

Sacramento Region Broadband Project

Scoping Study Findings

September 2009 - DRAFT

INTRODUCTION

This report presents the results of a scoping study to identify priorities for a regional broadband action plan and validate the interest in a collaborative effort to move this plan forward. The Scoping Study was led by Valley Vision from June 1 through September 30, 2009. Valley Vision is partnering with our funders, the [California Emerging Technology Fund](#) and the Sacramento Regional Community Foundation, and many other organizations including the Sacramento Area Council of Governments to investigate opportunities for improving digital access to all corners of our region and to bolster promising e-health initiatives. The term “broadband” commonly refers to high-speed Internet access.

The mission of the California Emerging Technology Fund (CETF) is to help close California’s Digital Divide. Strategies include partnerships with collaborative regional leadership initiatives and championing the development and use of innovation technologies in health, education, e-government, public safety, economic development, communications, transportation, and other areas where California’s regions have or can gain competitive advantage. Development of regional broadband action plans is intended to help each region accelerate deployment and adoption of broadband infrastructure, applications and their benefits to improve the economy and quality of life for all. They can help position the region to maximize emerging broadband initiatives and resources such as the Federal Stimulus programs (American Revitalization and Reinvestment Act - ARRA) and other federal and state programs.

The Sacramento Regional Broadband Scoping Study was triggered by a call for additional data and action based on a February 4, 2009 Sacramento Metro Broadband Regional Policy Roundtable hosted by the Sacramento Area Council of Governments (SACOG) and Valley Vision on behalf of the CETF. The Roundtable was held in partnership with CSU Sacramento; the Community Services Planning Council; Sacramento Area Commerce and Trade Organization (SACTO); Sacramento Metropolitan Chamber of Commerce; Sacramento Region Community Foundation; Sacramento Regional Research Institute (now the Center for Strategic Economic Research); the Sierra Health Foundation; and the UC Davis Center for Regional Change, and the Information Center for the Environment. A diverse cross-section of participants attended representing urban, rural and suburban areas and the public, private, educational and philanthropic sectors. The findings of the Roundtable can be found [here](#).

Based on the results of the February Roundtable, the Scoping Study focused on opportunities in three key areas:

- Digital Inclusion – With a focus especially on urban poor and disadvantaged communities that lack computers and affordable connections to the Internet for relevant applications, and disabled populations that lack technology accessibility;

- Rural Access – Identifying strategies to better link rural and urban areas of the six-county region, addressing infrastructure gaps and bringing the benefits of broadband to rural areas; and
- Enterprise Opportunities – Identifying areas of regional competitive advantage and economic and workforce development emphasis across key industry sectors.

A cross-cutting area of opportunity, addressed in each area of inquiry, is advancing e-Health and telemedicine strategies in coordination with the California Telehealth Network (CTN), a major statewide initiative sponsored by a consortium of stakeholders led by the University of California. The CTN will build a statewide network to bring specialized, cost-effective health and medical care to more than 800 sites in underserved areas, including several in the Sacramento region. A Sacramento regional broadband strategy could build on the institutional capacity of UC Davis, regional hospitals and other health care partners, along with the emerging industry cluster of medical and health information technologies.

There are many important and exciting activities taking place in the Region, and many partners and innovators working to make broadband access and adoption a reality. The goal of the Scoping Study was to facilitate the connection of these assets, identify the areas and issues that will most benefit from dedicated attention through a regional broadband strategy, and affirm the interest of leaders and communities to participate in a collaborative effort. The findings of the Scoping Study validate these efforts and provide further guidance on next steps and recommendations.

About Valley Vision

Valley Vision is the manager for the Partnership for Prosperity, a collaboration of thirty-four leadership organizations and jurisdictions working on the Region’s collaborative economic strategy. Partners include the Sacramento Metropolitan Chamber which leads the MetroPulse program, coordinating 16 economic development programs to provide efficient and proactive economic development services; the Sacramento Regional Technology Alliance (SARTA) which works with emerging technology-driven industries and entrepreneurs; and the Center for Strategic Economic Research which provides strong analytic skills. Valley Vision is the civic engagement partner for the Sacramento Area Council of Governments on initiatives such as the Blueprint Program and the Rural Urban Connections Strategy, the region’s economic strategy for the rural areas of the region. Partnership initiatives include the Green Capital Alliance to foster the region as a leader in green technologies and clean energy, and efforts to develop a highly skilled workforce and improve civic amenities. They are referenced in this report’s summary of proceedings.

EXECUTIVE SUMMARY

This report presents the results of a scoping study to identify priorities for a regional broadband action plan and validate the interest in a collaborative effort to advance this plan. The Scoping Study was led by Valley Vision from June 1 through September 30, 2009, in partnership with the California Emerging Technology Fund (CETF), the Sacramento Region Community Foundation, the Sacramento Area Council of Governments (SACOG) and other community partners. The project was based on a call to action for additional information and action following a regional broadband policy roundtable held on February 4th, 2009. The purpose of the Scoping Study was to investigate opportunities for improving digital access throughout the six-county SACOG region, and bolstering promising e-Health initiatives.

The Scoping Study focused on three key opportunity areas:

- Digital Inclusion – with a focus on urban poor and disadvantaged communities that lack computers and affordable connections to the Internet, and disabled populations that lack technology accessibility;
- Rural Access – to better link rural and urban areas of the Region, addressing infrastructure gaps and bringing the benefits of broadband applications to rural areas; and
- Enterprise Opportunities – to identify areas of regional competitive advantage and economic and workforce development emphasis across key industry sectors.

A cross-cutting area of opportunity is the advancement of e-Health and telemedicine strategies in coordination with the California Telehealth Network, a major statewide initiative to bring specialized, cost-effective health and medical care to more than 800 sites throughout the State, with several in the Sacramento Region. This effort dovetails with the MedStart Telemedicine Task Force, to support innovators and investors developing health and communications technologies for e-Health and telemedicine applications, especially for rural areas.

