

EAGLE-NET'S NEVER-ENDING ODYSSEY: ADDRESSING COLORADO'S UNIQUE BROADBAND INFRASTRUCTURE CHALLENGES

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Although 80% of Colorado's population lives in the densely populated Front Range, the remaining 20% of Colorado residents live in sparsely populated regions. The Federal Communications Commission and the federal government's National Broadband Plan have prioritized universal availability of high speed Internet, but Colorado has struggled to close the "digital divide," which decreases the benefits of the Internet for public education and other services in rural regions. Using a \$100 million federal grant and \$35 million in additional funding from CenturyLink, Coloradans created the EAGLE-Net Alliance to address this issue. EAGLE-Net is a local government co-operative designed to create a middle-mile fiber network connecting Colorado's 178 public school districts and other community anchor institutions like hospitals. However, EAGLE-Net has already spent about 90% of its budget, yet it has only completed its broadband infrastructure build-out in six of Colorado's nineteen unserved counties. EAGLE-Net has also faced hostility from small telecom providers because of the organization's construction plan and because the executive team has focused on economic sustainability instead of ensuring optimal improvements to rural infrastructures. The National Telecommunications and Information Administration temporarily suspended EAGLE-Net's grant to determine if it is adequately completing its environmental assessments and to determine if the network will harm small telecom companies in rural Colorado. Many potential solutions exist; such as streamlining agency operations, repealing a state statute that prevents municipal broadband service, and accepting the need to operate at a loss in the most remote regions of Colorado.

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I. INTRODUCTION

In 1994, only a quarter of U.S. households had computers, and fewer than half of those had Internet access.¹ Six years later, after a rarely paralleled technology boom, 41.5% of U.S. households had Internet access.² Although the dotcom boom of the 1990s is remembered somewhat cynically as a bubble—due to high-profile stock meltdowns and overeager speculation—the United States population has never looked back. Less than a generation has passed since rudimentary interfaces like AOL and the widespread adoption of email, but people

1. NAT'L TELECOMM. & INFO. ADMIN., FALLING THROUGH THE NET: A SURVEY OF THE "HAVE NOTS" IN RURAL AND URBAN AMERICA (tbls. 14 & 15) (1995), <http://www.ntia.doc.gov/ntiahome/tables.htm> (tbls. 14 & 15).

2. See NAT'L TELECOMM. & INFO. ADMIN., FALLING THROUGH THE NET: TOWARD DIGITAL INCLUSION 1 (2000), <http://www.ntia.doc.gov/files/ntia/publications/fttn00.pdf>.

now communicate, shop, and learn online.

Today, many Coloradans may take Internet access for granted, but 18% of Coloradans still do not have a computer or an Internet connection in their home.³ While the private sector has made serious inroads into online profitability, the public sector's access to and use of high-speed broadband lags behind.⁴ Key civic institutions—hospitals, police stations, schools, and libraries—are not wired as well as the private sector or even their counterparts in other advanced countries.⁵ In part because of Colorado's geography and population dispersion, the Centennial State has struggled for fifteen years to ensure its rural citizens and civic institutions have Internet access equal to urban citizens and the private sector. A 2008 study showed that Colorado was forty-second in statewide broadband connectivity and that market forces were not strong enough to build adequate broadband infrastructure in the state's remote rural areas.⁶ In 2010, EAGLE-Net Alliance ("EAGLE-Net") received a \$100.6 million grant from the Department of Commerce's \$4.7 billion Broadband Technologies Opportunities Program ("BTOP") to develop Colorado's middle-mile broadband infrastructure.⁷

Middle-mile infrastructure is akin to a network of highways carrying data on long hauls between destinations and connecting to the nation's Internet backbone. Last-mile broadband, akin to off-ramps and city streets, provides end-user service. End-user servicers, such as incumbent providers Comcast and CenturyLink, depend on middle-mile networks to efficiently hold and carry large amounts of data. The vanguard of middle-mile broadband is fiber-optic cable, which carries a nearly infinite amount of data at much faster speeds than its cable wire predecessor. EAGLE-Net received its BTOP grant to build a network of middle-mile fiber-optic cable throughout Colorado, particularly to rural areas.⁸

This note will begin with a discussion of the federal government's

3. *Computer and Internet Use, Presence and Type of Computer for Individuals 3 Years and Older, by State: 2010* at tbl. 3B [hereinafter *Computer and Internet Use 2010*]; U.S. CENSUS BUREAU, <http://www.census.gov/hhes/computer/publications/2010.html> (last revised July 2012).

4. See generally *Executive Summary*, FED. COMM'N COMM'N ("FCC"), NAT'L BROADBAND PLAN: CONNECTING AMERICA [hereinafter NATIONAL BROADBAND PLAN], <http://www.broadband.gov/plan/executive-summary>.

5. See *id.*

6. See *id.*

7. See Notice of Funds Availability ("NOFA") & Solicitation of Applications, 75 Fed. Reg. 3792 (proposed Jan. 22, 2010), http://www.ntia.doc.gov/files/ntia/publications/fr_btopenofa_100115_0.pdf [hereinafter Notice of Funds Availability].

8. See generally C.T.C. TECH. & ENERGY, *EAGLE-NET IN CONTEXT: AN ANALYSIS OF THE PROCESSES AND BENEFITS OF MIDDLE-MILE BROADBAND PROJECTS* 1 (2012), <http://www.ctcnet.us/EAGLE-Net.pdf>.

vision for broadband infrastructure and the BTOP grant process. It will describe EAGLE-Net's formation, the implementation of its plan, and the controversy surrounding the National Telecommunications and Information Administration's ("NTIA") decision in January 2013 to suspend EAGLE-Net's grant. This note will also formulate criteria for analyzing EAGLE-Net's efforts and some of the problems it has faced. Finally, this note will suggest potential solutions such as streamlining agency operations, repealing a state statute that prevents municipal broadband service, or accepting the need to operate at a loss in the most remote regions of Colorado.

II. BROADBAND IN CONTEXT

Japan, Hong Kong, and South Korea have developed high-speed broadband networks that provide download speeds unlike anything the average American consumers experience in their living rooms. In Hong Kong and South Korea, Internet users benefit from average peak speeds close to 50 Mbps, whereas Internet users in urban areas of the United States only enjoy average peak speeds of about 28 Mbps and far lower in rural areas.⁹ Like dial-up connections in the mid-1990s, the federal government's recognition of the importance of broadband infrastructure has been slow, but it has recently connected with the idea that broadband infrastructure is as vital in the twenty-first century as roads and bridges were in the twentieth.

