



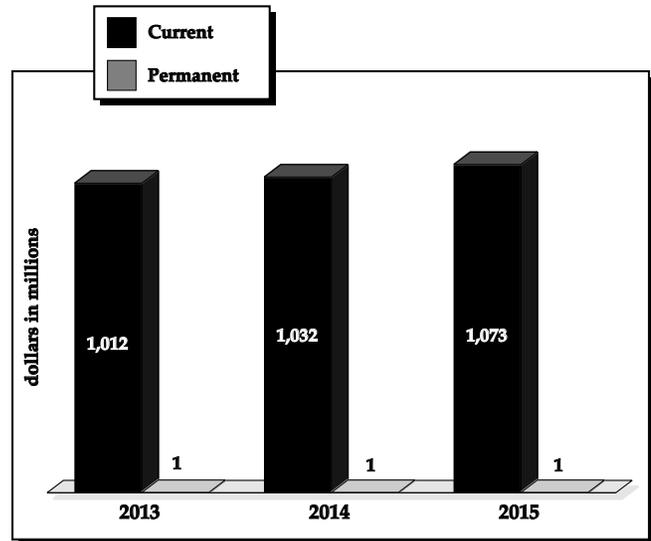
U.S. GEOLOGICAL SURVEY

Mission – The mission of the U.S. Geological Survey is to provide reliable scientific information to describe and understand the Earth, minimize loss of life and property from natural disasters, support the sustainable stewardship of land and water, and manage biological, energy, and mineral resources.

Budget Overview – The 2015 U.S. Geological Survey budget request is \$1.1 billion, an increase of \$41.3 million above the 2014 enacted level. The USGS estimates staffing will equal 8,259 full time equivalents in 2015, a decrease of 18 FTE from the 2014 enacted. The 2015 budget reflects the Administration’s commitment to invest in research and development to support a robust economy and resilient Nation. The 2015 budget investments maximize the impacts of research, development, and monitoring, in support of natural resource decisionmaking and will enable USGS to continue to provide world-class science and support priorities outlined in the USGS Science Strategy. The budget prioritizes programs unique to USGS which have national impacts, and provide monitoring, research, and tools to make science immediately usable, particularly in support of Interior’s resource and land management missions and trust responsibilities. To optimize investments in these priorities, some targeted reductions were made. Highlights of the budget include increases for priorities in ecosystem restoration, water resources management, sustainable energy development, climate resilience, and earth observation systems, including streamgages and Lidar elevation data, which provide critical data to the Nation. Continuation of a hydraulic fracturing research and development effort with the Department of Energy and the Environmental Protection Agency will support research to better understand and minimize potential environmental, health, and safety impacts of energy development through hydraulic fracturing.

Powering Our Future – The 2015 USGS budget provides \$40.7 million for the Secretary’s Powering Our Future initiative, \$8.1 million above the 2014 enacted level. A program increase of \$1.3 million supports agencies responsible for alternative energy permitting on Federal lands. These funds will be used to study geothermal resources as a potential energy source and will build

USGS Funding



on current USGS efforts to develop an assessment methodology for wind energy impacts. Included in the request is \$18.6 million, \$8.3 million over 2014, to support the interagency effort to better understand potential impacts of hydraulic fracturing. Funding for other conventional energy programs, including oil, gas, and coal assessments, totals \$15.6 million.

Water Challenges – The 2015 USGS budget provides \$14.5 million for USGS activities in support of water assessments, an increase of \$6.4 million above the 2014 enacted level. The increase will enhance implementation of the WaterSMART Availability and Use Assessment through State water use grants to develop water use and availability datasets, develop regional water availability models, integrate and disseminate data through online science platforms, and support the National Groundwater Monitoring Network. In 2015, USGS will begin development of a model that integrates hydrological and biological variables, to better understand water resource needs of ecosystems when making decisions.

