SAN DIEGO REGIONAL BROADBAND ROUNDTABLE
July 10th, 2008

Sponsored by the San Diego Regional Economic Development Corporation
in partnership with AeA, CommNexus, SANDAG and the
the San Diego Regional Chamber of Commerce
on behalf of the California Emerging Technology Fund (CETF)

—AGENDA—

9:00	Sign In - Refreshments and Conversation
9:30	Welcome and Introductions –Purpose of the Meeting: California Emerging Technology Fund (CETF) and Co-Sponsors ➢ Sunne Wright McPeak, *President and CEO,* CETF ➢ Julie Meier Wright, *President and CEO,* San Diego Regional Economic Development Corporation
9:45	Overview of CETF ➢ Sunne Wright McPeak
10:00	Overview of the Governor's Broadband Task Force Update on Status of Regional Broadband Activities ➢ Bill Geppert, Chair, San Diego Regional EDC, and Member, Governor's Broadband Task Force ➢ Paul Hernandez, Member, Governor's Broadband Task Force (*invited*)
10:15	Facilitated Discussion ➢ Identify the next steps and actions to further the work that has been done in the Region
11:45	Summary and Next Steps – CETF and Co-Sponsors
Noon	Adjourn

Topics for Facilitated Discussion

- What are the major gaps in broadband availability and digital literacy?
- What are the targets of opportunity and assets for the application of broadband access and use – including economic and small business development, eHealth and telemedicine, distance learning and workforce development, e-government solutions and services, “green” strategies, community revitalization and emergency services?
- What are the kinds of public policies, plans and ordinances that local governments can adopt to promote broadband infrastructure, deployment and digital inclusion, in general plans, public works, economic development strategies, and other areas?
- What other strategies and actions are needed from regional public and private sector partners to advance broadband infrastructure and applications?
- How can CETF and the State Broadband Taskforce assist the Region?

San Diego – Imperial Border Regional Roundtable

July 10, 2008
Joan B. Kroc Institute for Peace and Justice
University of San Diego
SUMMARY

"We are on the cutting edge of telecommunications in San Diego. California will benefit from the leadership of this region. San Diego is relatively connected. We should be asking ourselves what we should be doing regarding low adoption rates."

Julie Meier Wright, President and CEO
San Diego Regional Economic Development Corporation

"Access to broadband is vital for our economy, education and healthcare. Affordability is still a concern but the situation is improving as the cost of broadband is getting lower. We really need to educate people about the online comprehensive services that are available."

Bill Geppert, Vice President and General Manager
Cox Communications, Member of the Governor's Broadband Task Force

Overview of the San Diego – Imperial Border Region

The San Diego-Imperial Region, also known as the Border Region, encompasses San Diego and Imperial Counties along the border with Mexico. The region covers a wide range of terrain, from seventy miles along the Pacific coast to mountainous areas in the Northeast part of San Diego County, and the Sonoran Desert in the eastern areas. There is great variation in population density and development patterns, with the majority of the population residing in the coastal areas. San Diego County has 18 incorporated cities, with about 15 percent of the population living in the unincorporated area (481,000 in 2007). The population of San Diego County was estimated to be more than 3.1 million persons in 2008, growing by 11.8% or almost 332,000 persons since 2000. The City of San Diego is the second largest city in the state. By contrast, although Imperial County is slightly larger in geographic size than San Diego County, it has 7 incorporated cities with a total population countywide estimated at 176,000 in 2008, with its largest city of El Centro at approximately 43,000 persons.

The San Diego Regional Economic Development Corporation (EDC) reports that San Diego has the most diversified high-tech economy in the nation, with more than 3,000 technology-producing companies in the areas of biotech, communications, software, Internet and information technology companies. The American Electronics Association (AeA) estimates that tech companies represent nearly ten percent of the region's private sector workforce. Telecom and wireless industries are a dominant part of the economy,

representing the second largest tech sector with an estimated 15,800 employees in 2006.[1] According to Fast Company magazine in 2004, San Diego had the highest concentration of wireless employment in the country, and had more than 75,000 miles of underground fiber optic cable, more than any other region in the country.[2] Imperial County's economy has been based historically on agriculture. Major industry clusters today include agri-business, logistics and international trade, construction and alternative energies. Both counties are major corridors for tourism, trade and commerce between the United States and Mexico.

