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Subject:	Broadband Opportunity Council -- Comments of Google Inc.
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Attachments:	2015-06-10 Google Broadband Opportunity Council Comments.pdf

Please find attached comments of our client Google Inc. in response to the Broadband Opportunity Council's April 24, 2015 Notice and Request for Comment.

Best,
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DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

Docket No. 1540414365-5368-01

DEPARTMENT OF AGRICULTURE

Rural Utilities Service

RIN 0660-XC019

Broadband Opportunity Council Notice and Request for Comment

Comments of Google Inc.

Google thanks the Broadband Opportunity Council ("Council") and its co-chairs, the Departments of Commerce and Agriculture, for its focus on expanding access to the Internet, and for its invitation to comment on and participate in this important initiative.[1]

Google recognizes that networks enabling broadband Internet access afford vast power to society. The Internet empowers people to create and share, to express opinions freely, and to pursue the promises of innovations big and small. Access to robust and affordable broadband Internet connections has become a vital component of everyday life and instrumental within and around homes, businesses and anchor institutions. But there remain stubborn gaps in broadband availability and digital inclusion. Although the United States has made significant steps towards spreading Internet connectivity, according to the Federal Communications Commission's ("FCC") latest broadband progress report, 55 million Americans live in areas that lack access to *any* high-speed broadband.[2] Even more users lack access to *affordable* high-speed broadband.

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[1] *See* Broadband Opportunity Council Notice and Request for Comments, Notice, 80 Fed. Reg. 23,785 (rel. Apr. 29, 2015) ("Broadband Opportunity Council Notice and Request for Comments").

[2] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, Report and Notice of Inquiry*, GN Docket No. 14-126, FCC 15-10, ¶ 4 (rel. Feb. 4, 2015) ("2015 Broadband Progress Report"). According to April 2015 statistics from the Pew Research Center, approximately 19% of Americans (more than 61 million people) either lack access to fixed broadband Internet connection at home, or have limited options for online access other than through their cell phones. *See* Aaron Smith, *U.S.*

The Council's actions can provide new momentum to increase broadband deployment and adoption nationwide, and expand access to the Internet and the opportunities it provides to all Americans. The Council will be a valuable forum for coordinated agency action to remove or reduce the regulatory and structural barriers presently faced by broadband Internet access providers, which continue to invest in networks to provide faster connection speeds at competitive prices to more parts of the country. The Council can take steps to ensure that government broadband investments are implemented efficiently and effectively, and facilitate data collection and sharing within and outside the government to help spur broadband readiness.

As the Council begins its work, Google urges it to focus on federal initiatives that will have the greatest impact on expanding high-speed broadband access and inclusion. Based on Google's experience in multiple biomes of the Internet ecosystem—including as a leader in Internet applications and content, and an innovator in expanding high-speed broadband access through fiber and wireless broadband networks—we offer the following list of high-priority issues and suggested remedies for the Council to act upon.

Google first describes executive actions that will reduce barriers to broadband deployment and adoption. Next, Google suggests ways existing federal programs can be leveraged to increase broadband deployment and promote broadband adoption. The third section describes digital inclusion initiatives that could enhance individual's abilities to access and use broadband networks. Finally, Google proposes performance metrics and accountability measures to help the Council gauge its progress and success.

I. REDUCING BROADBAND BARRIERS THROUGH EXECUTIVE ACTION

The Council sought comments on barriers to broadband deployment and adoption, including specific federal executive agency actions that could reduce those barriers as well as "promote best practices, modernize outdated regulations, promote coordination, and offer more services online."[3] Achieving broadband abundance requires reducing the cost of network buildout and removing barriers that limit providers' ability to reach consumers. The following recommended modifications to existing regulations would help to make high-speed broadband more widely available and more affordable.

1. Ease Access to Existing Rights of Way and Pathway Infrastructure

(Responds to Questions 1, 2, 3, 5, 6, 9, 10, 12, 13, 15, 18, 19, 21, 28)

To construct high-speed networks, broadband providers need access to existing utility infrastructure such as poles and conduits on a consistent, cost-effective, and timely basis. The FCC has taken important steps to improve rules related to infrastructure access.[4] However,

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Smartphone Use in 2015, PEW RESEARCH CENTER (Apr. 1, 2015), *available at* http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.

[3] Broadband Opportunity Council Notice and Request for Comments, 80 Fed. Reg. at 23,786.

[4] *See, e.g.*, *Implementation of Section 224 of the Act – A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, FCC 11-50, 26 FCC Rcd. 5240 (2011) ("2011 Pole Attachment Order").

Google's own experience in building new broadband networks demonstrates that more work needs to be done to remove delays and barriers.

Establish a national inventory of utility pole and conduit information. Reliable data about the condition, availability, location, and ownership of existing infrastructure, including utility poles and conduits, is currently decentralized, inconsistent, or entirely unavailable. This creates significant burden and delay for providers trying to build high-speed fiber networks. The Council, working in conjunction with federal and state utility regulators, should consider incentives or mechanisms to encourage owners to maintain reliable and complete information about their poles and conduits, and to make such data available to broadband providers. Access to reliable and comprehensive information will give broadband providers a means to address any stalling or noncompliance by infrastructure owners at the local or national level. Local governments should condition future utility pole permits on accurate and cooperative data sharing, and require pole and conduit owners to demonstrate to the relevant permitting authority within 18 months the availability of reliable information about pole location, condition, availability, and ownership.

The Council also should consider ways to reduce the barrier to deployment created by uncertainty as to underlying ownership of the poles. For example, if there is a dispute as to pole ownership, the attacher should have an affirmative defense against potential liability to a third-party owner if the ownership issue is not resolved within a certain amount of time after the execution of the pole attachment agreement.

