



UNITED STATES DEPARTMENT OF COMMERCE  
The Inspector General  
Washington, D.C. 20230

January 23, 2013

The Honorable Greg Walden  
Chairman  
Subcommittee on Communications  
and Technology  
2125 Rayburn House Office Building  
U.S. House of Representatives  
Washington, DC 20515

The Honorable John Shimkus  
Chairman  
Subcommittee on Environment  
and the Economy  
2125 Rayburn House Office Building  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairmen Walden and Shimkus:

This letter responds to your June 4, 2012, request to review the National Telecommunications and Information Administration's (NTIA's) Broadband Technology Opportunities Program (BTOP) grant awarded to the Executive Office of the State of West Virginia (EOWV). In your letter, you specifically requested that OIG:

- determine whether taxpayer funds associated with the \$126.3 million BTOP grant were being properly and efficiently spent,
- review the process EOWV used to apply for the BTOP grant to determine whether it made any material misrepresentations, and
- review the process NTIA used to evaluate EOWV's BTOP application and any steps NTIA took to verify the claims in the application.

Regarding your first request, we found that EOWV could have better managed its execution of the grant. More specifically, we concluded that EOWV:

- has not demonstrated that BTOP funds used to purchase routers were spent cost effectively,
- has not effectively managed and tracked router inventory, and
- did not administer agreements with community anchor institutions (CAIs) for the receipt of federal property.

Pertaining to your second request, we did not find any material misrepresentations in EOWV's submitted application. Finally, regarding your third request: prior to issuance of the award, NTIA followed their defined process, which was found to be reasonable by OIG<sup>1</sup> and GAO,<sup>2</sup> to evaluate the application submitted by EOWV.

<sup>1</sup> U.S. Department of Commerce, Office of Inspector General, April 2010. *NTIA Must Continue to Improve its Program Management and Pre-Award Process for its Broadband Grants Program*, OIG ARR-19842-1. Washington, DC: Department of Commerce OIG, 7.

<sup>2</sup> U.S. Government Accountability Office, August 4, 2010. *Further Opportunities Exist to Strengthen Oversight of Broadband Stimulus*, GAO/10-823 Recovery Act. Washington, DC: GAO, 18.



In response to your request, we reviewed EOWV's BTOP application, associated documents, and the process NTIA used to evaluate the application. We also met with NTIA program and EOWV project personnel and reviewed documentation supporting the application. For our site visit, we traveled to West Virginia to meet with EOWV's BTOP grant management personnel, where we reviewed the process EOWV employed to procure equipment, procurement documents supporting their router purchases, and the inventory management system. At our site visit, we also spoke with the subrecipient and the manufacturer. Please see appendix A for a more detailed statement of objectives, scope, and methodology.

## Background

NTIA awarded a \$126 million grant to EOWV in February 2010 to create a fiber and radio broadband network to serve CAIs formerly not connected and improve existing bandwidth to these public facilities, as well as emergency responder networks. The grant, BTOP's second largest project, totals approximately \$160 million, including the matching share required of all BTOP grantees (see table 1 below). EOWV's project plan included building 12 new microwave towers, deploying 981 miles of fiber optic cable, and distributing 1,064 routers to CAIs.

**Table 1. EOWV BTOP Grant Award Totals, by Share**

	Amount	Percent of Project
Federal share	\$126,323,296	79
Recipient share	\$ 33,500,000	21
<b>Total</b>	<b>\$159,823,296</b>	<b>100</b>

Source: Department of Commerce Grants Online

Members of the Subcommittee on Communications and Technology of the House Committee on Energy and Commerce (the Subcommittee) raised concerns about the BTOP grant awarded to EOWV at its May 16, 2012, hearing on "Broadband Grants and Loans." At that hearing, the Subcommittee discussed a series of articles in the *Charleston Gazette* concerning the award<sup>3</sup> and requested that OIG conduct additional analysis.

