Executive Summary

Community Capacity Problems Wisconsin's anchor institutions must deal with two key 'community capacity' problems posed by comprehensive community broadband infrastructure: (1) Few communities have institutions that act together, and stay together, to get their advanced broadband needs met; (2) Few institutions, even in the best of times, can afford the expertise to sustain a comprehensive community effort on broadband. With community and institutional resources scarce, what actions are needed to design a community-driven infrastructure, governed by anchor institutions and partnered with for-profit providers? We answer below. BCCB To address these two problems, the University of Wisconsin-Extension (UWEX) and our key partners propose the Building Community Capacity through Broadband project (BCCB). For 100 years, UWEX has placed university faculty in communities to advise community-driven solutions and to bring to bear the needed federal, university and local resources. This university mission to address community problems is the core of the 'Wisconsin Idea.' BCCB will use our trusted community role and longstanding partnerships with institutions that also carry out the Wisconsin Idea: the University of Wisconsin System and eight UW campuses; the Wisconsin Educational Communications Board; and WiscNet, our state research and education (R&E) network. Our statewide partners include the Wisconsin Department of Transportation and CCI Systems. Demonstration Communities We created a statewide process to identify a set of committed, diverse communities in economic distress and whose leading anchor institutions had significant unmet broadband needs. We selected four 'demonstration communities' that fit two community-types (Also see addtl. supp. material #1.Proposed Service Area Map): - Small remote city: Platteville and Superior - Urbanized area-rural multi-county region: Wausau metro/Central Wisconsin and Eau Claire metro/North West Wisconsin. Three demonstration communities are located within Community Development Zones. While unemployment averages 7.8% in the four demonstration communities, three have double-digit unemployment rates in their region: Platteville (11.1%), Superior (10.1%), Stevens Point (10.8%). Layoffs are prevalent, with many job losses permanent. Wisconsin leads the U.S. in the percentage of employment in manufacturing (~16%). This idled workforce needs re-education enabled by broadband. Community Area Networks Through UWEX-facilitated community design meetings, our four demonstration communities agreed on solutions that build on the decade-long success in the Eau Claire-Chippewa Falls region, where a consortium of anchor institutions uses a Community Area Networking (CAN) governance and operations model to collectively decide how to connect facilities, provide broadband services, exchange traffic with providers and manageably add institutions. The demonstration communities consulted with our statewide partners to decide how to connect their community area networks to the public Internet and create opportunities for Last Mile broadband.
services. WiscNet agreed to expand its R&E network membership to serve the BCCB CANs, prefiguring the FCC's recent National Broadband Plan recommendation for 'Unified Community Anchor Networks' built upon existing regional networks. UWEX also selected CCI Systems, a for-profit provider, to build BCCB’s Middle and Last Mile infrastructure on a community-driven timeline. Proposed Funded Service Area (PFSA) The PFSA covers 4,200 square miles and 350,305 persons. To serve four demonstration communities at 182 facilities run by 74 anchor institutions, we will deploy 608 total miles of Middle Mile infrastructure. We also will deploy into eight rural underserved Last Mile service areas in Central Wisconsin that contain 13,674 households, 550 businesses and 72 anchor institutions. BCCB will serve 156 facilities via 204 miles of fiber-optic laterals. We will distribute or bridge WiMax wireless service via 26 facilities to cover 1305 square miles in the Eau Claire metro area. BCCB meets all seven CCI priority criteria and will serve all nine facility types: 10 community colleges, 28 healthcare, 29 K12, 2 libraries, 17 community support organizations, 43 government facilities, 10 higher education, 2 public housing, and 41 public safety. We will build 405 miles of Middle Mile fiber-optic backbone to connect our four demonstration communities to the public Internet. The backbone will pass within 10 miles of 774,370 people, 116 municipalities, 319,198 households, 20,625 businesses and 1,727 anchor institutional facilities in mainly rural underserved areas. Although we do not include this 'service corridor' in our PFSA, we will build 140 potential points of interconnection at 3-mile intervals for future broadband uses. Proposed Services We will deploy One Gigabit per second Ethernet service to all Middle Mile facilities connected by fiber laterals, including WiMax distribution towers, and offer dark fiber strands. We will transport backbone traffic at 10 Gigabits per second and provide long-haul services at 1 or 10 Gigabits per second, with dark fiber also available. Facilities connected via fixed or mobile WiMax will share service of 50 to 70 Mbps, with each typically connected at 10 to 20 Mbps. Within three years, BCCB will meet the FCC's National Broadband Plan's recommendation to equip by 2020 all U.S. anchor institutions with at least One Gigabit per second. CCI Systems initially will offer these Last Mile services: advanced broadband & fiber access, 25 Mbps residential/business cable modem Internet access, digital telephone services and advanced digital/HD TV. Our scalable, resilient services will meet the demand for advanced broadband applications expressed by the four demonstration communities' anchor institutions, including their ability to: 1) Improve public safety and health by increasing the interoperability of broadband applications used by regional governments, healthcare and agencies serving vulnerable populations; 2) Advance regional economic development through increased resilience, mobility, scalability and extent of broadband services used in schools, libraries, homes and businesses; 3) Provide new capabilities to institutions who promote community well-being and cohesion, such as high-definition videoconferencing for telemedicine, education, and maintaining relationships with family members deployed in remote locations. 4) Provide better service to the greater community through partnership among anchor institutions to fund and share innovations in broadband infrastructure. Qualifications of Applicant and key partners UWEX is a time-tested veteran at managing grant-funded projects of similar scope and budget and at making partnerships work. We annually partner with the U.S. Department of Agriculture and 72 counties to fund and manage Wisconsin's highly-effective cooperative extension program, which represents $8.8 million of the $20 million in Federal funds awarded UWEX during its most recent fiscal year. Over the last five years, UWEX consistently received $6 million annually in Federal funding from other Federal agencies. UWEX and our key partner the Wisconsin Educational Communications Board jointly operate Wisconsin Public Radio and Television
educational broadcasting networks, funded in part by the Corporation for Public Broadcasting and the U.S. Departments of Commerce and Education. Five institutions in the University of Wisconsin System and the Wisconsin Technical College System will play key roles in helping their demonstration communities operate community area networks and Middle Mile service areas. All employ permanent staffs who manage large-scale advanced broadband networks. For 20 years, WiscNet has operated our state R&E network and directly serves 450 anchor institutions. WiscNet will provide the BCCB community area networks access to the public Internet, advanced broadband services and technical support. In BCCB's Last Mile service areas, CCI Systems will use its 55 years of industry experience to provide residential and business broadband services and access, transport and wholesale services to other service providers. Obligations Commitment UWEX and our partners commit to all Nondiscrimination and Interconnection Obligations per BTOP NOFA. BCCB Cost BCCB will cost $42,726,744. The BCCB partners will contribute $12,841,825, or 30.06%. We request $29,884,919. BCCB Subscribers Over eight years, 450 institutional facilities will use BCCB Middle Mile infrastructure; 13,854 households and 550 businesses will use Last Mile services. In addition, we predict an additional 40,000 subscribers in the middle mile service areas. Jobs Created BCCB will create 464 job years: 297 direct and indirect and 167 induced job years.