ARRA Broadband Program

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General Overview of ARRA Broadband Funding

Consistent with the stimulus funding goals of job creation and economic development, ARRA provided $7.2 billion for broadband grant and loan programs to be administered by both the Department of Commerce, through the National Telecommunications and Information Administration (NTIA), and the Department of Agriculture, through the Rural Utilities Service (RUS).

The NTIA program, the Broadband Technology Opportunity Program (BTOP), was appropriated $4.7 billion for a competitive broadband grant program.[1] Under Division B, Title VI of ARRA, NTIA was authorized to, in part: establish broadband expansion to "unserved and underserved areas;" to consult with states to identify these areas and the appropriate allocation of grants within the state; to award not less than one grant in each state, if practical; to coordinate with the Federal Communications Commission (FCC) regarding appropriate contractual grant conditions for "non-discrimination and network interconnection obligations;" to "seek to fund, to the extent practicable, projects that provide the highest possible, next-generation speed to customers;" to fund projects that would not have been implemented without federal grant assistance; and to limit the federal share to 80% of the project cost.

The RUS program, the Broadband Initiatives Program (BIP), was appropriated $2.5 billion to be divided between grants and loans as RUS saw appropriate. ARRA specified, in part, that at least 75% of the areas served by a project had to be rural areas without sufficient access to high-speed broadband, that priority be given to projects that gave users a choice of broadband providers and also to former borrowers of rural telephone loans, and that no project could also receive funding under NTIA's BTOP.

There were two rounds of funding. The first round was announced on July 1, 2009 with $2.4 billion available under RUS's BIP and $1.6 under NTIA's BTOP. Both NTIA and RUS used the same definitions for "unserved," "underserved," "broadband," and "rural area." It was determined that BTOP could make awards for applications submitted to RUS after RUS reviewed the application and decided not to fund it. Both agencies used a two-stage process first scoring all applications on the project's purpose, benefits, viability, budget and sustainability. Those who scored highest were asked for further

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[1] Most of the background information used here is derived from a number of CRS reports including: Lennard G. Kruger, *Distribution of Broadband Stimulus Grants and Loans: Applications and Awards* (September 9, 2010 and January 4, 2011) R41164; Lennard G. Kruger, *Broadband Infrastructure Programs in the American Recovery and Reinvestment Act* (January 4, 2011) R40436; Lennard G. Kruger, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service* (January 4, 2011) RL33816;

documentation. Recommendations, or priority listings, from the states were also considered. NTIA used outside, volunteer "expert reviewers" to score applications during the first stage; RUS used its staff and contractors. During the first round, NTIA and RUS received over 2,200 applications requesting nearly $28 billion; applications were received from all states, the five territories and DC. NTIA awarded 82 BTOP projects, totaling $1.206 billion, and RUS awarded 68 BIP projects, totaling $1.069 billion.

The second round was announced on January 15, 2010 with a total of $4.8 billion available with $2.6 for NTIA's BTOP program and $2.2 for RUS's BIP. In response to agencies' experiences during the first round and public comments submitted to a request for information,[2] both agencies simplified the applications process and made some substantive changes including giving applicants the option of applying to either BTOP or BIP, focusing BTOP projects on the middle mile and BIP projects on the last mile, offering BIP projects a standard 75%grant/25% loan combination, and eliminating requirements for certain criteria (e.g., underserved) but awarding points on those criteria. NTIA and RUS received 1643 applications in the second round, requesting $22.2 billion. NTIA awarded 151 BTOP projects, totaling $2.694, and RUS awarded 262 BIP projects, totaling $1.625 billion.

In both rounds, NTIA awarded 233 BTOP projects, totaling $3.9 billion[3], and RUS awarded 320 BIP projects, totaling $3.6 billion (See Table 1 for breakdown by states). Job creation for both programs took off rather slowly but became more successful over time. For example recipients of BTOP awards funded 20.09 jobs in the first quarter of 2010, 1,597.77 in the first quarter of 2011, and 4,273.28 in the first quarter of 2012. A similar trajectory exists for BIP awards with no jobs reported in the first quarter of 2010, 1,574.09 in the first quarter of 2011, and 3,799.08 in the first quarter of 2012.[4] In May 2012, the NTIA Assistant Secretary testified to a House committee that BTOP recipients had: deployed or upgraded more than 56,000 miles of broadband infrastructure; connected more than 8,000 anchor institutions to high-speed Internet; installed more than 30,000 workstations in public computer centers; and generated about 350,000 new broadband Internet subscribers.[5] At the same hearing the RUS Administrator reported that the RUS awards will connect nearly 7 million rural Americans, more than 360,000

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[2] Department of Agriculture, Rural Utilities Service and Department of Commerce, National Telecommunications and Information Administration, "Broadband Initiatives Program and Broadband Technology Opportunities Program," 74 *Federal Register* 58940-58944, November 16, 2009.

[3] The original ARRA funding for BTOP was $4.7 million, including administration and oversight costs. In August 2010, there was a $302 million rescission. BTOP awarded $3.9 billion in grants in the two round. OIG (Nov 17, 2011), p.1, fn1.

