RIVERSIDE COUNTY BROADBAND MASTER PLAN

RIVCO CONNECT

ACCESSING THE FUTURE

The RIVCOconnect Project Team

Steve Reneker – Chief Information Officer, County of Riverside
Tom Mullen II –Chief Data Officer, County of Riverside
David Littell –Information Technology Officer II, County of Riverside
Joe Van Eaton, Partner, Best Best & Krieger, Attorneys at Law
Gail Karish, Partner, Best Best & Krieger, Attorneys at Law
Seth Merewitz, Partner, Best Best & Krieger, Attorneys at Law

The RIVCOconnect Project Team would like to take this time to thank our stakeholders – the Riverside County Board of Supervisors and County Executive Officer Jay Orr, the 28 cities, 12 tribal nations, public utilities, special districts, local council of governments, and the other County Departments who are supporting and participating in this worthy effort to bring Gigabit-speed fiber optic service to every home and business across the County.

RESOLUTION NO. 2016-197 SETTING FORTH SUPPORT FOR RIVERSIDE COUNTY'S BROADBAND FIBER TO THE PREMISE MASTER PLAN

WHEREAS, all Riverside County residents, businesses and institutions need high quality gigabit broadband services where they live, work, learn and play; and

WHEREAS, closing the digital divide is important and provides long-term community benefits that include the ability to fully engage in the digital economy, access existing and emerging services, and expands economic opportunities; and

WHEREAS, high speed broadband enables improved healthcare access, treatment and information; and

WHEREAS, high speed broadband enables new business models, creates business efficiencies, drives job creation, and connects goods and services to customers and partners worldwide; and

WHEREAS, high speed broadband enables changes in how we access educational resources, collaborate, conduct research and continue to learn anytime, anyplace and at any pace; and

WHEREAS, high speed broadband enables greater civic participation and brings communities together, helps improve public safety, and makes our transportation systems more resilient and efficient; and

WHEREAS, the County of Riverside and other community partners can work together to affect the deployment decisions of broadband providers by lowering the cost of entry and operation of systems in our communities, reduce the risks of delays during the planning, permitting and construction phases, provide opportunities for increasing revenue, and creating new avenues for competitive entry; and

WHEREAS, the County of Riverside supports the adoption of consistent expedited broadband permitting processes throughout participating jurisdictions; and

WHEREAS, the County of Riverside supports the concept of 'Dig Once' whereby conduit is installed for future or immediate use for fiber optic cable installation whenever underground construction occurs in a roadway; and

WHEREAS, the County of Riverside supports the aggregation of demand by all participating communities as anchor tenants of selected provider(s) if acceptable services are available.

NOW, THEREFORE, BE IT RESOLVED on this 20th day of September 2016 that the Riverside County Board of Supervisors does hereby support the Riverside County Broadband Master Plan and the development of a Request for Participation (RFP) for the deployment of gigabit fiber services to all homes, businesses and institutions countywide.

Kevin Jeffries
First District

John Tavaglione
Second District

Chuck Washington
Third District

John Benoit, Chairman
Forth District

Marion Ashley
Fifth District

Executive Summary

In large segments of Riverside County – as well as across the country as a whole – residents have no access to high-speed internet service or broadband. Approximately 58% of the total population who are without broadband reside in rural, unincorporated, and tribal communities. These Riverside County residents, numbering almost 100,000 in total, are the individuals most at risk of falling behind in the 21st Century world of information, the 21st Century economy, and occupy the "have-not" side of the Digital Divide. RIVCOconnect is a Riverside County initiative, supported by the Riverside County Board of Supervisors and Executive Office, and led by Riverside County Information Technology (RCIT), that seeks to remove the barriers that today obstruct service providers from building out an improved communications infrastructure to 21st century capabilities. A principal goal of this initiative is to present a Request for Participants (RFP) in early 2017, to invite the private sector, either incumbent vendors or business entities new to the County, to work in cooperative fashion and create partnerships to deliver Broadband services Countywide at speeds of 1 Gbps and above. Another goal of RIVCOconnect is that this service be provided to all residents at an affordable cost, one that allows our citizens to access high-speed connections to information, entertainment, health care, government services, employment opportunities, and educational growth. This collaborative effort calls for the development of expedited permitting procedures, providing low-cost locations for broadband equipment and offering incentives such as anchor tenancy. These efforts will be required of not only the County, but cooperation will be sought from our twenty-eight cities, numerous unincorporated locations, and twelve tribal communities as well.

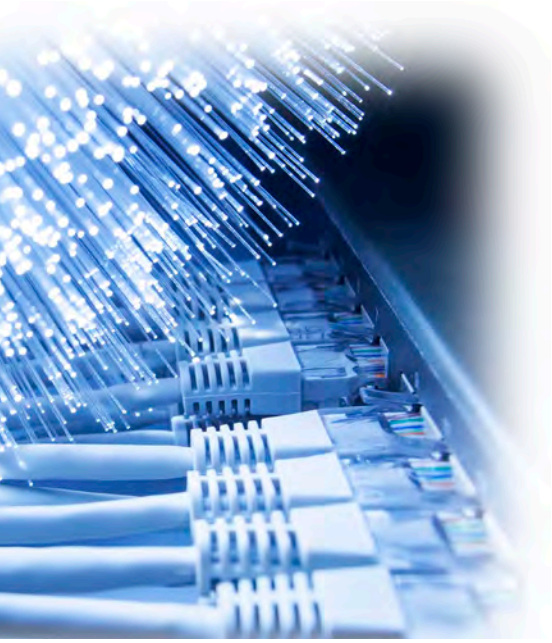
It is not intended that this new broadband infrastructure and service will be owned and operated by the County of Riverside or any other public agency. Rather, the goal is to create the conditions for the private sector to see the new opportunities that will lead to the construction of the largest such high-speed broadband network in the country. Gigabit-speed Broadband will pave the way for economic growth, educational advancement, rising employment in professional and technical lines of business, and increased security for the County's seniors.

1. Purpose of this Plan

The County will seek out broadband providers who will work with it to ensure that every home and every business in the County has access to high-quality broadband services, at affordable rates.

To that end, the County is proposing to take a series of steps (some organizational, and some involving collection and creation of databases) that: (a) will make it easier and less expensive for broadband providers to plan and install new broadband networks, or extend and enhance existing broadband networks in the County; (b) will allow the County to serve as an anchor tenant on selected broadband network(s), and provide selected broadband providers additional opportunities to identify and take advantage of new revenue opportunities in the future. The County then intends to issue a Request for Participants (RFP) to identify companies interested in leveraging these efforts and incentives to install new, or extend and/or enhance existing, broadband networks to offer services via fiber to the premises (FTTP) and to the business.