Methodology

The Scoping Study focused on the primary research question: ***What are the current, or near term, opportunities for increasing broadband infrastructure and utilization in our communities?*** Information was gathered primarily from three meetings on the opportunity area topics listed above, held in August 2009; meetings and interviews with private sector representatives of major e-Health initiatives and other key informants; meetings with convening partners on key initiatives and resources; consultation with CETF and grantees which have projects in the region; initial research on promising examples identified by participants; recent research findings by the Public Policy Institute of California on the Digital Divide; and tracking of emerging broadband initiatives such as the federal stimulus programs.

Key Highlights and Conclusions

In addition to the primary research question, two additional questions were considered: ***What initiatives would maximize the benefit of a collaborative regional partnership if one were to be pursued, and what would 2011 look like in terms of unique and powerful outcomes.*** Proceedings from each meeting were summarized and synthesized to document cross-cutting opportunities, themes and areas of interest for follow up.

The research findings validated the research questions. Broadband is the avenue of opportunity for a sustainable and inclusive regional economy and health community. The Scoping Study confirmed the great potential that exists for regional broadband deployment, access and use; a strong interest in furthering a collaborative regional approach; and numerous opportunities that would benefit from such an approach. The ultimate goal is complete digital inclusion: broadband that is available, accessible and affordable to every home, business and community in the region.

Currently, broadband infrastructure is scattered throughout the Region; existing infrastructure, including state and federal assets, is underutilized; and there is no cohesive strategy to improve the status quo. Major gaps need to be addressed through targeted initiatives at the planning, investment and policy levels.

The region has unique institutional, business and human assets that provide competitive advantage, including a large presence in education, e-Health and telemedicine linked with enabling technologies, a skilled workforce, and vibrant collaborations. The Region has the potential and is poised to become a global leader in health care innovation and improved outcomes, and a test bed for innovation-driven pilots around digital inclusion across a range of opportunity areas, if partners can leverage these assets strategically.

The following are key cross-cutting areas of recommendation from the Scoping Study that will guide the next stage planning process – the preparation of a strategic action plan and governance approach for a regional broadband collaborative effort:

- Mapping – identify gaps in infrastructure, access and service for the most in need; underutilized assets; and public access points.
- Digital inclusion – connect communities most in need, including youth, elders, those with language barriers. Focus on ready projects; emphasize digital literacy.
- Education – is the backbone; implement School to Home initiatives.
- Marketing and Awareness – anchor institutions like schools need to help drive adoption and support user connectivity and comfort with new technologies and applications. Focus on health care providers; market public access points.
- Economic and Workforce Development – focus on skills building, rural-urban market connections, small business development, smart business parks.

- Infrastructure planning – include broadband in housing and infrastructure projects; harmonize state, regional and local permitting processes.
- Emerging Technologies – foster the region as a center for technology innovation, especially in telemedicine, communications and the Smart Grid.
- Network/Resource Leveraging – leverage the many creative and diverse initiatives and resources across sectors and to engage the private sector.
- Sustainable Business Model – make the ROI (return on investment) case for public investment in broadband; use existing infrastructure more efficiently; pursue new resources to close gaps, including public-private partnerships.
- Regulatory Issues – address rights of way for public assets and other policies.
- Public Policy/Leadership – educate local elected officials on the benefits of broadband and need for public sector policy and infrastructure support for a connected region. Identify and mobilize champions.

Next Steps

Valley Vision has submitted a proposal to the California Emerging Technology Fund for continuation of the Sacramento Regional Broadband Study (phase 2). Phase 2 of the project will build on the interest and momentum generated during the Scoping Study, completing the planning for a strategic action plan. The plan will address three areas: rural access, digital inclusion and e-Health. The primary emphasis will be on rural access which currently has a “poverty of action.” The project will provide support to develop a work group and design an action plan focusing on infrastructure deployment and access for rural regions. It will offer support for and participation in existing and emerging e-health and digital inclusion activities, providing coordination and connection across the three areas of focus.

It is anticipated that the planning process will run from October 2009 through March 2010. The action plan will include: a recommended governance structure to support the regional broadband collaborative effort; identification of priority projects to leverage federal, state and other resources including philanthropic; and a sustainable business model with a focus on economic development opportunities most suited for the region.

STUDY PROCESS

This section describes the methodology for the study process used to prepare this report. Information for the report was gathered using a variety of methods, including one-on-one interviews and information gathering sessions, focused on three opportunity areas for the Sacramento Region. The information gathering sessions were facilitated by Valley Vision staff, enabling lively and rich discussion and information sharing from over 40 participants, representing a range of organizations including non-profits, government agencies, elected officials' staff and telecom companies. (See Appendix A for the participant list). Session discussions focused around the primary research question: ***What are the current, or near term opportunities for increasing broadband infrastructure and utilization in our communities?***

In addition to gathering data from expert informants, these sessions became a vehicle for many to connect in a more strategic way with intentional networking and connecting of related groups, which is creating the conditions to continue the process of collaboration and defining a roadmap for the Region as a coalition. Throughout the Scoping Study, more than 300 interested parties were informed and brought up to date with this project by receiving periodic e-news status updates. This distribution received an early draft of the report for a focused review and feedback period.

Information from the following sources was compiled for this report:

- Three meetings on the key opportunity areas of digital inclusion, rural access and enterprise, with a focus on bolstering promising e-Health and telemedicine initiatives and emerging technologies;
- Meetings with public and private sector representatives of major e-Health initiatives, including the UC Davis Health System, the California Telehealth Network and the Sacramento Area Regional Technology Alliance (SARTA)'s MedStart Telemedicine Task Force;
- Meetings with convening partners on relevant initiatives and resources;
- Consultation with CETF and CETF partners including those leading rural aggregation of demand projects in four of the six SACOG counties;
- Initial research on promising examples identified during the scoping meetings and interviews with key informants;
- Individual interviews with key informants who were not able to attend the meetings and to fill gaps; and,
- Recent research findings on the status and characteristics of the Digital Divide by the Public Policy Institute of California (PPIC).
- Tracking of emerging broadband initiatives such as the federal stimulus programs.

