

U.S. DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

FY 2019 Budget as Presented to Congress



February 2018

DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Budget Estimates, Fiscal Year 2019
Budget as Presented to Congress

Exhibit 1

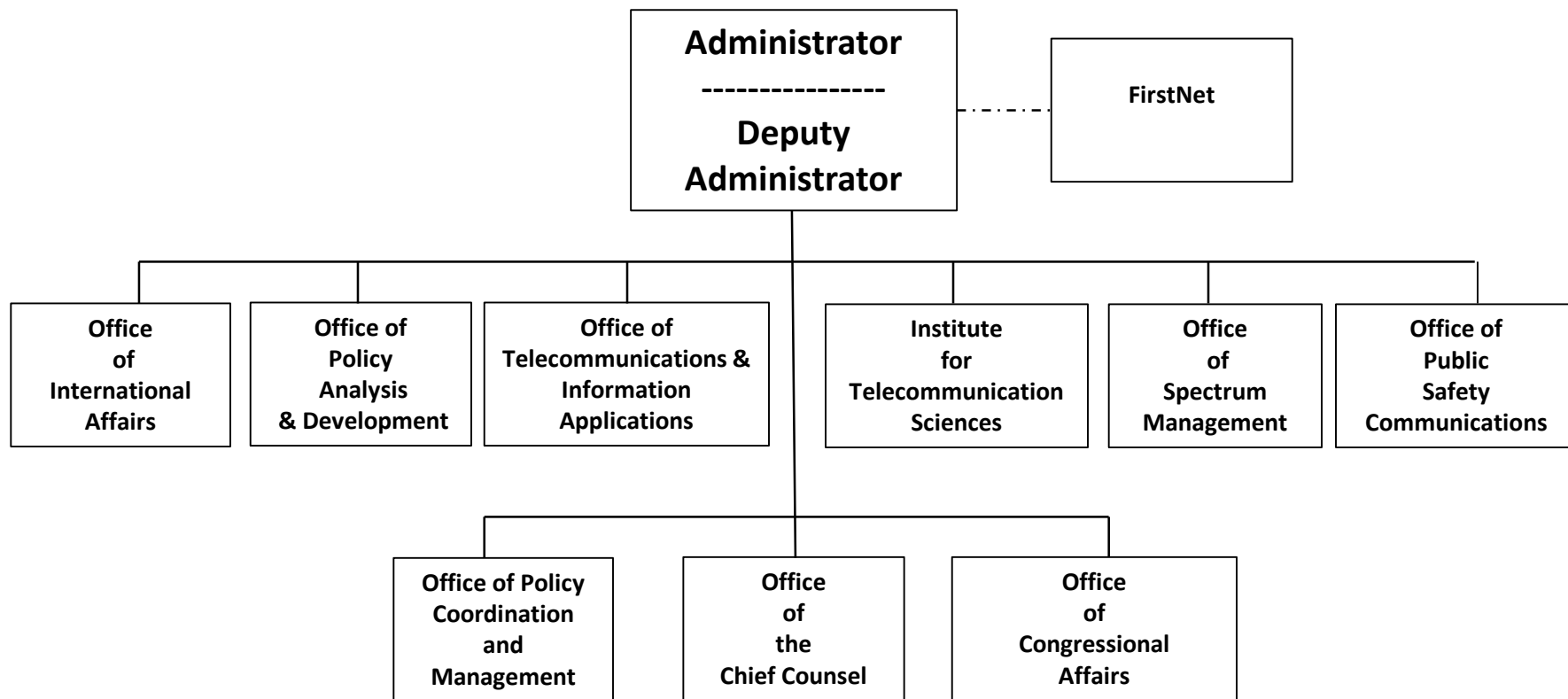
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U.S. DEPARTMENT OF COMMERCE

National Telecommunications & Information Administration



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National Telecommunications and Information Administration
Fiscal Year 2019 Executive Summary
Salaries and Expenses

Exhibit 3

The National Telecommunications and Information Administration's (NTIA) 2019 Budget Request totals \$33.6 million. The budget request supports the critical role advising the President on communications and information policy issues. NTIA's programs and policymaking focus on expanding the availability of spectrum for all users, managing core spectrum programs effectively and efficiently, and identifying innovative approaches to increase spectrum access and sharing opportunities. Additionally, this Budget provides the resources to ensure that the Internet remains an engine for continued economic growth, which promotes a 21st century Internet economy in rural communities, and expands broadband Internet access and adoption in America.

Spectrum Management. NTIA's spectrum management program funding for 2019 totals \$43.9 million and 151 positions. The tremendous growth in demand for wireless broadband by consumers, businesses, and government agencies requires innovative approaches to increase spectrum access to commercial and Federal users. NTIA continues to support the commercial sector's development of next generation wireless services by evaluating and ensuring the efficient use of spectrum by Government users, recommending reallocation for commercial use where possible, and promoting sharing between commercial and government users. The agency promotes the best possible and most efficient use of the nation's limited spectrum resources across the Federal Government to satisfy the congressionally mandated missions of all Federal agencies in support of national defense, homeland security, law enforcement, and public safety. Working with the Federal Communications Commission (FCC), NTIA coordinates international and domestic spectrum access requirements, identifies and reallocates spectrum bands for commercial use, updates spectrum policies, and develops long-range spectrum management plans. NTIA collaborates with the State Department and other interested agencies to advance U.S. interests and positions related to international spectrum issues, conferences, and negotiations. To promote efficient use of the electromagnetic spectrum, the Budget proposes to authorize NTIA to negotiate leases with private entities that would expand their access to Federal spectrum. This authority will complement ongoing efforts to make Federal spectrum available for commercial uses through auctions conducted by the Federal Communications Commission.

In addition, in an effort to better define and validate the spectrum fee structure, NTIA is currently conducting a review of spectrum management costs, functions and allocations. The review began in October 2017 and will conclude in FY 2019 with implementation of a new fee structure beginning in FY 2020. This review may impact the level of fees charged to Agencies in the FY 2020.

Advanced Communications Research. NTIA's advanced communications research program funding for 2019 totals \$18.6 million and 90 positions. Communications research plays a critical role identifying innovative approaches to increase spectrum access and sharing opportunities. This request includes resources for NTIA's Institute for Telecommunication Sciences (ITS) which provides scientific research on spectrum capability, spectrum management approaches (e.g., spectrum sharing) and spectrum-

enabled technology development and testing for both Federal agencies and private industry partners. NTIA has a statutory directive to further scientific knowledge related to telecommunications, particularly with respect to radio spectrum. NTIA is expanding collaborative research and development in advanced communications technologies to support commercial and government applications. This work will advance research, development, testing, and evaluation to enhance wireless efficiencies.

Domestic and International Policies. NTIA's policy program funding in 2019 totals \$8.1 and 33 positions. The Internet is the greatest engine of communications and commerce the world has ever known. NTIA's domestic and international policies work to preserve the Internet's openness and its cultural and economic potentials while advancing key U.S. interests. NTIA coordinates Executive Branch communications policy and represents the Administration's policy to independent agencies such as the Federal Communication Commission (FCC) and the Federal Trade Commission (FTC). NTIA policy must be positioned to meet the growing complexity of the Internet environment, as the world becomes more interconnected via rapid growth of the Internet, the globalization of information technology services and equipment, and as governance of the Internet becomes an increasingly geopolitical issue. The 2019 President's Budget Request continues to support the United States leadership on these broad range of Internet policy issues. Utilizing the multistakeholder process, which involves the full inclusion of stakeholders, to reach general consensus on internet policy issues (e.g., consumer data privacy, cybersecurity, digital copyright), NTIA will be central to the Executive Branch's involvement in the Internet Governance Forum (IGF), and support mutual legal assistance treaty modernization efforts with key industries in the U.S.

BroadbandUSA. NTIA's broadband program funding in 2019 totals \$8.3 and 26 positions. Broadband has become integral in fueling a dynamic economy, driving commerce, enriching education, enhancing healthcare, and improving public safety. NTIA's 2019 budget continues to address demand by state, local, and tribal governments for technical assistance and hands-on guidance in bringing broadband to American communities across the nation. NTIA will continue to respond to the demand for technical services and broadband leadership efforts by partnering with unserved and underserved communities, so that they can attract new business investments and spur economic growth. NTIA's strategy capitalizes on strong relationships with broadband providers, municipal organizations, innovation economy firms, non-profit organizations, foundations, and other Federal stakeholders.

Public Safety – Mandatory. The Middle Class Tax Relief and Job Creation Act of 2012 (the Act) provided \$7 billion to establish a nationwide interoperable public safety broadband network (NPSBN). FirstNet was created to give public safety 21st century communication tools to help save lives, solve crimes, and keep our communities and emergency responders safe. NTIA and First Responder Network Authority (FirstNet) announced the selection of AT&T to build the first nationwide wireless broadband network dedicated to America's first responders on March 30, 2017. The operation of the network will be self-sustaining, and a range of services will be provided to states that have joined the NPSBN. The Act also provided \$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 NPSBN. NTIA concluded the first phase of funding and is now administering the second phase of the grant program. All 50 states, District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the Pacific territories have opted-in to FirstNet's state plans.

Department of Commerce
National Telecommunications and Information Administration
FY 2019 PROGRAM INCREASES / DECREASES / TERMINATIONS
(Dollar amounts in thousands)
(Largest to Smallest)

Increases

Page No. in CJ	Appropriation	Budget Program	Activity/Subactivity	Positions	Budget Authority
NTIA - 20	Salaries & Expenses	Spectrum Management	Spectrum Management	0	1,054
NTIA - 28	Salaries & Expenses	Advanced Communications Research	Advanced Communications Research	0	80
NTIA - 12	Salaries & Expenses	Domestic & International Policy	Domestic & International Policy	0	46
NTIA - 36	Salaries & Expenses	Broadband Programs	Broadband Programs	0	4
Subtotal, Increases				0	1,184

Decreases

Page No. in CJ	Appropriation	Budget Program	Activity/Subactivity	Positions	Budget Authority
-	No Program Decreases				
Subtotal, Decreases				0	0

Terminations

Page No. in CJ	Appropriation	Budget Program	Activity/Subactivity	Positions	Budget Authority
-	No Program Changes				
Subtotal, Terminations				0	0
Total, Increases, Decreases and Terminations				0	1,184