[4] Data available at: http://www.recovery.gov/Transparency/RecipientReportedData/Pages/JobSummary.aspx?qtr=2010Q1

[5] Testimony of the Honorable Lawrence E. Strickling, Assistant Secretary for Communications and Information, National Telecommunications and Information Administration, US Department of Commerce Before the Broadband Loans and Grants Hearing, Committee on Energy and Commerce, Subcommittee on Communications and Technology, US House of Representatives, May 16, 2012.

businesses, and more than 30,000 critical community institutions to new or improved broadband service.[6]

Pre-ARRA Federal Broadband Activity

Prior to ARRA, the federal government had generally played a largely hands-off role regarding broadband development, leaving it largely to the private sector and the competitive marketplace. However, the FCC did have a regulatory role to ensure that the market remained competitive and open. To this end, the FCC adopted a Broadband Policy Statement in August of 2005.[7]

The federal government was also concerned about the "digital divide" and whether telecommunications generally and the Internet in particular were available to all geographic and economic areas of the country. Because of particular concern about the slow pace of broadband development in rural areas, Congress in 2001 and 2002 funded pilot broadband loan and grant programs to be managed by the Rural Utilities Service (RUS) in the Department of Agriculture. In FY 2001, RUS funded $100 million in loans and in FY 2002 $80 million. In 2002, the Farm Bill amended the Rural Electrification Act of 1936 to authorize a loan and loan guarantee program for broadband deployment in eligible rural communities. This was reauthorized in 2008. The two RUS programs dedicated to broadband are: the Rural Broadband Access Loan and Loan Guarantee Program with an annual budget of $15 million, and the Community Connect Grant Program with an annual budget of $12 million.[8] Prior to ARRA, these were the only ongoing federal programs funding broadband deployment.

Since the RUS programs began in 2001, there had been a number of criticisms of them including: the complex and burdensome loan application process; the low rate of approval for loan applications; lack of clarity in the eligibility criteria so that it was difficult to distinguish between rural and suburban communities; and, loans issued to communities which had existing broadband providers.[9] One of the features of any loan program is that the funding agency needs to determine that the loans can be repaid and that the applicants have sufficient resources to cover operating expenses until the project produces revenue; this requires the funding agency to do, or to validate, market analyses for the applicant and service area.

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[6] Statement of Jonathan Adelstein, Administrator, Rural Utilities Service, US Department of Agriculture, House Energy and Commerce Subcommittee on Communications and Technology, May 16, 2012.

[7] Federal Communications Commission, *Policy Statement on Broadband Internet Access* FCC 05-10 (August 5, 2005). Available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf

[8] Lennard G. Kruger, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service* CRS RL33816 (January 4, 2011)

[9] Kruger, op cit (RL33816); Government Accountability Office, *Broadband Deployment is Extensive throughout the United States, but It is Difficult to Assess the Extent of Deployment Gaps in Rural Areas* GAO-06-426 (May 2006). Available at: www.**gao**.gov/new.items/d06426.pdf; U.S. Department of Agriculture, Office of Inspector General, Southwest Region, *Audit Report: Rural Utilities Service Broadband Grant and Loan Programs*, Audit Report 09601-4-Te (September 2005). Available at: http://www.usda.gov/oig/webdocs/09601-04-TE.pdf. Michael Martinez, "Broadband: Loan Fund's Strict Rules Foil Small Municipalities," *National Journal's Technology Daily* (August 23, 2005).

NTIA had two programs related to broadband: Public Telecommunications Facilities Program, with an average budget of $23 million annually; and, Telecommunications Opportunities Program, with an annual budget of $24 million. NTIA, along with the Department of Homeland Security, had also administered the Public Safety Interoperable Communications Program, which had a one-time appropriation of $1billion.[10]

Broadband ARRA Implementation Framework – Awards Phase

Prior to ARRA, the NTIA and RUS programs in the broadband area were on a far smaller scale than the $4.7 billion appropriated to NTIA and the $2.5 billion appropriated to RUS. In terms of the initial implementation of ARRA, both NTIA and RUS were basically dealing with new programs, new rules, unprecedented budgets, and an 18-month compressed timeframe in which to make awards. Although both agencies faced enormous challenges in starting up their ARRA programs, NTIA faced the larger challenge in that it had to establish the BTOP program "from scratch"[11] while RUS had existing long-term programs that needed to be significantly scaled up. The quick start-up presented enormous staffing problems for both agencies. In spring 2009 NTIA established a BTOP program office with approximately 40 staff and gave them grants training.[12] Both NTIA and RUS contracted with private sector agencies. NTIA contracted with Booz Allen Hamilton for assistance with evaluating applications and overseeing implementation of the grants, including audits and site visits; the cost of the contract was about $99 million and at times of heaviest work the contract provided about 200 additional staff.[13] NTIA also used unpaid volunteers during the review of the first round of awards to help examine and score applications. RUS contracted with ICF International to assist in the application review process and the development of post-award oversight; RUS did not use outside volunteer reviewers.[14]

Implementation Network -- Initial Challenges

The initial implementation posed challenges for coordination among the federal counterparts and with state, private sector and nonprofit parties. Prominent among these challenges were 1) the need to start the programs quickly; 2) the lack of clear guidance regarding key criteria to be used in making awards, and 3) the reality of the administrative tasks and coordination required. The discussion of how these challenges

