



Connecting Citizens, Shaping Solutions

Sacramento Regional Broadband Project: Scoping Study Findings



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SACRAMENTO REGION
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Sacramento Regional Broadband Project: Scoping Study Findings

INTRODUCTION

This report presents the results of the Sacramento Regional Broadband Scoping Study for the six-county Sacramento Area led by Valley Vision from June through September 2009. The goals of the Study were to facilitate the connection of the Region's existing and emerging assets for improved broadband infrastructure, access and use; identify the areas and issues that would most benefit from dedicated attention through a regional broadband action plan; and affirm the interest of leaders and communities to participate in a collaborative effort. "Broadband" refers to high speed Internet access and is considered an essential 21st Century infrastructure for economic competitiveness and high quality of life.

The Scoping Study was triggered by a call for additional data and action based on the February 4, 2009, **Sacramento Metro Broadband Regional Policy Roundtable**. The Roundtable was co-hosted by the Sacramento Area Council of Governments (SACOG) and Valley Vision on behalf of the California Emerging Technology Fund (CETF), in collaboration with many community partners. Roundtable participants identified gaps in rural area infrastructure, and in access and use of broadband throughout the Region. There are persistent access disparities, not only between urban and rural areas but also within urbanized areas. They identified the potential positive economic impact of increased broadband activity, many important and exciting activities underway, and many partners and innovators working to make broadband access and adoption a reality. They also noted the lack of a regional strategy that could bring these assets to scale and create a truly connected region.

Based on the recommendations of the Roundtable, the focus of the Scoping Study was to investigate opportunities for improving digital access throughout the Region and bolstering promising e-health initiatives. The Scoping Study further defined the targets of opportunities and actions needed to accelerate the deployment of broadband infrastructure, access, and applications and their multiple benefits for all parts of the Region. The Region has unique institutional, business and human assets that provide competitive advantage, including a large presence in health care, 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 to be a test bed for innovation-driven pilots around digital inclusion across many opportunity areas.

The Scoping Study provides guidance for the development and implementation of a strategic action plan to help leaders, partners, investors and communities meet this great potential. This plan also will 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 Scoping Study was conducted in partnership with our funders the [California Emerging Technology Fund](#) and the [Sacramento Region Community Foundation](#), and many other key organizations including the Sacramento Area Council of Governments (SACOG).

The following sections of the report describe the Study method, key findings and recommended next steps. The Appendices contain detailed information on participants, proceedings, and resources.

About Valley Vision

Valley Vision is an independent nonprofit providing research and action to improve the Capital Region's prosperity, equity, and sustainability. Valley Vision managed the Partnership for Prosperity, a collaboration of thirty-four public, private and nonprofit economic development organizations and jurisdictions working on the Region's shared economic strategy. Partners include the Sacramento Area Commerce and Trade Organization, which focuses on business attraction and marketing, 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.

Additional partners include convening partners from the February 4th Regional Broadband Roundtable: CSU Sacramento, the Community Services Planning Council, Sacramento Region Community Foundation, the Sierra Health Foundation, and the UC Davis Center for Regional Change, and the Information Center on the Environment. The findings of the Roundtable can be found [here](#).

About Our Funding Partners

The California Emerging Technology Fund - The mission of the California Emerging Technology Fund (CETF) is to help close California's Digital Divide and ensure that California is a global leader in the deployment and adoption of broadband. CETF was established in 2006 by direction of the California Public Utilities Commission in approving the mergers of SBC-AT&T and Verizon-MCI. CETF has three priorities for grantmaking: rural and remote areas, disadvantaged urban neighborhoods, and people with disabilities. Strategies include partnerships with collaborative regional leadership initiatives and championing the development of strategic investments to accelerate use of innovation technologies in health, education, e-government, public safety, economic development, communications, and other areas where California's regions have or can gain competitive advantage (www.cetfund.org).