SUMMARY OF PROCEEDINGS

This section of the report summarizes and synthesizes the information gathered during the Sacramento regional broadband Scoping Study. Study findings are presented by summarizing the key highlights of each opportunity area. The next section concludes with common themes and recommendations which will guide the next steps of the Project. The findings address the three research questions posed at each meeting and in other information gathering activities:

- What are the current, or near term, opportunities for increasing broadband infrastructure and utilization in our communities?
- If a collaborative approach were pursued, what initiatives would maximize the benefit of a regional partnership? What are the two to three things that should be addressed?
- Two years from now, imagine we have done something unique and powerful for broadband access and use. What does 2011 look like in terms of outcomes? What two to three things stand out?

For additional information on several of the projects that are referenced by the meeting participants, please refer to the February 4th Sacramento Regional Broadband Roundtable summary.

Digital Inclusion Information Gathering Session – Key Highlights

Purpose of the Meeting: The Digital Inclusion meeting was held August 4th at Drexel University to discuss opportunities and strategies to overcome the Digital Divide, with a focus on urban poor and disadvantaged communities that lack computers and affordable connections to the Internet for relevant applications, and disabled populations that lack technology accessibility. Areas of focus included health care, education, human services, housing, workforce development and economic development.

Key Sectors: Participants represented organizations with expertise in the realm of digital inclusion, reflecting real experience in assessing need; knowledge of best practices; and familiarity in adoption and deployment of broadband, technology, social media and other applications, including planning for and investing in both infrastructure and services delivery. Organizations were primarily from the non-profit and government sectors, along with representatives from private sector telecommunications service providers.

Key Highlights:

1. Current/near term opportunities:

CATEGORY	OPPORTUNITY AREAS
Mapping	<u>Map broadband gaps (correlated with a density map of population)</u> <ul style="list-style-type: none"> ➤ Identify unserved and underserved neighborhoods and communities. ➤ Inventory all centers where broadband is available or could be. ➤ Inventory all facilities that could be public access points. ➤ Generate an awareness map identifying gaps and overlay with population density.

<p>Education, Skills Building and Marketing</p>	<p><u>Focus on education, training and awareness</u></p> <ul style="list-style-type: none"> ➤ Market awareness of public access points and services available throughout the community. ➤ Conduct media campaign on benefits of broadband. ➤ Increase broadband access to homes. Help connect children with school to home partnerships and help them introduce older adults to technology. ➤ Increase job skills and employability of residents – connect workers with employers. ➤ Educate local elected officials about the benefits of broadband.
<p>Targetting of Key Populations</p>	<p><u>Focus on young people, elders, and immigrant populations</u></p> <ul style="list-style-type: none"> ➤ Go to where the youth are and get them involved, not just as users but to share their knowledge. Empower youth to gain skills. ➤ Make broadband applications relevant for these groups and their use of technology and their competency will improve. Design with consideration to age, gender, culture, language. Combine ESL and computer skills.
<p>”Smart” Housing</p>	<p><u>Develop “Smart” Housing, building on models of successful projects</u></p> <ul style="list-style-type: none"> ➤ Provide broadband infrastructure and technology centers in low and moderate income housing projects as standard policy, for both new and modernization projects. ➤ Provide training in the use and applications of technology, and to develop new job skills, such as in computer repairs. ➤ Identify groups that can provide technology training services. ➤ Note: Sacramento Housing and Redevelopment Agency is doing an analysis of how to help residents. The wait list for public housing is huge and backlogged; this is a strong market.
<p>Technology Innovation</p>	<p><u>Plan for new technologies</u></p> <ul style="list-style-type: none"> ➤ Be technology neutral. ➤ Create wifi pod zones. ➤ Look at changing technologies and include a mobile strategy.
<p>Operational Sustainability</p>	<p><u>Create a cost-effective broadband system</u></p> <ul style="list-style-type: none"> ➤ Address the need to make public and in-home access cost effective. ➤ Broadband offers the opportunity for a distributed system with some centralized management – explore a partnership to help manage and maintain the network. ➤ Deploy low cost infrastructure to improve access and use for those most in need. ➤ Identify public buildings that can be used as free public access points. ➤ Use existing centers and programs to expand outreach. ➤ Provide subsidies to address income-related issues holding back the use of broadband.

Collaboration	<p>Create and Leverage Partnerships for Regional Benefit</p> <ul style="list-style-type: none"> ➤ Foster partnerships with the faith-based community, libraries, community centers, parks and recreation centers, training providers and other non-profits on free or low cost training. ➤ Create partnerships with broadband providers and hardware companies. ➤ Take advantage of cable industry partnerships with schools. ➤ Provide a continuum of access to services and capacity building by providers. ➤ Identify large companies that provide community volunteer opportunities.
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2. Initiatives that would benefit from a collaborative regional approach:

Mapping	<ul style="list-style-type: none"> ➤ Map the gaps where the most underserved neighborhoods exist, both with infrastructure and/or use, and the density; quantify this gap. ➤ Define the ideal access point standards and some generalized points across projects so they can connect across systems; compatible platforms are needed.
Best Practices	<ul style="list-style-type: none"> ➤ Learn from others; many areas are far ahead of us. Be a clearinghouse for information.
Education, Skills Building and Marketing	<ul style="list-style-type: none"> ➤ Create a holistic approach to improve community and home access, awareness of services and access points, and increased skills.

3. Two/three important outcomes by 2011:

Mapping	<ul style="list-style-type: none"> ➤ Public access points are mapped, including libraries, community centers, schools, and wifi hotspots. ➤ There is a coordinated map of resources, a plan to help communities most in need, and programs for further deployment.
Education, Skills Building and Marketing	<ul style="list-style-type: none"> ➤ The region is focused on broadband research, access and training. There is universal access to low cost training. ➤ There is increased awareness about broadband access and its benefits. ➤ There is 80-85% usage, up from 65% in 2009. All populations have affordable and easy access. There is a "Computers in the Home" program and community-wide training programs. Residents of public housing have 90% use rates. ➤ Schools integrate with home use for monitoring and mentoring. ➤ Increased access and use is helping communities with economic development and workers with job security. Educational attainment and high school graduation rates are up; literacy is improved. Business attraction improves with a skills-ready workforce. ➤ The FCC and the CPUC engage in extensive outreach programs in the Sacramento region.