Reduce delays associated with pole attachments and conduit occupancy. Make-ready work—the process of rearranging existing pole attachments, installing new poles, and ensuring proper spacing between equipment—is a significant source of cost and delay in building broadband networks. The current timetables for implementing statutory use rights in the FCC's rules permit excessive delays in completing the make-ready work that can be necessary for broadband providers to attach their lines and network equipment to utility infrastructure.[5] Under current rules, utilities can take up to 148 days before allowing providers to attach their equipment in the communications space, and up to 178 days before allowing wireless attachment on pole tops.[6] Moreover, as noted in the FCC's National Broadband Plan, delay can result from reluctance of existing attachers to move equipment to accommodate a potential competitor.[7] Large-scale deployments of more than 3,000 poles are excluded altogether from the timetables,[8]

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[5] *See* 47 C.F.R. § 1.1420(e) (providing pole owners up to 120 days to complete the make-ready work after receipt of payment from attachers for deployments to between 300 and 3000 poles).

[6] *See* 2011 Pole Attachment Order, 26 FCC Rcd. at 5244 ¶ 8. For attachers seeking access to the less of 300 poles or 0.5% of a utility's total number of in-state poles, the timelines are each increased by 60 days, producing a total of 208 days for communications space attachments and 238 days for wireless pole-top attachments. *See id.*

[7] FCC, *Omnibus Broadband Initiative, Connecting America: The National Broadband Plan*, at 111 (Mar. 2010) ("National Broadband Plan"), *available at* http://www.fcc.gov/national-broadband-plan.

[8] *See* 47 C.F.R. § 1.1420(g)(4).

which can ultimately lead to delays in buildout of competitive broadband networks that require access to a large number of poles. Introducing shorter timeframes and establishing higher pole-count thresholds before additional time allowances are triggered would accelerate deployments. The Commerce and Agriculture Departments should ensure that all broadband grant recipients agree, with respect to their own poles and conduit, to process in a timely manner simultaneous make-ready work requests without regard to volume.

In addition, state and local authorities and utility infrastructure owners sometimes each require that all other required agreements and licenses be finalized before beginning their own approval process. As a result, providers may find themselves unable to complete either process. To address this Catch-22, infrastructure owners should be required to negotiate access agreements in good faith with a broadband provider as soon as the provider has begun the process of obtaining necessary regulatory approvals.

Allow use of utility-approved contractors to perform all pole attachment and conduit make-ready work. Presently, providers are allowed to use contractors approved by pole owners only as a backstop after owners have failed to complete make-ready work within regulatory timeframes.[9] Broadband providers should be able to hire utility-approved contractors from the beginning of a project to improve deployment speed. Approved contractors have the same qualifications as utility-hired workers and can perform the work in a timely manner. Moreover, utilities currently must make lists of approved contractors available to broadband providers to further speed the necessary pole attachment work.[10] As recommended in the National Broadband Plan,[11] the Council also should ensure that broadband providers be permitted to use independent contractors if, in their estimation, utility-approved contractors alone cannot meet the deployment timetables.

In addition, the Labor Department should work with utility providers and local community colleges to ensure a sufficient level of independent utility-approved and certified contractors to perform engineering assessments and make-ready work. Such steps would not only increase jobs and job training, but also would speed deployment of new and upgraded broadband networks.

Promote access to "middle mile" infrastructure. Policy discussions relating to infrastructure access tend to focus on a network's "last mile"—the final link to the user. The last mile is, indeed, critically important. Yet broadband networks also depend on well-functioning "middle mile" infrastructure that connect backbones to last mile networks reaching homes, businesses, and anchor institutions. These facilities are not as open as the last mile. Current utility pole attachment rules, for instance, do not grant providers access to transmission lines and

[9] *See id.* § 1.1420(i).

[10] *See id.* § 1.1422(a).

[11] *See* National Broadband Plan at 111.

towers,[12] which can be used safely and efficiently to build out middle mile segments of high-speed networks.

Similarly, many cities, municipalities, and states have deployed fiber conduits in their communities with the assistance of federal grants and related incentive programs,[13] yet associated infrastructure is not always available for shared use. A portion of available, government-managed conduits could be opened up for broadband providers to connect their networks and reduce the overall costs of trenching and laying down fiber when it would be duplicative or cost-prohibitive. Yet, there are no national requirements that this conduit be made available for reuse by broadband providers (nor is there a catalog of the national inventory). The Council should consider what changes are necessary to enable providers to access middle mile infrastructure and create a machine-readable data set on the availability of federally-funded conduits, with geolocation information that can be used by broadband providers as they plan and build out their networks.

Discourage state laws that unduly delay access. States are permitted under federal law to certify that they will regulate pole attachments and conduit occupancy themselves, rather than relying on federal laws and regulations.[14] The conditions required to obtain this "reverse preemption," however, are minimal, and states can provide fewer protections to attachers than federal law guarantees.[15] The Council should explore ways, including preemption, to ensure that the federal standards set by Congress and the FCC are a floor, and states that have engaged in reverse preemption do not provide lesser opportunities for infrastructure sharing.

Clarify EPA settlement policy to permit dual-use rehabilitation of infrastructure. As recognized in President Obama's Executive Order on Accelerating Broadband Infrastructure Deployment, policies that promote the joint deployment of network facilities with other infrastructure upgrades can "reduce the cost of future broadband deployment."[16] Cities and other local government authorities that are undertaking large sewer and drainage system renovations pursuant to settlement agreements with the Environmental Protection Agency ("EPA") should be

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[12] *See Southern Co. v. FCC*, 293 F.3d 1338, 1344-45 (11th Cir. 2002).

[13] *See* Broadband Technology Opportunities Program ("BTOP"), *23rd Quarterly Program Status Report*, at 1 (Mar. 2015), *available at* http://www.ntia.doc.gov/files/ntia/publications/ntia_btop_23rd_qtrly_report.pdf (showing BTOP infrastructure grants totaling $3.5 billion) ("BTOP 23rd Quarterly Report").

[14] *See* 47 U.S.C. § 224(c).

[15] *See States That Have Certified That They Regulate Pole Attachments*, Public Notice, WC Docket No. 10-101, 25 FCC Rcd. 5541 (rel. May 19, 2010). Currently, twenty states and the District of Columbia have invoked the "reverse preemption" provision: Alaska, Arkansas, California, Connecticut, Delaware, Idaho, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Oregon, Utah, Vermont, and Washington.