The Sacramento Region Community Foundation – The Foundation's mission is to serve as a leader and trusted partner in expanding philanthropic activity and enhancing its impact for the

betterment of our communities. The Foundation launched a Digital Inclusion Initiative in 2006 to address the lack of broadband access in low-income communities. Along with the Sacramento Mutual Housing Association, the Foundation instituted one of the city of Sacramento's first community wireless (WiFi) projects. The Foundation is playing a leadership role with the city of Sacramento to promote wireless solutions for all residents and to bring low cost technology training and other services to the community, thereby creating a permanent asset that fosters both entrepreneurial training and jobs (www.sacregcf.org).

STUDY METHOD

This section describes the methodology for completing the Study. Information was gathered using a variety of methods and sources, including one-on-one interviews and group information gathering sessions. The Study team:

- Held three group meetings in August, 2009 on key opportunity areas identified through the February 4th Roundtable on urban access, rural access and enterprise, with a session focused on bolstering promising e-health and telemedicine initiatives and emerging technologies across all areas;
- Consulted with CETF and CETF partners including those leading rural aggregation of demand "CONNECT" projects in four of the six SACOG counties. CETF has numerous initiatives that are resources for the Region. The rural projects are mapping infrastructure gaps and demand, and are working with private providers and others to leverage ARRA and other resources. The Upstate California Connect project includes Sutter and Yuba counties, led by CSU Chico and the Center for Economic Development; the Gold Country Broadband Project, including Placer and El Dorado counties, is led by the Sierra Economic Development Corporation – SEDCorp – also a non-profit lender to businesses in El Dorado, Placer and counties for broadband projects.
- Conducted meetings with public and private sector representatives of major e-health initiatives, including the UC Davis Health System, the California Telehealth Network (CTN) and the Sacramento Area Regional Technology Alliance (SARTA)'s MedStart Telemedicine Task Force. CTN is 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 Telemedicine Task Force, to support innovators and investors developing health and communications technologies for e-health and telemedicine applications, especially for rural areas.
- Interviewed regional experts on relevant initiatives and resources to gather relevant economic, public policy and technical data;
- Identified initial research on promising examples during the scoping meetings and interviews with key informants;

- Conducted individual interviews with key informants who were not able to attend the meetings;
- Tracked the potential impact of emerging broadband initiatives such as those outlined in federal stimulus programs; and
- Reviewed recent research findings on the status and characteristics of the Digital Divide by the Public Policy Institute of California (PPIC).

The three information sessions addressed opportunities and strategies to overcome the Digital Divide and promote widely shared economic prosperity:

Meeting	Purpose of the Meeting
Urban Access – August 4 th , at Drexel University	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.
Rural Access – August 6 th , at Valley Vision	Identify better linkages between rural and urban areas; address broadband infrastructure gaps and improved access to benefits for underserved and unserved rural areas, including for e-health and telemedicine, education, transportation, public safety, and e-government. Support SACOG’s Rural Urban Connections Strategy to strengthen rural economies (RUCS); identify new network opportunities such as CTN and CETF-funded CONNECT projects
Enterprise – August 13 th at Valley Vision	Focus on telemedicine and e-health, other emerging technologies, job training and education.

The three information gathering sessions were conducted by Valley Vision facilitators, 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 addressed three research questions:

1. ***What are the current, or near term opportunities for increasing broadband infrastructure and utilization in our communities?***
2. ***What initiatives would maximize the benefit of a collaborative regional partnership, if one were to be pursued?***
3. ***It’s 2011 and you’re giving a speech before a large crowd about the Broadband Partnership. You proudly cite three signature successes that a regional partnership has worked together to achieve. What are they?***

In addition to gathering data from expert informants, these sessions became a vehicle for many to connect individually in a more strategic way with intentional networking as well as connecting across groups with shared interests. This has created the necessary conditions to continue the process of collaboration to define a broadband roadmap for the Region. Building

upon the stakeholder list from the February 4th Roundtable, Valley Vision grew the key contacts list of over 300 individuals in public, private, and association roles from across the region. Throughout the Scoping Study, these stakeholders were kept informed about the project through monthly e-news status updates. Additionally, Study participants were provided a draft report for review and comment, and the report was finalized October 5, 2009, incorporating their feedback and suggestions.

The next sections of the report present the Study's key findings and next steps for the Sacramento Regional Broadband Project. Appendices A through C include a list of participants, resources and best practices, and detailed proceedings from each group information gathering session.

