U.S. DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

FY 2016 Budget as Presented to Congress

February 2015

DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Budget Estimates, Fiscal Year 2016
Budget as Presented to Congress

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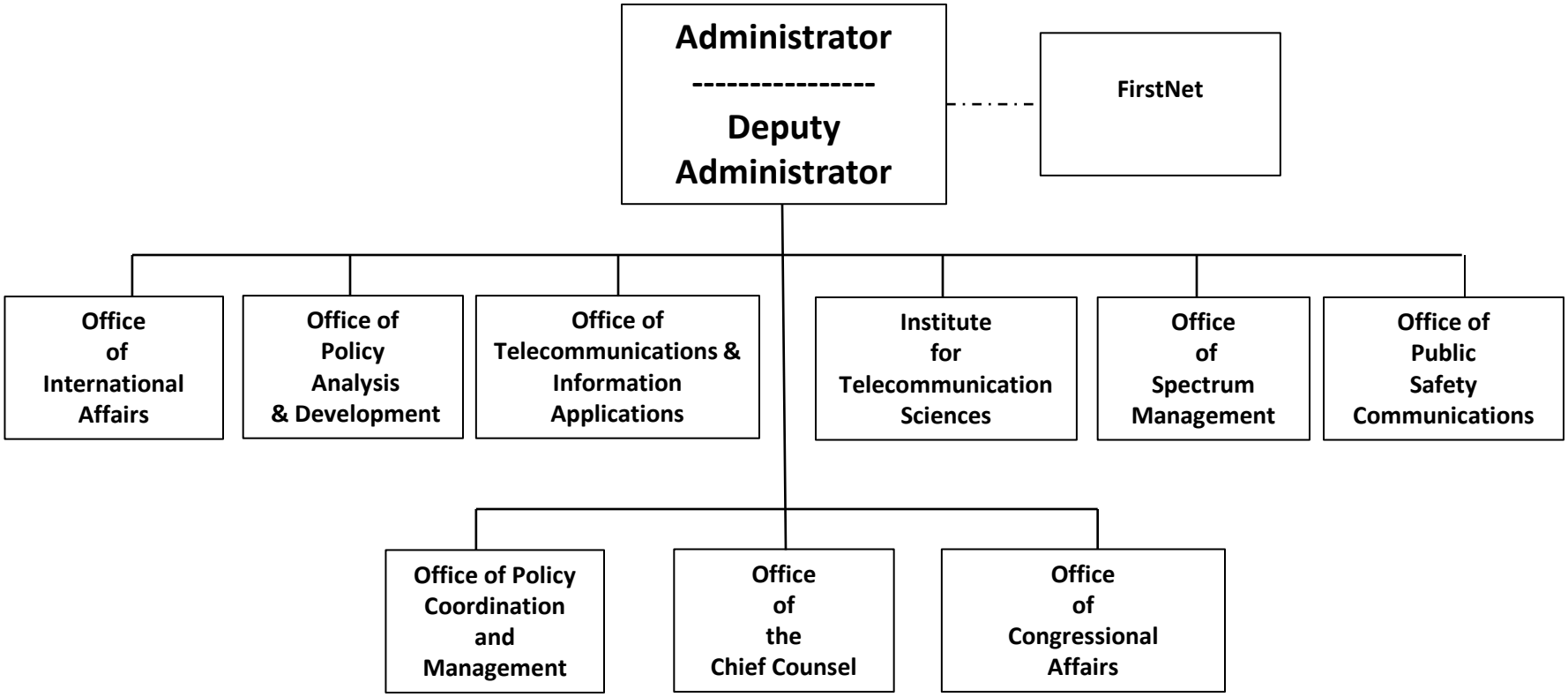
U.S. DEPARTMENT OF COMMERCE

National Telecommunications & Information Administration



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Department of Commerce
National Telecommunications and Information Administration
Fiscal Year 2016 OMB Submission

Executive Summary

The National Telecommunications and Information Administration (NTIA) is responsible by law for advising the President on communications and information policy issues, as well as for managing Federal wireless spectrum assignments. NTIA's programs and policymaking focus on expanding broadband Internet access and adoption in America, expanding the availability of spectrum for 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, energy independence, and public safety.

Summary of Change

Program	FY 2016 Base	FY 2016 Request	Difference 2015 vs. 2016
Domestic and International Policies	$8,093	$15,227	$7,134
Spectrum Management	8,488	8,488	0
Advanced Communications Research	7,727	12,555	4,828
Broadband Programs	16,101	12,962	(3,139)
Totals	**$40,409**	**$49,232**	**$8,823**

Salaries and Expenses

The NTIA FY 2016 budget request for Salaries and Expenses totals $49.2 million, a net increase of $8.8 million over the FY 2016 base budget. This increase includes ramping down administration of broadband infrastructure grants and reprogramming those funds for BroadbandUSA, NTIA's community broadband assistance and advisory program, which is a critical area of focus for NTIA as it advances the Nation's broadband capabilities. Additional resources are required to tackle gaps in Internet policy (including cybersecurity); to address the wireline broadband industry's plans to transition to Internet protocol (IP), which threatens key Federal systems; and to support the modernization of mutual legal assistance treaties through outreach to key online industry participants.

Also requested is funding for NTIA's partnership with the National Institute of Standards and Technology (NIST) through the Center for Advanced Communications, to support research, testing, and standards development required by government and industry, including addressing the Nation's ever-increasing need for spectrum. The Center for Advanced Communications also will provide testbeds to catalyze accelerated development, testing, and deployment of advanced communications technologies for commercial and government applications.

In addition, the increase funds mandatory pay raises and inflationary adjustments necessary to maintain current programs.

Broadband Programs. As broadband grants funded under the 2009 Recovery Act (which NTIA performs critical oversight of) reach completion, NTIA will redirect a portion of its base budget to

continue the momentum of the grant program by providing sustained technical assistance and outreach to a diverse set of communities and stakeholder groups to strengthen broadband capacity, economic opportunities, and innovation. NTIA will provide technical and administrative expertise to various communities, helping them to address difficult issues—including infrastructure financing, coalition building, broadband adoption, engineering challenges, project management, fee development, and billing management—that often cut short very promising broadband projects. Our strategy capitalizes on NTIA's strong relationships with broadband providers, municipal organizations, innovation economy firms, non-profit organizations, foundations, and other Federal stakeholders, which have become stronger and more collaborative as a result of administering Recovery Act grants. NTIA also will provide tools to advance projects so that they can attract new business investments and spur economic growth.

Domestic and International Policies. NTIA needs critical additional resources to ensure its policy program is positioned to meet the growing complexity of the Internet environment. The world is becoming more interconnected via rapid growth of the Internet and the globalization of information technology services and equipment. The U.S. Government, U.S. industry, and U.S. citizens need to connect and operate anytime and anywhere in the world, requiring the promotion and preservation of a harmonized, global Internet policy and governance landscape.

As the Internet matures and expands internationally, threats to its openness have increased. NTIA is the only agency in the Executive Branch with the mission to advise the President on critical national and international information and communications policy issues, including cybersecurity, net neutrality, targeted advertising, big data, and Internet governance. Without additional resources, the Department and NTIA will not be able to sufficiently influence domestic and international discussions to preserve the Internet's openness and its cultural and economic potentials while advancing key U.S. interests. Domestically, economic and innovation equities will suffer from less robust and capable interagency policy development process.

The Internet and the online world are developing faster than the pace of government. To keep up with this growth and ensure it continues to evolve in a way that supports American values and economic goals, NTIA also must innovate and scale to meet today's demands and to anticipate those of tomorrow. For example, various communications companies plan to retire time division multiplexing (TDM) technology and transition to Internet protocol (IP) technology in their networks, threatening the viability and reliability of critical Federal public safety and communication systems. Additional funding will allow NTIA to coordinate Federal agencies' inventory, evaluation, and planning for this transition; support creation of a unified strategy; and facilitate negotiations with commercial service providers. NTIA will also encourage modernization of mutual legal assistance treaties through an outreach and education initiative aimed at key online industry participants in the U.S., ensuring more cohesive strategies and representation of U.S. interests. This effort will include promoting the initiative with foreign governments and emphasizing to U.S. industry the importance of their response to and compliance with foreign law enforcement requests.

Advanced Communications Research. NTIA also proposes to expand collaborative research and development in advanced communications technologies to support commercial and government applications. This will be done in partnership with NIST through the Center for Advanced Communications, by leveraging and expanding key research and engineering expertise and capabilities available at NTIA and NIST. The need for advanced spectrum outreach was highlighted by the 2013 Presidential Memorandum "Expanding America's Leadership in Wireless Innovation," which directs the Secretary of Commerce, through NTIA and NIST, to publish an inventory and description of Federal test facilities available to commercial and

other stakeholders engaged in research, development, testing, and evaluation of advanced communications technologies to enhance spectrum sharing and other wireless efficiencies.

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 (FCC). The Public Safety Trust Fund (PSTF) receives all proceeds from these auctions that do not support certain statutory costs or the relocation of Federal systems, which are deposited into the Spectrum Relocation Fund. The Act also 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 buildout of the public safety broadband network. NTIA completed borrowing of the $2 billion in early FY 2014. Later that same year, the FCC transferred $1.2 billion in auction proceeds from the H-block auction to NTIA, which allowed partial repayment to Treasury for the FirstNet borrowings.

In addition, the Act provides $135 million for a grant program to assist State, regional, tribal, and local jurisdictions in identifying, planning, and implementing efficient and effective ways to utilize and integrate the infrastructure, equipment, and other architecture associated with the 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.

In FY 2015, receipts transferred to NTIA from the FCC from the Advanced Wireless Services 3 (AWS-3) auction are expected to fully repay borrowing and fund the remainder of the public safety broadband network and several related programs detailed in the Act. In addition, the proceeds will fund a $20.4 billion transfer to Treasury for deficit reduction. PSTF balances in excess of the transfers detailed in the Act are an estimate and shown as incoming receipts not available for obligation, and they will remain in the PSTF until they are returned to the Treasury for deficit reduction as statute requires.

Public Television Facilities Planning and Construction Program

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

Summary

NTIA's FY 2016 Budget Request reflects a funding level matching the ever more important economic and social roles played by the fast growing broadband and Internet world. This budget provides the resources necessary to support NTIA's responsibilities as advisor to the President on communications issues; promote and create opportunities related to broadband expansion and adoption; manage core programs more effectively and efficiently; deliver on Administration priorities, such as identifying and making available 500 MHz of spectrum for commercial broadband use by 2020; and ensure that the Internet remains an engine for continued innovation and economic growth.

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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 2015 Enacted	150	150	$38,200	$42,879
less: Obligations from prior years	0	0	0	0
plus: 2016 adjustments to base	0	0	2,209	2,209
2016 Base	150	150	40,409	40,409
plus: 2015 program changes	26	19	8,823	8,823
2016 Estimate	176	169	49,232	49,232

Comparison by budget program/sub-program		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies	Pos/BA	31	$6,535	33	$7,580	33	$8,093	48	$15,227	15	$7,134
	FTE/Obl.	24	6,139	33	$8,255	33	8,093	44	15,227	11	7,134
Spectrum management	Pos/BA	39	8,002	39	8,002	39	8,488	39	8,488	0	0
	FTE/Obl.	22	7,488	39	9,398	39	8,488	39	8,488	0	0
Advanced Communications Research..1/	Pos/BA	47	6,778	42	7,197	42	7,727	53	12,555	11	4,828
	FTE/Obl.	44	6,367	42	8,216	42	7,727	50	12,555	8	4,828
Broadband Programs	Pos/BA	36	24,685	36	15,421	36	16,101	36	12,962	0	(3,139)
	FTE/Obl.	35	24,341	36	17,010	36	16,101	36	12,962	0	(3,139)
TOTALS	Pos/BA	153	46,000	150	38,200	150	40,409	176	49,232	26	8,823
	FTE/Obl.	125	44,335	150	42,879	150	40,409	169	49,232	19	8,823
Adjustments to Obligations											
Recoveries/Refunds			(1,019)		0		0		0		0
Unobligated Balance, start of year			(2,032)		(4,679)		0		0		0
Unobligated Balance, end of year			4,679		0		0		0		0
Unobligated Balance expiring			37		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
Appropriation			46,000		38,200		40,409		49,232		8,823

1/ FY 2014 Enacted included Telecommunication Sciences Research and Spectrum Pilot Monitoring Program. The programs have been combined for this presentation.

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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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 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.	35	8,759	45	16,331	45	7,800	45	7,800	0	0
Other	Pos/BA	1	0	1	0	1	0	1	0	0	0
	FTE/Obl.	2	433	1	1,201	1	800	1	800	0	0
Total, Reimbursable projects	Pos/BA	46	0	46	0	46	0	46	0	0	0
	FTE/Obl.	37	9,192	46	17,532	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.	88	32,496	109	41,677	109	33,952	109	33,952	0	0
Total, Spectrum fees	Pos/BA	109	0	109	0	109	0	109	0	0	0
	FTE/Obl.	88	32,496	109	41,677	109	33,952	109	33,952	0	0
Total, Reimbursable Obligations	Pos/BA	155	0	155	0	155	0	155	0	0	0
	FTE/Obl.	125	41,688	155	59,209	155	42,552	155	42,552	0	0

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

Comparison by budget program	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/(Decrease)
Total Obligations	**$86,023**	**$102,088**	**$82,961**	**$91,784**	**$8,823**
Offsetting collections from:					
Federal funds	(41,188)	(58,709)	(42,052)	(42,052)	0
Non-Federal sources	(500)	(500)	(500)	(500)	0
Recoveries/Refunds	(1,019)	0	0	0	0
Unobligated balance, start of year	(2,032)	(4,679)	0	0	0
Unobligated balance, end of year	4,679	0	0	0	0
Unobligated Balance expiring	37				
Budget Authority	**46,000**	**38,200**	**40,409**	**49,232**	**8,823**
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	**46,000**	**38,200**	**40,409**	**49,232**	**8,823**

Exhibit 9

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

Adjustments to Base		FTE	Amount ($000)
COST CHANGES:			
Pay Raises		0	$ 231
Full-year cost of FY 2015 pay increase and related costs			
Total cost in FY 2016 of FY 2015 pay increase	212,000		
Less amount funded in FY 2015	159,000		
Total amount requested in FY 2016 to provide cost of FY 2015 pay raise	53,000		
FY 2016 pay increase and related costs			
A general pay raise of 1.3 percent is assumed to be effective January 1, 2016.			
Total cost of FY 2016 pay raise	178,000		
Working Capital Fund	0		
Total adjustment for FY 2016 pay increase	178,000		
Civil Service Retirement System (CSRS)		0	$ (25)
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 3.7 percent in FY 2015 to 1.4 percent in FY 2016. The contribution rate will remain 7.0 percent.			
FY 2016 ($15,248,000 x .014 x .0700)	14,943		
FY 2015 ($15,248,000 x .037 x .0700)	39,492		
Total adjustment to base	(24,549)		
Federal Employees Retirement System (FERS)		0	$ 237
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 96.3 percent in FY 2015 to 98.6 percent FY 2016. The contribution rate will increase from 11.9 percent in FY 2015 to 13.2 percent for FY 2016.			
FY 2016 ($15,248,000x .986 x .132)	1,984,558		
FY 2015 ($15,248,000 x .963 x .119)	1,747,375		
Total adjustment to base	237,183		

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	$ 40
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 remain increase from $119,100 in FY 2015 to $122,100 in FY 2016. The OASDI tax rate will remain at 6.2 percent.			
Regular Employees			
FY 2016 ($15,248,000 x .986 x .866 x .062)	816,181		
FY 2015 ($15,248,000 x .963 x .843 x .062)	775,971		
Total adjustment to base	40,210		
Thrift Savings Plan (TSP)		0	$ 4
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 at 1 percent.			
FY 2016 ($15,248,000 x .986 x .01)	150,345		
FY 2015 ($15,248,000 x .963 x .01)	146,838		
	3,507		
Health Insurance		0	$ 22
Effective January 2015, NTIA's contribution to Federal employees' health insurance premiums increased by 2.5 percent. Applied against the 2015 estimate of $899,000, the additional amount required is $22,475.			
One More Compensable Day		0	$ 70
The increased cost of one additional compensable day in FY 2016 compared to FY 2015 is calculated by dividing the 2015 estimated personnel compensation ($15,248,000) and applicable benefits ($3,106,000) by 261 compensable days.			
Per Diem		0	$ 22
Per diem rates are projected to increase 4.9%. This percentage was applied to the FY 2015 estimate of $442,000 to arrive at an increase of $21,658.			
Postage			
Effective January 26, 2014, the Governors of the Postal Service implemented a rate increase for shipping. The overall price change for all shipping services is 5.3%. This percentage was applied to the 2015 estimate of $31,000 to arrive at an increase of $1,643.		0	2

Exhibit 9

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

Adjustments to Base	FTE	Amount ($000)
Rental Payments to GSA GSA rates are projected to increase 1.5 percent in FY 2016. This percentage was applied to the FY 2015 estimate of $1,351,000 to arrive at an increase of $20,265.	0	$ 20
Working Capital Fund The amount of $1,346,000 funds changes within the Departmental Working Capital Fund.	0	$ 1,346
General Pricing Level Adjustment This request applies 1.019 percent based on OMB economic assumptions for FY 2016 to object classes where the prices that the Government pays are established through the market system. Factors are applied to: other services ($217,648), supplies and materials ($3,392), equipment ($15,776), GPO Printing ($1,072), and communications, utilities, and misc. charges ($1,952).	0	$ 240
Total, non recurring costs		0
Subtotal, Cost Changes	0	$ 2,209
Total, Adjustments to Base	0	$ 2,209

National Telecommunications and Information Administration (NTIA)
Salaries and Expenses

APPROPRIATION ACCOUNT: SALARIES and EXPENSES
BUDGET PROGRAM: SALARIES and EXPENSES

For FY 2016, NTIA requests an increase of $8,823,000 and a net increase of 19 FTE.

This is comprised of $231,000 for payroll increases and $1,978,000 for inflationary adjustments for current activities, for a total of $2,209,000 in adjustments to the base budget. In addition to being a resource for Internet governance and policy-making plans, NTIA also plans to help coordinate Federal agencies' transition to IP technology and to support modernization of mutual legal assistance treaties related to sharing cross-border electronic information in law enforcement contexts. NTIA will advance efficient use of spectrum and spectrum sharing by bolstering a strong research, testing, and information-sharing infrastructure through its partnership with the NIST at the joint Center for Advanced Communications. In addition, NTIA has realigned resources within the Broadband Programs to reflect the transition from broadband grant management to a community broadband capacity-building program.

BASE JUSTIFICATION:

SALARIES and EXPENSES Overview

NTIA serves as the principal adviser to the President on communications 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. communications technology, equipment, and service companies. These policies further U.S. strategic goals of opening markets and encouraging competition, innovation, and entrepreneurship domestically and globally; advancing the public interest in communications, mass media, and information services; and promoting the availability of advanced services to people around the globe.

Since its creation in 1978, NTIA has been at the cutting edge of critical communications issues. For example, over the past decade, NTIA has identified several bands of Federal radio spectrum that the Federal Communications Commission (FCC) has auctioned for commercial use, generating billions of dollars in deficit reduction. NTIA also administered the TV Converter Box Coupon Program allowing analog televisions to continue receiving over-the-air television broadcast signals after the June 2009 transition of full-power television stations to digital broadcasting. During various national and international emergencies, such as Hurricane Katrina and the 2010 earthquake in Haiti, NTIA responders assisted in maintaining or restoring radio spectrum frequency assignments to ensure continued critical communications. 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 programs and objectives are based on the interdisciplinary analysis of economic, technological, regulatory, legal, social, and foreign policy issues. The Department of Commerce's (DOC) Strategic Plan describes NTIA's activities, which include working with the White House and other Federal agencies on Administration-wide communications policy statements and obtaining private-sector views on a broad range of communications policy issues. NTIA's activities fall within two DOC Strategic Goals:

Trade and Investment: Expand the U.S. economy through increased exports and inward foreign investment that lead to more and better American jobs: Objective 1.1. Increase opportunities for U.S. companies by opening markets globally.

Innovation: Foster a more innovative U.S. economy—one that is better at inventing, improving, and commercializing products and technologies that lead to higher productivity and competitiveness: Objective 2.3. Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity.

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

- The **Domestic and International Policies program** formulates and promotes national policies for consideration by the President, Congress, other Executive Branch agencies, the independent FCC and Federal Trade Commission (FTC), and other government and non-government organizations. The program has leadership responsibility for promoting broad articulation of policy and policy frameworks necessary to continue Internet innovation both domestically and internationally. The program also formulates and promotes national policies for presentation in multilateral, bilateral, international, and multi-stakeholder organizational settings as well as ensures the stability and security of the Internet DNS. This program has positioned NTIA to advocate strongly within interagency discussions and within a wide variety of domestic and international forums to advance the nation's economic, social, and political interests.

- The **Spectrum Management program** develops, establishes, and implements plans, policies, activities, capabilities, and procedures to ensure that 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, both domestically and internationally.

- The **Advanced Communications Research program** utilizes communications research and engineering to support Administration communications goals, such as enhanced domestic competition, advanced services and new technology deployment, improved foreign trade opportunities for U.S. communication firms, and more efficient use of the radio frequency spectrum. NTIA has a cooperative effort with NIST to align the world-class advanced communications capabilities of both organizations under a Center for Advanced Communications. The Center for Advanced Communications unites key research and engineering activities under an umbrella of national excellence for collaborative research and engineering, including addressing current and long-term challenges in spectrum sharing, public safety communications, standards coordination, electromagnetics, and quantum electronics.

  NTIA's research and engineering laboratory is located in Boulder, CO. On a reimbursable basis, NTIA's laboratory also serves as a principal Federal resource for

addressing the communications, information technology (IT), and security challenges of other Federal agencies and state, local, and tribal governments. NTIA has a cooperative effort with the National Institute for Standards and Technology (NIST) to align the world-class advanced communications capabilities of both organizations under a Center for Advanced Communication. The Center for Advanced Communications addresses current and long-term communication challenges related to spectrum sharing, public safety communications, standards coordination, electromagnetics, and quantum electronics.

- The **Broadband Programs** serve communities by providing information, tools, and financial assistance to support projects that expand broadband availability and adoption nationwide. The program was initiated through the American Recovery and Reinvestment Act of 2009 (Recovery Act, Public Law No. 111-5), which allocated $4.7 billion in grant funding through the Broadband Technology Opportunities Program and the State Broadband Data and Development Program. The grants were awarded for state broadband initiatives (SBI) throughout the U.S., for improving broadband services in areas of the Nation not adequately served, for encouraging broadband adoption, and for developing a map of broadband services.

  As the grant program is being closed-out, NTIA will ensure that recipients comply with all grant terms and conditions. Grant recipients have deployed significant infrastructure across the Nation that needs to be inventoried and properly recorded so that NTIA can ensure that BTOP-funded property continues to serve the public purpose for which it was intended. Throughout the closeout process, NTIA will review final reports to identify any unused grant funds. NTIA will expeditiously deobligate any funds not spent during the grant period of performance and ensure that those funds are returned to the Treasury.

  NTIA is continuing the momentum generated by these projects by transitioning staff to support states and municipalities through a new program designed to expand community broadband and the digital economy. This effort, BroadbandUSA, promotes sustainable approaches to planning, financing, and implementing broadband projects. Building on the knowledge and experience gained by managing hundreds of grants projects, NTIA provides technical assistance, financing advice, and management tools to help communities leverage existing resources and build public-private partnerships to support broadband projects. The program includes hands-on assistance for targeted underserved communities.

NTIA staff and facilities are located primarily in Washington, DC, and at a laboratory facility in Boulder, CO.

INFORMATION AND TECHNOLOGY

NTIA staff is serviced by a full range of infrastructure and information management efforts that support and promote NTIA's mission. NTIA proposes to continue its modernization of IT operations. Through modernization, NTIA will standardize its platforms to support new initiatives in spectrum management, communications policy, and public safety communications. NTIA will

migrate all legacy systems to standard platforms, reducing the number and types of technology it employs.

NTIA will implement the Federal Spectrum Management System Release 3 in FY 2015. This will allow NTIA to begin retiring legacy spectrum systems while improving data capture and analysis capabilities; expanding data modeling for system characterization; strengthening compliance and data integrity; enhancing engineering algorithms that identify frequencies in congested environments; providing easier system interface tools; and ensuring a more secure operating environment for spectrum information.

NTIA will continue to investigate and seek opportunities for new modernization efforts to improve business performance as well as invest in shared services, consolidation efforts, and improvements in administrative efficiencies, including those led by DOC focusing on data center consolidation, call center operation, information security, and electronic travel systems.

SIGNIFICANT ADJUSTMENTS-TO-BASE:

NTIA requests a net increase of $2.209 million to fund adjustments-to-base (ATBs) to current programs for S&E activities. The increase will fund the estimated FY 2016 Federal pay raise of 1.3 percent. The increase will also provide inflationary increases for non-labor activities, including service contracts, utilities, field office lease payments, 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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and international policies.....	Pos/BA	31	$6,535	33	$7,580	33	$8,093	48	$15,227	15	$7,134
	FTE/Obl.	24	6,139	33	8,255	33	8,093	44	15,227	11	7,134
Direct Obligations.....	Pos/BA	31	6,535	33	7,580	33	8,093	48	15,227	15	7,134
	FTE/Obl.	24	6,139	33	8,255	33	8,093	44	15,227	11	7,134

SUBPROGRAM: DOMESTIC AND INTERNATIONAL POLICIES

NTIA is the only Executive Branch agency that has as one of its core missions "the protection and promotion of the Internet and the innovation and economic value it fosters." Within NTIA, the Office of Policy Analysis and Development (OPAD) and the Office of International Affairs (OIA), working in close collaboration, endeavor to ensure that the Internet remains an open, dynamic platform for innovation, job creation, and economic growth. NTIA promotes competition, transparency, fairness, and openness in traditional and new communications networks and services.