Ecosystems – The 2015 budget includes \$162.0 million for the Ecosystems activity, \$9.2 million above the 2014 enacted level. Through the Ecosystems activity, USGS

U.S. GEOLOGICAL SURVEY FACTS

- **Founded by an Act of Congress in 1879.**
- **Is the Nation's largest water, earth, and biological science and civilian mapping agency.**
- **Employs over 8,300 scientists, technicians, and support staff working in more than 400 locations throughout the United States.**
- **With over 2,000 strategic partnerships, USGS is a primary Federal source of science-based information on ecosystem science, climate and land use change, energy and mineral resources, environmental impacts, natural hazards, water resource use and availability, and updated maps and images for the Earth's features available to the public.**
- **Generates and maintains data from over 8,000 streamgages and over 2,700 earthquake sensors that are available to the public.**
- **Provides direct access to 16 million Landsat images spanning the globe from 1972 to present; archives contain 7.6 million air photos dating to 1939 and over 100 other satellite, cartographic, and topographic datasets characterizing the Earth's surface; and available data is provided at no cost to the user.**

conducts research and monitoring to better understand how ecosystems are structured and function. Information generated by the Ecosystems activity helps improve management of the Nation's natural resources and address hazards that threaten land, coastlines, and populations.

The 2015 budget includes a program increase of \$2.0 million for research on new methods to eradicate, control, and manage Asian carp in the Upper Mississippi River Basin and prevent entry into the Great Lakes. Program increases totaling \$2.5 million are provided for the following priority ecosystem restoration initiatives: California Bay-Delta, Chesapeake Bay, Columbia River, Everglades, and Puget Sound; and \$300,000 is provided for science support for Outer Continental Shelf ecosystems decisions. In addition to the increase for hydraulic fracturing discussed above, program increases totaling \$1.8 million are provided to address native pollinators, brown treesnakes, and new and emerging invasive species of national concern.

A program increase of \$2.0 million will support efforts to further the science and integration of ecosystems services frameworks into decisionmaking and implement efforts to assess and sustain the Nation's environmental capital. Additional program increases include: \$200,000 for wildlife health, \$1.0 million for energy future and wildlife sustainability, \$1.0 million for the CRU Scientists for Tomorrow youth initiative, and \$500,000 for wildfire restoration ecology. Increases are partially offset by reductions in several activities within the Ecosystems Mission Area.

Climate and Land Use Change – The 2015 budget provides a total of \$149.1 million for Climate and Land Use

Change, an increase of \$17.1 million from 2014. The proposed budget for the Climate Variability subactivity is \$72.0 million, an increase of \$18.4 million above the 2014 enacted level. This subactivity provides practical scientific information to inform resilient and adaptive natural resource and land management on a landscape scale and prioritizes and advances the implementation of the President's Climate Action Plan.

The National Climate Change and Wildlife Science Center and the eight Department of the Interior Climate Science Centers are funded at \$35.3 million, an increase of \$11.6 million. This includes a program increase of \$3.0 million for CSC grants, focused on providing translational and applied science needed for decisionmaking, particularly in resource management and biological sequestration. To further collaboration, better leverage resources, and reduce potential for duplication, a program increase of \$2.3 million will support coordination efforts with other Federal climate science entities and ensure scientific results and products are made available to the public in a centralized, web-accessible format. Also provided are program increases of \$2.5 million for applied science and capacity-building in support of tribal climate adaptation needs in each CSC region, \$800,000 for climate adaptation and resiliency research leading to a Vulnerability Assessment Database and Field Guide, and \$3.0 million for research on drought impacts and adaptive management.

The budget includes program increases of \$2.6 million in the Climate Research and Development program to focus on emerging science needs and \$2.0 million to begin research on climate and land cover change effects. A program increase of \$2.0 million is included for the development of decision support tools to support

biological carbon sequestration in natural resource and land management.

The 2015 budget request for the Land Use Change subactivity is \$77.1 million, \$1.3 million below the 2014 enacted level. This subactivity ensures Earth observation imagery collected via satellite is available and accessible to users and provides analyses of these data to quantify rates of land use change, identify key driving forces, and forecast future trends of landscape change. The Landsat satellite program in the Land Remote Sensing program is funded at \$53.3 million, level with 2014, and includes funding for maintenance and operation of ground systems and satellite operations.

In 2015, USGS will continue to work with the National Aeronautics and Space Administration to analyze user requirements and implement a 20-year sustained land imaging program to provide for Landsat data continuity. Funding for the land imaging program is provided in the 2015 budget for NASA, which will be responsible for development of a sustained, space-based, global land imaging capability for the future. The USGS will continue its operational role in managing the collection, archiving, and dissemination of Landsat data to users and the Land Remote Sensing program will continue to further the advancement of the science, usability, and centralized sharing of Landsat data, applications, and software.