A. *The National Broadband Plan*

The Telecommunications Act of 1996 deregulated the telecommunications market in an effort to create competitive innovation, spur rapid deployment of information technology, and make these technologies universally available.¹⁰ Yet, in 2010 the Federal Communications Commission ("FCC") found that broadband capability was still not universally available—about eighty million adults did not have broadband access at home, and about twenty million adults lacked any access at all.¹¹ According to Section 706 of the Telecommunications Act of 1996, this finding meant the FCC needed to "take immediate action to accelerate deployment of advanced telecommunications

9. See Charlie Osborne, *Hong Kong Secures Top Spot for Global Broadband Speed*, ZDNET (Aug. 13, 2012, 8:19 AM), <http://www.zdnet.com/hong-kong-secures-top-spot-for-global-broadband-speed-7000002511>.

10. See H. R. REP. NO. 104-458, at 1 (1996) (Conf. Rep.).

11. See generally Inquiry Concerning the Deployment of Advanced Telecomm. Capability to all Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecomm. Act of 1996, as Amended by the Broadband Data Improvement Act, *Sixth Broadband Deployment Report*, 25 FCC Rcd. 9556, 9557 (2010) [hereinafter *Sixth Broadband Deployment Report*].

capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.¹² In response, the FCC generated a report, which concluded that because consumer use changed dramatically as the Internet became more sophisticated in the 2000s, 4 Mbps of download speed and 1 Mbps of upload speed should be required across the nation's entire network.¹³

To facilitate its mission and explain the benefits of its goals, the FCC created the National Broadband Plan ("The Plan"). The Plan lays out the FCC's roadmap for using high-speed broadband Internet to improve the economy, public education, health care, and homeland security.¹⁴ The Plan suggests digital literacy standards with the goal of teaching every young person in the country to use a computer effectively.¹⁵ Talented high school students will have the opportunity to take online advanced placement courses not offered by their schools;¹⁶ government agencies will be able to store documents on the cloud rather than in a warehouse; and employees will be able to spend more time on actual work and less time on paper work.¹⁷ The Plan will also improve social services. Only half of the people eligible to receive food stamps actually use them, but programs like ACCESS NYC use online calculators to help residents determine their eligibility.¹⁸ Yet, without Internet access this program cannot help those who need it. But, if high-speed Internet were available for free in a public library, residents could access this information and learn about their eligibility, even if they don't own a computer.¹⁹

The Plan captures the promise of the Internet. It is ambitious. But, for the ambition to come to fruition, the proper foundation must be laid.

In 2010, a study of broadband availability found about a third of counties in the United States were not even minimally served by broadband, and that those counties are generally more rural and have lower income levels than counties with broadband access.²⁰ In Colorado, nineteen counties were unserved, and 88% of the unserved households were in rural areas, one of the higher rural concentrations among the fifty

12. *See id.* at 9558.

13. *See id.* at 9559.

14. *See Plan*, FCC, NAT'L BROADBAND PLAN, <http://www.broadband.gov/plan/> (last visited Feb. 28, 2013).

15. *Id.*

16. *See Education*, FCC, NAT'L BROADBAND PLAN, <http://www.broadband.gov/plan/11-education/> (last visited Feb. 23, 2013).

17. *Government Performance*, FCC, NAT'L BROADBAND PLAN, <http://www.broadband.gov/plan/14-government-performance> (last visited Feb. 22, 2013).

18. *See id.*

19. *See id.*

20. *See Sixth Broadband Deployment Report*, *supra* note 11, at 9569-70.

states.²¹

B. Colorado's Fitful Effort

Over four million people live in Colorado's Front Range, dominated by the Denver, Fort Collins, and Colorado Springs metropolitan areas.²² The rest of the state's population, about 900,000 people, is spread between rural Eastern Colorado, the isolated central mountain region, and the equally isolated Western slope.²³ Internet providers like Comcast and CenturyLink provide consistent, relatively cheap home Internet access to the high-density Front Range population.²⁴ However, slower Internet service is more expensive in the state's rural regions because infrastructure is costlier to build—especially in mountainous areas. The lower population density in rural areas makes service less profitable.²⁵ Pricing differences in Denver and Silverton illustrate a problem that is also prevalent in state services such as safety, health care, and education.

1. Colorado's Early Effort: The Rocky Mountain Network

In 1996, the Colorado legislature recognized a growing "digital divide"²⁶ in the state, and passed Senate Bill 102 to authorize a statewide network to equalize Internet access.²⁷ Colorado's Department of Personnel and Administration partnered with CenturyLink (then Qwest) to create the Colorado Multi-Use Network ("MNT"), the first attempt to fully equip Colorado for the Internet Age.²⁸ Implemented in 1999, when

21. See *id.* at 9582.

22. *Census 2000 and 2010 Counts by Region & County*, COLO. DEP'T OF LOCAL AFFAIRS, <http://dola.colorado.gov/dlg/demog/2010data/total%20pop%20change%20region.pdf>.

23. See *id.*

24. *Xfinity Internet High Speed Internet Service*, COMCAST, <http://www.comcast.com/internet-service.html> (last visited Sept. 29, 2013) (demonstrating Comcast's \$29.99/month offer for 25 Mbps in Denver).

25. Compare *id.* with *Comcast in Silverton Xfinity Internet*, CABLETV, <http://www.cabletv.com/co-silverton-comcast-cable.html> (last visited Sept. 29, 2013) (demonstrating \$34.99/month offer for 20 Mbps in Silverton).

26. See generally *The Digital Divide, ICT and the 50x15 Initiative*, INTERNET WORLD STATS, <http://www.internetworldstats.com/links10.htm> (last visited Mar. 31, 2013) (describing how the digital divide describes the disparity in useful, enriching broadband Internet access between urban and rural communities and rich and poor communities); and "*Digital Divide*" *Defined (Hint it's not about access)*, DIGITAL DIVIDE INSTITUTE, <http://www.digitaldivide.org/digital-divide/digitaldividedefined/digitaldivide.html> (last viewed Mar. 31, 2013).

27. See *About the Colorado State Network*, GOVERNOR'S OFFICE OF INFO. TECH. ("OIT"), <http://www.colorado.gov/cs/Satellite/OIT-ServicesApps/CBON/1251610497752> (last visited Feb. 24, 2013).

28. See *Frequently Asked Questions*, DEP'T OF PERSONNEL AND ADMIN., THE MULTI-USE NETWORK PROJECT, <http://www.state.co.us/mnt/faq/index.html> (last viewed Feb. 24, 2013).

many people still connected to AOL via dial-up access, and completed in 2005, as Facebook, Google, and Amazon began to define Internet use, MNT's mission was to level the playing field for rural communities and mountain towns by providing them with bandwidth equal to that of the Front Range cities and to prepare schools, libraries, and government agencies for a new era.²⁹ MNT simplified the state's broadband network and saved money by aggregating demand and sharing costs across the state.³⁰ The network connected nearly 100 public-sector organizations through more than 3,000 endpoints.³¹ In 2011, the Office of Information Technology entered into a new agreement with CenturyLink to modernize MNT, now known as the Colorado State Network.³² Because the project's success was undercut by the fast pace of technological change,³³ it only ensured that the state has not fallen further behind.