Operations and efficiencies	<ul style="list-style-type: none"> ➤ Management and sustainability resources have been identified; funding has been raised for 10 years of operation. ➤ There is an umbrella organization to help oversee the broadband network and achieve economies of scale. ➤ The public-private partnership is a model to address other issues in the region.
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Additional comments and concerns raised during the meeting are:

- Is there agreement on desired project outcomes? There is support for broadband access and utilization, but what does it mean for the Three E's (equity, environment, economy)?
- There is a basic need that needs to be fulfilled, not just for infrastructure or the community. Broadband is tied to attaining a 21st century skills set; try to measure outcomes beyond utilization.
- Projects need to show financial sustainability. Show reductions in service costs – e.g., it costs four times as much to process paper as opposed to electronic transactions. Show how other benefits can accrue to the cities and communities with expanded services. Show Return on Investment (ROI), such as – police times will improve.

Rural Access Information Gathering Session – Key Highlights

Purpose of the Meeting: The Rural Access meeting was held August 6th at Valley Vision to discuss opportunities and strategies for improving access to broadband infrastructure and the benefits of its many applications for underserved and unserved rural areas throughout the region. These benefits include e-health and telemedicine, education, transportation, public safety, emergency services, and e-government. A particular focus was on opportunities to support SACOG's Rural Urban Connections Strategy (RUCS), intended to strengthen rural economies; to identify new network opportunities, especially through the California Telehealth Network (CTN); and to coordinate with CETF rural projects in the region (the Upstate California Connect project including Sutter and Yuba counties, led by CSU Chico, the Center for Economic Development; and the Gold Country Broadband Project, including Placer and El Dorado counties, directed by the Sierra Economic Development District – SEDCorp).

Key Sectors: Participants represented a mix of public and private sector representatives, including county economic development, the two CETF-funded Connect Projects, SACOG, e-Health and telemedicine (the California Telehealth Network and private sector technology and venture capital including representatives of MedStart), K-12 education, and telecommunications service providers.

Key Highlights:

1. Current/near term opportunities:

CATEGORY	OPPORTUNITY AREAS
Mapping	<p><u>Map broadband gaps, utilization and demand</u></p> <ul style="list-style-type: none"> ➤ Identify unserved and underserved areas where infrastructure could best be deployed – local governments, schools, etc. Use standardized mapping such as Connected Nation. ➤ State agencies can help identify underutilized existing infrastructure; increased availability could help reach low density areas. ➤ Gold Country Broadband Connect and Upstate California Connect mapping can help identify gaps in four of the counties. ➤ Identify projects already underway.
Marketing and Outreach	<p><u>Do proactive outreach to users; address generational issues</u></p> <ul style="list-style-type: none"> ➤ Communicate with consumers to build expectations and demand for better broadband services. ➤ Work with younger people - early adopters of technology and applications, to help others with adoption. ➤ Libraries and other institutions could have a “technology petting zoo” for people to try out technologies in a safe environment. ➤ Computer rehab and distribution can help low income users connect. ➤ Educate employers on the green benefits of telecommuting. <p>Create a digital literacy fund for seniors.</p>
Operational Sustainability	<p><u>Create a clear, sustainable business model for infrastructure and services</u></p> <ul style="list-style-type: none"> ➤ Identify a realistic aggregation of demand so providers can lower costs with shared infrastructure. ➤ Leverage state and federal funds to help with initials costs, then partners can jumpstart models for local sustainability. Leverage networks (see below). ➤ Convene the right parties (schools, local government, telecom, etc.) to commit to projects for development and implementation; turn over to ISPs (Internet Service Providers). ➤ Fund service providers only in underserved areas. ➤ Track changes in technologies that can reduce cost. ➤ Learn from successful deployment elsewhere. ➤ Create a regional revolving loan fund or other mechanism. ➤ Assess potential for ARRA funding.
Infrastructure and Adoption	<p><u>Anchor institutions must help with infrastructure and adoption</u></p> <ul style="list-style-type: none"> ➤ Several rural districts do not have access to broadband. ➤ Education can drive adoption through use, like distance learning; get their constituents connected to broadband; help households with direct subsidies to providers to improve access; and to fund end user connectivity. ➤ Leverage CENIC’s network (<u>Corporation for Education Network Initiatives in California</u>), the education system’s broadband

	<p><u>backbone</u>. CENIC is actively seeking partners.</p> <ul style="list-style-type: none"> ➤ The region has a high level of special needs children; school districts are looking for health resources, to link parents to experts.
Technology Innovation	<p><u>Be a center for technology innovation</u></p> <ul style="list-style-type: none"> ➤ Application of communications technologies, especially, but not exclusively with wireless, have great potential for medicine, as may cloud computing and emerging technologies. Enabling technologies are important for start-ups. ➤ There are many resources in the region. MedStart’s Task Force is reaching out to innovators to move technologies forward, especially to reach rural and underserved communities. ➤ Businesses are connecting home/life experiences; applications are increasing, such as interactive TV modes. Telemedicine can capitalize on these trends. Telecom providers and others can monetize the high costs of infrastructure though an ad base. ➤ The only way telecommuting can really work is with new very high speed telepresence applications technologies. The broadband network needs to get to the next generation of technologies.
Telemedicine/e-health Initiatives	<p><u>Leverage the California Telehealth Network (CTN)</u></p> <ul style="list-style-type: none"> ➤ With \$30 million in awards and potential ARRA funding, the CTN can grow to more than 800 sites statewide with dedicated connections to UC for telemed and to CENIC (for distance learning and training). ➤ The CTN is providing for cross-sector opportunities through deployment of rural broadband. ➤ Address the low rate of broadband use by medical providers. Cost factors are a big issue. Regulatory and reimbursement issues for telemedicine have not caught up with the technology. Charges are high for medical grade applications. ➤ Address isolation of rural providers; be aggressive in outreach so providers feel connected (UC is starting to pull them in – “online rounds”).
Regional Planning	<p><u>Leverage SACOG’s Regional Planning and Project Efforts</u></p> <ul style="list-style-type: none"> ➤ ITS (Intelligent Transportation Systems) can connect traffic operations and rural areas with urban emergency services, promote economic development, and provide other benefits, including better mobility. ➤ The RUCS project’s focus on improving rural economies will help reduce trips to urban areas for jobs and services. Better broadband infrastructure and access can support telecommuting and the agricultural economy, including emerging local market systems. ➤ The Regional Transportation Plan update will be an opportunity to integrate broadband infrastructure into planning; new federal legislations requires transportation infrastructure to allow for fiber conduits (dark fiber).

