U.S. DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

FY 2014 Budget as Presented to Congress

April 2013

Exhibit 1

DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
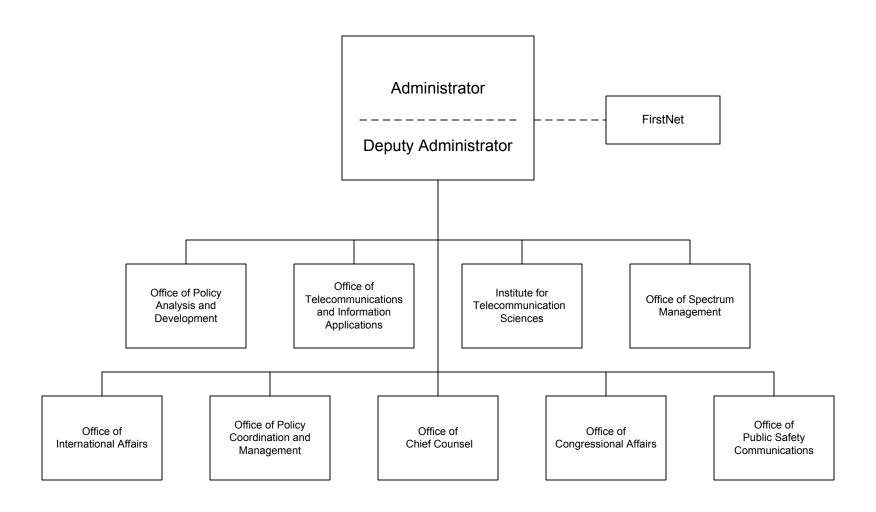**Budget Estimates, Fiscal Year 2014**
Budget as Presented to Congress

Table of Contents

U.S. DEPARTMENT OF COMMERCE

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Administrator

- - - - - - - - - - - - - - - -

Deputy Administrator

FirstNet

- Office of Policy Analysis and Development
- Office of Telecommunications and Information Applications
- Institute for Telecommunication Sciences
- Office of Spectrum Management

- Office of International Affairs
- Office of Policy Coordination and Management
- Office of Chief Counsel
- Office of Congressional Affairs
- Office of Public Safety Communications

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Department of Commerce
National Telecommunications and Information Administration
Fiscal Year 2014 Budget

Executive Summary

The National Telecommunications and Information Administration (NTIA) is responsible by law for advising the President on telecommunications and information policy issues. NTIA's programs and policymaking focus largely on expanding broadband Internet access and adoption in America, expanding the use of spectrum by all users, and ensuring that the Internet remains an engine for continued innovation and economic growth. These goals are critical to America's competitiveness in the 21st century global economy and to addressing many of the nation's most pressing needs, such as improving education, health care, and public safety.

Salaries and Expenses

The NTIA FY 2014 budget request for Salaries and Expenses is $52.1 million, a net increase of $5.2 million from the FY 2013 President's Budget. This net increase is composed of both a reduction in base funding and an increase for a pilot program to facilitate spectrum sharing approaches. This budget request reflects and recognizes the need for sustainable spending within the Federal Government. In FY 2014, NTIA's policy, spectrum management, and research programs will support emerging technologies and uses of spectrum resources for affordable, alternative communications services. Promising technologies and services have the potential to drive the new economy by improving communication and enabling the sharing and application of information resources. The Administration and NTIA support the advancement of information technologies and have moved aggressively to create an economic and regulatory environment in which innovations can flourish.

NTIA seeks a base decrease of $2.2 million and 4 FTEs in Broadband Programs to reflect that most grants funded under the Recovery Act will be in their closeout phase. NTIA will continue to support the oversight of more than $4.2 billion in awarded broadband grants to expand broadband service to communities in a cost-effective manner that maximizes impacts on economic growth, education, health care, and public safety. Because a subset of grants will be closed by the end of FY 2013, NTIA can reduce its level of effort but must continue to manage the remaining grants as they near completion or move into the closeout phase. Significant oversight will continue to be needed in FY 2014 to ensure successful project completion and the recovery of unused funds in the closeout process.

NTIA will continue to promote the Internet as a key driver in the creation of enterprises and communities. In order to maintain the United States' leadership role for this dynamic sector, NTIA will direct and coordinate Federal activities to address important policy issues threatening the expansion of Internet commerce, such as cybersecurity, online copyright protection, and user privacy. NTIA will address these issues by advancing multistakeholder governance in a concrete and tangible way. NTIA will bring stakeholders together to develop approaches on domestic policy issues that promote consensus and result in voluntary, enforceable codes of conduct. Resolution of these issues will empower consumers, protect on-line transactions, and create new opportunities for economic growth.

In formulating and executing the country's international information and communications technology strategies, NTIA will strive to improve market access for U.S. industry, promote access to and use of information and communications technologies by U.S. commercial

interests, and support U.S. foreign policy goals such as improved economic development and promotion of U.S. national security interests through access to and use of such technologies. NTIA will continue to work toward international recognition of Internet policy-making principles that support transparency and accountability and promote the global free flow of information on the Internet.

NTIA will continue to support wireless broadband access and implementation of the President's 2010 Executive Memorandum, which charged NTIA and the Federal Communications Commission (FCC) with identifying and making available 500 MHz of Federal and non-Federal spectrum suitable for both mobile and fixed wireless broadband use during the next 10 years. NTIA will continue to analyze, identify, monitor, and report on making the 500 MHz available. To address the ever-growing demand for spectrum, NTIA will work with representatives from industry and other Federal agencies to explore opportunities for developing new spectrum access approaches and technologies, including options for sharing spectrum.
NTIA's Institute for Telecommunication Sciences is the only Federal telecommunications laboratory capable of providing NTIA, Federal agencies, and the telecommunications industry with impartial and technically sound measurement data and propagation models. The laboratory will continue to perform research and engineering to address telecommunications, information technology, and security issues for NTIA; other Federal agencies; state, local, and tribal governments; and the private sector.

The sharing of spectrum bands is perceived as a promising option for gaining greater functionality from the spectrum. Assessing spectrum sharing opportunities requires better data and analysis techniques than are available today which focus on the nature and extent of current spectrum usage. NTIA requests $7.5 million for a pilot program to better document spectrum usage and provide data which could facilitate research into new spectrum management approaches. NTIA will develop, validate, and field a prototype spectrum monitoring system to assess spectrum-sharing technologies. The system will include a network of radiofrequency (RF) sensors and a centralized database for storing and retrieving spectrum usage information. Spectrum policy makers, researchers and other stakeholders will use the data to investigate the feasibility of new spectrum sharing approaches in key Federal and non-Federal bands.

Public Safety -- Mandatory

The Middle Class Tax Relief Act of 2012, P.L.112 -96, provided funding of up to $7 billion to establish a nationwide interoperable public safety broadband network. The investment will be fully offset by proceeds from spectrum auctions to be conducted by the Federal Communications Commission and deposited in the Public Safety Trust Fund (PSTF). The Act authorizes NTIA to borrow up to $2 billion from Treasury prior to the deposit of spectrum auction proceeds into the PSTF for the establishment of the First Responder Network Authority (FirstNet), and to begin establishment of the nationwide public safety broadband network.

The Act also provided $135 million for a grant program to make grants to States to help State, regional, tribal and local jurisdictions to identify, plan and implement the most efficient and effective way for such jurisdictions to utilize and integrate the infrastructure, equipment, and other architecture associated with the nationwide public safety broadband network. The Act authorizes NTIA to borrow up to $135 million from Treasury to implement this program prior to the deposit of spectrum auction proceeds into the PSTF.

Public Television Facilities Planning and Construction Program

The Public Telecommunications Facilities Planning and Construction Program was terminated in FY 2011. NTIA will continue to close out the grants using recoveries and unobligated balances of funds available in FY 2012 until all open grants have expired.

NTIA will continue to explore opportunities for managing its programs as effectively and efficiently as possible by reducing administrative costs and making investments that will reduce future costs. Efforts include working with other Department bureaus on shared information technology services; pursuing more competitive contracting practices, reducing consumption of paper and supplies, and focusing on human capital management.

Summary

The Department of Commerce and NTIA have great responsibilities in FY 2014 and beyond: playing a leadership role in the fast-growing broadband and Internet world, managing a $4.2 billion grant portfolio, creating opportunities through the astute management of the nation's spectrum resources, and building a new network to support the nation's first responders in managing critical situations. This budget sets forth a realistic plan to manage NTIA's responsibilities while recognizing the need for thoughtful, sustainable Federal spending.

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2014 Annual Performance Plan Formulation
National Telecommunications and Information Administration

Section 1 Agency Information

National Telecommunications and Information Administration

The National Telecommunications and Information Administration (NTIA) serves as the President's principal adviser on telecommunications and information policy matters and develops forward-looking spectrum policies that ensure efficient and effective spectrum access and use.

NTIA manages all spectrum use by Federal departments and agencies and examines how the radio frequency spectrum is used and managed in the United States. A significant part of NTIA's policy activities is devoted to making spectrum use more efficient. Both domestically and internationally, NTIA will foster and encourage innovation and growth in telecommunications and information services, promote broadband deployment, and advance the Administration's positions on policy issues affecting the Internet, including Internet governance and adoption. NTIA's research laboratory, the Institute for Telecommunication Sciences (ITS), will perform telecommunications research, conduct cooperative research and development with U.S. industry and academia, and provide technical engineering support to NTIA and to other Federal agencies. NTIA also manages $4.2 billion in grants to promote the availability and adoption of broadband and Internet technology. In addition, NTIA will house FirstNet, an independent authority charged with overseeing the deployment of a nationwide wireless broadband network for public safety. NTIA's policy, spectrum management, and research programs will support emerging technologies and uses of spectrum resources for affordable, alternative communications services.

Section 2 Cross-Agency Priority Goals
NTIA is not a leader of or a participant in any Cross-Agency Priority Goals.

Section 3 Corresponding DOC Themes

ECONOMIC GROWTH -- INNOVATION AND ENTREPRENEURSHIP GOAL: Develop the tools, systems, policies, and technologies critical to transforming our economy, fostering U.S. competitiveness, and driving the development of new businesses. In carrying out its diverse

programs and services, NTIA uses a multi-stakeholder approach to lead U.S. policymakers and regulators, governments around the world (including divisions of the United Nations), and industry in addressing spectrum, Internet, and telecommunications issues. NTIA also appears before the FCC, which is a regulatory agency, to present the Administration's views on spectrum, telecommunications, and information matters. NTIA focuses on public policies that impact how Americans access and use the Internet, wireline and wireless telephony, mass media, and video services. Specific issues include: developing policies and programs to ensure that all Americans have access to broadband services; protecting online privacy; ensuring the continued open global Internet; and facilitating competition in the telecommunications and information industries.

***ECONOMIC GROWTH -- *TRADE PROMOTION AND COMPLIANCE GOAL:** Improve our global competitiveness and foster domestic job growth while protecting American security.

NTIA formulates and promotes national telecommunications and information policies for presentation in multilateral and international organization settings. NTIA also engages in advocacy directly with counterparts in foreign governments and the European Union. NTIA draws on its extensive policy and technical expertise to support U.S. negotiators and interagency delegations in strategic international forums.

NTIA represents the spectrum-related interests of the Executive Branch and Federal agencies, as well as the interests of the United States as a whole, abroad. In doing so, NTIA works closely with the Department of State, the Federal Communication Commission, and other Federal agencies.

Many activities involve the International Telecommunication Union (ITU), the United Nation's specialized agency responsible for information and communications technologies (ICT). The United States is one of 193 Member States of the ITU. Every three to four years, the ITU convenes a World Radiocommunication Conference (WRC) to revise the international Radio Regulations, an important international treaty that governs the use of the radio frequency spectrum from the ground and from space, and provides for the allocation of frequency bands to radiocommunication services. The Radio Regulations also set technical and regulatory conditions to promote interference-free operations. NTIA leads Federal preparations for WRCs and advances U.S. positions in regional organizations such as the Inter-American Telecommunication Commission (CITEL).

SCIENCE AND INFORMATION THEME and GOAL: Generate and communicate new, cutting-edge scientific understanding of technical, economic, social, and environmental systems.

The Institute for Telecommunication Sciences (ITS) in Boulder, CO, is NTIA's research and engineering laboratory. ITS provides technical support to NTIA in advancing telecommunications infrastructure development, improving U.S. telecommunications trade opportunities, and promoting more efficient and effective use of the radio spectrum. On a reimbursable basis, NTIA's laboratory also serves as a principal Federal resource for addressing the telecommunications, information technology (IT), and security challenges of other Federal agencies and state, local, and tribal governments.

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National Telecommunications and Information Administration

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<u>Section 4 Strategic Objectives – includes management challenges</u>

Objective 4.   Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system, and support e-commerce.

NTIA serves as the President's primary policy advisor on domestic and international telecommunications and information issues and acts as the Administration's primary voice on them. NTIA fulfills this role in a number of ways: by advocating globally for foreign regulatory and policy regimes that encourage competition and innovation; preparing and issuing special reports on topics of broad interest; providing the Administration's views on actions proposed by the Federal Communications Commission (FCC) and Federal Trade Commission (FTC); issuing requests for public input on specific issues; and encouraging dialogue with the private sector through sponsorship and participation in conferences, workshops, and other multistakeholder forums. NTIA also directly benefits the American public by promoting universal, affordable availability of advanced telecommunications such as broadband and wireless services and Internet-related technologies and by facilitating national and homeland security, public safety, and scientific research. NTIA also supports a new program to create a public safety wireless broadband network that will permit interoperability of public safety equipment nationwide, using spectrum in the 700 MHz band. The program will be offset by new spectrum auctions.

Additionally, NTIA participates on behalf of the Administration in other proceedings related to telecommunications and information policy, including Internet governance, domain name management, and the core issues of privacy policy, child protection, freedom of expression, and cybersecurity. All of these activities engage other government agencies, both in the Department of Commerce and throughout the Federal government, as well as Internet constituencies in the commercial world, civil society, and academia. All of these activities require substantial coordination among NTIA's program offices, as well as interagency coordination to develop the Administration's positions.

U.S. policies must ensure that radio spectrum is used efficiently and fairly to promote the best interests of the public. Current spectrum management policies are under increasing strain as the demand for existing spectrum-based services grows and new spectrum-related technologies and applications emerge. The nation's spectrum policies must keep pace with new technologies and demands on existing resources, while ensuring that essential government missions are maintained. Under the National Wireless Initiative, NTIA and the FCC will seek to identify and make available 500 MHz of Federal and non-Federal spectrum suitable for both mobile and fixed wireless broadband use by 2020. NTIA will work in conjunction with the FCC in recovering and reallocating spectrum, updating 20th century spectrum policies, and providing adequate incentives and assistance to enable Federal agencies or affected entities to make 500 MHz in bandwidth available.

NTIA's Broadband Programs serve and monitor recipients of grants from the Broadband Technology Opportunities Program and the State Broadband Data and Development Program, which originated from the receipt of $4.7 billion through the American Recovery and Reinvestment Act of 2009 (Recovery Act, Public Law No. 111-5). The grants were awarded for broadband initiatives throughout the United States, to improve broadband services in areas of the Nation not adequately served, to encourage broadband adoption, and to develop a map of broadband services in the United States. In FY 2014, NTIA will continue to administer the BTOP grants through their completion and Federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband

adoption projects. Although most grants will be in the closeout phase, NTIA's oversight responsibilities will remain significant. In addition to administering the grants from NTIA's Broadband Programs, NTIA will continue to update and manage the national map of broadband availability. NTIA plans to award new grants to the 50 States, the District of Columbia, and the U.S. Territories to continue to collect, validate, and submit broadband availability data. Under the new grants, recipients will submit data to NTIA on an annual basis, which is a reduction from the semiannual submissions funded under the Recovery Act. NTIA merges this information into a national dataset and makes it available via multiple means, including the National Broadband Map, different types of downloadable files, and through an Application Programming Interface (API).

Objective 11. Develop and influence international standards and policies to support the full and fair competitiveness of the U.S. information and communications technology sector.

As the President's primary policy advisor on domestic and international telecommunications and information issues, NTIA advocates globally for foreign regulatory and policy systems that encourage competition and innovation and by encouraging dialogue with the private sector through sponsorship and participation in conferences, workshops, and other forums. NTIA pursues policies promoting international trade in telecommunications products and services, promoting consistent international approaches to telecommunications policies, and improving relations with countries with rapidly expanding markets.

NTIA is responsible for coordinating the Federal government's participation in the International Telecommunication Union's World Radiocommunication Conference in 2015 (WRC-15) and related national and international meetings. NTIA works with the FCC, which represents the civil spectrum community, and the State Department, to create United States Preliminary Views and Proposals for the WRCs. The conference in 2015 will consider spectrum requirements for uses ranging from mobile service allocations for broadband applications to controlling unmanned aircraft from space.

The United States was successful in achieving an agenda item at the WRC for potential new mobile broadband spectrum to support the President's 500 MHz Initiative. Expanded wireless broadband access will trigger the creation of innovative new businesses, provide cost-effective connections in rural areas, increase productivity, improve public safety, and allow for the development of mobile telemedicine, telework, distance learning, and other new applications that will transform Americans' lives.

NTIA will give a great deal of focus to this agenda item to ensure U.S. manufacturers have sufficient harmonized international spectrum to realize economies of scale for emerging technologies. Spectrum and the new technologies that it enables also are essential to the Federal Government. As the wireless broadband revolution unfolds, innovation can enable efficient and imaginative uses of spectrum to maintain and enhance the Government's capabilities.

Objective 13. Increase scientific knowledge and provide information to stakeholders to support economic growth and to improve innovation, technology, and public safety.

In addition to its policy-related activities, NTIA supports innovative telecommunications and information technologies through basic research performed at its laboratory, the Institute for Telecommunication Sciences (ITS). ITS performs extensive basic research on quality of digital speech, audio and video compression, and transmission characteristics. This research has the

potential to improve both the performance of telecommunications networks and the availability of digital content on the Internet. ITS research also supports U.S. positions in international standards-setting bodies and NTIA's development of Administration policies related to the introduction of new technologies.

Major Management Challenges. NTIA's responsibilities in FY 2014 and beyond include creation of economic potential through astute management of the Nation's spectrum resources, and a leadership role in the fast-growing broadband and Internet world. Significant NTIA resources will also be devoted to ensuring the safety, stability, and security of the Internet via advocacy with regard to Internet governance and cybersecurity, both domestically and internationally.

The Secretary of Commerce established Internet policy issues as a top priority. The Internet Policy Task Force, for which NTIA is the expert convener, will identify leading public policy and operational challenges in the Internet environment. The Task Force leverages expertise across many bureaus, including those responsible for domestic and international information and communications technology policy, international trade, cyber security standards and best practices, intellectual property, business advocacy, and export control.

Under the National Wireless Initiative, NTIA will support efforts to make spectrum available for fixed and mobile wireless broadband. The President directed that adequate funding and incentives be provided to accomplish these actions. This includes efforts to improve spectrum sharing between Federal and non-Federal users as a means of improving spectrum efficiency.

Section 5 Performance Goals and Other Indicators

Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system, and support e-commerce.						
Measure: Update the Spectrum Inventory first established in FY2011	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Actual**	**FY 2013 Target**	**FY 2014 Target**
	New	New	Completed initial version of Spectrum Inventory	Completed Spectrum Inventory Update	Discontinued	Discontinued

Description: NTIA will maintain a Spectrum Inventory and other information that describe Executive Branch spectrum use. The spectrum inventory is needed to inform spectrum-management policy decision-makers and technology innovators. System characteristics and assignment data will be used to determine spectrum/geographic areas that are underutilized or vacant. NTIA will continue to maintain the Inventory, but is converting this GPRA measure to an internal measure.

Comments on Changes to Targets: N/A

Relevant Program Change(s): N/A	**Title:** N/A	**Exhibit 13 Page no:** N/A

Validation and Verification

Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
NTIA Office of Spectrum Management (OSM)	Monthly, Annually	OSM, Associate Administrator	NTIA document clearance process, IRAC clearance process, OMB/Interagency clearance process	Need to protect sensitive and classified data	None

Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system, and support e-commerce.

Measure: Identify up to 500 MHz of spectrum to support commercial broadband services or products	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Target	FY 2014 Target
	New	New	New	Exceeded goal of 66% by achieving 85% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband

Description: NTIA is undertaking tasks in collaboration with the FCC to make available a total of 500 MHz (in bandwidth) of spectrum to support wireless broadband services or products over the next 10 years. The Ten-Year Plan and Timetable, developed with input from other Federal agencies and the FCC, identifies over 2,200 MHz of spectrum for evaluation, establishes a process for evaluating these candidate bands and lays out the steps necessary to potentially make the selected spectrum available for wireless broadband services. This work will also include regular progress reports. The Ten-Year Plan includes annual milestones to be achieved in order to complete this complex project.

Comments on Changes to Targets: N/A

Relevant Program Change(s): N/A	Title: N/A		Exhibit 13 Page no: N/A

Validation and Verification					
Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
NTIA Office of Spectrum Management (OSM)	Monthly, Annually	OSM, Associate Administrator	NTIA document clearance process, OMB/Interagency clearance process	None	None

Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system and support e-commerce.						
Measure: In coordination with DOC operating units, conduct outreach activities with government, industry and multistakeholder groups to identify and address privacy and global free flow of information issues	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Target**	**FY 2013 Target**	**FY 2014 Target**
	New	New	New	New	New	6 public forums and proceedings

Description: Stakeholders from industry, consumer groups, government, academia, and the technical community will work toward crafting a consensus on privacy and global free flow of information issues. NTIA will seek public input and comments to lay the groundwork for these challenges. NTIA's role is not to substitute its judgment for the views of stakeholders, but will ensure the process is open, transparent, and consensus-based, leading to the achievement of consensus on at least one policy issue by the end of FY 2014.

Comments on Changes to Targets: NA

Relevant Program Change(s): NA	**Title:** NA		**Exhibit 13 Page no:** NA

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<tr><th>Data Source</th><th>Frequency</th><th>Data Storage</th><th>Internal Control Procedures</th><th>Data Limitations</th><th>Actions to be Taken</th></tr>
<tr><td>Office of Policy Analysis and Development</td><td>Quarterly</td><td>NTIA website</td><td>Inspection of data</td><td>None</td><td>None</td></tr>
</table>

Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system and support e-commerce.						
Measure: Miles of broadband networks deployed (Infrastructure Projects)	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Actual**	**FY 2013 Target**	**FY 2014 Target**
	New	New	29,191 miles	78,120 miles	100,000 miles	110,000 miles

Description: BTOP funded projects that provide broadband service in unserved areas and enhance broadband service in underserved areas of the United States. The BTOP portfolio of projects initially included 123 infrastructure projects totaling $3.5 billion in Federal grant funds to construct broadband networks and to connect "community anchor institutions" such as schools, libraries, hospitals, and public safety facilities. This measure's target is the cumulative total number of miles of network (e.g., fiber, microwave) deployed using BTOP funding. The Recovery Act provided all funding for BTOP grants. Infrastructure projects are scheduled to be substantially completed by the end of FY 2013. In FY 2014, NTIA will continue to administer the BTOP grants through their completion and Federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband adoption projects.

Comments on Changes to Targets: NA

Relevant Program Change(s): NA	**Title:** NA	**Exhibit 13 Page no:** NA

Validation and Verification						

Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
Grantee reports	Quarterly	BTOP Post-Award Management (PAM) Tool	Inspection of data, site visits	Reporting errors on the part of grantees	Collection of data

Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system and support e-commerce.

Measure: Community anchor institutions connected (Infrastructure Projects)	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Actual**	**FY 2013 Target**	**FY 2014 Target**
	New	New	4,163	11,240	18,000	24,000

Description: The Recovery Act places a high priority on deploying and enhancing broadband capabilities for community anchor institutions such as libraries, hospitals, schools, and public safety entities. The BTOP portfolio of projects initially included 123 infrastructure projects totaling $3.5 billion in Federal grant funds to construct broadband networks and to connect "community anchor institutions" such as schools, libraries, hospitals, and public safety facilities. This measure's target is the cumulative total number of anchor institutions connected with new or improved broadband capabilities. The Recovery Act provided all funding for BTOP grants. Infrastructure projects are scheduled to be substantially completed by the end of FY 2013. In FY 2014, NTIA will continue to administer the BTOP grants through their completion and Federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband adoption projects.

Comments on Changes to Targets: NA					

Relevant Program Change(s): NA	Title: NA				Exhibit 13 Page no: NA

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Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system and support e-commerce.

Measure: New and upgraded public computer workstations (Public Computer Centers Projects)	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Target	FY 2014 Target
	New	New	24,512	38,654	37,500	Discontinued

Description: BTOP grants funded expansion of public computer-center capacity. The BTOP portfolio of projects initially included 66 public computer center (PCC) projects totaling $201 million in Federal grant funds to provide access to broadband, computer equipment, computer training, job training, and educational resources to the public and specific vulnerable populations. This measure's target is the cumulative total number of new and improved computer workstations funded through the BTOP Public Computer Centers category of funding. The Recovery Act provided all funding for BTOP grants. Public Computer Center projects are scheduled to be substantially completed by the end of FY 2013. In FY 2014, NTIA will continue to administer the BTOP grants through their completion and Federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband adoption projects.

Comments on Changes to Targets: NA					

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Objective 4 – Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system and support e-commerce.

Measure: New household and business subscribers to broadband (Sustainable Broadband Adoption Projects)	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Target	FY 2014 Target
	New	New	230,755	522,981	600,000	Discontinued

Description: The BTOP portfolio of projects initially included 44 sustainable broadband adoption (SBA) projects totaling $250.7 million in Federal grant funds to support innovative projects that promote broadband adoption, especially among vulnerable population groups where broadband technology traditionally has been underutilized. This measure's target is the cumulative total number of new household and business subscribers to broadband generated by projects funded through the BTOP Sustainable Broadband Adoption category of funding, as reported by awardees. Sustainable Broadband Adoption projects are scheduled to be substantially completed by the end of FY 2013. In FY 2014, NTIA will continue to administer the BTOP grants through their completion and Federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband adoption projects.

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Grantee reports	Quarterly	BTOP Post-Award Management (PAM) Tool	Inspection of data, site visits	Reporting errors on the part of grantees	Collection of data

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Objective 11 – Develop and influence international standards and policies to support the full and fair competitiveness of the U.S. information and communications technology sector.

Measure: 75% of NTIA positions substantially adopted or successful at international	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Target	FY 2014 Target

meetings						
	New	New	Exceeded target of 75 % by meeting 95% of NTIA positions substantially adopted/ successful at international meetings	>80% of NTIA positions substantially adopted/ successful at international meetings	75% of NTIA positions substantially adopted/ successful at international meetings	75% of NTIA positions substantially adopted/ successful at international meetings

Description: NTIA will develop and provide the Federal Government's positions and proposals necessary for technical and policy forums and meetings. This measure encompasses the completion of technical studies and preparation of draft proposals representing Federal agency views to prepare the U.S. proposals to WRC-15. NTIA also will promote acceptance of U.S. positions and proposals internationally by representing U.S. interests at regional telecommunications meetings, bilateral meetings, and conferences.

Comments on Changes to Targets: N/A

Relevant Program Change(s): N/A	**Title:** N/A	**Exhibit 13 Page no:** N/A

Validation and Verification

Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
NTIA Office of Spectrum Management (OSM), Office of International Affairs (OIA)	Monthly, Annually	OSM, OIA, Associate Administrators	NTIA document clearance process, OMB/Interagency clearance process	None	None

Objective 13 – Increase scientific knowledge and provide information to stakeholders to support economic growth and to improve innovation, technology, and public safety.

Measure: Annual Progress Report on the Test-Bed	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Actual**	**FY 2013 Target**	**FY 2014 Target**

		New	New	Published Annual Report	Published Annual Report	Discontinued	Discontinued

Description: NTIA, in coordination with the Federal Communications Commission (FCC) and other Federal agencies, has established a Spectrum Sharing Innovation Test-Bed (Test-Bed) pilot program to examine the feasibility of increased sharing between Federal and non-Federal users. NTIA will continue to publish an Annual Progress Report on the Test-Bed but is converting this GPRA measure to an internal measure.