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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	
Annualized CR, FY 2018							143	143	31,783	34,428	
less: Obligations from prior years							0	0	0	0	
plus: Inflationary/Adjustments to base							0	0	679	679	
2019 Base							143	143	32,462	32,462	
plus: 2019 program changes							0	0	1,184	1,184	
2019 Estimate							143	143	33,646	33,646	
Comparison by budget program/sub-program	2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base		
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	
Domestic and International Policies.....	Pos/BA	35	7,976	33	7,922	33	8,084	33	8,130	0	46
	FTE/Obl.	33	8,252	33	8,709	33	8,084	33	8,130	0	46
Spectrum Management.....	Pos/BA	39	7,611	39	7,559	39	7,724	39	8,778	0	1,054
	FTE/Obl.	24	7,819	39	7,559	39	7,724	39	8,778	0	1,054
Advanced Communications Research.....	Pos/BA	50	8,232	45	8,176	45	8,384	45	8,464	0	80
	FTE/Obl.	45	7,704	45	10,034	45	8,384	45	8,464	0	80
Broadband Programs.....	Pos/BA	36	8,181	26	8,126	26	8,270	26	8,274	0	4
	FTE/Obl.	34	9,842	26	8,126	26	8,270	26	8,274	0	4
TOTALS.....	Pos/BA	160	32,000	143	31,783	143	32,462	143	33,646	0	1,184
	FTE/Obl.	136	33,617	143	34,428	143	32,462	143	33,646	0	1,184
Adjustments to Obligations:											
Recoveries/Refunds.....			(908)		0		0		0		0
Unobligated Balance, start of year.....			(3,364)		(2,645)		0		0		0
Unobligated Balance, end of year.....			2,645		0		0		0		0
Unobligated Balance rescinded.....			10								
Financing from transfers:											
Transfer from DOC Census (-).....			0		0		0		0		0
Transfer to other accounts (+).....			0		0		0		0		0
Appropriation.....			32,000		31,783		32,462		33,646		1,184

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

Comparison by sub-program	2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
<u>Reimbursable projects</u>										
Advanced Communications Research... Pos/BA	45	0	45	0	45	0	45	0	0	0
FTE/Obl.	41	10,257	45	23,159	45	10,200	45	10,200	0	0
Other..... Pos/BA	2	0	2	0	2	0	2	0	0	0
FTE/Obl.	1	208	2	375	2	375	2	375	0	0
Total, Reimbursable projects..... Pos/BA	47	0	47	0	47	0	47	0	0	0
FTE/Obl.	42	10,465	47	23,534	47	10,575	47	10,575	0	0
<u>Spectrum Fees¹</u>										
Spectrum Management..... Pos/BA	123	0	112	0	112	0	112	0	0	0
FTE/Obl.	101	35,535	112	43,247	112	31,104	112	35,112	0	4,008
Total, Spectrum fees..... Pos/BA	123	0	112	0	112	0	112	0	0	0
FTE/Obl.	101	35,535	112	43,247	112	31,104	112	35,112	0	4,008
Total, Reimbursable Obligations..... Pos/BA	170	0	159	0	159	0	159	0	0	0
FTE/Obl.	143	46,000	159	66,781	159	41,679	159	45,687	0	4,008

Footnote 1: In an effort to better define and validate the spectrum fee structure, NTIA is currently conducting a review of spectrum management costs, functions and allocations. This review may impact the level of fees charged to Agencies in the FY 2020. For FY 2018 and FY 2019, NTIA will continue to utilize the current fee authority and approach for agency allocations which apportion costs of spectrum functions based on the number of frequency assignments of each agency.

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

Comparison by budget program	2017 Actual	2018 Annualized CR	2019 Base	2019 Estimate	Increase/(Decrease) From 2019 Base
Total Obligations	79,617	98,564	74,141	79,333	5,192
Offsetting collections from:					
Other	(45,500)	(66,281)	(41,179)	(45,187)	(4,008)
Non-Federal sources.....	(500)	(500)	(500)	(500)	0
Recoveries/Refunds.....	(908)	0	0	0	0
Unobligated balance, start of year.....	(3,364)	0	0	0	0
Unobligated balance, end of year.....	2,645	0	0	0	0
Unobligated balance, expiring	10	0	0	0	0
Budget Authority	32,000	31,783	32,462	33,646	1,184
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	32,000	31,783	32,462	33,646	1,184

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

Exhibit 8

Adjustments to Base	FTE	Amount (\$000)
<u>COST CHANGES:</u>		
FY 2019 pay increase and related costs.....	0	0
Annualized 2018 pay increase.....	0	94
FY 2019 pay raise.....	0	0
Full-year cost in FY 2019 of positions financed for part-year in FY 2019.....	0	0
Civil Service Retirement System (CSRS).....	0	0
Federal Employees Retirement System (FERS).....	0	0
Federal Insurance Contribution Act (FICA) - OASDI.....	0	0
Thrift Savings Plan.....	0	0
Health Insurance.....	0	33
Employee Compensation Fund.....	0	(17)
One more compensable day.....	0	67
Per Diem.....	0	7
Postage.....	0	1
GSA Steam.....	0	0
Electricity.....	0	0
Water.....	0	0
Rental Payments to GSA.....	0	0
Other Services:		
Working Capital Fund.....	0	332
General Pricing Level Adjustment:		
Communications, utilities and miscellaneous charges.....	0	2
Other services.....	0	106
Travel.....	0	0
Rental Payments to Others.....	0	23
GPO Printing.....	0	1
Supplies and materials.....	0	3
Equipment.....	0	27
Subtotal, Cost Changes.....	0	679
Total, Adjustments to Base.....	0	679

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	2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Domestic and International Policies.....Pos/BA	35	7,976	33	7,922	33	8,084	33	8,130	0	46
FTE/Obl.	33	8,252	33	8,709	33	8,084	33	8,130	0	46
Direct ObligationsPos/BA	35	7,976	33	7,922	33	8,084	33	8,130	0	46
FTE/Obl.	33	8,252	33	8,709	33	8,084	33	8,130	0	46

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Justification of Program and Performance**

Activity: Domestic and International Policies

Goal Statement

NTIA will protect and promote the Internet and the innovation and economic value it fosters.

Base Program

NTIA is the principal adviser to the President on communications issues and policies and represents the Administration before the Federal Communications Commission. It is the only Executive Branch agency with a core mission to protect and promote the Internet, digital commerce, and the economic value it fosters. NTIA provides timely analyses and policy recommendations on Internet and communications policy issues. It also endeavors to ensure that the Internet remains an open, dynamic platform for innovation, job creation, and economic growth in traditional and emerging communications networks and services.

From major cybersecurity incidents, to the stability and security of the Internet's domain name system, to the Internet protocol (IP) transition, to foreign Internet regulations, to digital copyright, to how online corporations are targeting ads and utilizing big data, NTIA addresses issues that support continued Internet innovation and job creation. The Internet and communications services are integral to the U.S. economy and account for a significant portion of our economy's recent growth.

Domestically and internationally, NTIA promotes a multistakeholder approach to Internet policymaking, standards development, and governance issues (e.g., cybersecurity, privacy, Internet of Things), which involves the full inclusion of stakeholders; relies on consensus-based decision-making; and operates in an open, transparent, and accountable manner. Although the Internet has flourished because this approach was followed from its infancy to resolve technical and policy issues, the multistakeholder approach currently is threatened by countries that do not share our interest in an open, dynamic, and innovative Internet. 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.

NTIA also supports and enhances the Department's leadership role on digital commerce issues by strengthening internal

coordination among bureaus across the Department. This includes a greater emphasis on anticipating emerging issues, conducting research and analysis from multiple perspectives, and working together to share information and leverage resources. NTIA plays an executive role in convening meetings among Department components, providing analytical support for joint projects, and developing and coordinating Department-wide policy positions. As an example, NTIA administers and convenes the USG Domain Name System (DNS) Interagency Working Group. In addition, NTIA represents the Department in key interagency processes on a range of cyber- and national security matters

As the Internet, digital commerce and cybersecurity landscape evolves to include a wider swath of functions and services involving big data, the Internet of things, advanced analytics, artificial intelligence, and numerous other innovative developments, the need to find an appropriate balance between openness and innovation that can grow our digital commerce and secure the infrastructure upon which we depend is increasing. NTIA's request reflects this approach.

Statement of Operating Objectives

Recognizing the vital importance of the internet to U.S. innovation, prosperity, education, NTIA has made a top priority to ensure that the Internet remains safe and open for innovation through the following key activities.

Multistakeholder Engagements. NTIA will promote sound Internet policies to protect, expand Internet use and encourage further innovation and economic growth by continuing to support the multistakeholder approach for Internet governance. By engaging in international negotiations, standards development, and diplomacy, NTIA works to strengthen and expand Internet policy development to include economic and business/industry concerns and impacts. Specifically, NTIA will preserve, promote, and enhance the multistakeholder approach to address Internet policymaking, standards development, and governance issues. This includes developing and presenting U.S. government (USG) positions at interagency, bilateral, multilateral and international organizational meetings and stakeholder fora to support and advance the multistakeholder approach.

Policy and Trends Analysis. NTIA will continue to identify new research resources from the private sector, governmental organization and academia and develop new products to keep the Executive Branch, the Department, Congress, and other stakeholders apprised of fast developing Internet policy issues and trends. In 2019, NTIA will convene a series of open, public meetings to encourage private-sector stakeholders to develop codes of conduct and best practices related to emerging technologies on issues such as privacy and intellectual property and will continue to address issues in a multistakeholder manner. In addition, NTIA will review online copyright protection provisions and develop positions on potential changes to U.S. copyright law in partnership with the U.S. Patent and Trademark Office.

Law Enforcement and National Security. NTIA will provide advice 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. Actions will

be taken to continue to participate 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. NTIA will continue to act as the lead for the Department in representing its equities in interagency deliberations related to cyber operations and policy, and will continue to convene stakeholders from across the ecosystem to address cybersecurity challenges in a proactive, collaborative manner, including in response to new and emerging risks posed by emerging technologies.

Executive Branch Support. In its role as advisor to the President on telecommunications and Internet issues, NTIA will continue to coordinate Executive Branch communications policy and represent the Administration’s policy to independent agencies such as the Federal Communication Commission (FCC) and the Federal Trade Commission (FTC) in 2019. NTIA will also provide technical and policy expertise to the Executive Branch and other stakeholders related to this important element of Internet infrastructure. NTIA is known for its leadership in promoting Internet DNS security and stability, including providing a framework for the administration of the .edu and .us domains. Through the coordination of policies and positions that impact the Internet and other communications, NTIA will ensure consistent U.S. messaging and positions domestically and internationally. NTIA will play a critical role in supporting the interagency legislative coordination and clearance process by reviewing Internet and Digital Commerce policy related documents.

International Representation. NTIA plays a critical role in developing strategy and representing the United States government (USG) in international negotiations, standard setting and diplomacy efforts. We advocate for bilateral, multistakeholder, multilateral and regional 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 and digital economy 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.

Trade Negotiations. NTIA will participate and provide policy and technical support to the Department, United States Trade Representative (USTR) and other federal agencies to ensure that any U.S. free trade agreement[s], existing or under development, supports the Administration’s position regarding communications and e-commerce services and the free flow of information across borders, preserving and/or creating jobs for Americans and facilitating economic growth. NTIA will continue to assist in trade dispute resolution processes, in coordination with the Department of Commerce’s International Trade Administration and the Commercial Service, providing technological and policy advice to ascertain the merits of a given dispute, and possible remedies. NTIA will increase its participation in Department of Commerce-run bilateral commercial dialogues to improve understanding with counterpart trade and economics (not just communications) ministries. NTIA will continue working with other agencies and stakeholders to determine how best to address telecommunications and Internet policy issues that emerge in trade venues and during negotiation processes.

Digital Commerce Leadership. NTIA will support the Department’s leadership team by providing analytical and technical expertise

on cross-cutting issues and convening senior leaders for decision making and direction on Internet policy economic competitiveness and digital commerce issues. To proactively identify emerging Internet issues and better understand the concerns of the U.S. business community and Internet industry, NTIA will continue to provide administrative and technical support advisory committees created to address digital commerce issues including to coordinate the review and follow-up on analysis and recommendations. NTIA will continue to serve as 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 digital commerce and Internet economy.