The 2015 budget provides program increases of \$1.0 million in the Land Remote Sensing program and \$500,000 in the Land Change Science program for Landsat science products for climate and natural resource assessments. The budget also provides a program increase of \$500,000 in the Land Change Science program for Chesapeake Bay ecosystem restoration. Increases are partially offset by reductions in several activities within the Climate and Land Use Change mission area.

Energy, Minerals, and Environmental Health – The 2015 budget includes \$99.1 million for Energy, Minerals, and Environmental Health. The proposed budget for the Mineral and Energy Resources subactivity is \$73.2 million, an increase of \$1.3 million above the 2014 level. This subactivity includes programs that conduct research and assessments on the location, quantity, and quality of the Nation’s mineral and energy resources. In addition to an increase for hydraulic fracturing discussed above, the budget includes a program increase of \$1.3 million for alternative energy permitting on Federal lands.

The 2015 request for the Environmental Health subactivity is \$25.8 million, \$6.2 million above the 2014 enacted level. This subactivity conducts research on the impacts of human activities that introduce chemical and patho-

genic contaminants into the environment and threaten human, animal, and ecological health. In addition to an increase for hydraulic fracturing discussed above, the 2015 budget provides program increases totaling \$400,000 for Chesapeake Bay and Columbia River ecosystem restoration, \$200,000 each, shared equally between Contaminant Biology and Toxic Substances Hydrology. The budget also provides a program increase of \$1.5 million in Toxic Substances Hydrology for research on emerging contaminants and chemical mixtures. The budget provides program increases of \$673,000 in Contaminant Biology and \$2.5 million in Toxic Substances Hydrology for environmental impacts of uranium mining. Increases are partially offset by reductions in several activities within the Energy, Minerals, and Environmental Health mission area.

Natural Hazards – The 2015 budget provides \$128.3 million for Natural Hazards, nearly level with 2014 enacted. This activity provides scientific information and tools to reduce potential fatalities, injuries, and economic loss from volcanoes, earthquakes, tsunamis, and landslides, among others. This activity also includes efforts to characterize and assess coastal and marine processes, conditions, vulnerability, and change. The 2015 budget provides a program increase in Earthquake Hazards of \$700,000 for induced seismicity studies for hydraulic fracturing. Increases are partially offset by reductions in activities within the Natural Hazards mission area.

Water Resources – The 2015 budget includes \$210.4 million for Water Resources, \$3.1 million above the 2014 enacted level. This activity includes programs that collect, manage, and disseminate hydrologic data, model and analyze hydrologic systems, and conduct research and development leading to new understanding of and methods for gathering data. The activities are supported by a national network of streamgages, wells, and monitoring sites, which are leveraged by funds from State, tribal, and local partners. The 2015 budget provides program increases of \$2.4 million in Groundwater Resources for the National Groundwater Monitoring Network and \$1.2 million for the National Streamflow Information Program for streamgages.

Program increases totaling \$1.9 million are provided for the following priority ecosystem restoration initiatives: California Bay-Delta, Chesapeake Bay, Puget Sound, and the upper Mississippi River. In addition to an increase for hydraulic fracturing discussed above, a program increase in Hydrologic Research and Development includes \$700,000 for streamgage research and development. Program increases in Hydrologic Networks and Analysis include \$2.0 million for WaterSMART State

Water Use Grants and \$750,000 for hydrologic modeling and groundwater sustainability initiatives.

Program increases in the Cooperative Water Program include \$2.0 million for WaterSMART Water Use Research and \$1.0 million for work with Tribes. The Water Resources Research Act Program is funded at \$3.5 million, a decrease of \$3.0 million from 2014. Increases are partially offset by reductions in several activities within the Water Resources mission area.

Core Science Systems – The 2015 budget provides \$109.4 million for Core Science Systems, \$593,000 above the 2014 enacted level. This activity provides the Nation with access to science, information, and geospatial frameworks used to manage natural resources and plan for and respond to natural hazards. Biologic and geologic data archives and geospatial data in The National Map provide critical data about the Earth, its complex processes, and natural resources. In addition to an increase for hydraulic fracturing discussed above, the 2015 budget includes a program increase of \$2.0 million for the Big Earth Data Initiative.