## Summary of Results

### ***EOWV Has Not Demonstrated Most Efficient Use of BTOP Funds to Purchase Routers***

EOWV did not perform a study to determine which size router would most effectively and efficiently meet the individual CAI's needs. As a result, it is uncertain whether the selected approach was the most cost effective. Based on cost estimates provided to us, an assumption of continued cost discounts, and an analysis of smaller counties (with populations less than 10,000

<sup>3</sup> See, for example, Eyre, E. May 6, 2012. Internet Routers Have Sat Unused for Nearly Two Years. *Charleston Gazette*.



and 20,000 ),<sup>4</sup> we determined that EOWV could conservatively have projected saving 2–5 percent on router purchases if it had purchased smaller, less expensive routers for some locations (see appendix B for cost analysis assumptions and results). The purpose of EOWV's BTOP award is to leverage an existing public safety network to create a new broadband infrastructure to connect schools, libraries, public facilities, and town and city offices to Internet services. To meet grant objectives, EOWV assembled a BTOP implementation team who met with points of contact from West Virginia's Department of Education, Library Commission, and Department of Health and Human Resources to determine the total number of CAIs that did not have Internet service or were underserved. With the help of maps it developed to identify unserved and underserved areas, the team determined that 1,064 CAIs needed additional services.

At the time of this award, the state of West Virginia already had a contract in place for the purchase of Cisco equipment. As a result, the team met with Cisco to discuss which router would meet the needs of the CAIs. Based on the list of requirements EOWV provided to them, Cisco suggested that its 3945 series router would best meet the project's requirements, and it offered an additional 100 free routers if EOWV purchased by July 23, 2010. EOWV provided OIG a list of router deployment locations, which included more than 1,164 locations. Although we were unable to visit all locations to confirm the demand, the list EOWV provided indicated a demand for the 100 free routers. Spending \$24 million in BTOP funds, EOWV completed the purchase of 1,064 of the 3945 series routers prior to July 23, 2010, to take advantage of perceived bulk purchase cost savings, including:

- the free routers offered,
- the standardization of parts and resulting reduced maintenance training costs,
- reduced labor hours to configure the routers, and
- the routers' ability to handle future growth.

Additionally, Cisco provided extended maintenance coverage, improving its standard 3 years to 5 years, at no additional cost. However, prior to selecting these routers, EOWV never assessed the data requirements for each CAI.

OIG met with a Cisco representative to gain an understanding of the router equipment that EOWV purchased. The representative stated that, based on functionality requirements provided to them, the 3945 router would be the best option. We requested comparison information on the 3945 router and Cisco's lower level 2900 series routers. The Cisco representative noted that one of the main differences between the 3945 router and 2900 series router—besides the decreased ability to receive, send, and direct data—was that the 3945 router, in contrast to the 2900, housed a dual power source for uninterrupted critical data services during mechanical failures, which the state presented as a major requirement. The dual power source is necessary for critical operations such as those that 9-1-1 centers and the state

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<sup>4</sup> A more complete, tiered calculation of cost savings would have necessitated consideration of future capacity requirements for all CAIs. We did not include counties with populations larger than 20,000, as we assume that their current demand and future growth would require greater data capacity.

police run; however, uninterrupted service is not critical for schools, libraries, and planning and development agencies.

As a result of these discussions, OIG completed a high-level analysis to determine whether EOWV could have achieved cost savings if it had considered purchasing 2900 series routers for CAIs that were not highly sensitive to outages resulting from mechanical failures. We analyzed EOWV's router distribution plan by comparing the number of routers in each county to the county's population, taking into consideration critical operations that would require more sophisticated router equipment. Because EOWV's BTOP application included only 1,064 routers, we based our analysis on the assumption that Cisco would have provided 100 free routers even if EOWV would have selected two different models of routers to meet the project's needs. We determined that EOWV could have realized a cost savings had it considered purchasing 2900 series routers for CAIs with non-mission-critical requirements in less-populated counties (representing less than 50 percent of routers deployed), whose needs could have been met with the smaller router. Although we did not complete a similar analysis for counties with larger populations, EOWV may have realized additional cost saving if they had assessed the needs of all non-mission-critical CAIs.

### ***EOWV Has Not Effectively Managed and Tracked Router Inventory***

EOWV could not demonstrate that its tracking and control of the 1,164 routers was effective. Federal cost principles require the safeguarding of federal assets.<sup>5</sup> Additionally, GAO's *Standards of Internal Control in Federal Government* requires that the recording of assets be complete and accurate.<sup>6</sup> As the lack of an effective asset management system increases the risk of fraud, waste, or abuse, it is vital for EOWV to maintain an accurate equipment inventory tracking system, including router inventory.

Because EOWV did not have the storage capacity for 1,164 routers, it requested that the manufacturer ship the routers to three different locations: West Virginia's Office of Technology, the Library Commission, and the Department of Education. The multiple router inventory locations increase the risk of loss and the need for an accurate asset management system, since one entity does not maintain physical control. Further, EOWV does not use a uniform centralized inventory management tool; instead, it tracks the BTOP routers using a combination of three spreadsheets (router distribution plan, routers in storage, and deployed router list) and a Web-based tool which was being developed at the time of our review. Each of the spreadsheets provides a different view of the router inventory. The router distribution plan tracks all routers purchased, the intended recipient, and other pertinent information. The spreadsheet for routers in storage tracks routers purchased and stored in the state of West Virginia's office building, and the deployed router list tracks router deployment.