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[10] Mark L. Goldstein, *Recovery Act: Preliminary Observations on the Implementation of Broadband Programs* (Testimony before the Committee on Commerce, Science and Transportation, US Senate, October 27, 2009). GAO-10-192T, p. 3-4.
[11] Ibid, p.3
[12] Department of Commerce, OIG, *NTIA Must Continue to Improve its Program Management and Pre-Award Process for its Broadband Grants Program* (April 2010). ARR-19842-1, p. 2. The OIG criticized NTIA for relying on a few key individuals and not establishing clear lines of authority and procedures. (p. 5-6) and for the application intake system during the first round (p.9).
[13] Ibid., p.2 NTIA signed MOUs with two Commerce Department agencies and the FCC for help with grant processing, management support, and technical assistance. Ibid, p.4.
[14] GAO, *Recovery Act: Further Opportunities Exist to Strengthen Oversight of Broadband Stimulus Programs* (August 2010). GAO-10-823, p. 5.

unfolded is organized by the network partners rather than by the challenges. The discussion draws from interviews conducted with relevant federal agency staff; congressional staff; state officials involved in ARRA broadband implementation in California, Florida and Virginia; private and non-profit sector officials.

Federal Partners

Prior to stimulus funding, federal entities involved in broadband (NTIA, RUS, FCC) worked together more sporadically in ad hoc relationships. Because of the need to start the ARRA broadband programs quickly and because of the on-the-ground learning that was taking place, this ad hoc arrangement largely continued as the working model among the federal agencies during the time of the stimulus funding. Prior to the first round of funding, NTIA and RUS issued a joint request for information and a notice of public meetings in March 2009 to get input the range of implementation issues involved in the ARRA broadband funding including: role of states, eligibility criteria, grant mechanics, coordination of the two programs, and definition of some key terms (including "underserved," "unserved," "broadband"). They then worked together on a joint Notice of Funds Availability (NOFA), which was released in July 2009.[15] In response to their experiences with the first round of funding and public comments submitted in November 2009, NTIA and RUS issued separate NOFAs for the second round of funding and modified some of the requirements and processes. For example, the requirement that projects were to be awarded to "unserved" or "underserved" areas was dropped and instead this was to be considered as one of several factors in an application evaluation.

ARRA also carved out a role for the Federal Communications Commission (FCC) requiring it to develop a "National Broadband Plan."[16] The FCC was also directed to evaluate the progress of BTOP grant projects. Finally, FCC and NTIA were required to coordinate on the development of "non-discrimination and network interconnection obligations," often referred to as "net neutrality" or "open access."

State Partners

With respect to state governments, neither NTIA nor RUS had formal, ongoing interactions with state governments on the issue of broadband. Although the federal government had been taking on a leadership role in terms of addressing the broadband digital divide and advocating for the critical role broadband deployment played in economic development, this did not lead to ongoing working relationships with state agencies as were typical for education or highways. Instead, the funding relationships with states were more project-driven and responsive to grant proposals or, in the case of RUS, were based on loan applications from non-state agencies.

ARRA required more systematic state involvement, particularly with respect to the NTIA/BTOP program where NTIA was required by the statute to consult with states to

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[15] Kruger (Jan 4, 2011).
[16] Federal Communications Commission, *Connecting America: The National Broadband Plan* (March 17, 2010).

identify the areas of need and the appropriate allocation of grants within the state. In the NTIA/BTOP application review process, states were formally involved in the second step of the review process, following the initial screening by NTIA staff and the first step review and ranking by independent reviewers. During this second stage, state governors' offices had an opportunity to rank the applications from their state and/or affecting their state. It is important to point out that the governor's office received these applications from NTIA, not from the applicants themselves. The states, therefore, entered the process on the back end rather than the front end.

From a network management perspective, the point of contact between NTIA and the states was the governor's office. This meant that the governor's office became the pivotal organizing unit within state governments and that the governor's office had the responsibility and the control for managing the state's response for ARRA broadband. The contact was centralized rather than decentralized and required the governor's office to oversee and coordinate activities within the state. Given the importance of broadband to economic development generally, many states had existing formal broadband task forces, often operating within the governor's office, or had bureaus within line agencies that had been promoting broadband development. The states having formal broadband organizations in place when ARRA funding was announced were in better positions to organize within the state and with private and non-profit groups than those that did not have formal organizations in place. Where there were state efforts in place, those involved became the nucleus for the ARRA broadband group and served as a way of involving people from state agencies, private sector companies, and non-profit groups. All of the states were very conscious of the tight timeframe for ARRA broadband grant opportunities and all tried to use existing personnel and state agencies. Given the importance of the effort, many states designated their "A team" to take the lead.

Among the three states examined in some detail for this case study, experiences ranged. California established a Broadband Task Force in 2006, which conducted a voluntary broadband mapping in 2006-2007, issued a report in 2008, and established the California Advanced Services Fund (CASF) as a state broadband infrastructure grant program within the California Public Utilities Commission (PUC). These activities positioned California well for ARRA both because there was something of a plan in place and because there was a well-connected network of interested parties who had been on, or staffed, the task force.[17] In 2010 the California Broadband Council was established by statute with the PUC providing most of the staffing for the Council. Prior to ARRA oversight and coordination of broadband was conducted through the PUC. With passage of ARRA coordination moved directly to the Governor's Office and the establishment of the ARRA Task Force to coordinate all stimulus funding and deal with the reporting requirements. The California Technology Agency took the lead on broadband. The ARRA Task Force, whose members were all appointed by Governor, was successful in establishing new lines of communication, involving new people at higher levels, and

[17] Rachelle Chong, Commissioner of California Public Utilities Commission before the Subcommittee on Communications, Technology and the Internet re Broadband Programs Related to the American Recovery and Reinvestment Act (April 2, 2009)

educating them quickly as to the processes and opportunities. For this project, "the A team was pulled together" with only competent staff on the Task Force.