Summary of Change

Program	FY 2016 Base	FY 2016 Request	Difference 2015 vs. 2016
Domestic and International Policies	**$8,093**	**$15,227**	**$7,134**
FTE	**33**	**44**	**11**

Internet and communications services are integral to the U.S. economy and account for a significant portion of our economy's recent growth. According to a 2011 estimate, the Internet accounted for 21 percent of GDP growth in mature economies over the past five years. In the U.S., online retail sales are growing more quickly than the economy as a whole. By 2016, the Internet economy is projected to contribute a trillion dollars to U.S. GDP (just over five percent).

Through its policy programs, NTIA strives to maintain a policy environment that supports continued Internet innovation and job creation. While maintaining openness and competition are essential to achieving these goals, so are policies that maintain the security and stability of communications networks and infrastructure, protect consumers, and encourage Americans to connect to the digital economy through broadband. Moreover, the U.S. must engage with its international partners to maintain this environment and promote a global approach of inclusion and participation. The Internet has flourished because of the approach taken from its infancy to resolve technical and policy questions. Known as the multistakeholder process, this approach involves the full inclusion of all stakeholders, relies on consensus-based decisionmaking, and operates in an open, transparent, and accountable manner. This approach is contested by countries that do not share our interest in an open, dynamic, innovative Internet and continually seek to exert greater control. NTIA addresses these challenges through a combination of subject matter expertise; engagement with a broad array of multistakeholder organizations, regulatory agencies, and multilateral bodies; empirical research on broadband adoption and usage; and interagency coordination and collaboration.

During FY 2016, NTIA will:

- Assist the Assistant Secretary for Communications and Information in executing his duty to advise the President on communications policies pertaining to economic and technological advancement and the regulation of the communications industry under 47 U.S.C. § 902;
- Optimize policymaking and international engagement on U.S. Internet and digital economy goals;

- Promote, measure, and understand the deployment and adoption of broadband services and their impact on the U.S. economy;
- Encourage U.S. economic growth through policies that support competitive and innovative Internet, communications, and information technology infrastructures;
- Foster an Internet that industry and consumers trust through the development and promotion of appropriate safeguards for privacy, security, and intellectual property;
- Advance the multistakeholder model for Internet governance and policymaking, continue to support multistakeholder technical coordination of the Internet's DNS, and ensure the security and stability of the Internet DNS;
- Work with international partners to encourage communications and information policies and regulations that are fair, open, transparent, pro-competitive, low-burden, and conducive to using the Internet to promote economic development; and
- Promote small business and minority interests in the digital economy.

To accomplish NTIA's mission of promoting an open, dynamic, and globally interconnected Internet and supporting competition, in and liberalization of, communications services and technologies, the FY 2016 budget request for this sub-program seeks sufficient staffing and resources to execute the comprehensive strategy discussed below.

Policy for an Open, Dynamic, Innovative, Stable, and Secure Internet

As the Internet and other communications networks and services become more critical to the U.S. economy, privacy, security, and the protection of copyrighted works have become increasingly important. Insufficient privacy protections may inhibit consumers' use of new services. Unaddressed security threats impose significant time and expense on companies and consumers and threaten U.S. economic security. Online copyright infringement reduces revenues for creators and may reduce their incentives to produce new works. NTIA, working with other DOC bureaus and relevant Federal agencies, develops policies that refine privacy, security, and copyright protections in ways that avoid detailed, inflexible prescriptions that could stifle innovation.

Consumer Data Privacy. NTIA has significant expertise in consumer data privacy. NTIA was the lead author of the groundbreaking privacy reports issued by DOC in 2010 and by the White House in 2012 and 2014. The privacy principles and policy frameworks in these reports reflect input that NTIA received from extensive engagement with industry, advocacy groups, academics, other Federal agencies, and international partners. The reports also called on NTIA to establish a privacy policy development process that provides an ongoing role for all of these stakeholders. NTIA has developed such a process and has convened a series of open, public meetings to encourage private-sector stakeholders to develop codes of conduct. The stakeholders – not NTIA – draft and negotiate these codes. NTIA is evaluating topics for future codes, and will convene additional processes in FY 2015.

NTIA is also leading interagency efforts to influence global consumer data privacy frameworks. NTIA develops and coordinates positions ensuring interoperability between the consumer data privacy frameworks in the U.S. and the European Union. NTIA works with colleagues in the International Trade Administration to support the U.S. and EU Safe Harbor Framework, which provides mechanisms for the free flow of information across borders. Ensuring interoperability of privacy frameworks is critical to enhancing the free flow of information across borders and building economic growth.

Cybersecurity. In the complex debate surrounding how to improve the cybersecurity posture of the U.S., NTIA brings a perspective informed by its expertise in communications markets and Internet-based services. This expertise allowed NTIA to play a leading role in preparing a report for the President on cybersecurity incentives under Executive Order 13636, "Improving Critical Infrastructure Cybersecurity," and in partnering with NIST on the development of the Cybersecurity Framework. NTIA also engages with industry partners and the Departments of Defense and Homeland Security on a broad range of cybersecurity issues. In addition, NTIA promotes U.S. cybersecurity policies in intergovernmental organizations, including the Organizations for Economic Cooperation and Development (OECD) and the Asia Pacific Economic Cooperation (APEC) Telecommunications and Information Working Group.

Online Copyright Protection. NTIA is helping to develop positions on potential changes to U.S. copyright law in partnership with the U.S. Patent and Trademark Office. Large-scale infringement on the Internet continues to threaten the revenues and business models of the music, film, and other copyright-dependent industries. NTIA's Internet expertise informs policy development in this area with an understanding of how potential policy and technical measures to prevent infringement could affect innovation and the free flow of information online. NTIA also provides policy analysis and recommendations to U.S. regulators, encouraging them to recognize the importance of openness and competition in U.S. markets.

Every three years, NTIA by statute recommends to the Register of Copyrights which exemptions to recognize to the Digital Millennium Copyright Act's prohibition against circumvention of access controls protecting copyrighted works. Throughout the rulemaking process, NTIA advocates for a range of exemptions that promote innovative new technologies, accessibility for persons with disabilities, and more creative works by independent artists who rely on fair use exemptions. During the most recent rulemaking, concluded in 2012, NTIA recommended several important exemptions that were adopted, including protections for facilitating the dissemination of e-books by visually impaired Americans and for educational uses of audiovisual works in the classroom.

Law Enforcement and National Security. NTIA provides a viewpoint focusing on innovation and economic growth in policy discussions related to the protection of Americans from criminal and national security threats in the online environment. For example, NTIA participates in extensive discussions with law enforcement and national security agencies on potential changes to electronic surveillance statutes. NTIA brings an understanding of how potential changes to these laws could affect companies' ability to innovate as well as consumers' confidence in Internet-based services. Applying its expertise in privacy and the free flow of information to new settings, NTIA also participates in interagency discussions on topics ranging from countering online violence and radical extremism to proposals to authorize companies to "hack back" against the perpetrators of cyber-attacks.

Evolution of the Communications Policy and Technology Landscape. Finally, NTIA continues to analyze and engage on a broad range of other policy and regulatory issues, such as net neutrality and the convergence of the public switched telephone network and Internet Protocol (IP) technology. In FY16, NTIA will delve deeply into the Internet Protocol transition, assessing the short term policy impacts on consumers and critical services. Longer term, impacts of the transition are intertwined with questions on how future U.S. communications infrastructure services should be regulated. NTIA will undertake an in-depth examination of the Communications Act of 1934 rewrite and develop options and recommendations for consideration in this process.

Global Internet Policymaking and Governance

NTIA leads development of U.S. policy and international engagement on Internet policymaking and governance, and represents the U.S. in the organizations that coordinate key policy and technical services critical to the continued operations of the Internet's Domain Name System.

Domain Name System (DNS). The DNS plays a vital role in Internet commerce, security, and stability. It serves as the Internet's "address book," translating human-readable addresses (e.g., www.commerce.gov) to the numerical addresses that computer applications use. As the Internet has become an increasingly important component of the global communications and information infrastructure, there has been growing pressure to introduce some form of international political control over the Internet and the DNS.

NTIA is the Executive Branch agency responsible for DNS issues. A July 1997 Presidential directive requires DoC to transition the management of the Internet DNS to the private sector. In 2009, with the signing of the Affirmation of Commitments (Affirmation), the U.S. began transitioning the multistakeholder, private-sector led technical coordination of the Internet DNS to the Internet Corporation for Assigned Names and Numbers (ICANN). The Affirmation establishes mechanisms and timelines for continuing reviews by the ICANN community of ICANN's execution of core tasks in four areas: ensuring accountability, transparency, and the interests of global Internet users; preserving security, stability, and resiliency; assessing the impact of new generic top level domains (gTLDs); and determining policy for WHOIS, which are registered domain names that identify individuals, businesses, organizations, and governments. NTIA's Administrator is a member of the Accountability and Transparency Review Team (ATRT) tasked with ensuring accountability, transparency, and the interests of global Internet users. The first ATRT developed 27 recommendations advancing specific actions to improve ICANN's responsiveness its user community, while the second ATRT developed 12 recommendations. The implementation of the 27 ATRT1 recommendations has led to marked improvement in ICANN's performance, and this maturation continues with the ongoing implementation of the 12 ATRT2 recommendations.

ICANN's responsibilities include facilitating DNS policy development through a bottom-up process involving the diverse interests of generic and country code top level domain registries, domain name registrars, regional Internet registries, the technical community, business and individual Internet users, and governments. NTIA represents the U.S. Government in ICANN's Governmental Advisory Committee (GAC), which advises ICANN on issues of public policy related to the DNS, especially where there ICANN's activities or policies and national laws or international agreements may interact. In this role, NTIA convenes the monthly U.S. Government DNS Interagency working group and consults regularly with domestic and international industry, academia, civil society, and technical stakeholders. Through this policy development process, NTIA has successfully coordinated and advanced a broad range of U.S. Government interests in the GAC, which have been subsequently forwarded to the ICANN Board in the form of consensus GAC advice. In particular, the U.S. Government's perspectives on consumer protection, intellectual property protection, prevention of abusive uses of the DNS, and security and stability have been directly reflected in GAC consensus advice regarding ICANN's new generic top level domain (new gTLD) program.

NTIA administers the Internet Assigned Numbers Authority (IANA) Functions Contract and the Cooperative Agreement with private-sector root zone management partners. These complex legal agreements represent the core of Internet infrastructure, but the policies are not developed

by the U.S. Government. Instead, they incorporate policies and procedures developed over time by a variety of actors, including ICANN; the Internet Engineering Task Force (IETF) and the Internet Architecture Board (IAB); Regional Internet Registries (RIRs); top-level domain (TLD) operators/managers (e.g., country codes and generic); governments; and the Internet user community.

In 2014, NTIA announced its intent to transition key Internet domain name functions to the global multistakeholder community. This marks a milestone toward the final phase of the privatization of the DNS first outlined by the U.S. Government in 1997. Specifically, NTIA called upon ICANN to convene a multistakeholder process to develop a transition proposal. While looking to stakeholders and those most directly served by the IANA functions to work through the technical details, NTIA established a clear framework to guide the discussion. First, the proposal must support and enhance the multistakeholder model, with development by the multistakeholder community and broad community support. NTIA will not accept a transition proposal that replaces the NTIA role with a government-led or intergovernmental organization solution. Second, the proposal must maintain the security, stability, and resiliency of the DNS. Third, the proposal must meet the needs and expectations of the global customers and partners of the IANA services. And finally, the proposal must maintain the openness of the Internet.

NTIA is also a leader in promoting Internet DNS security and stability. NTIA administers several no-cost legal agreements that support the Internet DNS. For example, NTIA administers the usTLD contract for the benefit of the nation's Internet community. Our nation's country code top-level domain has historically served as a home for American business, individuals, and localities. NTIA also administers the Cooperative Agreement with EDUCAUSE to maintain the .edu domain 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.

International Forums. As required by statute, NTIA participates in many activities to enhance the global strength of the U.S. Internet, communications, and information services industries, including in Internet policymaking and governance. We advocate for bilateral, regional, and multilateral adoption of policies that encourage an open Internet; promote market liberalization; and stimulate democratization, economic development, and promotion of communications technology interests internationally. A wide variety of international forums – some treaty-based, others producing policy guidelines and research – are developing Internet policy, and NTIA participates in many of these forums to ensure that they maintain a central focus on innovation and economic growth and preserve the multistakeholder approach to Internet policymaking.

NTIA plays a central role in the Executive Branch's involvement in the Internet Governance Forum (IGF), a multistakeholder venue that facilitates global discussions of Internet policy issues. NTIA serves on the steering committee of the Internet Governance Forum USA (IGF-USA) a multistakeholder effort to illuminate issues and cultivate constructive discussions about the future of the Internet domestically. In this role, NTIA has helped to establish the overall theme and itemized agenda of workshops for the forum. Staff-level experts from NTIA have always participated in the IGF-USA workshops, and the NTIA Administrator has traditionally delivered keynote remarks. Both venues provide a forum to engage stakeholders in developing and shaping Internet policy by creating partnerships, coalitions, and dialogues that demonstrate best practices and help move policy forward.

The U.S. commitment to the Internet's successful multistakeholder model is not universally

shared. A handful of countries have repeatedly sought greater control over the multistakeholder process, an eventuality that could slow technological decisionmaking, introduce governmental censorship, and restrict innovation on the global Internet. Some countries are proposing to regulate the Internet by expanding the influence of intergovernmental institutions via the United Nations system. Consequently, it is more important than ever that the U.S. continues to oppose attempts to restrict and globally regulate the Internet. This is a major threat to the U.S. approach to the development and expansion of the Internet as well as more traditional communications technologies.

In order to preserve and enhance the multistakeholder approach, NTIA works with the Department of State and other interagency partners to develop and execute strategies that empower our corporate and civil society partners, build support among our allies, and rigorously prepare our official delegations. We have advocated for open, multistakeholder meetings at the ITU. We successfully opened the ITU World Telecommunication Policy Forum to all interested stakeholders and ensured that stakeholders had a voice in the outcome of that forum. We continue to try to open the ITU Council to stakeholders but face Member State resistance to the multistakeholder model. This resistance will only grow stronger, and NTIA must have the resources necessary to face this challenge and protect the multistakeholder governance model fundamental to the growth of the Internet.

NTIA also participates in and has successfully promoted U.S. positions at other intergovernmental forums that shape global norms, standards, and laws related to Internet, communications, and information services. These multilateral forums include the APEC, CITEL-the specialized communications Advisory organization of the Organization of American States (OAS), and the OECD. These organizations address important Internet and communications services issues, including cybersecurity, broadband metrics, and regional development.

NTIA's policy expertise and strategic coordination with other governments has contributed to the successes of the U.S. at previous international and intergovernmental conferences and meetings. NTIA will continue to participate in, and in some cases lead, the extensive preparatory process for international and intergovernmental meetings, partnering with the relevant Federal agencies and U.S. industry, civil society, and technical stakeholders. The U.S. Government must continue to address the challenges presented by international and intergovernmental organizations, in order to prevent relinquishing its global leadership role in communications technology policy, including Internet policy.

Satellite Organizations. NTIA provides policy and technical guidance on issues before the International Telecommunications Satellite Organization (ITSO) and the International Mobile Satellite Organization (IMSO). This ensures fair and competitive provisioning of fixed and mobile satellite services on a global basis, to protect lifeline communications 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.

Trade Negotiations. NTIA works with colleagues in DOC and other Federal agencies to ensure that U.S. trade agreements support communications and e-commerce services and the free flow of information across borders, creating jobs for Americans and facilitating economic growth. NTIA is consistently involved in trade policy discussions that impact the Internet. NTIA provides expertise to Federal agencies and offices with operational trade responsibilities. For example, NTIA provides advice on communications, e-commerce, and free flow-related language in specific trade negotiations, such as the Trade in Services Agreement, the Transpacific

Partnership, and the Transatlantic Trade and Investment Partnership.

Training of International Partners. NTIA also provides training to communications regulators from other countries through the U.S. Telecommunications Training Institute (USTTI) and a variety of digital Development Leadership Programs. These interactions with regulators and policymakers in emerging economies provide NTIA with the opportunity to emphasize the importance of open and competitive markets and transparent decisionmaking in communications policy as elements of economic development and growth.

Promoting, Measuring, and Understanding Broadband Deployment and Adoption

Surveying Broadband Adoption. Broadband is a key ingredient for job creation, sustainable economic growth, civic engagement, and social development. Broadband and the range of applications that it enables can benefit society by boosting employment, improving public health, facilitating active citizenship, and improving efficiency in virtually every sector of the economy. Measuring broadband adoption, and understanding the reasons that some households and small businesses do not use broadband, are integral to informing decisions on a broad range of policies of national economic importance.

NTIA, working with the Census Bureau and the Economics and Statistics Administration (ESA), has made the DOC the leading source of published data on broadband availability and Internet use in the U.S. These datasets are publicly available and enable researchers to conduct economic, financial, demographic, and other studies, which in turn provide a basis for sound policymaking to further encourage broadband adoption.

Promoting Small Business and Minority Interests in the Digital Economy. Broadband adoption in minority households lags behind the national average. Outreach to minority groups is therefore critical to the national goal of increasing broadband adoption. Through the Minority Telecommunications Development Program, NTIA conducts outreach to groups that represent minority interests in communications policies. NTIA also engages with minority trade associations and participates in meetings, conferences, and other events that focus on minority issues in the digital economy.

Internet Policy Coordination and Leadership

Promoting the Multistakeholder Model. A lynchpin of U.S. policy toward the Internet and other issues is promotion of the multistakeholder model for policy development. This approach creates a neutral forum for stakeholders to convene to “hammer out” policy solutions in a collaborative manner. NTIA supports multistakeholder meetings on issues ranging from privacy to cybersecurity to global Internet governance, and promotes the model domestically and internationally.

Interagency Leadership. 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) and Interagency Policy Committees (IPCs)); files Administration and Department comments with independent agencies such as the FCC or FTC; works with Congress on the formulation of legislation and provides comments through the Office of Management and Budget; 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.

Internet Policy Task Force Leadership. To advance NTIA's role as the President's principal adviser on communications policies and its mission to coordinate executive branch policies on communications issues, NTIA devotes significant staff resources to coordinating DOC and interagency policy development efforts. NTIA is the executive secretariat for the Department's Internet Policy Task Force (IPTF), a cross-Department group that coordinates the efforts in communications and information policy, economic analysis, intellectual property, trade, and technical standards to address the most pressing issues in the Internet economy. NTIA provides staff support for the working groups that produce IPTF policy documents, runs coordination meetings, and briefs officials from the Department and other agencies on the status of related projects.

During FY 2016, NTIA will:

- Coordinate and develop policies that promote the economic interests of the U.S. in an open, globally interconnected Internet;
- Lead and participate in U.S. delegations to international forums to build a global consensus on the multistakeholder approach to Internet policymaking;
- Advocate for transparent, accountable management of the Internet DNS, including representing the U.S. on ICANN's GAC;
- Continue to measure and analyze broadband adoption in U.S. households and share findings with the American public;
- Support NTIA's efforts to increase broadband adoption in the U.S. and to inform consumers of the benefits of using broadband;
- Administer contracts and cooperative agreements related to key technical services critical to the continued performance of the .us top-level domain name;
- Convene open, transparent, consensus-based meetings of stakeholders who are interested in developing codes of conduct and best practice to improve consumer privacy protections;
- Identify emerging consumer privacy and cybersecurity issues that could undermine consumer trust in the Internet, and organize public and interagency engagements to develop positions on these issues;
- Advocate in support of the White House's consumer privacy blueprint;
- Engage with international partners to encourage them to adopt privacy laws and regulations that promote innovation and permit the free flow of information, while also protecting consumers;
- Analyze and develop policy positions on information and communications policy issues, such as net neutrality and the IP transition;
- Work with law enforcement and national security agencies to assess whether changes to electronic surveillance statutes are necessary to promote Internet innovation and preserve consumer trust in the Internet;
- Work with USPTO and other relevant agencies to review and, as appropriate, develop legislative proposals to amend U.S. copyright law to address challenges in the Internet economy;
- Provide training to representatives of foreign communications regulators through USTTI and the DDLP and other appropriate venues;

- Coordinate and engage with relevant minority business, advocacy, and academic participants in the multistakeholder processes that NTIA convenes; and
- Assist in coordination with the Minority Business Development Agency (MBDA), to identify strategic partnership prospects in emerging economies to advance the Administration's Internet governance goals and promote MBDA's export initiatives.

To continue achieving these goals, NTIA leverages interagency relationships, technology, and expertise. However, NTIA needs more staff resources to ensure that it can properly coordinate interagency positions on Internet policymaking and the DNS. Today, the security and stability of the DNS are subject to unprecedented risks because of the extraordinary growth of the Internet and the well-documented threat of malicious activity. NTIA will continue to develop outreach strategies to facilitate additional international support for the U.S. multistakeholder approach. Positions that are more cohesive will improve our domestic and international strategies by ensuring that they represent a diverse array of interests and are consistent with U.S. Government policy. Better-coordinated positions will also ensure the Internet remains open, global, secure, and resilient, and support innovation and economic growth.

PROGRAM CHANGE FOR FY 2016:

Internet Policy (Base Funding: $8,093,000 and 33 FTE; Program Change: $7,134,000 and 11 FTE):

NTIA requests an increase of $7.1 million and 11 FTE to address gaps in Internet policy resources. The request will enable NTIA to launch new research and analysis teams on fast moving Internet issues; build a trends analysis and clearinghouse function; formalize stakeholder engagement through the creation of a Federal advisory committee; and improve global training programs to support the multistakeholder model. NTIA also will be able to support mutual legal assistance treaty modernization by working with key online industry participants. In addition, NTIA will inventory, evaluate, and plan for the transition from time division multiplexing (TDM) technology to Internet protocol (IP) that is underway in U.S. communications networks.

Statement of Need and Economic Benefits:

The economic benefits to the U.S. of an open, globally interconnected Internet are tremendous. These benefits are manifest in quantitative measures, such as GDP contributions and productivity gains, and in ways that are more difficult to measure, such as consumer convenience, democratic participation, and international economic and cultural leadership. For example, according to the Census Bureau, 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 to the U.S. economy. U.S. mobile commerce grew to an estimated $2.4 billion. Demand for new broadband applications and services, in combination with the arrival of smartphones and tablets, has created a seismic shift in industry structure and relationships. Converged services, emerging machine-to-machine communications, cloud computing services, and "over-the-top" services are giving raise to new service providers. Cisco predicts that global mobile data traffic will grow nearly 11-fold between 2013 and 2018 with a compound growth rate of 61 percent, a rate that is three times faster than fixed broadband traffic. Sustaining this growth is one of the most pressing economic issues for the U.S. Government.

NTIA's Internet policy work strongly complements NTIA's leading role in identifying spectrum to

expand wireless broadband Internet access. Ensuring that the wireless broadband revolution leads to the same economic benefits that the past 15 years of Internet privatization and broadband adoption have brought requires continuing attention to privacy, cybersecurity, openness and neutrality, copyright, the free flow of information, and other policy challenges. NTIA is uniquely positioned to provide leadership on these issues domestically and internationally.

Non-monetary benefits include advances in the government's understanding of the size and scope of the Internet economy as well as the policy variables that affect growth and innovation in this segment of the economy. This understanding will provide the Executive Branch and Congress with a stronger empirical basis for developing Internet policy. It will also provide NTIA and other Federal agencies with a foundation that can be used to support U.S. positions in international discussions and negotiations. Finally, industry and the economy will benefit from new analyses and data and have opportunities to formalize their engagement with government on critical digital economy issues. These initiatives will also deliver benefits through more rapid and complete implementation of existing U.S. Internet policy positions.

NTIA's Internet Policy Workforce.

NTIA's staff has expertise in a wide variety of communications, and internet policy areas. NTIA remains committed to applying these assets to benefit society, address contemporary environmental and social issues, lead or participate in emerging technology opportunities, collaborate and strengthen the capabilities of commercial partners, and communicate the challenges and results of NTIA programs and activities. Base funding and staffing is not enough to keep pace with these issues. The proposed FY 2016 budget supplements the NTIA workforce with economists, engineers, researchers, policy experts, managers, and technicians to more appropriately for NTIA to successfully accomplish its designated mission. Otherwise, NTIA will struggle with mission-essential work in developing communications policy.

During FY 2016, NTIA will:

- Conduct a comprehensive study of the Internet economy through targeted research and issue papers on new and emerging topics such as mobile application policy and the Internet of things;
- Provide a central clearinghouse of information on the digital economy and emerging policy issues;
- Identify new consumer privacy and cybersecurity best practices and codes of conduct;
- Provide a structure for formalizing stakeholder input into NTIA policymaking through a Federal advisory committee;
- Make recommendations on legislative amendments to copyright, trade secret, and patent law and support for IPTF efforts to identify voluntary solutions to online copyright infringement challenges; and
- Improve the training strategy to promote international acceptance and use of the multistakeholder approach to Internet policymaking and governance.