Because broadband deployment is capital-intensive and benefits from economies of scale, it is anticipated that



the RFP will be more successful if it is issued collaboratively with cities in the County, tribal nations and special districts (as appropriate), and if those entities and other key governmental agencies, including schools, housing authorities and health care networks, as well as private companies, work together through the development of the RFP to aggregate demand and identify resources that may encourage expansion of broadband throughout the County.

By adopting this Master Plan, the County will establish a road map that can be used by County departments to work together to develop the RFP. This plan can also serve as a model to be adopted by the cities, tribal nations and special districts who wish to collaborate with the County in this worthwhile initiative. With the goal of encouraging the County's cities and tribal communities' adoption and endorsement of this plan as it relates to areas within their jurisdiction, and securing their full commitment to working with the County as this process moves forward, attached to this Master Plan is a form of Resolution that these collaborating partners can sign. Others, such as special districts, other public agencies and private parties are also invited to commit to identifying resources that can be made available to potential entrants, and to express their interest in joining as an anchor tenant where appropriate.

If this plan is adopted, the County would move immediately to work with other communities, agencies and tribal nations throughout the County, and to obtain information from private companies and other public agencies with a goal of issuing a collaborative RFP by the 1st quarter of 2017.

A significant part of this plan involves working with broadband providers, and with other organizations in the County in an effort to close the Digital Divide[1]. This is, and has been, a priority of the County, as the ability of residents to participate fully in the economy, and the ability of the County and other entities (health care organizations and schools, for example) to deliver services efficiently depends more and more on widespread broadband availability and adoption. But it is also beneficial to broadband providers, as it creates new market opportunities for them.

The Digital Divide is, in many cases, associated with income, age and ethnicity. In Riverside County, the divide is geographic as well. Given the low population densities and remoteness of some parts of the County, it may not be economically feasible to close the Digital Divide by deploying FTTP without significant government assistance, and in some locations wireless solutions may be the only practicable alternative. Thus, as part of this plan, the County does intend to identify resources, and to work with existing organizations to create opportunities for provision of enhanced wireline or wireless broadband networks throughout the County.

2. The Need for the Network

Although California is home to a wellspring of innovation that has lead the growth and evolution of information technologies, the use of broadband by California residents is only approximately equivalent to the national average. Riverside County especially needs high-quality broadband to entice businesses seeking expansion opportunities, especially given its focus on sustainable growth. According to the California Department of Finance, the County's population grew from approximately 1.2 million in 1990 to approximately 2.19 million as of the 2010 census. Growth since 2000 has been most rapid, and driven largely by migration: inter-state migration, intra-state migration, and immigration[2]. Growth in employment and housing has also been substantial[3].

Among the key benefits of broadband identified by the recent Broadband Opportunity Council report of the U.S. Department of Commerce and U.S. Department of Agriculture:

- Broadband enables greater civic participation, provides tools for open government and streamlines government processes.
- Broadband enables changes in how we access educational resources, collaborate in the educational process, conduct research and continue to learn anytime, anywhere and at any pace.
- Broadband enables improved healthcare access, treatments and information.
- Broadband enables new business models, creates business efficiencies, drives job creation, and connects manufacturers and store-fronts to clients and partners worldwide.
- Broadband can also help bring communities together and improve public safety, reduce traffic and emissions, and make our transportation systems more resilient and efficient.
- Broadband provides a foundation for many of the advancements we will see across industry sectors in the coming years[4].

To be sure, there are several companies that offer broadband services to businesses and residences in the County, and some providers even offer fiber to the home or business. But in many areas options are limited, or prices for installation and monthly service are too high. In the eastern deserts and rural parts of the County, there are many residences and business that have limited or no access to high speed broadband. But even in areas of denser population, access to abundant broadband may be limited. The Inland Empire Plan identified at least one instance where a business relocated elsewhere because of the absence of adequate broadband resources[5]. The difference in price and quality of services provided where residents and businesses have access to competitive advanced broadband networks, and those where they do not is significant. At the simplest level, many residents in the County pay $60 a month for broadband services that offer 60% of the download speeds and 5% of the upload speeds offered by a fiber network in Chattanooga, Tennessee for the same price – a gap that can be particularly important for home-based businesses[6]. For $10 more, the Chattanooga system offers an Internet service that offers 17 times the speed of the connection offered to residences in Riverside County, and 250 times the upload speed. If the County encourages new entry and new investment, the financial and technological benefits will be sizeable.

Companies or entities willing to take a leadership role in building this new broadband infrastructure must be ready to meet a great variety of needs, notably those of government agencies, of businesses, and of residents and community non-profit organizations. And for all of these constituencies, but particularly government agencies, the new infrastructure must be able to meet a range of "Smart Community" needs, including emerging Internet of Things (IoT) technologies, that are part of essential government services[7].

3. Encouraging Faster Deployment – the Problem and Approaches To Solving It

While the economic development benefits to the County of universally available broadband are clear, incentivizing construction of such a network is not simple.

Barriers to the deployment of broadband include the very size, scale and topography of Riverside County. With 7,300 square miles, the County is larger than Connecticut and is nearly as large as New Jersey. In this century's first decade, the County's population grew to 2,189,641, a rate of 41.6% with no slowdown of growth expected, particularly in the more urban areas of the County. Yet the eastern deserts are likely to remain sparsely populated, at least in large part. Additionally, any builder seeking to deploy broadband infrastructure must be prepared to plan for the cost and potential delay that may result from the need to obtain information from, and to deal with, almost two dozen local governments (each engaged in separate processes of planning and governance,) as well as numerous special districts and state and federal agencies. In addition, the communications marketplace is dominated by well-entrenched incumbents that can make competitive, expansive deployments risky for new entrants, or for those smaller existing companies that currently serve limited geographic or economic markets. Due to state laws, almost any entity can enter the market and use publicly-owned rights of way at no charge, serving whomever they want, wherever they want, so the County is not in a position to simply require network expansions as a condition of operation within the County. That means it must use "carrots" rather than "sticks" to encourage deployment. Getting over these hurdles requires a basic understanding of the economics of telecommunications systems – and how decisions are made to expand (or not expand) deployment.