Collaboration	<p>Create and Leverage Partnerships for Regional Benefit</p> <ul style="list-style-type: none"> ➤ Many private sector firms are eager to be involved and have expertise and volunteers to contribute to community projects.
Policy	<p><u>Address regulatory issues</u></p> <ul style="list-style-type: none"> ➤ Regional and local government agencies should harmonize regulations to create “smart” permitting processes for broadband projects. ➤ Government deregulation for municipalities could help break down barriers for increased competition and lower costs. ➤ Network neutrality issues needs to be resolved. ➤ Most wireless Internet Service Providers systems operate unregulated and thus telemed applications cannot operate through them. There are huge opportunities if addressed.

2. Initiatives that would benefit from a collaborative regional approach:

Mapping	<ul style="list-style-type: none"> ➤ Need a current conditions report to educate the public and policymakers on gaps, priorities and opportunities – where we are and where we need to be. The information is good but not great. Even with CETF projects and new CPUC mapping there will still be large gaps. Also need to identify quality of level of coverage, and served vs. underserved areas.
Infrastructure and Economic Development	<ul style="list-style-type: none"> ➤ Where are dollars currently being spent? Where should the focus be? Funding needs to go to core infrastructure to keep up to speed. ➤ Understand what is using up existing capacity. Start with local disruption rate; take a phased approach and start with a local area. Technology will evolve. ➤ Track trends and companies which are emerging as big players.
Partnerships	<ul style="list-style-type: none"> ➤ Valley Vision can help with the policy map, partnerships in support of improving policy, and outreach strategies.

3. Two/three important outcomes by 2011:

Mapping	<ul style="list-style-type: none"> ➤ There is mapping of public access points including libraries, community centers, schools, wifi hotspots, etc. ➤ There is a coordinated map of resources, a plan to help communities most in need, and programs for further deployment.
Vision and Plan	<ul style="list-style-type: none"> ➤ The Sacramento Regional Broadband Collaborative is created. ➤ There is a shared vision for the future, with a convergence of public and private sector interests, convened by Valley Vision or another partner. Show progress toward the vision at the localized level, then bring to the regional scale. ➤ There is a functional framework for access to multi-tier applications at county-state-federal levels and for funding. Connect with the office of the CIO for help in bringing together a unified vision. ➤ There are defined standards for public infrastructure projects.

Economic development	➤ There is growth across industries.
Public Access and Utilization	<ul style="list-style-type: none"> ➤ There is 100% availability in the region. ➤ The rate of adoption increases from 60%, by a reasonable amount; the ultimate goal is 90%.

Enterprise Information Gathering Session – Key Highlights

Purpose of the Meeting: The Enterprise meeting was held August 11th at Valley Vision to discuss opportunities and strategies to foster economic development, with a focus on telemedicine and e-health, job training and education.

Key Sectors: Participants represented mix of public and private sector representatives including broadband service providers, education, healthcare and telemedicine, economic development, energy providers, chamber of commerce and other local agencies, as well as technology and innovation companies; and familiarity in adoption and deployment of broadband, technology, e-health and telemedicine and other applications, including planning for and investing in both infrastructure and services delivery.

Key Highlights:

1. Current/near term opportunities:

CATEGORY	OPPORTUNITY AREAS
Mapping	<u>Map broadband gaps, utilization and demand</u> Map underserved areas to make sure that ARRA funding goes to the areas most in need.
Education, Skills Building and Marketing	<u>Focus on education, training and awareness</u> <ul style="list-style-type: none"> ➤ Push projects that improve digital literacy. ➤ Develop better marketing to reach low income households. ➤ Create “video-gaming” for health – talk about health in a language kids can understand to engage them. ➤ Use technology in schools in high risk areas; distance learning with doctors and other health professionals to encourage kids to learn and show them career opportunities in the health sciences. (Ex: Coordinate with The California Endowment (TCE) Healthy Communities Project site in South Sacramento (Lemon Hill) where the goal is to completely connect the area. ➤ Campaign to underserved groups which are hesitant to utilize technology; make sure their fears/concerns are addressed. Even doctors have challenges. How can the end customer be informed about the benefits of telemed? ➤ Provide education, training, and capacity building in the business sector. This could be a huge asset.
Telemedicine/e-Health Initiatives	<u>Leverage the growing e-Health sector in the Sacramento Region</u> <ul style="list-style-type: none"> ➤ Identify best practices in telemedicine and deploy in rural areas. ➤ Health care industry and information technologies play a major