Comments on Changes to Targets: N/A

Relevant Program Change(s): N/A	**Title:** N/A	**Exhibit 13 Page no:** N/A

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Validation and Verification

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Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
NTIA Office of Spectrum Management	Monthly, Annually	OSM, Associate Administrator	NTIA document clearance process, OMB/Interagency clearance process	None	None

Objective 13 – Increase scientific knowledge and provide information to stakeholders to support economic growth and to improve innovation, technology, and public safety.

Measure: Number of research publication abstracts viewed annually on the ITS website	**FY 2009 Actual**	**FY 2010 Actual**	**FY 2011 Actual**	**FY 2012 Actual**	**FY 2013 Target**	**FY 2014 Target**
	New	New	New	New	New	2,000 views

Description: The Institute for Telecommunication Sciences (ITS) is the research and engineering laboratory of NTIA. ITS supports NTIA by performing the research and engineering that enables the U.S. Government, national and international standards organizations, and many aspects of private industry to manage the radio spectrum and ensure that innovative, new technologies are recognized and effective. ITS' telecommunications engineering research publications are used by engineers and scientists for technical data and information to support these activities.

Comments on Changes to Targets: N/A

Relevant Program Change(s): N/A	**Title:** N/A	**Exhibit 13 Page no:** N/A

Validation and Verification					
Data Source	Frequency	Data Storage	Internal Control Procedures	Data Limitations	Actions to be Taken
ITS	Quarterly, Annually	ITS web logs	Inspection	None	None

Section 6 Resource Requirements (Dollars in Thousands)

Objective 4: Drive innovation by supporting an open global internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system, and support e-commerce.

	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 CR (Annualized)	FY 2014 Base	Increase/ Decrease	FY 2014 Request
Salaries & expenses	$27,096	$30,145	$59,333	$56,390	$69,602	$59,363	$5,699	$65,062
Domestic and international policies	3,211	3,578	4,118	4,493	4,049	4,046	740	4,785
Spectrum management	23,178	25,826	32,576	26,804	38,584	28,192	(744)	27,447
Telecommunication sciences research	708	741	842	702	1,167	742	(97)	645
Broadband Programs	0	0	21,796	24,390	25,803	26,384	(1,699)	24,685
Spectrum Pilot	0	0	0	0	0	0	7,500	7,500
Digital Television Transition and Public Safety Fund	593,842	54,059	57,955	18,555	(4,300)	0	0	0
Broadband Technology Opportunities Program (ARRA)	77,477	4,287,827	0	0	0	0	0	0
Grants	325	4,248,380	0	0	0	0	0	0
Program management	77,152	39,447	0	0	0	0	0	0
Digital To Analog Converter Box Program (ARRA)	418,341	1,258	0	0	0	0	0	0
Public Telecommunications Facilities, Planning, and Construction	20,943	22,914	1,210	1,298	(2,750)	0	0	0
Grants	19,005	21,182	0	0	0	0	0	0
Program management	1,938	1,732	1,210	1,298	(2,750)	0	0	0
Information Infrastructure Grants	205	101	170	64	(684)	0	0	0
Grants	0	0	0	0	0	0	0	0
Program management	205	101	170	64	(684)	0	0	0
Funding	1,137,904	4,396,304	118,668	76,307	61,868	59,363	5,699	65,062
FTE	144	179	168	166	151	169	(4)	165

Objective 11: Develop and influence international standards and policies to support the full and fair competitiveness

	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 CR (Annualized)	FY 2014 Base	Increase/ Decrease	FY 2014 Request
Salaries & expenses	1,714	1,910	2,278	2,242	2,421	2,132	226	2,357
Domestic and international policies	1,070	1,193	1,373	1,498	1,350	1,349	247	1,595
Spectrum management	644	717	905	745	1,072	783	(21)	762
Telecommunication sciences research	0	0	0	0	0	0	0	0
Funding	1,714	1,910	2,278	2,242	2,421	2,132	226	2,357
FTE	8	8	9	10	11	11	0	11

Objective 13: Increase scientific knowledge and provide information to stakeholders to support economic growth and to improve innovation, technology, and public safety.

	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 CR (Annualized)	FY 2014 Base	Increase/ Decrease	FY 2014 Request
Salaries & expenses	21,821	23,412	27,760	23,025	36,102	24,275	(2,116)	22,159
Domestic and international policies	0	0	0	0	0	0	0	0
Spectrum management	8,370	9,326	11,764	9,679	13,933	10,180	(269)	9,911
Telecommunication sciences research	13,451	14,086	15,996	13,346	22,168	14,094	(1,847)	12,247
Funding	21,821	23,412	27,760	23,025	36,102	24,275	(2,116)	22,159
FTE	110	111	108	115	121	121	(1)	121

Grand Total

	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 CR (Annualized)	FY 2014 Base	Increase/ Decrease	FY 2014 Request
Salaries & expenses	50,631	55,467	89,370	81,657	108,125	85,769	3,809	89,578
Domestic and international policies	4,281	4,770	5,491	5,991	5,398	5,394	$986	6,380
Spectrum management	32,191	35,870	45,245	37,228	53,589	39,155	($1,034)	38,121
Telecommunication sciences research	14,159	14,827	16,838	14,048	23,335	14,836	($1,944)	12,892
Broadband Programs	0	0	21,796	24,390	25,803	26,384	($1,699)	24,685
Spectrum Pilot	0	0	0	0	0	0	$7,500	7,500
Digital Television Transition and Public Safety Fund	593,842	54,059	57,955	18,555	(4,300)	0	0	0
Broadband Technology Opportunities Program (ARRA)	77,477	4,287,827	0	0	0	0	0	0
Grants	325	4,248,380	0	0	0	0	0	0
Program management	77,152	39,447	0	0	0	0	0	0
Digital To Analog Converter Box Program (ARRA)	418,341	1,258	0	0	0	0	0	0
Public Telecommunications Facilities, Planning, and Construction	20,943	22,914	1,210	1,298	(2,750)	0	0	0
Grants	19,005	21,182	0	0	0	0	0	0
Program management	1,938	1,732	1,210	1,298	(2,750)	0	0	0
Information Infrastructure Grants	205	101	170	64	(684)	0	0	0
Grants	0	0	0	0	0	0	0	0
Program management	205	101	170	64	(684)	0	0	0
Total Funding	1,161,439	4,421,626	148,705	101,574	108,125	85,769	$3,809	89,578
Direct	534,814	4,331,796	44,246	46,457	45,847	46,485	$5,637	52,122
Reimbursable	32,783	35,771	46,504	36,562	62,278	39,284	($1,828)	37,456
Mandatory	593,842	54,059	57,955	18,555	(4,300)	0	$0	0
Total FTE	262	298	285	269	302	302	7	309

Section 7 Agency Priority Goals / Measures

Measure: Identify up to 500 MHz of spectrum to support commercial broadband services or products.
Measure: In coordination with DOC operating units, conduct outreach activities with government, industry, and multistakeholder groups to identify and   address privacy and global free flow of information issues.
Measure: Collect data on delivered speeds and performance of broadband networks and make data available to facilitate informed competitive service choices.
Measure: 75% of NTIA positions substantially adopted or successful at international meetings.
Measure: Number of research publication detail pages viewed per quarter.

Section 8 Other Information

Management reviews - The performance plans that are used to assess NTIA's organizational performance provide the basis for the performance ratings of the Senior Executive Service (SES) managers. The Department gives NTIA an annual organizational assessment that NTIA management considers for the final SES ratings. The SES ratings provide a qualitative basis for assessments for the performance ratings of the subordinate General Schedule and Commerce Alternative Personnel System (CAPS) staff. The SES, GS, and CAPS performance management systems are structured with cascaded organizational goals that are linked to the critical performance elements in each employee's performance plan.

The SES performance plans have critical performance elements that are tied to the Department's human capital program. The supervisory GS and CAPS positions also have critical performance elements that are linked to human capital program objectives. These performance measures are used to advance the Department's and NTIA's human capital goals.

Cross-Agency collaborations - NTIA is collaborating with the Federal Communications Commission to make available a total of 500 megahertz of Federal and non-Federal spectrum over the next 10 years for mobile and fixed wireless broadband use. NTIA is collaborating with the Federal Communications Commission and the State Department to prepare the U.S. proposals to WRC-15.

Data Validation and Verification - The FY 2012 Performance and Accountability Report includes in the Secretary's Statement, an assessment of the reliability and completeness of the Department's performance data.

Lower-Priority Program Activities - Lower-priority program activities for FY 2013 can be found in The Cuts, Consolidations and Savings volume of the FY 2013 President's budget, available at: http://www.whitehouse.gov/omb/budget/CCS.

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Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
FY 2013 President's Budget	147	147	$45,847	$45,847
less: Obligations from prior years	0	0	0	0
plus: 2014 adjustments to base	0	0	638	638
				0
2014 Base	147	147	46,485	46,485
Administrative Savings (amount reinvested)			[38]	[38]
plus: 2014 program changes	14	7	5,637	5,637
2014 Estimate	161	154	52,122	52,122

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies	Pos/BA	26	$5,365	26	$5,398	26	$5,394	33	$6,380	7	$986
	FTE/Obl.	26	5,991	26	5,398	26	5,394	31	6,380	5	986
Spectrum management..	Pos/BA	32	7,486	32	7,532	32	7,671	32	7,214	0	(457)
	FTE/Obl.	32	7,545	32	7,532	32	7,671	32	7,214	0	(457)
Wireless Broadband Access	Pos/BA	0	0	0	0	0	0	7	1,251	7	1,251
	FTE/Obl.	0	0	0	0	0	0	5	1,251	5	1,251
Telecommunication sciences research....................	Pos/BA	49	7,071	49	7,114	49	7,036	42	5,092	(7)	(1,944)
	FTE/Obl.	37	7,169	49	7,114	49	7,036	42	5,092	(7)	(1,944)
Broadband Programs……………………………………	Pos/BA	40	25,646	40	25,803	40	26,384	36	24,685	(4)	(1,699)
	FTE/Obl.	40	24,390	40	25,803	40	26,384	36	24,685	(4)	(1,699)
Spectrum Monitoring Pilot Program……………………	Pos/BA	0	0	0	0	0	0	11	7,500	11	7,500
	FTE/Obl.	0	0	0	0	0	0	8	7,500	8	7,500
TOTALS..	Pos/BA	147 *	45,568	147	45,847	147	46,485	161	52,122	14	5,637
	FTE/Obl.	135 *	45,095	147	45,847	147	46,485	154	52,122	7	5,637
Adjustments to Obligations:											
Recoveries/Refunds....................................			(224)		0		0		0		0
Unobligated Balance, start of year…………………..			(2,008)		0		0		0		0
Unobligated Balance, end of year........................			2,647		0		0		0		0
Unobligated Balance expiring................................			58		0		0		0		0
Financing from transfers:											
Transfer from DOC Census (-)…………………………			0		0		0		0		0
Transfer to other accounts (+).....................................			0		0		0		0		0
Wireless Broadband Access (500 MHz)...............................											
Appropriation..			45,568		45,847		46,485		52,122		5,637

* FTE totals different from totals reported in MAX due to updated calculations after MAX locked.

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Exhibit 6

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Reimbursable projects											
Telecommunication Sciences Research…………..	Pos/BA	45	$0	45	$0	45	$0	45	$0	0	$0
	FTE/Obl.	45	6,879	45	16,221	45	7,800	45	7,800	0	0
Other...	Pos/BA	1	0	1	0	1	0	1	0	0	0
	FTE/Obl.	1	1,230	1	800	1	800	1	800	0	0
Total, Reimbursable projects..................................	Pos/BA	46	0	46	0	46	0	46	0	0	0
	FTE/Obl.	46	8,109	46	17,021	46	8,600	46	8,600	0	0
Spectrum Fees											
Spectrum Management………………………………	Pos/BA	109	0	109	0	109	0	109	0	0	0
	FTE/Obl.	83	28,453	109	45,257	109	30,684	109	28,856	0	(1,828)
Total, Spectrum fees...	Pos/BA	109	0	109	0	109	0	109	0	0	0
	FTE/Obl.	83	28,453	109	45,257	109	30,684	109	28,856	0	(1,828)
Total, Reimbursable Obligations……………………	Pos/BA	155	0	155	0	155	0	155	0	0	0
	FTE/Obl.	129	36,562	155	62,278	155	39,284	155	37,456	0	(1,828)

Exhibit 7

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by budget program	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Total Obligations...	**$81,657**	**$108,125**	**$85,769**	**$89,578**	**$3,809**
Offsetting collections from:					
Federal funds..	(36,062)	(61,778)	(38,784)	(36,956)	1,828
Non-Federal sources...................................	(500)	(500)	(500)	(500)	0
Recoveries/Refunds..	(224)	0	0	0	0
Unobligated balance, start of year.....................................	(2,008)	0	0	0	0
Unobligated balance, end of year......................................	2,647	0	0	0	0
Unobligated Balance expiring..	58				
Budget Authority...	**45,568**	**45,847**	**46,485**	**52,122**	**5,637**
Restoration of unobligated balance, rescission.................	0	0	0	0	0
Financing:					
Transferred from other accounts (-)....................................	0	0	0	0	0
Transferred to other accounts (+)......................................	0	0	0	0	0
Appropriation...	**45,568**	**45,847**	**46,485**	**52,122**	**5,637**

Exhibit 9

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	FTE	Amount ($000)
ADJUSTMENTS:		
IT Savings	0	$ (970)
Total Adjustments:		(970)
COST CHANGES:		
Pay Raises	0	$ 195

Full-year cost of FY 2013 pay increase and related costs
The FY 2013 President's budget assumes a pay raise of 0.5 percent to be effective January 1, 2013.

Total cost in FY 2014 of FY 2013 pay increase...	98,667
Less amount funded in FY 2013...	(74,000)
Total amount requested in FY 2014 to provide cost of FY 2013 pay raise..............................	24,667

FY 2014 pay increase and related costs
A general pay raise of 1.0 percent is assumed to be effective January 1, 2014.

Total cost of FY 2014 pay raise..	148,000
Working Capital Fund……………………………………………………………………………	22,000
Total adjustment for FY 2014 pay increase..	170,000

Civil Service Retirement System (CSRS) 0 (29)

The number of employees covered by CSRS continues to drop as positions become vacant and are filled by employees who are covered by the Federal Employees' Retirement System (FERS). The estimated percentage of payroll for employees covered by CSRS will drop from 6.6 percent in FY 2013 to 4.1 percent in FY 2014. The contribution rate will remain 7.0 percent.

FY 2014 ($16,688,000 x .041 x .0700)...	47,895
FY 2013 ($16,688,000 x .066 x .0700)...	77,099
Total adjustment to base..	(29,204)

Federal Employees Retirement System (FERS) 0 81

The number of employees covered by FERS continues to rise as employees covered by CSRS leave and are replaced by employees covered by FERS. The estimated percentage of payroll for employees covered by FERS will rise from 93.4 percent in FY 2013 to 95.9 percent FY 2014. The contribution rate will increase from 11.7 percent in FY 2013 to 11.9 percent in FY 2014.

FY 2014 ($16,688,000 x .959 x .119)...	1,904,451
FY 2013 ($16,688,000 x .934 x .117)	1,823,631
Total adjustment to base..	80,820

Exhibit 9

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	FTE	Amount ($000)

Federal Insurance Contribution Act (FICA)   0 $ 46
As the percentage of payroll covered by FERS rises, the cost of OASDI contributions will increase. In addition,
the maximum salary subject to OASDI tax will rise from $114,000 in FY 2013 to $119,100 in FY 2014. The
OASDI tax rate will remain at 6.2 percent.

    Regular Employees
    FY 2014   ($16,688,000 x .959 x .907 x .062)..   899,957
    FY 2013   ($16,688,000 x .934 x .884 x .062)..   854,270
    Total adjustment to base...   45,687

Thrift Savings Plan (TSP)   0   8
The cost of NTIA's contributions to the Thrift Savings Plan will also rise as FERS participation increases. The
contribution rate is expected to remain 2 percent.
    FY 2014   ($16,688,000 x .959 x .02)...   320,076
    FY 2013   ($16,688,000 x .934 x .02)...   311,732
                                                                                                                                       8,344

Health Insurance   0   56
Effective January 2012, NTIA's contribution to Federal employees' health insurance premiums increased by 6.4 percent.
Applied against the 2013 estimate of $998,000, the additional amount required is $55,888.

Employee Compensation Fund: 0   18
The Employees Compensation Fund bill for the year ending June 30, 2012, is $18,000 higher than the bill for the year ending
June 30, 2011. The Employee Compensation fund is based on an actual billing from the Department of Labor.

Mileage Rate Increase   0   4
Effective April 17, 2012, the General Services Administration increased the mileage rate from 51 cents to 55 cents per mile,
a 7.8 percent increase. This percentage was applied to the 2013 estimate of $49,000 to arrive at an increase of $3,822.

Exhibit 9

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
JUSTIFICATION OF ADJUSTMENTS TO BASE

Adjustments to Base	FTE	Amount ($000)
Postage Effective January 22, 2012, the Governors of the Postal Service implemented a rate increase for shipping. The overall price change for all shipping services is 4.6%. This percentage was applied to the 2013 estimate of $22,000 to arrive at an increase of $1,012.	0	$ 1
Electricity The average decrease for PEPCO electricity is projected to be 18 percent. This percentage was applied to the 2013 electricity estimate of $507,000 for a decrease of $91,000.	0	(91)
Water The average increase for DCWASA is projected to be 66 percent. This percentage was applied to the 2013 DCWASA estimate of $37,000 for an increase of $25,000.	0	25
Rental Payments to GSA GSA rates are projected to increase 1.6 percent in FY 2014. This percentage was applied to the FY 2013 estimate of $1,991,000 to arrive at an increase of $31,856.	0	30
Working Capital Fund An additional amount of $700,000 is required to fund the cost increases in the Department's Working Capital Fund.	0	700
General Pricing Level Adjustment This request applies 1.7 percent based on OMB economic assumptions for FY 2014 to object classes where the prices that the Government pays are established through the market system. Factors are applied to: other services ($353,294), Personal Identity Verification (PIV) ($199,000) supplies and materials ($2,635), equipment ($4,879), transportation of things ($680),GPO Printing ($1,479), and communications, utilities, and misc. charges ($1,972).	0	564
Subtotal, Adjustments	0	$ (970)
Subtotal, Cost Changes	0	1,608
Total, Adjustments to Base	0	$ 638

National Telecommunications and Information Administration (NTIA)
Salaries and Expenses

APPROPRIATION ACCOUNT: SALARIES AND EXPENSES

BUDGET ACTIVITY: SALARIES AND EXPENSES

For FY 2014, NTIA requests an increase of $5,637,000 and a net increase of 7 FTE from the FY 2014 base for a total of $52,122,000 and 154 FTE for Salaries and Expenses. This net increase includes $638,000 resulting from a combination of inflationary adjustments (+$1,608,000) and IT savings adjustments (-$970,000).

BASE JUSTIFICATION FOR FY 2014:

Salaries and Expenses Overview

NTIA serves as the principal adviser to the President on telecommunications and information policy issues. In this role, NTIA formulates, advocates, and participates in the implementation of policies that further domestic and foreign policy goals and enhance the international competitiveness of U.S. telecommunications and information technology, equipment, and services companies. These policies further the United States' strategic goals of opening markets and encouraging competition, innovation, and entrepreneurship, in the United States and globally; advancing the public interest in telecommunications, mass media, and information services; and promoting the availability of advanced services to all people around the globe.

Since its creation in 1978, NTIA has been at the cutting edge of critical telecommunication issues. For example, NTIA identified Federal radio spectrum that the Federal Communications Commission (FCC) auctioned to commercial wireless markets, collecting over $19 billion, with the net proceeds deposited in the U.S. Treasury. NTIA also administered the TV Converter Box Coupon Program so that analog televisions could function after the June 2009 transition of full-power television stations to digital broadcasting. In 2009 and 2010, NTIA awarded grants to develop and expand broadband services to areas not adequately served, to improve access to broadband by public-safety agencies, and to upgrade technology and capacity at public computing centers, including community colleges and public libraries. During some national and international emergencies, such as Hurricane Katrina and the 2010 earthquake in Haiti, NTIA responders have assisted in maintaining or restoring radio spectrum frequency assignments to ensure continued telecommunications. Additionally, NTIA is the primary U.S. government expert on the Internet's domain name system (DNS) – the critical underlying infrastructure upon which the Internet depends.

NTIA policy objectives are based on the identification and interdisciplinary analysis of economic, technological, regulatory, legal, social, and foreign policy issues. These activities fall within three Department of Commerce (DOC) Strategic Goals:

Economic Growth -- Innovation and Entrepreneurship: Develop the tools, systems, policies, and technologies critical to transforming our economy, fostering U.S. competiveness and driving the development of new businesses: Objective 4. Drive innovation by supporting an open global Internet and through communications and broadband policies that enable robust infrastructure, ensure integrity of the system, and support e-commerce.

Economic Growth -- Trade Promotion and Compliance: Improve our global competitiveness and foster domestic job growth while protecting American security: Objective 11. Develop and influence international standards and policies to support the full and fair competitiveness of the U.S. information and communications technology sector.

Science and Information: Generate and communicate new, cutting-edge scientific understanding of technical, economic, social, and environmental systems: Objective 13. Increase scientific knowledge and provide information to stakeholders to support economic growth and to improve innovation, technology, and public safety. NTIA's budget proposals support the Department of Commerce's Strategic goals and objectives identified in the Department's and NTIA's Balanced Scorecard. The Institute for Telecommunication Sciences laboratory specifically supports the theme of Science and Information and the Department's goal of "Generating and communicating new, cutting-edge scientific understanding of technical, economic, social, and environmental systems." The Department of Commerce's Strategic Plan describes NTIA's activities that include working with the White House and other Federal agencies on Administration-wide telecommunications and information policy statements and on obtaining private-sector views on a broad range of telecommunications and information policy issues.

NTIA's Salaries and Expenses budget is organized into four subactivities:

- The Domestic and International Policies subactivity formulates and promotes national policies for consideration by the President, Congress, other Executive Branch agencies, by the independent Federal Communications Commission (FCC), Federal Trade Commission (FTC), and by other government and non-government organizations. The subactivity also formulates and promotes national policies for presentation in multilateral, bilateral, and international organizational settings as well as ensuring the stability and security of the Internet DNS.
- The Spectrum Management subactivity develops, establishes, and implements plans, policies, activities, capabilities and procedures to ensure that the U.S. spectrum policy, spectrum allocations and spectrum management capabilities and processes keep pace with the needs of Federal agencies and the American public for access to the radio spectrum in the 21st century domestically and internationally.
- The Telecommunication Sciences Research subactivity utilizes telecommunications research and engineering to support Administration telecommunications goals, such as enhanced domestic competition, advanced services and new technology deployment, improved foreign trade opportunities for U.S. telecommunication firms, and more efficient use of the radio frequency spectrum.
- The Broadband Programs serve and monitor recipients of grants from the Broadband Technology Opportunities Program and the State Broadband Data and Development Program, which originated from the receipt of $4.7 billion through the American Recovery and Reinvestment Act of 2009 (Recovery Act, Public Law No. 111-5). The grants were awarded for broadband initiatives throughout the United States, to improve broadband services in areas of the Nation not adequately served, to encourage broadband adoption, and to develop a map of broadband services in the United States. Among other things, NTIA must ensure that broadband projects are used by recipients in an efficient, expeditious, and competent manner.

The majority of NTIA staff and facilities are located in Washington, DC. Boulder, CO, is the site for the NTIA research and engineering laboratory and related offices.

In carrying out its diverse programs and services, NTIA uses a multi-stakeholder approach to lead U.S. policymakers and regulators, governments around the world (including divisions of the United Nations), and industry in addressing telecommunication issues. NTIA also appears before the FCC, which is a regulatory agency, to present the Administration's views on telecommunication and information matters.

The Institute for Telecommunications Sciences (ITS) in Boulder, CO, is NTIA's research and engineering laboratory. ITS provides technical support to NTIA in advancing telecommunications infrastructure development, improving U.S. telecommunications trade opportunities, and promoting more efficient and effective use of the radio spectrum. On a reimbursable basis, NTIA's laboratory also serves as a principal Federal resource for addressing the telecommunications, information technology (IT), and security challenges of other Federal agencies, state, local, and tribal governments

Significant Adjustments-to-Base (ATBs):

NTIA requests a net increase of 0 FTE and $638,000 to fund adjustments to current programs for Salaries and Expenses activities. This net increase includes $638,000 resulting from a combination of inflationary adjustments (+$1,608,000) and IT savings adjustments (-$970,000). Inflationary adjustments includes funds for an FY 2014 pay raise as well as inflationary increases for non-labor activities, including service contracts, health insurance, per diem, and rent charges from the General Service Administration (GSA).

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Domestic and international policies

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies...........	Pos/BA	26	$5,365	26	$5,398	26	$5,394	33	$6,380	7	$986
	FTE/Obl.	26	5,991	26	5,398	26	5,394	31	6,380	5	986
Direct Obligations..............................	Pos/BA	26	5,365	26	5,398	26	5,394	33	6,380	7	986
	FTE/Obl.	26	5,991	26	5,398	26	5,394	31	6,380	5	986

SUBACTIVITY: DOMESTIC AND INTERNATIONAL POLICIES

The objectives of the Domestic and International Policies subactivity are to:

Domestic Policies
- Promote the deployment and adoption of broadband services;

- Encourage greater innovation in and use of the Internet, by protecting, among other things, users' privacy and security, children who go online, intellectual property, and the global free flow of information.

- Encourage the development of new telecommunications and information technologies and services for the American public;

- Preserve and promote an open Internet, consistent with service providers' need to manage their networks in a transparent and nondiscriminatory manner;

- Open telecommunications and information markets to greater competition;

- Facilitate multistakeholder convenings to promote consumer privacy and other policy objectives;

- Refrain from regulating telecommunications and information markets wherever market forces are sufficient to ensure reasonable prices and terms of services and to protect consumers;

- Promote economic growth; and

- Promote small-business and minority interests in the Internet economy.

International Policies
- Advocate and negotiate international norms that preserve and promote a single global interoperable Internet;

- Facilitate and build multi-stakeholder models for addressing Internet governance issues (e.g., privacy, cyber security, and free flow of information);

- Continue support for multi-stakeholder coordination to ensure the stability and security of the DNS;

- Coordinate new international telecommunications and information policies and technologies with domestic policies (such as, the introduction of internationalized domain names (IDN), identity management (IdM), the deployment of Internet Protocol Version 6 (IPv6), intermediary protections and responsibility, etc.);

- Encourage greater innovation and use of the Internet, by protecting, among other things, users' privacy and security, children who go online, intellectual property, and the global free flow of information;

- Negotiate open, competitive markets abroad for telecommunications and information

services, including IP-enabled services; and

- Work multilaterally and bilaterally to ensure policy and regulatory approaches pertaining to communications and information services are fair, open, transparent, not-overly burdensome, and in line with U.S. domestic policies.

These activities are conducted under the authority arising from NTIA's statutory responsibilities as lead telecommunications and information expert agency. (NTIA Organization Act of 1992, Pub. L. No. 102-538, 106 Stat. codified at 47 U.S.C. Section 901 *et seq.)* The Act identifies a number of functions and requires the Secretary of Commerce to assign these functions to the Assistant Secretary for Communications and Information and to NTIA.

The Act gives NTIA the "authority to coordinate the telecommunications activities of the executive branch" and to "assist in the formulation of policies and standards for those activities, including (but not limited to) considerations of interoperability, privacy, security, spectrum use, and emergency readiness." (§103(b)(2)(H); 47 U.S.C. § 902(b)(2)(H)).