The free market has presumably led to the deployment of broadband networks where build-out makes economic sense under the status quo. While deployment can be expected to continue, it is our stated goal to ease further and more advanced deployment given the importance of broadband. In order to encourage faster deployment than would otherwise occur, the status quo must change. The Next Generation Network Connectivity Handbook, by Levin & Linn (July 2015) notes that deployment decisions are driven by the following formula: the "new or incremental Capital and Operating Expenses" of the new network[8] must be less than the risk-adjusted new or incremental revenues, plus the benefits to the provider's system (decreased maintenance costs, increased scale), plus the potential lost revenues that may result from competition if the network is not enhanced. To

Figure 1: Broadband Cost-Benefit Equation, Levin & Linn, p. 6

put it another way: an incumbent will invest to improve existing systems if the cost of doing so is rewarded by additional revenues, reduced costs, or by preventing loss of market share. New entrants will come in if the investment can be expected to yield an adequate return. Graphically, the formula looks like this:
Hence, as Levin & Linn suggest, in order to encourage more rapid or widespread deployment than would occur absent any government action, governments must affect the outcome of the deployment decision by:

- *Affecting the costs of entry and operation*
- *Reducing risks (by avoiding project delays, for example)*

- *Increasing revenue opportunities*
- *Increasing system benefits*
- *Creating new avenues for competitive entry, which will lead incumbents to improve their own networks.*

Experts suggest broadband deployment can be encouraged through three key strategies[9] :

- **Asset utilization and improvement.**

  Here, "the key inquiry is what assets does a city have that can be provided at no or little incremental cost that improve the economics of deployment and operations. This can include: physical assets, like rights-of-ways (RoW's), utility poles, conduit, building, etc.: information assets, like information regarding conduit, ducts, and other RoW's; and processes to improve current assets, such as ensuring that make-ready work is done expeditiously, coordinating with new providers to save costs or allowing them to perform work themselves through approved contractors." [10]

- **Regulatory flexibility to accommodate new business models.**

  "The key inquiry here is what rules the city has that may have made sense in a different time and with a different market structure that in today's market creates a barrier to an upgrade or new deployment. For example, all the projects with national ISPs, including Google Fiber, have allowed neighborhood-by-neighborhood builds, which significantly reduces capital expenditures and risk through a pre-commitment strategy." [11]

- **Demand Aggregation.**

  "The key inquiry here is how to aggregate demand to demonstrate to existing players the value of an upgrade and to potential new entrants the opportunity in the community. This can be done on both the institutional and residential level."[12]

As part of the first strategy, the County would create an accessible database allowing potential providers to identify elements necessary for successfully building infrastructure. This database will include County properties and public assets that can be used by fiber optic utilities, and a master uniform zoning system.

As part of the second strategy, the County would develop plans and processes for streamlining permitting and contracting for resources that may be useful in construction of broadband networks. While the work may not be done before the RFP is issued, it is strongly suggested that the County commits to developing a process for approving placement of wireless facilities in the rights of way in conjunction with any large-scale fiber deployment. Those wireless facilities can be used to deliver broadband services to potential customers who may not be reachable by fiber, and as important, can be leased to cellular providers and provide additional revenues for a broadband network.

The third strategy allows providers to aggregate demand, including demand for government telecommunications purchases. Demand aggregation can include creating opportunities for public entities to act as anchor tenants for proposed networks. But it can also include building on the natural advantages of the County – its high growth and development rate – to ensure that there are increasing market opportunities for new entrants through development policies that encourage deployment of broadband

infrastructure. The end-result of this process is that Riverside County will be pursuing policies that "lower input costs for adjacent market competition and network upgrades"[13], hence encouraging efforts to build an FTTP network throughout the County.

4. How Adoption of This Plan Can Help Deployment

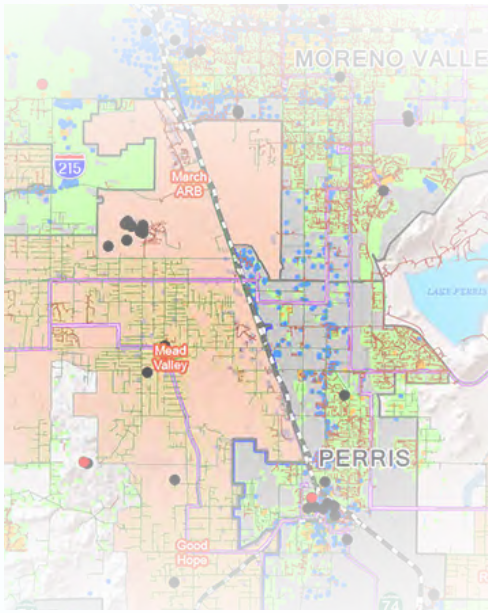
The RIVCOconnect initiative is taking steps to speed deployment of broadband networks throughout the County by reducing costs, reducing risks, increasing opportunities, and creating avenues for competitive entry. The best way to turn this work into results if for County leadership to affirmatively approve this Master Plan. This will not only sends a strong message to potential service providers that the County is committed to deployment, it will provide a roadmap to be followed by our partnering cities, tribes and districts across the County who will find great benefit in joining the effort to encourage high-speed broadband deployment. It is envisioned that the County will spend significant efforts seeking public and private partners to coordinate efforts so that Riverside County becomes highly attractive to potential broadband network investments and the increased economic development opportunities that will follow.

After completing the shorter-term steps detailed in the remainder of this plan, the County will issue an RFP. It is believed that the RFP will be fully supported by the other municipal jurisdictions within the County and that they will wish to collaborate in the effort. By issuing an RFP, the County provides an immediate opportunity for private service providers to take advantage of the ongoing efforts and help build out a 21st century broadband network. The longer-term steps reflect a commitment by the County to ensure that, to the extent possible, investments made in broadband networks here will yield benefits to providers and their investors, as well as the County and its residents. These efforts do not prevent any governmental entity from building its own network – in fact, the steps that are being taken in preparation of the RFP would help deployment of a publicly-owned or a privately-owned network. The efforts do not assume that the RFP will solve all broadband issues in the County by resulting in construction of fiber to every home or business in the County. While the goal is to take steps that result in the maximum deployment of fiber, other solutions or other approaches may be required to reach target areas particularly in the eastern portion of the County. This may be possible by taking advantage of grant opportunities, as it has been doing and

expects to continue to do through the Inland Empire Broadband Regional Consortium, and by taking advantage of existing municipal fiber, such as the City of Riverside to cite one example.