According to the Governor's California Broadband Task Force (CBTF), wireline broadband is available to 95% of the households in the Southern Border Region.[3] However, maps illustrating wireline and wireless availability show major gaps in coverage and slower service in large parts of both San Diego and Imperial Valley County. The Task Force estimated that there were 119 communities in the region without any broadband. While 78% of the households in the region were estimated to have a computer in 2005, only 48% had adopted broadband (p. 25). Research indicates that subscription levels are closely correlated with income, education and ethnicity.

San Diego County is consistently rated as one of the best places to live based on the high quality of life, strong economy, and excellent educational institutions. Imperial Valley is one of the poorest counties in the state and the country. In June 2008, California's unemployment rate was 7%, compared to 5.9%for San Diego County and 22.6% for Imperial County. In 2007, 29% of the population of San Diego County was estimated to be Hispanic, with 52% White, 5% African American and 9% Asian (www.sandag.org). In 2005, the population in Imperial County was estimated to be 18% White, 75% Hispanic and 4% African American (www.ivedc.org). A new survey by the Public Policy Institute of California (PPIC) (June 2008) indicates wide disparities in rates of both computer and Internet use by Latinos compared to Whites, Blacks, and Asians. In addition to Latinos, sharply lower rates of broadband use are evident among older adults, non-college-educated adults, less affluent residents, renters, those with disabilities, and immigrants.[4] These patterns occur in both urban and rural areas.

Significant Initiatives in the San Diego/Border Region

- The San Diego Futures Foundation (SDFF) was founded in 1999 by a consortium of technology companies providing information technology and telecommunications services to the County of San Diego. As the County began providing services online, SDFF was established to help underserved populations have access to "e-government" services and the training necessary to use new technologies. SDFF recycles computers and other equipment, provided primarily by the County through its current technology provider Northrop Grumman, and has donated 20,000 computers to San Diego non-profit organizations, which in turn provide computers to families. The CETF investment in SDFF is designed to enable SDFF to formalize a partnership with the Metro Area Advisory Community Project and others to reach families directly, provide discounted services for broadband, and develop a system to maintain communication with target families. SDFF will be distributing 1,600 computers to families in the next three months and plans to add more families to the program in the future. SDFF will focus on reaching those with disabilities and foster children. SDFF has training programs on use of technology and has provided 18,000 hours of technical support to non-profits, community-based organizations, schools and foster families. (www.sdfutures.org)

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[1] AeA, press release for Cybercities 2008: An Overview of the High Technology Industries in the Nation's Top 60 Cities, www.aeanet.org .

[2] San Diego Regional EDC, Community Overview, www.sandiegobusiness.org

[3] "The State of Connectivity: Building Innovation Through Broadband," Governor' Task Force on Broadband, p. 33, 2008.

[4] "California's Digital Divide," Just the Facts, Public Policy Institute of California, June 2008

- The City of San Diego Science and Technology Commission was created several years ago to advise the City on matters which impact both the technology industry and scientific research institutions. In 2004, a Public Broadband Access Working Group was formed to work with the City to increase adoption. In 2004 the San Diego Regional Technology Alliance (RTA) conducted a study for the Commission entitled "An Examination of the Impact of San Diego's Digital Divide on Regional Economic Prosperity." The report found a persistent digital divide among some ethnic and income groups in certain parts of the County, in spite of generally high levels of computer literacy and internet access in the region. The Commission's focus has since shifted to address green technology opportunities. The San Diego Regional Chamber of Commerce has formed a Technology Committee, focused on digital inclusion, whose Vice-Chair is the past Chair of the City's Science and Technology Commission.
- The Lemon Grove School District has an innovative program to erase the Digital Divide, facilitated by the Classroom of the Future Foundation with technology contributed by business partners with Cox Business (part of Cox Communications) and Motorola. Lemon Grove is a low-income community where English is the second language for 17% of the students. The School District provides no-cost broadband access to the home of every middle-school student. As only 16% of students reported that they possess computers at home and only 7% reported Internet access, the District worked with Cox Business to create a private education network called Project LemonLINK that connects schools, homes and city government facilities. The schools provide centrally housed educational software and content that can be accessed from any computer in the network. Cox provides a dedicated fiber-optic connection that links the homes to the District's Internet network. Cox also provides 20Mbps of filtered, managed access to the public Internet and 5 ISDN T-1 lines to handle the district's telephony needs. The District provides Internet services for other city agencies, which offsets its costs. Both students and parents have access to resources and online curriculum at all times. Cox Communications is the largest cable system in California, with more than 700,000 customers in San Diego serving 19 communities. (www.lemongroveschools1.net)