Inter-Agency Work. NTIA will continue to work with other agencies to develop implementation strategies for improved and continuous telecommunications and information development in key countries and regions (e.g., Africa, Central and Latin America, and the Middle East), through such foreign assistance efforts as the Telecommunications Leadership Program, and the U.S. Telecommunications Training Institute. NTIA will assist USTR and other parts of the Administration in development of specific trade negotiation language. NTIA will work through bilateral, regional, and international fora such as the ITU, OECD, APEC, and CITELE to promote the rollout and uptake of broadband and advanced mobile infrastructure, services, and equipment. We will work with the Office of the United States Trade Representative (USTR), other Commerce agencies, the State Department, and other federal agencies on policy approaches to telecommunications and information standards developments worldwide.

Explanation and Justification

NTIA communicates policy positions in many ways and works with the White House to develop policy positions and draft executive memoranda; participates in White House or interagency policy committees; files comments with independent agencies such as the FCC or FTC; works with Congress on the formulation of legislation and provides comments through OMB; addresses issues through briefings to senior officials or interagency meetings; and communicates with the public through reports, speeches, or public events.

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

Domestic Policies.

NTIA's domestic policy activities provide the information and framework to enable the economy to operate efficiently and equitably, on a global scale; providing infrastructure for innovation and entrepreneurship to enhance American competitiveness; and strengthening management at all levels. NTIA's domestic policy activities require it to maintain expertise with respect to current telecommunications and

information policy issues and to identify the most important for Executive Branch attention. NTIA performs research and analysis, and prepares written recommendations for future courses of action that affect these sectors. In coordination with other parts of the Administration, NTIA makes recommendations and works with the Congress on new or revised laws affecting these sectors; it also files written comments to the FCC on specific regulatory proposals.

NTIA engages in public discussions and meetings with Federal, state, and foreign government officials and private sector representatives to formulate and advocate its policies. NTIA obtains information and advice both informally, on an ad hoc basis, and through the Commerce Spectrum Management Advisory Committee. Consistent with the Federal Advisory Committee Act, this committee provides advice to the Assistant Secretary of Commerce for Communications and Information on needed reforms to domestic spectrum policies and management to enable the introduction of new spectrum-dependent technologies and services, such as policy reforms for expediting the American public's access to broadband services, public safety, and long-range spectrum planning. In addition, NTIA facilitates business ownership and participation, particularly small business and minority participation, in these important sectors.

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

International Policies.

NTIA plays a leading role in the strategic development, promotion, and execution of policies to support the global Internet and broader digital commerce. NTIA formulates and advocates national policies for presentation in multistakeholder, multilateral and bilateral organizational settings. The objective of these policies is to enhance American competitiveness in pursuit of both improved market access for U.S. service and equipment providers, and to achieve foreign policy goals such as economic development, democratization, and promotion of U.S. national security telecommunications and information interests in geographically strategic areas.

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

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
INCREASES/DECREASES FOR 2019
(Dollar amounts in thousands)

	2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base		
	Personnel	Amount	Personnel	Amount	Personnel	Amount	
Domestic and International Policies	Pos./BA	33	8,084	33	8,130	0	46
	FTE/Obl.	33	8,084	33	8,130	0	46

The Domestic and International Policy program proposes an increase of \$46K in support services to convene additional multistakeholder meetings.

	2018	2019	2020	2021	2022
Performance Measures:					
No change in performance metrics with a \$46K increase					
Cost and Benefits:					
Direct Obligations:	0	46	0	0	0
Budget Authority	0	46	0	0	0
Outlays	0	37	0	0	0
FTE	0	0	0	0	0
Benefits, in dollars	0	0	0	0	0

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Salaries and Expenses
Sub Activity: Domestic and International Policy
Program Change: Domestic and International Policy

Object Class	2019 Increase
11 Personnel compensation	
11.1 Full-time permanent	0
11.3 Other than full-time permanent	0
11.5 Other personnel compensation	0
11.9 Total personnel compensation	0
12.1 Civilian personnel benefits	0
21 Travel and transportation of persons	0
22 Transportation of things	0
23.1 Rental payments to GSA	0
23.2 Rental payments to others	0
23.3 Communications, utilities and miscellaneous charges	0
24 Printing and reproduction	0
25.1 Consulting services	0
25.2 Other services	46
25.3 Purchases of goods and services from Government accounts	0
25.7 Operation and maintenance of equipment	0
26 Supplies and materials	0
31 Equipment	0
41 Grants	0
Total obligations	46

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		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum Management.....	Pos/BA	39	7,611	39	7,559	39	7,724	39	8,778	0	1,054
	FTE/Obl.	24	7,819	39	7,559	39	7,724	39	8,778	0	1,054
Direct Obligations.....	Pos/BA	39	7,611	39	7,559	39	7,724	39	8,778	0	1,054
	FTE/Obl.	24	7,819	39	7,559	39	7,724	39	8,778	0	1,054

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

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

Comparison by sub-program		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Spectrum fees.....	Pos/BA	123	0	112	0	112	0	112	0	0	0
	FTE/Obl.	101	35,535	112	43,247	112	31,104	112	35,112	0	4,008
Total, Spectrum fees.....	Pos/BA	123	0	112	0	112	0	112	0	0	0
	FTE/Obl.	101	35,535	112	43,247	112	31,104	112	35,112	0	4,008

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Justification of Program and Performance**

Activity: Spectrum Management

Goal Statement

Under the Spectrum Management program, NTIA evaluates and ensures the best possible and most efficient use of electromagnetic spectrum resources across the Federal Government, subject to and consistent with the needs and missions of federal agencies, while supporting the commercial sector's development of next generation wireless services.

Base Program

NTIA carries out the President's authority to assign frequencies to radio stations belonging to and operated by the United States. The federal agencies rely on the radio spectrum to execute their congressionally mandated missions, which range from national defense, homeland security and law enforcement to ensuring aeronautical and marine safety, conducting space travel and scientific research, and accurately predicting the weather. Agencies could not provide these and other vital government services without frequency assignments and NTIA's management of scarce spectrum resources pursuant to the NTIA Organization Act, as amended (47 USC 901 et. seq.). In addition to direct funding, NTIA charges agencies fees for costs incurred in spectrum management, analysis, operations, and related services. NTIA also works closely with the Federal Communications Commission (FCC) to coordinate spectrum use, identify and reallocate spectrum bands for commercial wireless services, update spectrum policies, and develop long-range spectrum management plans. To execute these responsibilities and minimize costs, NTIA depends on significant collaboration with interested federal agencies and key private-sector stakeholders through the Interdepartment Radio Advisory Committee (IRAC), Policy and Plans Steering Group (PPSG), and Commerce Spectrum Management Advisory Committee (CSMAC).

Statement of Operating Objectives

The tremendous growth in demand for wireless spectrum by consumers, businesses, and government agencies requires NTIA to reassess the management of federal use of the nation's airwaves. Policy and technical decisions to repurpose spectrum used by federal agencies through relocation of incumbents and spectrum sharing entail balancing the potential economic and technological

benefits of increased commercial wireless services against the mission-critical needs of federal agencies. The *Spectrum Pipeline Act of 2015* directs NTIA and the FCC to identify and reallocate additional spectrum to meet the commercial sector's long-term needs. This includes, in collaboration with the FCC and the Office of Management and Budget (OMB), NTIA's review and oversight of federal agency plans for conducting research and development, engineering studies, economic analyses, and planning activities under the Spectrum Relocation Fund (SRF) that will improve the efficiency and effectiveness of spectrum use. NTIA will also commence efforts to analyze technical and operational options, and prepare reports to the President and Congress as mandated by the *Spectrum Pipeline Act*. These activities will leverage a PPSG-approved, multi-agency strategic process for prioritizing frequency bands for more detailed feasibility studies.

NTIA examines advanced spectrum access techniques to better leverage spectrum as a valuable resource for economic growth, public safety, national defense, scientific discovery, and other important applications. To this end, NTIA collaborates closely with the FCC, industry stakeholders, and affected agencies to examine innovative technologies and business processes that will improve federal spectrum management and address the ever-increasing demands for wireless communications.

The objectives of the Spectrum Management sub-activity are to:

- Execute the spectrum management functions and activities assigned to NTIA under 47 U.S.C. 901-904 and 921-929;
- Work with the FCC to coordinate spectrum use, recover and reallocate spectrum, and implement the *Spectrum Pipeline Act*;
- Promote spectrum efficiency by facilitating government and industry collaboration, quantifying federal spectrum use, and require agencies to justify new spectrum uses;
- Plan for and execute federal spectrum management functions during emergencies;
- Coordinate and register internationally planned Federal Government satellite networks;
- Develop positions and promote U.S. interests in international bodies dealing with radio regulations and other spectrum issues;
- Process more than 300 agency requests to certify spectrum support, compliance, and compatibility for federal spectrum-dependent systems including those supporting national security and emergency communications; and
- Review and process more than 100,000 domestic radio frequency assignment requests in accordance with the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management.

Additionally, in an effort to better define and validate the spectrum fee structure, NTIA is conducting a review of spectrum management costs, functions and allocations. The review began in October 2017 and will conclude in 2019 with implementation of a new fee structure beginning in 2020. This review may impact the level of fees charged to Agencies in the 2020. Updates and information will be provided through the Interdepartment Radio Advisory Committee (IRAC) and periodic correspondence to Agencies. For 2018 and 2019, NTIA will continue to utilize the current fee authority and approach for agency allocations which apportions costs of spectrum functions based on the number of frequency assignments of each agency. This proxy, approved by OMB in 1996, was determined to be the best available method and has been used since that time.

Explanation and Justification

During 2019, NTIA will continue its implementation of the Spectrum Pipeline Act of 2015, which requires NTIA and the FCC to identify and reallocate additional spectrum to meet the commercial sector's long-term needs. This includes, in collaboration with the FCC and the Office of Management and Budget (OMB), NTIA's review and oversight of federal agency plans for conducting research and development, engineering studies, economic analyses, and planning activities under the Spectrum Relocation Fund (SRF) that will improve the efficiency and effectiveness of spectrum use. NTIA will continue efforts to analyze technical and operational options, and prepare reports to the President and Congress, as mandated by the Spectrum Pipeline Act, which must identify 130 megahertz of spectrum for reallocation to non-Federal use. These activities will implement a PPSG-approved, multi-agency strategic process for prioritizing and selecting frequency bands for more detailed spectrum repurposing feasibility studies. NTIA will oversee this multi-agency process and resulting agency detailed feasibility studies.

NTIA's spectrum engineering studies and technical analyses inform important spectrum policy decisions. In 2019, NTIA will conduct in-depth studies and analyses to: assist federal agencies in resolving interference problems; quantify the effects on federal missions of proposed national and international allocation changes; establish and update federal technical standards; and develop new or improved automated analysis techniques for the study of spectrum sharing, interference prediction, and frequency coordination. For example, NTIA will implement innovative propagation assessment tools to enable dynamic spectrum access in the millimeter wave bands in support of FCC proceedings and international negotiations.