The Act also specifically grants NTIA the "authority to serve as the President's principal adviser on telecommunications policies pertaining to the Nation's economic and technological advancement and to the regulation of the telecommunications industry."   § 103(b)(2)(D), 47 U.S.C. § 902(b)(2)(D); "the authority to develop and set forth" such policies, § 103(b)(2)(I), 47 U.S.C. § 902(b)(2)(I); and the "responsibility to ensure that the views of the executive branch on telecommunications matters are effectively presented to the [Federal Communications] Commission and, in coordination with the Director of the Office of Management and Budget, to the Congress." § 103(b)(2)(J), 47 U.S.C. § 902(b)(2)(J). NTIA also serves as the manager of the Federal government's use of the electromagnetic spectrum.

Internationally, the Act assigns NTIA functions that involve working with the Secretary of State on developing and setting forth plans, policies and programs that relate to international telecommunications issues; coordinating preparations for international conferences, and providing advice and assistance on international telecommunications issues, § 103(b)(2)(G), 47 U.S.C. § 902(b)(2)(G). The Telecommunications Trade Act of 1988 sets forth policy goals for international telecommunications trade. NTIA assists in implementation of the Act through policy coordination with the International Trade Administration (ITA), the U.S. Trade Representative (USTR), and other U.S. agencies by preparing for and participating in telecommunications consultations with selected countries, with such organizations as the World Trade Organization (WTO), and through bilateral and regional Free Trade Agreements (FTAs) where telecommunications and information regulatory policies are involved.

NTIA also leads the Department of Commerce's Internet Policy Task Force (IPTF). The Task Force leverages expertise across many bureaus, including those responsible for domestic and international information and communications technology policy, international trade, cyber security standards and best practices, intellectual property, business advocacy and export control.

The Domestic and International Policies subactivity contains two items: Domestic Policies and International Policies.

DOMESTIC POLICIES (http://www.ntia.doc.gov/opadhome/opadhome.html)
NTIA is the principal Executive Branch agency dedicated to advising the President on telecommunications and information policy making. NTIA formulates and promotes national policies

for consideration by the President, Congress, other Executive Branch agencies, the independent Federal Communications Commission (FCC) and Federal Trade Commission (FTC), and other government and non-government organizations. Thus, NTIA staff must possess expertise, skill, and understanding in legal, economic, and technical issues; in telecommunications and information technology innovations; products, and services; in telecommunications and information technology policy; in regulatory structures and processes; and in the Internet economy.

Domestically, NTIA communicates policy positions in many ways. NTIA works with the White House to develop policy positions and draft executive memoranda; participates in White House or interagency policy committees (e.g., the cabinet-level National Science and Technology Council (NSTC), Interagency Policy Committees (IPCs); files comments with independent agencies such as the FCC or FTC; works with Congress on the formulation of legislation and provides comments through OMB; addresses issues through briefings to senior officials or interagency meetings; and communicates with the public through reports, speeches, or public events.

The U.S. has the world's leading telecommunications and information markets, and leads the world in the number of broadband connections. This translates to increased jobs for Americans, economic growth, innumerable socio-economic benefits to the public, improved supply of governmental services, and strong public-safety, national, and homeland security capabilities. Much of the U.S. success in these sectors is based on market-driven, pro-competitive policies and prudent deregulation--measures that have been emulated throughout the world. In radio spectrum management in particular, market based spectrum management reforms, advocated by NTIA and adopted by the FCC, have led to more efficient and innovative use of spectrum for commercial services.

The Communications Act of 1934, as amended, provides a basis for policymaking with respect to many telecommunications and information services and products. Other U.S. and state laws also affect the telecommunications and information sectors. Existing laws, regulations, and administrative procedures are subject to enormous pressures created by rapid changes in technology and increased demand for advanced services and equipment. NTIA's responsibilities are set forth by statute (47 U.S.C. §901 et seq.). NTIA's domestic policy activities require it to identify important current telecommunications and information policy issues, to evaluate and articulate those policies, and to respond to specific requests.

NTIA's policy activities support the Department's strategic themes of providing the information and the framework to enable the economy to operate efficiently and equitably, on a global scale; providing infrastructure for innovation and entrepreneurship to enhance American competitiveness; and strengthening management at all levels. NTIA's domestic policy activities require it to maintain expertise with respect to current telecommunications and information policy issues and to identify the most important for Executive Branch attention. NTIA performs research and analysis, and prepares written recommendations for future courses of action that affect these sectors. In coordination with other parts of the Administration, NTIA makes recommendations and works with the Congress on new or revised laws affecting these sectors; it also files written comments to the FCC on specific regulatory proposals.

NTIA engages in public discussions and meetings with government (Federal, state, and foreign) officials and private sector representatives to formulate and advocate its policies on the full range of telecommunications, Internet and information issues. In addition, NTIA facilitates industry and stakeholder engagement, participation, particularly small business and minority participation, on these important issues.

NTIA leads the Commerce Department's efforts on Internet policy issues, and facilitates multi-stakeholder engagements to address consumer privacy and other policy issues. By engaging with all stakeholders, NTIA is able to build national and international support for an economically robust and innovative Internet.

NTIA will remain at the forefront of other new Internet technologies and the policy changes they will require, such as next generation broadband services. NTIA will continue to develop and advocate policies that affect the Internet, wireless and wireline telecommunications competition, terrestrial and satellite video services, unlicensed devices, and future products and services important to the United States and its economy. It will also continue to promote minority ownership opportunities in telecommunications; provide staff support and expertise to White House offices and the Department of Commerce; and to respond to requests for technical and policy advice from the Congress, other Federal Government officials and from the private sector.

INTERNATIONAL POLICIES (http://www.ntia.doc.gov/oiahome/oiahome.html)

NTIA formulates and advocates national policies for presentation in multilateral and bilateral organizational settings. The objective of these policies is to enhance competition in pursuit of both improved market access for U.S. service and equipment providers, and to achieve foreign policy goals such as economic development, democratization, and promotion of U.S. national security telecommunications and information interests in geographically strategic areas.

Internationally, NTIA communicates policy positions in many ways. NTIA works with the White House to develop policy positions and draft executive memoranda; participates in White House or interagency policy committees (e.g., the cabinet-level National Science and Technology Council (NSTC), Interagency Policy Committees (IPCs); files comments with independent agencies such as the FCC or FTC; works with Congress on the formulation of legislation and provides comments through OMB; addresses issues through briefings to senior officials or interagency meetings; and communicates with the public through reports, speeches, public events, and participation in international organizations.

Consequently, NTIA must possesses expertise in the following areas: an understanding of domestic and international telecommunications and information policies and the resultant policy and regulatory structures and processes; an appreciation of U.S. economic, foreign, and trade policies and objectives, in particular as they relate to foreign telecommunications and information regulatory policies; knowledge of U.S.-backed foreign assistance resources that can supplement our educational efforts; in-depth expertise regarding U.S. and foreign-developed telecommunications and information products and services; and a detailed understanding of relevant international and intergovernmental organizations and treaties.

If U.S.-invested companies are to continue to innovate and maintain their global leadership in these sectors, policy and regulatory environments at home and abroad need to encourage the development of and access to telecommunications and information technologies and networks. To meet this need, NTIA advocates for flexible, technology-neutral, and transparent policy and regulatory regimes. This approach supports universal access to telecommunications and information technologies and networks that stimulates democratization, economic development, and entrepreneurship. It also facilitates the use of these technologies in disaster relief efforts and meeting broader U.S. national security, telecommunications, and information interests in war-torn areas. NTIA is uniquely positioned to serve as, or advise, U.S. negotiators by participating as delegates or in leadership posts in a variety of fora on international, regional, and bilateral policies and regulations, mainly of an intergovernmental nature. Delegations draw upon NTIA's wide-ranging expertise in telecommunications and information policy issues, particularly those related to Internet policies, to

support these goals of innovation, market entry, and universal telecommunications and information access. For example, NTIA advocates adoption abroad of open and transparent processes that take into account the input of all relevant stakeholders and that avoid overly prescriptive or burdensome regulation.

NTIA implements its policy objectives through a variety of representational and management responsibilities in inter-governmental fora such as the International Telecommunication Union (ITU), which is a United Nations organization, the Inter-American Telecommunication Commission (CITEL), the Asia-Pacific Economic Cooperation forum (APEC), the Organization for Cooperation and Economic Development (OECD), the International Telecommunications Satellite Organization (ITSO), the International Mobile Satellite Organization (IMSO), as well as in bilateral discussions (e.g., China, India, and Japan) and other international venues such as the Internet Governance Forum (IGF). NTIA also works with other Federal agencies to prepare for and participate in other related international telecommunications and information activities, such as trade negotiations involving the telecommunications and information sector. For example, NTIA staff possesses the most extensive technical knowledge and policy expertise in the U.S. Government regarding management of a critical Internet infrastructure asset: the Internet's DNS. As such, NTIA staff administers the Department's Internet Assigned Numbers Authority (IANA) functions contract through which all changes to the Internet's authoritative root zone file – or "address book" are approved.

NTIA also oversees the administration of the Department's Affirmation of Commitments with the Internet Corporation for Assigned Names and Numbers (ICANN) and represents the U.S. Government in the ICANN's Governmental Advisory Committee, which advises ICANN on public policy issues related to the Internet DNS. ICANN also performs, as of January 2012, the IANA functions under contract to the Department of Commerce. The IANA functions consist of several interdependent Internet management responsibilities, including coordination of the assignment of technical protocol parameters; performance of administrative functions associated with root zone management; and the allocation of Internet numbering resources.

NTIA also administers the Department's contract for the management of the DOT-US (".us") Internet top-level domain. NTIA also serves as the Federal Program Officer for the Department's Cooperative Agreement with EDUCAUSE to manage the DOT-EDU (".edu") domain space for use by educational institutions. This cooperative agreement facilitates the policy development and technical operations of the .edu domain and provides a framework for the administration of the .edu domain. NTIA also coordinates with the Department of Homeland Security, the National Security Council, and others to safeguard the security and stability of the Internet DNS.

The NTIA Organization Act as amended (47 U.S.C. §902(b)) requires the Secretary of Commerce to assign the Assistant Secretary for Communication and Information and NTIA various responsibilities and functions regarding international telecommunications and information policy. These responsibilities and functions include the development of plans, policies, and programs relating to international telecommunications and information issues for use in conferences, negotiations, and other fora. The Secretary is also responsible for coordinating economic, technical, operational, and related preparations for U.S. participation in Information and Communications Technology (ICT) organizations and negotiations. The Act requires NTIA to formulate telecommunications and information policy for participation and activities in international organizations such as the U.S. ITU, CITEL, APEC, OECD, ITSO, IMSO, and others. A July 1997 Presidential directive requires the Department of Commerce to transition the management of the Internet DNS to the private sector. ICANN signed an Affirmation of Commitments with the Department of Commerce in September 2009, which completed the transition of the technical management of the DNS to a private-sector-led, multi-stakeholder model and ensures accountability and transparency in ICANN's decision-making

with the goal of protecting the interests of global Internet users. ICANN facilitates DNS policy development through a bottom-up process involving the diverse interests of generic and country code top level domain registries, domain name registrars, the regional Internet registries, the technical community, business and individual Internet users, and governments. NTIA will continue its efforts in the stewardship of the DNS including the management of certain contracts for the technical management of the .us and .edu top-level domains as well as IANA functions.

In FY 2014, NTIA will continue its wide-ranging activities to enhance the global strength of U.S. telecommunications and information interests, including advocating and negotiating international norms that preserve and promote a single global interoperable Internet as well as facilitating multi-stakeholder solutions for addressing Internet governance issues (e.g., privacy, cyber security, and free flow of information).

NTIA will work to preserve key U.S. foreign policy goals in the telecommunications and information sector, in particular on the policy approaches to Internet governance to counter the many opponents to the U.S. approach. We will continue to promote market driven approaches to telecommunications and information pricing issues, such as international settlement rates and proposals for Internet cost-sharing arrangements. We will work collaboratively with other countries and institutions to ensure the benefits of new technologies that bring increased connectivity, such as electronic numbering and unlicensed usage of advanced wireless technologies. We will continue to support and participate in multi-stakeholder models of Internet governance and to advance public and private sector policies that promote the security and stability of the Internet and the DNS.

NTIA will encourage bilateral, regional, and multilateral adoption of policies that encourage open and competitive foreign markets, with transparent decision-making, while stimulating democratization, economic development, and promotion of U.S. national security telecommunications and information interests overseas. We will advance these objectives by advocating, monitoring, and participating in the structural reform of international institutions such as the ICANN, IGF, ITU, CITEL, OECD, APEC, IMSO, and ITSO.

NTIA will continue to work with other agencies to develop implementation strategies for improved and continuous telecommunications and information development in key countries and regions (e.g., Africa, Central and Latin America, and the Middle East), through such foreign assistance efforts as the Telecommunications Leadership Program, and the U.S. Telecommunications Training Institute.

NTIA will assist other parts of the Administration in development of specific trade negotiation language, for instance, in the continuation of the Doha Round of Services negotiations at the World Trade Organization, and the annual telecommunications trade act reviews under Section 1377 of the Telecommunications Trade Act of 1988. We will assist the International Trade Administration (ITA), Treasury, State, Justice, and the FCC to review potential acquisitions of strategic, critical U.S. telecommunications assets under FCC regulations and the Exon-Florio review mechanism for Foreign Direct Investment (FDI) in the Committee on Foreign Investment in the United States (CFIUS) process. NTIA will work through bilateral, regional, and international fora such as the ITU, OECD, APEC, and CITEL to promote the rollout and uptake of broadband infrastructure, services, and equipment. We will work with the Office of the United States Trade Representative (USTR), other Commerce agencies (ITA, National Institute of Standards and Technology (NIST), Foreign Commercial Service (FCS)), and the State Department on policy approaches to telecommunications and information standards developments worldwide, especially in key emerging markets such as India and China and our North American partners (Canada and Mexico). These standards are emerging in influential new technologies in developing economies, such as next generation

networking (NGNs), Advanced Wireless systems such as third and fourth Generation Wireless (3G/4G), Radio-Frequency Identification (RFID), and Worldwide Interoperability for Microwave Access (WiMAX). NTIA will also provide policy and technical guidance to the State Department in the IMSO and ITSO oversight processes, to ensure fair and competitive provisioning of fixed and mobile satellite services on a global basis, to protect lifeline telecommunications connectivity for developing nations, to protect Safety of Life at Sea (under the SOLAS treaty), and to implement provisions of the U.S. Maritime Transport Security Act of 2002 to ensure long-range tracking of vessels on the high seas.

PROGRAM CHANGE FOR FY 2014:

Internet 3.0—Internet Innovation (Base Funding: $5,394,000 and 26 FTE; Program Change: $986,000 and 5 FTE): NTIA requests an increase of $986,000 and 5 FTE for a total of $6,380,000 and 31 FTE to bolster the Department of Commerce's leadership role in the evolution of innovation-promoting policies for the Internet both domestically and internationally. NTIA will develop, implement, and advocate an "Internet 3.0" policy framework, building on previous work, including the Department's successful engagement with the Internet Corporation for Assigned Names and Numbers.

While a number of individual government agencies have interests in Internet policy, it is important that there be a single point within the Administration to consider and harmonize national policy. As noted above, NTIA is directed by law to provide for the "coordination of the telecommunications activities of the executive branch, including (but not limited to) considerations of interoperability, privacy, security, spectrum use and emergency readiness. (47 U.S.C. Sec. 902(b)(2)(H)) While the legislation creating NTIA predates the rise of the Internet, the statute further directs NTIA "to conduct studies and make recommendations concerning the impact of the convergence of computer and communications technology," in other words, the Internet. (47 U.S.C. 902 Sec. 902(b)(2)(M))

This Internet Innovation Initiative includes the following components:

1) Privacy: ($416,390 and 2 FTE)

Consumer privacy is a fundamental issue in the development of a sustainable Internet Policy 3.0 framework. (The term "Internet 3.0" refers to the next generation of Internet use, with 1.0 being primarily informational websites and 2.0 being increased user-generated content and developments such as social media. The third phase of the development of the Internet brings with it a range of new public policy challenges that the U.S. must be prepared to meet.) For consumers, it can mean protection against identify theft or the use of private data by social media or other increasingly popular web sites. For businesses, the ability to make flexible and innovative use of personal information, in an environment of consumer trust, is vital to future development of the marketplace. There is widespread agreement that the current privacy frameworks are in need of updating, both domestically and globally. Working with the Internet Policy Task Force (IPTF) NTIA has laid our general policy principles to guide this effort, but refining and implementing consensus principles will require sustained engagement with a multi-stakeholder group. In the mid-1990s, NTIA played a leading role, along with the Federal Trade Commission (FTC), in exploring options for addressing new online privacy issues. This initiative would provide funding to take on these issues in the current Internet environment and would implement the policy recommendations of the IPTF. Using new public policy and technology expertise, NTIA would establish a Privacy Policy Office to oversee the privacy efforts. This office would develop best practice agreements with industry, develop global privacy guidelines (working through the international Organization for Economic Cooperation and Development (OECD) or other organizations), and update its privacy report annually. This initiative would also support new issues to be taken up by the IPTF, such as lawful surveillance and the role of Internet Service Providers (ISPs).

In addition, this initiative would provide funds for NTIA to consider and respond to recommended Internet policies in the National Broadband Plan (NBP) prepared by a task force of the Federal Communications Commission (FCC). That plan recommends a number of actions for itself and executive branch agencies. As the President's principal adviser on telecommunications and information policy issues, NTIA has the jurisdiction and responsibility to review these proposals and coordinate their implementation within the government as appropriate. Many of the Commission's

proposals give NTIA an opportunity to offer Internet policy expertise to other Federal agencies as they implement Internet-based applications that make intensive use of personal information. The proposals recommend that government agencies (primarily the FCC and Federal Trade Commission (FTC) consider whether and how to clarify the relationship between users and their online profiles (NBP Recommendation 4.14); that there be legislation creating new consumer privacy tools such as trusted "identity providers" to allow consumers to manage their data (NBP Recommendation 4.15); that government agencies (FCC and FTC) develop principles to require informed consent before broadband providers share certain types of information (NBP Recommendation 4.16); that the Federal government (primarily FTC) put more resources into combating identify theft and fraud (NBP Recommendation 4.17); that broader national online security policy should be coordinated with the among Executive branch and independent agencies (NBP Recommendation 4.18); that the Federal Chief Information Officers Council accelerate agency adoption of social media for internal use (on which NTIA can provide expertise) (NBP Recommendations 14.8 and 15.10); and that there be legislation reexamining the Privacy Act to facilitate the delivery of online government services (NBP Recommendation 14.17). NTIA would participate on behalf of the Administration in the FCC and FTC proceedings.

2) Cyber security and Other Internet Issues: ($248,010 and 1 FTE)

The Department of Commerce views improving the nation's commercial cyber security posture and establishing consumer and business confidence in the security of cyberspace as essential to the country's economic well-being. Cyber security and confidence in that security are fundamental to realize the potential of electronic commerce (e-commerce), fuel innovation, create new types of jobs, and accelerate economic growth. Recognizing the vital importance of the Internet to U.S. innovation, prosperity, education, politics and cultural life, the Department of Commerce has made it a top priority to ensure that the Internet remains an open and trustworthy space for innovation through the work of the Internet Policy Task Force (IPTF). A major cyber security goal will be to implement policy recommendations of the IPTF.

NTIA must also consider and respond to policies recommended in the NBP within NTIA's policy jurisdiction. These recommendations included that the executive branch, in collaboration with relevant regulatory authorities, develop machine-readable repositories of actionable real-time information concerning cyber security threats in a process led by the White House Cyber security Coordinator (NBP Recommendation 14.9); the Federal government should take an active role in developing public-private cyber security partnerships (NBP Recommendation 14.10); that the executive branch expand existing and develop additional educational programs, scholarship funding, training programs, and career paths to build workforce capability in cyber security (NBP Recommendation 14.11); and that the Executive Branch develop a coordinated foreign cyber security assistance program to assist foreign countries in the development of legal and technical expertise to address cyber security.

NTIA's activities with respect to these recommendations would include advising the Administration on appropriate policies to ensure commercial cyber security; working with other agencies to lead the creation of a voluntary cyber security certification program; convening interagency working groups on cyber security; improving government online security efforts; participating in an interagency initiative to draft a domestic and international strategy to build on "The Cyberspace Review" issued by President Obama in May, 2009 (http://www.whitehouse.gov/the_press_office/Statement-by-the-Press-Secretary-on-Conclusion-of-the-Cyberspace-Review/) and the planned cyber security interagency "white paper" planned for FY 2012; and supporting agency protections to allow greater agency adoption of social media tools.

In addition, several international organizations, including the ITU and several countries have expressed growing interest in cyber security issues. Some of the proposals, however, raise significant concerns. NTIA will work with the appropriate international bodies to eliminate redundancy and guide international policies to support the interests of the United States.

Another important issue is intellectual property protection. Internet growth and innovation require a balance between protecting against illegal piracy of copyrighted works and intellectual property, while preserving the rights of users to access lawful content. This activity will implement policy recommendations of the ITPF. It will also provide NTIA with the resources to lead interagency efforts to address recommendations in the NBP. Relevant recommendations include that the Department of Education or other departments increase the supply of digital educational content online (NBP Recommendation 11.2); that the Department of Education examine digital data and interoperability standards to ensure consistency with the needs and practices of the educational community (NBP Recommendation 11.3); that Congress review existing copyright law and methods to encourage copyright holders to grant educational digital rights of use (NBP Recommendation 11.4); for public and broadcast media to more easily contribute their archival content to a digital national archive and grant reasonable noncommercial downstream usage rights (NBP Recommendation 15.9).

3) Global Internet Economy: ($321,600 and 2 FTE)

If U.S. companies are to continue to innovate and maintain their global leadership in the Information and Communications Technology (ICT) sector, policy/regulatory environments abroad need to foster user confidence in order to facilitate deployment of ICT networks, which will enhance network adoption and usage, ultimately enabling and driving a cycle of continued innovation and economic growth. Challenges associated with achieving a Global Internet Economy include the fundamental need to expand Internet access and use worldwide, as well as the need to secure these critical information infrastructures and respond to new threats in order to ensure a trusted Internet-based environment, which will offer protection to individuals, especially children and other vulnerable groups. In this regard, efforts are needed to ensure the protection of digital identities and personal data, as well as the privacy of individuals online. A key way to meeting these challenges head on is to create a policy/regulatory environment that assures a level playing field for competition and upholds the open, decentralized, and dynamic nature of the Internet, which has been the foundation for its unprecedented growth and impact. This effort will in part look at the important role of online services and other "intermediaries" play in fostering an innovative and positive Internet economy.

To meet the need to build a culture of cyber security worldwide, NTIA proposes to promote the development of the Global Internet Economy. NTIA brings to the ITPF its functions as the President's principal adviser on telecommunications and information policy and its expertise as the primary U.S. government expert on the Internet's domain name system (DNS) – the critical underlying infrastructure upon which the Internet is dependent. NTIA is uniquely positioned to facilitate collaboration between the U.S. government, the private sector, civil society, and the Internet technical community to launch a new round of targeted bilateral policy and technical exchanges via ICT policy summits that will support the development of the global Internet economy. These policy summits will be aimed at key regional actors (e.g., China, India, Egypt, Brazil, and Russia) would facilitate exchanges on critical issues such as cyber security, universal service, online safety, privacy, spectrum management, and broadband deployment and usage. In addition, this initiative would seek to leverage existing international institutions such as the Organization for Economic Cooperation and Development (OECD) and the International Telecommunication Union (ITU), an agency of the United Nations, by devoting additional NTIA staff resources to develop policy and regulatory tools as well as accurate metrics to effectively measure the growth and impact of the global Internet Economy.

Proposed Actions:

NTIA's initiative would use a multi-stakeholder approach to lead U.S. policymakers and regulators, governments around the world, and industry, in the formation of Internet policies and best practices to ensure continued innovation in Internet-based services and products, the growth of the global Internet economy, Internet-savvy intellectual property protection regimes, and the protection of consumers and children. To fulfill its duty as principal telecommunications and information policy adviser to the President, the NTIA must have the resources and expertise to take a leadership role in developing Federal government policy in such areas.

Just as the U.S. Government led the world in creating a policy framework for the first phase of the Internet, so too must the U.S. Government show leadership in this new era. At stake are the commercial interests of U.S. Internet companies and the continued role of the Internet as a platform for education, research, and political expression. President Obama has called for harnessing the immense transformative power of technology and innovation to improve the lives of all Americans and spur the economy. Former Secretary of Commerce Gary Locke observed "the vital role the Internet plays in driving innovation throughout the economy," and that "the Department has made it a top priority to ensure that the Internet remains open for innovation. . . ." The Department created an Internet Policy Task Force to identify leading public policy and operational challenges in the Internet environment. These activities fall within the Department of Commerce Strategic Goal – Innovation and Entrepreneurship. The economic benefits provided by the Internet economy increased during our recent economic downturn, when e-commerce significantly outpaced overall retail sales growth. Globally, the Internet economy is growing even faster. The global Internet marketplace is critical to the United States because it leverages America's strength in first-time innovation, which permits the United States to excel in any business environment where innovation is a market prerequisite.

Guiding the development of Internet Policy 3.0 requires using a broad spectrum of tools, many of which will require leveraging and coordinating private sector, civil society, technical community, and government cooperation. This initiative describes the resources necessary to lead, engage, and build multistakeholder coalitions both domestically and globally that will carry the Internet Policy 3.0 message around the world and see that it is successfully implemented in legislative and regulatory venues.

By engaging in promotion of the global Internet economy, NTIA proposes to extend the initial work of the Department's Internet Policy Task Force (IPTF). NTIA drove the formation of the IPTF in mid FY 2010 and is leading its efforts in coordination with the Office of the Secretary. The IPTF's mission is to identify leading public policy and operational challenges in the Internet environment. It has already leveraged expertise across many bureaus, including those responsible for cyber security standards and best practices, domestic and international information and communications technology policy, international trade, intellectual property, business advocacy, and export control. The FY2011-2012 results for the IPTF will include the broad articulation of policy frameworks necessary to enable continued Internet innovation. The purpose of this initiative is to see that those frameworks are implemented. Given the reliance on global, multi-stakeholder coalition building, the resources needed for the implementation phase far exceed those used in the initial development of the frameworks.

The IPTF has addressed issues in the following areas:

1) Privacy

2) Cyber security
3) Online Copyright Protection
4) Free flow of information

The increase will provide the policy and technical expertise, and empirical foundation, and the necessary fora for government and private sector actions. Each issue area, however, will be addressed using a common approach: leading development of global, multi-stakeholder organizations to advance U.S. Internet policy goals. In addition, the IPTF is considering additional issue areas that warrant broad collaboration.

Each issue under the Task Force, and the programs being created for each issue area, requires particular and specialized staff expertise (special industry knowledge, policy training, and technical background). Many of the projects require bringing order to all the disparate activities underway throughout the Administration and being responsible for communications and negotiations with high-level private sector industry and civil society leaders. This requires a core team of seasoned, senior experts in areas that include:

- Internet law and policy analysis
- Internet economics
- Web and Internet technology
- International outreach

Statement of Need and Economic Benefits:

In the space of a decade and a half, the Internet has gone from an interesting academic and defense communications tool to an unimaginably important foundation of modern civilization. The Internet now has the ability to act as a key driver for the creation of enterprises and communities. The Internet contributes directly and indirectly to the U.S. economy and affects the lives of every citizen in myriad ways. As cited in the DOC privacy Notice of Inquiry, April 23, 2010, and according to Census figures and published reports, between 1999 and 2007, business-to-consumer online commerce increased over 500 percent. Taking into account business-to-business transactions, online commerce in 2010 accounted for approximately $4.1 trillion in shipments, sales, or revenue for the U.S. economy. U.S. mobile commerce grew to an estimated $2.4 billion. In addition to the growth of online commerce, the World Wide Web and associated information systems have led to an unprecedented growth in productivity.

Need for FTEs (Privacy): The FTEs are needed to take on the tasks of the initiative: to establish a Privacy Policy Office; to develop the recommendations of the IPTF through public events and reports; to create global guidelines; to create enforcement mechanisms; and to negotiate with industry on adoption.