"I see the Digital Divide as an economic and social divide. The basis for community development is informed citizens. There is no greater way to achieve this than using technology as a tool to inform, educate and empower."

Paul Hernandez, Chief Program Officer, Metro Area Advisory Community Project
Member of the Governor's Broadband Task Force

- The California Institute for Telecommunications and Information Technology (Calit2) is one of four UC California Institutes for Science and Innovation focused on applying leading edge technologies to application areas of importance to future economic prosperity and quality of life. Calit2 uses emerging telecommunication and information technologies in "living laboratory" test beds developed with stakeholders from the public and private sector to create solutions in critical areas including: health care, the environment, emergency response, and technology based economic development. The Institute has interdisciplinary and multi-campus teams from U.C. San Diego and U.C. Irvine, and works with faculty, students, government, industry and community partners. Calit2 has collaborative partnerships with more then 140 private companies, oversees the administration of over 350 federal peer reviewed science grants, and works with students in hands-on projects to help enhance education and prepare the science and engineering workforce of tomorrow. (www.calit2.net)
- CommNexus San Diego is a non-profit network of telecommunications industry companies, defense industry companies, service providers, professional trade organizations and local government. Its mission is to accelerate the formation, growth, and success of communications technology and service companies in the region. Initiatives focus on introducing regional companies to multi-national corporations. Internships are developed collaboratively with local higher education institutions and aim to grow a talented workforce and showcase the region as a leading center of innovation. (www.commnexus.org)
- Classroom of the Future Foundation's (CFF) mission is to inspire educators and business leaders to embrace new learning technologies and innovative practices to improve academic achievement of

school children in the San Diego region. CFF partners and investors include the region's key technology innovation firms and educational institutions. Demonstration programs include: a professional technology development program, established by the San Diego County Office of Education in three regional technology centers; and a web-based program that incorporates wireless Internet technology for school to home connections called the One-to-One Academy, inspired by the Lemon Grove School District. (www.classroomofthefuture.org)

- The San Diego Regional EDC, the San Diego Association of Governments (SANDAG) and other partners are collaborating on a regional strategy to increase broad-based prosperity (See San Diego's Regional Economic Prosperity Strategy – www.sandag.org) through the growth of high-wage industries and investments in a skilled workforce and infrastructure including telecommunications. These investments will support growth and innovation in the region's critical technology-based industry clusters, a focus of the EDC's Partnership for the Global Economy (www.sandiegobusiness.org). The EDC is collaborating with the Imperial Valley EDC and other partners on a cross-border industry cluster initiative to increase regional competiveness and improve the standard of living for the entire region.

"Broadband is not only about high speed connection; it is about all the things you can get with a high speed connection, such as access to crucial information. Our job is to make sure people are aware that broadband is affordable and available so they can adopt technology."