Beyond the specific actions and programs discussed above, it is vital that the U.S. has a coherent, coordinated policy toward the Internet and digital economy. No other Executive Branch agency has the responsibility to protect and promote the Internet and digital economy as a core component of its mission. NTIA can provide the needed coordination and coherence that is essential for effective U.S. policymaking. But at its current staffing levels, NTIA is unable to properly protect the Internet from threats to its vibrancy and openness that threaten U.S.

innovation and economic growth.

Base Resources Assessment:

NTIA's base funding is used primarily for labor expenses. The current level of funding supports NTIA analysis of policies relating to the Internet, as well as policies and potential regulations that apply to wireline and wireless telephony. However, this level has remained unchanged for more than six years -- at a time when the internet environment is exploding. The range of policy issues that affect Internet-based innovation and the Internet economy continue to expand. NTIA will continue to play leadership and coordinating roles in interagency processes; however current resource levels have restricted the number and depth of areas our staff can accommodate.

NTIA needs additional subject matter and methodological expertise to be able to fulfill its advisory, policy development, and international engagement missions under 47 U.S.C. § 902.

- Greater capacity to conduct economic analysis will enable NTIA to advance innovation and entrepreneurship. NTIA would combine its existing expertise in substantive areas (*e.g., consumer privacy and cybersecurity*), economic analysis methods, and its leadership role in the internet policy arena to solidify a Federal approach and strategy.
- Similarly, policy experts with deep knowledge in areas such as digital trade, digital copyright, big data, and mobile technologies and applications would enrich and expand the policy analysis that NTIA can provide.

NTIA Internet Policy Enterprise Innovation (+$5,934,000 and +7 FTE):

The Internet, and services it supports, represent one of the most important drivers of economic growth and job creation for the country. NTIA is the only agency in the Executive Branch that has the mission to advise the President on these critical national issues that define the way that Americans communicate and interact with the online world and each other. From Internet governance, to cybersecurity, to digital copyright, NTIA is the agency responsible for providing timely analyses and development of policy recommendations on Internet and information policy issues. NTIA supports the Administration in developing and implementing views and positions that implicate U.S. economic, social, or political interests arising from or directly affecting the Internet and converged communications infrastructure, technology, and services. NTIA advocates strongly within interagency discussions for the Internet as a platform to be protected and promoted, and ensures that the U.S. Government can keep up the rapid evolution of the Internet and other communications services.

To keep pace with the growth of the Internet and digital economy and to ensure it continues to evolve in a way that supports American values and economic goals, NTIA must also innovate and scale to meet today's demands and to anticipate those of tomorrow. These key activities include:

- **Upgraded Policy Analysis Teams and Trends Analysis.** Because of its extraordinary reach into our society and its rapid growth, the Internet is a platform with societal implications that policymakers are still struggling to understand. NTIA will deepen and extend its policy analysis and expertise in legislative, regulatory, technical, and economic analysis. For example, NTIA will expand its policy development into new areas, such as mobile applications policy and the implications of the sharing economy, while expanding its coverage and trends analysis for Internet openness, Internet intermediaries, privacy,

security, the DNS, Internet routing, Internet standards setting activities, and intellectual property issues. Proposals to address specific issues will be informed by multidisciplinary analysis, so that the executive branch has a full understanding of the potential impacts of specific policy choices. NTIA will engage new research resources from the private sector and develop new products to keep the Executive Branch, DOC, Congress, and other stakeholders apprised of fast developing Internet policy issues and trends.

NTIA will also work with the Economics and Statistics Administration and other relevant bureaus in the Department to expand its study of the Internet economy, by using existing Federal datasets and developing new analyses and sources of data. Because the Internet economy is so diffuse – with participants ranging from multinational corporations to individual innovators – it is vital to have broad expertise to properly understanding the industry.

- **Interagency Coordination and Collaboration.** Collaboration and coordination are fundamental to avoiding duplication of efforts and incompatible policies. Numerous Federal agencies have missions that touch the Internet and communications infrastructure, technology, and services in some way. NTIA will focus on optimizing policies that impact the Internet to ensure consistent U.S. messaging and positions domestically and internationally. NTIA will mature this capacity by launching a set of products that keep agency stakeholders apprised of developing trends and issues and facilitate and coordinate agency dialogue to stay ahead of developing policy risks and conflicts.

- **Digital Economy Federal Advisory Committee**. Implementing policies that promote innovation and entrepreneurship requires extensive engagement with private-sector stakeholders and international and intergovernmental partners. The U.S. Government advocates a market-driven, private sector-led approach, which often does not fit the mold of regulation that many governments, international organizations, and even some companies expect. NTIA ensures that the input received from U.S.-based commercial industry and civil society stakeholders are given due consideration in developing Internet policy. NTIA will launch a new DOC Secretary-level Federal Advisory Committee (FACA) focused on the Digital Economy. The new FACA will engage Chief Executive Officer level representatives from the country's leading Internet companies to engage with the Secretary and NTIA on policy issues including cybersecurity, big data, digital copyright, and the free flow of information.

- **International Training.** One of the most significant threats to an open and innovative Internet is the attempt by individual governments to cede decisionmaking on Internet governance to international organizations such as the ITU. Through a global outreach and training program, NTIA will educate government officials in developing countries about the benefits of an open and unfettered Internet, the multistakeholder Internet governance model, and laws that will promote innovation while reducing fraud and cybercrime. Many countries, including developing nations in Africa and Asia, are not active in multistakeholder organizations where Internet governance policymaking discussions are taking place, as they lack the resources to engage effectively in a multistakeholder environment. NTIA will expand its collaboration with USTTI by funding seminars and webinars to develop a consortium of countries that will help to uphold and

maintain the goals of open and innovative Internet, sound Internet governance, and policymaking based on the multistakeholder model.

IP Transition Inventory, Evaluation, and Assistance for Federal Agencies (+$1,000,000 and +3 FTE):

One statutory mission of NTIA is to coordinate Executive Branch communications policy and to communicate this policy to independent agencies such as the FCC. As part of that mission, NTIA will coordinate the effort across the Executive Branch to inventory, evaluate, and plan for the transition from TDM technology to IP that is underway in U.S. communications networks.

Companies such as AT&T have reported that they plan to retire all TDM technology in their network by 2020. This transition affects millions of internal and external, public-facing Federal systems – having impacts from financial in nature to public safety to Americans nationwide. Therefore, it is important that Executive Branch agencies inventory, evaluate, and plan for this transition to ensure that the Federal government is prepared for the transition at the time it will impact Federal contracts. This will ensure that the Federal government is properly prepared and will not be a barrier to modernizing and advancing the nation's infrastructure. Impacts to agencies will vary and each will need to assess its ability to perform critical missions and functions in light of these technological advancements.

NTIA's work in this area will be multi-phased:

- **Phase I.** Agency Inventory and Evaluations. NTIA will work as a central coordinator for agencies to inventory their TDM-focused deployments, assess the status and criticality of those deployments, and conduct transition cost assessments. NTIA will centrally collect this information and provide it to OMB for evaluation. NTIA will also communicate with the FCC any agency concerns on the transition, including concerns about timing, budget, and critical mission functions.
- **Phase II.** Development of Plans of Action and Milestones. In phase II, NTIA will continue to serve as a central coordinator as agencies work with OMB to develop solutions for ensuring transition readiness. This may involve additional coordination with GSA and OMB to ensure Federal level and agency level planning, budgets, and cost-sharing solutions.
- **Phase III.** Develop and Maintain Technical and Planning Support Clearinghouse. NTIA will develop and maintain an online central clearinghouse of support information for Federal agencies that includes technical support data, planning and evaluation resources, Federal agency contact lists, a Federal level transition timeline, as well as links to vendors.

Mutual Legal Assistance Treaty (MLAT) Outreach and Education (+$200,000 and +1 FTE):
NTIA will support mutual legal assistance treaty modernization by executing an outreach and education initiative aimed at key online industry participants in the U.S. Commerce will work with the Departments of Justice (DOJ) and State to facilitate industry input into DOJ's modernization planning process. The Department will also undertake a formal industry outreach and education process to educate U.S. industry about DOJ's modernized MLAT process and methods to promote the initiative with foreign governments, and to emphasize to U.S. industry the need to optimize their response to and compliance with foreign law enforcement requests.

- **Activity 1 – Workshops:** In coordination with DOJ, the Department will conduct 1-2 workshops on the modernization initiative. These workshops will target both major and smaller U.S. companies – including small application developers – to educate them about DOJ's initiative and the important need to comply with foreign law enforcement requests in a timely manner.

- **Activity 2 – Communications strategy:** Commerce will conduct additional outreach through presentations at meetings, industry focused informational resources, and web publications.

Schedule & Milestones

During FY 2016, NTIA will:

- Conduct in-depth research, on an ongoing basis, into new and emerging issues and make policy recommendations, potentially for public comment, in areas such as big data, unmanned aerial systems, the Internet of things, intermediary liability, data localization, and mobile applications policy;

- Create a clearinghouse of information and analysis on cutting edge Internet policy issues and trends impacting the digital economy. Access would be available in the latter part of FY 2016;

- Consult bilaterally and multilaterally to advance U.S. Internet governance and policymaking. NTIA will work to foster better international awareness of the multistakeholder approach to Internet Governance by creating and engaging in bilateral and regional education programs. This will include the translation of policy documents and other relevant materials that will support these bilateral relationships and inform developing countries on issues related to Internet governance and policymaking;

- Conduct an inventory, analysis, and planning process across Federal agencies focused on the transition from the legacy communications network to Internet protocol technology; and

- Conduct outreach to Internet corporations and host workshops for industry on modernizing the MLAT process.

Deliverables:

During FY 2016, NTIA will:

- Represent within a broad range of interagency discussions the critical goals of protecting and promoting the Internet and the innovation and economic growth that flows from it.

- Advance the multistakeholder approach to Internet policymaking both domestically and internationally.

- Conduct various regional and bilateral training activities to encourage the adoption of U.S. Government policy approaches with the goal of increasing U.S. Government allies in international debates, policy summits, treaty conferences, and Internet governance policy development.

- Partner with USTTI to develop seminars and webinars on Internet governance and policymaking.

Performance Goals and Measurement Data:

Performance Goal: Innovation **Recommendations**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase	5	5	10	15	15	15	15
Without Increase	5	5	5	5	5	5	5
Description: This measure is focused on formulating coherent and pro-innovation policy recommendations that will be advanced in interagency discussions and through policy papers, speeches, and domestic and international conferences.							

Performance Goal: Innovation **Multistakeholder engagements**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase	2	2	4	6	7	7	7
Without Increase	2	2	2	2	2	2	2
Description: This measure is focused on significant NTIA-led multistakeholder engagements to address critical privacy, security, intellectual property, governance, and other issues.							

Performance Goal: Innovation **International training**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase	15	15	30	50	50	50	50
Without Increase	15	15	15	15	15	15	15
Description: This measure is focused on the number of foreign government officials with which NTIA can meaningfully engage through outreach, meetings, workshops, conferences, and USTTI							

trainings to promote understanding and acceptance of the multistakeholder model of Internet governance and decisionmaking.

Performance Goal: Innovation **Federal Inventories**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase				10	6	4	4
Without Increase				2	0	0	0
Description: This measure is focused on the number of Federal agencies' inventories assessed and completed to prepare for the transition to IP networks.							

Performance Goal: Innovation **Workshops**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase				2	2	2	2
Without Increase				0	0	0	0
Description: This measure is focused on the number of workshops to be held on the Mutual Legal Assistance Treaty (MLAT) Outreach and Education process.							

PROGRAM CHANGE PERSONNEL DETAIL

Budget Program: Salaries and Expenses
Sub-Program: Domestic and International
Policy Program Change: Internet Policy

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Economist	Washington, DC	GS-15	2	126,245	247,516
Telecommunications Policy Specialist	Washington, DC	GS-15	2	126,245	247,516
Telecommunications Policy Specialist	Washington, DC	GS-14	2	107,325	210,422
Economist	Washington, DC	GS-13	2	90,823	178,066
Telecommunications Policy Specialist	Washington, DC	GS-13	2	90,823	178,066
Telecommunications Policy Specialist	Washington, DC	GS-12	2	76,378	149,744
Business and Industry Specialist	Washington, DC	GS-11	1	63,722	62,467
Telecommunications Policy Specialist	Washington, DC	GS-9	2	52,668	103,260
Total			15		1,377,057
Less Lapse		25%	(4)		(344,264)
Total full-time permanent (FTE)			11		1,032,793
2016 Pay Adjustment (1.3%)					13,426
TOTAL					1,046,219

Personnel Data	Number
Full-Time Equivalent Employment	
Full-time permanent	11
Other than full-time permanent	0
Total	11
Authorized Positions:	
Full-time permanent	15
Other than full-time permanent	0
Total	15

PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Dollar amounts in thousands)

Budget Program: Salaries and Expenses
Sub-Program: Domestic and International Policy
Program Change: Internet Policy

	Object Class	2016 Change
11	Personnel compensation	
11.1	Full-time permanent	1,046
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	1,046
12	Civilian personnel benefits	293
13	Benefits for former personnel	0
21	Travel and transportation of persons	400
22	Transportation of things	1
23.1	Rental payments to GSA	145
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	20
24	Printing and reproduction	12
25.1	Advisory and assistance services	0
25.2	Other services	1,124
25.3	Purchases of goods & services from Gov't accounts	3,876
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	11
25.8	Subsistence and support of persons	0
26	Supplies and materials	24
31	Equipment	182
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	7,134

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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum management.....	Pos/BA	39	$8,002	39	$8,002	39	$8,488	39	$8,488	0	$0
	FTE/Obl.	22	7,488	39	9,398	39	8,488	39	8,488	0	0
Direct Obligations.....	Pos/BA	39	8,002	39	8,002	39	8,488	39	8,488	0	0
	FTE/Obl.	22	7,488	39	9,398	39	8,488	39	8,488	0	0

SUBPROGRAM: SPECTRUM MANAGEMENT

Many Federal agencies need radio frequency spectrum, a limited resource with high demand, to perform vital operations. NTIA plays a critical role in ensuring that Federal needs are appropriately accommodated through effective spectrum assignment and management, while also creating opportunities to meet increasing demand for commercial spectrum.

Federal spectrum needs range from homeland defense and law enforcement operations to scientific applications, weather prediction, and satellite operations. Such services could not be provided without NTIA's assignment and access management of vital spectrum bands. NTIA's Office of Spectrum Management supports the Department of Commerce's Strategic Goal of Innovation and Strategic Objective 2.3: Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity.

Summary of Change

Program	FY 2016 Base	FY 2016 Request	Difference 2015 vs. 2016
Spectrum Management	**$8,488**	**$8,488**	**$0**
FTE	**39**	**39**	**0**

The tremendous growth in demand for wireless broadband by consumers, businesses, and government agencies, and two Presidential Memoranda pledging to make additional wireless broadband spectrum available for commercial services, require NTIA to reassess its management of Federal use of the nation's airwaves. Decisions to repurpose spectrum through relocation of incumbent users or spectrum sharing require weighing the potential economic and technological benefits of increased commercial broadband against mission-critical Federal systems.

NTIA is examining various spectrum-sharing techniques to leverage spectrum as a resource for economic growth. To this end, NTIA collaborates with the FCC, industry stakeholders, and other agencies to examine new technologies and techniques that can improve Federal spectrum management and help address the ever-increasing demands of wireless communications.

The Spectrum Management program:

- Executes the spectrum management functions and activities assigned to NTIA under 47 U.S.C. 902 and 903;
- Works with the FCC to recover and reallocate spectrum, update spectrum policies, and provide adequate incentives and assistance to enable Federal agencies or affected entities to make up to 500 MHz (in bandwidth) available for commercial use by 2020, in accordance with the President's National Wireless Initiative and the Presidential Memorandum of June 28, 2010 (*Unleashing the Wireless Broadband Revolution*);
- Promotes spectrum sharing by facilitating government and industry collaboration, establishing methods to quantify Federal spectrum use, and requiring agencies to justify spectrum use between 400 MHz and 6 GHz as required by the Presidential Memorandum of June 14, 2013 (*Expanding America's Leadership in Wireless Innovation*);
- Plans for and executes Federal spectrum management functions during emergencies;

- Coordinates and registers internationally planned Federal government satellite networks and selected assignments for terrestrial systems;
- Works cooperatively with the FCC and other Federal agencies to coordinate spectrum use;
- Develops positions and promotes U.S. interests in international bodies dealing with radio regulations and other spectrum issues.

Interdepartment Radio Advisory Committee (IRAC)

The IRAC assists the Assistant Secretary (as delegated by Executive Order 12046) in assigning frequencies to U.S. Government systems and in developing and executing policies, programs, procedures, and technical criteria pertaining to the allocation, management, and use of spectrum.

The IRAC is composed of the representatives of 19 Federal agencies and an FCC liaison. The IRAC consists of a main committee, six subcommittees, and several ad hoc working groups. Through the Emergency Planning Subcommittee (EPS), Frequency Assignment Subcommittee (FAS), Radio Conference Subcommittee (RCS), Space Systems Subcommittee (SSS), Spectrum Planning Subcommittee (SPS), Technical Subcommittee (TSC), and ad hoc working 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.

During FY 2016, NTIA will:

- Chair the IRAC, its subcommittees, and ad hoc groups to coordinate spectrum use, review spectrum plans, develop Federal technical standards, perform emergency planning, support satellite registration and coordination, prepare for international conferences, and develop frequency coordination arrangements with Canada and Mexico;
- Coordinate with the FCC on all technical and policy decisions under consideration by the FCC that may impact Federal operations and decisions under consideration by NTIA that may impact non-Federal operations.
- Develop and update Federal rules and regulations necessary to manage the Federal government's use of spectrum, including those governing the relationships between the FCC and NTIA.
- Provide Secretariat support to the IRAC to include administrative, technical, secretarial, and clerical support for the IRAC committee, subcommittees, and ad hoc groups.
- Maintain the Manual of Regulations & Procedures for Federal Radio Frequency Management, archive IRAC documents, and submit documents to National Archives and Records Administration.

Spectrum Policy and Information

In coordination with the IRAC, NTIA develops and implements policies regarding spectrum use by Federal agencies, to including interoperability with state and local public safety systems. NTIA develops Executive Branch views and inputs on FCC rulemakings or decisions, and drafts legislation and represents other Congressional requests that may affect Federal spectrum use or operations. NTIA assesses spectrum policy trends, taking into account Congressional, economic, technical, and national security factors, and recommends spectrum policy changes in coordination with the Office of Science and Technology Policy, OMB, FCC, and Federal agencies.

NTIA also develops and implements strategic communications to advance NTIA's spectrum

mission, including providing to the public information regarding Federal spectrum use and regulation of Federal operations via its website and other electronic media. NTIA also performs outreach to Federal agencies, industry, academia, and other spectrum stakeholders. Outreach includes conducting spectrum training courses and seminars for U.S. and foreign spectrum managers, drawing upon experts from NTIA as well as Federal agencies and the private sector.

NTIA leverages the Commerce Spectrum Management Advisory Committee (CSMAC), a Federal Advisory Committee, to help develop spectrum policies. The CSMAC provides advice and recommendations on spectrum management policies that enable the U.S. to maintain its global leadership role in communications technology and services, and to expand the economy while improving the technology base that supports the country's homeland security, national defense, and other critical government missions.

During FY 2016, NTIA will:

- Update and publish information describing Federal spectrum management processes and Federal agencies' use of spectrum;
- Respond to requests from Congress and other sources for specific information about Federal operations;
- Plan and conduct at least three NTIA spectrum training courses and seminars for U.S. and foreign spectrum managers in coordination with USTTI;
- Monitor Congressional activity on spectrum management issues and assess draft legislation for potential impact to Federal spectrum management or operations.
- Support the interagency legislative coordination and clearance process (Legislative Referral Memoranda) and review spectrum-related documents;
- Convene the CSMAC on a quarterly basis to address priority spectrum policy issues; and
- Provide the Designated Federal Officer for the committee, and support administrative requirements including meeting notifications, agendas, and minutes.

International Spectrum Policy

NTIA, working closely with the Department of State, the FCC, and other Federal agencies, represents the spectrum-related international interests of the Executive Branch, as well as the interests of the U.S. as a whole, at international forums. NTIA coordinates, develops, and leads the Federal government's contributions to U.S. proposals for international radiocommunication treaty conferences, bilateral/multilateral negotiations, and other meetings on spectrum management, technical standards and regulations. NTIA builds confidence worldwide in U.S. spectrum planning techniques to win support for U.S. positions, enhance U.S. leadership and global competitiveness in information and communications technologies (ICT), and satisfy Federal mission spectrum needs internationally.

Many activities involve the International Telecommunication Union (ITU), the United Nations' specialized agency responsible for ICT. The ITU Radiocommunication Sector (ITU-R) develops international technical standards and regulations for spectrum use and ensures the equitable, efficient, and economical use of the radio frequencies and satellite orbits. NTIA leads Federal preparations for ITU-R Study Groups to develop technical standards and conduct sharing studies for the World Radiocommunication Conferences (WRC). NTIA represents U.S. radio treaty conference interests in ICT regional organizations such as the Inter-American Telecommunications Commission (CITEL), European Conference of Postal and Telecommunications Administrations, and the Asia Pacific Telecommunity. NTIA also leads

international registration efforts and coordination of Federal satellite systems within the ITU, to ensure protection from harmful interference which could degrade Federal government operations.

During FY 2016, NTIA will:

- Lead efforts to implement the 2015 WRC treaty results as domestic spectrum regulations.
- Coordinate Federal government positions and proposals to be submitted to international forums involved in spectrum management matters;
- Participate in international spectrum activities on behalf of the ITU, CITEL, North Atlantic Treaty Organization, the International Civil Aviation Organization, and the International Maritime Organization;
- Review Federal space systems for compliance with national requirements, register Federal satellite networks with the ITU, and coordinate with foreign administrations and domestic operators to protect Federal satellite services from harmful interference.
- Initiate and conduct scientific and technical cooperation in communications and spectrum management with specific foreign countries in accordance with U.S. foreign and international trade policy objectives; and
- Identify regulatory and procedural barriers to the timely and global implementation of U.S. innovations in radiocommunication technologies and services and recommend methods to remove these barriers.

Strategic Planning

NTIA develops programs and policies to expand the use of spectrum by all users. NTIA, the FCC, and Federal agencies have made significant progress toward the implementation of relevant Presidential Memoranda and the *Middle Class Tax Relief and Job Creation Act of 2012* to fulfill the President's goal of making available an additional 500 megahertz of spectrum. These initiatives foster economic growth; ensure our national and homeland security; maintain U.S. global leadership in communications technology and services; and satisfy other vital U.S. needs such as public safety, scientific research, Federal transportation infrastructure, and law enforcement.

NTIA leads spectrum management strategic planning efforts to meet the long-term goals and objectives for Federal government use while enabling increased access for commercial users. Innovative spectrum sharing approaches are key components to the Federal strategy, enhancing efficiency among all users, and expediting commercial access to additional spectrum bands where technically and economically feasible. NTIA enables increased access to and efficiency of spectrum through an integrated program of research, analysis, testing, and policy development.

NTIA chairs the Policy and Plans Steering Group (PPSG), which consists of the Assistant Secretaries, or their equivalents, in agencies that are major spectrum stakeholders. The PPSG provides advice to NTIA on spectrum-dependent communication policies, strategic plans, and national and international spectrum issues, and helps resolve contentious spectrum policy issues.

During FY 2016, NTIA will:

- Engage with the FCC, Federal agencies, and licensees to ensure a timely and successful transition of the AWS-3 (1695-1710 MHz and 1755-1780 MHz) bands, including facilitating spectrum sharing during the transition period or indefinitely for identified systems and locations;

- Develop and publish an annual report on Federal agencies' progress to transition systems;
- Engage with the FCC, Federal agencies, and commercial broadband providers in carrying out rule changes to allow consumer access to the 3550-3650, 5350-5470, and 5850-5925 MHz bands;
- Implement spectrum quantification study results to enable increased spectrum access by commercial broadband providers to Federal spectrum;
- Implement and update the Strategic Plan for Federal Spectrum Management and associated spectrum management action plan, in coordination with Federal agencies;
- Convene the PPSG on a quarterly basis and the PPSG Spectrum Working Group on a monthly basis to obtain advice on and help resolve any ongoing spectrum policy issues;
- Co-chair the Wireless Spectrum Research and Development (R&D) Senior Steering Group of the Networking and Information Technology Research and Development Program; and
- Convene monthly meetings and periodic workshops to coordinate R&D activities across Federal agencies and the private sector; and optimize spectrum sharing investments.

Emergency Services

NTIA supports the planning process for national security and emergency preparedness (NSEP) communications and coordinates Federal assistance to state and local governments through the National Response Framework (NRF) and the Regional Emergency Communications Coordination Working Groups (RECCWG). As a support agency to Emergency Support Function #2, NTIA will deploy in support of a coordinated Federal response effort to provide Federal spectrum management services at the Federal Emergency Management Agency (FEMA) Joint Field Office or other designated facility.