Need for FTEs (Cyber security and Other Internet Issues): The FTEs are needed to accomplish the tasks of the initiative: to bring network security and vulnerability expertise to the report described above, to develop the capacity-building program, and to address and help implement the recommendations of the IPTF.

In addition, the FTEs are needed to address the online copyright issues and proposals raised through the IPTF and by the NBP by analyzing the issues, creating interagency processes as necessary, undertaking research, and taking steps to implement particular recommendations.

Need for FTEs (Global Internet Economy): The FTEs will participate with international organizations and governments in bilateral and multilateral meetings and follow-on activities and will organize regional summits. The FTEs will also develop strategies to achieve U.S. Government objectives and will also develop and implement additional recommendations of the IPTF.

This initiative among other things addresses issues that have the potential to undermine the Internet's economic success. If policies could guarantee privacy, copyrights, security, safety, and international adoption, the Internet would become even more widely used for commerce or business. Even a small percentage increase would translate into millions or billions of dollars of the national economy.

Beyond the boundaries of commerce, the Internet is transforming critical sectors of the U.S. and global society, such as health care, energy, education, the arts, and political life. The Internet is also the base of new forms of civic engagement and participation, thereby promoting a diversity of opinions and enhancing transparency, accountability, privacy, and trust. The growth of commerce, of new social media applications and of the growing pervasiveness of Internet services require reexamination of existing frameworks regarding privacy, security, protecting intellectual property, and protecting children online.

Innovation and the Internet are nearly synonymous, yet we cannot take for granted that the United States will remain the leader in either. This initiative will develop new approaches in relevant areas. It will encourage innovation within the United States and also through its global outreach effort. Implementation of the policies will enable innovative information applications and services. The benefits are potentially broad and extensive, and yet intangible and not subject to simple measurement.

Base Resource Assessment:

NTIA does not currently have sufficient base program resources to accomplish the objectives of the Internet Innovation initiative. NTIA's base plan has historically provided funding for analysis of traditional telecommunications. NTIA's programs have provided funding for activities involving regulated wired and wireline telephony, as well as spectrum management.

NTIA has limited base funding to broaden its activities into analysis of subjects affecting Internet use and innovation or such a broad range of issues. NTIA's involvement in the DOC IPTF, for example, is the first time NTIA has undertaken a policy assessment of privacy issues since the mid-1990s, when the policy office had approximately twice the staff. NTIA has in some areas been able to undertake issue-scoping exercises, or in the case of Child Online Protection, the organization of meetings of a task force created by Congress. NTIA's base program does not support more in-depth economic or technical studies or multi-stakeholder activities to implement policies.

The Internet Policy Task Force (IPTF) referred to above, commits NTIA to a series of deliverables beyond its current base program. Moreover, in March 2010, a task force of Federal Communications Commission staff released the National Broadband Plan (NBP), which contained a series of recommendations for Executive branch policies. NTIA's Administrator is co-chair of the Broadband Subcommittee of the National Science and Technology Council's Committee on Technology. The issues being addressed by both the IPTF and the Broadband Subcommittee fall under NTIA's responsibilities as principal adviser to the President on communications and information policies as they pertain to the Nation's economic and technological advancement. In past years, some of the

projects covered by this initiative may have fallen under the Department's Technology Administration, which undertook work in privacy and related issues until its termination in 2007.

Schedule & Milestones:

Privacy

- FY 13-15: Continue the multi-stakeholder engagements on consumer privacy toward the adoption of enforceable codes of conduct.

Cyber security and other issues

- FY 13:   Public meetings/symposia; economic assessment and report
- FY 13-15: Creation of cyber-security best practices; negotiation with industry regarding adoption of codes of conducts; leadership in international organizations
- FY 13:   With DOC's Patent and Trademark Office, publish updated report on online copyright protection.

Global Internet Economy

- FY 13:   Targeted regional workshop to advocate Internet Policy 3.0

Deliverables:

Privacy

FY 13-14: Complete more than one enforceable code of conduct to address consumer privacy issues.

Cybersecurity

- FY 13: Bilateral and multilateral meetings
- FY 13-14: Best practices and codes of conduct; negotiation with industry stakeholders; development of new policies, e.g. botnets

Global Internet Economy

- FY 13-14: International agreement on principles following policy summits and treaty conferences

PERFORMANCE METRICS							
Performance Goal: Innovation and Entrepreneurship	**FY 2011 Actual**	**FY 2012 Target**	**FY 2013 Target**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**
Number of new policies adopted							
With Increase	N/A	2	3	4	4	4	4
Without Increase	N/A	0	0	0	0	0	0

Description: This measure is focused on formulating recommendations through the Internet Policy Task Force (IPTF) pertaining to privacy, cyber security, online copyright, and the global, free flow of information. Such policies will be advanced through policy papers, speeches, and domestic and international conferences.

Performance Goal: Innovation and Entrepreneurship Number of policies in accord with United States positions	FY 2011 Actual	FY 2012 Target	FY 2013 Target	FY 2014 Target	FY 2015 Target	FY 2016 Target	FY 2017 Target
With Increase	N/A	2	2	2	2	2	2
Without Increase	N/A	0	0	0	0	0	0

Description: This measure is focused on advancing and gaining agreement on policy proposals of the IPTF, given the global nature of the Internet, through engaging stakeholders internationally-- at conferences, meetings of international telecommunication organizations, and discussions with individual countries, industry stakeholders, and other non-governmental organizations.

Activity: Salaries and Expenses
Subactivity: Domestic and International Policies

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Internet Privacy					
Telecommunications Policy Specialist	Washington, DC	GS-15	1	123,758	123,758
Telecommunications Policy Specialist	Washington, DC	GS-14	1	105,211	105,211
Telecommunications Policy Analyst	Washington, DC	GS-12	1	74,872	74,872
Cybersecurity & Other Internet Issues					
Telecommunications Policy Specialist	Washington, DC	GS-15	1	123,758	123,758
Telecommunications Policy Analyst	Washington, DC	GS-9	1	51,630	51,630
Global Internet Economy					
Economist	Washington, DC	GS-15	1	123,758	123,758
Telecommunications Policy Specialist	Washington, DC	GS-13	1	89,033	89,033
Total			7		692,020
less Lapse		25%	(2)		(173,005)
Total full-time permanent (FTE)			5		519,015
2014 Pay Adjustment (1.0%)					5,190
TOTAL					524,205

Personnel Data	Number
Full-Time Equivalent	
Employment	
Full-time permanent	5
Other than full-time permanent	0
Total	5
Authorized Positions:	
Full-time permanent	7
Other than full-time permanent	0
Total	7

(Dollar amounts in thousands)

Activity: Salaries and Expenses
Subactivity: Domestic and International Policies

	Object Class	2014 Increase
11	Personnel compensation	
11.1	Full-time permanent	$524
11.3	Other than full-time permanent	0
11.5	Other personnel compensation	0
11.8	Special personnel services payments	0
11.9	Total personnel compensation	524
12	Civilian personnel benefits	147
13	Benefits for former personnel	0
21	Travel and transportation of persons	80
22	Transportation of things	2
23.1	Rental payments to GSA	37
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	13
24	Printing and reproduction	12
25.1	Advisory and assistance services	0
25.2	Other services	20
25.3	Purchases of goods & services from Gov't accounts	133
25.4	Operation and maintenance of facilities	0
25.5	Research and development contracts	0
25.6	Medical care	0
25.7	Operation and maintenance of equipment	9
25.8	Subsistence and support of persons	0
26	Supplies and materials	4
31	Equipment	5
32	Lands and structures	0
33	Investments and loans	0
41	Grants, subsidies and contributions	0
42	Insurance claims and indemnities	0
43	Interest and dividends	0
44	Refunds	0
99	Total obligations	986

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Spectrum management

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum management............................	Pos/BA	32	$7,486	32	$7,532	32	$7,671	32	$7,214	0	($457)
	FTE/Obl.	32	7,545	32	7,532	32	7,671	32	7,214	0	(457)
Direct Obligations............................	Pos/BA	32	7,486	32	7,532	32	7,671	32	7,214	0	(457)
	FTE/Obl.	32	7,545	32	7,532	32	7,671	32	7,214	0	(457)

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Spectrum management
  Line Item: Wireless Broadband Access (500 MHz)

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Wireless Broadband Access	Pos/BA	0	$0	0	$0	0	$0	7	$1,251	7	$1,251
(500 Mhz)	FTE/Obl.	0	0	0	0	0	$0	5	1,251	5	1,251
Direct Obligations...............................	Pos/BA	0	0	0	0	0	0	7	1,251	7	1,251
	FTE/Obl.	0	0	0	0	0	0	5	1,251	5	1,251

SUBACTIVITY: SPECTRUM MANAGEMENT

The objectives of the Spectrum Management subactivity are to:

- Execute the spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903;
- Develop, establish, and implement plans, policies, activities, capabilities and procedures to ensure that the U.S. spectrum policy, spectrum allocations and spectrum management capabilities and processes stay up with the needs of the Federal agencies and the American public for access to the radio spectrum in the 21st century domestically and internationally;
- Ensure Federal agencies use the radio spectrum efficiently and only occupy the spectrum as necessary to perform their missions;
- Plan for and enable performance of Federal spectrum management functions during emergencies;
- Coordinate and register internationally planned Federal Government satellite networks and selected assignments for terrestrial systems; to work cooperatively with the Federal Communications Commission and the Federal agencies in coordinating spectrum use;
- Develop positions and promote U.S. interests in international bodies dealing with radio regulations and other spectrum issues; and
- Develop, implement, and maintain the automated spectrum management capabilities necessary for performing these activities.

These activities fall within the Department of Commerce Strategic Goal – Innovation and Entrepreneurship: Develop the tools, systems, policies, and technologies critical to transforming our economy, fostering U.S. Competiveness, and driving the development of new businesses. Within NTIA, they are carried out by the Office of Spectrum Management (OSM).

Interdepartment Radio Advisory Committee (IRAC) and other Advisory Committee Support

NTIA will continue to manage federal use of the radio spectrum, maintaining and updating the NTIA Manual of Regulations & Procedures for Federal Radio Frequency Management, and providing the management and administrative support to the Interdepartment Radio Advisory Committee (IRAC), the Executive Branch interagency advisory body for Federal spectrum management. The IRAC is composed of the representatives of 19 Federal agencies and an FCC liaison. Through the Space Systems, Spectrum Planning, Technical, Radiocommunication Conference, Emergency Planning and Frequency Assignment Subcommittees as well as numerous ad hoc groups, the IRAC advises NTIA on spectrum policy and procedural matters, develops Federal positions on international radio treaty conferences, and provides recommendations for conflict resolution. NTIA chairs and provides secretariat support and maintains the archive of all documents for the committee.

NTIA also provides support to the Commerce Spectrum Management Advisory Committee that provides private sector advice to the Assistant Secretary and the Policy and Plans Steering Group (PPSG), a committee of executive level representatives from the main spectrum using agencies, plus Office of the Director of National Intelligence, the FCC, OSTP, and OMB.

Domestic Spectrum Policy

In coordination with the IRAC, NTIA develops and implements policies regarding spectrum use by the Federal agencies. At the same time, NTIA develops Executive Branch views and inputs on FCC decisions that may affect Federal operations.

The OSM Domestic Spectrum Policy Division conducts spectrum training courses and seminars for U.S. and foreign spectrum managers. The Division coordinates these courses, drawing upon experts from other divisions of OSM as well as various Federal agencies and the private sector. The Division also develops and provides to the public information, on the web or in print, describing Federal spectrum management and use.

International Spectrum Plans and Policies

NTIA, via the OSM International Spectrum Plans and Policies Division (ISPPD), provides leadership and participates with the State Department, FCC, Federal agencies, commercial industry, and private sector interests in preparing for diverse international radio treaty conferences, negotiations and fora on spectrum management, allocations, technical standards, and regulation. Specifically, NTIA coordinates and develops the Federal Government's contributions to the U.S. proposals for these treaty conferences and forums and helps prepare the preliminary and final U.S. positions. In many cases, NTIA representatives chair the national preparatory groups for these forums. In addition, these representatives are often called upon to chair or organize activities at an international level on behalf of the International Telecommunications Union (ITU), Inter-American Telecommunications Commission (CITEL), International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO). NTIA analyzes the known intentions and positions of other nations to determine whether U.S. counter-proposals are necessary. NTIA also participates in bilateral/multilateral negotiations and provides personnel and technical support for the U.S. delegations to radio treaty conferences and other ITU, CITEL, ICAO, IMO, and regional administrative, policy, and technical forums. In addition, NTIA works toward building confidence worldwide in U.S. spectrum planning techniques to win support for U.S. positions in negotiations and forums. After each World Radiocommunication Conference, ISPPD leads efforts to develop and propose a plan to implement the results of the completed conference into domestic spectrum regulations.

Strategic Planning

NTIA, via OSM's Strategic Planning Division (SPD) develops the Strategic Plan for Federal Spectrum Management, preparing a comprehensive strategy to carry out spectrum management improvements to meet long range goals and objectives for Federal Spectrum Management, and develops the spectrum management roadmap or action plan that will lead to improved means to assuring spectrum access and efficient and effective spectrum use across the Federal Government. The Division will : (1) investigate the means to gather, maintain and update accurate information relating to current and future spectrum requirements, including collaborating and coordinating effectively among the various Federal agencies to obtain the necessary results to collectively execute the means in a unified approach; (2) develop a roadmap designed to identify the necessary actions to incrementally improve Federal spectrum management and use; (3) investigate advanced technologies and concepts for the management of the spectrum that hold the potential for increasing the

efficiency of spectrum use; and (4) assessing the continued effectiveness of spectrum allocations in light of changes in planned spectrum usage.

When necessary, NTIA convenes the PPSG to deal with particularly contentious or difficult issues or issues of a long term or strategic nature. Given the strategic nature of President Obama's call to identify 500 megahertz for wireless broadband, NTIA has called on the PPSG to support this effort.

Emergency Preparedness and Public Safety

In recognition of the importance of public safety services to the American public and the importance of spectrum to these activities, NTIA provides the necessary leadership, technical expertise, applied research, policy guidance, and spectrum management support for the successful coordination of national public safety requirements, goals and objectives both within the Federal Government and state and local entities in coordination with the Department of Homeland Security and the FCC.

NTIA will address and implement the new requirements of National Communications System (NCS) Directive 3-10 to provide the required continuity communications capabilities at both the NTIA primary and alternate operating facilities. NTIA also will maintain a viable Continuity of Operations (COOP) capability by: (1) enhancing the capabilities of the NTIA COOP Alternate Operating Facilities, (2) conducting COOP/Continuity of Government (COG) tests, training, and exercises for NTIA and IRAC personnel to include annual national exercises, and (3) supporting the National Response Framework (NRF) and upon activation of Emergency Support Function #2 by the Department of Homeland Security deploy (as needed) in support of the coordinated Federal response effort to provide Federal spectrum management services at the Joint Field Office or other designated facility.

NTIA also serves in the capacity as an executive committee member to the Emergency Communications Preparedness Center. The Division will support the Assistant Secretary in that capacity while also serving as the working/focus group member for the Department.

Spectrum Services

NTIA, via the OSM Spectrum Services Division, reviews, processes, and authorizes Federal radio frequency assignments. NTIA also reviews each frequency assignment action to determine the degree of compliance with authorized use and will continue its reviews of Federal frequency assignments to evaluate the validity of current needs. This frequency assignment responsibility involves chairing the IRAC Frequency Assignment Subcommittee (FAS) as well as directing the subcommittee's activities and providing its administrative support. The assignment responsibility also involves ensuring that the spectrum needs of certain Federal agencies not represented on the IRAC and the spectrum access requirements of the United Nations and foreign embassies in the United States are satisfied. NTIA maintains and updates files and records for radio spectrum management. The computerized files include the Government Master File of Frequency Assignments (GMF); portions of the FCC frequency records necessary for use in Federal spectrum management, especially the management of frequency bands allocated for shared Federal/non-Federal use; frequency allocation records; terrain elevation data; and Federal systems characteristics data used to support the processing of requests for spectrum certification. NTIA also coordinates Federal spectrum requirements with Canada and Mexico.

The Division also reviews proposed Federal radiocommunication systems to determine compliance with applicable Federal regulations and policies and to evaluate such systems for compatibility with other present and planned spectrum-dependent systems, providing guidance concerning frequency bands, design parameters, and appropriate operating constraints necessary to mitigate harmful interference and ensure effective use of available spectrum resources. NTIA, in accordance with the advice of the IRAC Spectrum Planning Subcommittee (SPS), approves or withholds certification of spectrum support for the system or, alternatively, indicates what adjustments to the system are needed to enable the certification to be approved. The spectrum certification responsibility involves chairing the SPS and directing the subcommittee's activities. NTIA performs certification reviews at the conceptual, experimental, developmental, and operational stages of a given system's procurement cycle, as required by OMB Circular A-11.

Spectrum Engineering and Analysis

NTIA, via the OSM Spectrum Engineering and Analysis Division, conducts in-depth analyses of spectrum use, assists Federal agencies in resolving operational interference problems; provides technical engineering/policy analysis support for international studies and radio treaty conferences; and establishes and improves Federal standards to assure efficient use of the spectrum. The in-depth studies evaluate the effect of existing and planned radiocommunication systems on the radio frequency spectrum and provide technical engineering support for domestic and international policy development and long range planning. These technical/policy analyses fall into two categories: the first focuses on the selected portions of the radio frequency spectrum and the second focuses on particular types of uses of the spectrum. Both types of studies examine present and planned equipment usage to determine if the spectrum is efficiently and effectively used, the potential for compatible sharing of Federal radio services, and the effects of proposed and planned national and international allocation changes on the ability of Federal agencies to complete their mandated missions. NTIA also investigates the possibility of increased sharing of spectrum resources between Federal and non-Federal radiocommunication systems in order to increase the efficient use of the spectrum within the United States. Results from field and laboratory measurements aid in the evaluation of frequency utilization, policy compliance, new technologies, and radio frequency interference.

The Division resolves operational conflicts that arise between Federal agencies regarding the use of the spectrum and coordinate the process of meeting spectrum requirements that cannot be satisfied within existing policies and procedures. These problems become known through NTIA studies or concerns from other agencies. Solving such problems demands analyses of the effects that proposed changes in frequency assignments, operational procedures, or equipment will have on the electromagnetic environment as well as consideration of the various tradeoffs between technical and operational factors. In support of international spectrum management, NTIA provides engineering analyses on technical issues necessary to support U.S. participation in and preparation for international conferences and meetings.

National and international radio regulations ensure that various radio services can operate compatibly in the same environment without unacceptable levels of radio interference. These regulations focus primarily on radio systems using the same allocated bands. Recent years have seen a dramatic increase in the number of problems and spectrum issues involving adjacent band interference (i.e., interference from a transmitter operating in one band to a

receiver operating in an adjacent allocated band). In the national and international marketplace, adjacent band problems surface as the search goes on to identify spectrum for an ever-expanding number of new and innovative radio-based telecommunication services continues. Billions of dollars of investment depend on the availability of spectrum and the resolution of in-band and adjacent band interference concerns through proper coordination or by effective equipment designs through the use of technologies. Within this environment, addressing the adjacent band interference problem has become a significant issue. The effects of adjacent band emission from transmitters and the characteristics of the adjacent band receiving equipment and its interference susceptibility to unwanted signals creates a particularly challenging problem because the FCC has not traditionally applied standards to receivers and cost factors have led to interference prone designs. NTIA has undertaken a comprehensive examination of adjacent band and man-made interference, including technical and regulatory issues.

NTIA evaluates new technologies that can be used to increase the efficiency with which the Federal and private sector use the radio spectrum that makes more spectrum available for emerging technologies, develops new engineering analysis capabilities to improve spectrum efficiency in the Federal frequency assignment process, uses advances in engineering modeling and information technology to improve existing Federal spectrum certification and frequency assignment processes, and develops measurement techniques to assess innovative adaptive sharing techniques between Federal and non-Federal systems.

Information Technology

OSM works with the NTIA Information Technology Division to ensure that automation capabilities fully support the spectrum management function.

Systems Development -- NTIA will design, develop, and implement software and services that are necessary to optimize the spectrum authorization processes; optimize the Federal agencies' computer automated capabilities to manage their frequency spectrum assets; and provide the spectrum management community the optimal spectrum information (e.g., Federal Spectrum Management System) that will enable the Federal agencies to manage their spectrum assets without interference and within the current rules and regulations. The goal is to ensure that Federal agencies have access to accurate spectrum management data, that Federal agencies have the information technology tools necessary to use that data to develop new assignment application requests or changes to existing authorizations that comply with Federal regulations and procedures for using the radio frequency spectrum, and that NTIA has the information technology required to effectively process agency requests for frequency assignment authorizations in a timely manner. NTIA will also develop and improve engineering and analysis models and tools to support spectrum engineering and analysis and the spectrum authorization processes, review its automated analytical capability to ensure the methods of problem solving are appropriate for new communications systems and for state-of-the-art changes in telecommunications technology, develop and enhance analytical computer programs that permit rapid computation of potential interference between existing and proposed communications systems. NTIA also supports design, development, and implementation of administrative/back office systems that support NTIA mission-specific functions including domestic and international telecommunications policy, financial management, human resources, and grants administration.

Network Engineering & Operations - NTIA will provide the information technology systems and services required for inter-office communications, processing frequency assignment

requests, exchanging spectrum management information with Federal agencies using the radio-frequency spectrum, telecommunications grants administration, and providing the public with electronic access to spectrum management and telecommunications policy information. It will also maintain and enhance local area networks and use the Internet to support spectrum management activities (NTIA's unclassified local area network supports traditional office automation activities, such as e-mail and word processing. A classified local area network provides the NTIA staff with access to the computers that process frequency assignment actions and provides secure access to Federal spectrum managers via remote access servers and through the Secret Internet Protocol Router Network (SIPRNet).

Systems Support - NTIA will continue to modify and maintain the production software and databases necessary to operate the spectrum authorization process; provide the Federal agencies the computer automated capability to manage their frequency spectrum assets; and provide the spectrum management community the necessary spectrum information, which will enable the Federal agencies to manage their spectrum assets without interference and within the current rules and regulations. Additionally, as the new Federal Spectrum Management System is placed into production, NTIA will provide the application, database, and end-user support necessary to ensure a smooth transition from the legacy system to the new system.

Enterprise Architecture - NTIA will provide the business strategy and operational transformation to support the information technology required for NTIA to manage the Federal Government's use of the radio frequency spectrum, formulate international information and communications policy, goals, and strategies; enhance the public interest by generating, articulating, and advocating creative and influential policies and programs in the telecommunications and information sectors; and to assist public and non-profit entities in effectively using telecommunications and information technologies to better provide public services and advance other national goals.

During FY 2014, NTIA's OSM will:

- Support the Wireless Innovation and Infrastructure Initiative (WI3) effort to free spectrum for commercial use;
- Provide IRAC Support administrative services for the IRAC, its subcommittees, and ad hoc groups (benefits realized through the year), the CSMAC and PPSG;
- Maintain the Manual of Regulations and Procedures for Federal Radio Frequency Management (benefits realized through the year);
- Maintain the Federal Spectrum Inventory and web presentation for public access (benefits realized to improve transparency of Federal spectrum usage through the year);
- Complete FSMS/Spectrum XXI Release 3.0 in FY14 (benefits realized in FY15 and out years via modernized databases and engineering algorithms);
- Implement FSMS and have available for use by all trained users;
- Initiate the retirement of legacy systems (FMRS and Spectrum XXI and EL-CID);
- Complete one United States Telecommunications Training Institute (USTTI) course for foreign students and two courses on Federal spectrum management (benefits realized at the completion of the courses);
- Implement policies regarding spectrum use by the Federal agencies and respond to FCC decisions that may impact Federal operations (benefits realized through the year);
- Review and improve international spectrum management policies, including U.S. processes for World Radiocommunication Conferences (WRCs), outreach efforts to foreign administrations, and various regional radiocommunication groups, and participation and representation in

international fora addressing spectrum management policies (benefits realized leading up to the WRC in 2015);

- Provide leadership and participate in ITU-Radiocommunication Sector (ITU-R) Study Activities affecting international treaty text, technical studies in preparation for WRCs, and development of regional positions (benefits realized at the WRC in 2015);
- Participate on U.S. Delegations, supporting bilateral and multilateral consultations with key countries throughout the world in preparation for WRC-15 (benefit realized at the WRC in 2015).
- Review Federal space systems for compliance with Federal and non-Federal regulations, and participate in satellite coordination meetings with other administrations (benefits realized through the year);
- Develop the Strategic Spectrum Plan for Federal Spectrum Management in FY13 (benefits being realized in FY14 and out years to improve Federal spectrum planning and policy); Provide cognizant spectrum management liaison support to the National Response Framework, specifically Emergency Support Function 2, so that Federal requirements can be met in the event of a natural or man-made disaster (benefits realized through the year, but particularly during hurricane season);
- Serve as the Department of Commerce representative to the Emergency Communications Preparedness Center so that emergency responders have the necessary tools to communicate with each other in the event of a disaster (benefits realized through the year);
- Review and coordinate requests from Federal agencies for frequency assignments in a thorough and timely manner (benefits realized through the year);
- Review and process requests from Federal agencies for certification of spectrum support in a thorough and timely manner (benefits realized through the year);
- Improve the methods and procedures used to process requests for frequency authorizations and certification of spectrum support to ensure equitable and expeditious access to the radio spectrum resource (benefits realized through the year),
- Complete the Spectrum Sharing Innovation Test-Bed Pilot Program, evaluating the ability of devices employing Dynamic Spectrum Access sharing techniques to compatibly operate with systems in the land mobile radio service frequency bands (benefits realized in the following years);
- Complete the technical studies identifying changes to the Federal regulations, procedures, and processes necessary to improve spectrum efficiency in the land mobile radio, fixed, and radiolocation service frequency bands (benefits realized through the year);
- Implement the electronic exchange of information between the OSM and National Archives and Records Administration (NARA).
- Work with NTIA ITD to:
    - maintain and update existing computer software used for processing assignments, databases, and interference calculations;
    - design or implement new software packages to further improve assignment data processing and analytical engineering evaluation;
    - develop new automated systems to improve access to spectrum management information;
    - plan for upgrading the spectrum management frequency assignment and system review processes;
    - plan, upgrade and improve the computer automated software tools (e.g., Federal Spectrum Management System) provided to the Federal agencies to assist them in: (a) making more efficient and effective use of the spectrum, (b) preparing frequency assignment and spectrum certification applications, (c) developing spectrum related policies and procedures and (d) resolving interference problems;

- o prepare and implement plans to improve the efficiency and effectiveness of the Federal Government's spectrum management process using advanced IT techniques and business re-engineering; and
- o plan, upgrade and implement new methods of providing secure and non-secure access to Federal spectrum management data by NTIA staff, Federal spectrum managements, the telecommunications industry, and the general public.
- o provide the IT technology systems required for inter-office communications, processing frequency assignment requests, exchanging spectrum management information with Federal agencies using the radio-frequency spectrum, and providing the public with electronic access to spectrum management information;
- o develop and improve engineering and analysis models and tools to support spectrum engineering and analysis and the spectrum authorization processes;
- o develop, modify, and implement software that is necessary to operate the spectrum authorization processes, to provide the Federal agencies the computer automated capability to manage their frequency spectrum assets, and to provide the spectrum management community the necessary spectrum information that will enable the Federal agencies to manage their spectrum assets without interference and within the current rules and regulations;
- o develop plans to implement computer automated software tools to assist the Federal agencies in: (1) preparing their requests for frequency authorization and spectrum certification; (2) insuring that requests for spectrum are interference free and comply with NTIA's rules and regulations; (3) coordinating spectrum requests of other agencies; (4) ensuring that their use of the spectrum is efficient and effective; (5) managing their frequency assignment assets; and (6) resolving interference problems;
- o develop and implement automated workflow processes and the electronic exchange of information between the OSM and National Archives and Records Administration (NARA) for the purpose of archiving OSM Federal records;

Interdepartment Radio Advisory Committee (IRAC) and other Advisory Committee Support: NTIA will:

- Provide the necessary leadership and administrative support for the IRAC, its subcommittees, and ad hoc groups as the committee provides advice to NTIA on spectrum management, including coordination of spectrum use, review of spectrum plans, development of Federal technical standards, emergency planning, satellite registration and coordination, international conference preparations, and development of coordination arrangements with Canada and Mexico;
- With the advice of the IRAC, coordinate with the FCC views on all technical and policy decisions under consideration by the FCC which may impact Federal operations, and decisions under consideration by NTIA which may impact non-Federal operations;
- Develop and update the Federal Government rules and regulations necessary to manage the Federal Government's use of the spectrum including those governing the relationships between the FCC and the NTIA;
- Provide public access to the IRAC and to releasable spectrum management information;
- Improve and upgrade the electronic archives of the IRAC and distribute it periodically to the NTIA staff and Federal agencies; and
- Provide support and management of the PPSG and CSMAC.