The plan builds off of aspects of the economic development principles embodied in the existing vision statement of the County of Riverside General Plan[14], which includes stimulating the growth of businesses focused on national and international markets, stimulating cooperative arrangements with adjacent cities, stimulating practical incentives for business development, and promoting the dissemination of information about opportunities for growth in Riverside County. Among the principles that could be added to the County's General Plan, through this Broadband Master Plan, are[15]:

- The need for a robust and reliable County-wide broadband network
- That businesses are attracted to locate and grow in the County because of its use of broadband technology
- Developing a strong, technology-literate workforce
- Ensuring access to digital tools for all residents, businesses and community organizations
- That government and business services and infrastructure - including transportation, electricity, and water -- are conducted in accordance with this Broadband Master Plan
- Identifying a broadband component in as many services as possible offered by government
- Utilizing broadband to achieve County-wide purposes



5. BROADBAND MASTER PLAN AND RFP – ACTION STEPS

In order to increase the likelihood that the RFP will be successful, it will be necessary for the County to do as much as it can prior to the issuance of the RFP to show that it has changed the economics of broadband deployment in the County, and that it has the systems in place to create ongoing market opportunities for entities selected through the RFP process. However, taking these steps has benefits beyond the RFP process. For example, the same steps that encourage private deployment would also make it easier to justify deployment of a publicly-owned network, so the steps taken to implement this plan – if implemented by communities County-wide – could also make it easier for communities who plan to deploy their own networks or as part of a public-private partnership to do so.

In order to ensure that this plan is implemented, we recommend that it be adopted by the Riverside County Board of Supervisors and that implementation within the County and with other entities be governed by the RIVCOconnect team internal to the Riverside County Information Technology (RCIT) Department.

5.1 Strategy: Reduce Capital Costs And Ongoing Operating Costs For Potential Entrants

5.1.1 Make it easier and faster for potential providers to plan their network by providing access to databases that allow providers to identify roads and easements that may be used for deployment, and to identify and obtain access to resources required for installation of the network – land for network structures, fiber optics, conduit, and supporting structures (poles, light standards, rooftops and the like); and by developing uniform contracts for access so providers will be able to obtain access to property without extended negotiations. Steps to implement:

5.1.1.1 Prior to issuance of the RFP, County will collect and provide links, data bases and datasets on an open data portal that identify County population centers and County demographics; show rights of way and utility easements; show the road condition (whether the road has been recently repaved, or is scheduled to be repaved); areas where utilities may be placed aboveground and where facilities must be placed underground; and developments that are now either under construction or that have been approved or are in the process of being approved. The County's Chief Data Officer in the County's Information Technology Department is responsible for the county's open data portal and the placement of data that can be shared by all agencies and the public.

5.1.1.2 The County of Riverside's Information Technology Geographic Information Systems (GIS) group has developed an ESRI-based application to capture assets and determine what can be made available for consideration in the RFP. This GIS data layer will be placed in the County's Open Data portal. The RIVCOconnect Group in RCIT will be responsible for coordinating placements for communication enclosures and will place those locations as a layer on a GIS system and ultimately in the open data portal as well.

5.1.1.3 Prior to issuance of the RFP, County will identify other County-owned property (storm water culverts, conduits, fiber non-building structures) that may be useful for deployment of fiber infrastructure, and investigate whether those can be used to allow providers to limit the number of actual permits that need to be submitted.

5.1.1.4 The RIVCOconnect group in RCIT will work with County Counsel and the Transportation and Land Management Agency in the creation and maintenance of uniformed contracts.

5.1.1.5 Prior to issuance of the RFP, County will work with municipalities, tribal authorities and other governmental entities in the County (e.g., the Parks District, Riverside Transit Authority) to identify properties that could be made available for access to property to develop, as far as possible, uniform contracts for access to that property, and to determine if similar databases can be made available for roads and structures under their control.

5.1.1.6 Prior to issuance of the RFP, County will work with private entities that may have assets that could be made available for this process, including Southern California Edison (SCE). SCE, for example, possesses an existing network of fiber, conduits, poles and other infrastructure that could be made available to a program participant. The County is working with SCE on a plan that could provide an RFP respondent with more rapid access to SCE assets and infrastructure.

5.1.2 Streamline and reduce the costs associated with the process for obtaining approvals required for project construction/ inspection. This would involve ensuring that the process is simple to navigate, and result in coordinated management of

the approvals/post-construction inspections for what will be a process that might normally require thousands of permits/applications across the County. In order to avoid potential conflicts with state or federal law, the expedited process would be available to any entity that was planning a multi-year broadband deployment project. It is envisioned that the process used would be similar to that used recently in the deployment of the Verizon (now Frontier) FiOS system. To implement this strategy:

5.1.2.1 The RIVCOconnect group in RCIT will serve as the single point of contact and departmental coordinator for this effort.

5.1.2.2 Prior to issuance of an RFP, create a broadband deployment group consisting of TLMA, County Counsel, Economic Development Agency, and the Executive Office that will be responsible for:

5.1.2.3 Developing rules for submission of bulk permits applications/traffic control plans, bulk approval of electrical/structural plans for facilities [e.g., the size of the area for which a bulk permit may be issued];

5.1.2.4 Meeting with a potential applicant at the start of the process to gain an understanding of the project, and to assist the applicant in understanding what permits will be required;

5.1.2.5 Developing best practices for placement of aboveground facilities [sides of yards, backyard easements, and so on];

5.1.2.6 Recommending requirements for inspectors, both during and post-construction, as necessary to ensure work can be promptly inspected and corrected/approved;

5.1.2.7 Serving as the primary points of contact for the coordinator with their respective departments;

5.1.2.8 Authorize use of a fee structure for approvals and inspections that recovers County costs on a project basis, and take any steps necessary to implement that fee structure. For example, in connection with the FiOS build, the County charged for permitting based on the time required to review permits, and accepted permits on a neighborhood basis. The same approach would likely make sense here.

5.1.3 The County has 28 incorporated municipalities, so any entity that wished to build a broadband network throughout the County would need to file for permits with at least 29 jurisdictions, as well as the state and federal governments and special districts, depending on the location of the build. Even if the information sought by each jurisdiction was identical, the cost associated with filling out different forms may add significantly to costs and build-out delays. Therefore, the County should direct the RIVCOconnect coordinator to work with other jurisdictions through the local Councils of Government (WRCOG, CVAG) to encourage use of model standards for construction, model forms for permitting, and a consolidated list of the points of contact for each jurisdiction and for cross-jurisdictional issues (such as may arise should a facility located on County property also occupy space within an incorporated municipality). It is unlikely that this effort will be wholly successful, but to the extent variations are minimized, and potential providers know which communities will be working from the same permitting "playbook," deployment may be encouraged. The forms need not be developed prior to issuance of the RFP, but it would be helpful if the County and other jurisdictions can commit to this process so that the forms can be developed and the structures are in place for cross-jurisdictional cooperation prior to the receipt of RFP responses.