Virginia initiated broadband task forces beginning in the late 1990s and viewed the Internet as a "leveragble asset" and an important infrastructure for economic development. When the tobacco settlement monies became available in early 2000 broadband deployment was viewed as a key component of economic redevelopment plans particularly in southern Virginia; by 2008 the Virginia Tobacco Commission had invested $85 million in fiber optic infrastructure in south and southwest Virginia.[18] Interest in broadband further intensified after 9/11 as the telecommunications system was clearly viewed as critical infrastructure and as the state took on the task of broadband mapping. In Virginia the Office of Telework Promotion and Broadband Assistance, created in 2006 and located in the Center for Innovative Technology in the Office of the Secretary of Technology, has been the lead state agency coordinating broadband activities and took on this responsibility under ARRA as well. There is a Broadband Advisory Council within this Office, with representation from the legislative and executive branches, as well as from private and non-profit sectors. Because of the existing relationships that had been established through these various activities and groups and because of the informational resources including the maps, toolkit and website, the "timing of ARRA was good" for Virginia as it was "years ahead" of some states in its activity.

Florida viewed broadband as infrastructure for economic development and quality of life, similar to roads but prior to ARRA had not organized a state task force specifically on broadband deployment. After the passage of ARRA, the Florida Office of Economic Recovery formed an ARRA Broadband Strategy Working Group to develop an ARRA broadband strategy, collaborate with various stakeholders inside and outside government, and coordinate Florida's grant proposals. This small group of six to seven served as a multi-disciplinary review committee in the Governor's Office and made recommendations on the Florida applications. The group "had not worked together before" and included people from economic development agencies, universities, K-12 education, health agencies, and the data network provider. The Department of Management Services, working with SUNCOM within the Division of Telecommunications (DivTel), became the primary state agency for the Broadband Florida Initiative. Additionally, the North Florida Broadband Authority was established as a governmental entity for the purpose of pursuing and sustaining broadband resources, infrastructure and services for the region; it received the only grant awarded to Florida in the first round of broadband funding.[19]

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[18] In this effort, Virginia also leveraged $12.7 million from the US Department of Commerce's Economic Development Agency. See: *Final Report of Commonwealth's Broadband Roundtable*, presented to Governor Timothy Kaine, Sept. 9, 2008. Available at: www.wired.virginia.gov/pdf/Governor_report.pdf

[19] Barry Ray, ""Florida State helps secure $30 million to increase Internet access in rural North Florida," *Florida State News and Events* (March 15, 2010). Available at: http://www.fsu.edu/news/2010/03/15/internet.access/

All the states, including those examined in depth here, focused on disseminating information to potential applicants through workshops and websites, and made sure applicants knew how to fill out the applications. Most states did rank applications, although processes for ranking applications varied with the Governor's Office taking the lead in some states, the state Public Utilities Commission (PUC) in others, and in some states an independent third-party. Two aspects of this process seem important from a network and collaboration perspective. First is that in some cases, but not all, states did know which proposals were being submitted to NTIA; this occurred primarily because of the state outreach regarding ARRA broadband opportunities and because of proactive steps to assist those interested in submitting grants. But in several cases entities submitted grants without the knowledge of the governor's office. Second is that NTIA asked states to "rank" the ARRA applications from their state. Most states, including California and Florida, did rank the applications received from NTIA. In California the Governor's Office set up a process for getting requests from various players (PUCs, industry wide associations, government agencies) for an overall sense of what the priorities should be. In general the priorities from the 2008 report, with infrastructure as the top concern, was accepted by all. There was then an attempt to communicate these priorities to those who were likely to submit. However, Virginia did not rank the applications, in part because the award criteria, e.g, what was an "underserved" area, were not entirely clear, but instead wrote letters of support for applicants using companies in Virginia and bringing or keeping jobs in Virginia.

In general, there was a perception among the states that NTIA was something of a "black hole," reflected by lack of feedback and paucity of information. State level people involved in broadband had not really worked with NTIA before and were not clear on how best to proceed in dealing with this federal agency. This uncertainty was complicated by the fact that there was a lack of clarity on some key NTIA criteria, e.g. what specifically constituted an "unserved" or "underserved" area, and what did having a project "substantially completed" in two years mean.[20] Moreover the states themselves, as well both NTIA and RUS, did not have adequate, reliable and timely data about current broadband deployment within their states. Part of NTIA's ARRA funds were targeted to broadband mapping, which would provide such information, but the perception among the states was that in a perfect world this mapping would have been done first. In many cases, states "scrambled" to collect this information quickly at the same time as they were also doing outreach to potential applicants within the state. In some states, there were existing areas that had been designated as in need of increased broadband deployment; in Florida these were termed Rural Areas of Critical Economic Concern (RACEC). In Virginia, the areas hit hardest by the withdrawal of the tobacco industry were viewed as areas in need of economic development and areas that generally met the rural requirements. Although states played an advisory role in the application review process, NTIA was not required to follow the states' recommendations – and sometimes did not, which added to the perception that NTIA was a "black hole."