Domestic Spectrum Policies: NTIA will:

- Plan and conduct spectrum training courses and seminars for U.S. and foreign spectrum managers;
- Respond to queries from the private sector relative to the use of spectrum by the Federal Government;
- Develop and disseminate via the web and printed materials information describing Executive Branch spectrum management and Federal agency use of spectrum; and
- Develop and implement policies regarding spectrum use by the Federal agencies.

International Spectrum Plans and Policies: NTIA will:

- Coordinate, develop, and present the Federal Government's contribution to U.S. proposals and positions for international fora where radio frequency spectrum management issues are addressed such as the ITU World and Regional Radiocommunication Conferences, ITU Plenipotentiary Conferences, ITU Council, ITU Standards Conferences, the ITU Development Conferences, and the Organization of American States' Inter-American Telecommunication Commission (CITEL);
- Analyze other administration's proposals to determine the impact on U.S. spectrum requirements:
- Develop and implement a plan for ongoing outreach strategies to facilitate gaining international support for U.S. positions;
- Lead or participate in and contribute to ITU-Radiocommunication Sector study groups and other international telecommunication regulatory fora;
- Participate in and contribute to other international fora dealing with radio spectrum issues such the North Atlantic Treaty Organization (NATO) Joint Civil/Military Committees, the International Civil Aviation Organization and the International Maritime Organization.
- Chair the IRAC Radio Conference Subcommittee (RCS) and through this forum coordinate Federal Government positions and proposals to be submitted to international fora involved in spectrum management matters;
- Consult with foreign countries on reforming their spectrum management processes to use the spectrum more efficiently and effectively;
- Lead and participate in bilateral and multilateral meetings on spectrum management issues with foreign administrations including bi-lateral frequency coordination agreements with Mexico and Canada;
- Implement the results of international radio treaty conferences by recommending changes to U.S. domestic rules;
- Chair the IRAC ad hoc group on WRC Implementation;
- Provide leadership on spectrum-related issues that come before the ITU Council and Plenipotentiary Conference;
- Review Federal space systems for compliance with national requirements, coordinate with other Federal and non-Federal radiocommunication systems, and participate in satellite coordination meetings with other administrations;
- Chair the IRAC Space Systems Subcommittee;
- Coordinate non-Federal space systems with Federal radiocommunication systems;
- Develop spectrum policies relative to satellite operation, national and international coordination, notification, and advanced publication;
- Negotiate satellite coordination agreements with foreign countries relative to either

Federal Government satellite operations or foreign government satellite operations;

- Coordinate with the FCC on both domestic satellite systems and Federal Government systems. Provide recommendations on FCC rulemakings on space allocations and rules and regulations;
- Provide comments to the FCC on rulemakings concerning international activities;
- Provide support and technical analysis in cooperation with other Department offices to promote U.S. product sales to other countries;
- Initiate and conduct scientific and technical cooperation in the field of telecommunications and spectrum management with specific foreign countries in accordance with U.S. foreign and international trade policy objectives;
- Identify regulatory and procedural barriers to the timely and global implementation of United States innovations in radiocommunications technologies and services and recommend methods to remove those barriers;
- Participate in and contribute to Federal strategic spectrum planning on emerging technologies such as dynamic spectrum access, and incorporate domestic activities in international planning; and
- Lead and participate in international spectrum management training activities including support for the USTTI.

Strategic Planning: NTIA will:

- Develop, coordinate, and execute an integrated program that responds to Administration directives on spectrum management including identifying 500 megahertz for wireless broadband.
- Provide leadership and support for the Policy and Plans Steering Group, an interagency advisory committee whose membership includes executive representatives from those Federal agencies whose missions require significant use of the radio frequency spectrum resource. The role of this committee will be advisory and this committee will report to the Assistant Secretary of Commerce for Communications and Information. This forum will serve as a significant mechanism for resolving spectrum policy issues within the Executive Branch.
- Develop long range goals for Federal Spectrum Management that will include the development of a spectrum management roadmap to identify the future actions and coordinate among affected stakeholders;
- Assist the Federal agencies in maintaining and updating their agency-specific spectrum plans defining current and future spectrum requirements; to include the identification of those spectrum efficiency enhancing technologies under consideration;
- Develop, maintain and update the Strategic Plan for Federal Spectrum Management and coordinate the Plan with appropriate Federal agencies;
- Assist the Federal agencies and the Office of Management and Budget with incorporating the consideration of spectrum-related requirements within the capital planning process;
- In coordination with the FCC, assist in the development and updating of a National Strategic Spectrum Plan to include appropriate coordination with affected Federal agencies and other executive components;
- Investigate and develop a future Federal spectrum management roadmap that considers advanced and spectrum efficient concepts to improve the effectiveness and efficiency of spectrum use by the Federal agencies and thereby increase the spectrum availability in fulfilling the national interest for national security, public safety and economic opportunities; and
- Provide monitoring of and annual reporting on the achieved progress Administration

goals in coordination with Federal agencies and other relevant components of the Executive Branch.

Emergency Planning and Public Safety: NTIA will:

- Develop Public Safety Telecommunications Policy consistent with Administration goals;
- Provide spectrum management input to FirstNet;
- Provide leadership, liaison, and guidance for the integration of National Public Safety telecommunications systems, ensuring inter-operability among Federal, state, and local public safety agencies; and provide for the spectrum needs of these integrated systems,
- Provide the necessary leadership, technical expertise, applied research, policy guidance, and spectrum management support for the successful coordination of national public safety requirements, goals and objectives both within the Federal Government and the state and local entities in coordination with the FCC;
- Identify current and future technology which could enhance interoperability;
- Develop security/emergency preparedness and long-range plans for use of the spectrum;
- Develop procedures and incorporate them in the planning process for a timely and orderly transition from normal to emergency modes;
- Participate with other Federal agencies in communications emergency readiness planning and implementation;
- Formulate and advocate plans and policies necessary to the development of strategies to improve and restore U.S. telecommunications resources;
- Develop and modify spectrum policies and procedures for crisis-related situations under the National Response Framework, specifically Emergency Support Function 2;
- Provide emergency readiness planning for the Federal use of the radio frequency spectrum;
- Identify and provide solutions to issues and deficiencies in the national security/emergency preparedness communications planning process in support of the National Communications System (NCS); and
- Serve as the Department's working group and focus group representative for the Emergency Communications Preparedness Center.

Spectrum Services: NTIA will**:**

- Process Federal agencies requests for frequency assignment authorizations and actions;
- Provide Federal agencies with accurate spectrum management data;
- Assist non-IRAC agencies in identifying spectrum to meet their radiocommunications needs;
- Resolve conflicting requirements concerning Federal agencies' use of the spectrum;
- Evaluate proposed Federal radiocommunications systems for certification of spectrum support in accordance with OMB Circular A-11;
- Identify and implement the information technology capabilities required to satisfy the needs of the Federal agencies for computer automated tools to assist in the preparation of frequency authorization and spectrum certification requests, the determination of compliance with rules and regulations, and the prediction and mitigation of radio frequency interference;

- Participate in the negotiation of spectrum coordination agreements and spectrum sharing protocols with Mexico and Canada;
- Coordinate requests for radio frequency assignments in the U.S./Canadian border area in order to ensure interference-free operations to both the U.S. and Canada;
- Coordinate FCC requests for Special Temporary Authorizations assignments from the private sector when such requests involve use of spectrum that is allocated for Federal use on a primary or shared Federal/non-Federal basis; and
- Chair the IRAC Frequency Assignment and Spectrum Planning Subcommittees (FAS and SPS) and through these forums, coordinate the processing of requests by the Federal agencies for frequency assignment and spectrum certification actions.

Spectrum Engineering and Analysis: NTIA will:

- Assess the present and projected Federal use of the spectrum by conducting studies of spectrum use, concentrating on bands and services involving: upcoming international radiocommunication conferences, Federal and non-Federal sharing, and those areas where significant improvements in utilization appear possible;
- Resolve spectrum sharing problems concerning conflicts between Federal agencies or between Federal and non-Federal spectrum users, and identify any changes to existing spectrum policies and procedures that could minimize such problems in the future;
- Provide technical engineering support to the IRAC and its subcommittees, especially in the area of spectrum standards, FCC proposed rulemaking, improved frequency coordination procedures, and resolving reported interference cases;
- Undertake a comprehensive examination of adjacent band interference, including technical and regulatory issues, and make appropriate recommendations;
- Evaluate new technologies, applicable to various radio services and frequency bands, to determine their potential spectrum efficiency and usefulness for Government applications;
- Develop plans for intra-service and inter-service sharing in selected bands;
- Define new or improved automated techniques for the study of spectrum sharing, interference prediction, and frequency coordination;
- Plan and coordinate spectrum measurements in selected frequency bands to support ongoing studies involving spectrum sharing, radio interference, spectrum standards, spectrum policy development, frequency coordination, and/or spectrum efficiency;
- Provide technical support in performing research and development of automated spectrum engineering and analysis capabilities;
- Provide technical engineering and policy analysis support in preparation for and participation in international radiocommunication conferences and in development of domestic spectrum policy and long-range planning; and
- Chair the IRAC Technical Subcommittee (TSC) and through this forum, coordinate and develop spectrum standards that apply to all Federal systems.

Information Technology: OSM, via NTIA's Information Technology Division (ITD), supports spectrum management. NTIA will:

- maintain and update existing computer software used for processing assignments, databases, and interference calculations;
- design or implement new software packages to further improve assignment data processing and analytical engineering evaluation;
- develop new automated systems to improve access to spectrum management

information;

- plan for upgrading the spectrum management frequency assignment and system review processes;
- plan, upgrade and improve the computer automated software tools (e.g., Federal Spectrum Management System) provided to the Federal agencies to assist them in: (a) making more efficient and effective use of the spectrum, (b) preparing frequency assignment and spectrum certification applications, (c) developing spectrum related policies and procedures and (d) resolving interference problems;
- prepare and implement plans to improve the efficiency and effectiveness of the Federal Government's spectrum management process using advanced IT techniques and business re-engineering; and
- plan, upgrade and implement new methods of providing secure and non-secure access to Federal spectrum management data by NTIA staff, Federal spectrum managements, the telecommunications industry, and the general public.

PROGRAM REDUCTIONS FOR FY 2014:

Spectrum Management: Federal Spectrum Management System (Base Funding: $7,214,000 and 32 FTE; Program Reduction: (-$457,000 and -0 FTE): NTIA requests a decrease of $457,000 and 0 FTE for a total of $7,214,000 and 32 FTE to support the government-wide effort to be fiscally responsible.

Proposed Actions

The Office of Spectrum Management (OSM) proposes a reduction of $457,000 in direct appropriations by reducing funding for its Federal Spectrum Management System (FSMS). This will also reduce the amount charged to Federal agencies for spectrum management activities. This reduction will not delay development and roll out of the FSMS system. Because of the current status of the project, the program feels this reflects anticipated reductions in development costs. FSMS remains a high priority in order to improve future capabilities for spectrum management. Therefore, NTIA recommends minimization of reductions to FSMS, where possible.

Recently, the Commerce Spectrum Management Advisory Committee (Committee) has noted that the new FSMS data processes capability will need data improvements in terms of the numbers of technical fields and the accuracy of the data to maximize the value of the FSMS effort. The Committee recommends that NTIA pursue this data collection and cleanup effort.

Statement of Need and Economic Benefits:

The need to reduce the Federal Government's deficit requires a reduction in Government spending. NTIA's contribution to this effort will promote operations that are more efficient. There would be no risk associated with this reduction because NTIA employees will be assuming various aspects of the development of FSMS that were previously handled by contractors.

Base Resources Assessment

OSM currently conducts the following activities with its base resources:

- Execute spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903;
- Development, establishment, and implementation of plans, policies, activities, capabilities and procedures to ensure that the U.S. spectrum policy, spectrum allocations and spectrum management capabilities and processes stay up with the needs of the Federal agencies and the American public for access to the radio spectrum in the 21st century domestically and internationally;
- Ensure Federal agencies use the radio spectrum efficiently and only occupy the spectrum as necessary to perform their missions;
- Plan for and enable performance of Federal spectrum management functions during emergencies;
- Coordinate and register internationally planned Federal Government satellite networks and selected assignments for terrestrial systems to work cooperatively with the Federal Communications Commission and the Federal agencies in coordinating spectrum use;

- Develop positions and promote U.S. interests in international bodies dealing with radio regulations and other spectrum issues; and
- Develop, implement, and maintain the automated spectrum management capabilities necessary for performing these activities.

Schedule & Milestones:

- FY 13: Enhancement to the FSMS Functionality
- FY 13: Replacement of FMRS with New and Enhanced Back-Office Services
- FY 13: Propose domestic rule changes in response to the results of WRC-12
- FY 14: Retirement of SXXI, DCFS, GMF Card Format
- FY 14: Legacy Data Migration
- FY 14: Publish NTIA's Strategic Plan for Federal Spectrum Management
- FY 14: Receive and Process Spectrum Certifications
- FY 15: Satellite Registrations
- FY 15: Enhancements to the FSMS Back-Office Functionality
- FY 15: Statistical and Analytical Reporting
- FY 15: Frequency Assignment Review Process
- FY 15: Prepare for and participate in the Conference Preparatory Meeting for WRC-15
- FY 15: Prepare for and participate in WRC-15
- FY 16: Prepare and Submit Certifications
- FY 16: Generate Allocation Plans, Channel Plans, and Frequency Schedules
- FY 16: Validate Telecommunications Service Priorities for Radiocommunications

Deliverables:

- FY13:   Complete CSMAC activity on 1695-1710 MHz
- FY 13: Complete CSMAC activity on 1755-1850 MHz
- FY 13: Renew the CSMAC Charter and the Membership
- FY 13: Implement changes to the NTIA Manual Annex O, the Technical Review Panel and the Dispute Resolution Board in response to the Middle Class Tax Relief Act changes to the Commercial Spectrum Enhancement Act
- FY 13: Implement rule changes to the NTIA Manual in response to the results of WRC-12
- FY 13: Recommend to the President 15 megahertz with the 1675-1710 MHz band for reallocation for mobile broadband
- FY 13: Complete a report on 5350-5470 MHz and 5850-5925 MHz bands in accordance with the Middle Class Tax Relief Act
- FY 13 and 14: Publish Annual Reports on Relocation and the Spectrum Sharing Test-Bed Pilot
- FY 14: Enhancement to the FSMS Green Functionality
- FY 14: Replacement of FMRS with New and Enhanced Back-Office Services

Performance Goal: Organizational Excellence **Performance Measure**: Projected lines of code created vs. required for FSMS	FY 11 Actual	FY 12 Target	FY 13 Target	FY 14 Target	FY 15 Target	FY 16 Target	FY 17 Target
With decrease	40.5%	50%	68%	81%	90%	99%	100%
Without decrease	40.5%	50%	69%	82%	91%	100%	100%
Description: This measure focuses on the amount of computer coding necessary to ensure FSMS' proper operation. Percentages indicate the cumulative goal during the software's life-cycle development.							

PROGRAM CHANGE PERSONNEL DETAIL

Not applicable. There will be no reduction in the number of positions.

(Dollar amounts in thousands)

Activity: Salaries and Expenses
Subactivity: Spectrum Management

Object Class	2014 Decrease
Personnel compensation	
Full-time permanent	0
Other than full-time permanent	0
Other personnel compensation	0
Special personnel services payments	0
Total personnel compensation	0
Civilian personnel benefits	0
Benefits for former personnel	0
Travel and transportation of persons	0
Transportation of things	0
Rental payments to GSA	0
Rental Payments to others	0
Communications, utilities and miscellaneous charges	0
Printing and reproduction	0
Advisory and assistance services	0
Other services	0
Purchases of goods & services from Gov't accounts	(457)
Operation and maintenance of facilities	0
Research and development contracts	0
Medical care	0
Operation and maintenance of equipment	0
Subsistence and support of persons	0
Supplies and materials	0
Equipment	0
Lands and structures	0
Investments and loans	0
Grants, subsidies and contributions	0
Insurance claims and indemnities	0
Interest and dividends	0
Refunds	0
Total obligations	(457)

PROGRAM CHANGES FOR FY 2014:

Wireless Innovation and Infrastructure Initiative (WI3) (500 MHz) (Base Funding: $0 and 0 FTE; Program Change: $1,251,000 and 5 FTE): NTIA requests $1,251,000 and 5 FTE for a total of $1,251,000 and 5 FTE to implement WI3's charge to NTIA to find over the next 10 years 500 MHz of Federal and non-Federal spectrum suitable for both mobile and fixed wireless broadband use. The spectrum must be available to be licensed by the Federal Communications Commission for exclusive use or made available for shared access by commercial and Government users to enable licensed or unlicensed wireless broadband technologies to be deployed. NTIA will analyze, identify, monitor, and report on making the 500 MHz available, develop new spectrum access approaches and technologies, and use its test bed to test devices that could promote spectrum sharing. Heretofore, NTIA has been involved with spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903. Finding 500 MHz is an entirely new project for NTIA; thus, base funding is not sufficient to achieve the initiative's goals.

In accordance with the President's National Wireless Initiative, NTIA will commence work in conjunction with the FCC in recovering and reallocating spectrum, updating 20th century spectrum policies, and providing adequate incentives and assistance to enable Federal agencies or affected entities to make up to 500 MHz (in bandwidth) available. This work will also include regular progress reports. It will require in-depth review of Federal spectrum use and short- and long-term actions for accommodating mobile broadband. Some actions are likely to require analytical support and spectrum measurements. Other actions may require "domino" movement of systems from additional bands.

NTIA will develop new spectrum access approaches and technologies that will improve management of the nation's airwaves and deliver new ways for industry to provide wireless services to consumers. NTIA will apply its policy and scientific expertise to advance the Administration's spectrum sharing reform recommendations.[1] The White House, Congress, telecommunications industry, and consumers support reforms that will ensure that there is a sufficient, flexible spectrum of radio frequencies that can accommodate growing consumer demand and evolving wireless technologies, with the understanding that scarcity of mobile broadband could mean higher prices, poor service quality, and an inability for the U.S. to compete internationally. NTIA will address increasing the access to and efficiency of spectrum through an integrated program of research, testing, and policy development. This will be done through the combined efforts of NTIA's spectrum management and research programs.

The wireless broadband spectrum research efforts will examine the feasibility of increased spectrum sharing between Federal and non-Federal users as a means of improving spectrum efficiency. More specifically, Section 3 of the President's Memorandum calls for the following action: *"to facilitate research, development, experimentation, and testing by researchers to explore innovative spectrum-sharing technologies, including those that are secure and resilient."* [2] NTIA's research focus will expand the initial test-bed pilot program to review all promising spectrum sharing technologies and implementation approaches to ascertain if these are effective in sharing with other radio services. This research will play a critical role in making available 500 MHz of spectrum within the next 10 years.

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[1] Presidential Determination: Memorandum for the Heads of Executive Departments and Agencies, *Improving Spectrum Management for the 21st Century*, 40 WEEKLY COMP. PRES. DOC. 2875 (Nov. 30, 2004).
[2] Presidential Memorandum for the Heads of Executive Departments and Agencies, *Unleashing the Wireless Broadband Revolution* (June 28, 2010).

Proposed Actions:

NTIA will support economic growth by continuing work to identify and make available 500 MHz of spectrum as directed by the President. However, new resources are required to be dedicated solely in developing criteria for nominating candidate bands, evaluating band selection factors, determining candidate bands, determining what categories of repurposing for these candidate bands, and transitioning planning that will be required for either relocation or spectrum sharing. In addition, this work will have supporting actions regarding legislative, regulatory rulemaking, and international agreements that will be required in fulfilling the availability of spectrum. This work is expected to require the entire resources for the next ten years.

NTIA will provide opportunities for Federal agencies to work with industry, researchers, and academia to examine cooperatively new ways of sharing radio spectrum through spectrum management reforms and new technologies. In response to the executive memorandum from the President, NTIA will create and implement a plan to facilitate research, development, experimentation, and testing by researchers to explore innovative spectrum-sharing technologies. This effort will be accomplished in close consultation with NIST, the Wireless Spectrum Research & Development Technology Workgroup, National Science Foundation, and all agencies as appropriate.

NTIA, in coordination with the Federal Communications Commission (FCC) and other Federal agencies, has established a Spectrum Sharing Innovation Test-Bed (Test-Bed) pilot program to examine the feasibility of increased sharing between Federal and non-Federal users. The pilot program is currently evaluating the ability of devices employing Dynamic Spectrum Access (DSA) techniques to share spectrum with land mobile radio (LMR) systems. To fulfill the objectives being set out by the Executive Memorandum from the President, the program will expand research into spectrum-sharing technologies, such as DSA, which can be made as a part of the overall plan in making 500 MHz of spectrum available.

As part of the pilot program, NTIA engineers will develop performance monitoring tools, models, and measuring techniques that can accurately evaluate spectrum-sharing technologies and techniques. The goal of the pilot program is to develop the necessary policies and spectrum management strategies to promote the development of this potentially flexible and innovative approach to spectrum access.

Test-Bed Pilot Program: NTIA will continue the existing Test-Bed pilot program examining DSA sharing techniques in the LMR frequency bands. The laboratory and field measurements currently planned under the pilot program were initially scheduled to be completed in April 2011. The work being performed under the pilot program has progressed more slowly than anticipated, due to the complex nature of the technologies and the difficulties experienced in tailoring the testing to each technology. Given the progress to date, in all likelihood it will take until 2014 or later to complete and document the measurements.

As directed in the Executive Memorandum, NTIA and the FCC are to work together and identify 500 MHz of spectrum for mobile broadband technologies.[3] New and innovative techniques must be employed to facilitate sharing between Federal and non-Federal users if there is any hope of identifying 500 MHz. Adaptive sharing techniques such as DSA are envisioned as a key component to increasing access to spectrum. DSA is intended to allow each device to evaluate its radio frequency environment using spectrum sensing, geo-location, or a combination of spectrum sensing

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[3] Presidential Memorandum for the Heads of Executive Departments and Agencies, *Unleashing the Wireless Broadband Revolution* (June 28, 2010).

and geo-location techniques; determine which frequencies are available for use on a non-interference basis; and reconfigure itself to operate on the identified frequencies. DSA has the possibility to permit access to the spectrum without relocating the incumbent spectrum users.

Accomplishing the Administration's goals will require an expansion of staff and equipment. To date, NTIA has not conducted much research on spectrum-sharing techniques and technologies. Some of the technical actions above require original research and new analysis tools and techniques. In FY 2009, NTIA initiated the Test-Bed pilot program as a limited effort focused on existing LMR systems. Additional resources will be required to expand this effort, move the testing ahead more quickly, and to release measurement resources to perform based functions related to interference analysis and spectrum planning. The FY 2011 spectrum-access initiative using intelligent networks and cognitive radio means NTIA will expand spectrum-sharing research next year.

Statement of Need and Economic Benefits:

New resources are required to be dedicated solely in monitoring, tracking, and reporting assessment of progress toward accomplishing the actions necessary in fulfilling the goal of making available 500 MHz of spectrum. This action involves monitoring, tracking, and coordinating with over 20 Federal agencies and will require reporting to various executive offices of the President.

Few technological developments hold as much potential to enhance America's economic competitiveness, create jobs, and improve the quality of our lives as wireless high-speed access to the Internet. Innovative new mobile technologies hold the promise for a virtuous cycle -- millions of consumers gain faster access to more services at less cost, spurring innovation and then a new round of consumers benefit from new services. Expanded wireless broadband access will trigger the creation of innovative new businesses, provide cost-effective connections in rural areas, increase productivity, improve public safety, and allow for the development of mobile telemedicine, telework, distance learning, and other new applications that will transform Americans' lives.

Spectrum and the new technologies it enables also are essential to the Federal Government, which relies on spectrum for important activities, such as emergency communications, national security, law enforcement, aviation, maritime, space communications, and numerous other Federal functions. Spectrum is also critical for state, local, and tribal government functions. As the wireless broadband revolution unfolds, innovation can enable efficient and imaginative uses of spectrum to maintain and enhance the Government's capabilities. This global technology leadership will only happen if there is adequate spectrum available to support the forthcoming myriad of wireless devices, networks, and applications that can drive the new economy. To carry this out, NTIA is finding ways to use spectrum more efficiently by reviewing current uses of the Federal Spectrum, investigating innovative sharing techniques, and researching the development of advanced, situation-aware spectrum-sharing technologies.

LMR systems are used for two-way communication by Federal agencies over spectrum that is occupied infrequently throughout the day. This infrequent usage pattern allows opportunities for DSA enabled devices to access spectrum that is unused at any point in time on a non-interference basis. With the funds requested in FY 2012, NTIA will accelerate research to show that DSA can be a viable sharing technique and a legitimate option in the ongoing effort to identify 500 MHz of spectrum that can be made available for emerging broadband technologies in order to satisfy the demand described in the National Broadband Plan and the Executive Memorandum of June 28, 2010.

This effort will require additional Institute for Telecommunication Sciences (ITS) engineers to accelerate the progress of the laboratory and field measurements to characterize the behavior of DSA with incumbent systems. These measurements are critical to the acceptance of DSA as a viable sharing technique. Additional OSM engineers are needed to ensure that the data collected by ITS is sufficient to develop policy and service rules for devices using DSA sharing techniques. NTIA is currently the only Federal organization that performs the types of measurements necessary to support policy decisions on this emerging technology.

As aptly summarized by the FCC in the National Broadband Plan, "The growth of wireless broadband will be constrained if government does not make spectrum available to enable network expansion and technology upgrades. In the absence of sufficient spectrum, network providers must turn to costly alternatives, such as cell splitting, often with diminishing returns. If the U.S. does not address this situation promptly, scarcity of mobile broadband could mean higher prices, poor service quality, an inability for the United States to compete internationally, depressed demand and, ultimately, a drag on innovation … Flexibility of use enables markets in spectrum, allowing innovation and capital formation to occur with greater efficiency. More flexible spectrum rights will help ensure that spectrum moves to more productive uses, including mobile broadband, through voluntary market mechanisms. Spectrum flexibility, both for service rules and license transfers, has created enormous value. For example, the combined book value of flexible-use licenses held by the four national wireless providers, reflecting the prices paid at auction as well as in mergers and other corporate transactions, is over $150 billion. Some economists estimate that the consumer welfare gains from spectrum may be 10 times the private value to the spectrum holder. If this rule of thumb is true, it suggests that the social value of licensed mobile radio spectrum alone in the U.S. is at least $1.5 trillion." [4]

This initiative will result in a number of benefits. Non-monetary benefits include advances in spectrum science and policy, experimentation, innovation, and growth of new technologies. The monetary benefits are difficult to quantify, but the return on investment, to NTIA alone, is expected to be substantial. The Test-Bed pilot program, if properly executed, will serve as a best practices model for other similar research efforts to provide Federal agencies with more information about the performance of emerging technologies. This information can be used by Federal agencies to make sound decisions regarding whether sharing is possible through the use of DSA devices. Finally, industry and the economy overall will benefit as strengths and weaknesses of DSA sharing techniques are better understood, providing opportunities for increased spectrum access.