KEY STUDY FINDINGS

The Scoping Study answered the three research questions described in the previous section. Study participants and informants stated strongly that broadband is the avenue of opportunity for a sustainable and inclusive regional economy and healthy community. They confirmed the great potential that exists for additional broadband deployment, improved access and use, and the numerous opportunities that would benefit from a collaborative regional approach. Participants identified several desired or possible outcomes that could be realized within the next few years via a Digital Action Plan implemented through the aligned efforts of leaders, partners, investors and communities throughout the Region.

The rationale for a strategic action plan was well-articulated. Currently, broadband infrastructure is built to capture current and anticipated market demand, achieving 96% coverage¹, but the final 4% will take concerted investment of time and capital to close. Existing private and public 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 availability, according to school Information Technology experts. Gaps in broadband infrastructure, access, use and quality need to be addressed with targeted initiatives at the policy, planning, and investment levels.

The Region has unique institutional, business and human assets that provide competitive advantage and serve as a valuable resource for the State. They include a large presence in health care, education, 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

¹ "The State of Connectivity: Building Innovation Through Broadband," Governor's Task Force on Broadband, 2008.

pilots around digital inclusion across a range of opportunity areas, if it can leverage these assets in a strategic way.

Study participants defined the ultimate goal for the Region – “success” – as:

Complete Digital Inclusion: *Broadband that is available, accessible and affordable to every home, business and community; services and applications that are high quality; and adoption that increases as users become familiar and comfortable with technologies and the benefits associated with access and use.*

The Scoping Study identified three building blocks that provide the path to digital inclusion and economic prosperity for a Connected Sacramento Region, illustrated in Figure 1 below: Infrastructure, access and use, deploying a variety of physical infrastructure assets and technologies for fixed and mobile broadband services and applications, and fostering awareness and skills to drive adoption and benefits. Recommended next steps for the Sacramento Regional Broadband Project have been developed within this framework.

Building Blocks to Broadband Digital Inclusion for a Connected Sacramento Region

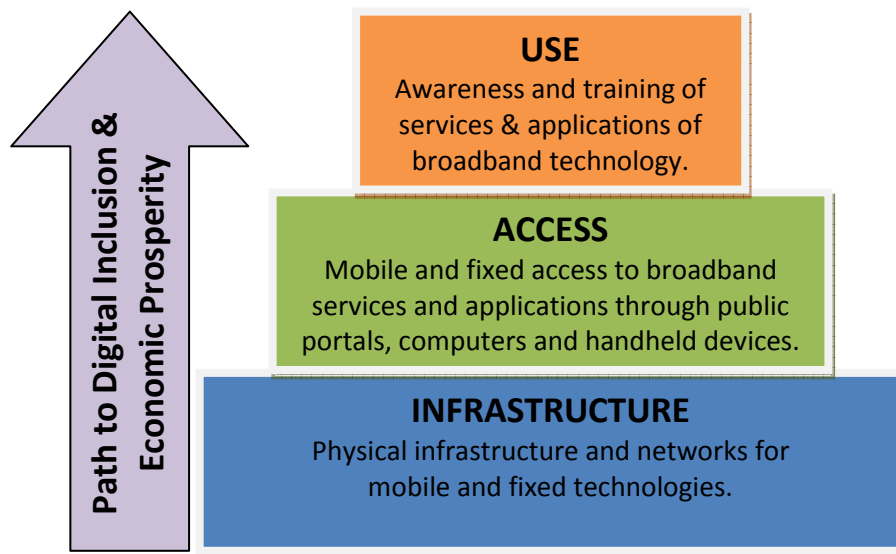


Figure 1

Session Proceedings Highlights

Highlights from the three research questions considered at the information gathering sessions are summarized below according to priority opportunity areas. They include initiatives that participants identified which would benefit from a collaborative regional approach, and possible outcomes that could result from a cohesive, accelerated broadband strategy. The summaries clearly show areas of intersection and specific areas of focus that reflect distinctive current conditions, needs and opportunities.