5.2 Strategy 2: Reducing Risk by Reducing Requirements for Areas Initially Served.

5.2.1 Provide flexibility to RFP respondents as to areas to be served

5.2.1.1 Frame the RFP to allow respondents to define service areas. Given the size and the population density of the County, it is unlikely that any one company will build fiber out to all areas of the County. Provide incentives and opportunities that encourage proposals for service in those lower-density locations.

5.2.1.2 Build on and continue to work with the Inland Empire Regional Broadband Consortium to seek grants for building out underserved areas (grants have thus far come mainly from the California Advanced Services Fund) and offer to work with selected partners to cover underserved areas to the extent permissible.

5.2.2 The County should work with educational institutions to explore opportunities for using now underutilized Educational Broadband Service (EBS) frequency spectrum to deliver broadband wirelessly to schools and communities in areas of the County where fiber may not be run practicably.

5.2.2.1 Establish agreements with educational institutions prior to the issuance of an RFP, it could attract additional respondents, including wireless Internet service providers.

5.3 Strategy 3: Create Opportunities for Selected Providers To Secure Revenues That May Support Build-Out.

5.3.1 To the extent it can reasonably do so, County should aggregate demand for County broadband services so that it may serve as an anchor tenant for selected providers.

5.3.1.1 The County currently purchases broadband services for service to approximately 250 offices, and 31 departments or agencies at a total cost of $3.9 million annually; it spends $2.7 million for services at locations that require connections of 100 Mbps or greater.

5.3.1.2 Subject to any competitive bidding restrictions, and as part of RFP, County should seek a proposal from providers as to minimum financial support each requires to build out, and what services that could be provided to County offices in exchange for that support.

5.3.2 County should encourage partners, local governments, agencies and tribal communities to aggregate demand and to commit to serving as anchor tenants, assuming selected providers can offer acceptable services.

5.3.2.1 As part of RFP, it would be useful for interested agencies and governments to identify current expenditures and requirements for broadband services that could be switched to a provider as suggested

by Section 5.3.1.2.

5.4 Strategy 4: Encourage Innovations That Increase Demand

5.4.1 Develop resources that encourage broadband adoption and that provide businesses and residences with information about broadband availability. One key to this effort is the adoption of a "brand" that can be used to create awareness of the County's broadband efforts, and to provide information about the companies that participate in the broadband project.

5.4.2 Prior to issuance of the RFP, the County should commit to undertake a review, in conjunction with other participating communities where appropriate, of policies that may make it simpler to deploy, and may make it easier for the public to locate and purchase high-quality broadband services. This effort should address some of the barriers to adoption and deployment identified by the Inland Empire Regional Broadband Plan, including e.g.

5.4.2.1 The County will work to develop standards that identify buildings as "broadband ready," and will also encourage building owners to open buildings to broadband deployment.

5.4.2.2 The County will work to develop standards for deployment of conduit and handholds as part of new developments, as well as appropriate "Dig Once" standards that reduce the expense of deploying broadband infrastructure.

5.4.2.3 While these efforts may not be completed before issuance of an RFP, the County's firm commitment to these actions, particularly if coordinated with actions by other local governments, will attract additional interest in serving the County.

5.4.3 The County will coordinate with partners with which it is working to deploy computers and handheld devices to underserved populations so that deployments by providers who participate in the broadband program and the County's digital divide efforts work together to get computer devices and training to potential users as services become available.

5.4.4 The County, as part of the RFP process, commits to working with providers to expand computer centers and to provide training to underserved populations, which in turn will create new opportunities for broadband growth.

5.4.5 The County commits to revisiting policies for placement of wireless facilities, to facilitate deployments which may provide fiber network owners with opportunities to obtain additional revenues through provision of "backhaul" services to wireless service providers. This work will not be completed before issuance of the RFP, but adoption of a resolution committing to policies may attract additional attention to the RFP, and encourage broadband deployment.

5.4.5.1 The explosive growth in demand for wireless data services requires wireless providers to install many more antennas, and to connect those antennas to fiber networks in order to provide the speeds and capacity users demand. For example, Verizon is expanding the deployment of its FiOS fiber system in Boston under an agreement through which the City of Boston is providing Verizon Wireless with opportunities to place small wireless cells throughout the City. The revenues that Verizon can obtain by carrying signals across the small cells allows Verizon to expand fiber coverage to homes and businesses. The goal here is to create a new opportunity

for private providers that will result in more rapid deployment of fiber throughout the County.

5.4.6 The County's RIVCOconnect group will act as a central repository for information about projects being undertaken by County and other participating agencies that may affect broadband deployment. Those may include infrastructure projects where infrastructure may be installed as part of the project (e.g., new street or "smart" transportation projects) or projects that expand the communications capabilities of local agencies. It may be possible to coordinate efforts to obtain grants that leverage projects to expand broadband availability, or that reduce costs for broadband deployment.

5.4.6.1 The goal of the office would be to break down internal, intra-jurisdiction and cross-jurisdiction silos so that projects that involve broadband and infrastructure development can be leveraged to create new opportunities for broadband growth.

6 MISCELLANEOUS - OBTAINING APPROVAL OF ANY RFP

6.1 The work described above may also require the County, prior to issuance of the RFP to:

6.1.1 Develop appropriate memoranda of understanding (MOU) with other agencies who wish to collaborate on this effort.

6.1.2 Define the effort carefully and consider CEQA appropriately.

6.1.3 Devise and approve standards for evaluation of any RFP, consistent with the goals of the RFP process.

6.2 The County of Riverside will, in the first quarter of 2017, submit for bid a comprehensive Request for Participants, to include all Cities and Tribal Communities that have agreed to collaborate and follow aspects of this Broadband Master Plan. The RFP will include multiple zones to consider multiple responses or a single response to the areas to be served. A committee will be appointed to determine what carrier(s) will be awarded to serve each or all of those zones.