[16] *Accelerating Broadband Infrastructure Deployment*, Exec. Order No. 13,616, 77 Fed. Reg. 36,903 (June 20, 2012).

able simultaneously to build or upgrade underground communications networks. However, an EPA policy on the settlement of claims against local governments is currently discouraging cities from doing so. The Council should recommend that the EPA clarify the scope of its settlement policy and permit local governments with which it has entered into consent decrees to use their own funds to deploy broadband networks.

As part of its enforcement of environmental laws, the EPA may enter into settlement agreements with parties, including local governments, under which the settling party agrees to undertake certain Supplemental Environmental Projects ("SEP") to offset the civil penalty assessed by the EPA for violations by a percentage of the total cost of the SEP. The EPA is working with hundreds of municipalities and local government agencies to settle alleged Clean Water Act violations arising from outdated sewer systems throughout the country. SEPs that call for rehabilitation of sewer systems have been, and will likely continue to be, a major part of settlements.

These types of SEPs present cost-effective opportunities for municipalities simultaneously to install conduits that can be used for broadband networks. Such dual-purpose rehabilitation projects make network deployments much more cost-efficient, which in turn spurs greater broadband competition and reduced costs for consumers. However, local governments have expressed concern that the EPA's settlement policy prohibits them from installing conduits at the same time that they implement an SEP. Under a typical consent decree that includes a SEP, local governments commit to spending a minimum amount in implementing the SEP.[17] Certain types of costs are excluded from the calculation of the SEP cost, such as administrative overhead and additional employee salaries.[18] Because joint trenching would reduce significantly the cost of deploying the conduits, local governments are concerned that the savings would be counted against the total cost of the SEP, thus risking a shortfall in the total allowable cost of the SEP and noncompliance with the consent decree.

The EPA should make clear that its current settlement policy does not prohibit local governments from making other infrastructure improvements at the same time as carrying out an SEP, and that the savings from joint trenching do not count against the total cost of the SEP. The Council also should take steps to inform municipalities that are under consent decrees that they are permitted to deploy network infrastructure at the same time as they work on their SEPs.

Encourage adoption of local best practices. In addition to the specific actions that the federal government can take, cities and localities play a critical role in facilitating broadband deployment and adoption. The *Google Fiber City Checklist* provides a collection of best

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[17] *See, e.g.*, *United States v. City of Lima*, 3:14-cv-02551-JZ, Consent Decree at 21 (N.D. Ohio. Nov. 19, 2014), *available at* http://www2.epa.gov/sites/production/files/2014-12/documents/cityoflima-cd.pdf.

[18] *See* Memorandum from Cynthia Giles, Assistant Administrator, on Issuance of the 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy, to Regional Administrators (filed Mar. 10, 2015), *available at* http://www2.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf.

practices and other resources that can assist local governments to speed deployment of fiber-optic networks.[19] The Commerce Department, through the BroadbandUSA program, should increase and promote its service as a technical resource for questions from local and state authorities, including permitting offices.

2. Bolstering Wireless Broadband Access
(Responds to Questions 1, 3, 6, 13, 15, 24, 26)

Wireless service is critical to bringing broadband to rural areas where low population densities and rough terrain often make traditional wireline networks prohibitively expensive to construct and to underserved areas that may lack robust infrastructure. It has been well-documented that spectrum availability for broadband deployment and other innovative uses has been hampered by governmental control over large swaths of frequencies, not all of which are intensively used.[20] Federal agencies should pursue a balanced approach to spectrum reallocation that allows for licensed and unlicensed commercial uses at a variety of high, medium, and low frequencies. Federal agencies also should explore further opportunities for shared use of spectrum.

Ensure each agency has a designated point of contact on spectrum efficiency. The Council should incentivize and encourage government agencies to make more spectrum available for shared use, including by continuing NTIA's work to promote spectrum sharing between governmental and non-governmental users. Toward that end, the Council should ensure that each agency has a publicly-identified, designated point of contact who is trained to serve as an advocate of modern spectrum efficiency practices inside the agency and the outreach contact with industry. This would not only encourage more efficiency in the agency's own spectrum practices, but also reflect greater awareness of the public's broadband infrastructure needs as the agency conducts its other policymaking and enforcement practices.

Promote greater research into advanced wireless technologies. The National Science Foundation has administered a Foundation-wide program for investing hundreds of millions of dollars for basic research through the Enhancing Access to Radio Spectrum ("EARS") program. The program has long focused on finding innovative ways to use spectrum more efficiently. To

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[19] *See* GOOGLE FIBER, *Google Fiber City Checklist* (Feb. 2014), https://fiber.storage.googleapis.com/legal/googlefibercitychecklist2-24-14.pdf (attached hereto as an addendum).

[20] *See* Nat'l Telecomms. and Info. Admin., *Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband (Ten-Year Plan)*, at 1 (Oct. 29, 2010), *available at* http://www.ntia.doc.gov/files/ntia/publications/tenyearplan_11152010.pdf ("Without public action to free up both Federal and non-Federal spectrum for emerging wireless uses, there is a risk that America may fall behind other countries in the wireless broadband revolution."); *see also Unleashing the Wireless Broadband Revolution*, Presidential Memorandum, 75 Fed. Reg. 38,387 (June 28, 2010), *available at* http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution ("America's future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum.").

that effect, the EARS program should dedicate research funding between two areas: (1) achieving significant reductions in size, energy use, and manufacturing costs for consumer-grade spectrum sharing band-switching radio technologies and (2) developing low-cost, high-sensitivity spectrometers (measuring 100 MHz - 100 GHz) that could be deployed in a nationwide mesh measurement network to boost spectral utilization for shared radio bands.

3. Increase Competitive Availability of Video Services
(Responds to Questions 1, 3, 6, 9, 15)

Offering video services increases the utility of a broadband network, offers more choice for the user, and improves the economics for new broadband infrastructure entrants. It also provides additional avenues for diverse public media and democratizing opportunities for content creation, as well as consumption. However, the inability of new entrants to negotiate reasonable terms for access to popular broadcast and cable content makes it difficult to attract and retain subscribers for broadband networks, thereby serving as a barrier for more ubiquitous and affordable broadband access. Thus, the lack of competitive availability of video services hinders deployment of high-speed networks, resulting in less competition in the market.