In support of mission-critical federal agency operational requirements during 2019, NTIA expects to review and process more than 100,000 domestic radio frequency assignment requests in accordance with the Manual of Regulations and Procedures for Federal Radio Frequency Management. NTIA will likely receive more than three hundred agency requests to certify spectrum support, compliance, and compatibility for federal spectrum-dependent systems including those supporting national security and emergency communications planning and exercises. These assignment and certification actions require expert electromagnetic compatibility evaluations to ensure compliance with applicable spectrum regulations, policies, and technical standards. To prevent unmanageable processing backlogs and increase spectrum manager productivity, NTIA will continue to incrementally improve and streamline its regulations, procedures, and business processes through a more user-friendly Manual, broader agency exemptions and self-certification options, and updated automation tools. Specifically, in 2019 NTIA expects to select vendors to carry out some of the key objectives of its Frequency Authorization Management Program (FAMP) investment, which could ultimately employ a flexible and sustainable information technology architecture with more robust reporting tools and enhanced interoperability across the federal government. NTIA plans to implement new online, browser-based system certification tools that more effectively enable the submission and evaluation of complex and more spectrally efficient systems.

Domestic and international spectrum policy efforts in 2019 will consist of developing, advocating, and implementing spectrum policies that expand spectrum access and improve efficiency across the Federal Government. NTIA will continue to provide technical assistance for proposed spectrum legislation, respond to Congressional requests for information on federal spectrum use and operations, and faithfully implement any new statutory provisions as resources allow. The views of the executive branch will be

formulated and presented in dozens of new and ongoing FCC proceedings, including important matters addressing proposals to repurpose spectrum bands that it and the FCC may identify to satisfy growing private and public sector requirements. NTIA will execute its responsibilities under the Commercial Spectrum Enhancement Act, as amended by the Middle Class Tax Relief and Job Creation Act of 2012, in collaboration with OMB and the FCC to ensure that commercial licensees have timely access to federal spectrum bands auctioned by the FCC and that agencies spend SRF transfers in accordance with their approved transition plans.

On international matters, NTIA will work closely with the State Department, the FCC, and other agencies to advocate U.S. positions and represent the executive branch in preparation for the International Telecommunication Union (ITU) World Radiocommunication Conference (WRC) to be conducted in November of 2019 (i.e., 2020). Specifically, NTIA will conduct and coordinate technical studies, negotiate constructive solutions to critical issues under WRC agenda items, and represent U.S. interests in bi-lateral, multi-lateral, regional, and ITU forums. The results of these efforts will enable military operations worldwide, support global broadband adoption, enable groundbreaking wireless technologies, and help increase worldwide market penetration of U.S. companies through spectrum harmonization.

Within the IRAC's Space Systems Subcommittee, NTIA will continue to improve the process for reviewing federal space systems for compliance with national requirements, registering federal satellite networks with the ITU, and coordinating hundreds of satellite actions. These activities ensure protection of global satellite services from harmful interference and safeguard orbital slots for U.S. satellite systems. In collaboration with the FCC and the State Department, NTIA will continue to coordinate federal spectrum requirements along the borders with Canada and Mexico to prevent harmful interference and facilitate spectrum access for foreign embassies in Washington, DC.

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
INCREASES/DECREASES FOR 2019**
(Dollar amounts in thousands)

	2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base		
	Personnel	Amount	Personnel	Amount	Personnel	Amount	
Spectrum Management (Direct)	Pos./BA	39	7,724	39	8,778	0	1,054
	FTE/Obl.	39	7,724	39	8,778	0	1,054
Spectrum Management (Reimbursable)	Pos./BA	112	0	112	0	0	0
	FTE/Obl.	112	31,104	112	35,112	0	4,008

NTIA will use the increase in funding to decrease the monthly backlog of spectrum certifications by 10 percent.

Performance Measures:

	2018	2019	2020	2021	2022
Spectrum Certifications Monthly Backlog (# Records)	27	24	22	20	20

Cost and Benefits:

Direct Obligations:	0	1,054	0	0	0
Budget Authority	0	1,054	0	0	0
Outlays	0	843	0	0	0
FTE	0	0	0	0	0
Benefits, in dollars	0	0	0	0	0

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Salaries and Expenses
Sub Activity: Spectrum Management
Program Change: Spectrum Management

Object Class	2019 Increase
11 Personnel compensation	
11.1 Full-time permanent	0
11.3 Other than full-time permanent	0
11.5 Other personnel compensation	0
11.9 Total personnel compensation	0
12.1 Civilian personnel benefits	0
21 Travel and transportation of persons	0
22 Transportation of things	0
23.1 Rental payments to GSA	0
23.2 Rental payments to others	0
23.3 Communications, utilities and miscellaneous charges	0
24 Printing and reproduction	0
25.1 Consulting services	0
25.2 Other services	527
25.3 Purchases of goods and services from Government accounts	527
25.7 Operation and maintenance of equipment	0
26 Supplies and materials	0
31 Equipment	0
41 Grants	0
Total obligations	1,054

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	2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Advanced Communications Research.....	50	8,232	45	8,176	45	8,384	45	8,464	0	80
Pos/BA										
FTE/Obl.	45	7,704	45	10,034	45	8,384	45	8,464	0	80
Direct Obligations.....	50	8,232	45	8,176	45	8,384	45	8,464	0	80
Pos/BA										
FTE/Obl.	45	7,704	45	10,034	45	8,384	45	8,464	0	80

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

Budget Program: Salaries and Expenses
 Sub-Program: Advanced Communications Research

Comparison by sub-program		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Reimbursable projects.....	Pos/BA	45	0	45	0	45	0	45	0	0	0
	FTE/Obl.	41	10,257	45	23,159	45	10,200	45	10,200	0	0
Reimbursable projects - other.....	Pos/BA	2	0	2	0	2	0	2	0	0	0
	FTE/Obl.	1	208	2	375	2	375	2	375	0	0
Total Reimbursable Obligations.....	Pos/BA	47	0	47	0	47	0	47	0	0	0
	FTE/Obl.	42	10,465	47	23,534	47	10,575	47	10,575	0	0

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Justification of Program and Performance**

Activity: Advanced Communications Research

Goal Statement

Through cutting-edge research and engineering, NTIA advances radio science, enables effective spectrum sharing, develops advanced telecommunication and information technology, and influences domestic and international telecommunications standards.

Base Program

NTIA's research facility in Boulder, CO, is recognized as one of the world's leading telecommunications research laboratories. Research conducted there provides critical technical input to NTIA's development of policies to support more efficient use of the nation's radio spectrum resources, including new approaches to dynamic spectrum-sharing, and promotes Administration positions in national and international standards-setting bodies. Additionally, using the tools and techniques developed under direct-funded research, the laboratory solves telecommunications problems, such as interference resolution, on a cost-reimbursable basis for other Federal agencies and for private entities.

The Advanced Communications Research program:

- Provides timely technical advice in support of NTIA's mandate to develop and promulgate Executive Branch policies that address domestic and international communications issues.
- Continually advances the state of the art in radio frequency (RF) propagation measurement, RF propagation modeling, electromagnetic compatibility analysis, development of interference mitigation strategies, evaluation of end-user experience, and engineering analysis of evolving technologies to manage and share spectrum efficiently.
- Delivers expanded knowledge of the nature and interaction of communications equipment, systems, and services in support of the deployment of new technologies and services that rely on spectrum to position U.S. industry for international leadership in communications technology.

- Leverages, through interagency agreements, NTIA expertise and capabilities on behalf of other Federal agencies to perform measurements and analysis to support planning for spectrum reallocation or sharing and to resolve interference events.

Statement of Operating Objectives

Radio Frequency Measurements. Radio frequency (RF) measurements of spectrum occupancy and device emissions provide information about the electromagnetic radiation actually present in a certain band in select locations: how many signals, the extent of coverage, how often they occur, and on what frequencies. This quantitative data informs assessments of spectrum utilization for policy and regulatory actions, and is critical for validating the propagation models that underpin spectrum management decisions on spectrum reallocation and spectrum sharing.

Radio Frequency Propagation Modeling. RF propagation models are software implementations of physics-based mathematical models that predict how radio waves behave in operational environments. RF propagation models are used, for example, to predict the distance from a transmitter at which a receiver can detect a signal, or to predict areas where the radio waves from different transmitters may overlap and interfere with each other. Government communications operations, including those for public safety and national security, depend critically on the ability to successfully predict radio propagation in a variety of environments and conditions. Different radio frequencies have different propagation properties, and characterizing the interactions of radio waves with environmental features such as buildings or foliage is critical to making accurate predictions. Accurate propagation predictions also depend on antenna heights, antenna characteristics, and distance. The accuracy of a propagation prediction depends not only on the reliability of the model itself, but also on the suitability of the model for use in the particular case.

Electromagnetic Compatibility Analyses. Electromagnetic compatibility (EMC) analyses use models, simulations, tests, and measurements to examine the totality of spectrum usage by radio transmitters and receivers and the interactions between different radio systems. They support effective spectrum sharing and spectrum reallocation by defining the technical parameters that will allow both legacy and new services to operate in the same or adjacent bands without interference. When interference occurs, they are used to trace interference to root causes and devise mitigation strategies.

Spectrum Monitoring. NTIA conducts 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 that regulators may use to support enforcement actions. This research supports dynamic spectrum sharing by providing both industry and government with key insights into usage, and thereby helps to identify frequencies that are good candidates for sharing.

Quality of Experience Assessment and Enhancement. Engineering studies identify the numerically quantifiable factors that influence how accurately and reliably digital representations of speech, video, images, text messages, etc. are transmitted over networks. NTIA conducts research and development leading to implementation, publication, and standardization of perception-based tools for assessment and end-to-end optimization of video and audio communication systems. This work provides important

and reliable information on the impact of bandwidth constraints, time-varying channel quality, and new technologies on telecommunications network performance. This data is used by government and industry network and equipment designers as well as standards bodies.

Spectrum-Dependent System Certification. Spectrum-dependent systems must meet various engineering criteria to guarantee operation without affecting other systems in the same or nearby bands. NTIA performs RSEC (Radar System Engineering Criteria) certification on new radars, before they are deployed, to ensure that out-of-band emissions are within acceptable bounds. NTIA also works with the FCC to develop and execute certification processes and criteria for commercial systems that share spectrum with mission-critical Federal systems to ensure that system behavior meets the system specification and will not interfere with critical Federal capabilities. This suite of tests allows NTIA to certify new radars with a high level of confidence.

If the certification tests are not adequate, the eco-system for advanced spectrum sharing may be abandoned by Wall Street, sunk investment will be lost, the U.S. as the technology leader in spectrum sharing will be lost, and opportunities for U.S. companies to expand spectrum sharing domestically and internationally will have been squandered.

Domestic and International Standards. NTIA contributes to the development and application of strong and unbiased national and international telecommunication standards for emerging mobile radio technologies of importance to U.S. industry and government by leading, participating in, and making technical contributions to national and international telecommunication standards organizations (SDO), such as the 3rd Generation Partnership Project (3GPP), ITU, and the Alliance for Telecommunications Industry Solutions (ATIS).