[1] The Inland Empire Broadband Infrastructure and Access Plan, November 6, 2014 (Inland Empire Plan), noted that, according to CETF, "the Inland Empire's broadband adoption rate decreased from 71% in 2012 to 68% in 2013 which is behind the statewide average of 75%. By comparison, the adoption rate in the Central Valley is 60%, Los Angeles is 64%, Orange County and San Diego is 77%, and the Bay Area is 80%." Closing that digital divide was part of the approved plan.

[2] County of Riverside Draft General Plan Amendment No. 960, Public Review Draft, Volume 4 Appendices, February 2015 (GPA No. 960, Volume 4A, 2015-01-23), pp. 195-206.

[3] Id.

[4] Broadband Opportunity Council Report and Recommendations, August 20, 2015, page 4.

[5] Inland Empire Broadband Plan, p. 45.

[6] Based on comparison of undiscounted prices shown on the Internet for services offered in Chattanooga, TN. by EPB (Chattanooga's municipally owned fiber utility) and in Riverside by Charter Communications as of July 31, 2016.

[7] See "What the Internet of Things Means for Local Government," Public CEO, April 1, 2016, Drew Clark. "Among the areas where the civic IoT is advancing most rapidly are in water management and waste removal, the electrical 'smart grid,' and improving transportation — whether it be public transit, smoother automobile traffic or parking cars."

[8] Those costs can be enormous. Analysts estimate that Verizon's spent $23 billion to extend its fiber infrastructure to pass 18.5 million homes. http://www.buffalonews.com/business/verizon-still-cant-justify-expanding-its-fios-service-20140421. Some analysts estimate the cost of the fiber infrastructure at about $2500 per subscriber, and estimate the costs of equipment and other infrastructure required to serve each home at an additional $1000 per home – that does not include any ongoing operational costs. Verizon did not build FiOS to the sort of remote areas with low density that typify the Eastern part of the County. https://www.researchgate.net/publication/237378204_Fiber_to_the_Home_Capital_Costs_and_the_Viability_of_Verizon%27s_FIOS

[9] "Achieving Bandwidth Abundance," pages 13-14.

[10] Id., italics omitted.

[11] Id.

[12] Id.

[13] "Achieving Bandwidth Abundance: The Three Policy Levers for Intensifying Broadband Competition," October 30, 2015, Blair Levin, Internet Society Fall 2015.

[14] County of Riverside Draft General Plan Amendment No. 960, Public Review Draft, Volume 4 Appendices, February 2015 (GPA No. 960, Volume 4A, 2015-01-23), pp. 58-60.

[15] Several of these principles can be found in the National Broadband Plan, and in various City- and County-wide broadband plans, including those of Portland, Oregon, and Montgomery County, Maryland.

Riverside County Broadband Policy

Findings and Declarations

The County of Riverside hereby declares that wireline and wireless communications providing abundant capacity which supports high-speed, advanced digital communications, including Gigabit-Speed Internet Access—referred to generically as "Broadband" – forms the basis of an essential 21st Century infrastructure in our digital world and global economy. It is vital to the economic development and quality of life for the residents, businesses and institutions of Riverside County and throughout California, and it can enable Riverside County government to operate more efficiently while providing services more cost-effectively.

The ability to connect instantly to information, services and digital tools is becoming increasingly necessary for access to, and success in, education, business, and economic opportunities. The deployment and adoption of Broadband is a major strategy to spur economic growth, because it improves productivity, which attracts more capital investment and generates better-paying professional jobs, while saving both time and money for businesses and consumers. Broadband also provides an avenue by which needed offerings are delivered to the County's seniors and disabled, bringing these residents in-home healthcare tools and services such as Telemedicine and other clinical services at a distance.

In addition, Broadband is also a "Green Technology" that can, if widely accessed, significantly reduce negative impacts on traffic and the environment by reducing the need for vehicle use, thereby decreasing the use of resources and saving energy.

Although California is home to a wellspring of innovation that leads in the growth and evolution of many technologies, the use of Broadband by residents of California only approximates the national average, and there still exists a Digital Divide that must be closed for this region to remain globally competitive. Broadband has become a fundamental need of modern life, whether related to job, home, or school. As more and more information and media migrates online, those without ready access to the Internet are increasingly being left behind. Bridging the Digital Divide is about helping those with little, or no, access to the digital world acquire tools to leverage technology in ways advantageous to their economic and personal pursuits. Riverside County is exploring ways to ensure these tools and services are delivered to its constituents via methodologies which will be heavily dependent upon access to high-speed Broadband. If the County is to take full advantage of the new technologies to deliver these services more effectively to homes and businesses, it is imperative that Broadband be available to the furthest extent possible to everyone living and working in the County of Riverside.

Riverside County is committed to operating governmental functions in as cost-efficient manner as possible and recognizes that information technologies such as Broadband can greatly assist in achieving that goal. Riverside County is dedicated to providing public information and increasing online access to government services for the convenience and benefit of residents, as well as reducing downtown congestion and traffic and other negative impacts to the environment. Residents should have access to Broadband to transact business with our local government agencies, such as obtaining and paying for building permits or business licenses, paying utility bills, or accessing official documents and maps. Broadband links County government with its constituents.

Riverside County is committed to encouraging the families and children living here to be healthy, productive and self-sufficient, and it is recognized that the use of Broadband can save both time and money for residents, while also providing opportunities to grow professionally and economically. Therefore, it is important that all residents within Riverside County, particularly lower-income households and those living in publicly-supported

housing, to have access to Broadband.

Riverside County is committed to helping students obtain the highest-quality education possible and understands that the ability to learn and prepare for higher education is significantly enhanced if schools incorporate digital literacy and applications into the various curricula. The availability of Broadband-connected computing devices is an irreplaceable teaching and learning tool for academic achievement, both in the classroom and at home. Riverside County is thus committed to Digital Inclusion and increasing residents' participation in the public process through expanded engagement using Broadband.

Therefore, it shall be the policy of the County of Riverside to encourage, and when practicable to facilitate, the deployment and adoption of Broadband to provide our residents with opportunities, convenience, and a higher quality of life. Furthermore, it is recognized that the speed of data and image transmission capability of the Broadband infrastructure is a vital driver of adoption: higher speeds enable more applications that are relevant to the daily lives of consumers. Thus, it also shall be the policy of the County of Riverside to encourage and facilitate upgrades to existing Broadband infrastructure to ensure that the public and private sectors have access to sufficient Broadband speeds to support consumer demand for new and evolving applications that save time, money and resources.