During FY 2016, NTIA will:

- Participate with other Federal, state, tribal, territorial, and local authorities in emergency preparedness planning through the FEMA RECCWGs;
- Provide for integrated public safety communications systems, ensuring inter-operability among Federal, state, and local public safety agencies;
- Provide emergency readiness planning for Federal use of the radio frequency spectrum; and
- In consultation with the IRAC, coordinate radio spectrum priorities for spectrum-dependent communications resources operated by the Federal government and formulate, guide, and review NSEP planning for spectrum-dependent systems.

Frequency Assignment and Spectrum Certification Services

NTIA, in consultation with the IRAC, reviews, processes, and authorizes Federal radio frequency assignments within the U.S. and coordinates Federal spectrum requirements along the border areas with Canada and Mexico. NTIA assesses compliance with the rules, regulations, and procedures for Federal use of spectrum, and evaluates validity of current spectrum needs. Federal users must obtain a frequency assignment to operate a spectrum-dependent system. NTIA also assigns spectrum to meet the needs of Federal and non-Federal short-term Special Temporary Authorization (STA) requests, performs frequency assignment functions for certain Federal agencies not represented on the IRAC, and satisfies spectrum access requirements of the United Nations and foreign embassies in the U.S.

NTIA maintains and updates computerized files, including the Government Master File of

Frequency Assignments (GMF); FCC frequency records necessary for use in Federal spectrum management (e.g., 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's spectrum management activities are currently supported by antiquated information systems which hinder the identification of available spectrum to satisfy Federal system requirements. The Federal Spectrum Management System (FSMS) will replace legacy spectrum systems to improve data capture and analysis capabilities; expand data modeling for system characterization; strengthen compliance and data integrity; enhance engineering algorithms that identify frequencies in congested environments; provide easier system interface tools; and ensure a more secure operating environment for spectrum information. Improved data and new analysis tools will result in more effective and efficient use of spectrum by Federal agencies.

NTIA certifies Federal radiocommunication systems (during the acquisition process) for spectrum supportability and for compliance with applicable spectrum regulations, policies, and technical standards, as required by OMB Circular A-11. NTIA evaluates systems for compatibility with other spectrum-dependent systems and provides guidance on frequency bands, design parameters, and operating constraints necessary to mitigate interference and ensure effective use of available spectrum. NTIA, in consultation with the IRAC, approves or withholds certification of spectrum support or, alternatively, indicates what adjustments to the system are needed to enable the certification to be approved.

During FY 2016, NTIA will:

- In consultation with the IRAC, process requests by Federal agencies for frequency assignment and spectrum certification actions;
- Evaluate proposed Federal radio-communications systems for certification of spectrum support in accordance with OMB Circular A-11;
- Complete development of and implement the information technology capabilities required to satisfy the needs of 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;
- Participate in the Joint Commission on Resolution of Radio Interference to resolve cases of harmful interference between radio stations in the U.S. and Mexico;
- Coordinate requests for assignments in the U.S./Canadian border area to ensure interference-free operations in both countries; and
- Coordinate FCC requests for 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.

Spectrum Engineering and Analysis

NTIA conducts in-depth engineering studies and analyses of spectrum use; assists Federal agencies in resolving domestic interference problems; provides technical engineering/policy analysis support for international studies and radio treaty conferences; and establishes and

improves Federal standards to assure efficient and effective use of spectrum. NTIA examines 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 missions. These studies provide a technical foundation for domestic and international policy development and long-range planning.

In support of the Administration's goal to identify 500 megahertz of spectrum for commercial wireless broadband, NTIA performs detailed technical studies to assess sharing proposals between Federal and commercial operations. NTIA develops specialized automated computer models to evaluate the increasingly complex sharing approaches that are necessary to make additional spectrum available for licensed and unlicensed commercial information and communications technologies and services.

During FY 2016, NTIA will:

- Perform technical studies to identify spectrum that can be made available (through relocation or sharing) for commercial licensed and unlicensed wireless broadband services, and develop technical recommendations and approaches to support required policy and regulatory changes;
- Conduct studies of current and projected Federal spectrum use, prioritizing bands and services based on the potential for Federal/non-Federal sharing (identified in quantification analysis), future international radiocommunication conferences, and opportunities to improve utilization;
- Complete the Spectrum Sharing Innovation Test-Bed and document the proven testing methodology, including specialized measurement techniques, for evaluation of future dynamic spectrum access sharing technologies and their impact on incumbent Federal systems;
- Resolve spectrum conflicts between Federal agencies or between Federal and non-Federal spectrum users by analyzing effects of, or trade-offs between, changes in frequency assignments, operational procedures, or equipment;
- Identify changes to policies and procedures to minimize future problems;
- Identify and develop new or improved automated analysis techniques for the study of spectrum sharing, interference prediction, and frequency coordination.
- Provide technical support in the development and implementation of improved spectrum engineering algorithms in the Federal Spectrum Management System;
- Develop an annual plan for the Spectrum Measurement Program and coordinate spectrum measurements in select frequency bands to support ongoing studies on spectrum sharing, interference, standards, policy development, coordination, and efficiency;
- Implement improved data requirements and engineering algorithms to more efficiently assign frequencies in the 7/8 GHz band; and
- Through the IRAC, coordinate and develop standards for Federal systems to ensure efficient and effective use of the spectrum.

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: Advanced Communications Research

Comparison by sub-program		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Advanced Communications Research	Pos/BA	47	$6,778	42	$7,197	42	$7,727	53	$12,555	11	$4,828
	FTE/Obl.	44	$6,367	42	$8,216	42	7,727	50	$12,555	8	4,828
Direct Obligations.....	Pos/BA	47	6,778	42	7,197	42	7,727	53	12,555	11	4,828
	FTE/Obl.	44	6,367	42	8,216	42	7,727	50	12,555	8	4,828

SUBPROGRAM: ADVANCED COMMUNICATIONS RESEARCH

NTIA's research facility in Boulder, CO, is recognized as one of the world's leading communications research laboratories. It leverages its hundred-year-old legacy of DOC radio research expertise to investigate the characteristics, usage, and quality of wireless transmissions in all spectrum bands of interest.

NTIA's efforts in spectrum sharing will foster a more innovative U.S. economy—one that is better at inventing, improving, and commercializing products and technologies that lead to higher productivity and competitiveness.

This research is a critical component in NTIA's development of policies related to the introduction of new technologies and new spectrum sharing arrangements and advances Administration positions in national and international standards-setting bodies. In addition to direct-funded research, the laboratory performs research on a cost-reimbursable basis for other Federal agencies and for private entities.

Summary of Change

Program	FY 2016 Base	FY 2016 Request	Difference 2015 vs. 2016
Advanced Communications Research	**$7,727**	**$12,555**	**$4,828**
FTE	**42**	**53**	**11**

With the proliferation of mobile and fixed communications devices, research is crucial to evaluate and study the nature and interaction of communications equipment, systems, and services. Advanced research is required to enhance domestic competition, advance services and new technology deployment, improve foreign trade opportunities for U.S. communications firms, and use radio frequency spectrum more efficiently.

In FY 2016, NTIA will conduct engineering studies to promote technology advancement that is crucial to efforts currently underway to identify 500 MHz of spectrum for mobile broadband wireless uses. NTIA also will continue to improve and refine new propagation modeling and system simulation programs for spectrum sharing implemented in FY 2015 and will continue to design and perform tests and measurements of new spectrum-sharing systems to inform development of technologies and regulations. These efforts will provide expanded understanding of communications technologies and systems; promote a more agile regulatory environment; and position U.S. industry for international leadership in communications technology. They also provide timely technical advice to support NTIA's mandate to develop and promulgate Executive Branch policies that address domestic and international communications issues.

NTIA's FY 2016 advanced communications research operating objectives can be grouped into the following major categories:

Enhancing Spectrum Utilization

- **Interference Analysis, Prevention, and Mitigation:** Use electromagnetic compatibility (EMC) analysis to predict and prevent or troubleshoot and resolve interference issues involving Federal communications and radar systems, such as safety-of-life radar stations, by determining the source of the interference. Recommend mitigation actions to Federal agencies, including necessary system modifications, or assist with FCC enforcement actions. Conduct comprehensive EMC studies that include realistic scenarios, radio wave propagation constraints, transmitter emission characteristics, receiver susceptibility to other signals, radio system protocols, and radio regulation considerations. Conduct experiments to define technical parameters such as transmitter emission limits, frequency offsets, or separation distances for proposed rulemakings in support of new spectrum uses/sharing requirements. Support key regulatory reforms aimed at improving radar spectrum efficiency through revised Radar Spectrum Engineering Criteria (RSEC) requirements derived from NTIA-developed measurement methods and institutional knowledge of radar system characteristics. Continue surveillance testing of existing dynamic frequency selection (DFS) devices, evaluation of DFS performance in proposed new bands, and mitigation of interference problems as necessary. Provide technical support to Federal agencies for these efforts through IRAC technical subcommittee.

- **Domestic and International Standards:** In cooperation with other Federal agencies and U.S. industry groups, influence domestic and international communications standards and policies that support industry and U.S. spectrum sharing initiatives and needs, as well as fair competition in the information and communications technology sector. In cooperation with the U.S. ITU National Committees, provide technical contributions and leadership to committees in ITU-T (Telecommunication Standardization Sector) and ITU-R Study Groups developing technical standards of importance to U.S. industry and government. Submit recommendations on emerging mobile radio technologies, broadband network performance, radio propagation prediction, and radar systems, and coordinate their formal review and approval in important standards development organizations including the ITU, 3GPP, TIA, URSI, and IEEE. Develop and coordinate approval of related U.S. voluntary consensus standards where appropriate. Under agency reimbursable agreements, support Federal agencies with development of communications specifications, standards, proofs of concept, and demonstration measurements; interoperability analyses; technical and economic impact assessments; and prototype development.

Improving the Performance of Communications Networks

- **Radiowave Propagation Prediction Standards for Spectrum Coordination:** Develop and validate improved radio propagation models for various radio bands and environments and promulgate them to industry, agencies, and national and international standard bodies. Apply models towards assessing new spectrum-sharing techniques and the development of improved dynamic frequency management and spectrum-sharing systems. Develop propagation measurement systems, radio channel models, statistical analysis techniques, signal processing algorithms, and specialized RF emissions measurement systems. Study and characterize the broadband transmission channel for within-building and campus-wide wireless networks and ultrawideband communications.

- **Radio Network 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 advances in open-literature publications. Perform technology transfer to government, industrial,

academic, and individual users via NTIA-developed, easy-to-use, portable software toolkit. 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.

Ensuring Interoperability of Public Safety Communication Systems

- **Public Safety Communications Research:** Conduct close, constant coordination with public safety practitioners, and develop standards, technologies, and test methods to ensure interoperability of land mobile radio and broadband communications systems used by law enforcement, fire, and Emergency Medical Response communities. Develop information technology standards that public safety can adopt to ensure interoperability for information sharing. With respect to standards, advance the work of other Federal programs (e.g., FirstNet, DHS/OEC, etc.) through leadership and critical technical contributions to the 3GPP for public safety broadband. Operate a broadband demonstration network to provide manufacturers and practitioners a venue to test and evaluate broadband technologies and systems for newly available FirstNet 700 MHz spectrum.

Table Mountain Field Site and Radio Quiet Zone

NTIA manages the Table Mountain Field Site and Radio Quiet Zone, an 1,800 acre, open-air test location that supports fundamental research into the nature, interaction, and evaluation of communications devices, systems, and services. It is one of only two sites in the country regulated to prevent the transmissions of powerful signals over the site, and currently the only one consistently available for use by private industry. The flat surface of the site creates ideal conditions for radio research, which is required to develop and test new spectrum-efficient technologies.

This site serves as a resource for Federal agencies and private companies through interagency agreements and Cooperative Research and Development Agreements (CRADAs). CRADAs enable access to this unique resource for the purpose of testing and evaluating promising new communications technologies. The site is currently being used by several Federal agencies and companies to develop measurement techniques for new communication technologies, to test operational performance of new radar systems and other communication technologies, to evaluate broadband and laser radar (LADAR) technologies for public safety and national defense applications, and to test radio receivers for NOAA's "All Hazards" national warning system.

Spectrum Monitoring

NTIA intends to conduct spectrum monitoring over the entire lifecycle of new radio technologies, from the earliest stages when spectrum sharing is first proposed, to conformity assessment of newly deployed systems, to longer-term surveillance testing regulators may use to support enforcement actions. The Spectrum Monitoring Program began in FY 2014 with a limited study of existing Department of Defense (DoD) systems in the 3.5 GHz band, one of the first bands identified by NTIA in its Fast Track plan for sharing with new non-government systems. In FY 2015, the system was expanded to four additional monitoring locations along the coasts to better track activities in that band. The Measured Spectrum Occupancy Database and associated user interface were completed and, after policies for information sharing with authorized users were developed in coordination with DoD, systems were deployed. Besides serving as a prototype test-bed, the program's work in the 3.5 GHz band provided key insights into usage which benefited both industry and DoD. A key achievement is an agreement between NTIA and DoD

on spectrum sensor capabilities that effectively amounts to a joint validation of the system and its associated data. This facilitates collaborations on refinements to the models and assumptions for the 3.5 GHz band yielding better spectrum sharing rules.

In FY 2016, NTIA will build additional sensors to expand the spectrum monitoring system. Because of the constantly evolving nature of spectrum policy, deployment decisions cannot be determined at this date. However, a number of scenarios are possible. For example, in 2014 NTIA released a Plan for Agency Quantitative Assessments of Actual Spectrum Usage. Under this program, NTIA will compile an estimate of spectrum usage based on frequency assignments and Federal agency usage estimates. Additional spectrum monitors could be used to spot check and validate agency estimates. Use of empirical data, which would be shared with affected Federal agencies, would help enhance the quality of agency submissions. Alternatively, the system could be deployed in select locations adjacent to key Federal installations to monitor Federal agency usage in the AWS-3 bands. This would be particularly valuable as agencies begin to transition systems out of those bands. The system could simultaneously serve a dual purpose of monitoring industry build-out of new Long-Term Evolution (LTE) wireless systems. These data would permit the Federal government to refine models for assessing the potential for interference to Federal systems, which in turn would provide critical insights into how quickly agencies can free up the bands for commercial use. Finally, the system could be deployed to support proposed FirstNet deployments. Key areas of interest to FirstNet include evaluating the degree of LTE deployment in the band and gauging the degree of legacy Project 25 LMR usage. Commercial LTE deployments south of the U.S. border, where a conflicting LTE band plan is envisioned, will also be of interest to FirstNet.

SPECTRUM SHARING AND MONITORING (Center for Advanced Communications)

In June 2013 NTIA announced a cooperative effort with the NIST to align the world-class advanced communications capabilities of both organizations under a Center for Advanced Communications. The Center for Advanced Communications will unite key research and engineering activities under an umbrella of national excellence for collaborative research and engineering. This research is expected to address current and long-term challenges related to spectrum sharing, public safety communications, standards coordination, electromagnetics, and quantum electronics. The Center for Advanced Communications will also coordinate and tackle several national priorities outlined in the Presidential Memorandum *Expanding America's Leadership in Wireless Communications,* such as monitoring and supporting advances in new spectrum sharing technologies and policies. The Center for Advanced Communications will develop critical new radio analysis tools, capabilities, and test-beds, providing accelerated development, testing, and deployment of advanced communications technologies for commercial and government sectors.

The Spectrum Monitoring Program, funded in FY 2014, is the cornerstone of NTIA's participation under the Center for Advanced Communications' primary objective to better understand spectrum performance and usage issues for the development of policy and spectrum management practices regarding spectrum assignment, sharing, and innovation by both Federal and commercial stakeholders.

During FY 2016 NTIA will:

- Promote better understanding of how spectrum is currently used and explore opportunities for spectrum sharing to advance Federal and commercial use;

- Coordinate information and share data on spectrum-related research and applied technology to support improved management of spectrum and the efficiency of technology;
- Facilitate access to monitoring data for spectrum policy makers, researchers, and other stakeholders to investigate the feasibility of new spectrum sharing approaches in key Federal and non-Federal bands;
- Continue and expand the spectrum monitoring pilot project covering four additional locations, bringing the total to eight major metropolitan areas and making spectrum monitoring data publically available to facilitate research into new spectrum management approaches;
- Implement program changes recommended to the spectrum monitoring pilot based on preliminary results in FY 2015;
- Pursue private-sector participation in the spectrum monitoring effort and in efforts to develop approaches for spectrum sharing;
- Assess spectrum sharing opportunities in key bands of interest; and
- Prepare an annual status report based on monitoring data and spectrum-related technology developments including an assessment of data collected, its potential uses, and recommendations.

In April 2011, the General Accounting Office issued a report that was highly critical of existing systems to provide accurate data on the usage of spectrum and questioned the reliability of the data for making spectrum sharing decisions and supporting other spectrum innovations. The report underscored the need for a coordinated approach to provide research, analysis, and coordination for spectrum-related data. This is the guiding principle for the Center for Advanced Communications and the spectrum monitoring initiative. 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, would use the data to assess the feasibility of spectrum sharing by evaluating spectrum availability and developing commercially viable spectrum sharing technologies and approaches.

PROGRAM INCREASE FOR FY 2016:

Spectrum Sharing and Monitoring (Center for Advanced Communications) (Base Funding: $1,537,000 and 5 FTE; Program Change: $5,180,000 +3 FTE):

NTIA Leadership and Collaboration Tools for Advanced Communications

Rapid advances in communications technology have created significant challenges that, unless addressed, will adversely impact our Nation's ability to reap their benefits while ensuring national security needs are met. Examples of these challenges include the exponential growth of wireless data usage – scarce spectrum must be more efficiently used to meet the demand; the evolution of broadband access in the home – this has moved from a luxury to a necessity with increasing needs for ever-higher bandwidth; and the vulnerability of all Internet-capable devices to various security threats.

To address these challenges, NTIA, in partnership with NIST, through the Center for Advanced Communications, provides support for research, testing, and standards development efforts

required by government and industry to address technical barriers to implementation and adoption of new communications technologies. Through the Center for Advanced Communications, NTIA will build upon capabilities that are currently available at NTIA's laboratory and the NIST Boulder Laboratories to provide opportunities for collaborative research and development.

The Center for Advanced Communications will also provide access to test-bed resources and the infrastructure necessary to catalyze accelerated development, testing, and deployment of advanced communications technologies in support of commercial and government applications. The need for these activities was highlighted by the 2013 Presidential Memorandum "Expanding America's Leadership in Wireless Innovation," which directs the Secretary of Commerce, through NTIA and NIST, to publish an inventory of Federal test facilities available to commercial and other stakeholders engaged in research, development, testing, and evaluation of technologies to enhance spectrum sharing and other wireless related efficiencies. NTIA requests funds in FY 2016 and beyond to support the Center for Advanced Communications' activities. The Center for Advanced Communications provides a common process, framework, and environment whereby NTIA, NIST, other Federal labs, universities, and the private sector can collaborate and invest resources in the most valuable communications projects and technologies. The Center for Advanced Communications will bring together key research and engineering expertise and capabilities to establish and maintain a Federally-operated national "Center of Excellence" providing opportunities for collaborative research and development.

NTIA's Boulder laboratory already provides significant applied engineering and measurement expertise essential to support Federal management of the radio frequency spectrum and has a long history of conducting spectrum occupancy measurements for NTIA, DOD, other agencies, and the private sector. However, these measurement projects are limited in scope and funded by reimbursable clients through interagency agreements and CRADAs. NTIA seeks a modest increase to ensure that its research programs are appropriately coordinated with NIST and other Federal partners and to leverage Federal investments in spectrum research and technology development effectively. The focused approach will accelerate the economic development and growth associated with spectrum sharing and other innovations, and it also should provide Federal agencies with a clear alternative for spectrum-related development work, lowering technology costs of Federal agencies.

This request focuses on establishing NTIA Center for Advanced Communications program leadership and oversight and funding to stand up new collaboration technologies and tools. These elements will become the NTIA backbone for planning and communicating on advanced communication technologies with NIST and outside organizations. In order for the Center for Advanced Communications to work effectively, it must put into place effective and efficient collaboration strategies and tools, including a shared knowledge base, a project development platform, and an incubator advisory service.

Additional staffing for the Center for Advanced Communications will ensure a dynamic environment for the best and brightest personnel from both the private and public sector. NTIA will recruit subject matter experts to focus on key research and analytical projects through joint projects, temporary appointments, and Interagency Personnel Act agreements. The Center for Advanced Communications will also design mechanisms for advancing knowledge and technology transfer among all stakeholder groups on spectrum-related issues. Building on existing NTIA resources, the Center for Advanced Communications will offer unique laboratory assets and make Table Mountain available to a larger set of engineers and scientists. Finally,

specialized equipment and technology will need to be purchased to support the development and testing of spectrum sharing approaches. This includes spectrum analyzers with calibration service for measurement testing, servers and software for data collection, radio frequency equipment, antennas and other monitoring tools.

NTIA will use proven collaboration technology and social networking tools for communications among Federal agencies and between Federal and non-government organizations. NTIA will establish and manage a repository for research results for focus areas and technologies. This clearinghouse will create a common base of knowledge and socialize the exchange of technical information and ideas using web-based technology, organized forums, and meetings. This clearinghouse also will highlight promising technologies and technical approaches and target this information directly at those institutions interested in collaborating on advanced communication technologies. The knowledge base will allow rapid dissemination of positive and negative outcomes, allowing researchers to leverage each organization's experiences to avoid duplication of effort.

The project development platform will make available a central location where government, academia, and industry can share project ideas and propose projects of mutual interest. The design of this platform will be similar to the Kickstarter application, which has been used effectively by private start-up firms to advance creative ideas, projects, and technologies. Finally, the incubator advisory service will serve two purposes. First, it will provide descriptive profiles of Federal laboratories (facilities, expertise, and equipment) that are accessible through cooperative agreements. Second, the advisory service will identify individuals within NIST and NTIA who are able to respond to technical questions and/or assist with development of collaborative research projects and agreements.

Without new Center for Advanced Communications staff, the clearinghouse, and Center for Advanced Communications collaboration tools, information about advanced communication technologies will not be fluidly shared. A small investment in program leadership, expert staffing, and collaboration technology will not only promote collaboration, but will allow NTIA and NIST to harvest the best ideas and facilitate their exchange among agencies and project managers. The costs of standing up and maintaining collaboration technology and tools will result in a return on investment within a short period, including up to ten new projects per year at NTIA and NIST.

Schedule and Milestones:

- Additional NTIA Center for Advanced Communications staff established within 3 months
- Collaboration tools established within 6 months
- Priority equipment requisition plan established

Deliverables:

- Online and Automated Collaboration Tools
- CRADAs with Industry
- Interagency Agreements with Other Federal Agencies

Performance Goals and Measurement Data:

Performance Goal: Innovation **Initiate annually at least four new spectrum sharing-related research projects with NIST and/or other Federal, Industry, or State and local partners.**	**FY 2013 Actual**	**FY 2014 Target**	**FY 2015 Target**	**FY 2016 Target**	**FY 2017 Target**	**FY 2018 Target**	**FY 2019 Target**
With Increase	N/A	N/A	N/A	4	4	4	4
Without Increase	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Description: This measure is focused on promoting coordinated research and technology development between industry, academia, and government.							

PROGRAM CHANGE PERSONNEL DETAIL

Budget Program: Salaries and Expenses
Sub-Program: Center for Advanced Communications
Program Change: Spectrum Sharing and Monitoring, Center for Advanced Communications

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Senior Executive Service	Boulder, CO	ES-1	1	158,700	158,700
Electronics Engineer	Boulder, CO	ZP-V	2	149,587	299,174
Electronics Engineer	Boulder, CO	ZP-IV	4	125,680	502,720
Electronics Engineer	Boulder, CO	ZP-III	1	89,243	89,243
IT Specialist	Boulder, CO	ZP-III	2	89,243	178,486
Administrative Specialist	Boulder, CO	ZA-II	1	66,614	66,614
Total			11		1,294,937
Less Lapse		25%	(3)		(323,734)
Total full-time permanent (FTE)			8		971,203
2016 Pay Adjustment (1.3%)					12,626
TOTAL					983,828

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

PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Dollar amounts in thousands)

Budget Program: Salaries and Expenses
Sub-Program: Center for Advanced Communications
Program Change: Spectrum Sharing and Monitoring, Center for Advanced Communications

	Object Class	2016 Change
11	Personnel compensation	
11.1	Full-time permanent	984
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	984
12	Civilian personnel benefits	275
13	Benefits for former personnel	0
21	Travel and transportation of persons	50
22	Transportation of things	4
23.1	Rental payments to GSA	40
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	6
24	Printing and reproduction	2
25.1	Advisory and assistance services	0
25.2	Other services	613
25.3	Purchases of goods & services from Gov't accounts	721
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	75
25.8	Subsistence and support of persons	0
26	Supplies and materials	5
31	Equipment	2,053
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	4,828

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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Broadband Programs	Pos/BA	36	$24,685	36	$15,421	36	$16,101	36	$12,962	0	($3,139)
	FTE/Obl.	35	24,341	36	17,010	36	16,101	36	12,962	0	(3,139)
Direct Obligations.....	Pos/BA	36	24,685	36	15,421	36	16,101	36	12,962	0	(3,139)
	FTE/Obl.	35	24,341	36	17,010	36	16,101	36	12,962	0	(3,139)

SUBPROGRAM: BROADBAND PROGRAMS

The American Recovery and Reinvestment Act of 2009 (ARRA or Recovery Act, Public Law No. 111-5) appropriated $4.7 billion to NTIA to provide grants for broadband initiatives throughout the U.S. (www.ntia.doc.gov/broadbandgrants). NTIA awarded grants through the Broadband Technology Opportunities Program (BTOP) and the State Broadband Initiative (SBI).

