



Inland Empire Regional Broadband Consortium (IERBC) Preferred Scenario for Unserved Households in the Inland Empire October 1, 2020

Introduction

The California Emerging Technology Fund (CETF) sponsored AB1665, [The Internet For All Now Act of 2017](#) which established in statute the goal to achieve 98% broadband deployment in each region of California.

AB1665 also assigned the responsibility to achieve the 98% deployment goal to the California Public Utilities Commission (CPUC) as the administrator of the California Advanced Services Fund (CASF).

During the rulemaking process to implement AB1665, CETF strongly recommended that the CPUC work with the Regional Consortia to engage all stakeholders in each region, including Internet Service Providers (ISPs) and local governments, to develop “preferred scenarios” for achieving the 98% goal.

CETF underscored to the CPUC that it is essential to harness the power of “economies of scale” in infrastructure construction to accurately determine the percentage of CASF subsidy required to achieve the 98% goal and to avoid cherry-picking by ISPs of the most lucrative unserved communities for CASF applications without helping the region understand more detailed information and needs of the unserved households, the challenges to provide broadband service to them, and determine the most cost-effective strategies to serve them in order to help achieve the 98% goal.

Over the past decade, CETF has provided statewide leadership on closing the Digital Divide. This work has focused on advocating for CPUC CASF funding for ISPs to subsidize broadband infrastructure investment for unserved households, especially in disadvantaged communities.

CETF has also led by supporting CASF funded digital inclusion programs emphasizing digital literacy and adoption, as well as working with ISP’s going through mergers to improve their efforts in unserved and low adoption rate areas by entering into Memorandums of Understanding (MOUs) with ISPs with agreement on public benefits such as low cost internet programs and computer devices for low income qualified households.

CETF’s effort has included outreach in the Inland Empire spearheading regional leadership, stakeholder and roundtable discussions regarding broadband, digital inclusion and the needs of the unserved in Riverside and San Bernardino Counties, which comprise the Inland Empire.

CETF assisted the region develop and form the Inland Empire Regional Broadband Consortium (IERBC) which covers Riverside and San Bernardino Counties and has been in existence since 2012 funded through the CPUC CASF Rural and Urban Regional Broadband Consortia Account. IERBC is shown below in the CASF Regional Broadband Consortia Map.

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The Inland Empire Region Riverside and San Bernardino Counties



IERBC Consortium Members represent local, county, and regional government, public safety, elementary and secondary education, postsecondary education, healthcare providers, libraries, community-based organizations, tourism, parks and recreation, workforce development organizations, technology providers, internet service providers, engineering, utilities, and businesses.

IERBC helps expand broadband deployment through identifying priority unserved areas within Riverside and San Bernardino Counties, encouraging ISP's to apply for CASF and other broadband infrastructure grant opportunities, addressing strategic broadband planning for unserved areas, and advocating for the State's goal, adopted through AB1665, of 98% of households in the region served by broadband.

IERBC developed and adopted the [Inland Empire Broadband Infrastructure and Access Plan](#), which addresses priority areas in the region and cost-effective strategies to achieve the broadband goals. IERBC has also worked closely and cooperatively with ISPs to help foster, facilitate, and provide technical support for over \$39 million in successful CASF Broadband Infrastructure Grants for broadband deployment in Riverside and San Bernardino County to bring service to over 16,000 previously unserved households.

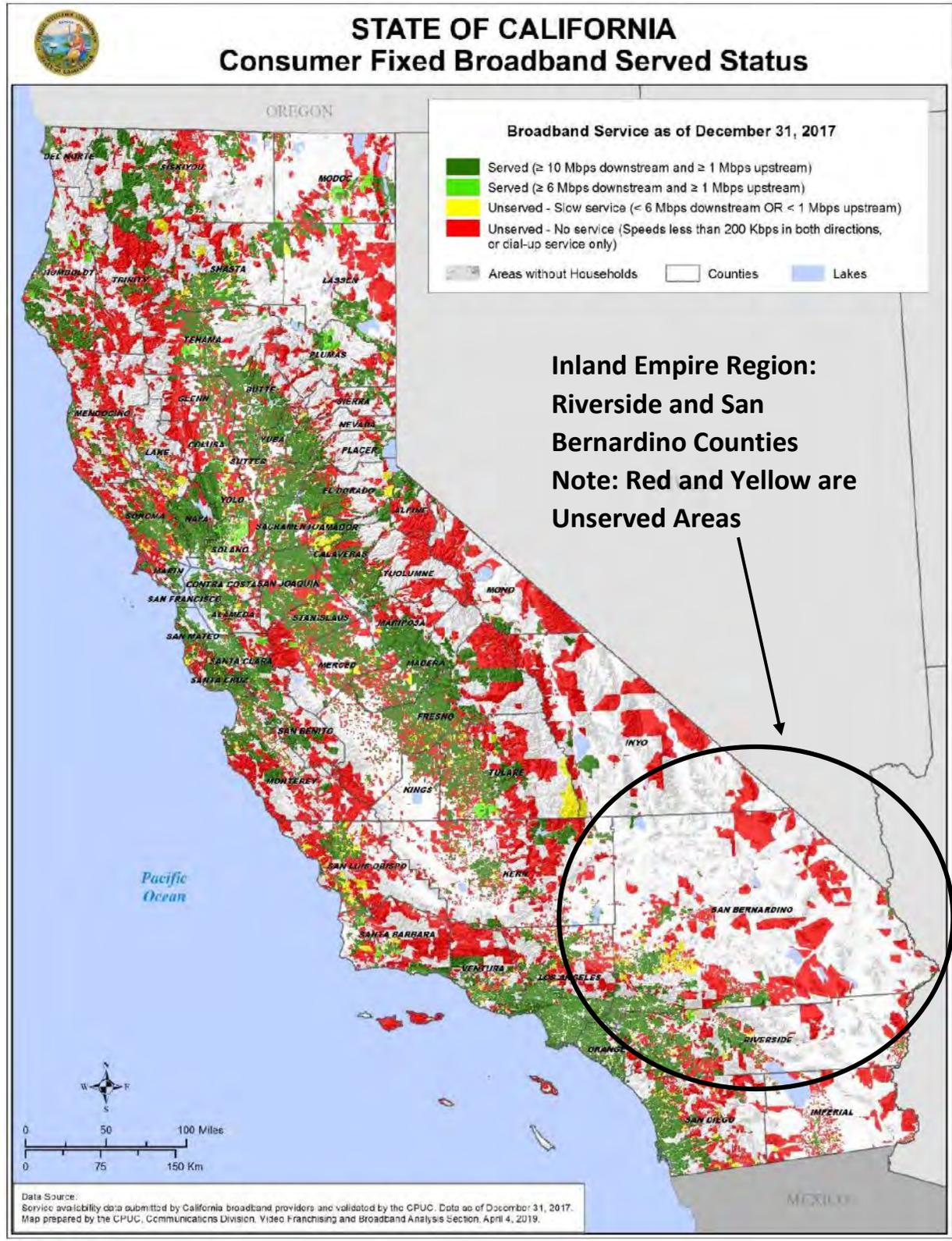
On May 9, 2018, CPUC Commissioner Martha Guzman Aceves, who leads and oversees CASF and implementation of AB1665, met with ISPs and other stakeholders in the Inland Empire at a roundtable discussion convened by IERBC. Commissioner Aceves posed specific questions to the ISPs which began a conversation and invited follow up to explore opportunities for cooperation and collaboration.

CETF was invited by IERBC to attend the May meeting and concluded that the interest by the CPUC in the Inland Empire, a priority region for CETF for both deployment and adoption, presents an opportunity to demonstrate how to develop a “preferred scenario” that could serve as a model and template for other Regional Broadband Consortia.