The budget provides program increases of \$800,000 for priority ecosystem restoration initiatives in Columbia River and Puget Sound and \$800,000 for EcoINFORMA. Program increases in the National Geospatial Program include \$5.0 million for Lidar collection through the

3-D Elevation Program, \$236,000 for Alaska Mapping, and \$1.9 million for The National Map modernization. Increases are partially offset by reductions in several activities within the Core Science Systems Mission Area.

Science Support – The 2015 budget request includes \$108.3 million for Science Support, a \$2.4 million decrease below the 2014 enacted level. This activity funds the executive, managerial, and accounting activities, information technology, and bureau support services of USGS. The 2015 budget request includes program increases in Administration and Management of \$1.0 million for Youth and Education in Science, \$300,000 for Tribal Science Coordination, \$500,000 for the Mendenhall Program, \$200,000 for Outreach to Underserved Communities, and \$200,000 for Science Coordination. The Science Support activity includes a reduction in Information Services of \$2.3 million for administrative services within USGS.

Facilities – The 2015 budget provides \$106.7 million for Facilities, \$6.3 million above the 2014 enacted level. This activity provides safe, functional workspace, laboratories, and other facilities needed to accomplish the USGS scientific mission. A program increase of \$5.4 million will be used to reduce the facilities footprint of USGS nationwide by consolidating and improving the efficiency of space and real property.

Fixed Costs – Fixed costs of \$6.2 million are fully funded.

SUMMARY OF BUREAU APPROPRIATIONS
(all dollar amounts in thousands)

Comparison of 2015 Request with 2014 Enacted

	2014 Enacted		2015 Request		Change	
	FTE	Amount	FTE	Amount	FTE	Amount
Current						
Surveys, Investigations, and Research.....	5,222	1,032,000	5,204	1,073,268	-18	+41,268
Subtotal, Current.....	5,222	1,032,000	5,204	1,073,268	-18	+41,268
Permanent						
Operations and Maintenance of Quarters.....	0	38	0	34	0	-4
Contributed Funds.....	6	937	6	714	0	-223
Subtotal, Permanent.....	6	975	6	748	0	-227
Reimbursable, Allocation, and Other						
Reimbursable.....	2,787	0	2,787	0	0	0
Allocation.....	36	0	36	0	0	0
Working Capital Fund.....	226	0	226	0	0	0
Subtotal, Reimbursable, Allocation, and Other..	3,049	0	3,049	0	0	0
TOTAL, U. S. GEOLOGICAL SURVEY.....	8,277	1,032,975	8,259	1,074,016	-18	+41,041

HIGHLIGHTS OF BUDGET CHANGES

By Appropriation Activity/Subactivity

APPROPRIATION: Surveys, Investigations, and Research

	2013 Actual	2014 Enacted	2015 Request	Change
Ecosystems				
Status and Trends	20,473	20,473	20,917	+444
Fisheries	20,886	20,886	22,257	+1,371
Wildlife	44,252	44,757	45,123	+366
Environments.....	34,024	36,244	37,538	+1,294
Invasive Species.....	12,080	13,080	17,639	+4,559
Cooperative Research Units	17,371	17,371	18,551	+1,180
Subtotal, Ecosystems	149,086	152,811	162,025	+9,214
Climate and Land Use Change				
Climate Variability	54,809	53,589	71,974	+18,385
Land Use Change	78,386	78,386	77,107	-1,279
Subtotal, Clim. and Land Use Chge.	133,195	131,975	149,081	+17,106
Energy, Minerals, and Environmental Health				
Mineral Resources	45,931	45,931	46,345	+414
Energy Resources	25,970	25,970	26,902	+932
Contaminant Biology.....	8,647	9,647	12,000	+2,353
Toxic Substances Hydrology	9,967	9,967	13,826	+3,859
Subtotal, Energy, Minerals, and Environmental Health	90,515	91,515	99,073	+7,558
Natural Hazards				
Earthquake Hazards	50,753	53,803	54,117	+314
Volcano Hazards	22,721	23,121	23,308	+187
Landslide Hazards	2,985	3,485	3,511	+26
Global Seismographic Network.....	4,853	4,853	4,866	+13
Geomagnetism.....	1,888	1,888	1,905	+17
Coastal and Marine Geology	40,336	41,336	40,632	-704
Subtotal, Natural Hazards	123,536	128,486	128,339	-147
Water Resources				
Groundwater Resources.....	8,348	8,948	11,429	+2,481
National Water Quality Assessment	58,859	58,859	59,090	+231
National Streamflow Info Program	27,701	33,701	35,060	+1,359
Hydrologic Research and Developmt..	10,915	10,915	11,323	+408
Hydrologic Networks and Analysis.....	28,884	28,884	30,423	+1,539
Cooperative Water Program.....	59,474	59,474	59,561	+87
Water Resources Research Act Prog	3,268	6,500	3,500	-3,000
Subtotal, Water Resources.....	197,449	207,281	210,386	+3,105
Core Science Systems				
Science Synthesis, Analysis, and Research Program.....	23,914	24,314	24,439	+125
Nat'l Cooperative Geologic Mapping ..	24,397	24,397	24,533	+136
National Geospatial Program.....	59,332	60,096	60,428	+332
Subtotal, Core Science Systems	107,643	108,807	109,400	+593
Science Support (<i>new name</i>)				
Administration and Management (<i>new name</i>)	86,985	86,985	86,392	-593
Information Services (<i>new name</i>)	23,719	23,719	21,875	-1,844
Subtotal, Science Support (<i>new name</i>).	110,704	110,704	108,267	-2,437