Ensure reasonable programming rates and terms are available. The Council should explore ways to reform retransmission consent and program access laws through executive action to encourage the availability to new entrants of broadcast, regional sports, and other competitively essential programming at reasonable prices, terms, and conditions.

Fix the current co-op structure for negotiating rates. Pursuant to the current co-op regime for negotiating programming agreements, individual programmers can opt out of collective agreements with providers, and can charge rates that vary widely based on each individual co-op member's subscriber base. This structure gives large incumbents a significant advantage over competitors seeking to establish or expand their services, because incumbents can obtain greater volume discounts as a result of their larger subscriber bases. Video service over broadband—and broadband Internet access generally—will become more competitive and more attractive to consumers if access to content is made available on commercially reasonable terms to competitive providers. The Council should take steps to make the co-op structure competitively and technologically neutral.

Conform discounts to cost-based requirements. Section 628 of the Communications Act makes it unlawful for a video programmer that is vertically integrated with a cable operator to discriminate between multichannel video programming distributors with respect to the prices, terms, and conditions of sale of satellite cable programming.[21] Although the statute allows cost-based discounts, the FCC has not required cable-affiliated programmers to demonstrate that the discounts they give the largest distributors are cost-justified. The FCC's policy of allowing non-cost based discounts under the guise of permitted volume discounts undermines broadband entry and deployment.

[21] *See* 47 U.S.C. § 548.

Promote competitive availability of video navigation equipment. Similar to the recommendation contained in the National Broadband Plan,[22] the Council should explore ways to expand the availability of competitive navigation devices to access video (*e.g.*, set-top boxes and television sets). This will help encourage broadband deployment and adoption by increasing innovation in consumer access and use of the video service offerings purchased from MVPDs, particularly as providers move to Internet Protocol delivery. The Downloadable Security Technology Advisory Committee ("DSTAC") was tasked in the STELA Reauthorization Act of 2014 "to identify, report, and recommend performance objectives, technical capabilities, and technical standards of a not unduly burdensome, uniform, and technology- and platform-neutral software-based downloadable security system" to promote the competitive availability of navigation devices (*e.g.*, set-top boxes and television sets) in furtherance of Section 629 of the Communications Act. A technology and platform-neutral software solution will enable device makers to create new ways for consumers to interact with their video service and create stronger demand for providers to deploy advanced broadband networks supporting these technologies.

Given that users continue to pay significant fees to rent equipment from providers, the Council should evaluate and report on whether digital inclusion goals could be fostered by more competitive and innovative video equipment offerings through a more robust retail environment. The DSTAC must file a report with the FCC by September 4, 2015 to detail its findings and recommendations. The Council should encourage the FCC to act quickly on DSTAC's report to fulfill its Section 629 mandate to foster a competitive marketplace for video navigation devices that will promote widespread broadband deployment and adoption.

4. Increase Broadband-Ready Buildings
(Responds to Questions 1, 2, 3, 5, 6, 14, 15, 21, 22)

The availability of broadband conduit, wiring, and Wi-Fi and open LTE access inside residential, commercial, anchor institution, and government buildings, is critical to fast, efficient, and widespread deployment of broadband services. Conversely, the lack of suitable network infrastructure within buildings creates a barrier to broadband deployment and adoption by increasing the costs and reducing the quality of broadband connectivity. The Council should explore ways to lower the barriers to deploying broadband inside and around privately owned buildings, especially in multiple dwelling units ("MDUs"), and in government owned or leased facilities.

Update inside wiring requirements for MDUs. Approximately thirty percent of Americans homes are in buildings that house more than one family.[23] The Council should explore ways to encourage building owners to construct or retrofit MDUs so that they have appropriate inside wiring to be able to connect residents to external fiber optic networks. For example, the FCC should update its inside wiring quality standards to ensure that buildings are

[22] *See* National Broadband Plan at 51.

[23] *See* U.S. CENSUS BUREAU, *American Community Survey 5-Year Estimates*, Units in Structure, http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_B25024&prodType=table.

constructed with technologically up-to-date materials and are ready for installation of gigabit-and-beyond networks. The FCC has not revised the minimum required quality of inside wiring since 1985 when the rules were first promulgated. In addition, the Commerce Department, through the BroadbandUSA program, should maintain technical expertise to assist building owners on best practices for broadband-ready buildings, and the Departments of Energy, and Housing and Urban Development ("HUD"), the General Services Administration ("GSA"), and other agencies should promote that expertise in their public outreach.

Modernize government facilities to support Wi-Fi hotspots. Consumers increasingly are using Wi-Fi to access the Internet, both for their fixed broadband Internet access service at home, and for off-loading mobile traffic.[24] Wireless technologies like Wi-Fi and open LTE have made it possible to leverage government facilities and anchor institutions such as school and libraries to provide broadband access to the public.

The Council should recommend that federal agencies work with the GSA to enable broadband connectivity in and around government buildings that can be accessed wirelessly by the public. To the extent that government buildings need to be updated to enable the delivery of high-speed Internet access, GSA should include requirements for fiber-optic broadband conduit and wiring as well as Wi-Fi and open LTE access points. For example, GSA awards of Wire and Cable Services Contracts ("WACS") for broadband wiring should require the use of fiber-optic systems as part of any contractor bids. Moreover, GSA should compile the outcomes of these federal actions into best practices for state and local government buildings, which serve an equally important role in removing challenges to the availability of abundant bandwidth. In addition, the Department of the Interior should report to the Council on an annual basis the availability of Wi-Fi, LTE or other broadband access across the geographic territory of national parks and other national and cultural resources frequented by the public.

In addition, the U.S. Department of Justice's ("DOJ") Office of Justice Programs ("OJP") should create a formula grant program for the specific purpose of installing broadband service and providing both privately and publicly available Wi-Fi access in U.S. Courts. OJP could direct criteria and funding, and DOJ could manage implementation for federal courts while state administrative agencies could manage the process for state courts.