Information Session Opportunity Area Priorities

Urban Access	Rural Access	Enterprise
<ul style="list-style-type: none"> ➤ Map broadband gaps for unserved and underserved, compared to density, and map public access points 	<ul style="list-style-type: none"> ➤ Map broadband gaps, use and demand, and where infrastructure could best be deployed; identify underutilized state infrastructure; identify projects underway 	<ul style="list-style-type: none"> ➤ Map broadband gaps, utilizations and demand
<ul style="list-style-type: none"> ➤ Focus on education, training and awareness of public access points and services; build skills of workers and residents; educate local elected officials on broadband benefits 	<ul style="list-style-type: none"> ➤ Connect schools to homes. Do proactive outreach to users; address generational issues; work with younger people as early adopters to help others; have safe places for people to try technologies (technology petting zoo) 	<ul style="list-style-type: none"> ➤ Focus on education, training and awareness, especially to low-income households; push projects that improve digital literacy; improve skills in the business sector; target high-risk schools to encourage health professions
<ul style="list-style-type: none"> ➤ Create a cost-effective broadband system; explore partnerships to help manage and maintain networks; deploy low cost infrastructure; provide subsidies to address income-related issues; identify public buildings for free access points 	<ul style="list-style-type: none"> ➤ Create a clear, sustainable business model for infrastructure and services; identify aggregation of demand so providers can lower costs with shared infrastructure; leverage networks and state and federal funds; fund providers only in underserved areas 	<ul style="list-style-type: none"> ➤ Create, leverage and market the economic development business case – make the Return on Investment (ROI) case for public investment in broadband infrastructure; develop smart business parks; train dislocated workers; Smart Grid can provide opportunities
<ul style="list-style-type: none"> ➤ Plan for new technologies including mobile; be technology neutral 	<ul style="list-style-type: none"> ➤ Be a center for technology innovation 	<ul style="list-style-type: none"> ➤ Maximize the Region’s assets – health sector, information technology, and skilled workforce; leverage local technology and other companies and non-profits
<ul style="list-style-type: none"> ➤ Create and leverage diverse partnerships for regional benefit – faith-based organizations, libraries, broadband providers and hardware companies, training providers, etc. 	<ul style="list-style-type: none"> ➤ Leverage the California Telehealth Network; address low rates of broadband by medical providers ➤ Leverage SACOG’s regional planning and project efforts including ITS and RUCS projects 	<ul style="list-style-type: none"> ➤ Leverage the growing e-health sector, especially in the rural areas ➤ Leverage existing regional planning efforts; look at a fiber ring as a regional project; develop coherent emergency response system
<ul style="list-style-type: none"> ➤ Develop “Smart” Housing – provide broadband infrastructure and technology in low and moderate incomes housing projects; provide training 	<ul style="list-style-type: none"> ➤ Anchor institutions like schools must help with infrastructure and drive adoption ➤ Address regulatory issues; harmonize the permit process 	<ul style="list-style-type: none"> ➤ Coordinate, collaborate and align efforts – including health, economic development and other systems with emerging technologies; ensure that all stakeholders are at the table

Participants identified initiatives that would benefit from a collaborative regional approach:

- Mapping of current conditions on gaps, public access points and areas of most need;
- Best practices and information sharing, serving as a clearinghouse;
- Education, skills building and marketing/outreach, especially to targeted audiences;
- Broadband infrastructure investments and tracking trends;
- E-health and telemedicine – an economic advantage for the Capital Region
- Economic development – look at a big project to pull the region together; and
- Build partnerships across jurisdictions and disciplines

Participants also identified possible outcomes that could occur over the next two years through a collaborative regional effort. As clearly expressed by many participants and informants, achieving reliable, good quality and cost-effective broadband access and use is an ongoing and difficult challenge throughout much of the region. Core existing infrastructure must be maintained and upgraded in addition to funding and building new infrastructure. However, there was strong optimism that a collaborative, strategic approach with a shared vision could leverage existing and emerging networks such as the California Telehealth Network, and resources such as ARRA and other state and federal broadband funds, to make progress in closing the Digital Divide and advancing the Sacramento Region as an innovation leader. Below are examples of broadband-related outcomes that could be attained. (See Appendix C for detail):