2. Colorado Takes a Step Back

Just as MNT was completed, the state legislature passed C.R.S. § 29-27-103 ("SB 152"). This statute prevents municipalities from offering telecommunications services without a voter referendum that overrides the statute. Comcast and CenturyLink (née Qwest) lobbied for the bill, because it ensures they remain the dominant source of Internet for residents.³⁴ As the federal government relieves incumbent providers from building infrastructure in unprofitable regions, SB 152 ensures incumbent providers have leverage to keep consumers in a vice grip.

3. High Hopes and Ambitious Words

When one walks into a coffee shop, it seems like everyone in the world owns a Mac. That is not the case. In 2010, only 78% of Colorado residents lived in a household with a computer to access the Internet,³⁵ and a disproportionate number of those Coloradans are residents of the Front Range.³⁶

29. *See id.*

30. *See id.*

31. *See About the Colorado State Network, supra* note 27.

32. *See id.*

33. Moore's Law states that processing power will double every two years. This means broadband infrastructure must be built out to prepare for rapid growth in data demand. *See* Gordon E. Moore, *Progress in Digital Integrated Electronics*, 21 INT'L ELECTRON DEVICES MEETING 11, 13 (1975), <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1478174>.

34. Esme Vos, *Dave Hughes: Colorado Lawmakers Bow to Qwest on Municipal Broadband*, MUNIWIRELESS.COM (Apr. 19, 2005), <http://www.muniwireless.com/2005/04/19/dave-hughes-colorado-lawmakers-bow-to-qwest-on-municipal-broadband>.

35. *Computer and Internet Use 2010, supra* note 3, at tbl. 3A.

36. NTIA estimates that 66% of urban households, compared to 54% of rural households, had broadband Internet access in their home. LAWRENCE E. STRICKLING & ANNA

In a joint resolution, Colorado's legislature determined that high-speed broadband access is vital and necessary for educating students, business development, and myriad other reasons.³⁷ In rural and remote areas across the state, deficient broadband infrastructure has hindered communities from competing in the broader economy. Developing sufficient broadband infrastructure is also increasingly necessary so that schools can provide an education to prepare students to compete in the twenty-first century workforce. The State House of Representatives recognized a gap between most urban and suburban schools, which already possessed sufficient access to broadband, and rural schools, which had "fewer opportunities to take advantage of broadband technologies."³⁸ The legislature also resolved that the best way to end these shortfalls in equity was to make every effort to "prioritize the provision of broadband service to unserved customers through the efficient distribution of resources."³⁹

Like many resolutions, House Joint Resolution 10-1016 uses broad and vague language, but many of the goals coincide with the National Broadband Plan. The state recognizes the importance of prioritizing support for its rural and remote areas, which is a matter of equitability and aspiration. A robust statewide broadband network will open up the world for students in rural areas. One of the Internet's promises is shrinking the world by giving someone in a rural school district the same opportunities as someone in a suburban school district. Without a dependable, high-capacity broadband infrastructure that reaches rural and remote areas, the Internet's potential for improving the educational opportunities of rural school districts will not be met.

III. EAGLE-NET ALLIANCE

The first step towards statewide completion of the ambitious goals of House Joint Resolution 1026 came on the local level. The Centennial Board of Cooperative Educational Services ("CBOCES"), which provides cost-effective broadband services to thirteen member-school districts in northern Colorado,⁴⁰ served as a template and jumping off point for the EAGLE-Net.⁴¹ Although the intellectual brainpower of EAGLE-Net was in a local organization, the capital came from the

GOMEZ, NAT'L TELECOMM. & INFO. ADMIN., DIGITAL NATION: 21ST CENTURY AMERICA'S PROGRESS TOWARD UNIVERSAL BROADBAND INTERNET ACCESS 10 (Feb. 2010).

37. H.R.J. Res. 10-1026, 67th Gen. Assemb., 2d Reg. Sess., at 2 (Colo. 2010).

38. *Id.*

39. *Id.* at 4.

40. *About Us*, CENTENNIAL BOCES, http://www.cboces.org/files/_hLDDL3_/7d1e2ef30be3209d3745a49013852ec4/About_Centennial_BOCES_-_Who_We_Are.pdf (follow "CBOCES: Who We Are").

41. *History*, EAGLE-NET, <http://www.co-eaglenet.net/about-us/history/>.

federal government.

A. "The Stimulus" Provides Capital

The American Recovery and Reinvestment Act ("Recovery Act") targets several areas of economic development, including a \$7.2 billion investment in technology and infrastructure on state and local levels.⁴² The Recovery Act provided \$4.7 billion to NTIA, which is within the Department of Commerce, to administer BTOP.⁴³ Agencies were instructed to "commenc[e] expenditures and activities as quickly as possible consistent with prudent management."⁴⁴ NTIA's Notice of Funds Availability ("NOFA") prioritized cooperation with end-user service providers and improvement of broadband infrastructure for institutions of learning, health, and safety, which would create "a ripple effect of economic development."⁴⁵

EAGLE-Net received its NTIA grant during the second round of funding. Whereas, the Rural Utility Services ("RUS") and NTIA issued joint grants during the first round, they offered grants separately during the second round to "better promote each agency's distinct objectives" with the intent to avoid "geographic overlap."⁴⁶ RUS gave loans to rural businesses for essential utility services, including broadband.⁴⁷ NTIA focused on Comprehensive Community Infrastructure projects, which would develop and improve middle-mile broadband infrastructure for anchor institutions such as hospitals and schools.⁴⁸

B. EAGLE-Net's Formation

CBOCES applied when BTOP was announced and won a \$100.6 million grant in September 2010, in addition to receiving \$35 million in private donations.⁴⁹ Instead of operating the statewide program itself, CBOCES formed EAGLE-Net, a non-profit, intergovernmental entity, which is structured as a cooperative.⁵⁰ EAGLE-Net, like other boards of cooperative educational services, provides cost savings across a network of member institutions and allows access to education networks that

42. Notice of Funds Availability, *supra* note 7, at 3792.

43. *Id.*

44. *Id.*

45. *Id.* at 3795.

46. *Id.* at 3794-95.

47. *About RD*, OFFICE OF RURAL DEVELOPMENT, U.S. DEP'T OF AGRICULTURE, <http://www.rurdev.usda.gov/AboutRD.html> (last visited Sept. 25, 2013).

48. Notice of Funds Availability, *supra* note 7, at 3818.

49. *Frequently Asked Questions*, EAGLE-NET, <http://www.co-eaglenet.net/btop/faq/> (last visited Sept. 25, 2012).