	<p>role in the region’s economy.</p> <ul style="list-style-type: none"> ➤ Determine the actual capacity of telehealth network utilization, possible use for other purposes, and any policies needed for access to that network. ➤ Telemedicine requires high level of broadband capacity (“big pipe”); how do we bring in the private sector? The public sector is the anchor tenant.
Economic Development	<p><u>Create, leverage and market the economic development business case</u></p> <ul style="list-style-type: none"> ➤ There is a Return on Investment case for public investment in broadband infrastructure. ➤ From a utility perspective, there are complementary technologies. PG&E is heavily into “Smart Grid” technologies through deployment of its smart meter program. CSU Sacramento has a major partnership with SMUD, Los Rios Community College District and the California Department of General Services. Its California Smart Grid Energy Center will perform research to advance the technologies. Partners have applied for ARRA funding. ➤ Smart Grid home automated networks (for power, medicine) provide a lot of opportunities; they improve efficiencies and can improve service call reliability for areas with access problems and achieve service improvement. ➤ Look at development or redevelopment of smart business parks for the region (e.g., Verizon business park redevelopment of some former military bases) to support long term economic development; make sure the entire park has fiber to support business in the area – e.g., UC Davis Research park – could be an intermediary between the private sector and the University. ➤ Provision of service is not cost effective in rural areas. Public-private sector partnerships can help lower costs; perhaps this can leverage more private investment. ➤ Develop business areas where we could reach more people. Focus on retraining, helping dislocated workers, helping existing employers – virtual workshops, visits, SCORE.
Regional Planning	<p><u>Leverage existing regional planning efforts</u></p> <ul style="list-style-type: none"> ➤ A fiber ring install to improve access and redundancy would be a regional project, with an entity like SACOG the lead. ➤ Look at the emergency response system that we can build. It is currently fractionalized – need to get people together, have an Emergency Response Forum.
Regional Advantages	<p><u>Maximize the Sacramento Region’s assets</u></p> <ul style="list-style-type: none"> ➤ The health sector, information technology sector, and skilled workforce are competitive advantages. ➤ Leverage local technology companies – e.g., Intel and HP; and other companies who promote health and kids issues; also tap into local non-profits (such as SAGE – Sacramento Area Girls’ Empowerment – informs girls about potential careers in new

	technologies).
Collaboration	<p><u>Coordinate, collaborate and align efforts in the Region</u></p> <ul style="list-style-type: none"> ➤ Make sure to align health, economic development and other systems with emerging technologies; stay in line with innovators on what the future will look like for scalability, and how to use. ➤ Ensure all stakeholder groups are at the table – technology innovators, anchor institutions, customers, providers, and all the different industries that will be impacted.

2. Initiatives that would benefit from a collaborative regional approach:

Telemedicine and e-Health	<ul style="list-style-type: none"> ➤ Re-enforce the idea that broadband access will allow greater access to technology and beneficial uses. ➤ Research shows patient satisfaction is high for “doc in a box”; the providers seem to be the challenge (focus on buy-in and education of older doctors) through marketing to overcome barriers to adoption and use.
Public Access	<ul style="list-style-type: none"> ➤ Map the gaps where the most underserved neighborhoods exist, both with infrastructure and/or use, and the density; quantify this information. ➤ Focus on end user buy in (increase awareness, training, etc).
Economic Development	<ul style="list-style-type: none"> ➤ Telehealth is an economic advantage in the region. ➤ Focus on telehealth, education and economic development linkages - include public access issues; integrate the pieces so that the opportunity is apparent to frame the conversation (affects users and providers, including health and safety, first responders). ➤ Look at a big project that will bring the Region together.

3. Two/three important outcomes by 2011:

Telemedicine and e-Health	<ul style="list-style-type: none"> ➤ Increased health care delivery ➤ The Telehealth Network serves all or will be completed by 2015 ➤ A sustainable telemedicine strategic plan is completed and up and running; three new telemedicine companies are up and running with 75 new well paying jobs in the region ➤ E-learning is in place in Yolo County for preventative health at an early age ➤ A greater percentage of people here have access to telehealth services than anywhere else in the U.S. (we are a leader) ➤ All major hospitals can share e-health records
Economic Development	<ul style="list-style-type: none"> ➤ Increased job creation, energy independence ➤ The region submits an application for and receives funding for a fiber ring and it’s half built (underneath rural electrical lines) ➤ We’ve taken the lessons learned from telemedicine and applied them to the delivery of economic development services (business retention and expansion) ➤ Improved economic vitality for the State

Public Access, underserved populations, K-12 schools	<ul style="list-style-type: none"> ➤ Increased education outcomes, with focus on K-12 ➤ All underserved schools have access to broadband ➤ All poor and elderly have broadband access to medical care ➤ A successful rural pilot program is up and running in three areas ➤ Creation of the value proposition for the underserved community so they will buy into broadband ➤ The Digital Divide is halved and “underserved” is becoming a word of the past
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Additional comments shared during the meeting:

- Computer ownership for digital inclusion and recycling opportunities: how you bring the technology to the public to address underserved areas and how you educate them, how you can promote community sustainability. Are there strategies to reuse the State’s old computer-related equipment here instead of shipping overseas? CETF is funding companies and non-profits to teach people directly how to refurbish used computer equipment, including from the State (instead of shipping overseas). These users are the fastest learners. This is a chance to build & support small businesses.
- For rural areas trying to do telemedicine, a virtual training facility could be developed to serve as a portal through remote access, and could host training sessions and be used for on-demand business services; this would offer reasonable costs for small businesses.
- Sacramento is a gold mine. UCD is the link for both urban and rural areas in the region. The infrastructure for health access and care is here. The region has big hospital systems providers, all of which are linked except Catholic Health Care West through the EPIC system (health information exchange). Sacramento could be a prototype to get all of the hospitals linked. There are so many benefits, including huge costs savings through efficiencies. We can start in our region, and support the prototype with business concepts. This would give us viability.

The following section of the report weaves together the common themes from the meeting highlights and the additional information gathering process, including individual interviews, and presents overall conclusions and next steps for the regional broadband strategic planning process.

CONCLUSIONS AND NEXT STEPS

The Scoping Study participants and informants stated strongly that broadband is the avenue of opportunity for a sustainable and inclusive regional economy and healthy community. The Scoping Study confirmed the great potential that exists for regional broadband deployment, access and use, and strong interest in furthering a collaborative regional approach. Participants identified numerous opportunities that would benefit from such an approach. The ultimate goal – “success” – is complete digital inclusion: broadband that is available, accessible and affordable to every home, business and community, and adoption that increases as users become familiar and comfortable with technologies and the benefits associated with access and use.

Currently, broadband infrastructure is scattered throughout the Region; existing infrastructure, including state and federal assets, is underutilized; and there is no cohesive strategy to improve the status quo. For example, broadband is the education backbone for the region, critical to bridging the Digital Divide for both parents and children, and to foster economic development. Yet many rural school districts lack broadband access, and access and use is limited in many other area schools. Major gaps in broadband infrastructure, access, use and quality need to be addressed with targeted initiatives, at the planning, investment and policy levels.