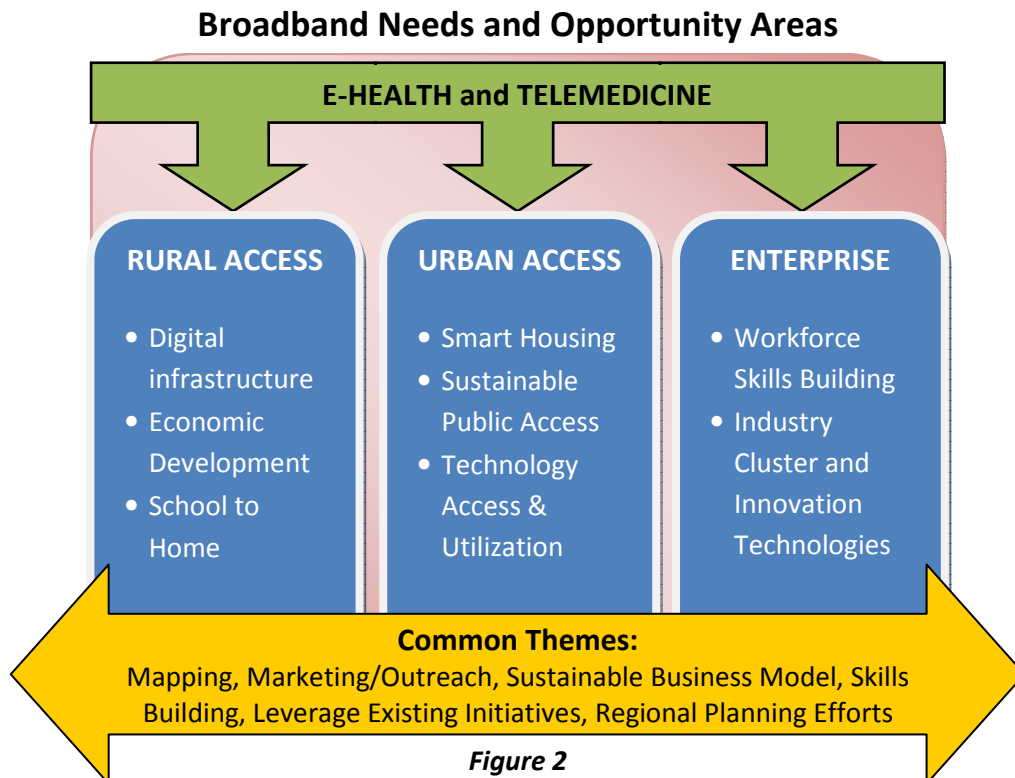
Initiative	Potential Outcomes
Mapping, Public Access , and Outreach	Public access points are mapped, there is a plan to help communities most in need, there is a strong marketing (awareness), and there are programs for both infrastructure and services. All underserved schools have access to broadband.
Usage	All schools have access to broadband. There is 80%-85% usage of broadband, up from 65% in 2009. There is universal access to low cost training. All populations have affordable and easy access. Residents of public housing have 90% use rates. There are increased education outcomes, especially K-12. The Digital Divide is halved and “underserved” is becoming a word of the past.
E-Health and Telemedicine	The California Telehealth Network will be completed by 2015; A sustainable telemedicine strategic plan is up and running; three new telemed companies are operating with 75 new well paying jobs; a greater percentage of people in the Region have access to telehealth services than anywhere else in the US; there is a rural preventative Health care pilot program in Yolo County.
Economic Development	Increased job creation; energy independence; development of a fiber ring project; lessons learned from e-health are applied to delivery of economic development services
Sustainability	Management resources have been raised for ten years of operation. There are defined standards for public infrastructure projects. There is an umbrella organization to help oversee the broadband network and achieve economies of scale. The Sacramento Regional Broadband Collaborative is created, convened by Valley Vision or another partner.

NEXT STEPS

Given the findings of the Scoping Study and the momentum generated by the scoping process, the next step for the Sacramento Regional Broadband Project (Phase 2) is to complete the planning process, prepare a strategic action plan, and further mobilize key partners and decision-makers. Valley Vision has submitted a proposal to the California Emerging Technology Fund for Phase 2, which is anticipated to run from October 2009 through March 2010. Valley Vision is working with partners to match the CETF grant funds.