Summary of Change

Program	FY 2016 Base	FY 2016 Request	Difference 2015 vs. 2016
Broadband Programs	**$16,101**	**$12,962**	**($3,139)**
Grant Administration	**12,942**	**6,235**	**(6,707)**
Community Broadband	**3,159**	**6,727**	**3,568**

In FY 2016, NTIA will enhance its efforts to promote broadband deployment and adoption within America's communities. First, NTIA will largely conclude its critical oversight of the broadband grants funded under the Recovery Act. Second, NTIA will transition its operations and continue the momentum of the broadband grant program by supporting a diverse set of communities and stakeholder groups with expert legal, financial, engineering, and other technical assistance to support broadband deployment.

During FY 2016, NTIA will:

- Provide effective oversight of ARRA grants through the close-out and Federal-interest period to protect the Federal government's investment in broadband infrastructure, public computer centers, and broadband adoption projects.
- Manage the grant closeout process to ensure that recipients have met all financial and reporting requirements; funds were used for eligible grant activities; and excess funds are expeditiously returned to the Treasury.
- Advance U.S. economic development by assisting communities and leveraging partnerships with broadband stakeholders that elevate broadband preparedness.

FY 2016 funding for broadband grant administration reflects the continued ramp down and movement of the BTOP and SBI grants through closeout. For the second year, NTIA will significantly reduce funding for grant administration while redirecting resources toward efforts to expand community broadband deployment and adoption. The result is a net reduction for NTIA's Broadband Programs from FY 2015 of $3,139,000.

Completing Recovery Act Investments

Oversight will focus on closeout activities of the more complex BTOP and SBI grants that were awarded later in the ARRA grant-giving process. Furthermore, NTIA must continue to provide oversight during the Federal-interest period to protect the Federal government's investment.

During FY 2016, NTIA will:

- Ensure efficient closeout of the remaining BTOP and SBI grants. NTIA will ensure that recipients comply with all grant terms and conditions, including the appropriate filing of UCC-1 forms that document the Federal interest in grant-funded property. This includes inventorying all construction projects, ensuring recipients fulfill their closeout obligations, and continuing financial reviews to identify grant funds to be returned to Treasury.

- Review and resolve grant recipients' audit activities. For example, for an audit containing findings or questioned costs for which the bureau needs additional information, NTIA will provide the recipient with technical assistance for audit resolution. If the audit resolution process results in any disallowed costs, NTIA will work with the recipient on repayment of those costs and ensure that the funds are promptly returned to Treasury. Audit reviews will extend into FY 2017.

- Continue to protect the Federal interest in the BTOP grants. NTIA's oversight and management responsibilities do not end when the projects are closed. NTIA must ensure that projects remain in compliance with Federal requirements, including use of equipment for grant-related purposes and NTIA review of any sale or transfer of assets. NTIA's continuing responsibilities will extend throughout the estimated useful life of the BTOP-funded property.

- Disseminate best practices and proven solutions from these projects to help other stakeholders further broadband deployment and adoption in the United States. NTIA broadband program staff has identified projects that have shown strong results in broadband adoption and value-added applications in areas such as education and economic development.

Expanding Community Broadband and the Digital Economy

In FY 2016, NTIA will continue to expand the digital economy through its BroadbandUSA community broadband work that began during FY 2015. Through this effort, NTIA will provide technical assistance and leverage partnerships to elevate communities' broadband preparedness. New resources will allow NTIA to reach additional communities and forge stronger partnerships with stakeholders that will accelerate broadband deployment and adoption.

During FY 2016, NTIA will:

- Offer online and in-person technical assistance in FY 2016 to a diverse set of stakeholder groups and individual communities that request assistance or information from NTIA's team. This assistance will be based on sharing replicable and scalable lessons to support a "right size" approach for each community. NTIA will make financial, engineering, and economic experts available to communities during broadband planning and deployment.

- Link communities with existing Federal resources across the government (e.g., SmartGrid, economic development) to build each communities' broadband capacity and generate long-term economic return.

- Support the Administration's efforts to improve the prospects and quality of life for Native American youth by partnering with other Federal agencies. This work includes identifying opportunities to extend broadband Internet and computer access to Bureau of Indian Education-funded schools.

- Begin work with a wide variety of stakeholders to establish national broadband benchmarks and metrics to measure the level of economic growth for communities that meet these benchmarks.

- Broaden outreach efforts with stakeholders, building on the demonstrable outcomes and best practices of recent public and private broadband investments that have raised levels of broadband availability and adoption across much of the country. This public-private engagement will help communities participate more effectively in the Internet-based economy.

PROGRAM REDIRECTION AND REDUCTION FOR FY 2016:

NTIA requests to reduce funding for its grant program, which is in its closeout phase, and repurpose a portion of those funds to support communities through BroadbandUSA, a technical assistance and partnership-building program for communities seeking to improve their broadband infrastructure.

Broadband Grants Administration (Base Funding: $12,942,000 and 25 FTE; Program Change: -$6,707,000 and -5 FTE): NTIA requests a decrease of $ 6.7 million and a reduction of 5 FTE to parallel the ramp down of BTOP administration. This funding level will be sufficient to prevent waste, fraud, and abuse of the existing grants; ensure that recipients accomplish program goals; and oversee recipients' continued activities to fulfill the terms of their grants through the Federal-interest period. NTIA plans to redirect a limited amount of this funding to expand BroadbandUSA from a pilot to operating capacity. Overall, NTIA's Broadband Programs budget reflects a reduction of $3,139,000.

Statement of Need and Economic Benefits:

Through the Recovery Act, NTIA oversaw investments of $3.5 billion in broadband infrastructure, $450 million in public computer centers and adoption programs, and $300 million in state broadband availability data and capacity building, and learned important lessons about broadband policy and economic development. NTIA will be able to provide technical assistance to communities to expand broadband adoption and utilization, while prudently reducing administrative resources as projects are completed.

Total anticipated administrative expenses, including Recovery Act administrative expenses, base resources, and out-year plans, represent less than five percent of funds. Competitive Federal grant programs often require 10 percent of an appropriation to manage grants comprehensively from application to closeout.

Risk Assessment:

Insufficient funding in FY 2016 to oversee broadband awards adequately will:

- Increase the potential for waste, fraud, and abuse due to inadequate program oversight;
- Decrease NTIA's ability to close grants in a timely fashion;
- Compromise NTIA's ability to identify, recover, and return unused funds to the Treasury (estimated recoveries $168-200 million); and
- Preclude the documentation and sharing of BTOP and SBI lessons learned and best practices in support of broadband initiatives and as a resource for States and communities to use in building out future broadband projects.

Base Resource Assessment:

FY 2015 broadband grants administration programs were funded at $12,421,000. Because many of NTIA's Broadband Program grants will be in the closeout phase or closed by the end of

FY 2015, NTIA will prudently reduce resources for grants administration. NTIA will efficiently execute critical grants oversight and program management functions with the remaining funds.

Schedule & Milestones:

- 9/30/2015: All BTOP and SBI Recovery Act Projects Completed

Deliverables:

- Public Safety Report to Congress
- Quarterly Program Reports to Congress
- Broadband Availability Reports
- End of Program Reports

PERFORMANCE METRICS

Performance Goal: Innovation Projects Closed Out*	FY 2013 Actual	FY 2014 Target	FY 2015 Target	FY 2016 Target
With Decrease	23%	76%	100%	Retired
Without Decrease	23%	76%	100%	Retired

* **Description:** Broadband projects with a period of performance into FY 2015 include the State Broadband Initiative (SBI) grants, funded up to five years, and likely 700 MHz public safety projects impacted by the passage of the Middle Class Tax Relief and Job Creation Act of 2012. A small number of large-scale middle mile construction projects may also be extended into FY 2015 due to complications related to environmental regulations, contracts, or weather-related delays.

Performance Goal: Innovation Broadband networks deployed	FY 2013 Actual	FY 2014 Target	FY 2015 Target	FY 2016 Target
With Decrease	100,000	109,000	110,000	Retired
Without Decrease	100,000	109,000	110,000	Retired

Performance Goal: Innovation Community institutions connected	FY 2013 Actual	FY 2014 Target	FY 2015 Target	FY 2016 Target
With Decrease	18,000	23,000	23,500	Retired
Without Decrease	20,322	23,000	23,500	Retired

Performance Goal: Innovation Public computer workstations	FY 2013 Actual	FY 2014 Target	FY 2015 Target	FY 2016 Target
With Decrease	37,500	Retired	Retired	Retired
Without Decrease	46,327	Retired	Retired	Retired

Performance Goal: Innovation Broadband subscribers	FY 2013 Actual	FY 2014 Target	FY 2015 Target	FY 2016 Target
With Decrease	600,000	670,000	Retired	Retired
Without Decrease	628,314	670,000	Retired	Retired

PROGRAM CHANGE PERSONNEL DETAIL

Budget Program: Salaries and Expenses
Sub-Program: Broadband Programs
Program Change: Expanding Community Broadband and the Digital Economy

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Comm. Program Specialist	Washington, DC	GS-15	(3)	143,079	(429,237)
Comm. Program Specialist	Washington, DC	GS-14	(1)	121,635	(121,635)
Secretary	Washington, DC	GS-09	(1)	59,689	(59,689)
Total			(5)		(610,561)
Less Lapse		0%	0		0
Total full-time permanent (FTE)			(5)		(610,561)

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

PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Dollar amounts in thousands)

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

	Object Class	2016 Change
11	Personnel compensation	(611)
11.1	Full-time permanent	0
11.3	Other than full-time permanent	(6)
11.5	Other personnel compensation	0
11.8	Special personnel services payments	0
11.9	Total personnel compensation	(617)
12	Civilian personnel benefits	(171)
13	Benefits for former personnel	0
21	Travel and transportation of persons	(35)
22	Transportation of things	(3)
23.1	Rental payments to GSA	(132)
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	(24)
24	Printing and reproduction	(150)
25.1	Advisory and assistance services	0
25.2	Other services	(29)
25.3	Purchases of goods & services from Gov't accounts	(5,527)
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	(12)
31	Equipment	(7)
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	(6,707)

PROGRAM REDIRECTION FOR FY 2016:

Broadband Programs- Expanding Community Broadband and the Digital Economy (Base Funding: $3,159,000 and 11 FTE; Program Change: +$3,568,000 and +5 FTE):

Proposed Action:

NTIA requests a reallocation of $3.6 million of Broadband Programs' grant administration funds for efforts to expand community broadband adoption and utilization across the country through its community broadband program, BroadbandUSA. This redirection still results in a total reduction of $3,139,000 from the FY 2015 Broadband Programs budget. This redirection will not only continue the momentum generated by the successful implementation of NTIA's broadband and technology programs over the last two decades through outreach, knowledge share, and partnerships, but it also allows the new program team to expand beyond the BTOP lessons learned and beyond the limited number of communities with direct ties to BTOP projects.

NTIA has received a strong response from community leaders for technical and project management. NTIA is uniquely qualified to provide this assistance and drive continued progress in communities across America. Due to decades of experience leading broadband and technology programs, NTIA has accumulated tremendous knowledge on effective mechanisms to increase broadband availability, adoption, and use across the country. NTIA has also has developed strong partnerships with key stakeholders. This enables NTIA to offer online and in-person technical assistance to stakeholder groups and individual communities and to identify technical experts to address unique community issues.

BroadbandUSA

In FY 2015, NTIA began to redirect expert staff from the grant program to launch the BroadbandUSA community broadband program. BroadbandUSA promotes local and regional broadband deployment and adoption throughout the U.S. by working with a variety of stakeholders, including incumbent communications providers, community leaders, and financing partners.

Broadband has become a cornerstone of economic growth, providing citizens with the tools necessary to participate in the rapidly growing domestic digital economy and, in turn, sustaining America's ability to compete internationally.

- Community leaders know that broadband infrastructure is critical to attract and retain businesses, allow local businesses to compete globally, and secure the sustainability of the community's future.
- Fast, affordable, reliable broadband for all citizens must be a national imperative if we are to create jobs and grow wages at home, and compete in the global information economy.

NTIA will use the redirection of $3.6 million to expand its ability to communicate invaluable information gathered from the broadband grant program into scalable lessons that can be "right sized" for individual communities' use. By leveraging the knowledge and expertise of its current workforce, NTIA is positioned to reach a greater number of communities and forge stronger partnerships with stakeholders that will accelerate broadband deployment and adoption.

NTIA's FY 2016 request is a continued redirection of resources so that BroadbandUSA becomes more fully operational. On January 14, 2015, President Obama announced BroadbandUSA as a

new initiative to support community broadband projects. The announcement noted that BroadbandUSA will offer online and in-person technical assistance to communities; host a series of regional workshops around the country; and publish guides and tools that provide communities with proven solutions to support planning, financing, construction, and operations across many types of business models.

As a result of the President's announcement, it is imperative that NTIA receive additional funding for BroadbandUSA. Although NTIA initially planned for an increased demand from communities for BroadbandUSA services, the administration's new focus on expanding broadband deployment, its broad announcement and publicity for these projects, and ambitious community broadband goals will place additional demand on NTIA's staff and resources. This funding will ensure that NTIA has the capacity to support local communities that respond to the President's announcement and NTIA's partnership with the Next Century Cities coalition. In order to provide assistance to communities nationwide, NTIA will use the redirected funds to double its product offerings in FY 2016; contract with financial, economic, and other specialists to enhance its technical assistance capabilities; and expand its in-person regional workshops.

The additional funding will allow NTIA to provide sustained technical assistance to communities, helping them to address difficult issues that often cut short very promising broadband projects, including infrastructure financing, coalition building, broadband adoption, engineering challenges, project management, fee development, and billing management. In addition, NTIA will leverage partnerships to support activities in communities that elevate their broadband preparedness and innovation readiness, resulting in significant strides towards improving America's overall competitiveness. At full funding, the FY 2016 product suite will expand the program to more communities; encourage community coalitions and public-private partnerships; provide access to experts with specialized skills; and address emerging trends in broadband, with a focus on expanding broadband availability outside the scope of BTOP-specific investments.

FY 2016 is the first year that NTIA's community broadband efforts will be fully operational. Based on initial feedback from community stakeholders and Federal partners, interest in two regional "best practices" workshops (with nearly 300 attendees) held in late FY 2014 and early FY 2015, and incoming requests for additional products and technical assistance, NTIA anticipates demand for broadband products and technical assistance will grow exponentially during FY 2015. The President's announcement of January 14, 2015, notes that BroadbandUSA will "… help more communities achieve these results, support economic growth, and promote a level playing field for all competitors."

In addition to the President's goals of improving internet speeds and affordability, NTIA's FY16 community broadband work will lead to increased economic benefits for the communities it serves:[1]

- Increased Economic Output: In communities where grantees built new broadband infrastructure, broadband availability grew by an estimated 2 percent more than in

[1] On January 14, NTIA released an independent study prepared by the research firm ASR Analytics examining the social and economic impacts of Recovery Act grants awarded by NTIA to expand broadband access and adoption across the country. *See* http://www.ntia.doc.gov/files/ntia/publications/asr_final_report.pdf

communities not served by a broadband grantee. That growth could be expected to translate into increased economic output of as much as $21 billion annually.
- Increased wages: Workers who upgrade their information and communication technology skills can raise wages an estimated $111 per month.
- Increased employment: A one percent increase in broadband availability increases employment 0.2 to 0.3 percent per year.
- Value to new broadband subscribers: Individuals who use the internet at home and work make $1.40 more per hour than non-users.
- Increased social, health, and educational benefits: For example, by accessing health information online, 35 percent of new broadband users saved $217 per year on health care expenses.

To help more communities increase their broadband adoption and access, NTIA plans to scale BroadbandUSA to meet community needs.

More specifically, NTIA will provide technical assistance to a diverse set of communities based on sharing replicable and scalable lessons learned to support a "right size" approach for each community. NTIA will also link communities with existing Federal resources across the government (*e.g.*, SmartGrid, economic development) to build their broadband capacity. NTIA will augment its staff expertise by utilizing consultants with, for example, expert complex financial analysis, communications systems engineering, and economic impact knowledge and making those resources available to communities to maximize their abilities to plan, select, and built projects that work locally. During FY 2016, NTIA will provide technical assistance to at least 250 communities on implementing or expanding broadband availability and adoption programs. NTIA anticipates that it will also continue to support communities with adoption and deployment efforts that we assisted during FY15, as they progress through planning, partnering, financing, implementing, and sustaining their projects. NTIA will bring resources to bear on three critical areas:

- Developing products that provide concrete pathways for expanding broadband access and use;
- Pursuing outreach and partnerships with organizations that can benefit from NTIA's expertise and those that can promulgate more broadband-friendly policies and activities; and
- Delivering technical assistance that provides communities and organizations with the advice and information they need to make the best decisions about their community.

NTIA staff will double its products and produce a mix of 20 'how-to' papers, checklists, analyses, presentations, literature review summaries, funding opportunities, and other products throughout FY 2016. While maintaining relationships with at least 30 stakeholder groups, staff will work with six key groups to drive new or modified policy and program changes that support broadband. These activities are expected to result in an increase in broadband availability and adoption, as well as a long-term economic return in these communities.

In addition, NTIA's work will focus on partnering with Federal and stakeholder groups so that we can help agencies maximize their investments in broadband infrastructure and adoption. We will work closely with partners to assist communities with their broadband needs. For example, NTIA will be able to link communities with existing Federal resources across the government (e.g., SmartGrid, economic development) to build and expand their broadband capacity. NTIA will utilize these resources to lead cross government coordination to better integrate all Federal

support for broadband deployment. In this role, NTIA will provide training to other Federal agencies' staff. During FY 2016, NTIA will also begin providing technical assistance to state broadband leaders, who continue to promote state-level broadband availability and adoption and promote collaboration across geographic boundaries. Finally, NTIA will enhance information technology systems that support its community broadband work to provide up-to-date project information and program status reporting.

NTIA will also work with the Administration to expand the national movement of local leaders for better broadband by coordinating with and assisting the Next Century Cities coalition. As of today, 50 cities representing over 20 million Americans have joined the Next Century Cities coalition, a nonpartisan network pledging to bring fast, community-supported broadband to their towns and cities. They join 37 research universities around the country that have committed to bring fast broadband to communities around their campuses. NTIA will also participate in a **Community Broadband Summit** of mayors from around the nation joining in this movement for broadband solutions and economic revitalization.

Given competing priorities, NTIA plans to initiate its multistakeholder work in FY 2016. This public-private engagement will help communities participate more effectively in the Internet-based economy. The work will build on NTIA's strong relationships with broadband providers, municipal organizations, innovation economy firms, non-profit organizations, foundations, and other Federal stakeholders. This network has strengthened as a result of NTIA's broadband programs but was built over previous decades as NTIA provided the leading voice in the Administration on broadband and technology access and adoption. Through its partnerships, NTIA will lead an effort to identify broadband opportunities to incentivize a community's ability to support existing commerce and attract new business investments that will spur economic growth. NTIA will convene key stakeholders to identify strategies to support communities as they seek to improve their broadband infrastructure and expand their digitally literate workforce.

During FY 2016, NTIA will also support initiatives that help improve opportunities and quality of life for Native American youth. The Administration has requested that NTIA work with other Federal agencies to develop a well-integrated approach to addressing the educational, physical and mental health, and social service needs of Native youth and create key metrics and goals to measure progress. This work includes identifying opportunities to extend broadband Internet and technology access to Bureau of Indian Education-funded schools and dormitories.

While NTIA requests a total reduction for its broadband work, the budget increase for the BroadbandUSA work comes in three primary areas: staffing cost; departmental charges; and contract costs. As noted above, NTIA anticipates an increase in its staffing to meet increased BroadbandUSA responsibilities, as well as the anticipated demand for its technical assistance and broadband products. The increased contract support will provide administrative support and allow NTIA to provide additional technical assistance. As a result, NTIA will be able to help more communities increase broadband access and adoption, generating economic benefits for these communities. Finally, contracts will serve as flexible vehicle to support NTIA with resources where the agency cannot justify hiring an FTE. For example, products may require basic layout and design services but are used on a limited basis throughout the year.

Statement of Need and Economic Benefits:

NTIA's broadband work in FY 2016 will achieve benefits in three primary areas: (1) high-value activities undertaken in newly mobilized communities, including coordination, planning, research,

and stakeholder engagement; (2) increased broadband development and adoption resulting from these activities; and (3) short- and long-term social and economic development, such as potential employment gains, outside private investment, and enhanced educational, health, and civic outcomes.

Studies consistently show the transformative benefits of broadband, which is why the Administration has set ambitious targets for its deployment. To attract private investment, communities increasingly need ultra-fast broadband as much as they need rail, ports, roads, and electricity. Communities that have adopted broadband early experience faster growth in employment, number of businesses, and businesses in IT-intensive sectors. A 2009 World Bank study found that for every 10 percentage point increase in broadband adoption, a high-income economy enjoys a 1.21 percentage point increase in per capita GDP growth. A more recent study in 2011 by the Chalmers University of Technology found that in 33 OECD countries, doubling the broadband speed for an economy increases GDP by 0.3 percent.

NTIA's work will provide communities with the tools and assistance they need to improve broadband deployment and adoption efforts to improve economic development.

Risk Assessment:

Today, communities across the country reach out to NTIA to ask questions, be referred to resources, and find new developments in the field. Without this level of funding, NTIA will be unable to support these communities as they seek to expand broadband availability and adoption. This is particularly critical for cities, towns, and counties that have limited financial resources, which are often most in need of leveraging the power of technology to strengthen their local economies. NTIA possesses a talented team of subject-matter experts who have unique know-how in navigating the financial, technical, and human-capital issues to promote broadband development in communities.

Insufficient funding in FY 2016 to operationalize BroadbandUSA adequately will:

- Cripple NTIA's ability to meet the demands of communities across the country that are attempting to launch efforts to grow and expand their broadband readiness and preparedness capabilities;
- Fail to increase GDP because communities and public private partnerships fail to invest resources to improve broadband
- Inhibit individual wage growth by approximately $100 and employment by 0.2 to 0.3 percent because workers do not have the opportunities to increase digital literacy skills to improve employment opportunities.
- Increase the potential for communities to miss critical, non-partisan information from NTIA products when making broadband adoption and deployment decisions;
- Risk the loss of potential matchmaking and partnership opportunities to assist communities in improving their broadband adoption and deployment; and
- Preclude NTIA's ability to serve as a critical, neutral resource to help communities improve economic development through broadband deployment and adoption efforts.

Base Resource Assessment:

Federal staffing includes personnel to lead and drive implementation; to develop and manage

partnerships with private and non-profit stakeholders; and to apply technical, sectorial, and financial knowledge based on NTIA's expertise.

Schedule & Milestones:

10/2014–3/2016	Continue conducting and improving outreach and continue to engage broadband stakeholders such as Federal agencies, philanthropic groups, and broadband trade groups
10/2015 – 09/2016	Continue assessing replicable, scalable models from NTIA programs as well as other successful projects
10/2015 –9/2016	Increase direct and indirect technical assistance over FY 2015 (webinars, workshops, training materials, one-on-one support) to communities seeking to expand broadband availability and adoption

PERFORMANCE METRICS

Performance Goal: Innovation	FY15 Target	FY16 Target	FY17 Target	FY18 Target
Number of communities to which NTIA provides technical assistance				
With increase	175 communities	250 communities *	250 communities *	250 communities *
Without increase	N/A	175 communities	175 communities	175 communities

* Different communities each year for a total of 425 . NTIA anticipates that it will continue to assist communities from FY15 through the life cycle of their projects.

Description: Many communities were not able to receive NTIA assistance during the BTOP grant period. These communities now will be to take advantage of NTIA's technical expertise and outreach program, thereby leveraging the expansion of broadband. This performance metric measures the additional communities that NTIA still can assist now that grant funding has expired.