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 and its geological features create ideal conditions for radio research to safely develop and test new spectrum-efficient technologies, and for other electromagnetic and geomagnetic research.

This site serves as a resource for Federal agencies and private companies through interagency agreements and Cooperative Research and Development Agreements (CRADAs). The site is currently being used by several Federal agencies and private companies to research, develop, and test operational performance of new communication technologies, including new radar systems; to evaluate broadband and laser radar (LADAR) technologies for public safety and national defense applications; to test radio receivers for NOAA's "All Hazards" national warning system; to perform absolute gravity measurements and gravimeter calibrations; and to measure and monitor solar, ultraviolet, and infrared radiation.

Explanation and Justification

NTIA's activities will improve and expand NTIA's ability to perform accurate, timely, and ongoing radio frequency measurements of spectrum occupancy and device emissions to inform assessments of spectrum usage and sharing feasibility, and continue to perform and publish the results of such measurements to inform Federal and private sector spectrum planning and use. By developing and validating improved radio propagation models, NTIA supports industry, agencies, and national and international standard bodies towards assessing new spectrum-sharing techniques and the development of improved dynamic frequency management and spectrum-sharing systems. In cooperation with other Federal agencies and U.S. industry, 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. Finally, NTIA's technical work will support 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.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
INCREASES/DECREASES FOR 2019
(Dollar amounts in thousands)

	2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base		
	Personnel	Amount	Personnel	Amount	Personnel	Amount	
Advanced Communications Research	Pos./BA	45	8,384	45	8,464	0	80
	FTE/Obl.	45	8,384	45	8,464	0	80

The Advanced Communications Research program will increase its equipment budget by \$80K to upgrade its equipment for RF propagation models.

	2018	2019	2020	2021	2022
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Performance Measures:

No change in overall performance measures due to the \$80K increase.

Cost and Benefits:

Direct Obligations:	0	80	0	0	0
Budget Authority	0	80	0	0	0
Outlays	0	64	0	0	0
FTE	0	0	0	0	0
Benefits, in dollars	0	0	0	0	0

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)**

Activity: Salaries and Expenses
Sub Activity: Advanced Communications Research
Program Change: Advanced Communications Research

Object Class	2019 Increase
11 Personnel compensation	
11.1 Full-time permanent	0
11.3 Other than full-time permanent	0
11.5 Other personnel compensation	0
11.9 Total personnel compensation	0
12.1 Civilian personnel benefits	0
21 Travel and transportation of persons	0
22 Transportation of things	0
23.1 Rental payments to GSA	0
23.2 Rental payments to others	0
23.3 Communications, utilities and miscellaneous charges	0
24 Printing and reproduction	0
25.1 Consulting services	0
25.2 Other services	0
25.3 Purchases of goods and services from Government accounts	0
25.7 Operation and maintenance of equipment	0
26 Supplies and materials	0
31 Equipment	80
41 Grants	0
Total obligations	80

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		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Broadband Programs.....	Pos/BA	36	8,181	26	8,126	26	8,270	26	8,274	0	4
	FTE/Obl.	34	9,842	26	8,126	26	8,270	26	8,274	0	4
Direct Obligations.....	Pos/BA	36	8,181	26	8,126	26	8,270	26	8,274	0	4
	FTE/Obl.	34	9,842	26	8,126	26	8,270	26	8,274	0	4

**Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
Justification of Program and Performance**

Activity: Broadband Programs

Goal Statement

NTIA will support communities across America to accelerate broadband access and use to lay the foundation critical to attract new jobs, promote economic growth and encourage increased innovation.

Base Program

While communities may understand that broadband access and use are vital to their economic development, innovation, workforce, education, healthcare and public safety needs, they often lack the resources and expertise to seize those benefits. In response to the established and growing state and local broadband needs across America, NTIA has leveraged staff expertise to develop and provide local technical assistance through the BroadbandUSA program. Despite these efforts, the demand continues to exceed our ability to keep pace. Thirty-four million Americans lack access to the FCC standard broadband speeds of 25Mbps download and 3Mbps upload and most of those (23 million) live in rural areas. Less than 60 percent of Americans have access to 100Mbps required for more advanced Internet applications. In 2015, 33 million households (27 percent of all U.S. households) did not use the Internet at home, where families can more easily share Internet access and conduct sensitive online transactions privately.

BroadbandUSA assists, educates and convenes government, community and industry leaders working together to advance broadband initiatives and policy. Without BroadbandUSA's technical resources and expertise, smaller, more rural, or less affluent communities lacking broadband access will fall further behind, losing industry, jobs, and population. Deprived of access to and the ability to use broadband, small businesses will lose millions in potential revenue, individual wage growth will stagnate or decline, and communities will fail to attract new commercial enterprise.

Additionally, NTIA has an ongoing responsibility to oversee the two BTOP grants extended until 2020. These funds will continue NTIA's high-quality work to prevent waste, fraud, and abuse in the grant program; ensure that recipients accomplish program goals; disseminate best practices; and oversee recipients' continued activities to fulfill the terms of their grants. NTIA launched BroadbandUSA in response to demand from communities seeking to ensure that their citizens have the broadband

capacity they need to attract employers, create jobs, improve healthcare, advance development and increase public safety. BroadbandUSA's experts know that there is no one-size-fits-all approach to expand broadband access and adoption. To date, BroadbandUSA has provided support to more than 800 communities through its regional events, workshops, educational webinars, and technical assistance activities. Requests for technical assistance grew 250 percent in 2017 over 2016.

Technical Assistance. The centerpiece of BroadbandUSA is its technical assistance (TA) team, which provides one-to-one technical assistance to state, local, nonprofit, and industry leaders interested in planning, funding, or implementing broadband infrastructure deployment and digital inclusion initiatives. BroadbandUSA ensures that it is specifically reaching rural communities and at least 60% of engagements are with rural communities.

Events and Workshops. BroadbandUSA organizes events that bring together state, local, and federal officials, industry, community leaders, and other key broadband stakeholders to share broadband success stories and lessons learned. To date, the Program has held seven regional workshops with over 800 attendees coupled with webinars on a range of broadband topics.

Guides and Tools. BroadbandUSA develops resources, tools, fact sheets, and brochures to help stakeholders better understand the critical role of broadband in community prosperity and to navigate the broadband planning and implementation process. To date, the Program has published eight guides focused on the following topics: how to implement a broadband project; the power of broadband partnerships; using partnerships to drive smart city deployment; stakeholder outreach; broadband adoption; broadband planning for local and tribal governments; building public private partnerships; and federal funding opportunities for broadband projects.

Partnerships. NTIA continues to use its position as co-chair of a federal broadband interagency working group to identify barriers to broadband deployment and push interagency efforts to streamline or eliminate regulatory processes and requirements that hinder infrastructure deployment. BroadbandUSA works with federal, state, and local officials to better integrate broadband into policy and program efforts. Additionally, NTIA leverages its close ties to state and local leaders through its State Broadband Leaders Network (SBLN) to collaborate on broadband deployment and expansion efforts. Through annual and regional meetings, workshops, and webinars, SBLN and BroadbandUSA discuss state priorities concerning broadband investment, access, and digital inclusion and consider how best to realize these goals.

BTOP Grants. NTIA has an ongoing responsibility to oversee the two BTOP grants extended until 2020. Through effective grant administration and grant closeout, NTIA continues to prevent waste, fraud, and abuse of the public funds; ensure that recipients accomplish program goals; disseminate best practices; and oversee recipients' continued activities to fulfill the terms of their grants through the federal-interest period. With approximately \$100 million in remaining grant funds, this work continues to be a prudent investment to protect taxpayer funds.

Statement of Operating Objectives

NTIA will use a collection of outreach products and technical assistance strategies – from toolkits and training programs, to webinars and workshops – to accelerate broadband access to generate opportunities to attract jobs, encourage innovation and promote economic growth. During 2019, NTIA will:

- Enable communities to accelerate broadband implementation by disseminating replicable and scalable knowledge through direct and indirect interaction with program participants (local, regional or state government organizations, non-profits and/or former NTIA broadband grant recipients), thus propelling important economic and societal benefits.
 - a. Hold three regional broadband events, convening key stakeholders from public, private, and non-profit sectors.
 - b. Develop 10 broadband products that support states and local governments in the planning, funding and implementation phases of broadband programs.
 - c. Provide technical assistance to 160 communities.
 - d. Expand BroadbandUSA's support for American Smart Cities' initiatives, emphasizing broadband programs that support informatics, monitoring, and efficiency.
- Begin development of a portfolio/suite of online products and tools, including assessment, data analytics, mapping, cost modeling and speed testing. The online tools will enable communities to accelerate the planning phase of their broadband projects, thus shifting their limited financial resources to implementation.
- Accelerate broadband funding opportunities by partnering with investment organizations (banks, venture capitalists, etc.) to develop guidance, checklists, and templates to better present community broadband projects as "investment ready," to accelerate investment.
- Advance public/private partnerships among broadband stakeholders, including federal, state, industry and not-for-profit organizations, to improve support for broadband deployment and digital inclusion programs.
- Streamline federal cross agency work through the Broadband Interagency Working Group and ensure that future interagency collaboration results in federal action that helps accelerate broadband implementation and adoption. Lack of coordination between federal programs results in inefficient use of limited resources.

- Provide effective oversight of the BTOP grant programs through their closeout and federal-interest periods to protect the federal government's investment in broadband infrastructure, public computing centers and broadband adoption projects.
- Manage the grant closeout process to ensure that recipients have met all financial and reporting requirements, they used funds for eligible grant activities and any excess funds are expeditiously returned to the Treasury.

Explanation and Justification

The National Telecommunications and Information Administration's (NTIA) BroadbandUSA program promotes innovation and economic growth by supporting efforts to expand broadband access and meaningful use across America. BroadbandUSA serves communities, industry and nonprofits that want to expand broadband infrastructure and promote digital inclusion. BroadbandUSA's services are driven by the needs and interests of state and local broadband leaders, and focus on supporting planning efforts, helping to identify funding, and implementing local broadband programs.

The program provides a ready solution to large and small communities, reaching out citizens with the promise of a digital future. Since 2010, we have built a network of more than just fiber – NTIA has built a network of people and organizations who are ready to come together to help communities nationwide secure access to fast and affordable broadband. NTIA's BroadbandUSA uniquely leverages these investments and provides the critical foundation and continued momentum needed to nurture, establish, and grow essential public-private collaborations which are vital to achieving next generation high-speed broadband.

Our nation's future, which hinges on the caliber of our nation's education, healthcare, and jobs, also depends on providing every American with maximum access to broadband. BroadbandUSA builds on NTIA's established successes in deploying broadband infrastructure and expanding broadband adoption. NTIA shares critical lessons learned and leverages best practices developed by broadband grantees, helping a wide range of stakeholders get better broadband, faster.

Furthermore, NTIA's position as Co-Chair of the Broadband Interagency Workgroup will require a high level of direct support and coordination. The group is comprised of more than 25 different Executive Branch departments and agencies and will (1) engage with industry and other stakeholders to understand ways the government can better support the needs of communities seeking broadband investments; (2) identify and eliminate regulatory barriers unduly impeding broadband deployment and competition; and (3) survey and make available information on existing programs that currently support or could be modified to support competition, deployment or adoption. It is through the investment in these broadband infrastructure and outreach activities that a stronger, healthier and better educated America will have the broadband they need to advance economic development, education, and healthcare. NTIA is well-suited to carry out these activities, providing continuity and substance to the Workgroup.