APPROPRIATION: Surveys, Investigations, and Research (continued)

	2013 Actual	2014 Enacted	2015 Request	Change
Facilities				
Rental Payments and Operations and Maintenance	93,141	93,141	99,417	+6,276
Deferred Maintenance and Capital Improvement	6,899	7,280	7,280	0
Subtotal, Facilities	100,040	100,421	106,697	+6,276
TOTAL APPROPRIATION	1,012,168	1,032,000	1,073,268	+41,268

Detail of Budget Changes

	2015 Change from <u>2014 Enacted</u>		2015 Change from <u>2014 Enacted</u>
TOTAL APPROPRIATION	+41,268		
Ecosystems	+9,214	Climate and Land Use Change	+17,106
Status and Trends	+444	Climate Variability	+18,385
Native Pollinators	+300	Climate Adaptation and Resiliency –	
Fixed Costs	+144	Vulnerability Assessment Database	
Fisheries Program	+1,371	and Field Guide	+800
Hydraulic Fracturing	+2,200	Interagency Coordination	+2,250
Fisheries Program Research	-1,000	Translational Science Grants	+3,000
Fixed Costs	+171	Tribal Climate Science Partnerships	+2,500
Wildlife Program	+366	Emerging Science Needs	+2,600
Energy Future and Wildlife Sustainability	+1,000	Grand Challenge	
Wildlife Health	+200	Drought Impacts and Adaptive Mgmt.	+3,000
Wildlife Program Research	-1,200	Climate and Land Cover Change Effects	+2,000
Fixed Costs	+366	Carbon Inventory and Decision	
Environments Program	+1,294	Support Tools	+2,000
Ecosystem Priority		Fixed Costs	+235
California Bay-Delta	+500	Land Use Change	-1,279
Chesapeake Bay	+300	Landsat Science Products for Climate	
Columbia River	+300	and Natural Resources Assessments	+1,500
Puget Sound	+400	Ecosystem Priority: Chesapeake Bay	+500
National Ecosystems Services Framework ...	+1,000	National Civil Applications Program	
Sustaining Environmental Capital	+1,000	Civil Applications Committee	-2,547
Outer Continental Shelf Ecosystems Decisions	+300	Land Change Science Research	-1,000
Wildfire Restoration Ecology	+500	Fixed Costs	+268
Environments Program Research	-3,220	Energy, Minerals, and Environmental Health	+7,558
Fixed Costs	+214	Mineral Resources	+414
Invasive Species	+4,559	Fixed Costs	+414
Brown Treesnakes	+500	Energy Resources	+932
Ecosystem Priority		Hydraulic Fracturing	+950
Everglades	+1,000	Alternative Energy Permitting and Fed. Lands	+1,300
Great Lakes Asian		Oil, Oil Shale, and Gas Assessments	-500
Carp Control Framework	+1,000	Energy Research	-1,000
Upper Mississippi River		Fixed Costs	+182
Asian Carp Control	+1,000	Contaminant Biology	+2,353
New and Emerging Invasives of		Hydraulic Fracturing	+1,400
National Concern	+1,000	Ecosystem Priority	
Fixed Costs	+59	Chesapeake Bay	+100
Cooperative Research Units	+1,180	Columbia River	+100
CRU Scientists for Tomorrow	+1,000	Environmental Impacts of Uranium Mining	+673
Fixed Costs	+180	Fixed Costs	+80