With the requested funding, NTIA will deliver the following:
- Measurement techniques to evaluate DSA devices. These will be made available to government, industry, and academia.
- Proposals for DSA spectrum-sharing techniques and presentation to national and international organizations.
- A plan to facilitate research, development, experimentation, and testing by researchers to explore other innovative spectrum-sharing technologies.
- Recommendations for further evaluation of spectrum-sharing technologies that have potential for the greatest near term benefits.

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[4] *Connecting America: The National Broadband Plan*, pages 77-79 (March 2010).

Base Resources Assessment:

OSM's base funding is used primarily for OSM labor expenses for domestic and international spectrum management. OSM is reimbursed by other Federal agencies to execute the spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903; to develop, establish, and implement plans, policies, activities, capabilities, and procedures to ensure that the U.S. spectrum policy, spectrum allocations and spectrum management capabilities and processes stay up with the needs of the Federal agencies and the American public for access to the radio spectrum in the 21st century domestically and internationally; to ensure Federal spectrum management functions during emergencies; to coordinate and register internationally planned Federal Government satellite networks and selected assignments for terrestrial systems; to work cooperatively with the Federal Communications Commission and the Federal agencies in coordinating spectrum use; and to develop, implement and maintain the automated information technology capabilities necessary for performing these activities. OSM will not collect reimbursable funds from other Federal agencies to fund the identification of 500 MHz because the effort is not intended to provide spectrum management support to those agencies. As a result, the $1.2 million for 500 MHz will be needed to address the signed Executive Memorandum that commits the Federal Government to make available 500 MHz available for wireless broadband. The spectrum will be identified from spectrum that may currently have Federal and/or non-Federal users. New resources are needed to identify, analyze, and reallocate spectrum and to recover current operations.

NTIA's involvement with the Test-Bed program began in the summer of 2008. NTIA provided reimbursable funds collected from other Federal agencies to evaluate the ability of DSA devices for employing spectrum sensing and/or geo-location techniques to share spectrum with land mobile radio (LMR). NTIA subsequently drafted the Phase I test plan and is presently drafting the test plans for the Phase II and III field tests. As the case above, NTIA should not collect reimbursable funds from other Federal agencies to fund a long-term research program on spectrum sharing innovation. The additional funds are required to expand the initial test-bed pilot program to review all technologies that are poised for advancement in development and commercialization. NTIA should also credibly examine all of the different DSA implementation approaches being tested to ascertain if DSA techniques are effective in sharing with other radio services. The Test-Bed program and spectrum sharing research efforts play a critical role in making available 500 MHz of spectrum within the next 10 years.

Schedule & Milestones:

- FY 2011:   Developed an in depth plan and milestones for identifying 500 MHz for wireless broadband, working with the FCC and Federal agencies
- FY 2011-13:   Implemented the plan and milestones to review and identify bands to be made available
- FY 2012-16:   Increase the spectrum available to wireless broadband services by 500 MHz within the next ten years
- FY12-13:   Completed the measurements under the Test-Bed pilot program
- FY12-14:   Develop and evaluate interference protection criteria, and appropriate interference models, for assessing potential interference between DSA devices and LMR systems (in coordination with appropriate Federal agencies)
- FY13 -16:   Identify policies and management strategies to perform spectrum sharing between DSA devices and LMR effectively

- FY14-16:   Based on the lessons learned in the Test-Bed pilot program, develop a set of general tools and models that can be used to predict behavior and interactions of DSA spectrum-sharing techniques with other radio services

Deliverables:

Identify 500 MHz for Wireless Broadband
- FY 14   Progress reports every 6 months
- FY 14   Recommendations for legislative action
- FY 14   Transition plans for each system to be relocated or considered for band sharing
- FY 13-15 Proposed regulatory rulemakings as required
- FY 11-14 Completion of testing and associated reports on devices being tested within the Test-Bed
- FY 12-14 Evaluation and validation of interference protection criteria of LMR services
- FY 12-14 Analysis techniques for assessing potential interference to primary systems. These will be made available to government, industry, and academia
- FY 14   Measurement techniques to evaluate DSA devices. These will be made available to government, industry, and academia
- FY 16-20 New international agreements as required

<table>
<tr><td colspan="8" align="center">PERFORMANCE METRICS</td></tr>
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Performance Goal: Innovation and Entrepreneurship	FY 2011 Actual	FY 2012 Target	FY 2013 Target	FY 2014 Target	FY 2015 Target	FY 2016 Target	FY 2017 Target
Identify 500 MHz of available spectrum							
With Increase	N/A	100 MHz	200 MHz	300 MHz	400 MHz	500 MHz	500 MHz
Without Increase	N/A	0	0	0	0	0	0
Description: Performance targets a cumulative total of 500 MHz required to be identified due to impact of reducing the amount of new required resources.							

Performance Goal: Innovation and Entrepreneurship	FY 2011 Actual	FY 2012 Target	FY 2013 Target	FY 2014 Target	FY 2015 Target	FY 2016 Target	FY 2017 Target
Make 500 MHz of spectrum available							
With Increase	N/A	100 MHz	200 MHz	300 MHz	400 MHz	500 MHz	500 MHz
Without Increase	N/A	0	0	0	0	0	0
Description: Performance targets a cumulative total of 500 MHz required to be made available.							

Performance Goal: **Science and Information** Performance Measure: Test and evaluate dynamic spectrum access devices	FY 2011 **Actual**	FY 2012 **Target**	FY 2013 **Target**	FY 2014 **Target**	FY 2015 **Target**	FY 2016 **Target**	FY 2017 **Target**
With increase	15%	25%	100%				
Without increase	15%	25%	50%	75%	100%		
Description: This measure is focused on the testing of spectrum devices and accelerating the on-going Test-Bed pilot program evaluating DSA sharing techniques to help satisfy the goal of identifying 500 MHz for the deployment of broadband consistent with the goals established in the Executive Memorandum.							

Activity: Salaries and Expenses
Subactivity: Spectrum Management

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Telecommunications Specialist	Washington, DC	GS-14	2	105,211	210,422
Electronics Engineer	Washington, DC	GS-14	1	105,211	105,211
Electronic Engineers	Boulder, CO	ZP-IV	2	129,668	259,336
Electronic Engineers	Boulder, CO	ZP-III	2	92,181	184,362
Total			7		759,331
less Lapse	25%		(2)		(189,833)
Total full-time permanent (FTE)			5		569,498
2014 Pay Adjustment	1.0%				5,695
TOTAL					575,193

Personnel Data	Number
Full-Time Equivalent Employment	
Full-time permanent	5
Other than full-time permanent	0
Total	5
Authorized Positions:	
Full-time permanent	7
Other than full-time permanent	0
Total	7

(Dollar amounts in thousands)

Activity: Salaries and Expenses
Subactivity: Spectrum Management

Object Class	2014 Increase
Personnel compensation	
Full-time permanent	$575
Other than full-time permanent	0
Other personnel compensation	0
Special personnel services payments	0
Total personnel compensation	575
Civilian personnel benefits	161
Benefits for former personnel	0
Travel and transportation of persons	47
Transportation of things	4
Rental payments to GSA	54
Rental Payments to others	0
Communications, utilities and miscellaneous charges	19
Printing and reproduction	11
Advisory and assistance services	0
Other services	100
Purchases of goods & services from Gov't accounts	94
Operation and maintenance of facilities	0
Research and development contracts	0
Medical care	0
Operation and maintenance of equipment	56
Subsistence and support of persons	0
Supplies and materials	30
Equipment	100
Lands and structures	0
Investments and loans	0
Grants, subsidies and contributions	0
Insurance claims and indemnities	0
Interest and dividends	0
Refunds	0
Total obligations	1,251

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Telecommunication sciences research

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Telecommunication sciences research......	Pos/BA	49	$7,071	49	$7,114	49	$7,036	42	$5,092	(7)	($1,944)
	FTE/Obl.	37	$7,169	49	$7,114	49	7,036	42	$5,092	(7)	(1,944)
Direct Obligations...............................	Pos/BA	49	7,071	49	7,114	49	7,036	42	5,092	(7)	(1,944)
	FTE/Obl.	37	7,169	49	7,114	49	7,036	42	5,092	(7)	(1,944)

SUBACTIVITY: TELECOMMUNICATION SCIENCES RESEARCH

The objectives of the Telecommunication Sciences Research are to:

- Continue applied engineering and measurement work that is essential to effective NTIA and Federal Communications Commission (FCC) management of the radio frequency spectrum; the efficient implementation and electromagnetic compatibility of advanced wireless, public safety, broadcasting, and satellite communications technologies; and the development and effective use of emerging technologies, such as dynamic spectrum access (DSA), ultrawideband, dynamic frequency selection (DFS), digital television, land mobile radio communications, Worldwide Interoperability for Microwave Access (WiMAX), Long Term Evolution (LTE), and software-defined radio systems;

- Provide technical advice to support NTIA's mandate to develop and promulgate executive branch policies addressing domestic and international telecommunications and information issues. Provide support through leadership and participation in standards organizations both international and national;

- Promote timely, effective application of NTIA's research and engineering results to U.S. industry through government publications, technology transfer, and commercialization activities;

- Perform research and engineering that promote technology advancement and the efficient delivery of public services, enabling private industry, other Federal agencies, and state and local governments to meet their specific telecommunications needs in the areas of applied radio science, public safety communications, and next-generation networks (NGN);

- Organize and coordinate U.S. participation in international telecommunications conferences, standards development organizations, and treaty negotiations in cooperation with other interested U.S. government agencies and industry groups; and

- Develop and present public interest and user-oriented technical contributions to national and international standards organizations addressing quality of service (QoS), communication network resource management, and other topics critical to the development and implementation of advanced Internet Protocol (IP)-based networks, optical transport networks, NGNs, and supporting broadband infrastructures.

Through telecommunications research and engineering performed at its Institute for Telecommunications Sciences (ITS) research facility in Boulder, CO, NTIA supports the Administration's telecommunications goals, such as advancing telecommunications development, improving U.S. telecommunications trade opportunities, and promoting more efficient use of the radio frequency spectrum. These activities fall within the following Department of Commerce strategic goals:

- Economic Growth—Innovation and Entrepreneurship: Develop the tools, systems, policies, and technologies critical to transforming our economy, fostering U.S. competitiveness, and driving the development of new businesses .

- Economic Growth—Trade Promotion and Compliance: Improve our global competitiveness and foster domestic job growth while protecting American security.

- Science and Information—Generate and communicate new, cutting-edge scientific understanding of technical, economic, social, and environmental systems

On a reimbursable basis, NTIA's laboratory also serves as a principal Federal resource for addressing the telecommunications, IT, and security challenges of other Federal agencies, state, local, and tribal governments, and the private sector. To support fundamental research into the nature, interaction, and evaluation of telecommunication devices, systems, and services NTIA manages the Table Mountain Field Site and Radio Quiet Zone. This 1,800 acre, open-air test location is protected from strong external radio signals by both Federal and State laws to enable sensitive radio or electromagnetic experiments, as well as for applications needing low vibration and unobstructed views of the sky. Recent activities include exploratory field tests of dynamic spectrum access (DSA) radio systems and controlled measurements of low-to-ground radiowave propagation to validate models for use in mitigating and jamming improvised explosive devices (IEDs). The results of the Table Mountain work benefit the Government and industry via reports, technical papers, journal articles, conference papers, web documents, and computer programs.

FY 2014 operating objectives for the Telecommunication Sciences Research activity are summarized by program area below, with additional explanation following:

- Radio Spectrum Measurement and Analysis: Provide the following services in support of selected spectrum management concerns: measurements of radio spectrum occupancy and usage patterns; technical support to identify and resolve interference issues; engineering analyses to characterize the compatibility of existing and proposed new telecommunications systems and predict the impact of radio frequency noise and interference on radio systems; and systems engineering and radiowave propagation models to help maximize performance and efficiency of systems for interference-free sharing of bands.

- Propagation Model Development: Conduct radio propagation measurements and analyses for the development and validation of improved radio propagation models across the spectrum in all environments. Share these models with industry, other agencies, and national and international standard bodies.

- Broadband Wireless Research: Develop ultrawideband, wideband, and narrowband propagation measurement systems, channel modeling, statistical data analysis, signal processing algorithms, and specialized RF emissions measurement systems. Study and characterize the broadband transmission channel for within-building and campus-wide wireless local area networks and ultrawideband communications.

- Interoperability of Public Safety Communication Systems: Develop standards, technologies, and test methods to ensure interoperability of land mobile radio and broadband systems used by public safety and justice communities, public service, and land transportation agencies.. Develop information technology standards that public safety can adopt to ensure interoperability for information sharing.

- Domestic and International Standards: In cooperation with the U.S. International Telecommunications Union (ITU) National Committees, provide leadership of committees in ITU-T (Telecommunication Standardization Sector) and ITU-R (Radiocommunication Sector) Study Groups developing technical standards of importance to U.S. industry and Government (e.g., NGNs, switched optical networks, IP Multimedia Subsystem (IMS) and other advanced signaling systems, integrated broadband cable networks, and radar systems). Submit ITU recommendations on emerging mobile radio technologies, broadband

network performance (e.g., NGN QOS), radio propagation prediction, and radar systems, and coordinate their formal review and approval. Develop and coordinate approval of related U.S. voluntary consensus standards where appropriate.

- Performance Assessment: Develop and demonstrate perception-based audio and video performance assessment tools for critical new areas including Internet multimedia conferencing, advanced television, and wireless services. Document the advances associated with these tools in open-literature publications. Perform technology transfer to Government, industrial, academic, and individual users via NTIA-developed, easy-to-use, portable software toolkit.

- Wireless Networks: Perform interoperability and quality assessments of representative wireless network technologies. Spearhead standards committee activities and provide engineering analysis and simulation results defining quantitative limits for adjacent and co-frequency block interference within and among advanced wireless communications technologies.

- E-Government Research and Engineering: Support agencies and industry in the evaluation and development of innovative E-government tools aimed at improving government services, expanding Internet access, and promoting technology transfer opportunities.

Radio Spectrum Measurement and Analysis: In support of NTIA's mandate to oversee the usage of the radio spectrum by Federal agencies, NTIA maintains a comprehensive spectrum measurement capability. NTIA's Radio Spectrum Measurement Science (RSMS) program uses the most modern test equipment to measure and record signals between 10 kHz and 26 GHz. A transportable radiofrequency shielded enclosure isolates the equipment from strong external signals to ensure the integrity of the measurements.

Spectrum occupancy and usage measurements assist in the identification, analysis, and confirmation of candidate radio spectrum bands under consideration for spectrum sharing or reallocation. The spectrum survey system developed by the RSMS program is used to compare actual spectrum usage to spectrum inventory data derived from the Government Master File of frequency assignments. NTIA measures spectrum usage, efficiency, and channel occupancy and reports the results in publications and to the Interdepartment Radio Advisory Committee (IRAC). NTIA also performs radio measurements at selected sites to make specialized compliance measurements that ensure compliance with Government rules and regulations.

RSMS is also used to perform spectrum forensics to characterize and resolve difficult and unusual interference problems encountered by Government radio systems. This reduces costs to Federal agencies and preserves the integrity of critical safety-of-life systems. Recent examples include identification of interference to Federal radar systems from two types of commercial wireless systems Test and measurement systems developed under the RSMS program are also used to make specialized measurements to assess the compliance of new radio equipment with frequency assignment rules and regulations. For example, the system is being used to assess the ability of existing Dynamic Frequency Selection (DFS) and proposed new DSA devices to share Unlicensed National Information Infrastructure (U-NII) and land mobile radio bands, respectively.

NTIA also assists various Department of Defense agencies and Department of Commerce agencies in efficiently operating their own radio spectrum measurement programs through technical consultations, and modification, design, and construction of new radio spectrum and propagation

measurement systems. This work draws on expertise developed under the RSMS program, and provides an opportunity to investigate advanced measurement methods for use in the system itself.

Propagation Model Development: Over more than five decades of related research, NTIA has established a core telecommunications research expertise in propagation model development that is used by both the public and private sectors. Through cooperative research and development agreements (CRADAs) with industry and reimbursable agreements with other Federal agencies, both the private sector and other agencies access NTIA radio propagation models at cost. Most other models that are available to industry and Government agencies are actually based on the NTIA models and depend on NTIA maintenance. Direct-funded NTIA programs and other agency-sponsored research activities interact synergistically, generating greater total contributions to national goals, such as public safety communications interoperability and efficient spectrum management, than they would individually.

Broadband Wireless Research: As new wireless technologies emerge, NTIA has strengthened its efforts to develop improved measurements to support increasingly sophisticated uses of the spectrum, including spread-spectrum, ultrawideband, and frequency-agile systems, i.e., DFS and DSA. NTIA performs spectrum-engineering analyses to assess current and future Federal use of the spectrum and determine where significant improvements in utilization appear possible.

NTIA is also evaluating the Federal Government's use of its spectrum to promote more efficient and economic spectrum use. In FY 2013, NTIA will continue to support essential spectrum utilization analyses, including the impact of new frequency-agile, software-defined DFS and DSA radio technologies. NTIA develops the measurement procedures needed to characterize these new signals and perform the increasingly complex system-compatibility analyses to assess, for example, the effects such technologies may have on incumbent systems. Technical support will be continued for major frequency management concerns through representation at technical subcommittee (TSC IRAC) meetings, with principal emphasis on improving Federal spectrum efficiency.

Global trends are moving toward providing diverse services, such as audio, video, data, broadcasting, and common carrier services through a converged system of wireline and wireless networks. Radio science has an important role in portable and mobile communications and will play an increasingly important role in connecting the end user to the information infrastructure and in providing personal communication services. Another trend is that of radio systems utilizing higher frequencies. Some radio systems are already moving into the millimeter-wave band, located at the upper end of the allocated radio spectrum (30-300 GHz).

NTIA continues to provide support to the development and deployment of various wireless technologies such as DSA technologies, which have been proposed as interference-free secondary users in Land Mobile Radio bands. Knowledge from measurements and modeling DSA technologies are crucial in determining the feasibility of interference-free, commercially viable systems. NTIA is developing models to predict the performance of radio systems operating over short paths using detailed geographic information systems (GIS).

Interoperability of Public Safety Communication Systems: NTIA is assessing emerging spectrum requirements for public safety and law enforcement in coordination with the Public Safety Communications Research (PSCR) program and a number of different Federal departments and programs that have a keen interest in public safety interoperability. On a reimbursable basis, NTIA provides telecommunications engineering support to improve public safety communications interoperability through the PSCR program on behalf of a multiagency effort that includes the National Institute for Standards and Technology (NIST) Office of Law Enforcement Standards

(OLES) and the Department of Homeland Security (DHS) Office for Interoperability and Compatibility (OIC) and Office of Emergency Communications (OEC).

In general, the broad based interoperability effort addresses four key areas: (1) development of qualitative and quantitative public safety communication and information sharing requirements that are accepted nationally by the public safety community and industry; (2) identification and development of interface standards that satisfy defined user requirements through leadership and direct technical contribution to national and international standards bodies focused on public safety communications; (3) research, development, test and evaluation of concepts, products, and services for long-term interoperability solutions as well as interim improvements; and (4) research and development to accommodate technical gaps that emerge during the entire process. All elements of the NTIA public safety activity involve close and constant coordination with public safety practitioners. Recent efforts include the implementation of a broadband demonstration network to provide manufacturers a location to test and evaluate broadband technologies and systems for newly available 700 MHz spectrum.

Domestic and International Standards: In cooperation with U.S. industry, NTIA prepares and coordinates domestic and international telecommunications standards, develops and demonstrates technologies for assessing the performance and optimizing the utilization of public and private telecommunication networks, and evaluates emerging technologies for future needs. In its international standards work, NTIA is expanding trade opportunities for U.S. telecommunications and information providers by leading and supporting U.S. participation in key technical negotiations of the International Telecommunication Union's Telecommunication Standardization Sector (ITU-T) and Radiocommunication Sector (ITU-R). ITU telecommunication standards and radiocommunication recommendations serve as blueprints for future technology development involving billions of dollars in telecommunications industry investment worldwide. NTIA staff engages in ITU negotiations and provide the technical content for international standards and recommendations. A plurality of ITU technical recommendations are based on research conducted at NTIA's ITS. U.S. industry and U.S. government agencies depend heavily on NTIA to provide both technical information and negotiators in ITU-T and ITU-R.

Under agency reimbursable agreements, NTIA supports other Federal agencies with development of telecommunication specifications, standards, proof of concept and demonstration measurements, interoperability analyses, and technical and economic impact assessments, and prototype development. FY 2014 reimbursable programs will address standards development for public safety communications interoperability, digital land mobile radio, network reliability and restoration, and priority access capabilities for public wireless and IP-based networks. In Public Safety work, for example, NTIA advances the work of other Federal programs (e.g., NIST/OLES, DHS/OIC, etc.) through leadership and critical technical contributions to the Third Generation Partnership Project (3GPP) for public safety broadband and the Project 25 Technical Committees, Working Groups, and Task Groups, as well as the associated organizational entities within the Telecommunications Industry Association (TIA) TR-8 Committees for public safety narrowband communications.

Performance Assessment: NTIA's international and U.S. standards committee leadership is supported by telecommunications research and engineering activities that develop and implement performance measures for integrated data, audio (including voice), video, and multimedia communication equipment and services. NTIA applies its unique expertise and state-of-the-art voice and video measurement laboratories to validate and optimize telecommunication performance standards. This research leads U.S. Industry and the world in the development of user-oriented, technology-independent performance parameters and measurement methods for high-speed data communication services. In FY 2014, NTIA will continue its groundbreaking work in perception-

based audio and video quality assessment and associated digital compression and transmission issues. NTIA is focusing its work toward important new technology areas including advanced television (e.g., Internet Protocol Television (IPTV)) services. Fundamentally new technologies pose significant and novel coding, transmission, and quality assessment challenges. NTIA is also conducting research on coding and transmission quality for wireless and broadband access services. NTIA is pursuing in-service quality assessment techniques, since these allow for the most relevant assessments and do not require the interruption of services.

Wireless Networks: NTIA will continue its on-going wireless networking program in FY 2014. Advanced wireless technologies are expected to provide wireless voice, data, and image communications and a variety of advanced service features using small, inexpensive, lightweight, low-powered portable radio terminals. Advanced wireless technologies will extend wired information infrastructures to mobile, rural, and other users and may dramatically improve telecommunication service availability in natural disaster and other emergency situations. However, achieving these benefits will require solutions to major implementation problems. As wireless networks and applications expand, interference among users sharing spectrum is likely. Users and service providers hoping to develop advanced wireless networks may be faced with an over-abundance of candidate technologies, many of which are non-interoperable. NTIA is addressing these problems by providing objective, expert technical contributions in support of public interest concerns in national and international committees responsible for resolving wireless network implementation issues. A particular focus of NTIA activity is in the development of intra-system and inter-system interference assessment metrics and standards in the Alliance for Telecommunications Industry Solutions (ATIS) subcommittee WTSC/G3GRA (Wireless Technologies and Systems Committee — Radio Aspects of GSM/3G and Beyond) to enhance capability and harmonization among telecommunication systems in the environment. Results promote efficient use of increasingly scarce radio spectrum and improve wireless system coverage and performance.

E-Government Research and Engineering: NTIA's many decades of experience in the management of very large data stores is being leveraged to support agencies and industries in the evaluation and development of electronic records management tools. Under an agency reimbursable agreement, NTIA is supporting the National Archives and Records Administration (NARA) by providing the technical backbone for a proposed electronic Federal Record Center (eFRC). Working closely with NARA archivists, NTIA designed and implemented a prototype for a potentially large scale (up to 100 Terabyte) records management infrastructure to administer, store, and manage temporary e-records in compliance with well-established NARA records management requirements, including support for automation of NARA business processes through electronic workflow. ITS is tasked with assisting NARA to design and implement a large scale records management infrastructure to administer, store, and manage e-records.

PROGRAM REDUCTION FOR FY 2014:

Telecommunication Sciences Research: Phase-out of Multi-Media Quality Research, Propagation and Noise Measurements/Modeling, and Policy Support Special Studies (Base Funding: $7,036,000 and 49 FTE; Program Reduction: -$1,944,000 and -7 FTE): NTIA requests a decrease of $1,944,000 and 7 FTE to support higher priorities.

Proposed Actions:

In an effort to reduce Government spending, NTIA will restructure its research program and laboratory core capabilities around projects that yield the highest benefits and advance National goals in the areas of broadband deployment, spectrum management, public safety, and technology innovation. Less significant program elements will be phased out, including: multimedia quality research, projects focused on radio propagation, noise measurement methods and modeling studies, and policy support special studies. While these program elements are important, and their impact will be felt, a shift in research emphasis and resources is necessary to balance future research needs and budget reduction goals.

In order to fund higher priority programs in FY 2014, NTIA is in the process of downsizing the Institute for Telecommunication Sciences (ITS), in Boulder, CO, through normal attrition, buy-outs, and other voluntary incentive programs. Additionally, ITS will be pursuing reimbursable opportunities and plans to grow some program areas, such as public safety, that directly support and benefit other Federal agencies. High priority base research capabilities will continue to function without disruption, especially spectrum measurements and propagation support for the Office of Spectrum Measurement, Audio and Video Quality research in support of industry, Domestic and International Standards Development, and Table Mountain Field Site Modernization and Maintenance.

Statement of Need and Economic Benefits:

NTIA's Institute for Telecommunication Sciences is the only Federal telecommunications laboratory capable of providing NTIA, Federal agencies, and the telecommunications industry with impartial and technically sound measurement data and propagation models. These efforts contribute to the science-related goals of the Department of Commerce and the National Broadband Plan. NTIA's research directly benefits the telecommunications industry, which plays an important role in the U.S. and world economy.

Base Resources Assessment

NTIA's Institute for Telecommunication Sciences (ITS) performs state-of-the-art telecommunications research and engineering to further the knowledge of the radio frequency spectrum and to improve wireless telecommunications system planning, design, and evaluation. Below is a brief summary of the ITS research programs and activities:

Audio and Video Performance Assessment: Research on digital audio and video quality, grounded in signal processing theory and models of perception. Multimedia quality assessment studies will be discontinued in FY13 to meet laboratory restructuring and spending reduction goals.

Broadband and Wireless Communications Research: Research to explore and evaluate advances in broadband and wireless communication systems and how these systems can be used in national security/emergency preparedness, military, and commercial environments. This includes developing methods, propagation models, and tools for testing emerging broadband network and advanced antenna technologies. Several studies will be discontinued in FY14 to meet laboratory restructuring and spending reduction goals.

Domestic and International Standards: In cooperation with the U.S. International Telecommunication Union (ITU) National Committees, ITS supports the U.S. administration on committees in the Telecommunication Standardization Sector (ITU-T) and Radiocommunication Sector (ITU-R Study Groups. The goal of this effort is to develop technical standards of importance to U.S. industry and Government. For over thirty years, ITS has provided continuous leadership and technical support to the U.S. Administration on the ITU-T and ITU-R committees. ITS personnel currently serve as head of US/International Delegations on both ITU committees and participate on technical working groups. Budget reductions in FY 2013 will not eliminate ITS' participation on these committees; however, ITS will reduce staff participation on the study groups and will not fulfill the Vice-Chair role of ITU-R Study Group 3 for the US delegation.

Spectrum Measurements: ITS measures emission characteristics of Federal and non-government transmitter systems and identifies and resolves radio frequency interference. This enables NTIA and the FCC to manage effectively the radio frequency spectrum, implement advanced wireless solutions, and resolve management problems and interference issues involving Government systems.

Table Mountain Research and Modernization: The Table Mountain Field Site and Radio Quiet Zone supports fundamental research into the nature, interaction, and evaluation of telecommunications devices, systems, and services. Several research studies will be discontinued; e.g., near-earth wave propagation studies, research related to radio wave polarization measurements, and use of software defined radio for spectrum monitoring at the Table Mountain Field Site in FY 2014 to meet program restructuring and spending reduction goals.