Jeff Hancock, Vice President
San Diego Futures Foundation

- The Metropolitan Area Advisory Committee (MAAC) Project is a multi-purpose social service agency serving communities throughout San Diego County, helping individuals and families to become self-sufficient. MAAC serves over 35,000 individuals per year with a state of the art charter school, technology centers and other programs to build community. MAAC is partnering with the San Diego Futures Foundation to provide computers and technology services to families. (www.maacproject.org)
- Imperial County has broadband infrastructure through a fiber loop that builds off of the State's CENIC education network. The public utility in the region organized to access this infrastructure and has developed a cost effective model to build and maintain the network.
- AT&T plans to invest more than $70 million in Greater San Diego to expand wireless coverage in 2008. The company also plans to add at least 30 new cell sites in San Diego this year to further expand its higher-speed wireless network by the end of 2008. AT&T has introduced a third generation (3G) wireless broadband network in the San Diego area, so customers can quickly access wireless content such as videos, entertainment, news and weather on handsets, and faster speeds for laptop connections. AT&T is also working on a path to develop a 4G network.
- Centre City Development Corporation is the public, non-profit corporation created by the City of San Diego to implement downtown redevelopment projects and programs in partnership with the private sector. The Corporation, in partnership with the San Diego Unified School District, is planning a high tech high school. The Corporation also is proposing standards for a climate neutral green city which will require new technologies that link building monitoring systems and a grid of wave technology sites. (www.ccdc.com).

Challenges to Accelerating Broadband Infrastructure and Use

- The border region exhibits disparities in broadband access and adoption that reflect disparities in ethnicity, income and other issues such as cultural barriers, disabilities and geography.
- The 2004 Regional Technology Alliance study for the City of San Diego Science and Technology Commission identified the following conclusions: most of the region's industry clusters require computer literacy as a basic skill; several communities within the City of San Diego had the lowest levels of computer literacy in the region; comfort with computers and the Internet directly correlates with

income; computer ownership is growing but Latinos are the only ethnic group struggling to keep pace; San Diegans who own computers are increasing access through broadband at a high rate, but without a home computer access remains a challenge; and the use of a computer is particularly important in the search for jobs and training for respondents in lower income brackets. The study also found that the City risks a significant "opportunity cost" if the digital divide continues, due to the critical link between a skilled workforce and growing important regional industry clusters.

- Many families do not have access to computers or to broadband resulting in disparities in educational performance. This is an educational equity issue that has resulted in public policies targeting families such as the Governor's mandate that 8th graders be proficient in algebra and the requirement that California schools provide educational materials through the internet. Unfortunately, due to access or cost the school-to-home connection has not taken place at the level that is necessary to engage all students, parents and other family members.
- Broadband is not perceived as a high priority by families that are financially stressed. It is important to carefully define who the beneficiaries of broadband technology are – which include not just individuals but also government, education and business. There is an absence of "lead-in" applications that will engage target populations in activities that prompt interest and increased adoption rates.
- Students are often more knowledgeable about technology than their teachers and there is a critical need to train teachers in technology.
- The rural remote areas of eastern San Diego County have significant gaps in telecommunications service and access to broadband. Children may have access to broadband in school but have dial up service at home. Cell phone coverage is sporadic and the forest fires destroyed many cell towers making the problem worse. T-1 lines go down in the rain and the cost of connectivity is high even with the Teleconnect Fund discount. These gaps are a huge barrier to eHealth and telemedicine services, which are especially important for seniors. It is difficult to attract medical specialists to the region, so residents need access to specialty hospitals and need to connect to sister clinics to build volume. Insurance regulations don't always cover patients to "see" specialists through telecom.

"What we have in San Diego is a unique ecosystem for wireless. We're not replicating Silicon Valley, we're moving toward wireless. We are mobile; our kids' generation is mobile. The focus should be on moving broadband to the masses by using wireless mobile equipment such as smart phones."

Rory Moore, Director and CEO
Commnexus San Diego

- Many lower income and ethnic groups do not understand and/or do not feel comfortable using computers and broadband, and they have concerns about issues such as cost, privacy and identity theft. People often don't understand the benefits of broadband and not recognize the value of developing the skills and acquiring the necessary hardware.
- The City of San Diego's Broadband Access Work Group was disbanded and there has not been coordinated policy attention on addressing the Digital Divide since it went away.