Private Sector

[20] Richard Anguiano, "Marion/Alachua group to seek stimulus millions for broadband," *Ocala Business Journal* (June 26, 2009).

It is important to note the role of the private sector firms in the ARRA broadband implementation process. In general, states did not have existing relationships with private sector broadband firms other than their involvement in awarding competitive contracts for state operations and then overseeing those contracts. But states did not play a role in "championing" particular state firms or lobbying on their behalf. Indeed most broadband companies were national in scope, not state-based. Within state governments, there was not experience with working cooperatively with these firms and therefore not a basis for immediately collaborating on the ARRA broadband funding.

A range of private sector firms viewed themselves as affected by ARRA broadband activities. Broadband can be delivered by fiber, wire, cable, wireless, cellular and satellite – and those companies, both large and small, were potential partners in broadband grant and loan applications. They were also concerned that ARRA projects could compete with their planned private sector deployment efforts or with their existing broadband infrastructure. Additionally private sector suppliers of end-user equipment, particularly computers, would be advantaged by more deployment of broadband to unserved or underserved communities.

There was also the perception, and reality, that larger private sector players were reluctant to get involved in the first round of ARRA funding because they did not necessarily want to reveal so much of their proprietary information and were worried that they might be exposed to net neutrality rules in unexpected ways. This "shrunk the potential applicant pool and had a negative impact" in some states. The private sector disinterest is reflected in the number of awards made by sector with the for-profit sector receiving 55 of the 233 BTOP awards (24%); this was the first time that NTIA had made such awards to private sector companies. For profit-corporations, however, secured 202 of the 297 BIP awards (68%) with most of these going to small local companies.[21]

Non-profit sector

The non-profit sector was involved in broadband in three possible ways: the industry trade associations that had a stake in the processes and requirements for awards; as applicants for grants and loans either in partnership with others or alone; and, as implementing agencies.

In the broadband area, industry trade associations are proliferate, powerful and well-financed. Included are: United States Telecom Association (USTelecom), the trade association representing service providers and suppliers for the telecommunications industry; National Exchange Carrier Association (NECA), a not-for-profit association of incumbent local exchange carriers; COMPTEL, an industry association representing competitive communications service providers and their supplier partners; National Telecommunications Cooperative Association, the trade association representing rural telecommunications providers; Organization for the Promotion and Advancement of Small Telecommunications Companies (OPASTCO; Coalition for Rational Universal

[21] Kruger (March 14, 2012), p.2-3.

Service and Intercarrier Reform (CRUSIR); Rural High Cost Carriers, a cross-section of rural incumbent local exchange carriers;[22] and National Cable and Telecommunications Association.

A quarter of the NTIA BTOP awards were made to non-profit organizations, for a total of 58 awards out of 233. Only a small number of RUS BIP awards, 8 out of a total of 297, went to non-profits.[23]

California had a non-profit organization, the California Emerging Technology Fund (CETF), which had been established in 2005 as a result of the merger activities between AT&T and Verizon. Originally focused on bridging the "digital divide," CETF's activities broadened to include telehealth, broadband to new schools and new homes, training, distance learning, and policy advice. Some in California see CETF as plying a role in "absorbing some of the broadband coordination beyond ARRA." Florida is somewhat unique in that one of the two primary broadband implementing organizations was a non-profit, the Florida Rural Broadband Alliance, which was created by two nonprofit economic development organizations: Florida's Heartland Regional Development Initiative, a development unit in one of the Rural Areas of Critical Economic Concern (RACEC) and Opportunity Florida. The other was the North Florida Broadband Authority, a government entity, discussed above. There have been problems with both organizations. In Virginia, the Center for Innovative Technology (CIT) was created by the General Assembly in 1984 as a nonprofit corporation to enhance the research and development capability of the state's research universities in partnership with industry; telecommunications and broadband specifically had been a key priority of CIT since its inception and CIT took on a major role in ARRA, including coordinating activities and applying for grants itself.

Continuing Implementation Challenges – Post Award

With the awards phase completed as of October 1, 2010, efforts shifted to monitoring and overseeing the awards to ensure that projects are moving forward in a timely fashion and that award monies are being spent responsibly. To this end, ARRA required all award recipients to file quarterly reports with the funding agency, which was then required both to report on the status of awards to the relevant congressional committees and also to maintain a publicly available website with award information. Additionally, department Offices of the Inspector General and the congressional Government Accountability Office are conducting investigations and audits of ARRA grants and loans.