OIG reviewed each of EOWV's router inventory tracking mechanisms to determine accuracy and completeness. Table 2 below provides our results:

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<sup>5</sup> 15 C.F.R. § 24.20(b)(3).

<sup>6</sup> See GAO/AIMD-00-21.3.1, 15.



**Table 2. EOWV Router Inventory Tracking**

Current Controls	Function (and Confirmation Sample Size)	Deficiency
Spreadsheet 1: Router Distribution Plan	Tracks all routers purchased  (1,164 routers per the invoices)	<i>Incomplete:</i> 1 router of 1,164 invoiced was not included on inventory sheet. <sup>a</sup>
Spreadsheet 2: Routers in Storage	Tracks routers stored in state office building  (selected 20 of 163 routers listed)	<i>Incomplete:</i> 1 router of 20 sampled in storage was not included on the inventory sheet.
Spreadsheet 3: Routers Deployed	Tracks routers deployed  (selected 4 of 913 routers deployed)	<i>Inaccurate:</i> one router of four sampled on inventory list was not at designated location, despite a signed property receipt confirmation form. <sup>b</sup>
Property Receipt Confirmation Form (PRCF) <sup>c</sup>	Documents router deployment; requires signature of recipient at the time of deployment  (selected 4 of 913 routers deployed)	<i>Inaccurate:</i> as noted above, one of the four router locations sampled with a signed PRCF that we visited had not received the router.

Source: OIG

<sup>a</sup> EOWV stated that the router was being configured, and therefore, not included on the spreadsheet; <sup>b</sup> EOWV stated that the router was being configured at another location; <sup>c</sup> EOWV uses PRCFs to track router deployment; the form is signed at the time of deployment and returned to West Virginia’s Office of Technology for asset tracking purposes.

Based on our initial review results, we expanded our review to include 40 deployed router locations for independent phone verification to ensure that:

- the locations received a router and
- the information included in EOWV’s router tracking was correct.

We selected our sample from an updated router deployments list. EOWV uses both the router serial number and a unique BTOP asset tag number to track the routers. We spoke to the designated representatives at the 40 locations, requested the serial number and BTOP tag number, and compared them to the deployed router list. All the locations we contacted by phone confirmed that they received the BTOP routers.

In addition to verifying receipt of the routers, we asked the selected locations whether the router was operational—and, if so, whether the router was meeting the location’s current needs. The representative of one group of CAIs stated that three routers currently designated for a smaller location could be better utilized by other, larger sites; another representative stated that the service to operate the new router was cost prohibitive. We discussed these comments with EOWV, which replied that it is working with each CAI to ensure that the routers are best utilized. EOWV has received NTIA’s approval for a select number of alternative sites should it need to remove routers from sites where they are not needed or that no longer wish to participate in the project.

Several of the CAIs contacted stated that the routers were not yet operational. EOWV noted that there have been some compatibility issues that it is working to resolve. It expects to have all routers deployed and operational prior to the end of the grant period.

### ***EOWV Did Not Execute Agreements for the Receipt of Federal Property***

EOWV does not have agreements in place with CAIs to ensure the continued use of the routers purchased with grant funds. Federal cost principles require that assets purchased with federal grant funds be used for the program or project for which they were purchased.<sup>7</sup> The *BTOP Recipient Handbook* specifies that all real or personal property purchased with grant funds be held in trust for public purposes and not be sold, leased or transferred without prior written approval from the Grants Officer.<sup>8</sup> To remain compliant with these principles and guidelines, it is important for the grant recipient to establish an agreement with the CAIs regarding the equipment's continued use and disposition. Without an agreement, the CAI may not understand that it cannot dispose of the equipment without first seeking approval. EOWV agreed that an agreement of use and disposition is appropriate and has, at our suggestion, begun developing a document to be signed by all router recipients.

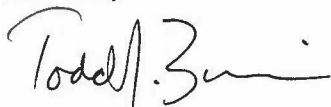
We have concluded that EOWV must strengthen its control over BTOP router inventory. To accomplish this, EOWV should:

- maintain a complete and accurate master list of all routers purchased with BTOP funds,
- provide training on their deployment process to ensure that the PRCF is not signed until the routers are installed and functioning, and
- develop and implement an agreement to be signed by all router recipients that specifies the condition of continued use and disposition.