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
INCREASES/DECREASES FOR 2019
(Dollar amounts in thousands)

	2019 Base		2019 Estimate		Increase/(Decrease)		
	Personnel	Amount	Personnel	Amount	Personnel	Amount	
Broadband Programs	Pos./BA	26	8,270	26	8,274	0	4
	FTE/Obl.	26	8,270	26	8,274	0	4

Broadband program will increase its support services by \$4K to advance its technical assistance efforts.

	2018	2019	2020	2021	2022
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Performance Measures:

No change in performance metrics with a \$4K increase.

Cost and Benefits:

Direct Obligations:	0	4	0	0	0
Budget Authority	0	4	0	0	0
Outlays	0	3	0	0	0
FTE	0	0	0	0	0
Benefits, in dollars	0	0	0	0	0

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Dollar amounts in thousands)

Activity: Salaries and Expenses
Sub Activity: Broadband Programs
Program Change: Broadband Programs

Object Class	2019 Increase
11 Personnel compensation	
11.1 Full-time permanent	0
11.3 Other than full-time permanent	0
11.5 Other personnel compensation	0
11.9 Total personnel compensation	0
12.1 Civilian personnel benefits	0
21 Travel and transportation of persons	0
22 Transportation of things	0
23.1 Rental payments to GSA	0
23.2 Rental payments to others	0
23.3 Communications, utilities and miscellaneous charges	0
24 Printing and reproduction	0
25.1 Consulting services	0
25.2 Other services	4
25.3 Purchases of goods and services from Government accounts	0
25.7 Operation and maintenance of equipment	0
26 Supplies and materials	0
31 Equipment	0
41 Grants	0
Total obligations	4

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

Object Class	2017 Actual	2018 Annualized CR	2019 Base	2019 Estimate	Increase/(Decrease) From 2019 Base
11 Personnel compensation					
11.1 Full-time permanent	15,633	14,182	14,331	14,331	0
11.3 Other than full-time permanent	0	0	0	0	0
11.5 Other personnel compensation	320	169	169	169	0
11.8 Other	0	0	0	0	0
11.9 Total personnel compensation	15,953	14,351	14,500	14,500	0
12.1 Civilian personnel benefits	4,997	4,061	4,089	4,089	0
13 Benefits for former personnel	0	0	0	0	0
21 Travel and transportation of persons	661	678	685	685	0
22 Transportation of things	7	15	15	15	0
23.1 Rental payments to GSA	0	0	0	0	0
23.2 Rental payments to others	1,319	1,353	1,376	1,376	0
23 Communications, utilities and miscellaneous charges	351	134	137	137	0
24 Printing and reproduction	101	64	65	65	0
25.1 Advisory and assistance services	0	0	0	0	0
25.2 Other services	1,632	4,930	2,324	2,901	577
25.3 Purchases of goods and services from Government ac	6,408	6,903	7,302	7,829	527
25.7 Operation and maintenance of equipment	33	61	61	61	0
26 Supplies and materials	265	175	178	178	0
31 Equipment	1,754	1,568	1,595	1,675	80
41 Grants, subsidies and contributions	136	135	135	135	0
TOTAL OBLIGATIONS	33,617	34,428	32,462	33,646	1,184
Prior Year Recoveries/Refunds	(908)				
Unobligated balances from Prior Years	(3,364)	(2,645)			
Unobligated balance EOY	2,645				
Unobligated balance, expiring	10				
Total Budget Authority	32,000	31,783	32,462	33,646	1,184

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

Personnel Data	2017 Actual	2018 Annualized CR	2019 Base	2019 Estimate	Increase/(Decrease) From 2019 Base
Full-Time Equivalent Employment:					
Full-time permanent	136	143	143	143	0
Other than full-time permanent	0	0	0	0	0
Total	136	143	143	143	0
Authorized Positions:					
Full-time permanent	136	143	143	143	0
Other than full-time permanent	0	0	0	0	0
Total	136	143	143	143	0

Department of Commerce
National Telecommunications and Information Administration
Salaries and Expenses
APPROPRIATION LANGUAGE AND CODE CITATION

FY 2019

For necessary expenses, as provided for by law, of the National Telecommunications and Information Administration (NTIA), \$33,646,000 to remain available until September 30, 2020: 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.

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

	<u>2017</u> Actual	<u>2018</u> Annualized CR	<u>2019</u> Estimate
Management and Professional Support Services	0	0	0
Studies, Analysis & Evaluations	0	0	0
Engineering & Technical Services	60	60	0
Total	<u>60</u>	<u>60</u>	<u>0</u>

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

	<u>2017 Actual</u>	<u>2018 Annualized CR</u>	<u>2019 Estimate</u>
Periodicals	0	0	0
Pamphlets	8	8	8
Audiovisual Products	0	0	0
Total	<u>8</u>	<u>8</u>	<u>8</u>

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

	<u>2017</u> Actual	<u>2018</u> Annualized CR	<u>2019</u> Estimate
Direct:			
Average ES Salary.....	181,528	184,977	184,977
Average Career Path Salary.....	108,633	110,697	108,421
Average GS Grade.....	14	14	14
Average GS Salary.....	122,764	125,097	123,512

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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	
Annualized CR, FY 2018							0	0	0	0	
less: Obligations from prior years							0	0	0	0	
plus: Inflationary/Adjustments to base							0	0	0	0	
2019 Base							0	0	0	0	
plus: 2019 program changes							0	0	0	0	
2019 Estimate							0	0	0	0	
Comparison by budget program/sub-program		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		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	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	55	0	852	0	0	0	0	0	0
TOTALS.....	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	55	0	852	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds.....			(4)		0		0		0		0
Unobligated Balance, start of year.....			(903)		(852)		0		0		0
Unobligated Balance, end of year.....			852		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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**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 2011.

**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.(Public Law 115-31)

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	
Annualized CR, FY 2018							0	0	0	0	
less: Obligations from prior years							0	0	0	0	
plus: Inflationary/Adjustments to base							0	0	0	0	
2019 Base							0	0	0	0	
plus: 2019 program changes							0	0	0	0	
2019 Estimate							0	0	0	0	
Comparison by budget program/sub-program		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		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	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	65	0	213	0	0	0	0	0	0
TOTALS.....	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	65	0	213	0	0	0	0	0	0
Adjustments to Obligations											
Recoveries/Refunds.....			0		0		0		0		0
Unobligated Balance, start of year.....			(278)		(213)		0		0		0
Unobligated balance rescission.....			213		0		0		0		0
Unobligated Balance, end of year.....			0		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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APPROPRIATION ACCOUNT: INFORMATION INFRASTRUCTURE GRANTS

BUDGET PROGRAM: INFORMATION INFRASTRUCTURE GRANTS

The Technology Opportunities Program was discontinued in 2005.

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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						
		0	102	0	65,589						
Annualized CR, FY 2018											
less: Obligations from prior years				0	0						
plus: Inflationary/Adjustments to base		0	0	0	0						
2019 Base		0	102	0	65,589						
plus: 2019 program changes		0	(97)	0	(56,790)						
2019 Estimate		0	5	0	8,799						
Comparison by activity/subactivity		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Trust Fund	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	50,875	0	50,875	0	2,000	0	(48,875)
First Responder Network Authority	Pos/BA	0	0	0	0	0	0	0	0	0	0
Administrative	FTE/Obl.	53	9,224	94	9,792	94	9,792	0	250	(94)	(9,542)
National Telecommunications and Information Administration Oversight & Programmatic	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	8	1,799	7	4,420	7	4,420	4	4,601	(3)	181
NIST Public Safety Wireless Research	Pos/BA	0	13,600	0	0	0	0	0	0	0	0
	FTE/Obl.	0	13,600	0	0	0	0	0	0	0	0
Next Generation E-911 Department of Transportation	Pos/BA	0	7,820	0	0	0	0	0	0	0	0
	FTE/Obl.	0	7,820	0	0	0	0	0	0	0	0
Next Generation E-911, NTIA	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	300	1	502	1	502	1	1,948	0	1,446
TOTALS.....	Pos/BA	0	21,420	0	0	0	0	0	0	0	0
	FTE/Obl.	61	32,743	102	65,589	102	65,589	5	8,799	(97)	(56,790)
Adjustments to Obligations:											
Recoveries/Refunds.....			0		0		0		0		0
Unobligated Balance, start of year...			(147,731)		(114,988)		0		(100,274)		0
Unobligated Balance, end of year....			114,988		100,274		0		91,475		0
Appropriation.....			0		0		0		0		0

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

Activity: Public Safety Trust Fund

Comparison by line item			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Public Safety Trust Fund	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		0	0	0	50,875	0	50,875	0	2,000	0	(48,875)
Direct Obligations.....	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		0	0	0	50,875	0	50,875	0	2,000	0	(48,875)

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

Activity: Public Safety Trust Fund

Comparison by line item		2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
First Responder Network Authority	Pos/BA	0	0	0	0	0	0	0	0	0	0
Administrative	FTE/Obl.	52	9,224	62	9,792	62	9,792	0	250	(62)	(9,542)
Direct Obligations.....	Pos/BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	52	9,224	62	9,792	62	9,792	0	250	(62)	(9,542)

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

Activity: Public Safety Trust Fund

Comparison by line item			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
National Telecommunications and Information Administration Oversight & Programmatic	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		8	1,799	9	4,420	9	4,420	5	4,601	(4)	181
Direct Obligations	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		8	1,799	9	4,420	9	4,420	5	4,601	(4)	181

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

Activity: Public Safety Trust Fund

Comparison by line item			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
NIST Public Safety Wireless Research	Pos/BA		0	13,600	0	0	0	0	0	0	0	0
	FTE/Obl.		0	13,600	0	0	0	0	0	0	0	0
Direct Obligations	Pos/BA		0	13,600	0	0	0	0	0	0	0	0
	FTE/Obl.		0	13,600	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)

Activity: Public Safety Trust Fund

Comparison by line item			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Next Generation E-911	Pos/BA		0	7,820	0	0	0	0	0	0	0	0
Department of Transportation	FTE/Obl.		0	7,820	0	0	0	0	0	0	0	0
Direct Obligations.....	Pos/BA		0	7,820	0	0	0	0	0	0	0	0
	FTE/Obl.		0	7,820	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)

Activity: Public Safety Trust Fund

Comparison by line item			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Next Generation E-911, NTIA	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		0	300	1	502	1	502	1	1,948	1	1,446
Direct Obligations.....	Pos/BA		0	0	0	0	0	0	0	0	0	0
	FTE/Obl.		0	300	1	502	1	502	1	1,948	1	1,446