PROGRAM CHANGE PERSONNEL DETAIL

Budget Program: Salaries and Expenses
Sub-Program: Broadband Programs
Program Change: Expanding Community Broadband and the Digital Economy

Title:	Location	Grade	Number of Positions	Annual Salary	Total Salaries
Comm. Program Specialist	Washington, DC	GS-15	3	143,079	429,237
Comm. Program Specialist	Washington, DC	GS-14	1	121,635	121,635
Secretary	Washington, DC	GS-09	1	59,689	59,689
Total			5		610,561
Less Lapse		0%	0		0
Total full-time permanent (FTE)			5		610,561
2016 Pay Adjustment (1.3%)					7,937
TOTAL					618,498

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

PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Dollar amounts in thousands)

Budget Program: Salaries and Expenses
Sub-Program: Broadband Programs
Program Change: Expanding Community Broadband and the Digital Economy

	Object Class	2016 Change
11	Personnel compensation	618
11.1	Full-time permanent	0
11.3	Other than full-time permanent	6
11.5	Other personnel compensation	0
11.8	Special personnel services payments	0
11.9	Total personnel compensation	624
12	Civilian personnel benefits	171
13	Benefits for former personnel	0
21	Travel and transportation of persons	24
22	Transportation of things	3
23.1	Rental payments to GSA	132
23.2	Rental Payments to others	0
23.3	Communications, utilities and miscellaneous charges	24
24	Printing and reproduction	25
25.1	Advisory and assistance services	0
25.2	Other services	24
25.3	Purchases of goods & services from Gov't accounts	2,522
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	12
31	Equipment	7
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	3,568

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

Object Class		2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/(Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$14,107	$15,213	$15,444	$17,481	$2,037
11.3	Other than full-time permanent	0	35	35	35	0
11.5	Other personnel compensation	189	169	169	169	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	14,296	15,417	15,648	17,685	2,037
12.1	Civilian personnel benefits	4,203	4,087	4,435	5,003	568
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	497	717	739	1,178	439
22	Transportation of things	5	16	16	21	5
23.1	Rental payments to GSA	1,344	1,351	1,371	1,556	185
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	242	153	157	183	26
24	Printing and reproduction	20	67	68	(43)	(111)
25.1	Advisory and assistance services	107	1,595	1,690	1,690	0
25.2	Other services	1,350	2,049	2,172	3,904	1,732
25.3	Purchases of goods and services from Government accounts	20,016	16,229	12,896	14,488	1,592
25.7	Operation and maintenance of equipment	0	0	0	86	86
26	Supplies and materials	359	212	215	244	29
31	Equipment	1,892	986	1,002	3,237	2,235
41	Grants, subsidies and contr butions	4	0	0	0	0
99	**TOTAL OBLIGATIONS**	$44,335	$42,879	$40,409	$49,232	$8,823
	Prior Year Recoveries/Refunds	(1,019)				
	Unobligated balances from Prior Years	(2,032)	(4,679)			
	Unobligated balance EOY	4,679				
	Unobligated balance, expiring	37				
	Total Budget Authority	$46,000	$38,200	$40,409	$49,232	$8,823

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

Personnel Data	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/(Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	125	150	150	169	19
Other than full-time permanent	0	0	0	0	0
Total	125	150	150	169	19
Authorized Positions:					
Full-time permanent	153	150	150	176	26
Other than full-time permanent	0	0	0	0	0
Total	153	150	150	176	26

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), $[51,000,000]49,232,000 to remain available until September 30, [2016] 2017: 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

	2014 Actual	2015 Estimate	2016 Estimate
Management and Professional Support Services	$153	$250	$250
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	23	50	50
Total	$176	$300	$300

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

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

	2014 Actual	2015 Estimate	2016 Estimate
Periodicals	$0	$0	$0
Pamphlets	22	15	15
Audiovisual Products	0	0	0
Total	$22	$15	$15

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

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

	2014 Actual	2015 Estimate	2016 Estimate
Direct:			
Average ES Salary	$171,675	$173,392	$175,126
Average Career Path Salary	116,089	117,250	118,422
Average GS Grade	13.9	13.9	13.9
Average GS Salary	$113,334	$114,467	$115,612

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 2015 President's Budget	0	0	$0	$0
less: Obligations from prior years	0	0	0	0
plus: 2015 adjustments to base	0	0	0	0
2016 Base	0	0	0	0
plus: 2015 program changes	0	0	0	0
2016 Estimate	0	0	0	0

Comparison by budget program/sub-program		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	(Decrease)	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	0	776	0	0	0	0	0	0	0	0
	FTE/Obl.	1	347	1	1,023	0	0	0	0	0	0
TOTALS	Pos/BA	0	776	0	0	0	0	0	0	0	0
	FTE/Obl.	1	347	1	1,023	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds			(594)		0		0		0		0
Unobligated Balance, start of year			(9,276)		(1,023)		0		0		0
Unobligated Balance, end of year			1,023		0		0		0		0
Unobligated Balance, rescinded			8,500		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
Appropriation			0		0		0		0		0

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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	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/(Decrease)
Total Obligations	**$776**	**$1,023**	**$0**	**$0**	**$0**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources	0	0	0	0	0
Recoveries/Refunds	0	0	0	0	0
Unobligated balance, start of year	(9,276)	(1,023)	0	0	0
Unobligated balance, end of year	0	0	0	0	0
Unobligated balance, rescinded	8,500	0	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**

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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 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	776	0	0	0	0	0	0	0	0
	FTE/Obl.	1	347	0	1,023	0	0	0	0	0	0
Direct Obligations	Pos/BA	0	776	0	0	0	0	0	0	0	0
	FTE/Obl.	1	347	0	1,023	0	0	0	0	0	0

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.

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	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$30	$31	$0	$0	$0
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	82	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	112	31	0	0	0
12.1	Civilian personnel benefits	26	9	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	5	5	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	1	1	0	0	0
24	Printing and reproduction	0	0	0	0	0
25.1	Advisory and assistance services	1	1	0	0	0
25.2	Other services	128	910	0	0	0
25.3	Purchases of goods and services from Government accounts	65	65	0	0	0
25.7	Operation and maintenance of equipment	0	0	0	0	0
26	Supplies and materials	1	1	0	0	0
31	Equipment	8	0	0	0	0
41	Grants, subsidies and contributions	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	$347	$1,023	$0	$0	$0
	Recoveries/Refunds	(594)	0			
	Unobligated Balance, start of year	(9,276)	(1,023)			
	Unobligated Balance, end of year	1,023	0			
	Unobligated Balance, rescinded	8,500	0			
	Total Budget Authority	$0	$0	$0	$0	$0

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	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	1	1	0	0	0
Other than full-time permanent	0	0	0	0	0
Total	1	1	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

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. [Consolidated and Further Continuing Appropriations Act, 2015]

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. § 902(b)(3) assigns to NTIA the administration of the Public Telecommunications Facilities Program.

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 2015 Enacted	0	0	$0	$0
less: Obligations from prior years	0	0	0	0
plus: 2016 adjustments to base	0	0	0	0
2016 Base	0	0	0	0
plus: 2016 program changes	0	0	0	0
2016 Estimate	0	0	0	0

Comparison by budget program/sub-program		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 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	630	0	0	0	0	0	0	0	0
	FTE/Obl.	0	223	0	407	0	0	0	0	0	0
TOTALS	Pos/BA	0	630	0	0	0	0	0	0	0	0
	FTE/Obl.	0	223	0	407	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds			0		0		0		0		0
Unobligated Balance, start of year			(630)		(407)		0		0		0
Unobligated Balance, end of year			407		0		0		0		0
Unobligated Balance, rescinded			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
Appropriation			0		0		0		0		0

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

Comparison by budget program	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 Increase/(Decrease)
Total Obligations	**$223**	**$407**	**$0**	**$0**	**$0**
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources	0	0	0	0	0
Recoveries/Refunds	0	0	0	0	0
Unobligated balance, start of year	(630)	(407)	0	0	0
Unobligated balance, end of year	407	0	0	0	0
Unobligated balance, rescinded	0	0	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**

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		2014 Actual		2015 Enacted		2016 Base		2016 Estimate		2016 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	630	0	0	0	0	0	0	0	0
	FTE/Obl.	0	223	0	407	0	0	0	0	0	0
Direct Obligations	Pos/BA	0	630	0	0	0	0	0	0	0	0
	FTE/Obl.	0	223	0	407	0	0	0	0	0	0

APPROPRIATION ACCOUNT: INFORMATION INFRASTRUCTURE GRANTS

BUDGET PROGRAM: INFORMATION INFRASTRUCTURE GRANTS

The Technology Opportunities Program was discontinued in FY 2005.

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

	Object Class	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 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	0	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	0	0	0	0	0
25.3	Purchases of goods and services from Government account	223	407	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 contr butions	0	0	0	0	0
44	Refunds	0	0	0	0	0
99	**TOTAL OBLIGATIONS**	223	407	0	0	0
	Recoveries/Refunds	0				
	Unobligated Balance, start of year	(630)	(407)			
	Unobligated Balance, end of year	407	0			
	Unobligated Balance, rescinded	0	0			
	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	2014 Actual	2015 Enacted	2016 Base	2016 Estimate	2016 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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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 2015	46	46	$5,339,456	$6,935,824
plus: Obligations from prior years	0	0	0	0
plus: 2016 adjustments to base	0	0	0	0
2016 Base	46	46	5,339,456	6,935,824
plus: 2016 program changes	6	6	(4,944,456)	(6,520,924)
2016 Estimate	52	0	395,000	414,900

Comparison by budget program/sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Trust Fund	Pos/BA	0	$1,661,057	0	$4,801,632	0	$4,801,632	0	$365,000 *	0	(4,436,632)
	FTE/Obl.	0	400	0	6,398,000	0	6,398,000	0	365,000	0	(6,033,000)
First Responder Network Authority	Pos/BA	83	$72,134	0	$0	0	$0	0	$0	0	$0
start-up	FTE/Obl.	45	43,881	0	0	0	0	0	0	0	0
First Responder Network Authority	Pos/BA	0	0	38	14,524	38	14,524	44	0	6	(14,524)
Administrative	FTE/Obl.	0	0	38	14,524	38	14,524	44	14,000	6	(524)
National Telecommunications and	Pos/BA	13	2,500	8	6,500	8	6,500	8	0	0	(6500)
Information Administration Oversight & Programmatic	FTE/Obl.	13	2,334	8	6,500	8	6,500	8	5,900	0	(600)
NIST Public Safety Wireless Research	Pos/BA	0	0	0	278,000	0	278,000	0	22,000	0	(256,000)
	FTE/Obl.	0	0	0	278,000	0	278,000	0	22,000	0	(256,000)
Next Generation E-911 Dept. of Transportation	Pos/BA	0	0	0	107,000	0	107,000	0	8,000	0	(99,000)
	FTE/Obl.	0	0	0	107,000	0	107,000	0	8,000	0	(99,000)
State and Local Implementation Fund	Pos/BA	0	0	0	131,800	0	131,800	0	0	0	(131,800)
	FTE/Obl.	0	0	0	131,800	0	131,800	0	0	0	(131,800)
TOTALS	Pos/BA	96	1,735,691	46	5,339,456	46	5,339,456	52	395,000	6	(4,944,456)
	FTE/Obl.	58	46,615	46	6,935,824	46	6,935,824	52	414,900	6	(6,520,924)
Adjustments to Obligations:											
Recoveries/Refunds			(1,059)		0		0		0		0
Unobligated Balance, start of year			(102,233)		(1,792,368)		0		(196,000)		(196,000)
Unobligated Balance, end of year			1,792,368		196,000		0		176,100		0
Unobligated Balance expiring			0		0		0		0		0
Budget Authority			1,735,691		5,339,456		0		395,000		
Financing from Borrowing Authority:											
Authority to borrow, start of year											
Unobligated balance start of year borrowed(-)					1,792,368				196,000		
Obligated(-)					(1,596,368)				(19,900)		
Unobligated balance end of year, borrowed					196,000				176,100		
Financing from appropriated receipts:											
Anticipated Receipts, Start of year			0		30,000,000						
Realized Receipts, start of year			0		0						
Realized Receipts,			1,221,000		0						
Repayment to Treasury:											
Borrowings Repaid (-)			(1,221,000)		(779,000)						
Sequestration and Pop-up (+-)					(258,000)				395,000		
Precluded from Obligation(-)					(3,223,544)						
Deficit Reduction (-)					(20,400,000)						
Appropriations Mandatory					5,339,456				395,000		

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

Comparison by sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Reimbursable projects											
First Responder Network	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
Authority	FTE/Obl.	0	0	94	117,000	94	117,000	106	147,000	12	30,000
NTIA/Opt-OUT	Pos/BA			0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	0	5	4	2,500	4	2,500	4	3,000	0	500
Total, Reimbursable Obligations……	Pos/BA	0	0							0	0
	FTE/Obl.	0	5	98	119,500	98	119,500	110	150,000	12	30,500

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		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Trust Fund	Pos/BA	0	$1,661,057	0	$4,801,632	0	$4,801,632	0	$365,000	0	($4,436,632)
	FTE/Obl	0	400	0	6,398,000	0	6,398,000	0	365,000	0	(6,033,000)
Direct Obligations.....	Pos/BA	0	1,661,057	0	4,801,632	0	4,801,632	0	365,000	0	(4,436,632)
	FTE/Obl	0	400	0	6,398,000	0	6,398,000	0	365,000	0	(6,033,000)

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		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
First Responder Network Authority	Pos/BA	83	$72,134	0	$0	0	$0	0	$0	0	$0
start-up	FTE/Obl	45	44,281	0	0	0	0	0	0	0	0
Direct Obligations.....	Pos/BA	83	72,134	0	0	0	0	0	0	0	0
	FTE/Obl	45	44,281	0	0	0	0	0	0	0	0

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		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
First Responder Network Authority	Pos/BA	0	$0	38	$14,524	38	$14,524	44	$0	6	($14,524)
Administrative	FTE/Obl	0	0	38	14,524	38	14,524	44	14,000	6	(524)
Direct Obligations.....	Pos/BA	0	0	38	14,524	38	14,524	44	0	6	(14,524)
	FTE/Obl	0	0	38	14,524	38	14,524	44	14,000	6	(524)

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		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
National Telecommunications and Information Administration Oversight & Programmatic	Pos/BA	13	$2,500	8	$6,500	8	$6,500	8	$0	0	($6,500)
	FTE/Obl	13	2,334	8	6,500	8	6,500	8	5,900	0	(600)
Direct Obligations.....	Pos/BA	13	2,500	8	6,500	8	6,500	8	0	0	(6,500)
	FTE/Obl	13	2,334	8	6,500	8	6,500	8	5,900	0	(600)

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

Comparison by sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
NIST Public Safety Wireless Research	Pos/BA	0	$0	0	$278,000	0	$278,000	0	$22,000	0	($256,000)
	FTE/Obl	0	0	0	278,000	0	278,000	0	22,000	0	(256,000)
Direct Obligations.....	Pos/BA	0	0	0	278,000	0	278,000	0	22,000	0	(256,000)
	FTE/Obl	0	0	0	278,000	0	278,000	0	22,000	0	(256,000)

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

Comparison by sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Department of Transportation E-911	Pos/BA	0	$0	0	$107,000	0	$107,000	0	$8,000	0	($99,000)
	FTE/Obl	0	0	0	107,000	0	107,000	0	8,000	0	(99,000)
Direct Obligations.....	Pos/BA	0	0	0	107,000	0	107,000	0	8,000	0	(99,000)
	FTE/Obl	0	0	0	107,000	0	107,000	0	8,000	0	(99,000)

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

Comparison by sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
State and Local Implementation Fund	Pos/BA	0	$0	0	$131,800	0	$131,800	0	$0	0	($131,800)
	FTE/Obl	0	0	0	131,800	0	131,800	0	0	0	(131,800)
Direct Obligations.....	Pos/BA	0	0	0	131,800	0	131,800	0	0	0	(131,800)
	FTE/Obl	0	0	0	131,800	0	131,800	0	0	0	(131,800)

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

	Object Class	2014 Actual	2015 Estimate	2016 Base	2016 President's Budget	2016 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$7,040	$4,403	$4,403	$4,225	($178)
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	31	0	0	0	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	7,071	4,403	4,403	4,225	(178)
12.1	Civilian personnel benefits	1,905	1,224	1,224	1,138	(86)
13	Benefits for former personnel	0	0	$0	0	0
21	Travel and transportation of persons	592	391	391	308	(83)
22	Transportation of things	2	2	2	2	0
23.1	Rental payments to GSA	966	546	546	375	(171)
23.2	Rental payments to others	0	0	$0	0	0
23.3	Communications, utilities and miscellaneous charges	66	10	10	10	0
24	Printing and reproduction	91	60	60	60	0
25.1	Advisory and assistance services	15,561	0	0	0	0
25.2	Other services	2,536	6,567	$6,567	6,314	(253)
25.3	Purchases of goods and services from Government accounts	16,580	7,359	7,359	6,281	(1,078)
25.7	Operation and maintenance of equipment	0	2	2	2	0
26	Supplies and materials	67	31	31	12	(19)
31	Equipment	778	1,740	1,740	1,173	(567)
41	Grants, subsidies and contr butions	0	0	0	0	0
94	Expenditure transfer	400	6,913,000	6,913,000	395,000	(6,518,000)
99	**TOTAL OBLIGATIONS**	$46,615	$6,935,335	$6,935,335	$414,900	($6,520,435)
	Prior Year Recoveries/Refunds					
	Unobligated balances from Prior Years					
	Unobligated balance EOY					
	Unobligated balance, expiring					
	Total Mandatory Budget Authority	$46,615	$6,935,335	$6,935,335	$414,900	($6,520,435)

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

Personnel Data	2014 Actual	2015 Estimate	2016 Base	2016 Estimate	2016 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	59	46	46	52	6
Other than full-time permanent	0	0	0	0	0
Total	59	46	46	52	6
Authorized Positions:					
Full-time permanent	59	46	46	52	6
Other than full-time permanent	0	0	0	0	0
Total	59	46	46	52	6

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

	Posi ions	FTE	Budget Authority	Direct Obligations
Estimate, FY 2015	0	0	$0	$0
plus: Obligations from prior years	0	0	0	0
plus: 2016 adjustments to base	0	0	0	0
2016 Base	0	0	0	0
plus: 2016 program changes	0	0	0	0
2016 Estimate	0	0	0	0

Comparison by budget program/sub-program		2014 Actual		2015 Estimate		2016 Base		2016 President's Budget		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
State and Local Implementation Fund	Pos/BA	0	$2,785	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	4	4,457	0	0	0	0	0	0	0	0
TOTALS	Pos/BA	0	2,785	0	0	0	0	0	0	0	0
	FTE/Obl.	4	4,457	0	0	0	0	0	0	0	0
Adjustments to Obligations:											
Recoveries/Refunds			(1,642)		0		0		0		0
Unobligated Balance, start of year			(2,630)		0		0		0		0
Unobligated Balance, end of year			2,600		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 o her accounts (+)			0				0		0		0
Budget Au hority			2,785		0		0		0		
Adjustments to Obligations:											
Budget Au hority											
Financing from Borrowing Authority:											
Au hority to borrow, start of year			130,800								
Borrowed(-)			-21,000								
Repaid(+)			0								
Obligated, not borrowed(-)			-101,000								
Au hority to borrow available, end of year			8,800								

* This account asssumes that the Public Safety Trust Fund will receive receipts from spectrum auction enabling transfer of offsetting collections to this account.

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

Comparison by sub-program		2014 Actual		2015 President's Budget		2016 Base		2016 Estimate		2016 Increase/(Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Reimbursable projects											
State and Local Implementation	Pos/BA	0	$0	0	$0	0	$0	0	$0	0	$0
Grant Fund Administration	FTE/Obl.	0	0	4	2,700	4	2,700	3	2,202 *	0	(498)
Total, Reimbursable Obligations……	Pos/BA	0	0							0	0
	FTE/Obl.	0	0	4	2,700	4	2,700	3	2,202	0	(498)

* Estimates have changed slightly from MAX submission

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		2014 Actual		2015 Estimate		2016 Base		2016 President's Budget		2016 Increase/ (Decrease)	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
State and Local Implementation Fund	Pos/BA	0	$2,785	0	$0	0	$0	0	$0	0	$0
	FTE/Obl.	4	4,457	4	0	0	0	0	0	0	0
Direct Obligations.....	Pos/BA	0	2,785	0	0	0	0	0	0	0	0
	FTE/Obl.	4	4,457	0	0	0	0	0	0	0	0

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

	Object Class	2014 Actual	2015 Estimate	2016 Base	2016 President's Budget	2015 Increase/ (Decrease)
11	Personnel compensation					
11.1	Full-time permanent	$732	$632	$632	$537	($95)
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	10	12	12	10	(2)
11.8	Special personnel services payments	0	0	0	0	0
11.9	**Total personnel compensation**	742	644	644	547	(97)
12.1	Civilian personnel benefits	213	145	145	116	(29)
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	25	65	65	65	0
22	Transportation of things	0	0	0	0	0
23.1	Rental payments to GSA	65	65	65	65	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities and miscellaneous charges	8	5	5	4	(1)
24	Printing and reproduction	0	12	12	0	(12)
25.1	Advisory and assistance services	4	4	4	3	(1)
25.2	Other services	829	829	829	610	(219)
25.3	Purchases of goods and services from Government accounts	591	918	918	783	(135)
25.7	Operation and maintenance of equipment	0	0	0	0	0
26	Supplies and materials	4	3	3	4	1
31	Equipment	47	10	10	5	(5)
41	Grants, subsidies and contributions	1,929	0	0	0	0
99	**TOTAL OBLIGATIONS**	$4,457	$2,700	$2,700	$2,202	($498)
	Prior Year Recoveries/Refunds	(1,642)				
	Unobligated balances from Prior Years	(2,630)	0			
	Unobligated balance EOY	2,600				
	Unobligated balance, expiring					
	Total Mandatory Budget Authority	$2,785	$0	$0	$0	$0

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

Personnel Data	2014 Actual	2015 Estimate	2016 Base	2016 Estimate	2016 Increase/ (Decrease)
Full-Time Equivalent Employment:					
Full-time permanent	4	4	4	3	(1)
Other than full-time permanent	0	0	0	0	0
Total	4	4	4	3	(1)
Authorized Positions:					
Full-time permanent	4	4	4	3	(1)
Other than full-time permanent	0	0	0	0	0
Total	4	4	4	3	(1)

FY 2016 Annual Performance Plan / FY 2014 Annual Performance Report

National Telecommunications and Information Administration

Part 1 Agency and Mission Information

Section 1.1: Overview

NTIA develops domestic and international communications policy for the Executive Branch under 47 U.S.C. § 902. NTIA also ensures the efficient and effective management and use of Federal radio spectrum and performs state-of-the-art communications research, engineering, and planning. As a result of the American Recovery and Reinvestment Act of 2009, NTIA administers and oversees programs to advance access to and use of broadband in the United States. In addition, NTIA continues to address Presidential Memorandums, "Unleashing the Wireless Broadband Revolution" and "Expanding America's Leadership in Wireless Innovation", and is making progress toward expediting wireless broadband access, either through allocating Federal operations or establishing acceptable sharing arrangements, while protecting the capabilities of Federal systems.

NTIA supports the Trade and Investment Goal's Strategic Objective 1.1 (Increase opportunities for U.S. companies by opening markets globally) through developing and influencing international policies to support fair competition and by negotiating international agreements and treaties that place the United States as a global leader in communications. Additionally, NTIA supports the Innovation Goal's Strategic Objective 2.3 (Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity) by serving as the principal adviser to the President on communications policy. NTIA ensures timely analysis and development of policy recommendations on Internet and information issues that implicate U.S. economic, social, or political interests.

NTIA also manages national spectrum resources, including pursuing spectrum sharing and monitoring to make 500 MHz available for expanded high-speed broadband service, and it performs research in cutting-edge areas of communications technology. Through NTIA's joint effort with the National Institute for Standards and Technology (NIST), the Center for Advanced Communications addresses current and long-term challenges related to spectrum sharing, public safety communications, standards coordination, electromagnetics, and quantum electronics. In addition, NTIA manages the Table Mountain Field Site and Radio Quiet Zone, an 1,800-acre, open-air test location in Boulder, Colorado. Several Federal agencies and private companies use the site to develop measurement techniques for new communication technologies, to test operational performance of new radar systems and other communication technologies, to evaluate broadband and laser radar (LADAR) technologies for public safety and national defense applications, and to test radio receivers for NOAA's "All Hazards" national warning system.

Having successfully administered the Recovery Act broadband grant programs, NTIA is expanding broadband access and adoption further by providing expert technical assistance to communities to help them build partnerships that will facilitate broadband deployment and associated

economic benefits to even more communities. NTIA is supporting activities in communities that elevate their broadband preparedness and innovation readiness, resulting in significant strides in improving America's competitiveness through broadband and economic development goals.

NTIA staff and facilities are located primarily in Washington, DC, and at the Department of Commerce Boulder Laboratories, a multi-agency shared research and engineering facility in Boulder, Colorado. There are approximately 175 employees funded by appropriations and 155 employees funded by reimbursable agreements with other agencies.

The Middle Class Tax Relief and Job Creation Act of 2012 created the First Responder Network Authority (FirstNet), which is charged with building a wireless broadband network for first responders throughout the Nation. Congress established FirstNet as an independent authority within NTIA but directed by a 15-member Board of Directors. FirstNet established its headquarters in Reston, Virginia.

Section 1.2: Mission Statement

The National Telecommunications and Information Administration (NTIA) serves as the President's principal adviser on communications policy matters, develops forward-looking spectrum policies and research to ensure efficient and effective spectrum access and use. NTIA manages all spectrum use by Federal departments and agencies. NTIA also manages $4.2 billion in grants to promote the availability and adoption of broadband and Internet technology. In addition, NTIA houses FirstNet, an independent authority charged with overseeing the deployment of a nationwide wireless broadband network for public safety.