Opportunities for Increasing Broadband Adoption

- San Diego is a leader in telecommunications technologies globally. The industry is characterized by rapid levels of innovation and creation of new technologies and services that will accelerate access to and use of telecommunications services.
- There are many public-private sector partnerships with telecom companies in the region, as well as partnerships with school districts and community-based organizations.
- Examples such as LemonLINK are making Internet access a way of life for many families through education. If children are growing up in a connected household, the Digital Divide will narrow over time. Children will be least resistant to lead-in applications and will involve adult family members in the use of technology.

- Broadband services are becoming more affordable, the range of applications is increasing, and the bundling of services will be even more cost effective over time.
- Use of technologies for health care applications has great potential.
- Wireless will allow for increased accessibility and open up new categories of applications.
- There is a melding of entertainment and communications and the importance of entertainment as a gateway to technology applications should not be underestimated. Youth are early adopters of new technologies, and their use of technologies for entertainment and other applications will help reduce the Digital Divide over time.
- Projects and technologies are being promoted as part of "green" solutions for uses such as telecommuting and teleconferencing, and this will help increase penetration. This is also an opportunity to help in areas like reducing congestion at the border.
- Leadership organizations are focusing on developing a skilled workforce to create high wage jobs and support the growth of the region's technology-based industry clusters, and to develop strategies for digital literacy and inclusion as a pathway to prosperity.
- E- Rate funds, the California Teleconnect Fund and support from CETF resources can be leveraged to promote increased availability of applications and use of broadband technology.
- The resurgence of interest in Career Technical Education can bring new resources for technical education and should be part of public planning processes.
- The Children's Partnership is working to ensure that every child will have broadband on his/her computing device, working with school districts to encourage best practices in adoption.

"***To achieve real digital inclusion it is going to take a tremendous community effort. It is crucial we continue sharing information and resources and conducting quarterly meetings on broadband access and digital inclusion."***

Martha Dennis, Vice Chair
Technology Committee, San Diego Regional Chamber of Commerce

Consensus on Priority Strategies and Next Steps

- **Convening Process:** Roundtable participants agreed that the convening process should continue. The Roundtable format is valuable on several fronts, including: sharing information about what activities are underway; making personal connections to others in the field; facilitating the adoption of best practices; and elevating public policy attention to broadband deployment and programs that address the Digital Divide. Quarterly regional meetings were proposed and rural organizations and non-profits should be represented.
- **Community Partnerships:** Private sector companies should continue to partner with community based organizations (CBOs) to make sure that the applications that roll out from the private sector are useful and address issues of concern of underserved communities.
- **Adoption Strategies:** Develop a strategy to bring models like LemonLINK and San Diego Futures Foundation partnerships to scale. Education should be considered the preeminent strategy to reach the goal of digital inclusion. Partners should start looking for funding to connect schools to homes.
- **Beneficiaries:** Focus on beneficiaries, benefits and applications. Conduct a requirements definition study for San Diego so the beneficiaries and the applications that matter most are clearly defined. This will provide a standard framework that won't depend on the transient nature of technology. Identify lead-in applications. Consumers will see benefits and vendors can provide what match consumer needs.
- **Public Awareness and Outreach:** Conduct a public awareness and outreach campaign to educate people about the value of broadband and how technology can be used to access important government services and information for making vital community connections.
- **Wireless:** Emphasize wireless technologies which will impact mobility and open up new categories of applications, for which San Diego is a leading innovator.