The Region has unique institutional, business and human assets that provide competitive advantage and can provide a valuable resource for the State. They include a large presence in education and telemedicine and e-Health linked with enabling technologies, especially information technologies, enhanced by a skilled workforce and a collaboration ethic, as exemplified by the Partnership for Prosperity. The Region has the potential to become a global leader in health care innovation and improved outcomes, and a test bed for innovation-driven pilots around digital inclusion across a range of opportunity areas, if it can leverage these assets in a strategic way.

The following summary provides recommendations on cross-cutting themes that resulted from the Scoping Study. They should guide the next stage planning process and follow up by partners and stakeholders. As noted, telemedicine and e-Health is a high priority for focus and action.

Regional Broadband Collaborative Process	Convene key partners to create a vision, framework, and implementation strategy. Facilitate and support existing and emerging initiatives; help connect resources and networks. Identify and learn from best practices; serve as a clearinghouse. Identify a big project that will be a catalyst.
Mapping	Identify gaps in broadband infrastructure – “most in need” unserved and underserved areas; underutilized existing infrastructure, especially public assets; low utilization rates; bandwidth requirements, especially for new technology applications; and public access points. Define standards.
Digital Inclusion	Connect communities most in need. Focus on youth, the elders, those with limited language skills, and the disabled – and on ready projects in underserved ethnic and low income areas. Emphasize projects that will improve digital literacy and skills building. Assist low-income users with connectivity and equipment. Coordinate with CBOs for greater adoption.

Education	Connect with School to Home initiatives, especially CSU Sacramento to include the South Sacramento Healthy Communities project area (The California Endowment) which may be a total digital immersion project and model. See CETF's Digital Literacy initiative - School2Home.
Marketing, Outreach and Awareness Campaign	Anchor institutions like schools need to help drive adoption and support end user connectivity. Partners need to proactively reach out to consumers and providers; provide secure places for people to get more comfortable with new technologies and applications – doctors' offices, libraries, churches, community centers, parks and recreation centers, (technology petting zoos). Do extensive marketing to health providers and users (will need to address cost and regulatory issues). Create awareness of public access points.
Economic and Workforce Development	Connect with public, private and community partners re: opportunities for rural-urban market connections, small business development, telecommuting, improved overall workforce skills; and optimizing niches for e-Health and telemedicine, including health information technologies. Develop/redevelop "smart" business parks. Develop business areas where more dislocated workers and employers can be reached with services.
Infrastructure Planning	Incorporate broadband infrastructure into regional transportation plans and projects, SACOG's Intelligent Transportation Systems, and all public housing projects. State, regional and local government agencies should harmonize regulations to include "smart" permitting processes for broadband projects.
Emerging Technologies	Foster the region as a center for technology innovation, especially with telemedicine, communications technologies and the Smart Grid. Track and tap emerging technologies and trends, such as mobile applications, social networking media, devices in the home that are pc enabled (like an x-box and mobile phones), that can be used to connect to the Internet and will drive new applications.
Leveraging Infrastructure Networks and Resources	See resources listed below for some of the partners. Others are identified in the meeting summaries for both existing and emerging networks. Include private sector partners, many of whom are volunteering.
Sustainable Business Model	Make the ROI case for public investment in broadband infrastructure. Use existing infrastructure more efficiently. Expand/create new resources to close gaps, including state and federal funds, revolving loan funds, debt and equity financing, and public-private partnerships. Identify a realistic aggregation of demand so providers can lower costs with shared infrastructure.
Public Policy/Leadership	Educate local elected officials on the benefits of broadband and need for public sector policy and infrastructure support for a connected region. Identify and mobilize champions.
Regulatory Issues	Address rights of way for access to public assets especially in unserved/underserved areas; smart permitting; reimbursement policies for telemedicine; and other areas.

Resources and Best Practices

Meeting participants and key informants identified several examples of projects, resources and ideas from both within and from outside the region for which linkages can be explored during the next phase of project planning and networking:

- California Emerging Technology Fund – School2Home Digital Literacy Initiative to provide all students in low-performing middle schools with affordable computers and broadband connections at home, and assist schools to integrate technology into learning. Also resources include smart housing, Get Connected awareness campaign, telehealth and smart infrastructure.
- California Telehealth Network and UC Davis Health System – connecting telemedicine sites within the region; deployment of new technologies; workforce training needs, especially health information technologies
- SARTA’s MedStart Telemedicine Task Force – support for technology innovators to grow telemedicine technologies and reach underserved areas, especially rural
- Upstate California Connect and Gold Country Broadband Connect projects – mapping; working with telecom providers on ARRA and funding for broadband infrastructure in Sutter, Yuba, Placer and El Dorado counties
- SACOG – Rural Urban Connections Strategy, Intelligent Transportation Systems and upcoming Regional Transportation Plan
- CSU Sacramento Digital Inclusion Project - The California Endowment Healthy Communities South Sacramento Neighborhoods Project - will be a total immersion project for school to home; CSU Sacramento will beta test a portal for local middle school teachers.
- Sacramento Housing and Redevelopment Agency and community partners – broadband for housing projects, with training and job opportunities, such as the Victory Evergreen Community Connect supported by the Sacramento Region Community Foundation
- Smart Grid – CSU Sacramento, SMUD, Los Rios Community College District and other partners
- Family-Link Program at UCD – pediatric telemedicine program for kids to stay connected with families while hospitalized
- CARES (Center for AIDS Research, Education and Services) – will be expert provider to UCD Health Systems, with new telemedicine equipment, serving four counties
- Center for Multicultural Cooperation – project using digital media to help teens from minority and under-served populations connect with their elders and community groups
- Camino Fiber Network Cooperative – El Dorado County grassroots organization to bring fiber optics broadband communications to the area
- SAGE – Sacramento Area Girls’ Empowerment (technologies career awareness program)
- Central Coast Broadband Consortium (CCBC) - hosted by CSU Monterey Bay; implementing a regional broadband strategy supported by CETF and community partners. CCBC has submitted several ARRA proposals, including for a Regional Fiber Ring Project.
- Zero Divide – new report on Community WiFi networks for low-income communities, and emerging practices
- Connecting Stanislaus – a community based technology access initiative; priorities address digital inclusion, training and access for Stanislaus County