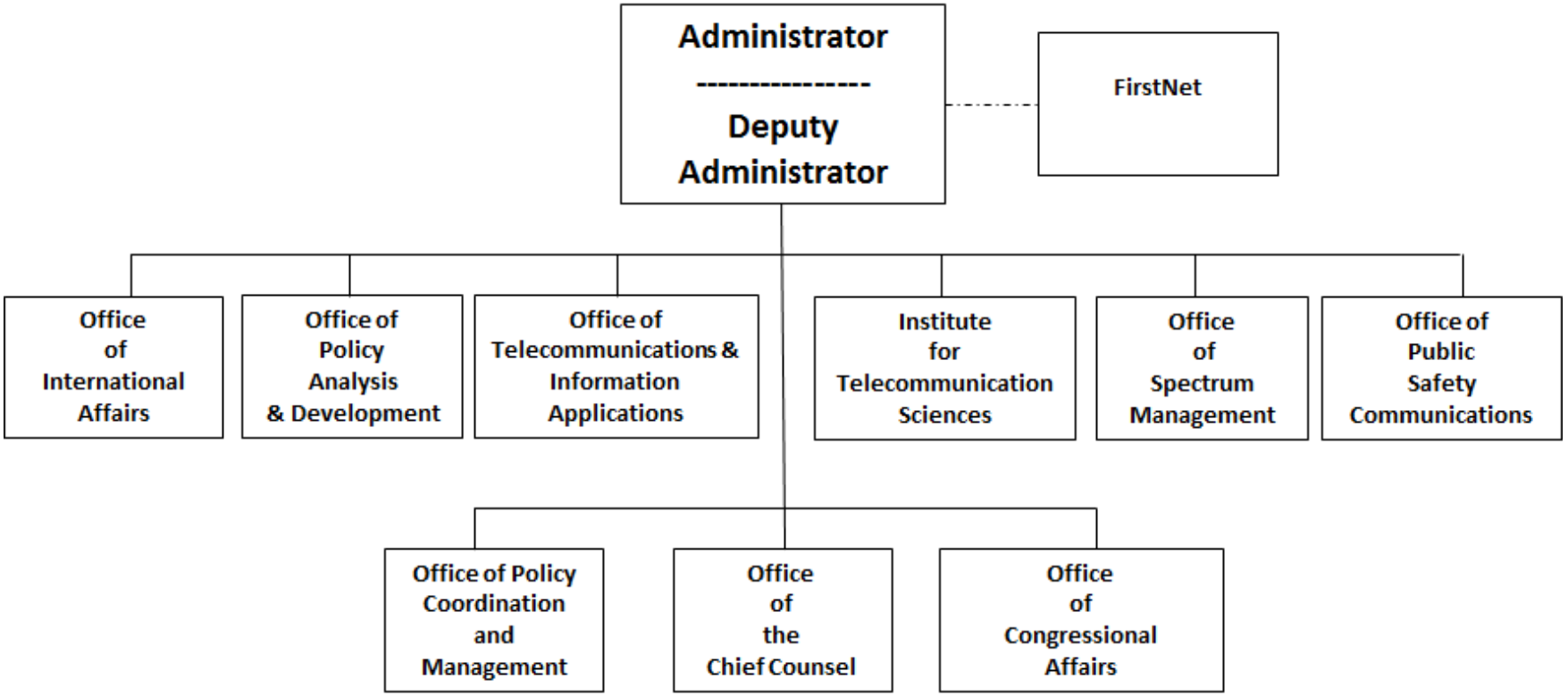
Section 1.3: Vision and Values

NTIA goals are to promote the efficient use of Federal radio spectrum; advocate nationally and internationally for communications policies that further Internet innovation, stability, and security; negotiate with foreign governments to ensure adequate spectrum for national defense, public safety, and U.S. business needs; advance communications technologies; promote broadband availability and adoption; and oversee the deployment of a nationwide wireless broadband network for public safety.

Section 1.4: *Organizational Structure*

U.S. DEPARTMENT OF COMMERCE

National Telecommunications & Information Administration



Part 2: Cross-Agency Priority Goals

Section 2.1: Overview

Per the GPRA Modernization Act requirement to address Cross-Agency Priority Goals in the agency strategic plan, the annual performance plan, and the annual performance report, refer to www.Performance.gov for the agency's contributions to those goals and progress, where applicable.

Although the Department of Commerce is not the lead agency for the Cross-Agency Priority Goal on 4G Coverage, NTIA contributes to this goal. In support of the goal to ensure 4G wireless broadband coverage for 98% of Americans by 2016, NTIA is collaborating with the Federal Communications Commission (FCC) to make available a total of 500 megahertz of Federal and non-Federal spectrum over 10 years for mobile and fixed wireless broadband use. NTIA is collaborating with the FCC and the State Department to prepare the U.S. proposals to World Radiocommunication Conference 2015 (WRC-15). The conference in 2015 will revise the international treaty governing the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits.

Lawrence Strickling, Assistant Secretary for Communications and Information, is responsible for ensuring NTIA's support for this Cross-Agency Priority Goal.

Part 3: Strategic Goals and Objectives

Section 3.1: Corresponding DoC Strategic Themes, Goals, and Objectives

Goal	Objective Number	Objective Name	Leader
Trade and Investment: Expand the U.S. economy through increased exports and inward foreign investment that lead to more and better American jobs.	1.1	Increase opportunities for U.S. companies by opening markets globally.	Kenneth E. Hyatt Acting Under Secretary for International Trade Ken.Hyatt@trade.gov
Innovation: Foster a more innovative U.S. economy—one that is better at inventing, improving, and commercializing products and technologies that lead to higher productivity and competitiveness.	2.3	Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity.	Lawrence E. Strickling Assistant Secretary for Communications and Information LStrickling@ntia.doc.gov

Section 3.2: *Strategies*

Objective 1.1:

- Ensure U.S. commercial and economic interests are advanced in trade agreements and in other international forums: NTIA ensures that U.S. negotiating objectives consider the priority needs of U.S. industries competing in the global market. NTIA will represent U.S. interests at treaty-making conferences, regional communications conferences and meetings, bilateral and multilateral meetings, and multistakeholder meetings and conferences. NTIA's priorities include strong and effective disciplines on trade barriers.

- NTIA will continue to participate in and, in several cases, lead the extensive preparatory process for international and intergovernmental meetings, partnering with the relevant Federal agencies and U.S. industry, civil society, and technical stakeholders. NTIA's policy expertise and strategic coordination with other governments have contributed to the success of the United States at previous international and intergovernmental conferences and meetings.

- Several countries are increasing their efforts to regulate the Internet through intergovernmental institutions. Attempts to restrict and globally regulate the Internet are a major threat to the United States' approach to the development and expansion of the Internet, as well as more traditional communications technologies. It is crucial that NTIA participate in developing and executing plans, policies, and programs that relate to international communications issues and provide advice and assistance on Internet issues, to ensure a free and open global Internet characterized by multistakeholder decisionmakers.

- The ITU's international regulation of radio spectrum directly affects U.S. roles in international commerce and diplomacy, including satellite orbit management. A plurality of the technical recommendations of the ITU are based on research conducted at NTIA's research laboratories, and these laboratories will continue to provide authoritative technical contributions and leadership to ITU committees that develop technical standards of importance to U.S. industry and government. NTIA will continue investments to develop and present U.S. positions, plans, policies, and programs for international communications conferences and associated preparatory meetings which have consistently produced outcomes favorable to the United States.

Objective 2.3:

- Ensure policies that promote the Internet as an engine of growth: The Internet's potential to drive innovation and economic growth relies on the free flow of information as well as the Internet's inherent flexibility. NTIA will advocate for relevant domestic and international policies that

do not unnecessarily hinder the digital economy or chill innovation in the online environment. NTIA will use and participate in multistakeholder processes to develop solutions to evolving digital economy issues.

- Increase broadband infrastructure and use: Broadband capabilities and appropriate mechanisms to leverage those capabilities to attract commerce can have a tremendous impact on local economies. NTIA will use its expertise in funding broadband projects and providing technical assistance to help communities increase their broadband infrastructure and provide citizens the tools to leverage broadband to attract jobs and investments.

- Foster advanced communications technologies: Spectrum sharing and other innovations in advanced communications will drive economic growth and development. NTIA and NIST have agreed to leverage both bureau's key research and engineering expertise and capabilities by establishing and supporting the Center for Advanced Communications. This unique national asset will provide both research and testing capabilities. NIST and NTIA will partner with industry, academia, and government agencies to foster the invention, development, and deployment of future advanced communications technologies.

- Facilitate the continued development of the online marketplace by ensuring copyright policy adapts appropriately to current digital technologies: Digital technologies have presented unprecedented challenges and opportunities for U.S. industries. The goals of both copyright and Internet policies can and should work in tandem to advance the digital economy. NTIA, in partnership with the U.S. Patent and Trademark Office, has convened stakeholders—creators, rights holders, service providers, and consumers—to develop a public record on critical digital copyright issues that were identified in a Department green paper (*Copyright Policy, Creativity, and Innovation in the Digital Economy*). As the process moves forward, the policy recommendations will advance the goal of both ensuring a balanced and effective copyright system and promoting the continued development of an efficient online marketplace for creative works.

- NTIA remains committed to using the multistakeholder model of Internet policymaking and governance in its efforts to ensure sound policy frameworks. NTIA engages with a broad array of stakeholders to gain consensus on Internet policy issues. This process encourages decisionmaking and operating in an open, transparent, and accountable manner and increases opportunities for effective participation by those most directly impacted by decisions.

- NTIA is continuing efforts to make available 500 MHz of spectrum for wireless broadband use by 2020, as mandated by Presidential Memorandum. NTIA is also promoting spectrum sharing by facilitating government and industry collaboration, establishing methods to quantify Federal spectrum use, and requiring agencies to justify spectrum use between 400 MHz and 6 GHz as required, in accordance with the Presidential Memorandum of June 14, 2013 (Expanding America's Leadership in Wireless Innovation). Through collaboration with the FCC, industry stakeholders, and other agencies, NTIA has been addressing challenges related to spectrum sharing as a means to maximize efficient spectrum use. The spectrum below 6 GHz most desired for wireless broadband is already committed to a host of Federal and non-Federal users. Decisions to repurpose spectrum through relocation of incumbent users or spectrum sharing will require policymakers to weigh the potential economic and technological benefits of increased commercial broadband against the need for Federal agencies to use spectrum to achieve their missions.

- NTIA implemented the Congressional mandate, using ARRA funding, to develop a national broadband map. The map is an unprecedented, searchable, public database showing the locations of broadband Internet service, the technology used to provide the service, the maximum advertised speeds of the service, and the names of the service providers. Each new data set loaded onto the map helps educate the Nation about broadband availability and assists the public and private sectors in making decisions affecting their businesses and constituents.

Section 3.3: Progress Update

FY 14-18 Strategic Goal: EXPAND THE U.S. ECONOMY THROUGH INCREASED EXPORTS AND INWARD FOREIGN INVESTMENT THAT LEAD TO MORE AND BETTER AMERICAN JOBS. (TRADE AND INVESTMENT)

FY 14-18: Strategic Objective: 1.1: INCREASE OPPORTUNITIES FOR U.S. COMPANIES BY OPENING MARKETS GLOBALLY

Benefits:

NTIA advocates globally for foreign regulatory and policy frameworks that promote competition and innovation in the information and communications technology sector and strengthens the ability of U.S. firms to compete effectively for global trade opportunities. NTIA utilizes its policy tools in advance preparation to best position the United States in international forums as a global leader and to strengthen the ability of U.S. firms to compete effectively for global trade opportunities. In addition, NTIA pursues policies promoting international trade in communications products and services, promoting consistent international trade policy, and improving relations with countries with rapidly expanding markets. NTIA has utilized its policy expertise and strategic coordination with other governments to advocate the United States' positions and will continue to participate in and, in several cases, lead the extensive preparatory process for international and intergovernmental meetings.

FY 2014 Accomplishments:

In April 2014, NTIA participated in a global multistakeholder conference on the future of Internet Governance, Netmundial. The successful Netmundial conference hosted by Brazil brought together a wide range of stakeholders including technical experts, civil society groups, industry representatives, and government officials, all on an equal footing with each other. At this meeting, not only did participants agree that Internet governance should be built on democratic multistakeholder processes, the entire meeting was a demonstration of the open, participative, and consensus-driven governance that has allowed the Internet to develop as an unparalleled engine of economic growth and innovation.

During FY 2014, NTIA participated in the U.S. preparatory process for the International Telecommunication Union (ITU) 2014 Plenipotentiary Conference (PP-14). The Plenipotentiary Conference is the top policy-making body of the ITU and establishes the strategic direction the ITU for the time period 2015-2019. NTIA led several of the U.S. delegation working groups, in particular the Internet Working Group (IWG).

NTIA along with the State Department and FCC has been preparing U.S. proposals to World Radiocommunication Conference 2015 (WRC-15). The 2015 conference will consider spectrum requirements for uses ranging from mobile service allocations for broadband applications to controlling unmanned aircraft from space.

FY 14-18 Strategic Goal: FOSTER A MORE INNOVATIVE U.S. ECONOMY—ONE THAT IS BETTER AT INVENTING, IMPROVING, AND COMMERCIALIZING PRODUCTS AND TECHNOLOGIES THAT LEAD TO HIGHER PRODUCTIVITY AND COMPETITIVENESS. (INNOVATION)

FY 14-18: Strategic Objective: 2.3: STRENGTHEN THE NATION'S DIGITAL ECONOMY BY CHAMPIONING POLICIES THAT WILL MAXIMIZE THE POTENTIAL OF THE INTERNET, EXPANDING BROADBAND CAPACITY AND ENHANCING CYBERSECURITY.

Benefits:

NTIA seeks to protect the Internet as a tool for innovation and economic growth, increase the spectrum available for broadband services and applications, and expand broadband availability and usage so communities can maximize the economic benefits of the Internet. NTIA has used approximately $4 billion to fund grants through the Broadband Technology Opportunities Program (BTOP) to stimulate broadband demand, economic growth, and job creation.

NTIA will build upon these broadband efforts to advance U.S. communities' broadband infrastructure, adoption, and utilization by creating and sharing lessons learned and best practices resulting from the success of BTOP. To maintain the momentum generated by BTOP, NTIA will encourage communities to elevate their broadband preparedness and innovation readiness.

NTIA also advocates for policies across the U.S. Government that promote the Internet and digital economy. NTIA promotes policies that protect consumer privacy, harness the advanced computational capabilities of the Internet, ensure an open Internet, and empower communities to explore creative means to advance broadband adoption and availability. NTIA advises the President on policies that protect consumer privacy and civil liberties, while enhancing trust and the security and stability of communications infrastructure.

FY 2014 Accomplishments:

NTIA was involved in numerous activities during FY 2014 related to Internet and communications policy, including convening an interagency working group to develop a set of principles to transition the current role played by NTIA in the coordination of the Internet's domain name system (DNS). NTIA also heavily contributed to the Administration's "Big Data Report". NTIA helped craft the final report, and following its release, NTIA issued a Request For Comment to gather public input into how "big data" impacts privacy. NTIA also continued its work implementing the Administration's Consumer Data Privacy Blueprint, including covering multistakeholder meetings on facial recognition policy.

During FY 2014, NTIA continued progress identifying spectrum bands for wireless broadband, promoting greater government/industry collaboration and developing processes and capabilities to ensure compliance with Congressional spectrum mandates. Pursuant to the President's June 2010 memorandum, NTIA has identified for potential reallocation 335 megahertz of Federal spectrum to date. NTIA ensured timely preparation for a November 2014 auction by the FCC of the 1695-1710 MHz and 1755-1780 MHz bands, increasing the geographic availability while decreasing costs and the transition period.

NTIA also developed and launched a website "spectrum.gov", providing detailed information on Federal spectrum use between 225 MHz and 5 GHz, a significant information resource never before available to the spectrum community. Under the new Spectrum Monitoring Initiative, NTIA established the first remote sensor control and data backhaul capability using commercial-off-the-shelf components. The sensor, deployed near Norfolk, VA, will monitor the 3.5 GHz maritime radar band on a continuous long-term basis.

As the first collaborative research program between NTIA and NIST under the new Center for Advanced Communications, NTIA initiated the development of an application of a new propagation measurement system to assess propagation losses due to clutter (i.e., man-made structures and foliage) in support of the Advance Wireless Services-3 and 3.5 GHz rulemakings.

During FY 2014, BTOP grant recipients connected more than 25,300 total community anchor institutions, deployed more than 113,500 miles of new or upgraded network miles; and generated approximately 736,500 new broadband subscribers. In addition, the State Broadband Initiative, which funded state data collection and analyses for the National Broadband Map, released a new data set and updated the Map. NTIA also worked with states to prepare for the final data collection under the SBI in FY 2015.

NTIA continued to support the FirstNet in developing a program roadmap, which outlines steps to be taken to develop a business plan and other foundational documents needed to successfully implement a nationwide broadband public safety network. NTIA began to identify issues for inclusion in a Public Notice seeking comment on the opt-out process for states that may apply to NTIA for grants and spectrum lease agreements. The grants to states will support efforts to construct their Radio Access Networks (RANs), which must be compatible with – and comparable to – the FirstNet network for coverage within their states. NTIA will coordinate this Notice with FirstNet and the FCC. NTIA continued to monitor the State planning grants awarded to states to support their efforts to plan for the FirstNet network. All 54 grantee performance progress reports for the quarters ending December 31, March 30, and June 30 were reviewed and approved for program progress and grant compliance.

Section 3.4: *Next Steps*

For their four programs, NTIA will do the following activities during FY 2016:

Domestic and International Policies

- Lead and participate in U.S. delegations to international forums to build a global consensus on the multistakeholder approach to Internet policymaking;
- Advocate for transparent, accountable management of the Internet DNS, including representing the United States in ICANN's Governmental Advisory Committee;
- Convene open, transparent, consensus-based meetings of stakeholders who are interested in developing codes of conduct and best practices to improve consumer privacy protections;
- Analyze and develop policy positions on emerging information and communications policy issues, such as network neutrality and the Internet protocol transition;
- Advance public dialogue and policies related to broadband advancement through data gathering and analysis on the digital economy, community broadband, and regional deployments, such as those in the arctic;
- Convene multistakeholder processes and promote policy action on critical issues to the Internet and digital economy, such as digital copyright, mobile devices and applications, cybersecurity, and the free flow of information;
- Work with law enforcement and national security agencies to assess whether changes to electronic surveillance statutes are necessary to promote Internet innovation and preserve consumer trust in the Internet;
- Provide training to representatives of foreign communications regulators through USTTI and the DDLP and other appropriate venues;
- Assist in coordination with the Minority Business Development Agency (MBDA) to identify strategic partnership prospects in emerging economies to advance the Administration's Internet governance goals and that promote MBDA's export initiatives; and

Spectrum Management

- Develop and/or update and publish information describing Federal spectrum management processes and Federal agencies' use of spectrum. Respond to requests from Congress and other sources for specific information about Federal operations;
- Plan and conduct at least three NTIA spectrum training courses and seminars for U.S. and foreign spectrum managers, to include participation in the United States Telecommunications Training Institute (USTTI);
- Participate in and contribute to other international forums dealing with radio spectrum issues, such as the North Atlantic Treaty Organization (NATO) Joint Civil/Military Committees, the International Civil Aviation Organization, and the International Maritime Organization;
- Coordinate Federal Government positions and proposals to be submitted to international forums involved in spectrum management matters;
- Review Federal space systems for compliance with national requirements, register Federal satellite networks with the ITU, and coordinate with foreign administrations and domestic operators to protect Federal satellite services from harmful interference;
- Identify regulatory and procedural barriers to the timely and global implementation of U.S. innovations in radiocommunication technologies and services and recommend methods to remove these barriers;

- Engage with the FCC, Federal agencies, and licensees to ensure a timely and successful transition of the AWS-3 (1695-1710 MHz and 1755-1780 MHz) bands, to include facilitating spectrum sharing during the transition period or indefinitely for identified systems and locations. Develop and publish annual report on Federal agencies' progress to transition systems;
- Engage with the FCC, Federal agencies and commercial broadband providers in carrying out rule changes to allow consumer access to 3550-3650, 5350-5470 and 5850-5925 MHz bands;
- Use spectrum quantification assessments to enable increased spectrum access by commercial broadband providers to Federal spectrum (2013 Presidential Memorandum);
- Chair the Interdepartment Radio Advisory Committee (IRAC), its subcommittees, and ad hoc groups to coordinate spectrum use, review spectrum plans, develop Federal technical standards, perform emergency planning, support satellite registration and coordination, prepare for international conferences, and develop frequency coordination arrangements with Canada and Mexico;
- In consultation with the IRAC, process requests by Federal agencies for frequency assignment and spectrum certification actions. Evaluate proposed Federal radio-communications systems for certification of spectrum support in accordance with OMB Circular A-11;
- Participate in the negotiation of spectrum coordination agreements and spectrum-sharing protocols with Mexico and Canada, as well as participate in the Joint Commission on Resolution of Radio Interference (CMERAR), to resolve cases of harmful interference between radio stations in the United States and Mexico;
- Coordinate requests for radio frequency assignments in the United States/Canadian border area in order to ensure interference-free operations in both the United States and Canada;
- Perform technical studies to identify spectrum that can be made available (through relocation or sharing) for commercial licensed and unlicensed wireless broadband services. Develop technical recommendations and approaches to support required policy and regulatory changes;
- Carry out actions related to the Strategic Plan for Federal Spectrum Management; and
- Promote government/industry collaboration on spectrum management matters.

Advanced Communications Research:

- Build additional sensors to expand the spectrum monitoring system;
- Continue to develop methods and techniques for improving the accuracy and utility of electromagnetic compatibility studies to characterize the emissions of different communications devices and spectrum measurements to characterize the radio space in which they operate;
- Enhance spectrum utilization through interference analysis, prevention, and mitigation;
- Improve the performance of communications networks by developing and validating radiowave propagation prediction standards for spectrum coordination;
- Assess radio network performance for critical new areas including Internet multimedia conferencing, advanced television, and wireless services; and

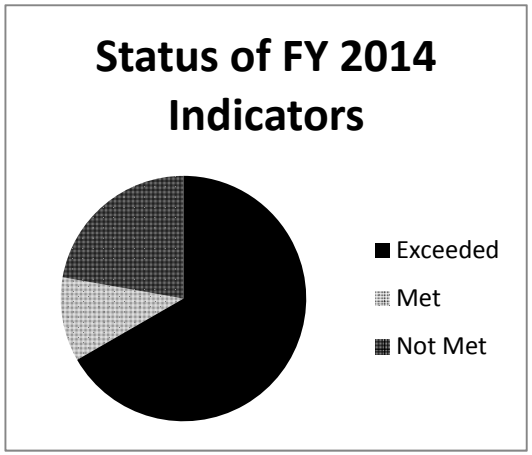
- Manage the Table Mountain Field Site and Radio Quiet Zone, which is one of only two sites in the country regulated to prevent the transmissions of powerful signals over the site, and currently the only one consistently available for use by private industry to test and evaluate promising new communications technologies.

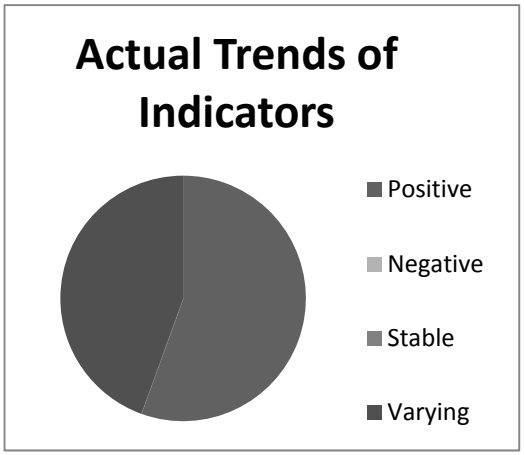
Broadband Programs:

- Ensure an efficient closeout of the remaining BTOP grants. NTIA will ensure that recipients comply with all grant terms and conditions, including the appropriate filing of UCC-1 forms that document the Federal interest in grant-funded property;
- Offer online and in-person technical assistance in FY 2016 to stakeholder groups and individual communities that request assistance or information from NTIA's team. NTIA will also link communities with existing Federal resources across the government (e.g., SmartGrid, economic development) to build their broadband capacity and result in long-term economic return in these communities;
- Continue to evaluate the national broadband benchmarks it established during FY 2015 and work with stakeholders to establish metrics to measure the level of economic growth for communities that meet these benchmarks; and
- Broaden efforts with our stakeholders that build on the demonstrable outcomes and best practices of the recent public and private broadband investments that have together raised the levels of broadband availability and adoption across much of the country. This public-private engagement will help communities participate more effectively in the Internet-based economy.

Part 4 Performance Goals / Indicators

Section 4.1: Summary of Performance





Status is based on the following standard:

Exceeded	More than 100 percent of target
Met	90 - 100 percent of target
Not Met	Below 90% of target

An indicator with a positive trend is one in which performance is improving over time while a negative trend is an indicator that has declining performance. A stable trend is one in which the goal is to maintain a standard, and that that is occurring. A varying trend in one in which the data fluctuates too much to indicate a trend. At a minimum these indicators must have three years of data.

Section 4.2: Summary of Indicator Performance

Objective 1.1: Increase opportunities for U.S. companies by opening markets globally

Indicator	Target	Actual	Status	Trend
Percentage of NTIA positions substantially adopted or successful at international meetings	75% of NTIA positions substantially adopted/ successful at international meetings	Exceeded target of 75 % by meeting 95% of NTIA positions substantially adopted/ successful at international meetings	Exceeded	Positive

Objective 2.3. Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity

Indicator	Target	Actual	Status	Trend
Recurring				
Identify up to 500 MHz of spectrum to support commercial broadband services or products	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Exceeded goal of 66% by achieving 100% of annual milestones regarding the identification of 500 MHz for wireless broadband	Exceeded	Positive
In coordination with DOC operating units, number of outreach activities with government, industry and multi-stakeholder groups to identify and address privacy and global free flow of information issues (forums and proceedings)	6	9 multistakeholder meetings	Exceeded	Not enough data
Miles of broadband networks deployed (Infrastructure Projects) (Agency Priority Goal)	115,000	113,555	Met	Positive
Community anchor institutions connected (Infrastructure Projects) (Agency Priority Goal)	23,000	25,391	Exceeded	Positive
Number of times research publications are downloaded annually	7,000	7,707	Exceeded	Not enough data
Successfully completed deliverables under reimbursable agreements (on time, on budget, and accepted)	>95%	>98%	Met	Not enough data
Delivery by FirstNet and acceptance of each state's network plan or, alternatively, FCC approval of a state's plan required for the implementation of the Public Safety Broadband Network	Issue Requests for Proposals	Consultation with Regional, State, Tribal and Local Jurisdictions initiated. Two additional RFIs, including the key RFI for Comprehensive Network Solution(s), and the Draft Comprehensive Statement of Objectives (SOO) were issued.	Not Met	Not enough data

Non-recurring				
New household and business subscribers to broadband (Sustainable Broadband Adoption Projects) (Agency Priority Goal)	670,000	736,489	Exceeded	Positive

Section 4.3: Detailed Indicator Plans and Performance

Trade and Investment Objective 1.1: Increase opportunities for U.S. companies by opening markets globally.