50. *Id.*

cannot be accessed by "commodity" Internet users.⁵¹

EAGLE-Net's existence is predicated on an intergovernmental agreement between CBOCES, the Northeast Colorado Board of Cooperative Education Services, and over forty other local government entities.⁵² These members share costs for web services like high-speed broadband access and data warehousing.⁵³ EAGLE-Net is registered with the Colorado Department of Local Affairs ("DOLA"), sends quarterly and annual financial reports to NTIA, and meets monthly with its Board of Directors, which represents EAGLE-Net's member institutions.⁵⁴ As part of its DOLA registration, EAGLE-Net must conduct independent audits and report to DOLA.⁵⁵

C. EAGLE-Net's Implementation

EAGLE-Net's network was intended to improve Colorado's broadband infrastructure in two ways: EAGLE-Net planned to build 1,070 miles of new, infeasible middle-mile cable and improve and put to use 1,718 miles of currently unused "dark fiber."⁵⁶ By creating a quality middle-mile backbone, EAGLE-Net allows last-mile access providers to provide better broadband to community anchors than to residential or business customers.⁵⁷

Once completed, EAGLE-Net's middle-mile backbone will offer speeds from 20 Mbps to 1 Gbps.⁵⁸ Because governmental entities cannot compete with private providers like Comcast and CenturyLink, school districts will rely on incumbents for their actual Internet access.⁵⁹

Because EAGLE-Net's grant requires sustainability, EAGLE-Net needs to take in revenue to maintain the network and provide service.⁶⁰ Member organizations, school districts, and other community anchors pay for their use of the network.⁶¹ EAGLE-Net will save school districts money over the long term because middle-mile infrastructure costs will not be charged back to them by last-mile servicers.⁶² In this way,

51. *Id.*

52. *EAGLE-Net Organizational Structure and Operations, Community Outreach Update*, EAGLENET (Mar. 2013) available at <http://archive.constantcontact.com/fs189/1104865671015/archive/1112649250194.html>.

53. *Id.*

54. *Id.*

55. *Id.*

56. *Construction Statistics*, EAGLENET, <http://www.co-eaglenet.net/btop/progress/construction-statistics/> (as of Mar. 31, 2013).

57. EAGLE-NET, *supra* note 49.

58. *Id.*

59. See discussion of SB 152, *supra* Part II.B.2.

60. Telephone interview with Gretchen Dierks, Communications Director, EAGLE-Net (Nov. 8, 2012).

61. *Id.*

62. *Id.*

EAGLE-Net should be especially economically viable for remote school districts, which would otherwise have to pay a premium for high quality middle-mile networks through the free market.⁶³ However, like previous efforts, EAGLE-Net has talked the talk, but it has not walked the walk.

By the middle of 2013, EAGLE-Net was well behind its scheduled August 2013 completion date and well over budget.⁶⁴ As of June 30, 2013, 668 of 1,070 planned new network miles were in use, only 236 of 1,718 miles of dark fiber were activated, and fewer than half of 223 community anchor institutions were connected; yet, EAGLE-Net had spent \$121,840,535 of its \$135,300,777 budget.⁶⁵

To compound these budgetary issues, EAGLE-Net's future building in the central mountains will be in Colorado's most difficult and expensive building region.⁶⁶ Additionally, an NTIA report raised doubts about the source and amount of EAGLE-Net's private matching funds.⁶⁷ EAGLE-Net's problems are illustrative of some of the problems Colorado's broadband projects have faced. The permitting process is complicated, construction is time-consuming and expensive, and mountain weather can slow things down.

D. Snags and Controversy

In a letter to Lawrence E. Strickling, NTIA's Assistant Secretary for Communications and Information, dated September 17, 2012, four Republican Congressman from Colorado expressed worries about EAGLE-Net's effect on small telecom carriers already operating in rural Colorado.⁶⁸ Specifically, the Congressmen claimed that EAGLE-Net had overbuilt networks in areas that were not unserved or underserved and in doing so, threatened the viability of the small telecom companies. The letter claimed that EAGLE-Net was doubling up on middle-mile fiber networks recently laid by small, private telecom providers.⁶⁹

In rural areas, residential business is too dispersed to sustain a

63. *Id.*

64. John Bakken, *Second Quarter, 2012 BTOP Progress Report*, EAGLE-NET (2012), <http://www.co-eaglenet.net/btop/progress/btop-progress-reports>.

65. *Second Quarter, 2013*, EAGLENET (2012), http://www2.ntia.doc.gov/files/grantees/nt11bix5570001_eaglenetalliance_redacted_ppr2013_q2_0.pdf.

66. Edward Wyatt, *Waste is Seen in Program to Give Internet Access to Rural U.S.*, N.Y. TIMES, Feb. 11, 2013, <http://www.nytimes.com/2013/02/12/technology/waste-is-seen-in-program-to-give-internet-access-to-rural-us.html?pagewanted=all&r=0>.

67. Andy Vuong, *Inside the Controversial Colorado EAGLE-Net Broadband Project*, THE DENVER POST (Mar. 3, 2013), http://www.denverpost.com/business/ci_22701822/eagle-net-broadband-project-steamboat-springs-struggles-launch.

68. Letter from Cory Gardner et al. to Lawrence Strickling (Sept. 17, 2012), available at <http://gardner.house.gov/sites/gardner.house.gov/files/EAGLE%20Net%20Colorado%20Letter.pdf>.

69. *Id.*

telecom, so large public institutions, like schools, are "the lifeblood of the private telecommunications providers."⁷⁰ Because EAGLE-Net began building in these regions, detractors claim, "U.S. taxpayers are being forced to subsidize a federal initiative whose most substantial accomplishment ultimately could be to put Colorado's rural telecommunications industry out of business."⁷¹ The letter asks the Department of Commerce to halt EAGLE-Net's plans, address the small business concerns, and investigate EAGLE-Net's strategy and use of funds.⁷²

On December 21, 2012, Strickling sent a response addressed to Representative Gardner.⁷³ The letter says that EAGLE-Net's core mission is to "expand broadband capabilities" in Colorado and "enhance broadband for community anchor institutions."⁷⁴ The letter stated that NTIA received "more than 80 letters of support from numerous community anchor institutions, stakeholders, and legislators in Colorado," and that support, particularly from education sector, continues.⁷⁵ NTIA's goal is to find "win-win solutions" for the competing entities to improve the state's broadband infrastructure and build the present and future economy.⁷⁶

In a separate action, the NTIA suspended EAGLE-Net's grant until it verified that EAGLE-Net completed environmental assessments for routes modified since the previous certification had been approved. EAGLE-Net's environmental assessment did not account for two endangered wild plant species, the clay-loving wild buckwheat and the pagosa skyrocket.⁷⁷ EAGLE-Net posted a note on its website that it had been instructed by NTIA to temporarily suspend its construction on December 6, 2012 in order to provide project information and ensure compliance with grant requirements.⁷⁸ EAGLE-Net promised in that note that completed services would not be affected and that the suspension would not have a major impact on its long-term plan, because there was little construction planned for the winter.⁷⁹

In a letter dated April 29, 2013, the Department of Commerce lifted

70. *Id.*

71. *Id.*

72. *Id.*

73. Letter from Lawrence Strickling, Assistant Secretary, NTIA, to Cory Gardner, U.S. Congressman (Dec. 21, 2012).

74. *Id.*

75. *Id.*

76. *Id.*

77. *EAGLE-Net Alliance NTIA Suspension: Explanation and Status Update*, EAGLE-NET (Feb. 2013), <http://archive.constantcontact.com/fs189/1104865671015/archive/1112312361548.html>.