CETF is supporting IERBC in developing a “preferred scenario” for the Inland Empire that can provide a roadmap to achieve the State’s 98% broadband deployment goal in the Inland Empire region.

The preferred scenario will help IERBC build upon its efforts to prioritize areas within Riverside and San Bernardino Counties in need of broadband service. The preferred scenario will also help facilitate ISPs to apply for CASF funding, as well as, deploy resources and other funding they receive to bring service to the remaining unserved households in the Inland Empire in order to meet the State’s 98% deployment goal for the region.

In order to develop a preferred scenario for the Inland Empire, the number and location of unserved households in the region is needed. Below is a CPUC California Broadband Map exhibit showing unserved households throughout the State including the Inland Empire region.



Inland Empire Preferred Scenario for 98% Broadband Deployment

1. Unserved Households in the Inland Empire

The CPUC CASF program by statute (AB1665) defines an “unserved household” in the State of California as a household where no facility-based provider offers broadband service at speeds of at least 6 megabits per second (mbps) downstream and one mbps upstream.

The Inland Empire Preferred Scenario is based upon the CPUC California Interactive Broadband Map data reported by ISPs by census block that identify unserved households in Riverside and San Bernardino Counties as of 12/31/2017 based upon 6 down and 1 up mbps CASF definition per AB1665.

According to the California Broadband Map data from CPUC in the Chart below, 96.1% of households in Riverside County and 95.8% in San Bernardino County are served by Wireline and Fixed Wireless Broadband with 2.1% of the region in need of service to meet California’s 98% broadband deployment goal. This equates to 15,328 Households in Riverside County and 13,529 Households in San Bernardino County for a total of 28,857 Households in need of service to meet the 98% goal.

Inland Empire Region Riverside and San Bernardino Counties Wireline and Fixed Wireless Broadband Deployment*						
County	All Households	Served Households	% Served Households	Unserved Households	% Unserved Households	Households to reach 98% Served (2.1%) **
Riverside County	729,920	701,328	96.1%	28,592	3.9%	15,328
San Bernardino County	644,247	617,048	95.8%	27,199	4.2%	13,529
Inland Empire Totals	1,374,167	1,318,376	95.9%	55,791	4.0%	28,857
*CPUC Broadband Data as of 12/31/2017						
**2.1% of Inland Empire Households need to be served to reach California’s 98% broadband deployment goal per AB1665 (95.9% Served Households - 98% Broadband Goal = 2.1%)						

The Inland Empire Preferred Scenario will therefore address the 28,857 households (2.1%) in Riverside and San Bernardino Counties that need a either wireline and fixed wireless broadband service per CPUC definition of 6 mbps down and 1 mbps up in order for the region to meet California's 98% broadband deployment goal.

Note: Although mobile wireless internet service is available throughout the Inland Empire region, CPUC data investigation shows that over the years mobile ISPs advertised data states that 99% of California is served by mobile broadband. Detailed field testing and investigation by CPUC resulted in development of the CPUC CalSPEED broadband application for computer devices and smart phones, actually show that only approximately 8% of the State may be able to be served by mobile wireless broadband.

If this 8% mobile wireless broadband service is added to the CPUC Wireline and Fixed Wireless service data in the Chart above, then the Inland Empire region would show over 98% of households served. However, CPUC has found even the 8% mobile service level to be problematic, and is continuing to study this issue, leaving it out as a method to meet the 98% deployment goal at this time.

To address the overall effectiveness of mobile wireless broadband service, CPUC is conducting a CalSPEED Home Broadband Study working with California State Universities Monterey Bay and Chico to measure home broadband speed and quality using the test protocols from its mobile testing apps and protocols. Results of the testing are planned for the April 2020 Annual CASF Report. This information may provide insight on how to measure mobile broadband service in the future.

Therefore, the Inland Empire cannot include mobile broadband service as meaningful broadband deployment based on the fact CPUC is not using it at this time; hence, the Inland Empire region has yet to achieve the 98% goal.

CPUC also does not currently consider satellite internet service as reliable broadband similar to mobile wireless broadband. Satellite service has restricted bandwidth, latency issues, data caps, and is subject to weather conditions. CPUC is also in the process of collecting information about advancements in satellite broadband service and may, in the future, include it as a viable option for considering households as served. However, it is not considered by the CPUC as providing broadband service under their 6 down and 1 up definition, and therefore is not included as a method to reach the 98% deployment goal.

CPUC is focusing on Wireline and Fixed Wireless broadband service data per region; therefore, these methods are considered the viable ways to extend broadband service to unserved households in the Inland Empire to achieve the 98% broadband deployment goal.

2. Where are the Unserved Households in the Inland Empire to reach 98% Deployment?

Over the past years, IERBC has been successful in identifying unserved priority areas within Riverside and San Bernardino Counties, working with the CPUC to set priorities, and getting the word out in the Inland Empire region and to ISP's about areas in need.

In order to achieve the 98% served goal, it is necessary for IERBC to continue identifying priority unserved areas, as well as focus on getting more specific information about unserved households in sparsely populated areas and those in small clusters in order to understand locations and characteristics of the unserved households.

The California Broadband Map is a useful resource as it shows areas in the region that are unserved; however, there needs to be additional data provided either on the map or in spreadsheet form to better understand the unserved households in the Inland Empire, such as street address.

CPUC has only provided unserved household data by city and by unincorporated area, which is too broad to be of much help in locating and understanding an unserved household. For example, all unserved households in the unincorporated areas of Riverside are lumped together with no geographic data points. Knowing that there are 19,011 unserved households in Riverside County is not much help when the Broadband Map data provided by the CPUC states "unincorporated areas of Riverside County" for these unserved households with no corresponding address, or other data points.

In addition, the Broadband Map shows all areas that are unserved, and does not have an added layer to only show unserved households. Along with houses, random uninhabited areas in the desert and mountains, as well as, commercial and industrial are all shown as unserved areas. The map does not have a function to look at each of these categories of unserved individually and to be able to pull out the unserved households. It therefore takes a lot of effort to try to figure out the location and circumstances of the unserved households that need to be addressed in order to help bring them service.

Therefore, it is very difficult and time-consuming to study the map to get to a more granular level regarding unserved household information in order to ascertain which unserved households to focus on and prioritize as part of the 28,857 unserved households to meet the 98% deployment goal. It is also difficult to determine if a household is misclassified as unserved, as the data on the map lags from 1 to 2 years at any given time. Currently the data on the map is listed as of 12/31/2017.

This lag in data on the map means that needless effort is done to try to figure out scenarios to bring service to an “unserved household” on the Broadband Map that in fact already has service, which can then prevent truly unserved household from getting needed attention. In addition, the region may be closer to reaching the 98% served goal than is thought. Therefore, improved CPUC broadband mapping and more frequent data updates to the Broadband Map are essential to implementing a preferred scenario for the Inland Empire.

The CPUC has indicated it is in process of refining the California Broadband Map. It is unknown if upgrades to the map will include a separate layer to assist in better identifying and locating unserved households, such as the unserved household specific location, including the street address. This type of detailed information on the map will help in identifying and analyzing the unserved households that have the best chance of being served in developing a preferred scenario for the Inland Empire.

Regardless of its constraints, the California Broadband Map is the only viable source of information to try to identify where the unserved households are to meet the 98% deployment goal.

IERBC utilized the available data on the California Broadband Map to identify priority areas where there are large amounts of unserved households. However, in order get to the 98% deployment goal, the lesser understood areas with small clusters of unserved households that are spread throughout the region need more detailed analysis and should be part of the preferred scenario for the region.