Indicator	**Percentage of NTIA positions substantially adopted or successful at international mee**
Description	NTIA will promote acceptance of U.S. positions and proposals internationally by representing U.S. interests at treaty-making conferences, regional communications conferences and meetings, bilateral and multilateral meetings, and multi-stakeholder meetings and conferences. This measure tracks the number of accepted U.S. technical and policy positions and proposals to international treaty-making conferences, bilateral and multilateral meetings, multi-stakeholder meetings, and regional communications conferences and meetings.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	75% 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	75% 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
Actual	N/A	N/A	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	>80% of NTIA positions substantially adopted/ successful at international meetings	Exceeded target of 75 % by meeting 95% of NTIA positions substantially adopted/ successful at international		

						meetings		
Status	N/A	N/A	Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Positive							
Validation and Verification								
Data Source	Office of International Affairs (OIA)							
Frequency	Monthly, Annually							
Data Storage	OIA, Associate Administrators							
Internal Control Procedures	NTIA document clearance process, OMB/Interagency clearance process							
Data Limitations	None							
Actions to be Taken	None							

Objective 2.3. Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity.

Indicator	**Identify up to 500 MHz of spectrum to support commercial broadband services or products**							
Description	NTIA is undertaking tasks, in response to the June 28, 2010 Presidential Memorandum and in collaboration with the Federal Communications Commission (FCC), to make available a total of 500 MHz (in bandwidth) of spectrum to support wireless broadband services or products by 2020. NTIA, with input from other Federal agencies and the FCC, developed a Ten-Year Plan and Timetable, identifying over 2,200 MHz of spectrum for evaluation. As this work has progressed, the band analysis process continues, but much of the effort has turned toward implementation of bands that NTIA and/or the FCC have identified. The combination of the ongoing analysis and implementation of band-repurposing results in a new set of deliverables each fiscal year. NTIA will establish at the beginning of each fiscal year the set of expected deliverables to complete this complex project.							
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	Meet 66% of annual milestones regarding the identification of	Meet 66% of annual milestones regarding the identification of	Meet 66% of annual milestones regarding the identification of	Meet 66% of annual milestones regarding the identification of 500	Meet 66% of annual milestones regarding the identification of

				500 MHz for wireless broadband	500 MHz for wireless broadband	500 MHz for wireless broadband	MHz for wireless broadband	500 MHz for wireless broadband
Actual	N/A	N/A	N/A	Exceeded goal of 66% by achieving 85% of annual milestones regarding the identification of 500 MHz for wireless broadband	Exceeded goal of 66% by achieving 100% of annual milestones regarding the identification of 500 MHz for wireless broadband	Exceeded goal of 66% by achieving 100% of annual milestones regarding the identification of 500 MHz for wireless broadband		
Status	N/A	N/A	N/A	Exceeded	Exceeded	Exceeded		
Trend	Positive							

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

Indicator	**In coordination with DOC operating units, number of outreach activities with government, industry and multistakeholder groups to identify and address privacy and global free flow of information issues**
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 2015.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	N/A	N/A	6 public forums and proceedings	6 public forums and proceedings	6 public forums and proceedings

Actual	N/A	N/A	N/A	N/A	N/A	9 multistakeholder meetings		
Status	N/A	N/A	N/A	N/A	N/A	Exceeded		
Trend	Not enough data							

Validation and Verification	
Data Source	Office of Policy Analysis and Development
Frequency	Quarterly
Data Storage	NTIA website
Internal Control Procedures	Inspection of data
Data Limitations	None
Actions to be Taken	None

Indicator	**Miles of broadband networks deployed (Infrastructure Projects) (Agency Priority Goal)**
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 indicator'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. As in FY 2014, NTIA will continue to administer in FY 2015 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.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	10,000	50,000	100,000	115,000	118,000	Retired
Actual	N/A	N/A	29,191	78,699	111,361	113,555		
Status	N/A	N/A	Exceeded	Exceeded	Exceeded	Met		
Trend	Positive							

Explanation (if not met in FY 2014)	The network miles indicator has lagged behind the target for the last two quarters of FY 2014, primarily due to deployment challenges, delays associated with environmental reviews, and delays with construction permitting.
Actions to be taken / Future Plans	NTIA expects to meet its overall target by the end of the program in 2015.
Adjustments to targets	NTIA had previously defined FY 2013 and "end of program" targets for BTOP, based on expected

	performance of the BTOP portfolio. However, NTIA had not previously developed specific FY 2014 and FY 2015 targets, since individual projects were only recently extended into FY 2014 and FY 2015. The revised targets for Miles of Broadband Networks Deployed are based on NTIA's insight into the expected actual performance of BTOP projects as these grants are closed out.

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

Indicator	**Community anchor institutions connected (Infrastructure Projects) (Agency Priority Goal)**
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. As in FY 2014, NTIA will continue to administer in FY 2015 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.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	3,000	10,000	18,000	23,000	23,500	Retired
Actual	N/A	N/A	4,163	11,246	20,325	25,391		
Status	N/A	N/A	Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Positive							
Actions to be taken / Future Plans	This indicator is being retired because NTIA will have met its final target.							
Adjustments to targets	NTIA previously defined FY 2013 and "end of program" targets for BTOP, based on expected performance of the BTOP portfolio. However, NTIA had not previously developed specific FY14 and FY15 targets, since individual projects were only recently extended into FY 2014 and FY 2015. The revised targets for Community Anchor Institutions Connected are based on NTIA's insight into the expected actual performance of BTOP projects as these grants move through closeout.							

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

Indicator	**Increase in communities to which NTIA provides technical assistance**							
Description	Among the communities that were not able to receive NTIA assistance during the BTOP grant period, various communities now will be able to take advantage of NTIA's technical expertise during NTIA's subsequent outreach program, thereby leveraging the expansion of broadband. This performance metric measures the additional communities that NTIA still can assist now that grant funding no longer exists.							
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	N/A	N/A	N/A	175 communities *	250 communities*
Actual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Status	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
* Not cumulative								
Trend	Not enough data							
Notes	This is a new performance indicator beginning in FY 2015.							
Validation and Verification								
Data Source	Varies, including attendance at NTIA workshops, direct technical assistance, product downloads							
Frequency	Quarterly							
Data Storage	TBD							
Internal Control Procedures	N/A							
Data Limitations	Limitations on data collections							
Actions to be Taken	Collection of data							

Indicator								
Description	Telecommunications engineering research publications are used by engineers and scientists associated with industry, other government agencies, standards development organizations, and academia for technical data and information to support efficient and effective management of spectrum and innovative use of new technologies.							
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	N/A	N/A	7,000	7,300	7,500
Actual	N/A	N/A	N/A	N/A	N/A	7,707		
Status	N/A	N/A	N/A	N/A	N/A	Exceeded		
Trend	Not enough data							
Adjustments to targets	FY 2015 and FY 2016 targets adjusted upward to reflect trend. (FY 2013 baseline was 7,174.)							
Notes	This is a new metric using new methodology; FY 2013 has established the baseline.							
Validation and Verification								
Data Source	Google Analytics							
Frequency	Annually							
Data Storage	Inspection							
Internal Control Procedures	None							
Data Limitations	None							
Actions to be Taken	None							

Indicator	**Successfully completed deliverables under reimbursable agreements (on time, on budget, and accepted)**							
Description	NTIA's laboratory performs research on a cost-reimbursable basis for other Federal agencies under interagency agreements (IAAs) and for private entities under CRADAs. As a proxy for customer satisfaction with research performed under an aggregate of unique agreements, the laboratory tracks as "Met/Not Met" three success parameters for each deliverable under all agreements: on time, on budget, and accepted. The metric reports the percent of total parameters (total number of deliverables under all MOUs × three parameters for each) that are reported as "Met."							
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	N/A	N/A	>95%	>95%	>95%
Actual	N/A	N/A	N/A	N/A	N/A	98%		
Status	N/A	N/A	N/A	N/A	N/A	MET		

Trend	Not enough data
Notes	Inter-Agency Agreements with two customers were renegotiated at the customer's request to end early, prior to the due date of scheduled deliverables, which were therefore counted as not met.
Validation and Verification	
Data Source	NTIA Institute for Telecommunication Sciences' Project Plans
Frequency	Quarterly, Annually
Data Storage	Inspection
Internal Control Procedures	None
Data Limitations	None
Actions to be Taken	None

dicator	**Delivery by FirstNet and acceptance of each state's network plan or, alternatively, FCC approval of a state's plan required for the implementation of the Public Safety Broadband Network**
Description	Under Title IV Subtitle B of the Middle Class Tax Relief and Job Creation Act of 2012, FirstNet must deliver to each state governor (or his designee) a plan for the construction, operation, maintenance and improvement out of the nationwide, interoperable broadband network in the state upon completion of a Request for Proposal (RFP) process. Upon delivery of the plan, each State and territory must choose whether to participate in the network deployment as proposed by FirstNet or conduct its own deployment of a radio access network in the State (opt-out). States seeking to opt-out must first obtain permission to do so by the Federal Communications Commission. If successful in opting out, these states must still comply with network standards developed by FirstNet.

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Target	N/A	N/A	N/A	N/A	Issue RFPs	Issue RFPs	RFP Development and Consultation with Regional, State, Tribal and Local Jurisdictions	Issue RFPs
Actual	N/A	N/A	N/A	N/A	Issuance of 11 Requests for Information (RFIs).	Consultation with Regional, State, Tribal and Local Jurisdictions initiated. Two additional RFIs, including the key RFI for Comprehensive Network Solution(s), and the Draft Comprehensive Statement of Objectives (SOO) were issued.		
Status				N/A	Not Met	Not Met		
Trend	Not enough data							
Explanation (if not met in FY 2014)	Issuance of the RFPs was delayed to enable consultation with regional, state, tribal and local jurisdictions. Focus on draft SOO and detailed RFI to ensure a well planned acquisition process.							
Actions to be taken / Future Plans	FirstNet has initiated an aggressive schedule for consultation with the regional, state, tribal, and local jurisdictions and plans to issue a draft RFP for a comprehensive network solution in the March 2015 timeframe.							
Adjustments to targets	Issuance of the final RFP for a comprehensive network is expected by early FY 2016.							
Validation and Verification PLEASE PROVIDE, OTHERWISE STATE WHY NOT PROVIDED								

Data Source	Internal Documents
Frequency	N/A
Data Storage	N/A
Internal Control Procedures	N/A
Data Limitations	N/A

Non-Recurring Indicators

cator	New household and business subscribers to broadband (Sustainable Broadband Adoption Projects) (Agency Priority Goal)					
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.					
	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Target	N/A	N/A	100,000	350,000	600,000	670,000
Actual	N/A	N/A	210,213	522,981	629,175	736,489
Status	N/A	N/A	Exceeded	Exceeded	Exceeded	Exceeded
Trend	Positive					
Adjustments to targets	NTIA adjusted its targets upward for FY 2015 based on recipient performance through FY 2013. The revised targets for New Household and Business Subscribers to Broadband are based on NTIA's insight into the expected actual performance of BTOP projects as these grants move through closeout. All of the grant performance must be complete by September 30, 2016, therefore, NTIA retired the targets for FY 2016.					
Notes	This indicator is being retired because NTIA will have met its final target					
Validation and Verification						
Data Source	Grantee reports					
Frequency	Quarterly					

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

Part 5: Other Indicators

None.

Part 6: Agency Priority Goals

See Performance.gov. for the Agency Priority Goal Statement, Goal Leader, Strategies and Indicators.

Progress Update

To date, BTOP grantees have exceeded their program targets for Community Anchor Institutions (CAIs) , and Broadband Subscribers. The Network Miles indicator has lagged behind target for the last two quarters, primarily due to deployment challenges, delays associated with environmental reviews, and delays with construction permitting. However, NTIA expects to meet its overall target by the end of the program in 2015. In addition, 204 grantees have completed their projects or are in the closeout process. (NOTE: Final third-quarter FY 2014 data from BTOP grantees will be available in early September.)

During this reporting period, BTOP grant recipients continued to deploy infrastructure in 12 states. This is a substantial reduction from previous quarters, since most grant recipients have completed deployment and are in the process of closing-out their awards. Many local and regional communities are already realizing the initial benefits of new and improved broadband delivered by BTOP-funded projects. BTOP projects are significantly increasing broadband capacity to more than 7,600 local and regional communities across the country. These connections, many to a gigabit or more, provide a platform for new and expanding innovations in many fields, including health care, manufacturing, and education.

Next Steps

Since BTOP is nearing completion, NTIA staff continues to work closely with grantees to ensure that projects wrap up on time and within budget and delivers the promised broadband benefits to the communities they serve. For the remaining infrastructure projects, the focus is on overcoming challenges that will permit them to complete construction, test, and then activate their BTOP-funded broadband networks. To accomplish these objectives, NTIA staff performs extensive and diligent oversight and provides technical assistance to grant recipients, ensuring projects meet their milestones and protecting taxpayer funds. NTIA is also working closely with the NOAA and NIST grants officers to accelerate the closeout period and bring completed grant projects to closure more rapidly.

NTIA oversees projects in a number of ways. Staff remains in close and frequent contact with award recipients via regularly scheduled conference calls, email exchanges, drop-in calls on specific administrative or programmatic topics, and in-person conferences. These contacts serve as a means to reinforce the terms and conditions associated with each award and help ensure that NTIA quickly addresses challenges that arise. Additionally, recipients must report quarterly and annually to NTIA on key financial and programmatic activities. These reports are posted publicly and provide detailed information on progress in achieving program outcomes, use of funds, challenges faced, and expected future progress.

NTIA's planned actions include:

- Continue monitoring and oversight activities, and provide technical assistance and other support to projects that continue their implementation and deployment efforts:
  - 15 infrastructure projects, representing $243.9 million in remaining Federal obligations;
  - 3 public computing center projects representing $2.6 million in Federal obligations; and
  - 2 sustainable broadband adoption projects representing $972,000 in Federal obligations.

- Partner with the NOAA grants office to coordinate and complete closeout activities associated with the 69 infrastructure projects in their closeout period, which NOAA administers for NTIA.

- Partner with the NIST grants office to coordinate and complete closeout activities associated with the 48 public computing center and sustainable broadband adoption projects in their closeout period, which NIST administers for NTIA.

- Continue ongoing monitoring of compliance with the Federal interest, open-access, and other post-grant obligations of the 32 infrastructure, 38 public computing center, and 17 sustainable broadband adoption projects that have closed out their grants.

Also, NTIA has contracted with ASR Analytics, LLC to conduct an evaluation of BTOP's social and economic impacts. This study will assess the short- and long-term economic gains in grant-funded communities. ASR has completed the case studies for 8 BTOP Public Computing Center (PCC) projects and 7 BTOP Sustainable Broadband Adoption (SBA) projects. Case studies of 12 broadband infrastructure grant recipients have also been completed. ASR is now drafting its Final Report, which summarizes the benefits and outcomes of BTOP. That report is expected to be released late in 2014.

Section 6.6: Contributing Programs

NTIA's Broadband Programs, housed in the Office of Telecommunication and Information Applications, contributes to three Agency Priority Goals, which fall under the Department-wide Innovation Goal. NTIA's Assistant Administrator is the Goal Lead. The three Agency Priority

Goals are:

- Miles of broadband networks deployed;
- Community anchor institutions connected; and
- New household and business subscribers to broadband.

Part 7: Resource Requirements Table

	FY 2009 Actual	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Enacted	FY 2016 Base	Increase/ Decrease	FY 2016 Request
Performance Objective 1.1. Increase opportunities for U.S. companies by opening markets globally.										
Salaries & expenses	**2,141**	**2,385**	**2,746**	**2,996**	**2,572**	**1,417**	**3,797**	**3,723**	**3,281**	**7,004**
Domestic and international policies	2,141	2,385	2,746	2,996	2,572	1,417	3,797	3,723	3,281	7,004
Subtotal, Objective 1.1	**2,141**	**2,385**	**2,746**	**2,996**	**2,572**	**1,417**	**3,797**	**3,723**	**3,281**	**7,004**
FTE	**10**	**11**	**12**	**13**	**14**	**11**	**15**	**15**	**5**	**20**
Performance Objective 2.3. Strengthen the Nation's digital economy by championing policies that will maximize the potential of the Internet, expanding broadband capacity, and enhancing cybersecurity.										
Salaries & expenses	**50,631**	**55,467**	**89,370**	**81,657**	**77,093**	**84,605**	**98,291**	**79,238**	**5,542**	**84,780**
Domestic and international policies	2,140	2,385	2,745	2,995	2,571	4,721	4,458	4,370	3,853	8,223
Spectrum management	32,191	35,870	45,245	37,228	34,963	40,304	52,276	43,240	0	43,240
Advanced Communications Research	14,159	14,827	16,838	14,048	12,531	15,239	24,547	15,527	4,828	20,355
Broadband Programs	0	0	21,796	24,390	24,456	24,341	17,010	16,101	(3,139)	12,962
Spectrum Sharing and Monitoring	0	0	0	0	0	0	0	0	0	0
Digital Television Transition and Public Safety Fund	593,842	54,059	57,955	18,555	0	0	0	0	0	0
Broadband Technology Opportunities Program (ARRA)	77,477	4,287,827	0	0	0	0	0	0	0	0
Grants	325	4,248,380	0	0	0	0	0	0	0	0
Program management	77,152	39,447	0	0	0	0	0	0	0	0
Digital To Analog Converter Box Program (ARRA)	418,341	1,258	0	0	0	0	0	0	0	0
Public Telecommunications Facilities, Planning, and Construction	20,943	22,914	1,210	1,298	526	347	1,023	0	0	0
Grants	19,005	21,182	0	0	0	0	0	0	0	0
Program management	1,938	1,732	1,210	1,298	526	347	1,023	0	0	0
Information Infrastructure Grants	205	101	170	64	55	223	407	0	0	0
Grants	0	0	0	0	0	0	0	0	0	0
Program management	205	101	170	64	55	223	407	0	0	0
Subtotal, Objective 2.3	**532,674**	**4,329,411**	**41,501**	**43,462**	**38,826**	**85,176**	**99,721**	**79,238**	**5,542**	**84,780**
FTE	**252**	**287**	**273**	**256**	**243**	**240**	**291**	**290**	**14**	**304**
Total Discretionary	**567,597**	**4,367,567**	**90,750**	**83,019**	**77,674**	**86,593**	**103,518**	**82,961**	**8,823**	**91,784**
Direct	534,814	4,331,796	44,246	46,457	41,397	44,905	44,309	40,409	8,823	49,232
Reimbursable	32,783	35,771	46,504	36,562	36,277	41,688	59,209	42,552	0	42,552
Mandatory	593,842	54,059	57,955	18,555						
Total Funding	**1,161,439**	**4,421,626**	**148,705**	**101,574**	**77,674**	**86,593**	**103,518**	**82,961**	**8,823**	**91,784**
Total FTE	**262**	**298**	**285**	**269**	**257**	**251**	**306**	**305**	**19**	**324**

Part 8: Other Information

Section 8.1: *Major Management Priorities, Challenges, and Risks*

The tremendous growth in demand for wireless broadband by consumers, businesses, and government agencies, and two recent Presidential Memorandums require NTIA to reassess its management of the nation's Federal airwaves. NTIA in conjunction with the FCC will work to recover and reallocate spectrum, update spectrum policies, and provide adequate incentives and assistance to enable Federal agencies or affected entities to make up to 500 MHz (in bandwidth) available for commercial use, in accordance with the President's National Wireless Initiative and the Presidential Memorandum of June 28, 2010 (*Unleashing the Wireless Broadband Revolution*). In addition, NTIA will promote spectrum sharing by facilitating government and industry collaboration, establishing methods to quantify Federal spectrum use, and requiring agencies to justify spectrum use between 400 MHz and 6 GHz as required, in accordance with the Presidential Memorandum of June 14, 2013 (*Expanding America's Leadership in Wireless Innovation*).

NTIA's responsibilities in FY 2016 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.

In its November 25, 2013 report, the Department of Commerce's Office of Inspector General (OIG) identified the following NTIA management issues:

- Due to limited remaining spectrum capacity, the NTIA must open up more commercial wireless broadband spectrum.
- NTIA faces several challenges in establishing the Public Safety Broadband Network and overseeing the First Responder Network Authority.
- NTIA should improve the BTOP closeout policies and procedures, ensure consistent implementation of those policies and procedures in place, as well as ensure that the Federal government's interest in BTOP property is protected.

NTIA is committed to addressing several of the Nation's most pressing needs, such as spectrum access for wireless broadband and enhancing public safety. NTIA understands the OIG's concerns and is working diligently to make spectrum available and to improve spectrum sharing consistent with the President's initiatives. In 2013, NTIA signed an agreement with NIST to work together to establish a joint Center for Advanced Communications to promote spectrum sharing and advance public safety applications. NTIA continues to move forward to fulfill the President's goal of 500 megahertz for wireless broadband by increasing collaborative interaction and greater information sharing between industry and government, including through working groups of the Commerce Spectrum Management Advisory Committee.

As FirstNet continues to ramp up its operations, NTIA is assisting FirstNet by providing ongoing support for FirstNet's staffing, contracting, and planning activities, as well as its outreach and consultations with Federal, state, local, territorial and tribal entities, and first responders. NTIA

also is sharing expertise acquired from establishing prior programs such as BTOP, the Public Safety Interoperable Communications (PSIC) grant program, and the 9-1-1 grant program. NTIA is administering the State and Local Implementation Grant Program (SLIGP), which supports state, regional, tribal, and local jurisdictions' consultations with FirstNet on the deployment of the nationwide public safety broadband network. FirstNet has negotiated spectrum leases with several BTOP grantees to enable the integration of these grant-funded public safety broadband projects into the nationwide public safety broadband network.

NTIA also remains committed to monitoring BTOP recipients' compliance with grant award terms and achievement of intended benefits and has taken several steps to strengthen the BTOP closeout process. First, NTIA has put additional project management resources toward ensuring that the closeout process proceeds more efficiently. Second, NTIA has held (and continues to hold) bi-weekly calls with NIST and NOAA on closeout-related issues. Third, NTIA has worked with NIST and NOAA to implement a procedure to send a letter to recipients whose awards have closed to remind the recipients of their ongoing obligations with respect to equipment funded under the award, including ongoing inventory management and Federal security interest requirements. Fourth, in March 2014, NTIA released a fact sheet for recipients on their obligations with respect to equipment purchased under a BTOP award and treatment of undeployed equipment and supplies. Finally, during calendar year 2014, NTIA held five closeout office hour sessions where recipients could freely ask questions of senior BTOP staff members and closeout team members. NTIA's Federal Program Officers also continue to be available to their recipients to assist with closeout-related questions and resolve issues. NTIA is committed to obtaining and reviewing all required closeout documentation, determining that all award activity has been completed, and reviewing whether grantees complied with pertinent laws and regulations.

As Assistant Secretary for Communications and Information, Larry Strickling is the NTIA bureau official responsible for these management challenges.

Section 8.2: Cross-Agency Priority Goals / Collaborations

NTIA contributes to the 4G Cross-Agency Goal aimed at ensuring 4G broadband coverage for 98% of Americans by 2016. NTIA is collaborating with the FCC to make available a total of 500 megahertz of Federal and non-Federal spectrum over 10 years for mobile and fixed wireless broadband use. NTIA also is working with the FCC and the State Department to prepare the U.S. proposals to World Radiocommunication Conference 2015 (WRC-15). The conference in 2015 will consider spectrum requirements for uses ranging from mobile service allocations for broadband applications to controlling unmanned aircraft from space.

Section 8.3: Evidence Building

NTIA applied existing research to formulate strategies and to improve its programs' performance. The following were used to inform NTIA's strategic planning process:

- Exploring the Digital Nation: America's Emerging Online Experience. NTIA and ESA, June 2013.
- Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband. NTIA, October 2010.
- Copyright Policy, Creativity, and Innovation in the Digital Economy. Internet Policy Task Force, July 2013.
- Preliminary Cybersecurity Framework. NIST, February 2013.
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Section 8.4: *Hyperlinks:* N/A.

Section 8.5: *Data Validation and Verification*

The FY 2014 Summary of Performance and Finance Information includes in the Secretary's Statement, an assessment of the reliability and completeness of the Department's performance data.

Section 8.6: *Lower-Priority Program Activities*

The President's Budget identifies the lower-priority program activities, where applicable, as required under the GPRA Modernization Act, 31 U.S.C. 1115(b)(10). The public can access the volume at: http://www.whitehouse.gov/omb/budget.