The Los Angeles Community College District (LACCD) intends to build a robust, scalable and sustainable broadband infrastructure that can accommodate the rapidly evolving needs of its students, faculty and staff with an ability to quickly accommodate emerging demands. LACCD retained a Strategy Consulting Team in April 2007 to develop a Conceptual Technology Strategic Plan. The Conceptual Technology Strategic Plan was developed as a result of conversations, interviews and group discussions with students, faculty, college leadership, district leadership and guided by the District's Strategic Plan in consultation with the Vice Chancellor, President of the Academic Senate, Dean for Student Learning Outcomes, Instructional and Student Services Technology Committee (ISSTC), Chief Information Officer (CIO), Technology leadership at each campus, and the Executive Director of Facilities Planning and Development. Our plan considers the need for modifying education delivery to meet the needs of the changing workforce and the needs of the marketplace, available technologies and business needs, as well as in-depth conversations with statewide resources like the California Community Colleges Chancellor’s Office (CCCCO), the Corporation for Education Network Initiatives in California (CENIC), California Virtual Campus (CVC) and the California K20 Functional Technology Collaborative. The CCC's Technology III Master Plan was used as a guide to ensure consistency with statewide directives and opportunities. LACCD’s nine colleges and its District office (DO) currently have a 1GB circuit and a DS-3 (45MB) provided by CENIC at rates negotiated by the CCC. As the District becomes a more technology-driven environment with distance learning, VoIP, enhanced video conferencing, Remote Access, Telemedicine, Multimedia-rich libraries, Video on-demand, security (including a security network for the LA County Sheriffs who provide District wide security), Virtual servers and personal computing devices, cloud computing, and Software as a Service across campuses, the need for resilience in infrastructure for each campus, and greater bandwidth is critical. The middle-mile backbone network will consist of two fiber sheaths containing 288 and 72 strands of fiber respectively. The 288 strand sheath will be used exclusively to accommodate the current and rapidly scaling demands of LACCD, with the 72-strand sheath allocated to selling dark and lit fiber services to commercial, carrier, and institutional clients. The impact such a network or 'cloud' would have for LACCD and its surrounding communities includes elevating the quality of and/or availability of all things necessary to thrive in the now lagging local communities such as education, healthcare, public safety, economic vitality, jobs, innovation, entertainment, quality of life, community services, and increasing real estate values. Connect LA/ CCD's proposed network will have a positive impact on all of these, allowing LACCD and its surrounding communities to thrive. Deploying an internal LACCD network cloud will enable a optimum level of collaboration toward leveraging Districtwide resources, enhancing the student experience, and creating
a sought-after workforce that meets emerging needs of employers, while providing leading edge technical expertise that can be leveraged to improve and sustain the local economy in leading new research and development. Key goals of Connect LA/ CCD are: Build a campus-wide Broadband wireless blanket for each campus and extend it up to a 3-mile radius beyond a campus for use by registered students, faculty and staff providing the ability to access college-housed data in real time. This creates the work-life balance for students, allowing them to enhance their skills whenever they have available time, rather than being tied to opportunities when a class is being taught. Upgrade the campuswide LAN to provide redundancy for all services, with the ability to switch services between primary and backup networks to each facility. All campus fiber will be dual homed to provide uninterrupted service to and from any campus location. Create networked Green Data Centers at each campus with at least one data center with capabilities for N+2 levels of power redundancy (self-generated, commercial, and UPS) and other appropriate aspects of cooling, expansion, access controls, and remote management with regional virtualization. Deploy Voice over Internet Protocol (VoIP) to the desktop for higher quality of service at lower costs including communication enhancements. Connect community anchor institutions, public safety organizations, and local residential communities to a network capable of delivering high-speed Internet access and broadband enabled services like Voice over IP and High definition Internet Protocol Video Conferencing and entertainment services. LACCD has secured assistance from third party partners for detailed planning, design, installation and ongoing maintenance of the proposed Fiber Optic Middle mile Backbone. One private partner, a state licensed telephone company, will operate and maintain the network, in coordination with CENIC, to ensure high resiliency and high availability. As education becomes more technology-dependent, network resilience is critical. The private entity will market any spare network capacity to other non-profits, libraries and the like including ERate eligible K-12 school districts. Deployment of Connect LA/ CCD will be managed by a professional management firm with expertise in managing network deployments. Design and construction of these facilities will be procured in a public procurement process in compliance with applicable regulations and the California Education Code. Ultimately, Connect LA / CCD will provide Districtwide high-bandwidth connectivity required to quickly and efficiently distribute and share energy-efficient green technology solutions throughout LACCD. The open architecture design will accommodate a multi-vendor, multi-product environment while delivering long-term reliability, performance, and a compelling total cost of ownership (TCO). Low-income communities throughout Los Angeles County are the main areas within the proposed funded service area. The middle mile backbone will pass 36 communities along its route. The middle mile backbone will pass 92,086 households along its route. The middle mile will pass 17,297 businesses along its route. The middle mile will pass 1,661 anchor institutions 129 of which are directly related to this project, 12 Los Angeles County Sherriffs Department locations, 51Public Libraries, 3 LAUSD sites, and Childrens Hospital Los Angeles. Proposed services include: 1) Distance learning for LACCD students and the surrounding communities, 2) Telemedicine for Childrens Hospital Los Angeles, LACCD, LA Unified School District 3) Security and Surveillance, Public Safety Radio system, for the City of Los Angeles Office of Traffic Management, and Los Angeles County Sheriffs department. 4) Voice Over IP Telephone service for LACCD, businesses and institutional clients, 5) IPTV and video conferencing for LACCD and local hospitals, 6) Facility and energy management systems for LACCD and area institutions 7) Thin client computing for LACCD, and low income residential customers 8) On-line Video games and entertainment for residential clients, 9) Data warehousing and server mirroring by
LACCD, commercial and institutional clients 10) Carrier IP/Ethernet/MPLS/ Video/Voice/Data transport for carrier clients Connect LA / CCD will comply with all nondiscrimination and interconnection obligations under the ARRA NTIA grant program. The Middle Mile will consist of: Physical Layer = Multi-strand Single-mode fiber optic middle mile backbone network, Logical layer = 10Gigabits per second Ethernet over Multi-protocol Label Switching The Last Mile component consists of: Wireless: 4G ' WIMAX 2.5 Gigahertz unlicensed spectrum canopy system with an Ethernet handoff. Wireline: Physical layer: single mode fiber-optic cable 100, 1000, and 10,000 megabits per second Ethernet over Multi protocol label switching with an Ethernet handoff. The overall project cost is $55,475,954 Expected subscriber projections over the 8 year window are as follows. Residential: 6,054 accounts Commercial/Institutional: 498 accounts Wholesale: 44 Jobs Created: As the mission of the District is to educate and prepare its enrolled students for the job market, it becomes difficult to put a number on the jobs created by this project; however, using the methodology found in the Council for Economic Advisors' guide, this project will create 603 jobs. Jobs Saved: It is estimated that this project will save 201 jobs.