Remove barriers to broadband deployment in government-funded buildings. The Council also should evaluate regulatory changes that remove or reduce barriers to broadband deployment in government-funded buildings. First, HUD should make regulatory changes as necessary to allow Public Housing Authorities ("PHAs") to pay for the cost of broadband service. Currently, PHAs are not permitted to use federal funds to pay for residents' broadband service because broadband services are not included as a covered use of the Public Housing Operating Fund.[25]

Second, HUD should include in the criteria for its loan, loan guarantee, grant, housing voucher, and rental assistance programs incentives for newly constructed buildings to make their

[24] *See* 2015 Broadband Progress Report ¶ 37.

[25] *See* 24 C.F.R. § 990.

inside wiring available to all broadband providers, and to wire units with future-proof fiber-optic cabling that then can be connected to a fiber-based broadband network at reasonable interconnection points. For example, the HUD Choice Neighborhoods Initiative planning and implementation grants should include incentives for broadband deployment from PHAs that can install wired broadband infrastructure and equipment that is compatible with that of the local ISP(s), or wireless infrastructure that supports an open LTE network so that smartphones from any wireless carrier would receive good interior coverage. This infrastructure change would encourage many more providers to offer service to public buildings. HUD and the BroadbandUSA program could provide technical support for PHAs that are interested in moving forward with this approach on new or existing buildings. In addition, HUD should prohibit public housing authorities and landlords receiving voucher support from entering into exclusive marketing arrangements with only one broadband provider, limiting competition and choice for building residents.

Publish information on broadband-ready buildings. The Council should require federal agencies to share information about the broadband-readiness of their leased and owned buildings. Readily accessible information about which buildings have broadband Internet access, such as through Wi-Fi hotspots, will both enable broadband availability for individuals, improve the government's ability to deliver e-government services, and promote competition among building owners. Likewise, broadband providers can better target buildout opportunities if they have access to an updated list of broadband-ready buildings, both government and privately owned. For example, the Department of Energy maintains a High Performance Buildings Database on energy efficiency and other building aspects for the construction industry to use. This or a similar list also should include broadband-readiness as a metric in its assessment. Similarly, the Department of Transportation should publish a user-friendly guide that assesses the availability and quality of broadband access in transportation hubs such as airports and train stations.

II. LEVERAGING EXISTING FEDERAL PROGRAMS TO PROMOTE BROADBAND DEPLOYMENT AND ADOPTION

The Council also sought comments on how "existing programs… currently support or could be modified to support broadband competition [and] deployment."[26] Federal programs provide opportunities to leverage existing funding and to work through existing intergovernmental and public-private partnerships to expand broadband availability. The Council should explore ways to expand direct and indirect financial support for network deployment, as well as ways to promote pro-broadband policies into the criteria of existing programs.

A. Changes to Federal Programs to Promote Broadband Deployment and Adoption

1. Establish Credit Support for Construction of Broadband Networks

(Responds to Questions 1, 2, 3, 5, 7, 10, 14, 16, 17, 20, 21, 22)

[26] *See* Broadband Opportunity Council Notice and Request for Comments, 80 Fed. Reg. at 23,785.

The large initial capital cost of constructing high-speed fiber optic networks remains a key challenge to achieving broadband abundance. Public and private entities alike struggle to find cost-effective financing to fund network construction. While private sources of capital exist to fund such projects, the associated risk makes the cost of capital prohibitively expensive, particularly for smaller and/or rural communities, businesses and anchor institutions. Federal credit support is an efficient way to spur investment and enable communities, either directly or in partnership with private entities, to build public infrastructure that then can be used to provide broadband service and generate revenues to repay the loans.

Provide loan guarantees for network construction. The Council can build on the NTIA's Broadband Technology Opportunity Program ("BTOP") and the Rural Utilities Service's ("RUS") Broadband Initiatives Program ("BIP"), as well as the RUS's ongoing Rural Broadband Access Loans and Loan Guarantees Program, to provide federal credit support for network buildouts. Support can come in the form of loan guarantees based on the amounts of funding already provided to recipients under NTIA's and RUS's programs. In addition, existing federal loan guarantee programs that support communities seeking to finance economic development projects can be used to help fund network builds. For example, HUD's Section 108 loan guarantee program can guarantee a private loan to local governments for an amount of up to five times the most recent amount of grant support that the jurisdiction received under HUD's Community Development Block Grant program.[27] Under existing HUD regulations, Section 108 loans can be used to fund certain economic development projects.[28] To the extent that current regulations are ambiguous, HUD should make clear that constructing a fiber optic network to be used to offer broadband Internet access to the general public is an eligible use. Building a new fiber optic network both directly creates jobs for construction and maintenance of the network and, importantly for HUD's programmatic purposes,[29] makes the community in which it is constructed more attractive for businesses and anchor institutions.[30]

Promote the full use of existing network assets funded through BTOP, BIP, and other federal sources. Broadband providers cannot access excess capacity on networks built with assistance from federal funds. As a result, valuable broadband network infrastructure lies fallow. The Council should work with NTIA and RUS to ensure that the network capacity constructed with federal loans and grants is being fully utilized. NTIA and RUS should require grantees to report any excess capacity on their networks. To make the best use of excess capacity, NTIA and RUS should examine whether BTOP's and BIP's program rules that restrict the sale or lease of assets should be amended. Specifically, NTIA should consider amending its prior BTOP

[27] *See* 42 U.S.C. § 5308; 24 C.F.R. §§ 570.700-570.710.

[28] *See* 24 C.F.R. §§ 570.703(f)(2); 570.203; 570.204.

[29] *See, e.g.*, City of Portland, Oregon, *The Case for Fiber in Portland: The Benefits Gigabit Networking Offers the Community*, Office for Community Technology, at 2-4 (Feb. 2014), *available at* http://www.portlandoregon.gov/revenue/article/482965.

[30] *See id.* at 6-10 (summarizing experiences of cities).