78. *Id.*

79. *Id.*

EAGLE-Net's suspension, while keeping EAGLE-Net on agency review status until the project's conclusion to ensure reasonable and appropriate spending and build-out.⁸⁰ As part of the agreement, EAGLE-Net agreed to find a business partner and focus its remaining money in mountainous areas west of the Front Range.⁸¹ In October 2013, EAGLE-Net announced a partnership with Affiniti of Colorado ("Affiniti"), a Texas company with a history of legal problems involving bid rigging and antitrust violations.⁸² Affiniti will manage EAGLE-Net's operations and own any infrastructure built with its own capital.⁸³

IV. ASSESSING EAGLE-NET

For the reasons outlined above, it is necessary to allocate public resources towards building broadband infrastructure. Although EAGLE-Net's work continues, and Trillion's impact is unclear, it is not too early to assess EAGLE-Net's accomplishments. Based on FCC rulings, NTIA's grant criteria, and Colorado's history, EAGLE-Net's efficacy can be measured by three components. The executive team should have a mix of expertise and business capability, the project should focus on creating universal availability by focusing on unserved and underserved rural areas, and EAGLE-Net should work with service providers, towns, anchor institutions, and other stakeholders.

A. *EAGLE-Net's Executive Team*

The EAGLE-Net executive team is defined by diverse experience with public education and the telecommunications industry, but its execution of EAGLE-Net's objectives has been less than impressive. Former Chief Executive Officer Randy Zila has a specialty in negotiations, and he worked for years in public education, winning Colorado Superintendent of the Year in 2007 while working for the St. Vrain School District.⁸⁴ In December 2012, Zila stepped down from his

80. Letter from Arlene Simpson Porter, Director, NOAA Grants Management Division, to Michael Ryan, President, EAGLE-Net Alliance (Apr. 29, 2013), <http://www.co-eaglenet.net/wp-content/uploads/2013/04/BTOP-EAGLE-Net-Alliance-Lift-of-Suspension-2013-04-29.pdf>.

81. Greg Avery, *Eagle-Net Reduces Scope, Regains Access to Stimulus Money*, DENVER BUSINESS JOURNAL (Apr. 30, 2013), <http://www.bizjournals.com/denver/news/2013/04/30/eagle-net-reduces-scope-regains.html?page=2>.

82. See Kristen Leigh Painter, *EAGLE-Net's Partnership with Affiniti of Colorado Raises Questions*, THE DENVER POST (Oct. 29, 2013), http://www.denverpost.com/breakingnews/ci_24413625/.

83. Kristen Leigh Painter, *EAGLE-Net Selects Affiniti as Network Operator*, THE DENVER POST (Oct. 22, 2013), http://www.denverpost.com/breakingnews/ci_24364648/eagle-net-selects-affiniti-network-operator.

84. *Executive Team*, EAGLE-NET, <http://www.co-eaglenet.net/about-us/executive-team>

EAGLE-Net post because of family health issues, and Mike Ryan, a former Level 3 executive, replaced him on January 14, 2013.⁸⁵ Other members of the executive team include Perry Movick, who has over thirty years of experience in telecommunications and networking management; Chip White, who worked in telecommunications and technology consulting; and Dale Briggs, who has twenty-five years of experience in operations management and networking services.⁸⁶ The Board of Directors, likewise, has members with leadership experience in public education, accounting, business, information technology, and eGovernment.⁸⁷

The executive team looks competent on paper, but high salaries and poor explanations about the project's progress have brought EAGLE-Net in line for criticism. First, the Department of Commerce sent warnings about the team's poor budget management.⁸⁸ Then, at a Legislative Audit Committee in February 2013, state legislators criticized EAGLE-Net's leaders for their failure to clearly explain where money was spent and what anchor institutions were being served.⁸⁹ EAGLE-Net claimed grant transfer delays slowed its starting date⁹⁰ and NTIA's suspension kept it from connecting many nearly-connected sites.⁹¹ However, its submission of a budget reprogram to its Board suggests its vision was flawed,⁹² and its ample routing changes have drawn scrutiny.⁹³ Meanwhile, the organization has a \$4 million payroll for only thirty employees and Zila made well over \$250,000 in annual salary and benefits, despite maintaining employment as Executive Director of CBOCES and adjunct professor at the University of Northern Colorado.⁹⁴ If EAGLE-Net's build-out went smoothly, the executive team's pay would not be brought into question; instead, the team's work has resulted in mounting delays, disputes, and detractors. Most crucially, the executive team lost sight of its mission.

(as of Nov. 15, 2012).

85. *EAGLE-Net Appoints President*, EAGLE-NET (Feb. 2013), available at <http://archive.constantcontact.com/fs189/1104865671015/archive/1112312361548.html>.

86. *Executive Team*, *supra* note 84.

87. *Board of Directors*, EAGLE-NET, <http://www.co-eaglenet.net/about-us/board-of-directors> (as of Nov. 15, 2012).

88. Wyatt, *supra* note 66.

89. See Joe Hanel, *Lawmakers: What exactly is Eagle-Net?*, THE DURANGO HERALD (Feb. 26, 2013), <http://durangoherald.com/article/20130226/NEWS01/130229675/Lawmakers:-What-exactly-is-Eagle-Net>.

90. Bakken, *supra* note 64.

91. *Id.*

92. John Bakken, *Annual Report, 2012 BTOP Progress Report*, EAGLE-NET (2012), http://www2.ntia.doc.gov/files/grantees/nt11bix5570001_apr2012_q4.pdf.

93. Wyatt, *supra* note 66.

94. Dan Njegomir, *CO: State Internet agency with no oversight spends millions*, COLORADOWATCHDOG.ORG (Sep. 21, 2012), <http://watchdog.org/57047/eagle-net-follo>.