In order to carry out post-award functions, adequate staffing at both agencies, but especially at NTIA, continued to raise problems. Early on the Department of Commerce OIG and GAO both pointed out that funding for the BTOP program office expired in December 2010 and recommended that NTIA develop alternative oversight strategies

[22] Kevin Taglang, Carriers Big and Small Weigh In on Broadband and Universal Service Reform (Dec. 8, 2009). Available at: http://benton.org/node/30362

[23] Kruger (March 14, 2012), p.2-3.

based on possible funding scenarios.[24] Given that NTIA did not have a grants management office, NTIA had established MOUs with NIST ($2.23 million) and NOAA ($4.15 million) but the Department of Commerce OIG noted that the MOUs needed to be clearer regarding roles and responsibilities especially as "only the grants officers at NOAA and NIST can approve or issue amendments to grant awards."[25]

Monitoring, Reporting and Compliance

One of the largest challenges with beginning projects funded through the ARRA broadband programs was the requirement that the projects certify their compliance with environmental regulations, both at the national level (NEPA) and also at the state level, as well as historical preservation, zoning and other state or local construction requirements. Of the 233 BTOP awards made by September 30, 2010, over 100 required environmental assessments before the projects could break ground; as of October 8, 2011, 31 draft assessments had been submitted and 11 of these had been approved.[26] The Department of Commerce OIG Office reported in November 2011 that environmental assessments often take six months or more to complete and that 12 award recipients still had not filed environmental assessments for a total of about $500 million funding.[27]

Given the importance of the ARRA broadband projects to state economic development goals, the governors' offices often tried to facilitate the completion of the permit and approval processes within the states. For example, in California the ARRA Task Force helped to expedite state review so that projects could begin by working directly with the relevant state agencies – e.g., Transportation, Environment, Fish and Games, and Historic Preservation. As projects were approved and if needed, the Task Force and Governor's Office held meetings with all the state actors who were involved in the environmental approvals to figure out how to get necessary approvals quickly. The new coordination required here was facilitated by the Task Force. Previously the state PUC had tracked individual projects but had not done the trouble-shooting that the CTA and Task Force could do.

NTIA requires quarterly reports on financial and programmatic activities from grant recipients and NTIA reports every 90 days on the status of BTOP to congressional appropriations and commerce committees. NTIA has also conducted site visits to monitor progress and offer advice, as well as individual and conference calls to assess progress. The Secretary of Agriculture is similarly required to submit detailed reports to the congressional appropriations committees on spending and obligations for RUS broadband programs.

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[24] Nov 2010, OIG, p. 6 and GAO, *Recovery Act: Further Opportunities Exist to Strengthen Oversight of Broadband Stimulus Programs*, (August 2010), p. 31.
[25] Nov 2010, OIG, p. 7
[26] Department of Commerce, OIG, *Broadband Program Faces Uncertain Funding, and NTIA Needs to Strengthen its Post-Award Operations* (Nov. 4, 2010) OIG-11-005-A, p. 2.
[27] Department of Commerce, OIG, *NTIA has an Established Foundation to Oversee BTOP Awards, But Better Execution of Monitoring is Needed* (Nov 17, 2011) OIG-12-013-A, p. 2.

BTOP grants were also required to have recipient financial matches that are contributed and expended at the same rate as federal funds. NTIA was tasked with monitoring the matching requirements. In May 2012, the DOC IG reported that sustainable broadband programs were not receiving detailed match review, that grantees did not record the grant match in the financial records, and that some grantees were behind in contributing their match. At the end of 2011, 49 BTOP grant recipients were behind schedule on their matches and 179 were on schedule.[28]

Timeframe for Completion

A major challenge involved the spending rate of the awards. BTOP projects were to be 67% complete within two years of the grant and fully complete within three years. As of September 2011, BTOP grant recipients had spent only about 19% of total funds ($729 million).[29] Under ARRA, all RUS awards require that loan/grant funds must be advanced by September 30, 2015 or would be rescinded by RUS and returned to Treasury. Concerns about funding rates led the Subcommittee on Communications and Technology of the House Committee on Energy and Commerce to hold a hearing in May 2012, stating in their hearing announcement that:

> …recipients of 233 National Telecommunications and Information Administration awards worth $4 billion have spent just $1.6 billion of it so far. Less than a dozen of the projects have been completed. Six of the awards worth $124.5 million have been returned or revoked. Recipients of 320 Rural Utility Service Awards worth $2.4 billion have spent $968 million. Five projects have been completed. As of July 2011, $124 million in grants and $35 million in loans have been rescinded or revoked.[30]

Completing projects in the timeframe required by ARRA would be difficult under the best of circumstances but was made even more problematic by the usual delays experienced by large projects that involved multiple contractors and subcontractors and required complicated and multilevel approval processes. Some projects did not meet their initial grant requirements and were declined before they were begun. Some entities returned BTOP grants to NTIA.[31] In testimony to a House hearing in May 2012, the IG for the Department of Commerce reported that as of April 2012, "the total number of BTOP grants decreased from 233 to 228 due to grant cancellations, modifications, and terminations, which resulted in approximately $127 million returned"[32] to the treasury. He went on to acknowledge that "slow awardee spending could result in unfinished grant projects" and that "spending – particularly with infrastructure projects – continues to

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[28] Zinser, op cit, p.8-9.
[29] Ibid, p.2.
[30] Committee Memorandum, May 14, 2012.
[31] House Committee Memo reported the State of Wisconsin Department of Administration, the Education Networks of America in Indiana, and the City of Tallahassee in Florida returned $38 million in grants.
[32] Todd J. Zinser, DOC IG, "Testimony before the House Energy and Commerce Committee, Subcommittee on Communications and Technology," May 16, 2012, p. 2.

lag."[33] He also noted that NTIA oversight was successful in identifying projects that were falling behind schedule and that eight projects had returned or deobligated $125 million in Federal funds and that one grant had been terminated for failure to comply with the terms of the grant.[34]