Identifying these small clusters or even individual unserved households, being able to understand what is happening at the unserved household location, and why they don’t have service in order to find a solution to get them service, will be a lot easier if the Broadband Map can be improved, or if CPUC can provide a spreadsheet or list of where the unserved households are located, as well as by having the CPUC provide a layer on the map that separates unserved households from other unserved areas, i.e., vacant land, commercial, industrial, etc.

3. What Type of Unserved Households comprise the Inland Empire Preferred Scenario?

IERBC has identified three types of unserved household categories that generally make up the 28,857 unserved households in need of service to reach the 98% broadband goal for the Inland Empire Preferred Scenario:

a. Priority Areas with many unserved households covering larger geographic areas shown on the Broadband Map as having little to no service.

The priority areas are typically well known in the region as areas without broadband service or with very poor service. If broadband can be extended to these areas, it will most likely be through a combination of wireline and fixed wireless service.

Broadband service could be provided by nearby ISP's extending their service either with or without broadband infrastructure grants such as from the CASF program or federal government.

An ISP's outside of the area may also be willing to investigate the service problems in the identified priority area, assess needs and situation of the area, and are open to pursuing CPUC CASF funds and/or other broadband infrastructure grants to expand their business and become a provider for the area.

CPUC CASF Broadband Infrastructure Grants, federal Connect America Fund II (CAF II) grants, and USDA Broadband ReConnect Program funding are most likely the sources of funding that will help bring broadband service to the Inland Empire priority areas.

In addition, the CPUC CASF Broadband Line Extension Program may be an avenue for ISPs already in the area to extend service to unserved households in the priority areas.

Over the past few years, IERBC and CPUC have identified priority areas in Riverside and San Bernardino County shown in the exhibits below that need broadband service.

Additional priority areas need to be identified as part of the Inland Empire Preferred Scenario.

IERBC has found that once priority areas are identified, incumbent ISPs and ISPs new to the region become more interested in applying for CASF and other types of funding to help bring service to the areas. This does not mean that all priority areas will receive service, but it provides notice to the incumbent and other ISPs that IERBC and regional leadership will be highly supportive of grant applications and other approaches an ISP may want to take to bring service to the priority areas.

Priority Unserved Areas in San Bernardino County:

The following San Bernardino County priority unserved areas cover large geographical areas where it is well known there is little to no broadband service.

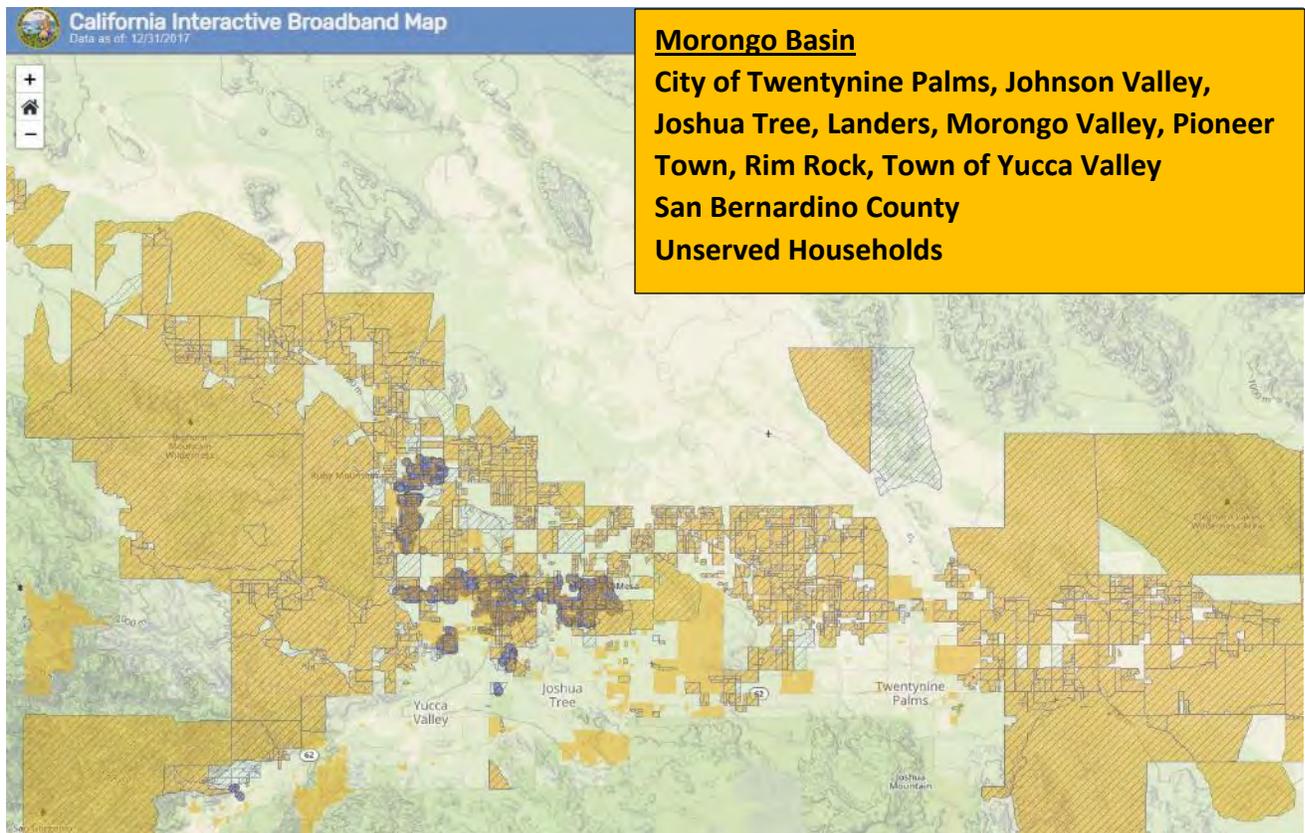
- **Morongo Basin**

The Morongo Basin is comprised of the City of Twentynine Palms, Town of Yucca Valley, and unincorporated areas of San Bernardino County including, Johnson Valley, Joshua Tree, Landers, Morongo Valley, Pioneer Town, and Rim Rock.

Frontier Communications, the incumbent ISP in the area, has received federal CAF II allocations to provide broadband service in the Morongo Basin.

The Exhibit below shows unserved areas in gold with the hashed overlay as areas where Frontier requested federal CAF II funding to extend broadband service.

The purple dots show areas where Frontier Communications has deployed CAF II funding in the Morongo Basin.