Roles and Responsibilities

Riverside County recognizes that it has many responsibilities that affect deployment and adoption of Broadband technologies and applications, including the following roles: (1) Policy Leader; (2) Planner; (3) Regulator; (4) Consumer; (5) Service provider; and (6) Property Owner. As a policy leader, Riverside County may promulgate policies and ordinances to advance and protect the public interest, implement state and national laws that promote and accommodate deployment of Broadband facilities, and encourage development and testing of new technologies and applications. It can work with other governmental agencies, as well as the private and non-profit sectors so that the County and its residents can best enjoy the digital economy's benefits and promises. As a planner, Riverside County prepares and adopts a General Plan and other land-use documents that guide the development of our jurisdiction, thus determining how "smart" growth will be and defining the quality of life for the future. As a regulator, Riverside County approves land uses and building permits that can encourage, promote or require "smart" infrastructure and facilities within our jurisdiction, and it also acts to protect consumers and ensure that providers do not discriminate in the provision of services. As a consumer, Riverside County purchases telecommunications and information technology equipment and services which, in turn, drives demand and improvements in these technologies and services. As a service provider, Riverside County has the ability to expand e-Government functions by providing more information and greater access to public services online, thus encouraging Broadband adoption, but also making it critical that residents have ready access to Broadband so that all can take advantage of the benefits offered by e-Government. As a property owner, County-owned land and buildings may, in many instances, provide useable areas for placement of wireless and wireline infrastructure and facilities that can be used for the distribution of Broadband to consumers. The County also has an interest in requiring that Broadband be available to the public on County property. It shall be the policy of Riverside County in all of its roles and responsibilities to actively identify opportunities to implement policies, programs and actions to encourage Broadband deployment and adoption.

Implementation

Riverside County shall incorporate these findings and declarations into the General Plan and all relevant Specific Plans, Broadband Master Plan, Redevelopment Agency Master Plans, and Community Sustainability Plan. It shall adopt the following implementation strategies and actions:

Land Use and Smart Infrastructure

Promote the provision of Broadband infrastructure in all public buildings; major transportation (and other infrastructure) projects; commercial developments; and residential developments and neighborhoods.

Where feasible, that new or renovated large-scale residential and commercial development projects include the infrastructure components necessary to provide and support Broadband and other future state-of-the-art information and communication technologies, such as conduit and riser space.

Identify local public rights-of-way (RoW) and public facilities that can be used for Broadband deployment and, where practicable, promulgate relevant procedures to streamline the approval of permits, licenses and franchises required for the installation of those facilities, consistent with principles of providing a level field of play and ensuring competition for all providers, and consistent with the protection of the public, property and roadway functions.

Maintain consistency in visual aesthetics as it pertains to Broadband facilities, with guidelines for other infrastructure such as street lighting, traffic light control equipment, and power generation to name a few.

Develop policies that allow for rapid deployment of Broadband facilities off the RoW, with appropriate protections for the public and property affected by the deployment, and avoiding proliferation of unnecessary or speculative facilities that may conflict with other important County policies or deter productive deployments.

Subject to the foregoing, encourage Broadband providers to size underground and overhead facilities to accommodate future expansion, changes in technology, and, where possible, the facilities of other telecommunications and utility providers.

Locate and operate infrastructure and appurtenant facilities, wherever possible, to protect cultural and scenic resources. Site facilities at the lowest possible point along ridge lines in order to minimize visual and aesthetic impacts. Minimize the size and extent of appurtenant facilities, to include antennas and equipment buildings, while still providing room for growth and co-location of future providers. Set guidelines as part of a special-use permit, that the top-most position of a monopole or tower be occupied with antennas to ensure that the ultimate structure height is justified. Use stealth technology solutions for masking antenna profiles. Use muted earth-tone colors that match the natural background setting. Landscape appropriately around the perimeter of facilities to be compatible with the surrounding vegetation.

Require commitments for sharing new vault, monopole or tower sites as a condition of approval if appropriate and feasible.

Submit notification and information about all major infrastructure and construction projects, including transportation projects, Broadband projects and new residential subdivisions, to a shared regional and/or statewide web-based database (such as the prototype developed by the California Department of Transportation) so that utility providers and other authorized RoW users, including Broadband providers, have the opportunity to coordinate infrastructure deployment in shared trenches, conduit, poles and towers, and other appurtenances to facilitate cost and time savings and minimize duplicative construction.

Require as a condition of approval the timely removal of communications facilities and equipment when they are no longer needed.

Public Services and Digital Inclusion

Prepare and implement a Technology Plan that uses state-of-the-art Broadband and other non-public network information technologies to support the local government operations in the most cost-efficient manner possible, and provide online all vital public information and critical services.

Continue to improve the County's website both to support the online provision of public information and critical services and to engage and increase citizen participation. Request all County departments post appropriate policies, programs, plans, ordinances and key information online.

Develop and provide an online comprehensive and standardized Geographic Information System (GIS) that can be used by all public agencies to aid in the provision of public services.

Promote the use of public buildings, such as libraries, parks and convention centers, as Broadband hot spots to provide residents with affordable or free high-speed Internet access while in the public space.

Ensure that public safety and emergency response agencies are capable of providing real-time information via Broadband to facilitate the efficient management of emergencies and natural disasters and to protect lives and property.

Smart Housing

Work with the business community and private developers to incentivize the provision of state-of-the-art Broadband-specific infrastructure, notably fiber conduits, space for vaults and pedestals, and vacant locations set aside for fiber enclosures and associated appurtenances for all new residential subdivisions.

Explore adding policies to the General Plan that will foster the provision and adoption of Broadband in all publicly-subsidized housing development projects, including policies that allow for aggregation of demand within and among projects so that, to the extent possible residents of public housing projects have Broadband choices comparable to those that are available to other residents in the same geographic area; policies that encourage service providers to offer low-cost plans for provision of Broadband that allow all residents to receive the benefits of Broadband; policies that encourage deployment of infrastructure within public housing projects that will support provision of Broadband by multiple providers; and policies that ensure that residents are aware of the low cost Broadband options available to them under private programs, and under state, local and federal Broadband programs, such as federal "lifeline" programs.

Request the local housing authority to adopt policies to promote and support smart affordable housing with Broadband infrastructure whenever their public funds are used to subsidize the construction and provision of housing for lower-income residents.

Digital Literacy and Workforce Development

Integrate digital literacy training into all workforce development programs.

Provide digital literacy training for all employees.

