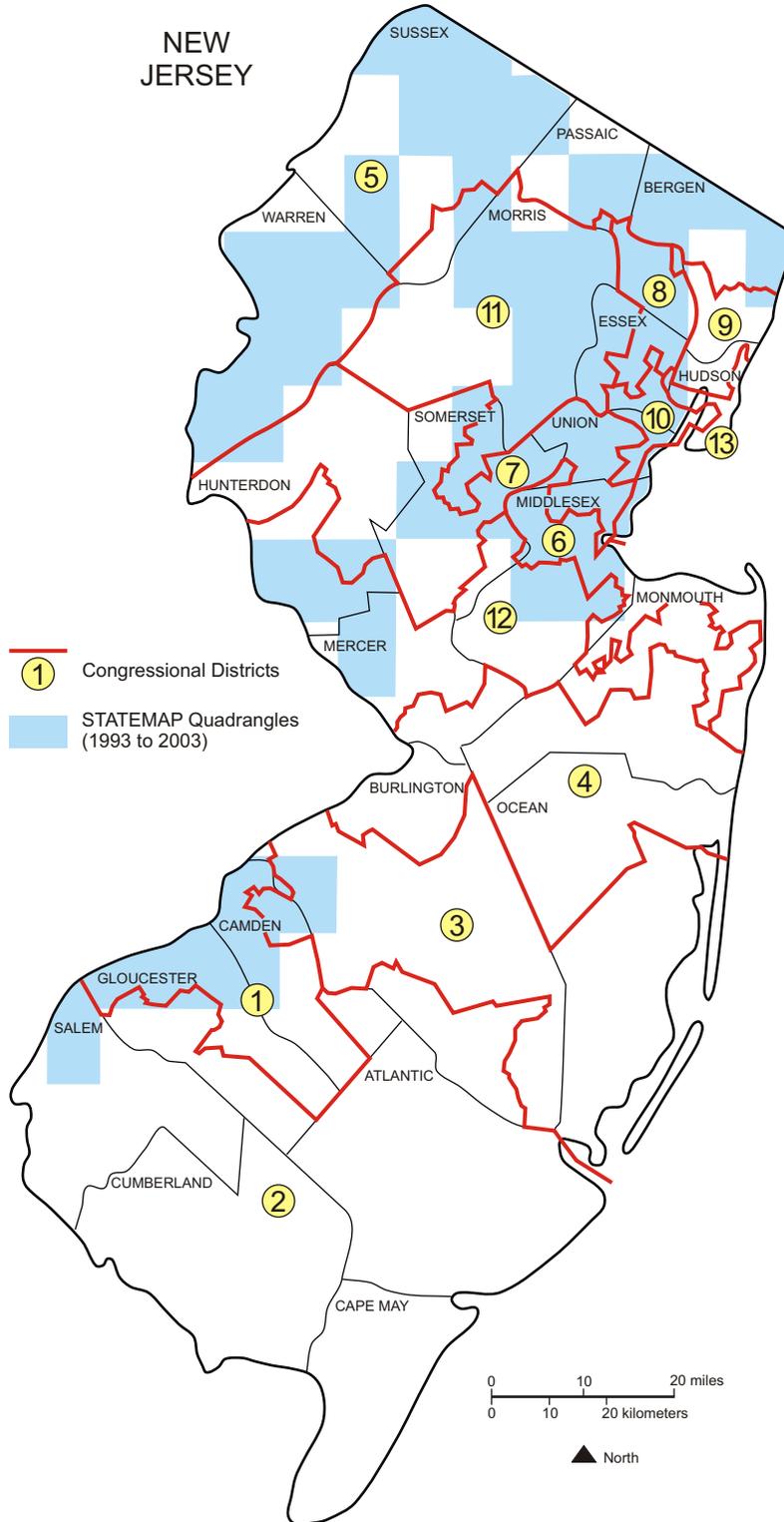




National Cooperative Geologic Mapping Program

STATEMAP Component: States compete for federal matching funds for geologic mapping