Notices of Funding Availability,[31] and updating its fact sheet on "BTOP's Sale/Lease Restriction, Indefeasible Rights-of-Use, and Fiber Swaps" to permit joint ventures, fiber swaps, and similar arrangements, or alternatively, include excess capacity as a basis for accelerating and granting a waiver to a BTOP-recipient.[32] Similarly, RUS explicitly could permit such allowed uses of funds under its Telecommunications Infrastructure Loan and Loan Guarantee program.[33]

2. Integrate Pro-Broadband Policies into Existing Federal Programs
(Responds to Questions 1, 2, 3, 5, 6, 7, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22)

Integrating policies that spur broadband network deployment and adoption into federal infrastructure and infrastructure funding programs will help reduce the cost of network construction and speed broadband deployment. The physical footprint of a broadband network naturally overlaps with that of other existing infrastructure that serves the needs of residents and of public and private institutions. Thus, sharing physical infrastructure within rights-of-way, much of which is or was government-funded, is essential. In addition, installing conduit suitable for broadband networks at the same time as other infrastructure is deployed or upgraded is critical for expensive last-mile deployments. Any expansion of government spending programs should be tailored narrowly and take into account legitimate concerns about crowding out private investment. Shifts of existing spending should minimize potential negative impact on stakeholders of existing federal programs. These considerations should be balanced against the "multiplier effect" that a dollar of broadband investment can have on the wider economy.[34] The Council should consider the following ways of promoting efficient broadband deployment that maximizes existing infrastructure to support new networks.

Establish a unified federal policy for access to rights-of-way over interstate highways. Current Federal Highway Administration ("FHWA") regulations accommodate access by "utility facilities" to rights-of-ways over Interstate highways.[35] For accommodation purposes, a "utility facility" is defined to mean privately or publicly owned facilities and lines used, *inter alia*, in "transmitting or distributing communications . . . , which directly or indirectly serve the

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[31] *See National Telecommunications and Information Administration, Broadband Technology Opportunities Program: Notice of Funds Availability and Solicitation of Applications*, Notice, 75 Fed. Reg. 3792, at 3810 (Jan. 22, 2010) (requiring NTIA waiver for sale or lease of broadband facilities); *Rural Utilities Service and National Telecommunications and Information Administration, Broadband Technology Opportunities Program: Notice of Funds Availability and Solicitation of Applications*, Notice, 74 Fed. Reg. 33,104, at 33,123 (July 9, 2009) (same).

[32] Broadband Technology Opportunities Program, *BTOP's Sale/Lease Restriction, Indefeasible Rights-of-Use, and Fiber Swaps*, Sale/Lease and IRU Fact Sheet (Aug. 2013), http://www2.ntia.doc.gov/files/btop_sale-lease_iru_factsheet_final_v2.pdf.

[33] *See* 7 C.F.R. §§ 1735, 1737.

[34] Int'l Telecomms. Union, *Regulatory and Market Environment – Impact of Broadband on the Economy*, Telecomms. Dev. Sector (Apr. 1012), https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf.

[35] *See* 23 C.F.R. §§ 645.201-645.215.

public."[36] To the extent there is ambiguity, the Council should ensure that FHWA explicitly clarifies that broadband networks qualify for accommodation pursuant to this regulation. Moreover, the FHWA should set nationwide standards that dictate when an accommodation is to be given, rather than have the states set separate and potentially inconsistent standards. The Council should explore ways to incentivize state and local authorities to partner with the Department of Transportation to achieve this goal at the state and local levels.

Decrease permitting times for rights-of-way over federal land. The Department of the Interior's Bureau of Land Management ("BLM") is responsible for granting authority for fiber or wireless broadband projects "over, upon, under, or through Federal lands under its jurisdiction."[37] Broadband projects qualifying for exclusions from the BLM requirements can take up to a year to receive the grant of exclusion, while projects requiring Complex Environmental Impact Statements can take up to four years to be approved.[38] Consistent with the direction in President Obama's 2013 Presidential Memorandum on modernizing the federal infrastructure permitting process,[39] BLM should work with the EPA to cap processing times to no more than several weeks for basic exclusions while limiting time frames for complex environmental approvals to no more than one year.

Include broadband deployment criteria into federal infrastructure funding rules. The Council should survey existing federally-funded infrastructure development programs for ways to incorporate criteria into the programs that promote broadband deployment. Federally funded infrastructure projects—such as those through the Department of Transportation's Transportation Infrastructure Finance and Innovation Act loans and loan guarantees,[40] or through Department of Energy's loan program for renewable energy projects—are appropriate opportunities for conducting simultaneous broadband network deployment.[41]

The Department of Transportation has completed important work in gathering and making available state and local best practices on joint trenching and similar "dig once" issues. The Council should continue reducing barriers to access government rights-of-way for broadband providers by further promoting joint-trenching policies among state and local governments that receive federal funds (*e.g.*, for highway and other infrastructure development). For example, the criteria for such programs could require funding recipients to notify broadband

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[36] *Id.* § 645.207.

[37] *See* 43 U.S.C. § 1763; 43 C.F.R. §§ 2800.0-1–2808.6.

[38] *See* FED. INFRASTRUCTURE PROJECTS, *Federal Permitting and Review Inventory*, http://www.permits.performance.gov/federal-permitting-and-review-inventory-118.

[39] *See Modernizing Federal Infrastructure Review and Permitting Regulations, Policies, and Procedures*, Presidential Memorandum, 78 Fed. Reg. 30733 (May 22, 2013), *available at* https://www.whitehouse.gov/the-press-office/2013/05/17/presidential-memorandum-modernizing-federal-infrastructure-review-and-pe.

[40] *See* 49 C.F.R. §§ 80.1-80.21.

[41] *See* 10 C.F.R. §§ 609.1-609.18.

network providers of planned construction and to allow for joint trenching during actual construction. Programs also could require recipients to provide broadband network providers with access to rights-of-way and to the infrastructure, such as poles and conduits, funded through federal programs.

Facilitate information sharing on federal rights-of-way, existing non-government network infrastructure, and federal funding opportunities. The Council should explore ways to expand the Executive Branch's Broadband Inventory Dashboard (an outgrowth of the 2012 Executive Order on Accelerating Broadband Deployment) to include information about existing governmental and non-governmental infrastructure that can serve as the platform for further broadband deployment.[42] This is the logical next step after the State Broadband Data and Development grant program created pursuant to the Recovery Act enabled states to map and inventory currently available broadband networks.