Schedule & Milestones: The following milestones will not be completed due to budget reductions:
- FY 13/14: Develop assessment methods for multi-media signals, as delivered over cable, Internet, and wireless channels
- FY 14:   Develop assessment methods for 3-DTV applications.
- FY12/13:   Measurement methods to characterize field conditions and soil types for detecting improvised explosive devices (Referenced in ITS' 2010 annual report.)
- FY13/14:   Short-range radio propagation modeling for frequencies from 162 Mhz to 6 GHz
- FY 13/14: Propagation models for new broadband technologies (CDMA2000, LTE, and WiMax)
- FY13/14:   Outdoor and indoor methods for measuring environmental noise
- FY 13/14: Two technical studies in support of quick response policy-related requests

Deliverables: The following deliverables will not be completed due to budget reductions:

- FY 13/14: Contributions and reports to the International Telecommunications Union study groups on audiovisual quality assessment methods for multimedia applications
- FY14:   Contributions and reports to ITU-R and Study Group 3 on next generation mobile

and aeronautical service standards
- FY 14: Report on quality assessment methods for 3-DTV technology
- FY 14: Proposed ITU standard on 3-DTV audio-video quality assessment methods
- FY14: Report series on best methods for collecting measurement data for propagation models with potential application in detecting and jamming improvised explosive devices
- FY14: Two reports with comprehensive set of noise measurement methods for both outdoor and indoor environments
- FY14: Report and on-line application associated with short-range propagation models and data for frequencies from 162 Mhz to 6 GHz
- FY14: Tools to model co-channel interference for new broadband technologies, e.g., CDMA200, LTE, and WiMax
- FY14: Software Defined Radio based test instrument for broadband technologies

PERFORMANCE METRICS							
Performance Goal: Science and Information **Performance Measure:** Measurement Methods and Propagation Models and Tools for Broadband deployment, Spectrum Sharing, and DoD Applications • Multi-media assessment methods • Broadband technology propagation models • Noise measurement methods • Short-range propagations models • Measurement methods for detecting improvised explosive devices • Methods for measuring environment noise for outdoor and indoor applications • Contributions to ITU-R and Study Group 3 on next generation mobile service standards • Software Defined Radio based test instrument for broadband technologies	FY 11 Actual	FY 12 Target	FY 13 Target	FY 14 Target	FY 15 Target	FY 16 Target	FY 17 Target
With decrease	6	7	0	0	0	0	0
Without decrease	6	7	6	0	0	0	0
Description: The above measurement methods and propagation models were planned to be completed in FY 2013. Instead, ITS will focus refocus research to those areas that yield high benefits to spectrum managers and the public.							

Activity:　　　Salaries and Expenses
Subactivity:　Telecommunications Sciences Research

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Electronic Engineer	Boulder, CO	ZP-IV	(1)	134,899	(134,899)
Electronic Engineer	Boulder, CO	ZP-IV	(6)	129,668	(778,008)
Total			(7)		(912,907)
less Lapse		0%	0		0
Total full-time permanent (FTE)			(7)		(912,907)
2012 Pay Adjustment (0%)					0
2013 Pay Adjustment (0.5%)					0
TOTAL					(912,907)

Personnel Data	Number
Full-Time Equivalent Employment	
Full-time permanent	(7)
Other than full-time permanent	0
Total	(7)
Authorized Positions:	
Full-time permanent	(7)
Other than full-time permanent	0
Total	(7)

PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Dollar amounts in thousands)

Activity: Salaries and Expenses
Subactivity: Telecommunications Sciences Research

	Object Class	2014 Decrease
11	Personnel compensation	
11.1	Full-time permanent	($913)
11.3	Other than full-time permanent	0
11.5	Other personnel compensation	0
11.8	Special personnel services payments	0
11.9	Total personnel compensation	(913)
12	Civilian personnel benefits	(258)
13	Benefits for former personnel	0
21	Travel and transportation of persons	(20)
22	Transportation of things	0
23.1	Rental payments to GSA	(33)
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	(4)
24	Printing and reproduction	(2)
25.1	Advisory and assistance services	0
25.2	Other services	(32)
25.3	Purchases of goods & services from Gov't accounts	(419)
25.4	Operation and maintenance of facilities	0
25.5	Research and development contracts	0
25.6	Medical care	0
25.7	Operation and maintenance of equipment	(2)
25.8	Subsistence and support of persons	0
26	Supplies and materials	(67)
31	Equipment	(194)
32	Lands and structures	0
33	Investments and loans	0
41	Grants, subsidies and contributions	0
42	Insurance claims and indemnities	0
43	Interest and dividends	0
44	Refunds	0
99	Total obligations	(1,944)

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Broadband Programs

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Broadband Programs……………………….	Pos/BA	40	$25,646	40	$25,803	40	$26,384	36	$24,685	(4)	($1,699)
	FTE/Obl.	40	24,390	40	25,803	40	26,384	36	24,685	(4)	(1,699)
Direct Obligations..............................	Pos/BA	40	25,646	40	25,803	40	26,384	36	24,685	(4)	(1,699)
	FTE/Obl.	40	24,390	40	25,803	40	26,384	36	24,685	(4)	(1,699)

SUBACTIVITY: BROADBAND PROGRAMS

The objectives of Broadband Programs are to:

- Oversee nearly $4.2 billion in awarded grants funded through the Broadband Technology Opportunities Program (BTOP) and the State Broadband Data and Development Program to prevent waste, fraud, and abuse by grant recipients and to protect the Federal Government's investment in broadband infrastructure and services;
- Provide assistance to grant recipients in carrying out their projects;
- Ensure the timely distribution of Recovery Act funds to create and maintain jobs;
- Demonstrate transparency and accountability of program activities and Recovery Act funds by ensuring the public availability of recipient reporting and other program information;
- Update and maintain a comprehensive, nationwide inventory map of existing broadband service capability and availability;
- Ensure BTOP 700 MHz public safety grants proceed in a manner that supports the nationwide public safety broadband network as described in the Middle Class Tax Relief and Job Creation Act of 2012; and
- Promote broadband investments and adoption by sharing best practices and proven solutions through the broadband grants.

Broadband Programs: www.ntia.doc.gov/broadbandgrants

The American Recovery and Reinvestment Act of 2009 (Recovery Act, Public Law No. 111-5) appropriated $4.7 billion to NTIA to provide grants for broadband initiatives throughout the United States. The Recovery Act instructed NTIA to establish BTOP, a grant program providing access to broadband in unserved areas of the United States; improving access in underserved areas; providing broadband technologies to schools, hospitals, libraries and other strategic institutions; improving broadband capabilities for public safety agencies; and stimulating demand for broadband.

In addition to fostering greater availability and use of broadband technologies, BTOP is helping to jump-start economic growth, create jobs, and lay the foundation for long-term prosperity for all Americans. The goal of this program is to improve broadband services in areas of the United States not adequately served, ensure that every American may benefit from broadband technologies, and enhance America's competitiveness through advances in broadband speeds, deployment, and adoption.

The Recovery Act also required NTIA to establish the State Broadband Data and Development (SBDD) Program and to develop and maintain a map of broadband services in the United States. The SBDD Program provided grants to U.S. States and Territories for projects that collect comprehensive and accurate State-level broadband mapping data, develop State-level broadband maps, and fund statewide initiatives that plan for and improve the availability of broadband. The nationwide broadband inventory map became available in February 2011, and the broadband inventory map is being updated and maintained by NTIA per the requirements of the Broadband Data Improvement Act, P.L. 110-385.

All BTOP and SBDD grants under the Recovery Act were obligated prior to the end of FY 2010. NTIA must ensure that the BTOP projects supported by these funds are substantially completed within two years and that funds are used by recipients in an efficient, expeditious, and competent

manner. Effective oversight of the grants is critical to mitigate the risk of waste, fraud, and abuse of nearly $4.2 billion in awarded broadband grants.

In FY 2014, NTIA will continue to administer the BTOP grants through their completion and federal interest period in order to protect the Federal Government's investment in broadband infrastructure, public computer centers, and broadband adoption projects. Although most grants will be in the closeout phase, NTIA's oversight responsibilities will remain significant. In addition to administering the grants from NTIA's Broadband Programs, NTIA will continue to update and manage the national map of broadband availability. Planned FY14 activities include:

- NTIA will continue to administer the State Broadband Data and Development Program. NTIA will oversee the projects and provide technical assistance to grant recipients of the State Broadband Data and Development Program, whose grants end after FY 2014. These grants are collecting broadband availability data for the national map and building capacity within each State to focus on broadband adoption. NTIA will continue to update and maintain the broadband inventory map twice a year with data collected from these recipients.

- NTIA will work with recipients of BTOP grants to complete and closeout their grants. The 220 projects and $4 billion Federal investment under BTOP are progressing on schedule, and the grants are on track to deliver the benefits of broadband to communities and their anchor institutions across the country without adequate broadband service. Specifically for FY14, NTIA's main focus will be on protecting those investments and ensuring their long-term success and sustainability.

- NTIA will continue to provide oversight and monitoring of the BTOP 700 MHz public safety grants, which are expected to extend due to the passage of the Middle Class Tax Relief and Job Creation Act of 2012. The Act provides funding for a nationwide public safety broadband network that may impact the BTOP public safety recipients' ability to use the 700 MHz spectrum. NTIA must ensure that these projects proceed in a manner that supports the nationwide public safety broadband network, and therefore, these projects may require oversight and monitoring into 2014.

- NTIA will maximize the budgets of broadband infrastructure projects by reinvesting project funds to add additional Community Anchor Institutions (CAIs) and network miles for a subset of grants. These projects are expected to complete the major milestone associated with construction of their backbone networks by the start of FY 2014, and many also will have connected a number of CAIs. NTIA can help to ensure the long-term sustainability of projects and maximize their impact by extending the period of performance into FY 2014. This will allow recipients to complete planned CAI connections as well as connect additional CAIs.

- NTIA will ensure an orderly closeout of the BTOP grants. An investment of $4 billion requires a thorough and well-documented closeout process to ensure that the Government's interest is appropriately documented and that NTIA has accurately captured the network routes, major network equipment, and end-user equipment deployed. Further, NTIA must protect against waste, fraud, and abuse. At the beginning of FY 2014, many of the BTOP recipients will be in the early stages of closing their grants. NTIA has a duty to ensure that recipients complied with grant terms and conditions, goals are met, grants are properly closed, and that excess funds are recovered and returned to the Treasury. NTIA expects this activity will carry on through

FY 2014, including the bureau's review and resolution of audit activity associated with recipient organizations.

- After closeout, NTIA will continue to protect the Federal interest in the BTOP grants. NTIA's oversight and management responsibilities do not end when the projects are finished. NTIA must ensure that projects are sustainable and remain in compliance with Federal requirements.

- NTIA will disseminate best practices and proven solutions from these projects to help other stakeholders further broadband deployment and adoption in the United States. The BTOP staff has identified projects that have shown strong results in broadband adoption and value-added applications in areas such as education and healthcare. Federal investments in the production of training curricula for workforce and digital literacy need to be documented and the resulting products disseminated. NTIA will document and disseminate best practices related to leveraging its broadband adoption projects.

The investments from NTIA's Broadband Programs are important for our Nation's economic progress. NTIA has invested $3.5 billion in broadband infrastructure across the country. This investment means that thousands of communities and their institutions that previously had inadequate broadband service will have access to high capacity, affordable broadband. For many of the CAIs being connected through the BTOP investments, these upgraded speeds will enable them to utilize technology solutions and applications that previously limited their ability to serve their communities. Broadband also allows schools, health institutions, public safety, and other statewide systems to leverage shared resources.

Broadband infrastructure is essential for economic development in areas of the country where traditional industries no longer provide the jobs to sustain their communities. As NTIA works with recipients to transition the grant-funded projects to a self-sustaining business model, NTIA will assess and analyze best practices associated with the deployment of broadband in communities without adequate broadband service. This knowledge base will spur future broadband investment throughout the United States and advance opportunities for business.

NTIA also has invested $450 million in delivery of public access centers and adoption programs from which it can draw lessons and leverage these important investments. At the end of September 2013, more than 3,500 new or improved public access computer centers will be "open for business". BTOP recipients have produced original content, curricula, and impact studies--knowledge that could be leveraged to benefit the nearly one-third of the U.S. population who do not subscribe to broadband at home because of lack of familiarity, lack of skills, or economic disadvantage. Unless these disparities are addressed head-on, millions of Americans will be locked out of the benefits of online access – including new educational opportunities, the ability to search and apply for jobs online, overcoming the social isolation imposed by aging or disability, and use of cost-effective telemedicine services. NTIA will expand the body of knowledge in these areas through the collection, analysis, and dissemination of best practices, proven materials, and curricula from 108 PCC and SBA projects. NTIA also will produce important evaluation results that can guide future investments, making them more efficient and effective. With hundreds of organizations poised to continue the job of bringing all Americans online, the public investment in BTOP will continue to yield returns into FY14, and beyond.

Finally, NTIA has invested $300 million for States to collect broadband availability data for the national map and to build capacity within each State to focus on broadband adoption. The National Broadband Availability Dataset is a cost-efficient tool that provides an important value to the American public and to policymakers.

PROGRAM DECREASE FOR FY 2014:

Broadband Programs Administration (Base Funding: $26,384,000 and 40 FTE; Program Change: -$1,699,000 and - 4 FTE): NTIA requests a decrease of $1,699,000 and a reduction of 4 FTE for a total of $24,685,000 and 36 FTE required to administer the BTOP and SBDD grants. NTIA has determined that this funding level will be sufficient to prevent waste, fraud, and abuse of nearly $4.2 billion in awarded broadband grants and to ensure that the broadband recipients accomplish program goals.

Proposed Action:

NTIA seeks a six percent decrease of its administrative expenses for fiscal year 2014. Because a subset of grants was closed at the end of fiscal year 2013, NTIA will scale back staff, contractor resources, and general operating expenses. Even with the reduction, NTIA will have sufficient resources to effectively administer the Broadband Programs.

Statement of Need and Economic Benefits:

NTIA's $3.5 billion investment in broadband infrastructure, $450 million investment in public access centers and adoption programs, and $300 million investment State broadband availability data and capacity building is essential for broadband policy and economic development. NTIA will be able to ensure broadband and economic development goals are met while beginning to scale down administrative resources as projects are completed and closed.

Although the BTOP grants will be substantially completed by the end of the FY 2013, the projects will need additional oversight and assistance during their final phases, the closeout process, and the post-closeout federal interest period. Due to the complexity of the grants and the need for transparency and accountability, NTIA expects the closeout of most grants to extend through 2014. Further, all of the SBDD grant efforts are not scheduled for completion until the end of 2014.

Total anticipated administrative expenses – which include this initiative, ARRA administrative expenses, base resources, and out year plans – represent less than 5 percent of the funds for the programs. Based on NTIA's experience, competitive Federal grant programs require approximately 10% of an appropriation to manage grants from application to closeout. For example, NTIA's Public Telecommunications Facilities Program regularly received 10 percent of its appropriation for administrative costs. With over $4 billion in awarded broadband grants at risk of potential waste, fraud, and abuse, this is a prudent investment to protect taxpayer funds.

Base Resource Assessment:

FY 2013 Broadband Programs were funded at $25,803,000. Because NTIA's Broadband Programs grants will begin to close, NTIA will be able to scale back resources. NTIA can continue to carry out critical grants oversight and program management functions with the decrease.

Schedule & Milestones:

- 9/30/2012: Projects Substantially (67%) Complete
- 9/30/2013: Projects 90% Complete
- 9/30/2014: Final Program Evaluation Report for BTOP

- 9/30/2015: All BTOP and State Broadband ARRA Projects Complete

Deliverables:

- Quarterly Program Reports to Congress

Performance Goal: Innovation and Entrepreneurship	FY 2011 Actual	FY 2012 Target	FY 2013 Target	FY 2014 Target	FY 2015 Target
Project Completion Rate *					
With Decrease	20%	67%	90%	97%	100%
Without Decrease	20%	67%	90%	97%	100%

Description: This performance measure focuses on the infrastructure, public computing center, and sustainable broadband adoption recipients' ability to timely complete the projects based on the oversight, guidance, and assistance provided by the Federal program office.

 * Note that these measures do not include the State Broadband Data and Development grants, which have a longer period of performance. Due to the passage of the Middle Class Tax Relief and Job Creation Act of 2012, NTIA expects to extend the BTOP 700 MHz public safety grants to FY 2015 to ensure that these projects proceed in a manner that supports the nationwide public safety broadband network.

Budget Program: Salaries and Expenses
Sub-Program: Broadband Programs
Program Change: Broadband Programs Administration

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Comm. Program Specialist	Washington, DC	GS-13	(1)	89,478	(89,478)
Management and Program Analyst	Washington, DC	GS-12	(1)	75,246	(75,246)
Grants Specialist	Washington, DC	GS-12	(2)	75,246	(150,492)
Total			(4)		(315,216)
less Lapse		0%	0		0
Total full-time permanent (FTE)			(4)		(315,216)
2012 Pay Adjustment (0%)					0
2013 Pay Adjustment (0%)					0
TOTAL					(315,216)

Personnel Data	Number
Full-Time Equivalent Employment	
Full-time permanent	(4)
Other than full-time permanent	0
Total	(4)
Authorized Positions:	
Full-time permanent	(4)
Other than full-time permanent	0
Total	(4)

(Dollar amounts in thousands)

Budget Program: Salaries and Expenses
Sub-Program: Broadband Programs
Program Change: Broadband Programs Administration

	Object Class	2014 Change
11	Personnel compensation	
11.1	Full-time permanent	(315)
11.3	Other than full-time permanent	0
11.5	Other personnel compensation	0
11.8	Special personnel services payments	0
11.9	Total personnel compensation	(315)
12	Civilian personnel benefits	(89)
13	Benefits for former personnel	0
21	Travel and transportation of persons	(85)
22	Transportation of things	(15)
23.1	Rental payments to GSA	(69)
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	0
24	Printing and reproduction	0
25.1	Advisory and assistance services	0
25.2	Other services	0
25.3	Purchases of goods & services from Gov't accounts	(1,125)
25.4	Operation and maintenance of facilities	0
25.5	Research and development contracts	0
25.6	Medical care	0
25.7	Operation and maintenance of equipment	0
25.8	Subsistence and support of persons	0
26	Supplies and materials	(1)
31	Equipment	0
32	Lands and structures	0
33	Investments and loans	0
41	Grants, subsidies and contributions	0
42	Insurance claims and indemnities	0
43	Interest and dividends	0
44	Refunds	0
99	Total obligations	(1,699)

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Salaries and expenses
Sub-Program: Spectrum Monitoring Pilot Program

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum Monitoring Pilot Program	Pos/BA	0	$0	0	$0	0	$0	11	$7,500	11	$7,500
	FTE/Obl.	0	0	0	0	0	0	8	7,500	8	7,500
Direct Obligations.............................	Pos/BA	0	0	0	0	0	0	11	7,500	11	7,500
	FTE/Obl.	0	0	0	0	0	0	8	7,500	8	7,500

SUBACTIVITY: SPECTRUM MONITORING PROGRAM

PROGRAM CHANGES FOR FY14:

Spectrum Measurement Pilot (Base Funding: $0 and 0 FTE: Program Change $7,500,000 and 8 FTE): NTIA is establishing a new Program, Project, Activity (PPA) and requests an increase of $7,500,000 and 0 FTE to launch the Spectrum Monitoring Pilot Project.

The new activity involves monitoring spectrum usage by covering up to 10 major metropolitan areas. NTIA, as affirmed by the President's Council of Advisers on Science and Technology, has determined that, to meet the growing spectrum needs of commercial broadband providers, the nation must determine how government agencies and commercial providers can share spectrum in the same geographical areas. Assessing spectrum sharing opportunities requires better data than are available today on the nature and extent of existing uses of spectrum. This pilot will facilitate research into new spectrum management approaches. NTIA will develop, validate, and field a prototype spectrum monitoring system to assess spectrum-sharing technologies. The system will include a network of radiofrequency (RF) sensors and a centralized database for storing and retrieving spectrum usage information. Spectrum policy makers, researchers and other stakeholders will use the data to investigate the feasibility of new spectrum sharing approaches in key Federal and non-Federal bands. At the conclusion of the two-year initiative, NTIA will recommend whether the system should be continued and expanded. The system will be designed to interoperate with other sensors and databases to permit knowledgeable third-parties such as universities, commercial spectrum managers, and database managers to expand it.

Proposed Actions

NTIA's Office of Spectrum Management (OSM) will setup and run the Spectrum monitoring pilot. Coverage areas for the pilot, monitoring requirements, and spectrum management objectives will be clearly defined. NTIA's Institute for Telecommunication Science (ITS) will initially build a prototype monitoring unit that can achieve the measurement requirements and project objectives. The monitoring unit will be designed to run continuously at a remote site with system control and data uploads performed over the Internet. Standardized data sets will be accumulated and analyzed within the unit and uploaded to a database located in Boulder, CO.

 NTIA will design the database system to store and administer measured spectrum occupancy data. Necessary hardware and software will be procured, built, installed, and configured. A graphical user interface will allow users to specify input parameters, such as: range in frequency, time, and location, and occupancy threshold. From this database, users will also be able to generate spectrum usage reports from available occupancy measurements.

ITS will develop a web-accessible Measured Spectrum Occupancy Database (MSOD), from which pre-approved users can generate spectrum usage reports from available occupancy measurements. Users will specify range in frequency, time, and location as well as occupancy threshold, and the database will generate a standardized usage report.

NTIA will build 10 spectrum measurement units, based on the fully developed prototype, and deploy these units to the test cities to continuously monitor the spectrum in pre-determined frequency bands**.** From the experimental research infrastructure and resulting data, OSM will develop models of spectrum management and analyze policy alternatives.

Statement of Need and Economic Benefits:

The President's Council of Advisors on Science and Technology's report to the President: Realizing The Full Potential Of Government-Held Spectrum to Spur Economic Growth, July 2012, p. 66, concludes that "Characterization of the incumbent systems in some region of spectrum is a necessary first step in establishing a shared band, and is done by government laboratories since some of the incumbent Federal systems may be classified." This initiative presents a number of benefits for NTIA, other Federal agencies, academia and industry. By improving the reliability of agency-reported spectrum usage data, NTIA could evaluate the potential for more dynamic frequency allocations and conduct research into new spectrum management processes. Federal agencies would use the spectrum usage data to identify and characterize incumbent systems in the targeted sharing bands and assess the impact of sharing on the agency's mission. Data from the pilot would also assist Federal Agencies in determining the technical or operational feasibility of relocating to other bands. Finally, researchers in academia would use the spectrum usage data to explore new technical approaches to spectrum sharing.

In April 2011, the Government Accountability Office (GAO) issued a Spectrum Management Report 95 that found that "NTIA's data management system is antiquated and lacks internal controls to ensure the accuracy of agency-reported data, making it unclear if decisions about Federal spectrum use are based on reliable data." As a result of the GAO report, Commerce Spectrum Management Advisory Committee (CSMAC) and the Interdepartmental Radio Advisory Committee (IRAC) Frequency Assignment Subcommittee (FAS) are providing recommendations to improve and strengthen NTIA's spectrum data management process. There are many benefits associated with improving the accuracy of spectrum usage data. From an economic standpoint, greater data accuracy would permit agencies that incur relocation or sharing costs to develop more accurate cost estimates prior to an auction or spectrum transition. Commercial enterprises, which are currently working with Federal agencies under the auspices of CSMAC, would use the data to assess the feasibility of spectrum sharing by evaluating spectrum availability and developing commercially viable spectrum sharing technologies and approaches.

With the requested funding, NTIA will deliver the following:
- New spectrum management models and techniques
- Up-to-date data on spectrum usage in 10 metropolitan areas
- Database on spectrum usage to be shared with spectrum managers around the country
- New technology for monitoring spectrum usage

Base Resource Assessment

OSM's base funding is used primarily for OSM labor expenses for domestic and international spectrum management. OSM is reimbursed by other Federal agencies to execute the spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903; to develop, establish, and implement plans, policies, activities, capabilities, and procedures to ensure that the U.S. spectrum policy, spectrum allocations and spectrum management capabilities and processes keep up with the needs of the Federal agencies and the American public for access to the radio spectrum in the 21st century domestically and internationally; to ensure Federal spectrum management functions during emergencies; to coordinate and register internationally planned Federal Government satellite networks and selected assignments for terrestrial systems; to work cooperatively with the Federal Communications Commission and the Federal agencies in coordinating spectrum use; and to develop, implement and maintain the automated information technology capabilities necessary for performing these activities. OSM will not collect reimbursable funds from other Federal agencies to fund this initiative.

Additionally, ITS, located in Boulder, Co, provides the applied engineering and measurement expertise that is essential to effective NTIA and Federal Communications Commission (FCC) management of the radio frequency spectrum. ITS has a long history of conducting spectrum occupancy measurements for the Office of Spectrum Management, the Department of Defense, and several private companies. However, these measurement projects are limited in scope and funded by reimbursable clients through interagency agreements and Cooperative and Research Development agreements. To develop and deploy new monitoring technology to10 different cities, to monitor spectrum usage, will require a significant increase in direct funds and staff for two years.

Schedule and Milestones

- FY14 Develop plan with objectives and milestones for identifying coverage areas and frequency bands
- FY14 Identify test cities/coverage areas and frequency bands to be monitored
- FY14 Design, Procure, and Build Measured Spectrum Occupancy Database (MSOD)
- FY14 Implement data transfer specifications and workflow
- FY14 Develop and test prototype monitoring unit
- FY15 Build ten spectrum monitoring units
- FY15 Setup, test, and monitor data collection effort at test locations
- FY15 Test data transfer to database in Boulder, Co
- FY15 Collect and analyze spectrum monitoring data
- FY15 Provide spectrum managers access to monitoring data
- Identify spectrum policies, management processes and techniques for spectrum sharing based on information collected from pilot program
- Prepare recommendation as to whether the system should be continued and expanded

Deliverables:

- FY14 Report on candidate coverage areas and frequency bands to be monitored
- FY14 Prototype monitoring unit
- FY14 Measured Spectrum Occupancy Database (MSOD) and data transfer specifications
- FY14 Tests and analysis report on prototype monitoring device
- FY15 Ten spectrum monitoring units setup and tested at 10 test locations
- FY15 Evaluation and validation that monitoring units and data provided are meeting data needs of spectrum managers
- FY15 Analysis of those spectrum policies, management processes and techniques for spectrum sharing that have potential for more dynamic frequency allocations
- FY15 Prepare recommendation as to whether the system should be continued and expanded

PERFORMANCE METRICS						
NTIA						
Performance Goal Performance Measure: Build, test, and evaluate prototype monitoring unit	FY 13 Target	FY 14 Target	FY 15 Target			
With increase		1	10			

Without increase		0	0			
Description: This measure is focused on developing a success prototype, testing it in the field, and replicating the prototype to test in 10 metropolitan areas around the country.						

Performance Goal Performance Measure: Make measured spectrum occupancy data available to users	FY 13 Target	FY 14 Target	FY 15 Target			
With increase		1 terabyte of data available to users	11 terabytes of spectrum occupancy data available to users			
Without increase		0	0			
Description: This measure is focused on developing a success database and uploading data to the central database for users to analyze.						