As a result of our review, EOWV has begun to develop an agreement of continued use which it will require all CAIs to sign.

If you have any questions or require further analysis of this matter, or if we can be of further assistance, please do not hesitate to contact me at (202) 482-4661, or Ann Eilers, Principal Assistant Inspector General for Audit and Evaluation, at (202) 482-2754.

Sincerely,



Todd J. Zinser

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<sup>7</sup> 15 C.F.R. § 14.34 and 15 C.F.R. § 24.32.

<sup>8</sup> Broadband Technology Opportunities Program, February 2012. *BTOP Recipient Handbook*. Washington, DC: National Telecommunications and Information Administration, 101.

cc: Members of the Subcommittee on Communication and Technology  
Members of the Subcommittee on Environment and the Economy  
Lawrence E. Strickling, Assistant Secretary for Communications and Information,  
Department of Commerce



## Appendix A: Objectives, Scope, and Methodology

The objectives of our review were to:

- determine whether a specific \$126.3 million National Telecommunications and Information Administration (NTIA) Broadband Technology Opportunities Program (BTOP) award associated with the Executive Office of the State of West Virginia (EOWV) is being properly and efficiently spent,
- assess the process used to apply for a BTOP award and whether the application submitted by EOWV contained material misrepresentations, and
- review NTIA's process to evaluate EOWV's application including any steps NTIA took to verify claims in the application.

The scope of the review was NTIA's BTOP grant number NT10BIX5570031 made to EOWV. The total estimated cost of the grant was \$159,823,296, comprised of \$126,323,296 in federal share and \$33,500,000 in cost share. The performance period of the grant is from February 1, 2010, to January 31, 2013. Resource constraints precluded a full review of claims made by a local newspaper. We conducted our review from June 2012 through October 2012.

The methodology included the following procedures:

- interviewing EOWV project, NTIA program, and NOAA Grant Office<sup>9</sup> officials,
- reviewing grant application and award documents,
- reviewing financial and performance reports,
- analyzing county population data to assess router location,
- performing a cost savings analysis with a two-tiered router installation,
- verifying equipment inventory for a sample of locations, including both storage and deployed locations, and
- interviewing Cisco sales representatives.

We performed fieldwork at NTIA headquarters in Washington, DC, and the Executive Office of West Virginia in Charleston, West Virginia. We also performed site visits to selected CAIs and a subrecipient in Charleston, West Virginia.

Our work was performed in accordance with the *Quality Standards for Inspection and Evaluation* (January 2012) issued by the Council of the Inspectors General on Integrity and Efficiency. These standards require that we perform work to obtain sufficient evidence to support the findings contained herein. We believe the evidence obtained provides a reasonable basis for the findings. The review was conducted under authority of the IG Act of 1978, as amended, and Department Organizational Order 10-13 (August 2006).

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<sup>9</sup> NOAA performs grants management services to NTIA.



## Appendix B: Cost Savings Assumptions and Analysis

### Assumptions

Our cost analysis assumed:

- the only way to fully assess CAI bandwidth requirements is by visiting each CAI location,
- small CAIs do not necessarily equate to lower bandwidth requirements,
- counties with populations less than 10,000 and 20,000 (per Census Bureau data) were examined,
- calculations completed using 1,064 routers, excluding the 100 free routers provided by Cisco,
- Cisco would have given EOWV the same discount even if its purchase included both 2900 series and 3945 routers,
- Cisco would have given EOWV 100 free routers, regardless of the type of routers purchased, and
- a 2900 series router will meet the needs of the following nonemergency response CAIs located in counties with populations less than 20,000 for the next 7 years (i.e., the life span of a router):
  - county courthouse,
  - Department of Education/board offices and Regional Education Service Agency locations,
  - higher education, including state colleges and universities,
  - elementary and secondary education schools,
  - local health departments offices,
  - libraries, and
  - planning and development councils.

### Analysis

	Potential Cost Savings	Total Cost	Percent Saved
Router (1064) purchase price		\$24,000,000	
Cost savings: population <10,000	\$500,000	\$23,500,000	2
Cost savings: population <20,000	\$1,200,000	\$22,800,000	5

Source: OIG

Note: This analysis is done based on 1,064 routers, which was the State's requirement. The state received 100 free routers, bringing the total number of routers to 1,164. If EOWV would have had to purchase the 100 free routers, then there would not be an apparent cost savings.