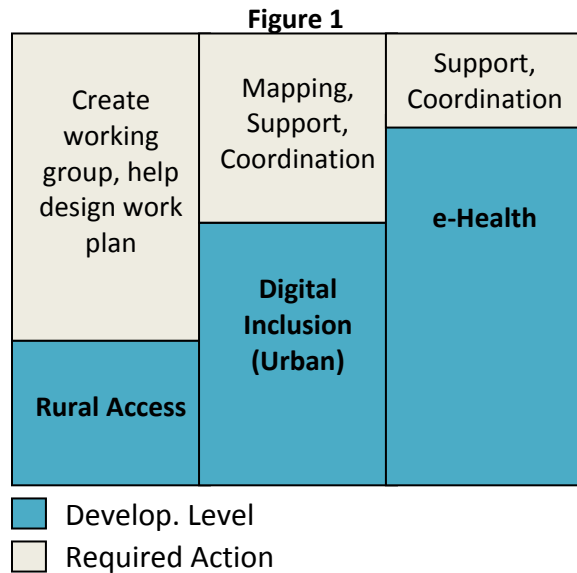
- California Office of the State Chief Information Officer
- California Public Utilities Commission programs
- Pixley Connect - a project of the Great Valley Center in partnership with the AT&T Foundation, is an effort to narrow the digital divide in rural California.

Next Steps

The draft report will be reviewed by Scoping Study participants and those on the stakeholder distribution list, finalized, and submitted to the project funders, the California Emerging Technology Fund and the Sacramento Region Community Foundation. It will then be distributed to community members and local elected officials.

Valley Vision has submitted a proposal to the California Emerging Technology Fund for continuation of the Sacramento Regional Broadband Study. The next phase of the project will build on the interest and momentum generated by the Scoping Study. The work will complete the planning phase initiated in June 2009, providing attention and coordination to address three major issues areas – eHealth, digital inclusion and rural access. The primary emphasis will be on rural access which currently has a “poverty of action.” The project will provide support to develop a work group and design an action plan focusing on infrastructure deployment and access for rural regions. It will offer support for and participation in existing and emerging e-health and digital inclusion activities, providing coordination and connection across the three areas of focus.

Figure 1 visually demonstrates the varied phases of development for the issues areas, with efforts around the digital inclusion and “E-health” initiatives more established, while rural access has an opportunity for cultivation and development.



The second phase of the planning process will run from October 2009 through March 2010. The outcome will be a strategic action plan and recommended governance structure to support the Region’s broadband efforts. The plan will identify priority projects to leverage state, federal and other resources including existing networks and resources. The plan also will identify a sustainable business model and will focus on the economic development opportunities which best fit the Region’s needs. Valley Vision is working with partners to match the CETF grant funds.

APPENDIX A

Participants:

Broadband Information Gathering Sessions - Attendees					
Name	Organization	Urban - Aug. 4th	Rural - Aug. 6th	Enterprise - Aug. 11th	Other Interview
Lisa Bates	Sacramento Housing & Redevelopment Agency	X			
Ruth Blank	Sacramento Region Community Foundation	X			
Nick Chhotu	Sacramento Housing & Redevelopment Agency	X			
Penny Cobarrubia	LEED	X			
Ron Cooper	Access Sacramento	X			
Monique Crossland	Valley Vision	X		X	
Jay Cutler	Office of Mayor Kevin Johnson	X			
Chari Darneal	Western Blue		X		
Sam Driggers	County of El Dorado, Office of Economic Development		X		
Priscilla Enriquez	Sacramento Region Community Foundation	X			
John Gutierrez	Comcast	X			
Jason Harm	County of El Dorado Office of Education, Director of Info Services		X		
David Harry	CA Telehealth Network		X		X
Cecette Hawkins	Sacramento Housing & Redevelopment Agency	X			
Mark Heiman	SACOG		X		
Bill Herenda	Stratascale, Inc		X		
Susan Hopkins	Sacramento Mutual Housing Association	X			
Taurus Jackson	Greater Sacramento Urban League	X			
Nicole Jarred	Center for Multicultural Cooperation				X
Barb Johnston	Medical Board of California / CETF Board of Directors			X	
Jacob Jorgensen	Velocity Venture Capital		X		
Bob Kamrath	CARES				X
Trish Kelly	Applied Development Economics	X	X	X	
Scot Kim	Medstart Task Force		X		
Don Kryszakowski	Chico State – Upstate Connect rep		X		
Tina Lee	ZeroDivide	X			
Susan McKee	District Director, Senator Darrell Steinberg	X			
Evelyn Milani	InfoSYS Inc.		X	X	
Gary Moser	Sierra College				X
Bill Mueller	Valley Vision	X	X	X	
Mark Nava	Pacific Gas & Electric Company, Economic Development			X	
Tom Nesbitt	UC Davis School of Medicine				X
Barbara O'Connor	Sacramento State University				X
Darby Patterson	Consultant	X			
Dean Peckham	City of Sacramento, Economic Development Dept	X		X	
Amit Rana	Sacramento Region Community Foundation	X			
Tim Ray	AT&T	X	X	X	
Lorraine Rinker	MedStart Task Force			X	
David Shabazian	SACOG		X		
Ryan Sharp	The Center for Strategic Economic Research			X	
Sandra Shewry	California Center for Connected Health				X
Brent Smith	Sierra Economic Development District – Gold Country Broadband rep		X		
Dan Throgmorton	Los Rios Community College				X
Tara Thronson	Valley Vision	X	X	X	
Christine Tien	The California Endowment	X			
Glenna Trochet	Sacramento County Public Health Office				X
Karl Wiggins	SETA	X			
Matt Yancey	Metro Chamber, Business and Economic Development			X	