Detail of Budget Changes
Surveys, Investigations, and Research (continued)

	2015 Change from 2014 Enacted		2015 Change from 2014 Enacted
Toxic Substances Hydrology.....	+3,859	Cooperative Water Program	+87
Ecosystem Priority		WaterSMART: Water Use Research.....	+2,000
Chesapeake Bay	+100	Tribes	+1,000
Columbia River.....	+100	Monitoring and Assessments.....	-3,264
Emerging Contaminants and Chem. Mixtures.....	+1,450	Fixed Costs	+351
Environmental Impacts of Uranium Mining.....	+2,500	Water Resources Research Act Program	-3,000
Contaminants in Wastewater Projects	-369	Funding to State Institutes	-3,000
Fixed Costs	+78	Core Science Systems.....	+593
Natural Hazards.....	-147	Science Synthesis, Analysis, and Research	+125
Earthquake Hazards	+314	Hydraulic Fracturing	+185
Hydraulic Fracturing - Induced Seismicity	+700	Ecosystem Priority: EcoINFORMA.....	+800
Geodetic Monitoring and		Big Earth Data Initiative	+2,000
Active-Source Seismic Profiling.....	-700	Bio-Science Data Synthesis.....	-3,000
Fixed Costs	+314	Fixed Costs	+140
Volcano Hazards.....	+187	National Cooperative Geologic Mapping.....	+136
Fixed Costs	+187	Hydraulic Fracturing	+2,000
Landslide Hazards	+26	Glacial Aquifers Project	-2,000
Fixed Costs	+26	Fixed Costs	+136
Global Seismographic Network.....	+13	National Geospatial Program.....	+332
Fixed Costs	+13	Ecosystem Priority	
Geomagnetism.....	+17	Columbia River.....	+350
Fixed Costs	+17	Puget Sound	+450
Coastal and Marine Geology	-704	3-D Elevation Program	+5,000
Coastal Vulnerability Studies.....	-1,000	Alaska Mapping	+236
Fixed Costs	+296	The National Map Modernization	+1,908
Water Resources	+3,105	Land Cover Data.....	-422
Groundwater Resources.....	+2,481	The National Atlas.....	-2,674
WaterSMART		Nation's 133 Largest Urban Areas	-4,082
Nat'l Groundwater Monitoring Network	+2,400	Program Coordination and	
Fixed Costs	+81	Partnership Development	-822
National Water Quality Assessment.....	+231	Fixed Costs	+388
Ecosystem Priority		Science Support (<i>new name</i>)	-2,437
California Bay-Delta.....	+1,000	Admin. and Management (<i>new name</i>)	-593
Chesapeake Bay	+500	Youth and Education in Science	+1,000
Upper Mississippi River	+200	Tribal Science Coordination	+300
Water Quality Monitoring.....	-2,000	Outreach to Underserved Communities.....	+200
Fixed Costs	+531	Mendenhall Program Postdocs	+500
National Streamflow Information Program	+1,359	Science Coordination	+200
Streamgages.....	+1,200	Administrative Services.....	-2,200
Fixed Costs	+159	Fixed Costs	-593
Hydrologic Research and Development.....	+408	Information Services (<i>new name</i>)	-1,844
Hydraulic Fracturing	+901	Administrative Services.....	-2,300
Ecosystem Priority: Puget Sound.....	+200	Fixed Costs	+101
Streamgage Research and Development.....	+700	IT Transformation Fixed Costs	+355
Monitoring and Assessments.....	-1,500	Facilities	+6,276
Fixed Costs	+107	Rental Payments and Operations	
Hydrologic Networks and Analysis.....	+1,539	and Maintenance	+6,276
WaterSMART: State Water Use Grants	+2,000	Operations and Maintenance Efficiencies -	
National Hydrologic Modeling and		Reduce Facilities Footprint.....	+5,365
Groundwater Sustainability.....	+750	Fixed Costs	+911
Watershed Support, Information Delivery,			
and Technical Support	-1,500	Subtotals for Changes Across Multiple Subactivities	
Fixed Costs	+289	Fixed Costs	[+6,200]