Designation of Broadband Leader

The County Executive Officer (CEO) will identify and designate an appropriate individual within management

as a coordinator to be responsible for implementing policies related to Broadband, information technologies, and Digital Inclusion. This designated leader shall develop a plan of action to increase and sustain the use of Broadband and information technologies within Riverside County. The Broadband Action Plan shall set forth specific goals, objectives, activities and metrics for success for all the relevant responsibilities and roles delineated above. It shall include the promulgation of a Technology Plan for the operations and functions within the County government and regular update to the existing Technology Plan. The coordinator shall prepare and submit a progress report annually to the Board of Supervisors.

Direct the Broadband coordinator to monitor Broadband deployment and adoption within the territorial limits of Riverside County and report rates and trends to the Board of Supervisors.

Interagency Cooperation

The CEO will outline a process for ensuring inter-agency and inter-jurisdictional cooperation which shall include: sharing this policy with other jurisdictions in the region; meeting with them to explore common needs for Broadband infrastructure (including backhaul and middle-mile needs); exploring opportunities to collaborate on Broadband applications, such as Telemedicine, or regional projects, such as library networks; and notifying neighboring jurisdictions about major infrastructure projects, such as transportation improvements along shared corridors.

Seek Opportunities

Explore opportunities to work with other public and private entities, such as schools, special districts, public utilities, and private health and medical providers, to cooperate in joint-ventures on Broadband deployment projects and adoption programs.

Regularly review and identify economic development opportunities (including grant and test bed opportunities) potentially associated with the deployment of Broadband facilities; and consider ways in which those opportunities can be realized and leveraged to maximize deployment of Broadband facilities and services throughout the County by public or private entities.

Identify opportunities for the County to encourage Broadband deployment as an “anchor tenant” for broadband platforms, and coordinate broadband projects among departments so that those projects maximize the deployment of broadband throughout the County.

Consider adoption of policies that encourage deployment of open networks or software-defined networks.

Support federal and state policies that protect and enhance the ability of local governments and regional agencies to ensure that communications systems that meet the needs and interests of all people in a community are deployed, and are deployed in a manner consistent with sound community development.

RESOLUTION IN SUPPORT FOR RIVERSIDE COUNTY'S BROADBAND FIBER TO THE PREMISE MASTER PLAN

The following resolution is a template for all cities to adopt in support of the Riverside County Broadband Master Plan. This same resolution has been adopted by the Riverside County Board of Supervisors on September 13, 2016.

RESOLUTION NO. __ SETTING FORTH [YOUR MUNICIPALITY]'S SUPPORT FOR RIVERSIDE COUNTY'S BROADBAND FIBER TO THE PREMISE MASTER PLAN

WHEREAS, all Riverside County residents, businesses and institutions need high quality gigabit broadband services where they live, work, learn and play; and

WHEREAS, closing the digital divide is important and provides long-term community benefits that include the ability to fully engage in the digital economy, access existing and emerging services, and expands economic opportunities; and

WHEREAS, high speed broadband enables improved healthcare access, treatment and information; and

WHEREAS, high speed broadband enables new business models, creates business efficiencies, drives job creation, and connects goods and services to customers and partners worldwide; and

WHEREAS, high speed broadband enables changes in how we access educational resources, collaborate, conduct research and continue to learn anytime, anyplace and at any pace; and

WHEREAS, high speed broadband enables greater civic participation and brings communities together, helps improve public safety, and makes our transportation systems more resilient and efficient; and

WHEREAS, the City Council of [INSERT NAME OF CITY] and other community partners can work together to affect the deployment decisions of broadband providers by lowering the cost of entry and operation of systems in our communities, reduce the risks of delays during the planning, permitting and construction phases, provide opportunities for increasing revenue, and creating new avenues for competitive entry; and

WHEREAS, the City Council of [INSERT NAME OF CITY] supports the adoption of consistent expedited broadband permitting processes throughout participating jurisdictions; and

WHEREAS, the City Council of [INSERT NAME OF CITY] supports the concept of 'Dig Once' whereby conduit is installed for future or immediate use for fiber optic cable installation whenever underground construction occurs in a roadway; and

WHEREAS, the City Council of [INSERT NAME OF CITY] supports the aggregation of demand by all participating communities as anchor tenants of selected provider(s) if acceptable services are available.

NOW, THEREFORE, BE IT RESOLVED on this [xx] day of [MONTH] 2016 that the City Council of [INSERT NAME OF CITY] does herby support the Riverside County Broadband Master Plan and the development of a Request for Participation (RFP) for the deployment of gigabit fiber services to all homes, businesses and institutions countywide.

Council Member, [XX] District	Council Member, [XX] District	Council Member, [XX] District
Council Member, [XX] District	Council Member, [XX] District	Council Member, [XX] District


PALM DESERT


MORENO VALLEY
WHERE DREAMS SOAR


Murrieta
the future of southern california


SAN JACINTO


City of Temecula


INDIAN WELLS
CALIFORNIA


CITY OF
LAKE ELSINORE
DREAM EXTREME


CITY OF RANCHO MIRAGE


CITY OF WILDOMAR


CITY OF
RIVERSIDE


CORONA
"THE CIRCLE CITY"
Incorporated
July 13, 1896
To Cherish Our Past - To Plan Our Future


CITY OF CANYON LAKE
CANYON LAKE


HORSETOWN USA
NORCO CA


CITY of BEAUMONT
CALIFORNIA
INC.NOV.18.1912


CITY of PERRIS
INC. 1911


CITY OF PALM SPRINGS
INCORPORATED 1938
CALIFORNIA


CITY OF DESERT HOT SPRINGS, CALIFORNIA


DEC. CALIMESA 1990
CALIFORNIA


CITY OF COACHELLA
CALIFORNIA
INCORPORATED 1946


CITY OF
MENIFEE


CITY OF HEMET
RIVERSIDE COUNTY, CALIFORNIA

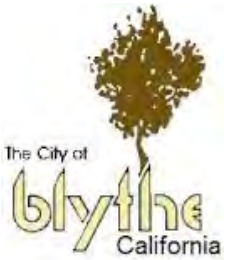

CITY OF EASTVALE
EST. 2010
Community * Pride * Prosperity


CITY OF JURUPA VALLEY
A COMMUNITY OF COMMUNITIES


La Quinta
GEM of the DESERT


BANNING, CA
STAGECOACH TOWN USA
ESTABLISHED 1913


Cathedral City
The Spirit of the Desert


The City of
blythe
California


CITY OF
INDIO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COUNTY OF RIVERSIDE
Riverside County, California


25 YEARS
WRCOG
Western Riverside
Council of Governments