- **Entertainment Applications:** Bring education and entertainment together to develop content that attracts users and helps increase adoption of technologies and applications. The adage of the entertainment industry should serve as a model: content drives adoption.
- **Rural Areas:** Address access and cost issues in rural areas. Create bridges between urban and rural areas. Assess health insurance policies to see if coverage includes specialists who treat patients remotely. The California Telehealth Network being developed in conjunction with the FCC Rural Health Care Pilot is an opportunity to develop the telemedicine and eHealth network in the region.
- **Universities:** Research and development play a critical role in addressing digital inclusion programs. Partnerships between educational institutions, private companies and government are essential. Encourage universities to pioneer new technologies and applications. In-kind and equipment donations from the private sector can speed up adoption and access.
- **Training:** Provide teachers with better information and support for their use of technology.
- **Learning Module:** Develop a middle school learning module that gets to the math, physics and new materials that underpin broadband technologies. The module would help fill a critical knowledge gap and create opportunities for teachers to work with the private sector as partners.
- **Regulatory Framework:** Ensure that general plans include policies for broadband to be built along with infrastructure and include rights of way for broadband deployment. CETF is developing a toolkit that will assist local governments to coordinate land use planning and infrastructure investments for broadband.
- **Green Solutions:** Broadband has a role to play in helping regions meet their requirements to reduce greenhouse gas emissions. Develop metrics up front. (AeA has projected measurements of the net decrease in carbon impact by broadband usage).
- **Connectivity**: To increase connectivity in San Diego work through CENIC to make schools more of a center point. Address the policy challenges on limitations of access for the CENIC network. Look at the Imperial County model for building a fiber loop through schools and community partnerships.
- **White Space:** Consider encouraging an FCC policy to open "white space" – unused TV channel frequencies to transmit and receive broadband - to tribes, rural municipalities and other so they can provide services to their underserved communities.
- **Regional Coordination:** Identify opportunities to expand connectivity between the border region and Mexico on issues such as economic development, telemedicine and distance learning.

Roundtable Leadership Participants

Philip Bona, Assistant Vice President – Architecture and Planning, Centre City Development Corporation
Kevin Carroll, Executive Director, American Electronics Association, San Diego
Mike Casey, Executive Director, Information Technology, San Diego Unified School District
Raquel Cinat, Associate Vice President, California Emerging Technology Fund
Steve Clemons, Director of Information Technology, San Diego County Board of Education
Amy Cline, Principal, Sagewood Group
Martha Dennis, Vice Chair, Technology Committee, San Diego Regional Chamber of Commerce
Tom Dillon, Board Member, Classroom of the Future Foundation
Clarissa Falcon, District Director, Office of Senator Denise Ducheny
Bill Geppert, Vice President and General Manager, Cox Communications; Chair, San Diego Regional Economic Development Corporation
Megan Graulich, Executive Director, San Diego Futures Foundation
Jeff Hancock, Vice President, Community Programs, San Diego Futures Foundation
Paul Hernandez, Chief Program Officer, Metro Area Advisory Committee (MAAC) Project
Scott Himelstein, Director, Career Technical Education Initiative, San Diego Regional Chamber of Commerce
Matthew Hurley, Senior Vice President, Oppenheimer & Co., Inc.
Trish Kelly, Consultant, California Emerging Technology Fund
Rich Kenney, Engineer, ThinkGroup, Inc.
Mark Leslie, Vice President, AT&T
Irene Linayao-Putman, Project Director, Union of Pan Asian Communities (UPAC)
Colin MacKinnon, CEO and Founder, CustoMatrix
Farshad Mohamadi, Senior Director, Mobile Video Solutions, Motorola
Rory Moore, Director and CEO, Commnexus San Diego
Louis Nava, Program Director, San Diego Broadband Initiative, San Diego Futures Foundation
Mary Newson, Consultant, California Emerging Technology Fund
Dale Osborn, CEO and Founder, ThinkGroup, Inc.
Antonio Pizano, President and CEO, Metropolitan Area Advisory Committee(MAAC) Project
Matthew R. Rantanen, Director of Technology, Southern California Tribal Chairmen's Association
Teri Sanders, Learning Technologies, Imperial County Office of Education
Judith Shaplin, CEO and President, Mountain Health & Community Services, Inc.
Jerry Sheehan, Manager for Government Program Development, U.C. San Diego, Calit2
Randy Ward, Superintendent, San Diego County Board of Education
Susan Wayo, Principal, The Gundreau Group, LLC
Julie Meier Wright, President and CEO, San Diego Regional Economic Development Corporation
Sunne Wright McPeak, President and CEO, California Emerging Technology Fund
John Yochelson, President, Building Engineering and Science Talent (BEST)