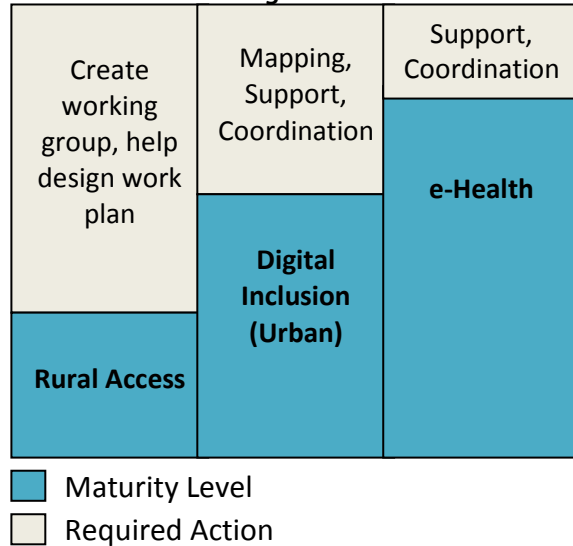
The Digital Action Plan will include: a recommended governance structure to support the regional broadband collaborative effort; identification of priority projects to leverage federal, state and other resources including philanthropic; and a sustainable business model with a focus on economic development opportunities most suited for the region.

The Plan's focus will be on the priorities identified for the three opportunity areas: Urban Access, Rural Access and Enterprise, with e-health and telemedicine woven through all three areas. The graphic below (Figure 2) summarizes these areas along with cross-cutting themes that will guide the action planning process.



Within this context, the primary emphasis of the planning process will be on rural access, which currently has a “poverty of action” compared to the other opportunity areas. The project will facilitate a work group and design an action plan focusing on mapping infrastructure, access and adoption gaps for rural parts of the Region. 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 for an integrated regional action plan. Figure 3 illustrates the focus for the level of effort related to the three Opportunity Areas.

Figure 3



Valley Vision thanks the Project's funders for their support, and thanks the partners and participants who gave so generously of their time and ideas during this Scoping Study to move the Sacramento Region along the path to full digital inclusion. In these difficult times, digital access and use remains an area of true opportunity for health and prosperity. There is a great deal of enthusiasm and creativity throughout the Region that can be harnessed to take action. These many initiatives, ideas and resources will provide a strong foundation for the preparation of the Digital Action Plan in Phase 2. Valley Vision looks forward to engaging with funders, partners and stakeholders in the next phase of this important effort.

APPENDIX A

SCOPING STUDY PARTICIPANTS

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 Krysakowski	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			
Glennah Trochet	Sacramento County Public Health Office				X
Karl Wiggins	SETA	X			
Patricia Williams	Yolo Emergency Communications Agency				X
Matt Yancey	Metro Chamber, Business and Economic Development			X	

APPENDIX B

EXAMPLES OF BEST PRACTICES AND RESOURCES

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, El Dorado and Sacramento counties; SEDCorp is a non-profit lending providing funding for broadband projects
- 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
- Yolo County Emergency Services is installing a new microwave system to various tower sites in Yolo County; they are finalizing an MOU with other partners in Yolo County, allowing collaboration when prudent and fiscally responsible on I.T.-related issues. Through this MOU, other entities, e.g. the County of Yolo, may have opportunities to increase utilization in the region
- 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.

APPENDIX C

SUMMARY OF PROCEEDINGS FROM THREE INFORMATION GATHERING MEETINGS

This Appendix summarizes the information gathered during the Sacramento Regional Broadband Project Scoping Study. Study findings are presented by the key highlights of each opportunity area. 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 Roundtable summary.