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**2003 SUMMARY OF STATEMAP
GEOLOGIC MAPPING PROGRAM IN NEW JERSEY**

Federal Fiscal Year	Surficial Geologic Maps (1:24,000-scale Quadrangles)		Bedrock Geologic Maps (1:24,000-scale Quadrangles)		Federal Dollars	State Dollars	Total Project Dollars
1993	New Brunswick South Amboy		New Brunswick South Amboy		\$30,000	\$30,000	\$60,000
1994	Branchville Franklin	Hamburg	Hamburg		\$40,000	\$40,000	\$80,000
1995	Perth Amboy		Plainfield		\$30,000	\$30,000	\$60,000
1996	Blairstown Tranquility	Washington	Bound Brook Perth Amboy	Raritan	\$104,287	\$104,287	\$208,494
1997	Belvidere Elizabeth	Orange	Bernardsville Chatham	Wawayanda	\$100,228	\$100,228	\$200,456
1998	Nyack Park Ridge	Runnemede Yonkers	Caldwell Morristown	Runnemede Stockton	\$99,446	\$99,446	\$198,892
*1999	Portland Unionville	Woodbury	Pompton Plains Roselle	Wanaque Woodbury	\$111,309	\$111,309	\$222,618
2000	Bloomsbury Camden-Philadelphia	Paterson	Boonton Camden-Philadelphia	Hopewell Paterson	\$105,857	\$105,857	\$211,714
2001	Bangor Bridgeport-Marcus Hook	Easton Ramsey	Bridgeport-Marcus Hook Dover	Lumberville Orange	\$127,114	\$127,114	\$254,228
2002	Caldwell Milford	Moorestown Port Jervis South	Belvidere Elizabeth	Moorestown Ramsey	\$150,390	\$150,390	\$300,780
2003	Morristown Newton West	Penns Grove	Blairstown Bloomsbury	Pennington Penns Grove	\$117,496	\$117,496	\$234,992
Total	33 Quadrangles		34 Quadrangles		\$1,016,087	\$1,016,087	\$2,032,174

* includes Sussex County surficial and bedrock digital maps

STATEMAP-funded geologic mapping in New Jersey provides basic data needed to address a number of significant public issues. Most prominent are issues related to water-resource management. Groundwater provides over 40% of the potable water consumed in New Jersey. Geologic maps provide basic framework data needed to identify aquifers, delineate aquifer recharge areas, model groundwater flow, and assess groundwater quality. Municipalities and counties use geologic maps as a basis for making zoning decisions and protecting recharge areas. Geologic maps are also used by federal and state agencies and the private sector to locate new water supplies, to determine safe water withdrawals, and to track and remediate groundwater contamination. STATEMAP projects have provided geologic frameworks for several important aquifers in the state, including glacial valley-fill aquifers of northern New Jersey, limestone aquifers in Sussex and Warren counties, the Brunswick shale aquifer of central New Jersey, and the Potomac-Raritan-Magothy aquifer of the Coastal Plain in Middlesex County and the Camden area. The great density of population, contamination sites, and water wells in New Jersey requires accurate, detailed, and complete geologic mapping. For this reason, the New Jersey Geological Survey is working toward full 1:24,000-scale bedrock and surficial geologic map coverage for the entire state. STATEMAP funding is an essential part of this goal.

Other issues requiring geologic map data involve natural hazards. Geologic hazards in New Jersey include sinkholes, naturally occurring contaminants, and earthquakes. Limestone formations in northwest New Jersey are susceptible to dissolution and collapse, forming sinkholes. Areas prone to sinkholes can be predicted from geologic maps. Mapping funded by STATEMAP has provided nearly complete coverage for areas of the state underlain by limestone. Some formations in the state contain elevated levels of radioactive minerals and heavy metals. These naturally occurring contaminants may present exposure hazards in soil, groundwater, or indoor air. Geologic maps show the occurrence of these formations. For example, radon hazard created by uranium-bearing minerals has been mapped under STATEMAP projects in areas of metamorphic and sedimentary rock in northern New Jersey and in marine sediments of the Coastal Plain in southern New Jersey. Damaging earthquakes are rare, but not unknown, in New Jersey. The density and value of seismically vulnerable buildings in New Jersey places the state quite high on national rankings of earthquake risk. Geologic mapping identifies soils that are prone to seismic shaking, and so provides essential information for predicting building damage. STATEMAP has directly contributed to this effort by funding mapping in northeastern New Jersey that was then used for earthquake vulnerability studies of Hudson, Bergen, Essex, Union and Middlesex Counties.