Activity: Salaries and Expenses

Subactivity: Spectrum

Title	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Electronic Engineer	Washington, DC	GS-15	1	155,500	155,500
Telecom Specialist	Washington, DC	GS-15	1	155,500	155,500
Electronic Engineer	Boulder, CO	ZP-IV	7	129,668	907,676
IT Specialist	Boulder, CO	ZP-IV	2	129,668	259,336
TOTAL			11		1,478,012
Less Lapse	25%		(2)		(369,503)
			8		1,108,509
2014 Pay Adjustment	1.0%				11,085
TOTAL					1,119,594

Personnel Data	Number
Full-Time Equivalent Employment	
Full-time permanent	8
Other than full-time permanent	0
Total	8
Authorized Positions:	
Full-time Permanent	11
Other than full-time permanent	0
Total	11

Budget Program: Salaries and Expenses
Sub-Program: Spectrum Monitoring Pilot Program

Object Class	2014 Increase
Personnel compensation	
Full-time permanent	1,119
Special personnel services payments	
Total personnel compensation	
Civilian personnel benefits	302
Benefits for former personnel	0
Travel and transportation of persons	50
Transportation of things	4
Rental payments to GSA	40
Rental Payments to Others	0
Communications, utilities and miscellaneous charges	6
Printing and reproductions	2
Advisory and assistance services	0
Others services	460
Purchases of goods & services from Gov't accounts	905
Operation and maintenance of facilities	0
Research and development contracts	0
Medical care	0
Operation and maintenance of equipment	75
Subsistence and support of persons	0
Supplies and materials	5
Equipment	4,526
Lands and structures	0
Investments and loans	0
Grants, subsidies and contributions	0
Insurance claims and indemnities	0
Interest and dividends	0
Refunds	0
Total Obligations	7,500

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Object Class	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11 Personnel compensation					
11.1 Full-time permanent	$15,076	$16,428	$16,623	$18,301	$1,678
11.3 Other than full-time permanent	0	260	260	260	0
11.5 Other personnel compensation	332	20	20	20	0
11.8 Special personnel services payments	0	0	0	0	0
11.9 **Total personnel compensation**	15,408	16,708	16,903	18,581	1,678
12.1 Civilian personnel benefits	4,300	3,617	3,894	4,371	477
13 Benefits for former personnel	0	0	0	0	0
21 Travel and transportation of persons	721	716	630	702	72
22 Transportation of things	9	40	48	43	(5)
23.1 Rental payments to GSA	1,497	1,901	2,021	2,050	29
23.2 Rental payments to others	0	0	0	0	0
23.3 Communications, utilities and miscellaneous charges	187	275	25	59	34
24 Printing and reproduction	35	87	88	111	23
25.1 Advisory and assistance services	65	0	410	410	0
25.2 Other services	2,343	1,279	1,904	1,904	0
25.3 Purchases of goods and services from Government accounts	18,167	20,715	20,041	19,520	(521)
25.7 Operation and maintenance of equipment	67	67	187	300	113
26 Supplies and materials	294	155	127	98	(29)
31 Equipment	2,002	287	207	3,973	3,766
41 Grants, subsidies and contributions	0	0	0	0	0
99 **TOTAL OBLIGATIONS**	$45,095	$45,847	$46,485	$52,122	$5,637
Prior Year Recoveries/Refunds	(224)				
Unobligated balances from Prior Years	(2,008)				
Unobligated balance EOY	2,647				
Unobligated balance, expiring	58				
Transfer from other accounts	0				
Total Budget Authority	$45,568	$45,847	$46,485	$52,122	$5,637

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	135	147	147	154	7
Other than full-time permanent	0	0	0	0	0
Total	135	147	147	154	7
Authorized Positions:					
Full-time permanent	147	147	147	161	14
Other than full-time permanent	0	0	0	0	0
Total	147	147	147	161	14

Exhibit 33

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
APPROPRIATIONS LANGUAGE AND CODE CITATIONS

For necessary expenses, as provided for by law, of the National Telecommunications and Information Administration (NTIA), [$45,847,000] $52,122,000, to remain available until September 30, [2014] 2015: Provided, That notwithstanding 31 U.S.C. 1535(d), the Secretary of Commerce shall charge Federal agencies for costs incurred in spectrum management, analysis and operations, and related services and such fees shall be retained and used as offsetting collections for costs of such spectrum services, to remain available until expended: Provided further, That the Secretary of Commerce is authorized to retain and use as offsetting collections all funds transferred, or previously transferred, from other Government agencies for all costs incurred in telecommunications research, engineering, and related activities by the Institute for Telecommunication Sciences of NTIA, in furtherance of its assigned functions under this paragraph, and such funds received from other Government agencies shall remain available until expended.

15 U.S.C. § 1512
15 U.S.C. § 1532
47 U.S.C. § 305
47 U.S.C. § 606
47 U.S.C. § 901, et seq.
47 U.S.C. § 1304
47 U.S.C. § 1305

15 U.S.C. § 1512 authorizes the Secretary of Commerce to foster, promote and develop foreign and domestic commerce.

15 U.S.C. § 1532 authorizes the Secretary of Commerce to conduct research and analysis in all telecommunications sciences; to investigate the transmission of radio waves and electromagnetic radiation; and to compile, evaluate, publish, and distribute related information.

47 U.S.C. § 305 authorizes the President to assign frequencies to radio stations or classes of radio stations belonging to and operated by the United States. Originally delegated to the Department of Commerce by Executive Order 12046, as later codified in the National Telecommunications and Information Administration Organization Act, 47 U.S.C. § 901, et seq.

47 U.S.C. § 606 and associated Executive Orders authorize the President to perform certain telecommunications emergency functions essential to security and the national defense.

47 U.S.C. § 901, et seq. authorizes NTIA to perform the Secretary's communications and information functions.

 47 U.S.C. § 1304 authorizes the Secretary of Commerce to establish and administer a grant program for the development and implementation of statewide initiatives to identify and track the availability and adoption of broadband services within each State.

 47 U.S.C. § 1305 authorizes the Assistant Secretary of Commerce for Communications and Information to establish and administer a national broadband service development and expansion grant program and to develop and maintain a comprehensive nationwide inventory map of existing broadband service capability and availability in the United States.

Exhibit 34

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
ADVISORY AND ASSISTANCE SERVICES

	2012 Actual	2013 Estimate	2014 Estimate
Management and Professional Support Services	$10	$0	$75
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	55	0	335
Total	$65	$0	$410

NTIA utilizes consultants throughout its programs to provide scientific or technical expertise in specialized areas.

Exhibit 35

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PERIODICALS, PAMPHLETS AND AUDIOVISUAL PRODUCTS

	2012 Actual	2013 Estimate	2014 Estimate
Periodicals	$0	$0	$0
Pamphlets	0	20	20
Audiovisual Products	0	0	0
Total	$0	$20	$20

NTIA utilizes pamphlets to provide an overview of NTIA programs and services to the public.

Exhibit 36

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
AVERAGE GRADE AND SALARIES

	2012 Actual	2013 Estimate	2014 Estimate
Direct:			
Average ES Salary……………………………………………………………………	$168,225	$168,225	$168,225
Average Career Path Salary………………………………………………………	109,443	$109,443	$110,537
Average GS Grade…………………………………………………………………	13.9	13.9	13.9
Average GS Salary…………………………………………………………………	$114,559	$114,559	$115,705

Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
FY 2013 President's Budget	1	1	($2,750)	$5,340
less: Obligations from prior years	0	0	0	0
plus: 2014 adjustments to base	0	0	0	0
2014 Base	1	1	(2,750)	5,340
plus: 2014 program changes	0	0	0	0
2014 Estimate	1	1	(2,750)	5,340

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Telecommunications Facilities, Planning and Construction											
Grants...	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Program management..................................	Pos/BA	1	(2,750)	1	(2,750)	0	0	0	0	0	0
	FTE/Obl.	1	1,298	1	5,340	0	0	0	0	0	0
TOTALS...	Pos/BA	1	(2,750)	1	(2,750)	0	0	0	0	0	0
	FTE/Obl.	1	1,298	1	5,340	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds..............................			(5,534)		0		0		0		0
Unobligated Balance, start of year........................			(6,604)		(8,090)		0		0		0
Unobligated Balance, end of year.........................			8,090		0		0		0		0
Unobligated Balance, rescinded...........................			2,750		2,750		0		0		0
Financing from transfers:											
Transfer from other accounts (-)...........................			0		0		0		0		0
Transfer to other accounts (+).............................			0		0		0		0		0
Appropriation..			0		0		0		0		0

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Exhibit 7

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by budget program	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Total Obligations...	**$1,298**	**$5,340**	**$0**	**$0**	**$0**
Offsetting collections from:					
Federal funds...	0	0	0	0	0
Non-Federal sources...................................	0	0	0	0	0
Recoveries/Refunds...	(5,534)	0	0	0	0
Unobligated balance, start of year...................................	(6,604)	(8,090)	0	0	0
Unobligated balance, end of year....................................	8,090	0	0	0	0
Unobligated balance, rescinded..	2,750	2,750	0	0	0
Budget Authority...	**0**	**0**	**0**	**0**	**0**
Restoration of unobligated balance, rescission..............	0	0	0	0	0
Financing:					
Transferred from other accounts (-)................................	0	0	0	0	0
Transferred to other accounts (+)...................................	0	0	0	0	0
Appropriation...	**0**	**0**	**0**	**0**	**0**

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Public telecommunications, facilities, planning and construction
Sub-Program: Grants and program management

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Grants..	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Program management......................	Pos/BA	1	(2,750)	1	(2,750)	0	0	0	0	0	0
	FTE/Obl.	1	1,298	1	5,340	0	0	0	0	0	0
Direct Obligations....................	Pos/BA	1	(2,750)	1	(2,750)	0	0	0	0	0	0
	FTE/Obl.	1	1,298	1	5,340	0	0	0	0	0	0

Exhibit 12

APPROPRIATION ACCOUNT: PUBLIC TELECOMMUNICATIONS FACILITIES, PLANNING AND CONSTRUCTION

BUDGET PROGRAM: PUBLIC TELECOMMUNICATIONS FACILITIES, PLANNING AND CONSTRUCTION

The Public Telecommunications Facilities, Planning and Construction program was discontinued in FY 2011.

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$422	$200	$0	$0	$0
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	0	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	422	200	0	0	0
12.1	Civilian personnel benefits	118	52	0	0	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	6	6	0	0	0
22	Transportation of things	2	2	0	0	0
23.1	Rental payments to GSA	73	50	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	8	8	0	0	0
24	Printing and reproduction	0	0	0	0	0
25.1	Advisory and assistance services	2	0	0	0	0
25.2	Other services	24	5,013	0	0	0
25.3	Purchases of goods and services from Government accounts	533	0	0	0	0
25.7	Operation and maintenance of equipment	10	5	0	0	0
26	Supplies and materials	4	3	0	0	0
31	Equipment	96	1	0	0	0
41	Grants, subsidies and contributions	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	$1,298	$5,340	$0	$0	$0
	Recoveries/Refunds	(5,534)				
	Unobligated Balance, start of year	(6,604)	(8,090)			
	Unobligated Balance, end of year	8,090	0			
	Unobligated Balance, rescinded	2,750	2,750			
	Total Budget Authority	$0	$0	$0	$0	$0

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	4	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	4	0	0	0	0
Authorized Positions:					
Full-time permanent	4	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	4	0	0	0	0

Exhibit 33

Department of Commerce
National Telecommunications and Information Administration
Public Telecommunications Facilities, Planning and Construction
APPROPRIATIONS LANGUAGE AND CODE CITATIONS:

For the administration of prior-year grants, recoveries and unobligated balances of funds previously appropriated are available for the administration of all open grants until their expiration. [(Department of Commerce Appropriations Act, 2013)]

47 U.S.C. § 391 authorizes the Secretary of Commerce to provide grant funds for the planning and construction of public telecommunications facilities by eligible entities.

47 U.S.C. § 392 sets forth the application requirements to be submitted to the Secretary of Commerce by eligible entities to request funds for the construction of public telecommunications facilities.

47 U.S.C. § 02(b)(3) assigns to NTIA the administration of the Public Telecommunications Facilities Program.

Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
Information Infrastructure Grants
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
FY 2013 President's Budget	0	0	($684)	$0
less: Obligations from prior years	0	0	0	0
plus: 2014 adjustments to base	0	0	0	0
2014 Base	0	0	(684)	0
plus: 2014 program changes	0	0	0	0
2014 Estimate	0	0	(684)	0

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Technology Opportunities Program											
Grants.. Pos/BA		0	$0	0	$0	0	$0	0	$0	0	$0
FTE/Obl.		0	0	0	0	0	0	0	0	0	0
Program management..................................... Pos/BA		0	(2,000)	0	(684)	0	0	0	0	0	0
FTE/Obl.		0	64	0	0	0	0	0	0	0	0
TOTALS.. Pos/BA		0	(2,000)	0	(684)	0	0	0	0	0	0
FTE/Obl.		0	64	0	0	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds..			(67)		0		0		0		0
Unobligated Balance, start of year..			(2,681)		0		0		0		0
Unobligated Balance, end of year...			684		0		0		0		0
Unobligated Balance, rescinded..			2,000		684		0		0		0
Financing from transfers:											
Transfer from other accounts (-)..			0		0		0		0		0
Transfer to other accounts (+)..			0		0		0		0		0
Appropriation...			0		0		0		0		0

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Exhibit 7

Department of Commerce
National Telecommunications and Information Administration
Information Infrastructure Grants
SUMMARY OF FINANCING
(Dollar amounts in thousands)

Comparison by budget program	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Total Obligations...	**$64**	**$0**	**$0**	**$0**	**$0**
Offsetting collections from:					
Federal funds..	0	0	0	0	0
Non-Federal sources......................................	0	0	0	0	0
Recoveries/Refunds..	(67)	0	0	0	0
Unobligated balance, start of year.......................	(2,681)	(684)	0	0	0
Unobligated balance, end of year........................	684	0	0	0	0
Unobligated balance, rescinded	2,000	684	0	0	0
Budget Authority...	**0**	**0**	**0**	**0**	**0**
Financing:					
Transferred from other accounts (-)...................	0	0	0	0	0
Transferred to other accounts (+)......................	0	0	0	0	0
Appropriation..	**0**	**0**	**0**	**0**	**0**

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Information Infrastructure Grants
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Information Infrastructure Grants
Sub-Program: Grants and program management

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Grants..	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Program management............................	Pos/BA	0	(2,000)	0	(684)	0	0	0	0	0	0
	FTE/Obl.	0	64	0	0	0	0	0	0	0	0
Direct Obligations..............................	Pos/BA	0	(2,000)	0	(684)	0	0	0	0	0	0
	FTE/Obl.	0	64	0	0	0	0	0	0	0	0

Exhibit 12

APPROPRIATION ACCOUNT: INFORMATION INFRASTRUCTURE GRANTS

BUDGET PROGRAM: INFORMATION INFRASTRUCTURE GRANTS

The Technology Opportunities Program was discontinued in FY 2005.

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Information Infrastructure Grants
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$0	$0	$0	$0	$0
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	0	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	0	0	0	0	0
12.1	Civilian personnel benefits	59	0	0	0	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	0	0	0	0	0
22	Transportation of things	0	0	0	0	0
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	0	0	0	0	0
24	Printing and reproduction	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services	5	0	0	0	0
25.3	Purchases of goods and services from Government accounts	0	0	0	0	0
25.7	Operation and maintenance of equipment	0	0	0	0	0
26	Supplies and materials	0	0	0	0	0
31	Equipment	0	0	0	0	0
41	Grants, subsidies and contributions	0	0	0	0	0
44	Refunds	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	64	0	0	0	0
	Recoveries/Refunds	(67)				
	Unobligated Balance, start of year	(2,681)	(684)			
	Unobligated Balance, end of year	684				
	Unobligated Balance, rescinded	2,000	684			
	Total Budget Authority	0	0	0	0	0

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Information Infrastructure Grants
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	0	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	0	0	0	0	0
Authorized Positions:					
Full-time permanent	0	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	0	0	0	0	0

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Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
FY 2013 President's Budget	0	0	($4,300)	$0
Adjustments to base	0	0	0	0
2014 Base	0	0	(4,300)	0
Change in mandatory program	0	0	0	0
2014 Mandatory Estimate	0	0	(4,300)	0
2014 Discretionary Estimate	0	0	(4,300)	0

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Interoperable Communications Grants...............	Pos/BA	0	0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	1	495	0	0	0	0	0	0	0	0
Low-Power Television and Translator Upgrade Program........	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	1	17,729	0	0	0	0	0	0	0	0
National Alert Program………………………………..….	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	1	237	0	0	0	0	0	0	0	0
Tsunami Warning Program…………………………………	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	94	0	0	0	0	0	0	0	0
TOTALS...	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	3	18,555	0	0	0	0	0	0	0	0
Adjustments to Obligations:											
Recoveries/Refunds...			368	0	0	0	0	0	0	0	0
Unobligated Balance, start of year................................			(8,786,580)	0	(8,764,234)	0	0	0	0	0	0
Unobligated Balance, end of year................................			8,764,234	0	0	0	0	0	0	0	0
Capital Transfer to General Fund…………………………			0	0	8,759,934	0	0	0	0	0	0
Mandatory Budget Authority ………………………….……			0	0	0	0	0	0	0	0	0
Change in Mandatory Program …………………….………………		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
Total Discretionary Budget Authority ………………………………		0	(4,300)	0	(4,300)	0	0	0	0	0	0

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Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Digital Television Transition and Public Safety Fund
Sub-Program: Public Safety Interoperable Communications Grants

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Interoperable Communications Grants	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	1	495	0	0	0	0	0	0	0	0
Direct Obligations.......................................	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	1	495	0	0	0	0	0	0	0	0

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Digital Television Transition and Public Safety Fund
Sub-Program: Low-Power Television and Translator Upgrade Program

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Low-Power Television and Translator Upgrade Program……………………………………	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	1	17,729	0	0	0	0	0	0	0	0
Direct Obligations......................................	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	2	17,729	0	0	0	0	0	0	0	0

Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Budget Program: Digital Television Transition and Public Safety Fund

Sub-Program: National Alert Program

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
National Alert Program……………………………	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	1	237	0	0	0	0	0	0	0	$0
Direct Obligations......................................	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	1	237	0	0	0	0	0	0	0	0

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	FY 2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$641	$0	$0	$0	$0
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	22	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	663	0	0	0	0
12.1	Civilian personnel benefits	189	0	0	0	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	22	0	0	0	0
22	Transportation of things	0	0	0	0	0
23.1	Rental payments to GSA	99	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	11	0	0	0	0
24	Printing and reproduction	2	0	0	0	0
25.1	Advisory and assistance services	8	0	0	0	0
25.2	Other services	181	0	0	0	0
25.3	Purchases of goods and services from Government accounts	708	0	0	0	0
25.7	Operation and maintenance of equipment	2	0	0	0	0
26	Supplies and materials	10	0	0	0	0
31	Equipment	220	0	0	0	0
41	Grants, subsidies and contributions	16,346	0	0	0	0
99	**TOTAL OBLIGATIONS**	$18,461	$0	$0	$0	0
	Prior Year Recoveries/Refunds	368	$0	$0	0	0
	Unobligated balances from Prior Years	(8,786,580)	(8,764,234)	0	0	0
	Unobligated balance EOY	8,764,234	0	0	0	0
	Capital transfer to General Fund	0	8,779,934	0	0	0
	Mandatory Budget Authority	0	0	0	0	0
	Change in mandatory program	(4,300)	(4,300)	0	0	0
	Total Mandatory Budget Authority	0	$0	$0	$0	0
	Total Discretionary Budget Authority	(4,300)	($4,300)	$0	0	0

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Digital Television Transition and Public Safety Fund
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	FY 2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	3	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	3	0	0	0	0
Authorized Positions:					
Full-time permanent	3	0	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	3	0	0	0	0

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Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
Public Safety Trust Fund
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

				Positions	FTE	Budget Authority	Direct Obligations
Estimate, FY 2013				31	31	$89,762	$85,983
plus:	Obligations from prior years			0	0	0	(1,221)
plus:	2014 adjustments to base			0	0	0	0
2014 Base				31	31	89,762	84,762
plus:	2014 program changes			(24)	(24)	1,818,238	1,818,238
2014 Estimate				7	7	1,908,000	1,903,000

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
First Responder Network Authority	Pos/BA	7	$2,238	31	$89,762	31	$89,762	7	$1,908,000	(24)	$1,818,238
	FTE/Obl.	7	1,017	31	85,983	31	89,762	7	1,908,000	(24)	$1,818,238
TOTALS..	Pos/BA	7	2,238	31	89,762	31	89,762	7	1,908,000	(24)	1,818,238
	FTE/Obl.	7	1,017	31	85,983	31	89,762	7	1,908,000	(24)	1,818,238

Adjustments to Obligations:						
Recoveries/Refunds..		0		0		0		0		0
Unobligated Balance, start of year...........................		0		(1,221)		0		0		0
Unobligated Balance, end of year............................		1,221		0		0		0		0
Unobligated Balance expiring..................................		0		0		0		0		0
Financing from transfers:						
Transfer from other accounts (+)............................		0		0		0		0		0
Transfer to other accounts (+)................................		0		0		0		0		0
Budget Authority		2,238		89,762		89,762		1,908,000		
Financing from Borrowing Authority:						
Authority to borrow, start of year..................................		2,000,000		1,997,462						
Borrowed(-)……………………………………		(2,238)								
Repaid(+)……………………………………		0								
Obligated, not borrowed(-)……………………………		0								
Authority to borrow available, end of year......................		1,997,762								
Anticipated receipts available, end of year....................		0		0		0				0

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Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
Public Safety Trust Fund
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Program: Public Safety Trust Fund

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Trust Fund	Pos/BA	7	$2,238	31	$89,762	31	$89,762	7	$1,908,000	(24)	$1,818,238
	FTE/Obl.	7	1,017	31	85,983	31	89,762	7	1,908,000	(24)	1,818,238
Direct Obligations...........................	Pos/BA	7	2,238	31	89,762	31	89,762	7	1,908,000	(24)	1,818,238
	FTE/Obl.	7	1,017	31	85,983	31	89,762	7	1,908,000	(24)	1,818,238

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Public Safety Trust Fund
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2012 Actual	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$170	$4,500	$4,500	$2,000	($2,500)
11.3	Other than full-time permanent	0	0	0	0	$0
11.5	Other personnel compensation	4	0	0		$0
11.8	Special personnel services payments	0	0	0	0	$0
11.9	**Total personnel compensation**	174	4,500	4,500	2,000	(2,500)
12.1	Civilian personnel benefits	48	1,215	1,215	1,080	(135)
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	29	750	750	300	(450)
22	Transportation of things	0	2	2	2	0
23.1	Rental payments to GSA	2	151	151	151	0
23.2	Rental payments to others	9	35	35	35	0
23.3	Communications, utilities and miscellaneous charges	0	30	30	30	0
24	Printing and reproduction	0	10	10	10	0
25.1	Advisory and assistance services	0	0	0	500	500
25.2	Other services	665	66,455	70,234	1,872	(68,362)
25.3	Purchases of goods and services from Government accounts	59	1,000	1,000	1,902,000	1,901,000
25.7	Operation and maintenance of equipment	0	45	45	10	(35)
26	Supplies and materials	2	90	90	5	(85)
31	Equipment	29	11,700	11,700	5	(11,695)
41	Grants, subsidies and contributions	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	$1,017	$85,983	$89,762	$1,908,000	1,818,238
	Prior Year Recoveries/Refunds	0				
	Unobligated balances from Prior Years	0	(1,221)			
	Unobligated balance EOY	1,221	0			
	Unobligated balance, expiring					
	Total Mandatory Budget Authority	$2,238	$89,762	$89,762	$1,908,000	$1,818,238

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
Public Safety Trust Fund
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	2012 Enacted	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	7	31	31	7	(24)
Other than full-time permanent	0	0	0	0	0
Total	7	31	31	7	(24)
Authorized Positions:					
Full-time permanent	7	31	31	7	(24)
Other than full-time permanent	0	0	0	0	0
Total	7	31	31	7	(24)

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Exhibit 5

Department of Commerce
National Telecommunications and Information Administration
State and Local Implementation Fund
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Estimate, FY 2013	8	8	$124,958	$125,216
plus: Obligations from prior years	0	0	0	0
plus: 2014 adjustments to base	0	0	0	0
2014 Base	8	8	124,958	125,216
plus: 2014 program changes	0	0	(115,258)	(115,258)
2014 Estimate	8	8	9,700	9,958

Comparison by budget program/sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
State and Local Implementation Fund	Pos/BA	0	$300	8	$124,958	8	$124,958	8	$9,700	0	($115,258)
	FTE/Obl.	0	41	8	125,216	8	124,958	8	9,700	0	(115,258)
TOTALS...	Pos/BA	0	300	8	124,958	8	124,958	8	9,700	0	(115,258)
	FTE/Obl.	0	41	8	125,216	8	124,958	8	9,700	0	(115,258)
Adjustments to Obligations:											
Recoveries/Refunds..			0		0		0		0		0
Unobligated Balance, start of year...........................			0		(258)		0		0		0
Unobligated Balance, end of year............................			258		0		0		0		0
Unobligated Balance expiring...................................			0		0		0		0		0
Financing from transfers:											
Transfer from other accounts (-).............................			0		0		0		0		0
Transfer to other accounts (+)................................			0		0		0		0		0
Budget Authority			300		124,958		124,958		9,700		
Financing from Borrowing Authority:											
Authority to borrow, start of year...................................			135,000		134,700						
Borrowed(-)…………………………………………			300								
Repaid(+)…………………………………………			0								
Obligated, not borrowed(-)…………………………			0								
Authority to borrow available, end of year......................			134,700								
Receipts available, end of year....................................			0		0		0		0		0

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Exhibit 10

Department of Commerce
National Telecommunications and Information Administration
State and Local Implementation Fund
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Program: State and Local Implementation Fund
Subprogram: State and Local Implementation Fund

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
State and Local Implementation Fund	Pos/BA	0	$300	8	$124,958	8	$124,958	8	$9,700	0	(115,258)
	FTE/Obl.	0	41	8	125,216	8	124,958	8	9,700	0	
Direct Obligations............................	Pos/BA	0	300	8	124,958	8	124,958	8	9,700	0	(115,258)
	FTE/Obl.	0	41	8	125,216	8	124,958	8	9,700	0	

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
State and Local Implementation
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2012 Enacted	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$30	$1,087	$1,087	$1,093	$6
11.3	Other than full-time permanent	0	0	$0	0	0
11.5	Other personnel compensation	0	1	$1	1	0
11.8	Special personnel services payments	0	0	$0	0	0
11.9	**Total personnel compensation**	30	1,088	1,088	1,094	6
12.1	Civilian personnel benefits	8	480	480	309	(171)
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	2	13	13	13	0
22	Transportation of things	0	2	2	2	0
23.1	Rental payments to GSA	1	154	154	154	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	0	15	15	15	0
24	Printing and reproduction	0	10	10	6	(4)
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services	0	819	561	7,741	7,180
25.3	Purchases of goods and services from Government accounts	0	798	798	334	(464)
25.7	Operation and maintenance of equipment	0	3	3	4	1
26	Supplies and materials	0	18	18	14	(4)
31	Equipment	0	31	31	14	(17)
41	Grants, subsidies and contributions	0	121,785	121,785	0	(121,785)
99	**TOTAL OBLIGATIONS**	$41	$125,216	$124,958	$9,700	(115,258)
	Prior Year Recoveries/Refunds					
	Unobligated balances from Prior Years					
	Unobligated balance EOY					
	Unobligated balance, expiring					
	Total Mandatory Budget Authority	$41	$125,216	$124,958	$9,700	(115,258)

Exhibit 16

Department of Commerce
National Telecommunications and Information Administration
State and Local Implementation
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

Personnel Data	2012 Enacted	2013 CR (annualized)	2014 Base	2014 Estimate	2014 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	3	8	8	8	8
Other than full-time permanent	0	0	0	0	0
Total	3	8	8	8	8
Authorized Positions:					
Full-time permanent	3	8	8	8	8
Other than full-time permanent	0	0	0	0	0
Total	3	8	8	8	8

Exhibit 6

Department of Commerce
National Telecommunications and Information Administration
Network Construction Fund
SUMMARY OF REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Comparison by sub-program		2012 Actual		2013 CR (annualized)		2014 Base		2014 Estimate		2014 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Reimbursable projects											
Network Construction Fund	Pos/BA	0	$0	0	$0	0	$0	24	$257,000	24	$257,000
	FTE/Obl.	0	0	0	0	0	0	24	257,000	24	257,000
Total, Reimbursable Obligations……………………	Pos/BA	0	0	0	0	0	0	24	257,000	24	257,000
	FTE/Obl.	0	0	0	0	0	0	24	257,000	24	257,000