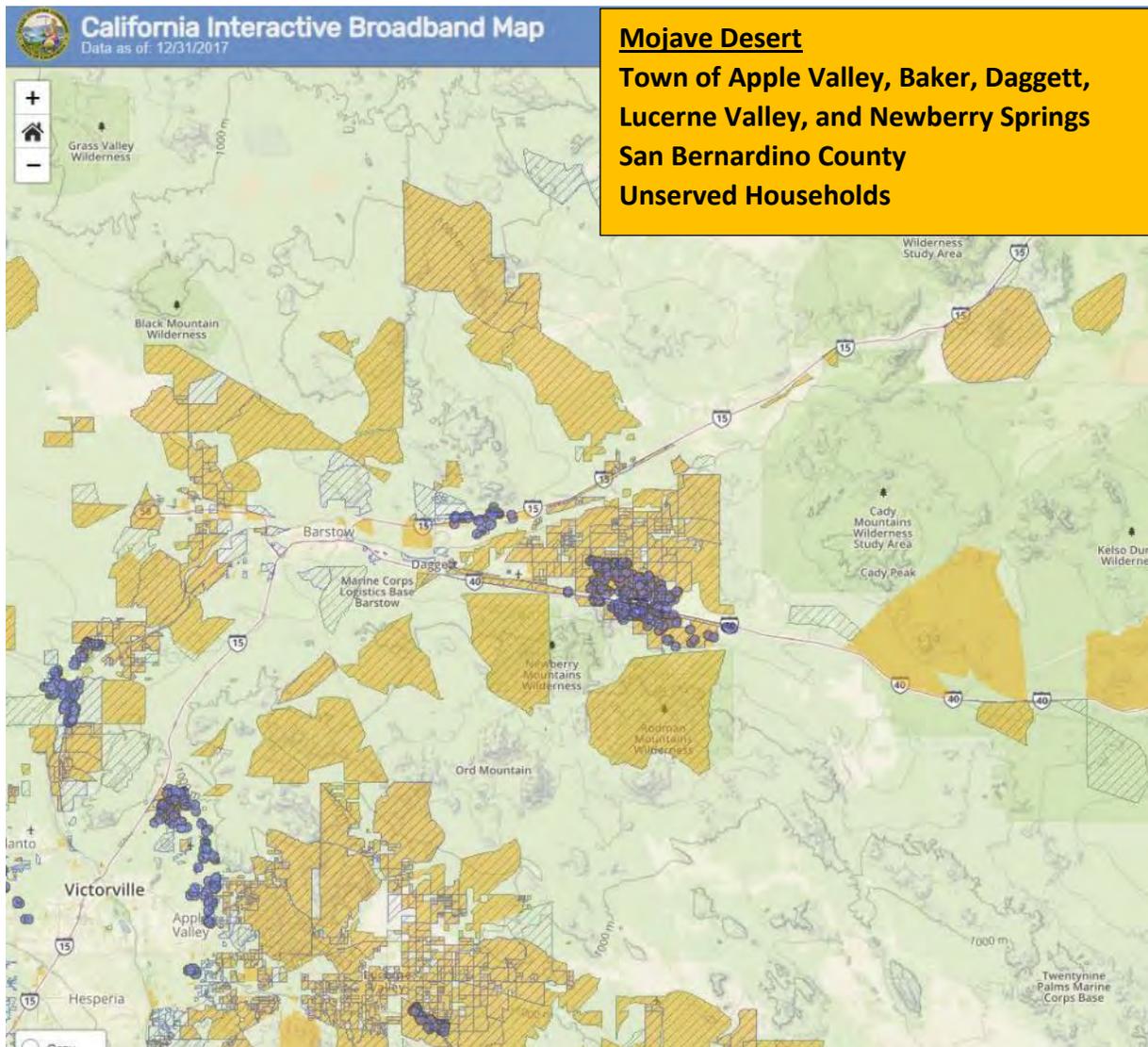
▪ **Mojave Desert Region**

The Mojave Desert Region includes the Town of Apple Valley, and unincorporated areas within San Bernardino County, including Baker, Daggett, Lucerne Valley, and Newberry Springs.

Frontier Communications, the incumbent ISP in the area, has received federal Connect America Fund II (CAF II) allocations to provide broadband service in the Mojave Desert Region.

The Exhibit below shows unserved areas in gold with the hashed overlay as areas where Frontier requested federal CAF II funding to extend broadband service.

The purple dots show areas where Frontier Communications has deployed CAF II funding in the Mojave Desert Region.



Priority Unserved Areas in Riverside County

The following Riverside County priority unserved areas cover large geographical areas where it is well known there is little to no broadband service.

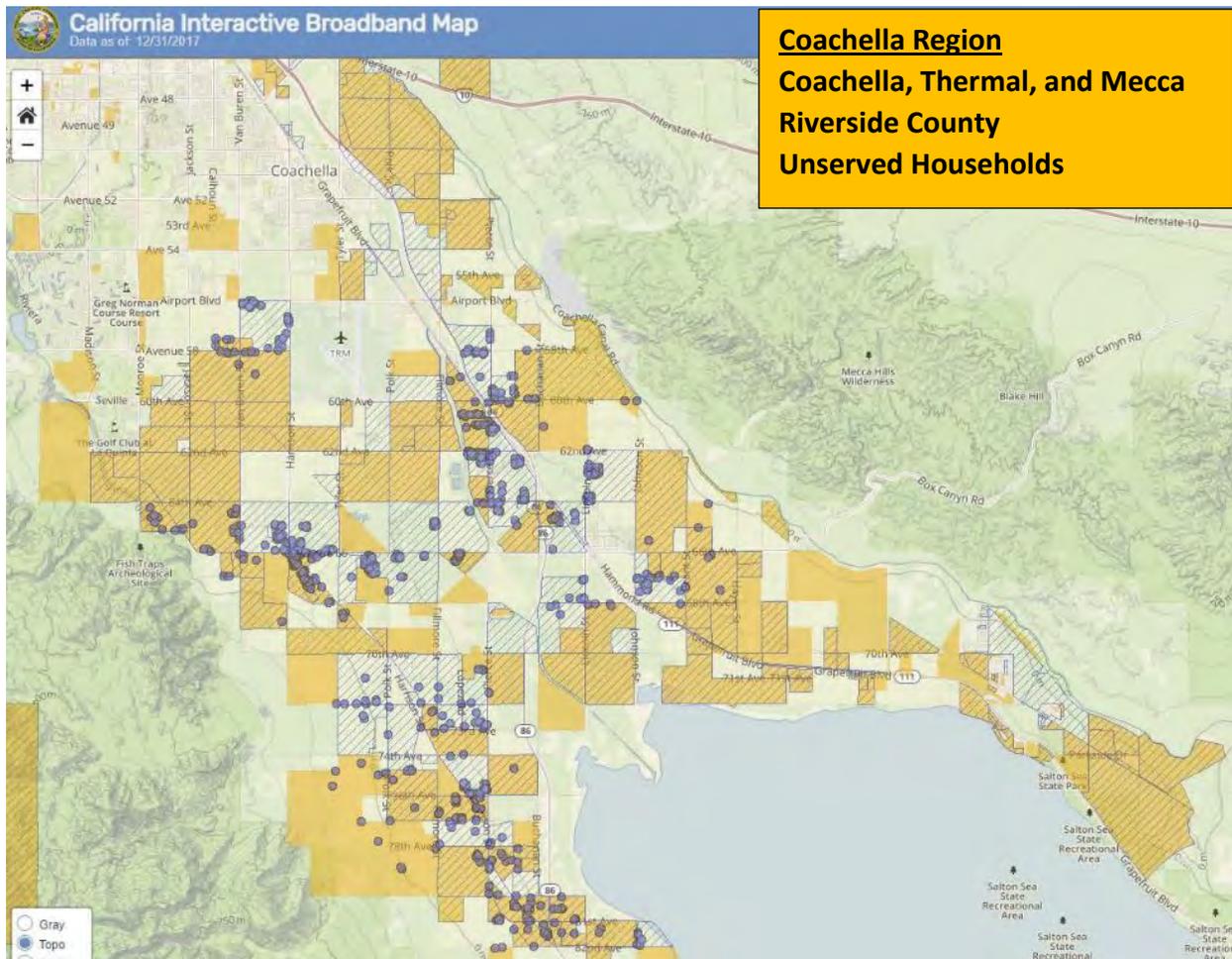
- **Coachella Region**

The Coachella Region is comprised of the City of Coachella and unincorporated areas of Riverside County including Thermal and Mecca.

Frontier Communications, the incumbent ISP in the area, has received federal Connect America Fund II (CAF II) allocations to provide broadband service in the Coachella Region.

The Exhibit below shows unserved areas in gold with the hashed overlay as areas where Frontier has received federal CAF II funding to extend broadband service.

The purple dots show areas where Frontier Communications has deployed CAF II funding in the Coachella Region.