At the same hearing the Administrator of the Rural Utilities Service reported that "tough calls" had been made as they managed awards resulting in rescission of 36 BIP awards and the return of approximately $266 to the Treasury.[35]

Each of the three states examined in some detail here had grants that were identified as being in trouble in reaching financial goals. In Florida, for example, the North Florida Broadband Authority (NFBA), which received a $30 million grant in BTOP's Round One funding, had spent only $7 million and completed zero miles of route as of September 2011 was suspended by NTIA[36] because of waste and conflict of interest issues.[37] The project was restarted in late Spring 2012 after two of the subcontractors resigned and NFBA was reorganized.[38] In California, the Department of Commerce OIG investigated a $50 million BTOP grant for the San Francisco Bay Area Wireless Enhanced Broadband Project with particular attention to project readiness and governance structure.[39] In Virginia, the Lenowisco Planning District returned a $20.2 million award to RUS because the partners could not agree on the revenue split and the repayment on the loan portion of the award.[40]

Meeting Broadband Deployment Goals

One of the initial and continuing concerns with the ARRA broadband program was that it would in the end not extend service to new, unserved or underserved areas, but would

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[33] Ibid, p.3-4.
[34] Ibid., p.11.
[35] Jonathan Adelstein, RUS Administrator, Statement to the House Energy and Commerce Subcommittee on Communications and Technology, May 16, 2012, p.4.
[36] Derek Gilliam and Kaitlin Mulhere, "Internet Stimulus Project Investigated," *The Ledger* (Sept. 25, 2011). Available at: http://theledger.com/article/20110925/NEWS/110929554?template=printart
[37] "Broadband Stimulus Scandals: Missteps in the buildout and what's at stake," *FierceTelecom* (Feb. 28, 2012). Available at: http://www.fiercetelecom.com/special-reports/broadband-stimulus-scandals-missteps-buildout-and-whats-stake. The article also notes that "Florida in general is a blooming garden of bad press around mismanaged stimulus funds."
[38] Jeffrey Boatright, "High Speed Internet on the Way," *Suwannee Democrat* (March 26, 2012). Available at: http://suwanneedemocrat.com/suwannee/x1437239544/High-speed-Internet-on-the-way. Two local entities (Bradford County and Perry City) have since pulled out of the project in part because broadband is already available in those areas. See: Samantha Bookman, "Perry, Fla. Drops out of North Broadband Authority," *FierceTelecom* (April 12, 2012). Available at: http://www.fiercetelecom.com/story/perry-fla-drops-out-north-florida-broadband-authority/2012-04-12.
[39] Department of Commerce, Office of Inspector General, *Misrepresentation Regarding Project Readiness, Governance Structure Put at Risk the Success of the San Francisco Bay Area Wireless Enhanced Broadband Project* (Jan. 10, 2012). Available at: http://www.oig.doc.gov/Pages/Misrepresentations-Put-at-Risk-Success-of-San-Francisco-BayWEB-Project.aspx
[40] "Some Broadband Stimulus Recipients Return Funding," *The ILEC Advisor* (March 25, 2011). Available at: http://www.jsicapitaladvisors.com/the-ilec-advisor/2011/3/25/some-broadband-stimulus-recipients-return-funding.html

instead overbuild in areas that already had broadband. Both NTIA and RUS have done studies to estimate jobs created, miles of broadband deployed, homes and schools connected, etc. NTIA awarded a $5 million contract to ASR Analytics to measure the impact of BTOP grants on broadband deployment and adoption and to assess the economic and social conditions in the grantee areas.[41]

For the RUS BIP program, ARRA required that 75 percent of the service areas were to be "rural areas" without sufficient access to high speed broadband and that RUS give priority to projects that would provide service to the highest proportion of rural residents without broadband access and projects that would provide end-users with a choice of broadband service providers. Prior to ARRA, RUS did not fund projects in areas where there was an existing RUS loan or grant recipient. BIP did not have that restriction and there was some concern, expressed by the DOA Inspector General, that an overlap with existing RUS recipients might result in overbuilding in some areas.[42] Additionally, the definition of "rural" was broad enough that it was sometimes difficult to distinguish rural and suburban communities.

In many cases, states had in place concepts that could be adopted as criteria for "unserved or underserved" areas. California had already been using "unserved" and "underserved" in its CASF program with an "unserved area" defined as "an area that is not served by any form of facilities-based broadband, or where Internet connectivity is available only through dial-up service or satellite" and "underserved" defined as "an area in which broadband is available but no facilities-based provider offers at speeds of at least 3 Mbps download and 1 Mbps upload."[43] Florida had long used the designation of Rural Areas of Critical Economic Concern (RACEC) to identify rural communities adversely affected by economic events or natural disasters permitting the governor to waive criteria for economic development incentives and give that area priority status for funding. The RACEC designation worked well for ARRA funding, especially RUS funding. Somewhat similarly to Florida, Virginia had a designation in place that had been used for those areas that were transitioning from tobacco farming and thus eligible for special funding.