First, machine-readable public data and APIs should be made available that catalog inventories of utility and telecom poles,[43] other infrastructure information such as wireline facilities, and federal rights-of-way. Having these resources available would reduce the cost and delay in building broadband networks, as well as help municipalities that are cataloguing their own assets, permits, and other resources for broadband deployment. Second, member agencies should continue working to streamline and, to the extent possible, consolidate the process for seeking access rights to federal rights-of-way and federal infrastructure for aid in broadband deployment, as well as the process for applying for all available sources of federal funding support. Finally, the Council should consider ways to strengthen the BroadbandUSA program by focusing its support on local permitting offices that are often too under-resourced to assist broadband providers with expediting city-wide deployments.

Create an interagency infrastructure permitting improvement center within the Department of Transportation. The Administration's GROW AMERICA proposal includes the creation of an interagency center to: facilitate the issuance of permits for broadband infrastructure deployment; modernize related efforts; provide technical assistance to field offices; expand the use of online transparency tools; and make continuous progress reports to the President.[44] This Center should be established under existing statutory authorizations and regulatory authorities for the Department of Transportation. Creating this Center also would further the goals of the President's Executive Order directing federal agencies to streamline the federal permitting process for infrastructure projects.[45]

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[42] *See* FED. INFRASTRUCTURE PROJECTS, *Permitting Dashboard*, http://www.permits.performance.gov/broadband_inventory.

[43] *See supra* at 5.

[44] *See* H.R. 4834, 113th Cong. § 1009 (2014).

[45] *See Improving Performance of Federal Permitting and Review of Infrastructure Projects*, Exec. Order No. 13,604, 77 Fed. Reg. 18,887 (Mar. 28, 2012).

B. Changes to Federal Programs to Promote Broadband Adoption Through Targeted Loan and Grant Programs

(Responds to Questions 1, 2, 3, 4, 5, 7, 9, 16, 18, 22, 23, 24, 26)

The Council also should review existing federal grant and loan programs for opportunities to enable and encourage broadband adoption. Some of the programs discussed below (and others) already may permit the use of program funds for broadband-adoption purposes. Nonetheless, the availability of support for broadband may not be widely known or understood. Accordingly, the Council should not only recommend the program revisions discussed below, but also work with the respective agencies to conduct outreach in order to ensure that their stakeholders are aware of the opportunities.

Improve broadband access for U.S. veterans. The U.S. Department of Veterans Affairs ("VA") currently administers several educational and training assistance programs for veterans pursuant to Chapter 33 of the Post-9/11 GI Bill.[46] This Chapter should be amended to provide for financial assistance to veterans for broadband-related purchases. First, the Monthly Housing Allowances ("MHAs") for veterans should be amended to specifically cover broadband service. Second, the VA should issue guidance regarding the annual Books and Supplies Stipend to clarify that veterans are permitted to expense broadband-ready computers, tablets, and related devices if used for an educational purpose.

Improve broadband quality in federal telehealth/telemedicine programs. The U.S. Department of Health and Human Service's ("HHS") Office for the Advancement of Telehealth currently administers thirty-six telehealth/telemedicine projects, which receive federal funds through the following grant programs: Telehealth Network, Telehomecare, Telehealth Resource Center, Rural Veterans Health Access, and Licensure Portability. HHS should update its grantee criteria to require as a prerequisite to receiving one of these grants availability of broadband conduit and wiring and Wi-Fi and open LTE access points for broadband connectivity on a grantee's property. HHS also should prioritize or provide preferences to grant applicants that demonstrate broader public benefits, such as a broadband adoption and use. In addition, HHS should evaluate whether its policy frameworks and reimbursement rules adequately incentivize direct home and mobile health monitoring and other emerging applications that enable consumers to share data and communicate directly with doctors and other health care providers.

Bring small businesses online. The Small Business Administration ("SBA") should clarify that proceeds from its General Small Business Loans can be used for the acquisition of broadband service, Wi-Fi and other networking equipment, and computing devices for business-specific uses under its 7(a) criteria.[47] In addition, the SBA should update its Business Plan criteria for companies seeking funds from current SBA grant programs, thus requiring them to include their current and future plans for using the Internet to grow their businesses. SBA also should promote the BroadbandUSA program's technical support services and other opportunities for increasing overall awareness of broadband-ready best practices.

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[46] *See* 38 U.S.C. §§ 3301-3325.

[47] *See* 15 U.S.C. § 636.

Improve broadband access in museums and libraries. In 2015, the Institute of Museum and Library Services ("IMLS") is projected to provide more than $154 million in federal grants and awards to state museums and libraries.[48] IMLS explicitly should permit museums and libraries to include wired and wireless broadband deployment as core tools for achieving their objectives in their grant applications, and then track the progress of those deployments through IMLS' existing outcome-based evaluations.

Highlight non-exclusive broadband franchise agreements. In communities where Google has deployed Google Fiber and entered into publicly-available, non-exclusive franchise agreements with local governments, we have seen local ISPs benefit significantly and be incentivized to reuse the terms and deploy additional broadband capacity. The BroadbandUSA program should seek to catalog and upload public, non-exclusive broadband franchise agreements between local governments and ISPs into a layer in the National Broadband Map on a quarterly basis, to spur competitive broadband deployments.[49]

III. DIGITAL INCLUSION

(Responds to Questions 1, 3, 4, 5, 7, 16, 17, 22, 23)

The Council sought comments on "issues related to vulnerable communities and communities with limited or no broadband." Google strongly supports the goal of making broadband Internet access available to all, and has a history of working on innovative ways to reach remote and vulnerable communities in particular.

Expand digital literacy for students. The Department of Education's Striving Readers Comprehensive Literacy ("SRCL") discretionary grant program is tasked with fostering state-based comprehensive programs to advance literacy skills (including pre-literacy, reading, and writing) for students from birth through grade 12, including limited-English-proficient students and students with disabilities.[50] This grant program should be expanded to include digital literacy as a core area of program support. At least one digital literacy expert should be included in each State Literacy Team that is established to support the program grant recipients.