Urban Access (Digital Inclusion) Information Gathering Session – Key Highlights

Participants: Organizations with expertise in digital inclusion issues and needs assessment; knowledge of best practices; and familiarity in adoption and deployment of broadband, technology, social media and other applications, and including planning and investing in both infrastructure and services delivery. Primarily non-profit and government sectors, with representatives from private sector telecom providers

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.
Education, Skills Building and Marketing	<u>Focus on education, training and awareness</u> <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

	<p>with school to home partnerships and help them introduce older adults to technology.</p> <ul style="list-style-type: none"> ➤ Increase job skills and employability of residents – connect workers with employers. ➤ Educate local elected officials about the benefits of broadband.
Targeting of Key Populations	<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.
“Smart” Housing	<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.
Technology Innovation	<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.
Operational Sustainability	<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><u>Create and Leverage Partnerships for Regional Benefit</u></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

	<p>training.</p> <ul style="list-style-type: none"> ➤ 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. <p>Identify large companies that provide community volunteer opportunities.</p>
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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

Participants: Public and private sector representatives, including county economic development, CONNECT Projects, SACOG, K-12 education, e-health and telemedicine (CTN and private sector technology and venture capital including representatives of MedStart), and telecommunications service providers

1. Current/near term opportunities:

CATEGORY	OPPORTUNITY AREAS
Mapping	<u>Map broadband gaps, utilization and demand</u> <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	<u>Do proactive outreach to users; address generational issues</u> <ul style="list-style-type: none"> ➤ Communicate with consumers to build expectations and demand for better broadband services.

	<ul style="list-style-type: none"> ➤ 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. ➤ Create a digital literacy fund for seniors.
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 <u>broadband backbone</u>. CENIC is actively seeking partners. ➤ 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;

	<p>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 through an ad base.</p> <ul style="list-style-type: none"> ➤ 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><u>Create and Leverage Partnerships for Regional Benefit</u></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.

	<ul style="list-style-type: none"> ➤ Most wireless Internet Service Providers systems operate unregulated and thus teled applications cannot operate through them. There are huge opportunities if addressed.
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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	<ul style="list-style-type: none"> ➤ 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

Participants: Public and private sector representatives including telecom service providers, education, healthcare and telemedicine, economic development, energy providers, chamber of commerce and other local agencies, technology and innovation companies.

1. Current/near term opportunities:

CATEGORY	OPPORTUNITY AREAS
Mapping	<p><u>Map broadband gaps, utilization and demand</u> Map underserved areas to make sure that ARRA funding goes to the areas most in need.</p>
Education, Skills Building and Marketing	<p><u>Focus on education, training and awareness</u></p> <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	<p><u>Leverage the growing e-health sector in the Sacramento Region</u></p> <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 role in the region’s economy. ➤ 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. ➤ A virtual training facility for rural areas could be developed to serve as a portal through remote access via telemedicine centers, and could host training sessions and be used for on-

	<p>demand business services: this would offer reasonable costs for small businesses.</p> <ul style="list-style-type: none"> ➤ 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.
<p>Regional Planning</p>	<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.
<p>Regional Advantages</p>	<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).
<p>Collaboration</p>	<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; work with innovators on what the future will look like for scalability and use. ➤ Ensure all stakeholder groups are at the table – technology innovators, anchor institutions, customers, providers, etc.

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

	<p>three areas</p> <ul style="list-style-type: none"> ➤ 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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Summary of Proceedings

The following are the more specific recommendations from the Scoping Study that will inform the development of the Phase 2 Action Plan:

Mapping	Identify gaps in infrastructure, access and service for the “most in need” underutilized existing infrastructure, especially public assets; bandwidth requirements, especially for new technology applications; and public access points. Define standards.
Digital Inclusion	Connect communities most in need. Focus on 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. Identify a strategy for proactive outreach 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; market access points.
Economic and Workforce Development	Focus on skills building, opportunities for rural-urban market connections, small business development, telecommuting, and optimizing niches for e-health and telemedicine, including health information technologies. “smart” business parks. Develop business areas where more dislocated workers and employers can be reached with services.
Infrastructure Planning/Smart Housing	Incorporate broadband infrastructure into regional transportation plans and projects, SACOG’s Intelligent Transportation Systems, and all public housing projects. Harmonize state, regional and local government agency regulations for “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,
Sustainable	Make the ROI case for public investment in broadband infrastructure.

Business Model	Use existing infrastructure more efficiently. Identify 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; and reimbursement policies for telemedicine.

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Connecting Citizens, Shaping Solutions

**Valley Vision provides independent research and action to improve the six-county Sacramento Region's prosperity, equity, and sustainability.
To learn more about our work, please visit us at:
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