B. Rural Focus

The clearest critique of EAGLE-Net's management is its priority setting, primarily its decision to start building in the Denver area and expanding outwards⁹⁵ at the expense of its *raison d'être*—building robust broadband infrastructure in Colorado's unserved rural areas to help achieve universal availability. After spending nearly its entire budget, EAGLE-Net's build-out to unserved rural counties is not remotely close to completion.⁹⁶

According to the Sixth Broadband Report,⁹⁷ there are nineteen unserved counties in Colorado. Seven are in the southeast quadrant of the state, three are in the northeast, six are in the state's central mountain spine, and three are in the southwest corner of the state. EAGLE-Net's central purpose was providing high speed broadband to the school districts in these counties. EAGLE-Net cancelled plans to build to the six unserved counties in the southeast quadrant of the state, delayed building plans to five counties in the central mountains until 2014, and completed work in only six of the state's nineteen unserved counties by the end of its original project timeline. EAGLE-Net spent about 90% of its budget and failed to reach one third of the state's unserved counties.⁹⁸

Meanwhile, EAGLE-Net completed work in the Front Range stretching into the northeast corner of the state and along the Western Slope. For the most part, these regions already had sufficient broadband infrastructure. For instance, Aurora Public Schools and Cherry Creek School District are connected⁹⁹ even though they already had lightning quick broadband speeds of 300 Mbps.¹⁰⁰ EAGLE-Net not only focused on areas with sufficient broadband infrastructure, but it avoided needy areas where mountains would drive up construction costs. Instead of prioritizing southeast Colorado or the central mountains, EAGLE-Net built a connection to Agate Elementary School in northeastern Colorado, the school's third fiber optic network connection.¹⁰¹ With the most expensive mountain building remaining, it is clear that EAGLE-Net will not finish its work under budget. This means that the state's still-unserved rural school districts must hope that Affiniti finishes what EAGLE-Net

95. See Andy Vuong, *NTIA to lift EAGLE-Net suspension, broadband project needs more money*, THE DENVER POST (Apr. 29, 2013), http://denverpost.com/ci_23133964/ntia-lift-eagle-et-suspension-broadband-project-needs

96. See *infra*, Appx. A and B.

97. *Sixth Broadband Deployment Report*, *supra* note 11.

98. Compare *Colorado County Map*, GEOLOGY.COM, available at <http://geology.com/county-map/colorado-county-map.gif>, with *EAGLE-Net Network Map*, EAGLENET (Nov. 1, 2012), <http://www.co-eaglenet.net/btop/map/> (tbl. 3b) (last viewed Jan. 30, 2013).

99. Vuong, *supra* note 67.

100. See Wyatt, *supra* note 66.

101. *Id.*

started.

Some of EAGLE-Net's work is defensible. Although EAGLE-Net has not connected its network in unserved southwestern counties, like Dolores, it is using an outside-in strategy—starting its network in counties on the western slope and then building connections into the central Rockies. Additionally, EAGLE-Net has completed building to all four unserved counties in the northeast (Washington, Phillips, Cheyenne, and Kit Carson).¹⁰² Of course, EAGLE-Net's work in this region has generated controversy.¹⁰³

Overall, EAGLE-Net's efforts barely made a dent in the two regions of the state most in need of a better broadband infrastructure. The failure to address the southeast during its first round of building is a major oversight. Six of the nineteen unserved counties are in the southeast, and EAGLE-Net came no closer than Cheyenne County—part of its building in the northeast. These counties are in the plains, so EAGLE-Net could have built cheaply and efficiently in the region to demonstrate its efficacy.

Additionally, EAGLE-Net should have addressed the unserved counties in the central spine of the Rocky Mountains earlier. Although EAGLE-Net has completed building in Saguache and Costilla Counties, EAGLE-Net should have addressed this region's needs before any building on the Front Range. Because construction costs are about ten times more expensive in the mountains, EAGLE-Net jeopardized its budget by spending substantial money in adequately served counties before completing work in the most expensive counties. In addition to unserved counties, EAGLE-Net is still planning to build in Fremont County, Chaffee County, Gunnison County, and Grand County, which extends from Rocky Mountain National Park to Winter Park. These low-population, mountainous counties also should have been completed before work on the I-25 corridor, because their demographics are the target of the federal government's universal availability goal. Instead, EAGLE-Net pursued a building plan far removed from its central goal of achieving universally available high-speed broadband access throughout Colorado.

C. Partnership Building

EAGLE-Net is required to partner with local telecoms to provide faster or cheaper broadband to end-users, but many local telecoms feel EAGLE-Net is competing with them instead. Because EAGLE-Net cannot provide last-mile service, the end-user "would have to pay for

102. See *Network Map*, *supra* note 98.

103. See Part III.E and Part IV.C., *supra*.

connecting EAGLE-Net's wholesale network itself" if it chose to avoid using a local telecom provider.¹⁰⁴ However, the Colorado Telecommunications Administration ("CTA"), which represents about two dozen small telecom carriers statewide, says that EAGLE-Net did not meet its burden for working with small telecoms, and in the fall of 2012, called for a discussion between EAGLE-Net, NTIA, and CTA to mutually decide on the best way to administer the grant money.¹⁰⁵ EAGLE-Net claims it has tried without success to reach out to small telecoms, and that its project will provide higher quality resources to rural school districts.¹⁰⁶

Stakeholders on both sides of the controversy have spoken. In Durango, EAGLE-Net built successful relationships with Southwest Colorado Access Group, a local, grant-funded "last mile" co-op; Brainstorm Internet, a local telecom providing Internet to Durango school district; and business leaders, including Durango's mayor.¹⁰⁷ In Holyoke, in northeastern Colorado, PC Telecom claimed EAGLE-Net violated its grant requirements by providing direct last mile support to schools.¹⁰⁸ Superintendent Bret Miles said a three-year contract existed between EAGLE-Net, PC Telecom, and the school district, but the district would consider the impact on the local economy when it sought new services in three years.¹⁰⁹

The Holyoke anecdote illustrates several difficulties faced by EAGLE-Net. First, EAGLE-Net needed to contract with dozens of different groups, and any disputes that could not be rectified quickly drove up transaction costs. Second, every middle-mile client EAGLE-Net acquires takes a client away from an existing company. Third, EAGLE-Net's project has been politicized and is being used as a symbol of the Stimulus's failures.¹¹⁰ Although EAGLE-Net only shares a portion of the blame for these travails, its odd decision to over-build in the northeast quadrant of the state ruffled feathers and provoked disputes.

104. See Greg Avery, *Colorado's GOP congressmen want Eagle-Net situation examined*, DENVER BUSINESS JOURNAL (Sep. 19, 2012), <http://www.bizjournals.com/denver/news/2012/09/18/colorados-gop-congressmen-want.html?page=all>.

105. See Greg Avery, *Stimulus-funded project irks some rural telecoms in Colorado*, DENVER BUSINESS JOURNAL (Sep. 7, 2012), <http://www.bizjournals.com/denver/print-edition/2012/09/07/stimulus-funded-project-irks-some.html>.

106. *Id.*

107. See Luke Groskopf, *State of the Internet*, THE DURANGO HERALD (Nov. 24, 2012), <http://durangoherald.com/article/20121124/NEWS01/121129757/State-of-the-Internet>.

108. See Brenda Johnson Brandt, *EAGLE-Net Agreement Clarified*, HOLYOKE ENTERPRISE (Nov. 29, 2012), http://www.holyokeenterprise.com/index.php?option=com_content&view=article&id=6340:school-student-count-certified-for-funding&catid=37:school-news&Itemid=56.

109. *Id.*

110. See Wyatt, *supra* note 66; Njegomir, *supra* note 94.

V. SOLUTIONS

Universal availability of high-speed broadband Internet will improve the lives of rural residents by bridging the digital divide. Whether EAGLE-Net or a different entity completes this task, a few changes will make the process easier.