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

Object Class	2017 Actual	2018 Annualized CR	2019 Base	2019 Estimate	Increase/(Decrease) From 2019 Base
11 Personnel compensation					
11.1 Full-time permanent	5,067	5,440	5,440	472	(4,968)
11.3 Other than full-time permanent	0	0	0	0	0
11.5 Other personnel compensation	214	0	0	0	0
11.8 Special personnel services payments	0	0	0	0	0
11.9 Total personnel compensation	5,281	5,440	5,440	472	(4,968)
12.1 Civilian personnel benefits	1,682	1,274	1,274	184	(1,090)
13 Benefits for former personnel	0			0	0
21 Travel and transportation of persons	111	225	225	40	(185)
22 Transportation of things	1	1	1	1	0
23.1 Rental payments to GSA	318	275	275	190	(85)
23.2 Rental payments to others	0	0	0	0	0
23.3 Communications, utilities and miscellaneous charges	134	51	51	51	0
24 Printing and reproduction	40	5	5	5	0
25.1 Advisory and assistance services	0	0	0	0	0
25.2 Other services	761	2,813	2,813	3,100	287
25.3 Purchases of goods and services from Government accounts	2,500	4,600	4,600	2,744	(1,856)
25.7 Operation and maintenance of equipment	2	0	0	0	0
26 Supplies and materials	50	30	30	12	(18)
31 Equipment	443	0	0	0	0
41 Grants, subsidies and contributions	0	0	0	0	0
94 Expenditure transfer	21,420	50,875	50,875	2,000	(48,875)
99 TOTAL OBLIGATIONS	32,743	65,589	65,589	8,799	(56,790)
Prior Year Recoveries/Refunds	0				
Unobligated balances from Prior Years	(147,731)	(114,988)		(49,399)	
Unobligated balance EOY	114,988	49,399		40,600	
Unobligated balance, expiring					
Total Mandatory Budget Authority	32,743	65,589	65,589	8,799	(56,790)

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

Personnel Data	2017 Actual	2018 Annualized CR	2019 Base	2019 Estimate	Increase/(Decrease) From 2019 Base
Full-Time Equivalent Employment:					
Full-time permanent	61	102	102	5	(97)
Other than full-time permanent	0	0	0	0	0
Total	61	102	102	5	(97)
Authorized Positions:					
Full-time permanent	61	102	102	5	(97)
Other than full-time permanent	0	0	0	0	0
Total	61	102	102	5	(97)

Department of Commerce
National Telecommunications and Information Administration
 First Responder Network Authority
 SUMMARY OF REIMBURSABLE OBLIGATIONS
 (Dollar amounts in thousands)

Comparison by sub-program	2017 Enacted		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
<u>Reimbursable projects</u>										
First Responder Network Authority	Pos/BA FTE/Obl.	0 0	0 0	0 50,000	0 94	0 50,000	0 260	0 120,000	0 166	0 70,000
Total, Reimbursable Obligations.	Pos/BA FTE/Obl.	0 0	0 0	0 50,000	0 94	0 50,000	0 260	0 120,000	0 166	0 0

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	2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
<u>Reimbursable projects</u>										
State and Local Implementation	0	0	0	0	0	0	0	0	0	0
Grant Fund Administration	4	1,968	4	18,375	4	18,375	4	20,409	0	2,034
Total, Reimbursable Obligations.....	0	0	0	0	0	0	0	0	0	0
	4	1,968	4	18,375	4	18,375	4	20,409	0	2,034

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

Comparison by sub-program			2017 Actual		2018 Annualized CR		2019 Base		2019 Estimate		Increase/(Decrease) From 2019 Base	
			Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
<u>Reimbursable projects</u>												
<u>Network Construction Fund</u>												
First Responder Network Authority	Pos/BA	0	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	153	1,063,293	93	20,000	93	20,000	0	250	(93)	(19,750)	
NTIA/Opt-OUT	Pos/BA			0	0	0	0	0	0	0	0	0
	FTE/Obl.	4	1,384	4	3,878	4	3,878	3	1,070	(1)	(2,808)	
Total, Reimbursable Obligations.....	Pos/BA	0	0							0	0	
	FTE/Obl.	157	1,064,677	97	23,878	97	23,878	3	1,320	(94)	(22,558)	

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**Department of Commerce
National Telecommunications and Information Administration**

Legislative Proposal

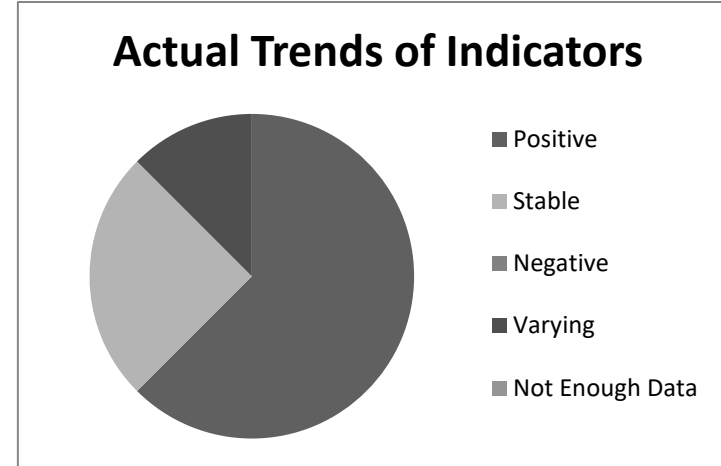
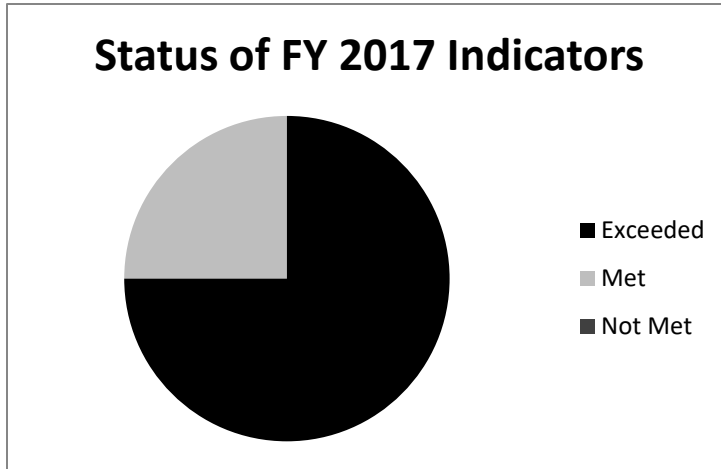
Lease Shared Secondary Access Rights: To promote efficient use of the electromagnetic spectrum, the Administration proposes, when technically and operationally feasible, to require the leasing of secondary access rights to federal spectrum. Under this proposal, the National Telecommunications and Information Administration (NTIA) would be granted authority to lease access to federal spectrum for commercial use, on a non-interference basis, with federal primary users. Working with other federal agencies, NTIA would negotiate sharing arrangements on behalf of the federal government and would seek to increase the efficiency of spectrum, when possible, without causing harmful interference to federal users authorized to operate in the negotiated bands. In addition to federal spectrum auctions, leases will provide another option for maximizing the economic value of this scarce spectrum resource. Significant resources will be required by NTIA and other federal agencies to negotiate and manage these spectrum leases, and therefore the proposal is conservatively estimated to generate approximately \$700 million in net deficit reduction for taxpayers.

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FY 2019 ANNUAL PERFORMANCE PLAN / FY 2017 ANNUAL PERFORMANCE REPORT

National Telecommunications and Information Administration

Performance Indicator Information



Summary of Indicator Performance

- Of the eight indicators, six actuals (75%) exceeded their targets and two actuals (25%) met their targets;
- There were eight indicators that had trends (more than three years of data); and
- Of those indicators with trends, two (25%) had positive trends, five (62.5%) had stable trends, and one (12.5%) have variable trend.

Summary of FY 2017 Indicator Performance

Indicator Name	Target	Actual	Status	Trend
Percentage of NTIA positions substantially adopted or successful at international meetings	75%	95%	Exceeded	Stable
Identify up to 500 MHz of spectrum to support wireless broadband	66%	66%	Met	Stable
In coordination with DOC operating units, conduct outreach activities with government, industry, and multistakeholders groups to identify and address	6 public forums and proceedings	7 multistakeholder meetings	Exceeded	Stable

privacy and global free flow of information issues				
Communities to which NTIA provides technical assistance	250	400	Exceeded	Positive
Number of times research publications are downloaded annually	8,000	8,089	Exceeded	Positive
Successfully completed deliverables under reimbursable agreements (on time, on budget, and accepted)	95%	99%	Exceeded	Stable
Delivery of FirstNet and acceptance of each state's network plans or alternatively, FCC approval of a state's plan required for the implementation of the Public Safety Broadband Network	Plans to award a contract	Contract Awarded	Met	Variable
Miles of broadband networks deployed (Infrastructure Projects)	116,000	117,072	Exceeded	Stable
Number of government and private test-bed facilities partnering with the Center for Advanced Communications*				

* This indicator was predicated on signing an agreement with NIST to develop the Center for Advanced Communications. The agreement was never signed, so the indicator never came to fruition.

Current / Recurring Indicators

Indicator	Percentage of NTIA positions substantially adopted or successful at international meetings							
Category	Supporting							
Type	Intermediate Outcome							
Description	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 multi-lateral meetings, multi-stakeholder meetings, and regional communications conferences and meetings.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	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	75% of NTIA positions substantially adopted/ successful at international meetings	60% of NTIA positions substantially adopted/ successful at international meetings
Actual	Achieved >80% of	Achieved >80% of	Achieved 95% of NTIA	Achieved 95% of NTIA	Achieved 95% of NTIA	Achieved 95% of NTIA		

	NTIA positions substantially adopted/ successful at international meetings	NTIA positions substantially adopted/ successful at international meetings	positions substantially adopted/ successful at international meetings	positions substantially adopted/ successful at international meetings	positions substantially adopted/ successful at international meetings	positions substantially adopted/ successful at international meetings		
Status	Exceeded	Exceeded	Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Stable							
Explanation (if not met in 2017)	None.							
Actions to be taken / Future Plans	None.							
Adjustments to targets	Due to FY19 budget cuts and staff reduction, NTIA will limit participation in critical international treaty-making conferences, bilateral and multilateral meetings, multi-stakeholder meetings, and regional communications conferences. Lack of participation and engagement by NTIA decreases the performance on adoption of U.S. policies and creates a substantial risk that some countries would push for expanded governmental and intergovernmental powers regulating cyberspace and the Internet.							
Notes	None.							
Information Gaps	None.							

Indicator	In coordination with DOC operating units, conduct outreach activities with government, industry, and multistakeholder groups to identify and address privacy and global free flow of information issues							
Category	Supporting (Non-Strategic Plan)							
Type	Intermediate Outcome							
Description	Partner with stakeholders from industry, consumer groups, government, academia, and technical community to work towards 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 rather will ensure the process is open, transparent, and consensus-based							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target			6 public forums and proceedings	6 public forums and proceedings	6 public forums and proceedings	6 public forums and proceedings	6 public forums and proceedings	4 public forums and proceedings
Actual			9 multistakeholder meetings	10 multistakeholder meetings	7 multistakeholder meetings	7 multistakeholder meetings		
Status			Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Stable							

Explanation (if not met in 2017)	None.
Actions to be taken / Future Plans	None.
Adjustments to targets	Due to FY19 budget cuts and staff decreases, NTIA will substantially de-scope the size and number of NTIA-convened cybersecurity and Internet multistakeholder processes, severely limiting the trusted venue for developing cross-sector, voluntary cybersecurity, privacy and emerging technology policies amongst government, the private sector, the technical community, civil society, and academics.
Notes	None.
Information Gaps	None.