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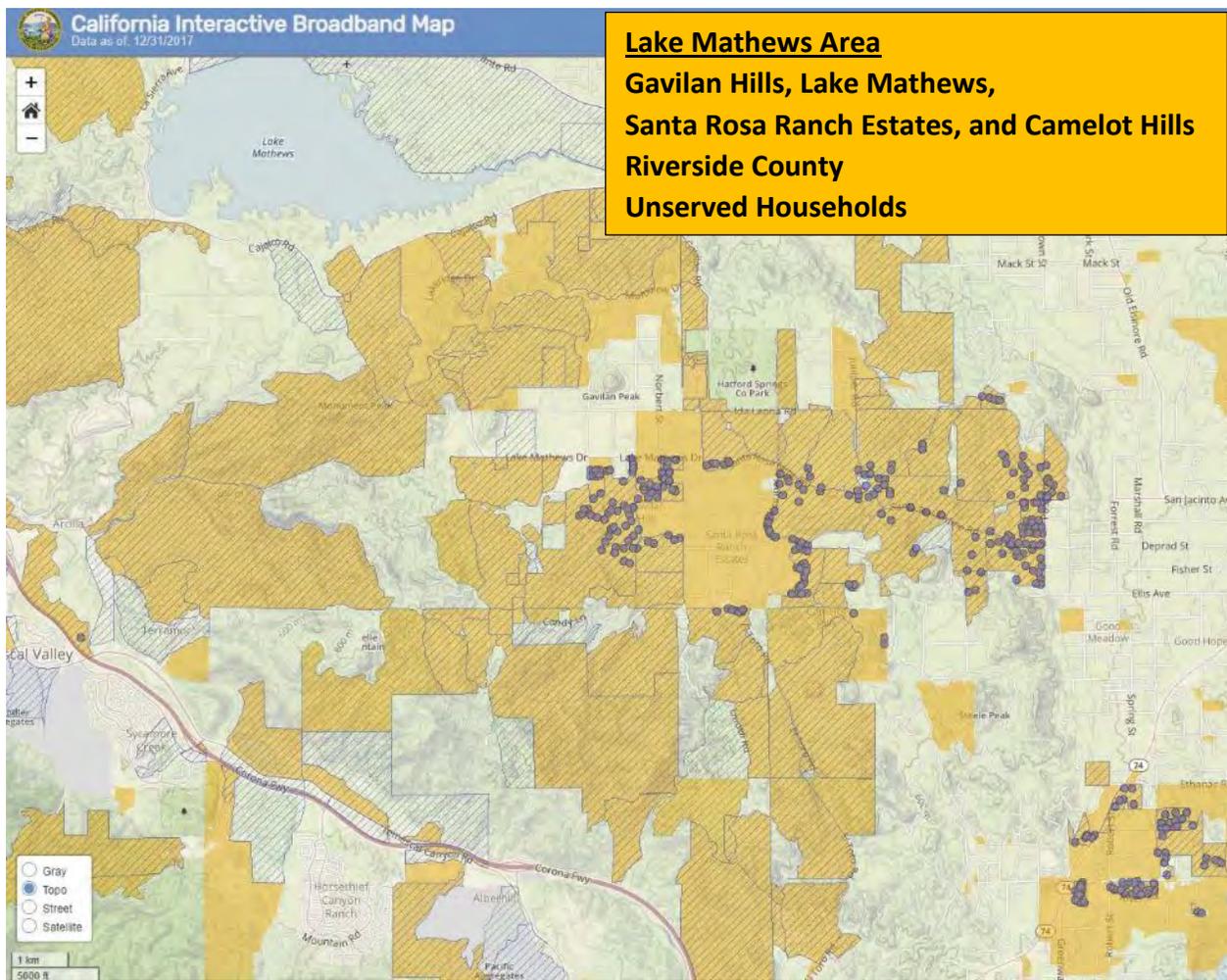
▪ **Lake Mathews Area**

The Lake Mathews Area is comprised of unincorporated areas of Riverside County including Lake Mathews, Gavilan Hills, Santa Rosa Ranch Estates, and Camelot Hills.

Frontier Communications, the incumbent ISP in the area, has received federal Connect America Fund II (CAF II) allocations to provide broadband service in the Lake Mathews Area.

The Exhibit below shows unserved areas in gold with the hashed overlay as areas where Frontier has received federal CAF II funding to extend broadband service.

The purple dots show areas where Frontier Communications has deployed CAF II funding in the Lake Mathews Area.



b. Small clusters of unserved households throughout the region in rural, desert, mountainous, suburban, and urbanized settings—including mobile home parks

Small clusters of unserved households require more detailed data and analysis to understand where they are located, how many households are unserved and can be served, what ISPs are in the area, and to determine the best method and cost for providing internet service.

The unserved household clusters are found throughout the region. Some are at the remote end an area that has service, some are located right next to areas that have service, and some are located in pockets within areas that have high level service surrounding them.

For instance, the California Broadband Map shows there are pockets of unserved households located in mobile home parks throughout both counties completely surrounded by areas that are served.

The CPUC CASF Broadband Infrastructure Program, CASF Line Extension Program, federal CAF II funding, or other funding sources may be options for ISPs to bring service to these small clustered areas. However, the Broadband Map may also not be showing accurate data for some of the unserved households in small clusters, and some of these areas may actually be served. Therefore, working with ISPs and the unserved household property owners may be necessary.

Some of the areas with clusters of unserved households are in remote places where it may have been considered infeasible to extend lines, but now the newly approved CASF Line Extension Program may offer an ISP the opportunity to revisit these areas for financial feasibility where there may not have been enough unserved households to consider applying for CASF Broadband Infrastructure grants, or other federal funding, but the CASF Line Extension Program may be a good fit for them to provide service.

An unserved household at the end of a roadway may have been offered service with a cost from an ISP and did not want to pay it or did not have the means to pay it. In this case, perhaps the CASF Line Extension Program is an option for the ISP and the property owner to consider. In addition, many of the unserved household cluster areas are demarcated as eligible for federal CAF II funding, and may be in line to be served through the CAF II program.

In dealing with the unserved household pockets, in otherwise served areas, located in mobile home parks, there are a variety of reasons the households may be unserved. It might be that the park owner is providing Wi-Fi to its residents and this is not shown on the Broadband Map.