A. *Operate at a Loss in Some Regions*

A free market, sustainable model will not work in some regions of Colorado. In the central mountains, where small towns are dotted twenty miles apart and tourist-friendly resorts provide a huge chunk of local industry, year-round residents feel the harshest effects of the digital divide.¹¹¹ In small rural towns, residents may have access to speeds of three Mbps from multiple providers; in unincorporated outer-rings, they are either stuck with 1.5 Mbps of download speed or expensive and fast satellite Internet; beyond the outer ring, rural residents lack home Internet options altogether.¹¹²

Anchor institutions like schools and hospitals are similarly disadvantaged. In mountainous regions, school districts cannot meet their broadband needs, because incumbent service providers charge them ten times more for bandwidth than they do urban school districts.¹¹³ In some difficult to access areas, such as Steamboat Springs, there is only one cable line connecting the town to the broadband network. On Halloween 2011, Steamboat's sole fiber connection from Summit County was disrupted for eight hours; during those eight hours businesses could not use credit card machines and hospitals could not access their patient's records.¹¹⁴ In some places, EAGLE-Net's competition will drive prices down and provide a backup connection,¹¹⁵ but EAGLE-Net's reticence to build in these regions shows that it, too, is choosing profit above progress.

If the federal government is serious about creating universal availability, it will need to accept operating at a loss in some regions. When big picture benefits outweigh taxpayer costs, it is worthwhile for the federal government to accept a loss. Rural schools, libraries, hospitals, and safety agencies need high-speed broadband to realize the Internet's promise of making rural living easier and equal to urban counterparts. The goal should not be profitability but net loss reduction trending towards zero. Where market solutions exist, profit should be

111. See Martin J. Woros, *Rural Internet Survey Response 2009*, GRAND COUNTY COLORADO, http://co.grand.co.us/Info_Systems/rural.html.

112. *Id.*

113. See Vuong, *supra* note 67.

114. *Id.*

115. *Id.*

championed, but expecting a profit from tough to reach places like Steamboat is like expecting five Aces from a single deck of cards.

B. Repeal SB 152

SB 152, described in II.B.2. *supra*, is a state statute preventing government entities from providing last-mile Internet access without voter approval. In 2009, Longmont citizens tried to make the city a broadband service provider, but the voter initiative failed because city representatives were restricted from advocating for the measure, and Comcast spent \$250,000 on a misinformation campaign against the measure.¹¹⁶ In 2011, Longmont citizens tried again, and this time the initiative passed.¹¹⁷ Comcast and other large providers spent \$300,000 to convince voters that it was risky for the city to provide Internet services, but this time their campaign was not enough.¹¹⁸ Commentators compared Longmont's plan to turn Internet access into a city service to high-quality, low-cost city-run utilities.¹¹⁹

About half of broadband consumers purchase broadband access that delivers half the advertised speed.¹²⁰ Even if EAGLE-Net builds a robust middle-mile network, many users will not reap the benefits of their tax dollars, because last mile servicers will provide an inadequate product. Since federal and state governments spent billions of dollars to build advanced middle-mile networks, it makes no sense to prevent governments from also delivering last-mile service. Yet, SB 152 creates an unnecessary barricade that prevents this option. The statute removes a potential provider—municipalities—from the free market and allows incumbent providers to prey on consumers with limited choices. It also flies in the face of Colorado's home rule tradition. By repealing SB 152, Colorado would move its broadband market closer to the free market by giving municipalities an option for Internet independence if incumbent providers do not deliver high-quality, last-mile service.

C. Streamline Agency Operations

Agency rules prevent NTIA and RUS grant-funded entities from sharing infrastructure.¹²¹ Market forces evolved quickly in the San Luis

116. See Jefferson Dodge, *Network to Nowhere*, BOULDER WEEKLY (July 7, 2011), <http://www.boulderweekly.com/article-5957-network-to-nowhere.html>.

117. See Andy Vuong, *Longmont Wins Right to Use Its Fiber Network*, THE DENVER POST BLOG (Nov. 4, 2011, 3:54 PM), <http://blogs.denverpost.com/techknowbytes/2011/11/04/longmont-wins-right-to-use-its-fiber-network/1916/>.

118. *Id.*

119. See Dodge, *supra* note 116.

120. See *Sixth Broadband Deployment Report*, *supra* note 11.

121. See Avery, *supra* note 105.

Valley, Lower Arkansas Valley, and northeastern Colorado to modernize broadband infrastructure when small telecoms took out RUS loans and banded together to improve infrastructure.¹²² One example is an effort in 2010 by ten small telecoms located in northeastern Colorado, including the Zayo Group and PC Telecom, to build Colorado Communications Transport, a 750-mile fiber-optic loop that connects to Denver and allows for broadband offshoots around the region.¹²³ Instead of identifying and adapting to these market changes, EAGLE-Net plowed forward and spent NTIA funds where RUS funds were already in use. This violated the NOFA provision, which instructed organizations to avoid geographic overlap.

Although EAGLE-Net should have avoided these overbuilds, the federal government can avoid future overbuilds by improving its use of resources. At the very least, organizations funded by the two agencies should be able to share infrastructure to save costs and avoid doubling up. Better yet, RUS should be expanded to include urban projects, state-wide projects, and multi-state regional projects. RUS has eighty years of expertise in allocating funds and demanding accountability,¹²⁴ but NTIA has much more grant money to disperse. With expertise, autonomy, and more capital, RUS will spend more efficiently while setting uniform goals.

EAGLE-Net's problems could have been avoided if it received a clear mandate to address unserved areas first. Instead EAGLE-Net focused on profitability and economic sustainability. In Colorado, the neediest areas are also the least profitable and the most expensive places to build infrastructure. By disbursing grants and loans with airtight directives, RUS (or NTIA) would have an easier time ensuring organizations, like EAGLE-Net, focus on the agency's goals rather than the organization's viability.

VI. CONCLUSION

BTOP distributed 230 grants, and only fourteen of them have been suspended or terminated due to mismanagement and ineffective monitoring.¹²⁵ Although poor federal oversight may have been a contributing factor, the same Republican Congressman complaining about EAGLE-Net's overbuild would complain if EAGLE-Net could not operate sustainably. Even though its grant money should have been spent improving rural access to high-speed broadband Internet service, EAGLE-Net focused on becoming a sustainable Front Range business.

122. *Id.*

123. *Id.*

124. *See About RD, supra* note 47.

125. *See Wyatt, supra* note 66.

When EAGLE-Net ruffled feathers in northeastern Colorado, its focus shifted from building infrastructure to defending its work to legislators.¹²⁶ EAGLE-Net cancelled building plans in as many unserved counties as it completed by the end of 2013, and it only made slight progress into the central mountains, a particularly expensive region in which to build efficient broadband infrastructure.