In addition, the Department of Education's "21st Century Community Learning Center" program includes grants for afterschool initiatives that enable family literacy.[51] The Department of Education should issue clarifying guidance that "family literacy" includes digital literacy for families and general technology education, as already offered for students within the program,

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[48] *See* INST. OF MUSEUM AND LIBRARY SERVS., *State Allotments with State Matching Funds for Current Fiscal Year*, http://www.imls.gov/programs/state_allotments.aspx.

[49] *See, e.g.*, Salt Lake City, Utah, Ordinance 11-2015, Ex. A, Video and Broadband Services Franchise Agreement By and Between Salt Lake City Corporation and Google Fiber Utah, LLC (Mar. 3, 2015), *available at* http://slcdocs.com/council/agendas/2015agendas/March/Mar3/030315G1.pdf.

[50] *See Striving Readers Comprehensive Literacy Grant Program, Notice Inviting Applications for New Awards for Fiscal Year (FY) 2011*, Notice, 76 Fed. Reg. 13,143 (Mar. 10, 2011).

[51] *See* 20 U.S.C. §§ 7171-7176.

and should specify that libraries are eligible for funding. The Department of Education also should expand the Ready-To-Teach Discretionary Program beyond grants for national telecommunications-based programs to improve teaching in core curriculum areas[52] to also include improved teaching for computer science courses.

The Council also should promote digitalliteracy.gov, the digital literacy portal developed by a federal interagency working group.[53] The website provides valuable broadband adoption resources including tools for developing and delivering digital literacy training programs. The Council should support and more broadly leverage this valuable asset.

Facilitate broadband-ready government device donations. The GSA should create an interagency program for shipping used Internet-capable federal desktops, laptops, and mobile devices for donation to local programs (such as "Everyone On"). The devices could be refurbished and distributed to schools, libraries, public housing authorities, community centers, and local employment centers in high-need areas of the country. GSA should require that these devices be provided at low or no cost to institutions receiving the devices, clarify which cost-effective refurbishing options would be preferred, and encourage new device operating system or software to be free and/or open-source. This initiative also would serve as a model for similar programs run by state, county, and city governments.

Foster the development of public computer labs. HUD should permit recipients of federal housing grants (*e.g.*, Promise Neighborhoods, HUD CHOICE, Community Development Block Grants, Community Services Block Grants, & Homeless Assistance Programs under HHS) to use funds to develop, operate, or support public computer labs.

Promote federal online service in high-need communities. Agencies that have moved application and service delivery processes for their respective programs online (*e.g.*, Social Security Administration benefit applications, Internal Revenue Service E-Filing/reimbursements, Department of Education FAFSA, Department of Veterans Affairs eBenefits) should create a series of interagency public service announcements, campaigns, and trainings to promote the use of these web-based federal services. The distribution of these messages should focus on communities that are significantly underutilizing these federal programs relative to the overall need of their populations. The Council also should recommend that federal agencies lead an effort to identify and promote best practices for online delivery of services for federal programs that are administered through state agencies, such as the Supplemental Nutrition Assistance Program.

More generally, agencies should focus on ensuring that, as government services increasingly move online, support for communities that had previously existed will migrate online as well. For example, recent cuts in funding to the Internal Revenue Service have resulted in fewer paper forms available for libraries to provide. This ultimately shifts costs to libraries to print these forms and to librarians who have to teach basic skills to navigate complex online

[52] *See id.* §§ 7257-7257d.

[53] *See* DIGITALLITERACY.GOV, www.digitalliteracy.gov.

forms.[54] As agencies expect or require online access for its services or resources, they should provide support for broadband adoption.

Move forward with comprehensive lifeline reform. The modernization of the Lifeline program is essential to encouraging broadband deployment and adoption nationwide. Today, Lifeline support is paid directly to carriers to enable them to provide monthly discounts to eligible low-income consumers for the purchase of phone service. The Council should urge FCC reforms that shift the responsibility for determining consumer eligibility out of the hands of the carriers that currently receive subsidies. Instead, the federal government should make the necessary eligibility determination. Importantly, comprehensive reform of the program should focus on enabling consumers to choose the connectivity services that best suit their needs. By doing so, the reforms will introduce competition into the Lifeline program. Along with shifting eligibility determinations, this will reduce opportunities for mistakes and, where bad actors are concerned, fraud and abuse. The reforms also will empower reasonable purchasing choices and encourage more participation by broadband providers.

IV. PERFORMANCE METRICS AND ACCOUNTABILITY MEASURES

(Responds to Questions 1, 2, 27, 28)

The Council should establish an action plan for implementing and measuring each of its recommendations, which should be linked to transparent mechanisms of accountability and reporting obligations. Consumers and regulated agencies can use these metrics to hold agencies accountable. Baseline accountability measures were outlined in the National Broadband Plan[55] and a number of other countries have included such goals, metrics and reporting in their national broadband plans. For example, South Korea's 2006 E-Korea Master Plan established timelines for online services to be expanded to include all civil services and an evaluation system to measure the information utilization and communications technology needed to meet those objectives. Finland's written policy also identified 50 individual measures with timelines and responsible agencies for use as metrics for assessing progress in achieving the defined goals.

Each agency participating in the Council should submit annual reports to NTIA and RUS and report progress data directly into the Department of Commerce's National Broadband Map and Data.gov. Potential metrics could include reporting on broadband-focused actions taken (*e.g.*, regulatory modifications, programs initiated), a cataloging of private investments resulting from agency changes, the total number of people reached through agency initiatives, and the total number of wireline and/or wireless networks deployed by each agency. The primary broadband achievements and gaps would then be compiled by the Council members for submission to the President in a report on an annual basis, with an appendix added by OMB on related efforts by independent agencies.

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[54] *See, e.g.*, Iain Wilson, "In Concord Area Libraries, IRS Cutbacks to Paper Tax Forms Causing Concern," CONCORD MONITOR (Feb. 2, 2015), *available at* http://www.concordmonitor.com/community/town-by-town/concord/15470137-95/in-concord-area-libraries-irs-cutbacks-to-paper-tax-forms-causing-concern.

[55] National Broadband Plan at 210.

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Google appreciates the opportunity to submit comments to the Broadband Opportunity Council and looks forward to working with the Council as it moves forward with implementing changes that accelerate broadband deployment and adoption.

Sincerely,

/s/

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