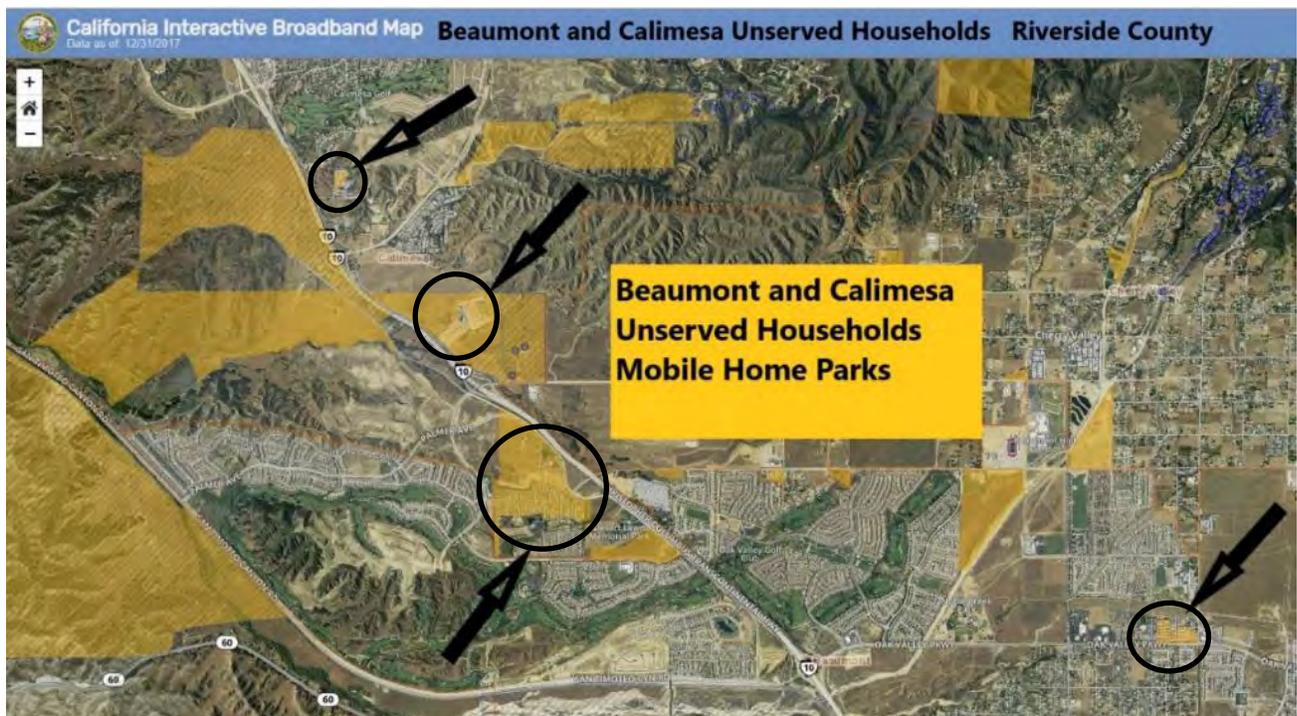
The park owner could also be in the process of researching how to work with an ISP and pay for broadband service for the park. It is also a possibility that a mobile home park has had cost or access issues in the past with ISPs.

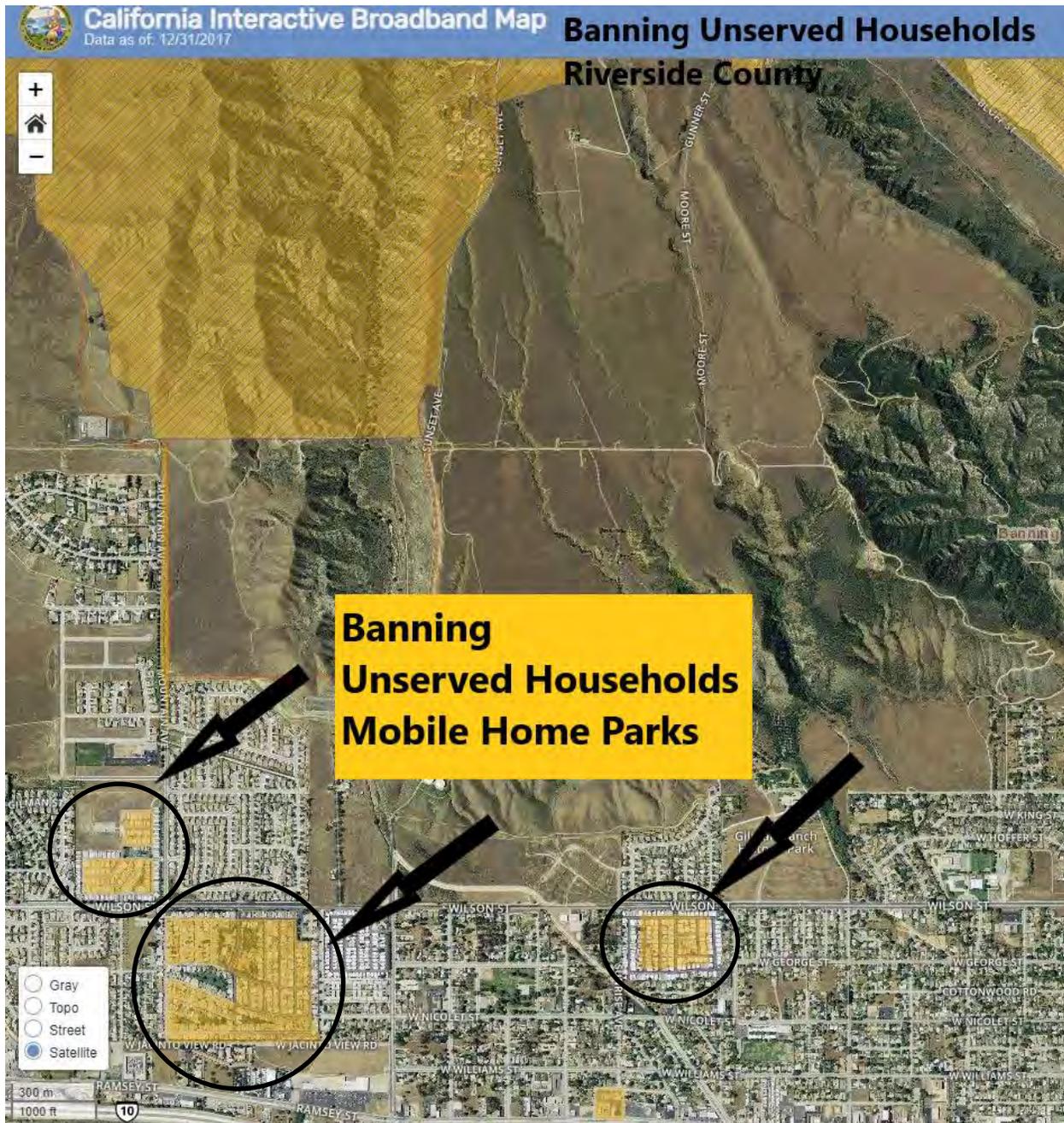
The streets inside Mobile Home Parks are on private property and considered private streets. Some of the mobile home parks show served households that back up to public street, but the internal “private” streets are shown as unserved. It is also possible that ISPs did not offer to provide service to a park.

ISPs may have Multiple Dwelling Unit (MDU) broadband service solutions that neither the park owner, residents or ISP have explored for mobile homes. An MDU solution may result in the park owner having one broadband account from the provider, and either offer the service as an amenity to the mobile home residents, or offering the monthly cost added voluntarily by the mobile homeowners to their space rent. This may not be acceptable to the mobile home park owners or residents; however, IERBC would recommend that the option is worth pursuing with willing providers that have MDU programs which could fit the needs of unserved mobile home parks.