If Affiniti does not complete EAGLE-Net's still ambitious building plan, another entity will have to solve Colorado's broadband infrastructure problems. In the next decade and a half, Colorado's population is projected to grow to over seven million residents with nearly one and a half million people living outside of the Front Range.¹²⁷ The population in the central mountains is poised to increase by 50% during that time,¹²⁸ so the threat of digital divide will remain. In order to reach its goal of universal broadband availability, the federal government will need to operate at a loss in Colorado's low-population, mountainous regions. By repealing SB 152, the state will allow municipalities to provide high-quality end-user service when incumbent providers are unable or unwilling to do so. Finally, the federal government should capitalize on the institutional competence of RUS by broadening its mandate to include non-rural areas. Doing so would streamline agency operations and help avoid future overbuilds.

Providing a strong infrastructure is only the first step in meeting the ambitious goals of the National Broadband Plan and the state legislature. Without a comprehensive plan to unlock the resources high-speed Internet provides, the creation of a statewide middle-mile network will be wasted. For instance, school districts will need to ensure teachers and administrators are trained to use the digital resources available with high-speed broadband Internet. Quality broadband will make interactive distance learning possible, so a student in Silverton will be able to take an Advanced Placement class from a teacher in Boulder. However, school districts and the Department of Education will need to develop programs to transform the possibility of distance learning into a reality. Once middle-mile infrastructure makes these ambitious goals possible, the state's anchor institutions will need to develop programs to make them reality.

126. See Hanel, *supra* note 89.

127. See Table 1: Preliminary Population Forecasts by Region, 2000-2040, U.S. CENSUS BUREAU, available at <http://dola.colorado.gov/dlg/demog/2010data/UpdatedPreliminaryProjections.xls>.

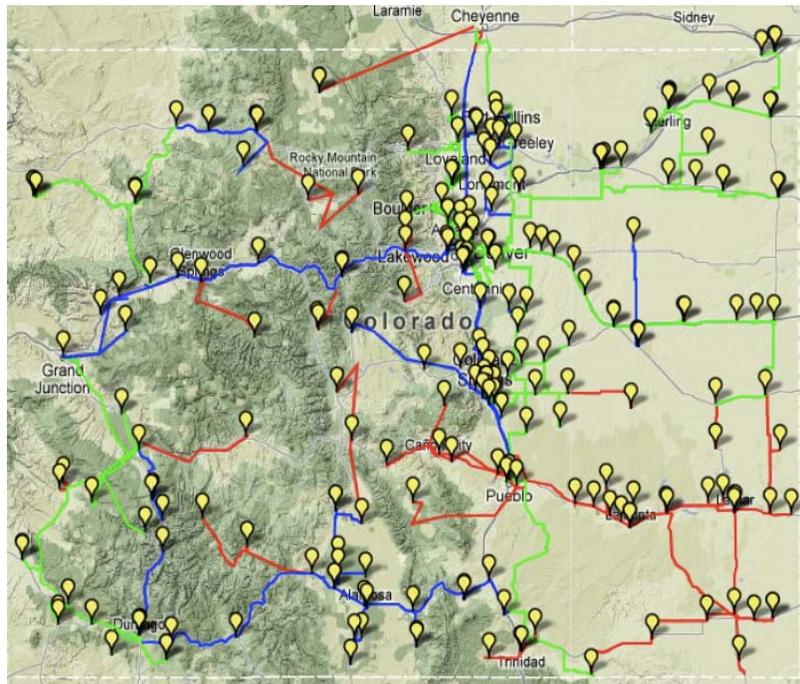
128. *Id.*

**APPENDIX A: UNSERVED COUNTIES ACCORDING TO 2010 FCC REPORT
AND EAGLE-NET'S BUILDING PROGRESS IN THOSE COUNTIES.**

County Name	Region	Progress as of 1/30/13	Progress as of 11/15/13
Baca	SE	Future	Cancelled
Bent	SE	Future	Cancelled
Cheyenne	NE	Completed	Completed
Conejos	Central Mountains	Under development	Delayed
Costilla	Central Mountains	Under development	Completed
Crowley	SE	Future	Cancelled
Custer	Central Mountains	Future	Under development
Dolores	SW	Under development	Under development
Gilpin	Central Mountains	Unclear/future?	Delayed
Hinsdale	SW	Future	Delayed
Jackson	Central Mountains	Future	Delayed
Kiowa	SE	Future	Cancelled
Kit Carson	NE	Completed	Completed
Mineral	SW	Future	Delayed
Otero	SE	Future	Cancelled
Phillips	NE	Completed	Completed
Prowers	SE	Future	Cancelled
Saguache	Central Mountains	Under development	Completed
Washington	NE	Completed	Completed

APPENDIX B: EAGLE-NET PROGRESS MAP AT THE BEGINNING AND END OF 2013

1. Network Progress as of January 30, 2013.



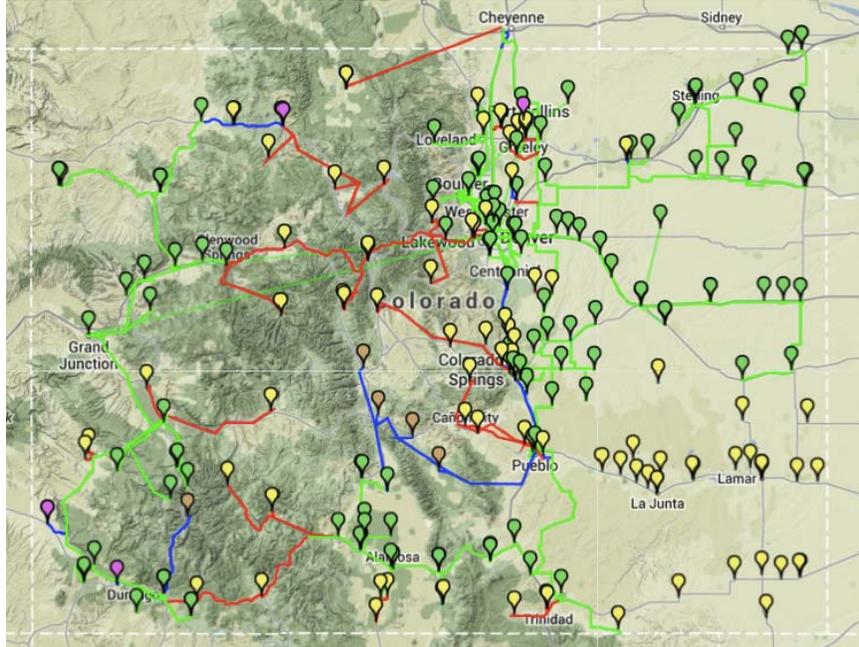
Map Key

Green = Complete

Blue = In progress

Red = Future development

2. Network progress as of November 15, 2013



Map Key

Lines:

Green = Complete

Blue = In progress

Red = future development

Marker tags:

Green = Service Available

Purple = 2013 Priority Build

Tan = 2014 Priority Build

Yellow = Other Community Anchor Institutions