The City of Shafter (City) proposes a middle mile project to extend its existing municipal fiber network to underserved areas of the community. The project will connect numerous commercial, industrial, law enforcement and educational anchor institutions and create a permanent Point of Presence (POP) facility to allow interconnection of broadband service providers. (See Figures 3 and 4) The project creates an extensible infrastructure to immediately supply high-speed broadband service to critical job centers throughout the proposed Service Area. (See Figure 2) Shafter, California is located in northern Kern County, near the southern end of the San Joaquin Valley. (See Figure 1) The community is represented by the Honorable Representative Jim Costa (D-CA), of the 20th Congressional District, one of the poorest in the nation. (See, http://en.wikipedia.org/wiki/California%27s_20th_congressional_district) The City limits encompass 28 square miles of land, but virtually all of the approximately 15,000 residents live within the five square mile “core” area of the town. Because Shafter’s southern City limits are common with the City of Bakersfield’s (a community with population greater than 50,000) northern city limits, the proposed Service Area does not qualify as “rural”. However, the proposed 23 square mile Service Area is decidedly rural in character with a population of 101 distributed among just 36 households. (Source: broadbandusa.gov mapping tool output verified against 2000 Census data.) Additionally, Fifty-three commercial enterprises operate in the Service Area. Like many communities in California’s Central Valley, Shafter is a city with agricultural roots that finds itself in economic, cultural and physical transition. Shafter has been hit hard by the nation’s recent economic troubles with unemployment rates more than double the national average. (See, http://www.calmis.ca.gov/file/Lfmonth/kernsub.xls ) Despite its current economic challenges, Shafter is poised to lead the region out of recession owing, in part, to its unique location and resources. The City lies between Highway 99 and Interstate 5, California’s primary north-south transportation arteries. Both the BNSF and Union Pacific railroad mainlines also pass through Shafter, creating a nexus of transportation infrastructure, unique in the region, perhaps in the entire State. An important intermodal project is preparing to launch. When operational, US commodities movement in and out of West Coast port will be significantly improved. The project will make significant contributions to air quality goals, reduce highway congestion and create thousands of jobs. Although standard broadband services are available to most neighborhoods in the “core” area of Shafter, such services are unavailable or prohibitively expensive in the proposed Service Area. This fact is seen as a serious impediment in precisely the areas where it is needed most – the developing commercial and industrial sectors of the Service Area. Outdated telecommunications infrastructure in the community has limited options for businesses seeking to locate here. Many of Shafter’s potential...
commercial and industrial development areas are located away from the City core and miles from existing broadband infrastructure. The capital cost to extend services to these areas is high and creates a barrier for companies considering Shafter as a facility location. The demographic and economic conditions in Shafter today make the Service Area an unlikely candidate for timely rollout of such products (by incumbents) due to the capital requirements of such projects. Unfortunately, the need for broadband to help stimulate new, high-tech businesses and jobs is now. In 2005 the City of Shafter began to study how creation of an advanced broadband network might provide for improved public services, encourage business growth (and job creation) and help bridge the “digital divide” experienced by many Shafter residents versus those living in metropolitan areas. The Shafter City Council has assumed the task of extending an advanced broadband network into the Service Area and then inviting qualified service providers to deliver their products via the Shafter network to commercial and residential customers. This strategy greatly reduces the capital expense to the customer and service provider and enhances the ability of the City to attract new businesses to the community. This approach also mitigates interconnection obligations and allows non-discrimination policies to be imposed on participating service providers. The City’s network plan calls for three basic phases: 1)Phase one created a fiber optic network to connect Government, Educational, Public Safety and other key facilities in the Shafter “core”. This phase consists of approximately four miles of all-fiber optic network connecting eight anchor institutions and passing dozens of additional key facilities and business centers. Currently, the minimum connection speed on this network is 1 Gbps. This phase has been operational for nearly eighteen months. The housing market collapse and economic downturn have stalled expansion of the network and delayed phase two. 2)Phase two will extend the fiber optic network to remote commercial job centers and open the network to qualified Internet Service Providers who will introduce advanced telecommunications services to these areas at affordable rates. This phase requires construction of approximately 14 miles of fiber optic backbone, numerous distribution points, a Point of Presence (“POP”) facility and interconnection with at least two Internet backhaul providers. Phase two is the subject of this funding opportunity. 3)The third phase is to create a true fiber-to-the-premise (“FTTP”) community where all new commercial and residential buildings have fiber connections. Existing homes and businesses in the “core” area will be included through a systematic overbuild of the community to provide fiber service to every address. This is a future phase and not the subject of this funding opportunity. The proposed Shafter broadband project greatly enhances the availability of state-of-the-art broadband services to the residents and commercial enterprises located in the Service Area. The project passes several additional anchor institutions including a municipal airport and business park, two intermodal transportation facilities, proposed community college, high school and three K-8 school campuses. The backbone also connects a public safety communications tower recently constructed through a Department of Homeland Security grant. The City has refined its network design over the past three years with input from numerous experts and consultants and experience gained from implementing the first four-mile phase of the project. The network backbone is designed to current GPON standards with greater bandwidth achievable through improvements in endpoint equipment and various aggregation technologies. Bandwidth to the Internet is available up to similar levels via interconnections to carriers with facilities within the Service Area. An initial 500 Mbps connection is planned with seamless growth available up to multiple OC 192s (10 Gbps) as network demand increases. The all-fiber network will see symmetrical bandwidth of 10 to 20 Mbps as the entry level service and
business class service of 50 to 100 Mbps the norm. The feasibility of including 1 Gbps point-to-point service within the network is being discussed with potential service providers. In short, the vision of the Shafter network is to build an infrastructure that is extensible and scalable -- to create a community where technology is NOT a limiting factor for education, business or the efficient delivery of government services. The Shafter broadband network project is ready to go. A large percentage of the proposed backbone has already been engineered and construction plans are ready for finalization and bidding. Unfortunately, housing market and economic downturns have limited funding for the project and slowed progress. An award of stimulus funds will allow the City to immediately proceed with final engineering, vendor selection and construction. Current budgetary estimates place the total cost of the project at $3.77 million. This middle mile extension, combined with concurrent water and sewer infrastructure projects in the Service Area will help create an estimated 1200 new jobs over the next five years – solving three-quarters of the City's current 25% unemployment problem. Increased business activity is projected to generate incremental annual tax revenues to the City in excess of $1.7 million within the same timeframe. Excluding the effects of business growth, the broadband network business as a stand-alone enterprise is expected to return the City’s capital match (approximately $753,974) and become cash flow positive within nine years. This payout could be substantially shortened if the housing market or business conditions improve more quickly than projected. Without grant funds, the capital return exceeds 20 years even with an unrealistic take rate assumption and the project is deemed non-sustainable. The City of Shafter has a clear vision to lead the region in business growth, innovative education and efficient, effective government. The Shafter broadband network plan quickly extends state-of-the-art telecommunications into underserved areas, promotes business growth and creates jobs. The proposed funded network allows current and future residents in the service area to bridge the digital divide and take advantage of cutting-edge technology for telecommuting, distance-learning, commerce and entertainment. With proper funding, critical broadband technology will be quickly deployed to the Service Area bringing opportunity and prosperity to a community, region and State.