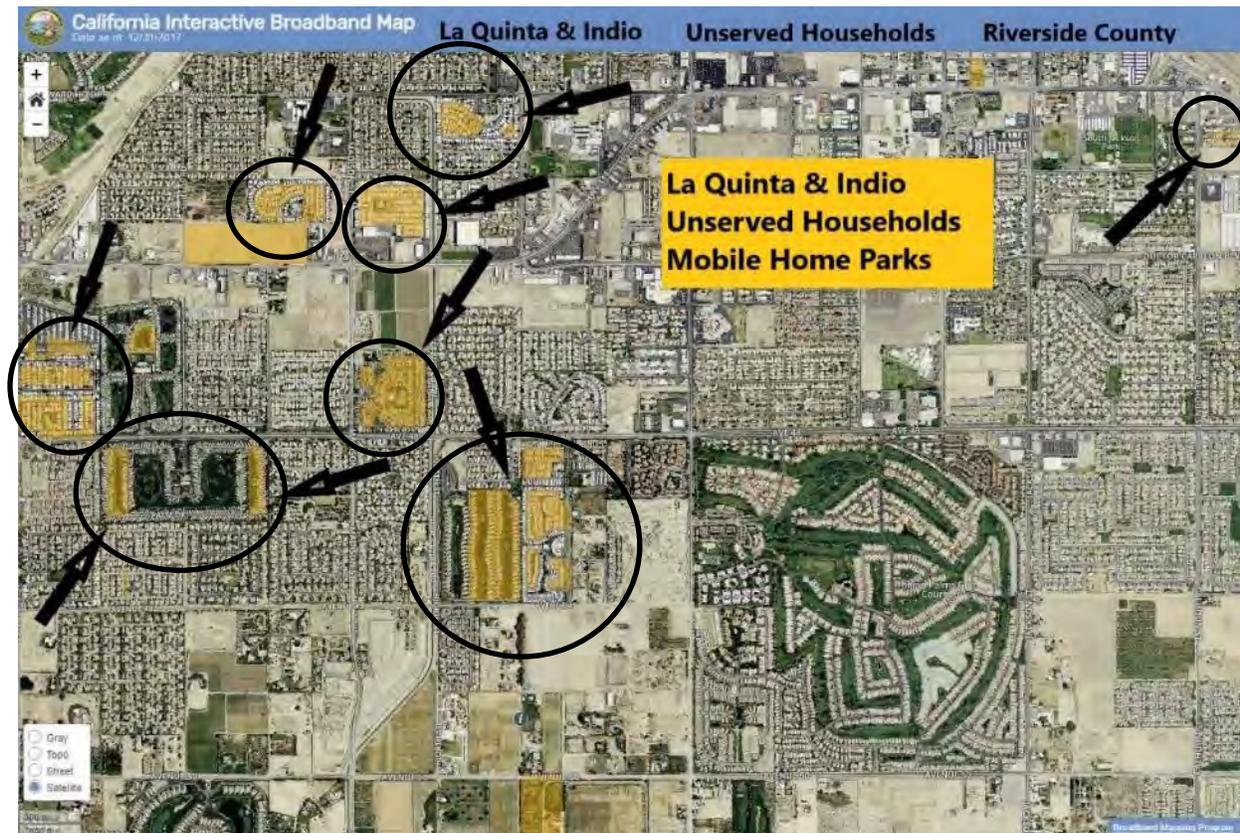
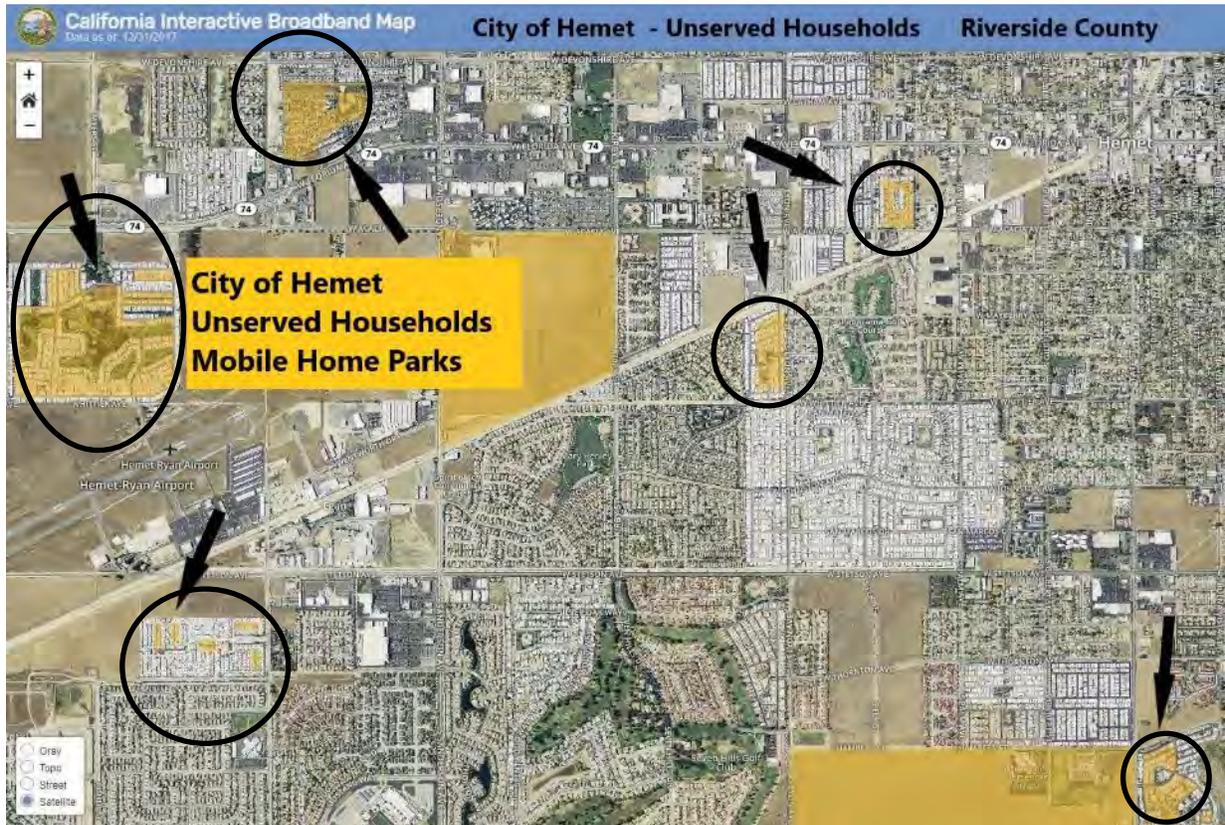
Providing service to the unserved mobile home parks is an important piece of the Inland Empire Preferred Scenario. CASF Broadband Infrastructure and Line Extension Grants may be a good match for the unserved mobile homes, as well as the ISP and the mobile home parks working together to determine what options exist for service outside of grants.

Below are examples of the unserved household pockets in various mobile home parks within the Inland Empire region. There are many more examples besides the ones shown, which means that understanding the unserved mobile home situation in the Inland Empire may significantly help reduce the number of unserved households in the region.