Indicator	Communities to which NTIA provides technical assistance							
Category	Key							
Type	Output							
Description	Provide broadband technical assistance to unserved and underserved communities to attract new business investments and spur economic growth. Various communities that were unable to receive NTIA assistance during the BTOP grant period can now 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 will assist.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target				175 communities	250 communities	250 communities	145 communities	145 communities
Actual				337 communities	449 communities	400 communities		
Status				Exceeded	Exceeded	Exceeded		
Trend	Positive							
Explanation (if not met in 2017)	None.							
Actions to be taken / Future Plans	Collection of data							
Adjustments to targets	The budget cuts will reduce the number of communities being served by broadband technical assistance.							
Notes	Communities served are not cumulative							
Information Gaps	None.							

Indicator	Number of times research publication are downloaded annually
Category	Supporting (Non-Strategic Plan)

Type	Output							
Description	Develop telecommunications engineering research publications, software programs, and data sets that 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 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target			7,000 downloads	7,300 downloads	7,500 downloads	8,000 downloads	7,000 downloads	7,000 downloads
Actual			7,707 downloads	8,960 downloads	8,748 downloads	8,089 downloads		
Status			Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Positive							
Explanation (if not met in 2017)	None.							
Actions to be taken / Future Plans	None.							
Adjustments to targets	Advanced research technology transferred by publications is giving way to technology transferred through software programs and data set releases. This is a new phenomenon and no trend information is available, but the audience for the software and data sets is known to be smaller than the audience for publications. Resource constraints are also reducing the average number of new research publications available each year.							
Notes	Metric is restated to include downloads of software programs and data sets. Software and data sets represented 23% of downloads in FY 2017 versus 13% of downloads in FY 2014. As the number of print publications decreases and the number of published software programs and data sets increase, the metric will also transition to total downloads.							
Information Gaps	None.							

Indicator	Successfully completed deliverables under reimbursable agreements (on time, on budget, and accepted)							
Category	Supporting (Non-Strategic Plan)							
Type	Process							
Description	Perform research on cost-reimbursable basis for other federal agencies under 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 three success parameters – on time, on budget, and accepted – for each deliverable under all agreements.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target			95% of customer satisfaction surveys meet expectations on three parameters	95% of customer satisfaction surveys meet expectations on three parameters	95% of customer satisfaction surveys meet expectations on three	95% of customer satisfaction surveys meet expectations on three	95% of customer satisfaction surveys meet expectations on three parameters	95% of customer satisfaction surveys meet expectations on three

					parameters	parameters		parameters
Actual			Achieved 98% customer satisfaction on three parameters	Achieved 99% customer satisfaction on three parameters	Achieved 99% customer satisfaction on three parameters	Achieved 99% customer satisfaction on three parameters		
Status			Exceeded	Exceeded	Exceeded	Exceeded		
Trend	Stable							
Explanation (if not met in 2017)	None.							
Actions to be taken / Future Plans	None.							
Adjustments to targets	None.							
Notes	None.							
Information Gaps	None.							

Non Recurring Indicators

Indicator	Identify up to 500 MHz of spectrum to support wireless broadband							
Category	Key							
Type	Output							
Description	NTIA is undertaking tasks to make available 500 MHz (in bandwidth) of spectrum to support wireless broadband service by 2020. NTIA, with input from federal agencies and the Federal Communications Commission (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 towards 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 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Meet 66% of annual milestones regarding the identification of 500 MHz for wireless broadband	Retire	Retire
Actual	Achieved 100% of annual milestones	Achieved 100% of annual milestones	Achieved 100% of annual milestones	Achieved 80% of annual milestones	Achieved 97% of annual milestones	Achieved 66% of annual milestones		
Status	Exceeded	Exceeded	Exceeded	Exceeded	Exceeded	Met		
Trend	Stable							
Explanation (if not met in 2017)	Not Applicable							
Actions to be taken / Future Plans	NTIA will continue to pursue the identification of spectrum for repurposing from federal to non-federal or shared use, but will reorient the target to a broader goal.							
Adjustments to targets	Performance against the target was greatly reduced from previous years.							
Notes	NTIA proposes a new indicator that aligns with NTIA's Strategic Initiative for Increased Spectrum Access							
Information Gaps	N/A							
Justification for elimination	NTIA proposes retiring this indicator since it specifically addresses a goal set by the previous administration and does not address the requirements imposed by the Spectrum Pipeline Act (PL 114-74).							

Indicator	Number of government and private test-bed facilities partnering with the Center for Advanced Communications							
Category	Supporting (Non-Strategic Plan)							
Type	Output							
Description	The Center for Advanced Communications (CAC) will become a single point of contact for engaging industry and other government agencies on advanced communications technologies. The CAC will increase its partnerships, in particular, in the area of testing, validation, and conformity assessments.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target				2 partnerships	2 partnerships	5 partnerships	Retire	Retire
Actual				0 partnerships	0 partnerships			
Status				Not Met	Not Met			
Trend	Not enough data							
Explanation (if not met in 2017)	This indicator was predicated on signing an agreement with NIST to develop the Center for Advanced Communications. The agreement was never signed, so the indicator never came to fruition.							
Actions to be taken / Future Plans	Retire this indicator							
Adjustments to targets	None.							
Notes	None.							
Information Gaps	None.							
Justification for elimination	The CAC activity is no longer being pursued by NTIA and NIST.							

Indicator	Miles of broadband networks deployed (Infrastructure Projects)							
Category	Key							
Type	Outcome							
Description	BTOP funded projects provide broadband services in unserved and enhance broadband in underserved areas of the U.S. 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 (CAIs), such as schools, libraries, hospitals, and public safety facilities. This indicator's target is the cumulative total number of miles of network deployed using BTOP funding.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	50,000	100,000	113,000	118,000	116,000	116,000	Retire	Retire
Actual	78,699	111,361	113,555	115,565	117,072	117,072		
Status	Exceeded	Exceeded	Met	Not Met	Exceeded	Exceeded		
Trend	Stable							
Explanation (if not met in 2017)	None.							
Actions to be taken /	None.							

Future Plans	
Adjustments to targets	None.
Notes	None.
Information Gaps	None.
Justification for elimination	The grant program is all but closed, with only two grants that remain open. The program no longer measures miles deployed.

Indicator	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							
Category	Key (Non-Strategic Plan)							
Type	Outcome							
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 a plan for the construction, operation, maintenance, and improvement of the nationwide public safety broadband network, upon completion of the 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 the radio access network.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target		Issue RFP	Issue RFPs	RFP Development and Consultation with Regional, State, Tribal, and Local Jurisdictions	Issue RFP	Complete RFP Process	Retire	Retire
Actual		Issuance of 11 Requests for Information (RFIs)	Consultation with State, Tribal, and Local jurisdictions initiated. Two additional RFIs released	Completed consultation with 50 of the 56 states and territories	Issued RFP	Completed RFP Process; Awarded network partner contract.		
Status		Not Met	Not Met	Met	Met	Met		
Trend	Stable							
Explanation (if not met in 2017)	None.							
Actions to be taken /	None.							

Future Plans	
Adjustments to targets	None.
Notes	None.
Information Gaps	None.
Justification for elimination	The network partner contract has been awarded. New indicator proposed to track progress.

Proposed NEW Indicators

Indicator	Create a pipeline of spectrum for mission-critical government services and commercial providers							
Category	Key							
Type	Intermediate Outcome							
Description	Create and institutionalize enduring processes that foster full, efficient, and effective use of radio spectrum and result in a pipeline that provides sufficient spectrum access opportunities to meet the increasing needs of the Federal Government, State and Local entities providing mission critical services, as well as commercial wireless services. The required ongoing analyses combined with various possible band-repurposing options 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 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target							Meet 66% of annual milestones	Meet 66% of annual milestones
Actual								
Status								
Trend	New indicator – not enough data.							
Explanation (if not met in 2017)	Not applicable, since it wasn't a 2017 target							
Actions to be taken / Future Plans	NTIA will continue to conduct spectrum assessments in order to support informed and timely spectrum sharing decisions, as well as produce band studies in order to identify spectrum for repurposing from federal to non-federal or shared use.							
Adjustments to targets	Not applicable, since this is a new indicator							
Notes	This revised indicator aligns with NTIA's Strategic for Increased Spectrum Access, as well as the draft new DOC Strategic Plan (Strategy 2.3a).							
Information Gaps	Not applicable							
Reason for New Indicator	To broaden the indicator measure, to update text to remove specific reference to goal of previous administration, and to incorporate the requirements imposed by the Spectrum Pipeline Act (PL 114-74).							
Indicator(s) being replaced	Spectrum identified for commercial broadband use (Previous OSM 500 MHz Goal)							

Indicator	Deploy, operate, and maintain a nationwide public safety broadband network							
Category	Supporting (Non-Strategic Plan)							
Type	Intermediate Outcome							
Description	Deploy, operate, and maintain a nationwide public safety broadband network. With its selection of a network partner in 2017, FirstNet has begun its initial five-year period of technical implementation and providing services to public safety first responders.							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019

Target							Stagger deployment of FirstNet core network and nationwide functions. Initiate Band 14 RAN build-out for Opt-In states	Target public safety device connections and Band 14 coverage in Opt-In states
Actual								
Status								
Trend	New indicator – not enough data.							
Explanation (if not met in 2017)	Not Applicable. There wasn't a 2017 target							
Actions to be taken / Future Plans	Measurement of network adoption by public safety users against targets within NPSBN contract							
Adjustments to targets	Not applicable since this is a new indicator							
Notes	None							
Information Gaps	None.							
Reason for New Indicator	Represents next phase in the FirstNet program							
Indicator(s) being replaced	This indicator is replacing the previous indicator of the Request for Proposal (RFP) and contract award, which have been met.							

Resource Requirements Table

	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	FY 2017 Enacted	FY 2018 Estimate	FY 2019 Base	Increase / Decrease	FY 2019 Request
Total Budget Authority	2,996	2,572	1,417	3,024	3,091	3,669	3, 810	3,821	11	3,821
Direct	2,996	2,572	1,417	3,024	3,091	3,669	3,780	3,821	41	3,821
Reimbursable	0	0	0	0	0	0	0	0	0	0
Total	2.996	2,572	1,417	3,024	3,091	3,669	3,780	3,821	41	3,821
Total Positions	13	14	11	12	12	12	12	12	0	12

	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	FY 2017 Enacted	FY 2018 Estimate	FY 2019 Base	Increase / Decrease	FY 2019 Request
Total Budget Authority	80,023	75,102	85,176	72,008	81,617	107,891	76,498	75,512		75,512
Direct	43,461	38,825	43,488	35,888	38,631	33,010	32,205	29,825	30	29,825
Reimbursable	36,562	36,277	41,688	36,120	42,986	74,881	53,978	45,687	(8,291)	45,687
Total	80,023	75,102	85,176	72,008	81,617	107,891	86,143	75,512	(8,261)	75,512
Total Positions	256	243	240	248	259	318	280	280	0	280