Private sector firms were carefully watching the awards process with an eye on any ARRA competition with their projects. At a House Agriculture Rural Development Subcommittee hearing on the rural development programs, the National Cable and Telecommunications Association, in particular, was critical of RUS for not focusing on "unserved" areas and instead overbuilding in areas where there were already projects funded by risk capital that had to compete with new ones funded by government subsidies.[44]

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[41] Kruger, op cit (March 14, 2012), p.8.
[42] David R. Gray, Deputy Inspector General, DOA, "Statement before the Subcommittee on Communications and Technology, Committee on Energy and Commerce," (May 16, 2012).
[43] Rachelle Chong, op cit, p. 2-3.
[44] John Eggerton, "NCTA: Things have to Change with RUS Implementation of Broadband Programs," *Broadcasting & Cable* (April 25, 2012). Available at: http://www.broadcastingcable.com/article/483592-NCTA_Things_Have_to_Change_With_RUS_Implementation_of_Broadband_Programs.php

Conclusions

The ARRA broadband program was among the most challenging of the stimulus programs. It involved stringent statutory requirements in terms of timelines but unclear standards for key elements of program implementation, e.g. the definitions of "unserved" and "underserved" and of "broadband" itself. It entailed a new role for the federal government and coordination among three federal agencies (NTIA, RUS and FCC), with one of the main agencies (NTIA) having never played a role in grants before. At the state level, the ARRA broadband program required leadership from the governor's office in coordinating state agencies, non-profits, and private companies – all with the possibility, if not the promise, of much-needed funding for a critical component of the infrastructure for economic development. At the same time, success of the grants program hinged on the federal players being able to make clear decisions on grant requirements and funding quickly, on the state partners being able to marshal knowledgeable staff within state offices and well-qualified teams to submit grants, and on the non-profit and for-profit sectors willingness to take risks and cooperate with each other and with governmental units in this new sandbox.

The success of the ARRA broadband programs was mixed. At the federal level, NTIA and RUS clearly learned from the Round One funding experiences and were able to make needed adjustments to make Round Two go more smoothly. RUS was able to fairly effectively ramp up its grants and loan office to accommodate the demands of the BIP program, make awards in a timely fashion, and monitor the implementation of those awards. NTIA was faced with the larger administrative challenge and was able to fill in the gaps in its own capacity by contracting with Booz Allen Hamilton and developing MOUs with NIST, NOAA and the FCC for help with grant processing, management support, and technical assistance. At the state level, experiences varied with the most critical factor in successful implementation being whether there was an existing network of public and private actors who understood broadband, had worked together previously, and were energized by the possibilities offered by the ARRA grants. At the state level, existing personal and professional relationships appear to be key to success. Non-profits were willing partners in grant submissions but in general lacked expertise in the broadband area and were depended upon private sector or governmental partners to help craft proposals. Small private sector companies understood that ARRA grants provided opportunities for them but larger private sector companies were reluctant to get involved.

At this point in the implementation cycle, the ARRA broadband programs continue to face fairly significant challenges. Many grants are behind schedule and several are unlikely to catch up in time to meet the completion dates. Many grants have been faulted for administrative or financial problems. And many grants appear to be targeted to areas that may not have actually needed broadband or that are unlikely to be able to use the

new broadband capacity effectively. At the same time, there are indeed many successes among the ARRA broadband programs.

Table 1
State-by-State Distribution of
All BTOP, SBDD, and BIP Awards

	Number of Awards	Total Amount of Grants and Loans ($ Millions)
California	29	444.3
Kentucky	20	315.0
Texas	32	312.8
North Carolina	18	278.6
Oklahoma	27	277.6
Missouri	20	263.5
Michigan	18	245.7
Washington	17	244.3
Minnesota	29	242.3
Illinois	18	239.6
Tennessee	16	233.9
Pennsylvania	13	215.9
Ohio	20	202.4
Louisiana	10	189.8
New Mexico	17	184.5
West Virginia	10	184.3
Vermont	7	174.0
Wisconsin	23	171.4
Georgia	17	170.7
Iowa	20	166.9
New York	20	160.7
Virginia	16	154.5
Colorado	13	146.5
Kansas	14	144.9
Alabama	15	142.5
Alaska	9	138.8
Montana	8	133.4
Arkansas	8	128.5
Mississippi	10	127.3
Florida	13	126.5
Maryland	6	125.0
Arizona	14	113.0
Connecticut	2	97.6
North Dakota	11	96.1
Massachusetts	9	94.5
American Samoa	2	92.9
Virgin Islands	4	67.5
Nevada	12	66.7
Indiana	10	63.5
New Hampshire	7	54.5
South Dakota	8	53.4
Oregon	15	52.7

New Jersey	3	49.7
Utah	9	48.9
South Carolina	7	45.4
Maine	7	42.6
Puerto Rico	3	41.1
Hawaii	5	40.4
Nebraska	6	31.6
Idaho	13	30.5
District of Columbia	4	27.2
Rhode Island	3	24.9
Wyoming	3	14.8
Guam	2	7.5
Delaware	2	5.0
Northern Mariana Islands	2	3.4

Source: NTIA, *The Broadband Technology Opportunities Program: Expanding Broadband Access and Adoption in Communities Across America, Overview of Grant Awards*, December 2010, available at http://www.ntia.doc.gov/reports/2010/NTIA_Report_on_BTOP_12142010.pdf, and Lennard G. Kruger, *Background and Issues for Congressional Oversight of ARRA Broadband Awards*, Congressional Research Service (March 14, 2012), R41775, pp. 17-18.