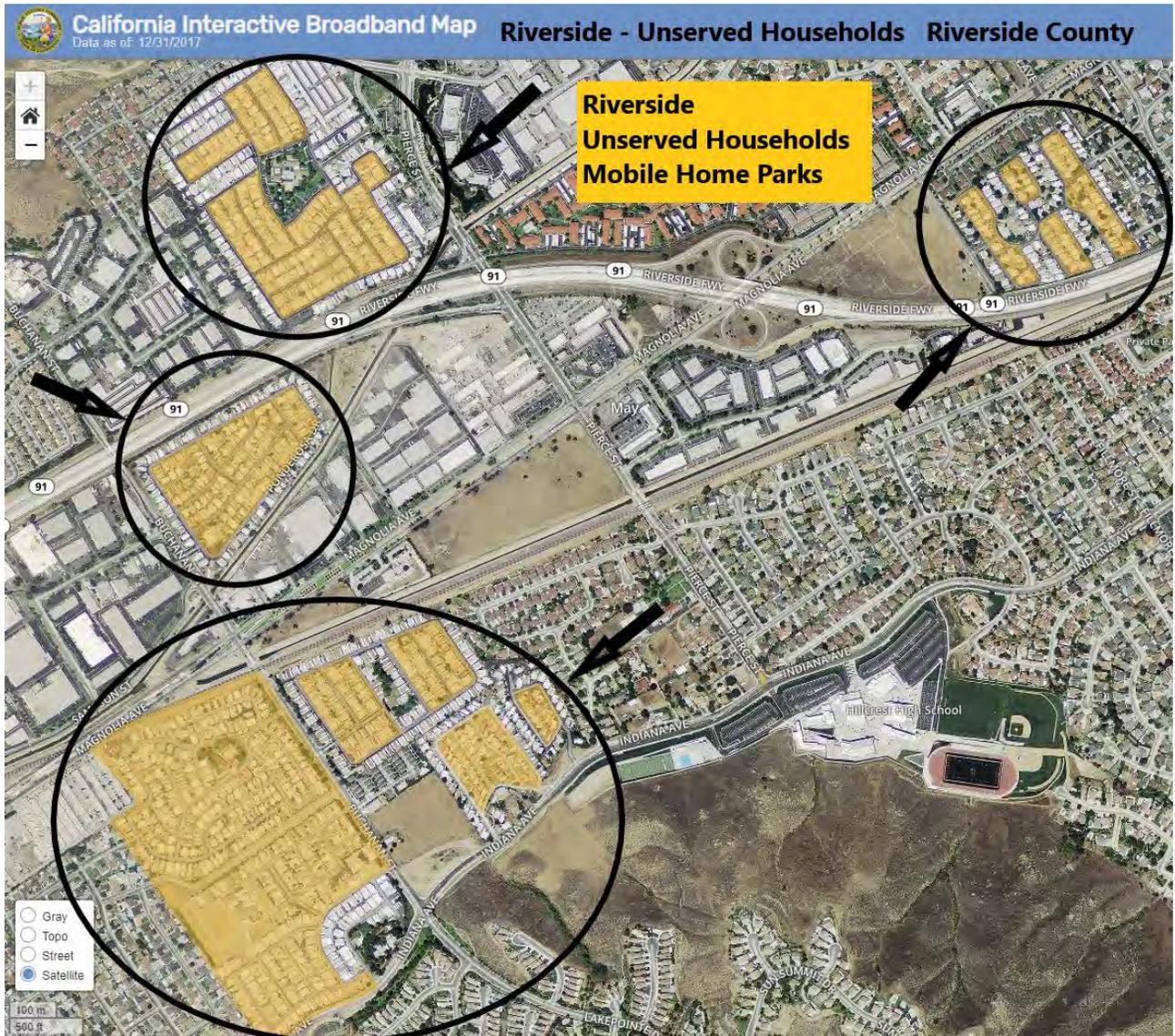
Inland Empire Regional Broadband Consortium (IERBC) - CETF
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October 1, 2020



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Preferred Scenario for Unserved Households in the Inland Empire
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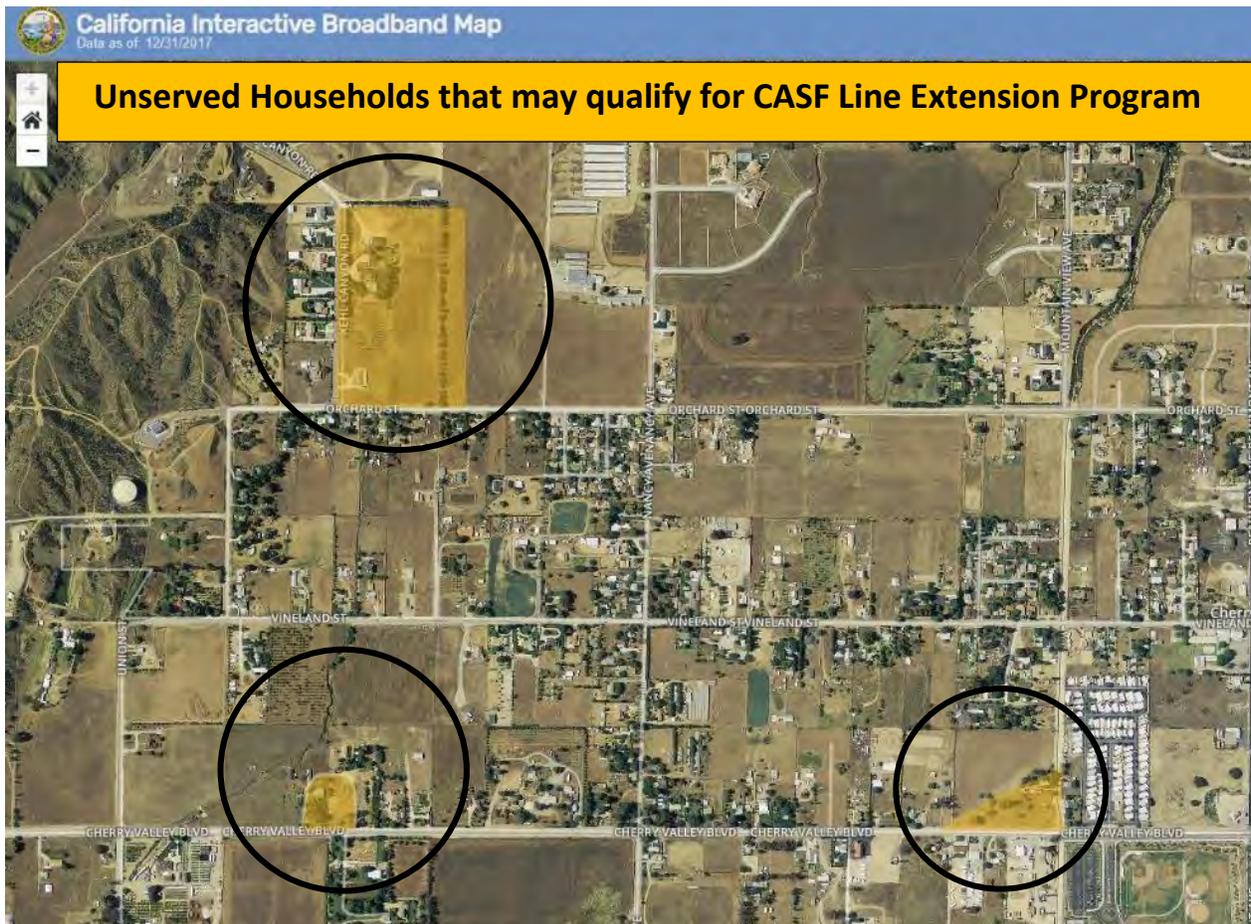
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Preferred Scenario for Unserved Households in the Inland Empire
October 1, 2020



c. Individual unserved households adjacent to served areas.

There are individual unserved households located adjacent to served areas throughout Riverside and San Bernardino County. There are providers actively providing service in the area adjacent to these homes. It is cost prohibitive to put in CASF Broadband Infrastructure Grants for these individual unserved household locations. Therefore, these types of unserved households adjacent to served areas may be good candidates and qualify for the CASF Line Extension Program.

Below is an exhibit showing the Cherry Valley unincorporated area in Riverside County where there are individual unserved households adjacent to served areas where an ISP may be able to extend its existing service to the household through the CASF Line Extension Program.



d. Sparsely Populated Areas of Unserved Households

Unserved households in sparsely populated, often remote areas, require more detailed data and analysis to determine if there is any method that is not cost prohibitive to serve, or functionally possible to serve, even with CASF, CAF II, and other potential broadband funding opportunities.

It is also unclear without more study, if the CASF Line Extension Program is even a possibility for some of the remote unserved households in sparsely populated areas.

Some of these unserved households may be using satellite internet service or mobile wireless internet service with a hot spot, which is not considered served by CPUC and AB1665. However, the households are not without some type of internet service and are functioning using the internet whether it be poor service or not.

Without counting satellite or mobile wireless as some level of broadband service equal to 6 up and 1 down, these households remain in the unserved category and may actually be receiving the best possible solution for their location, geological issues, and lack of providers able to serve them even with the available broadband grant programs being used elsewhere.

In fact, many of these types of unserved households may likely end up being part of the 2% in the region not considered served as part of the State's 98% broadband deployment goal.

Further detailed study of each of these remote unserved households would be needed to determine if any of them can be included for potential ISP service through wireline or fixed wireless technology to reach the goal of 98% broadband deployment in the Inland Empire.

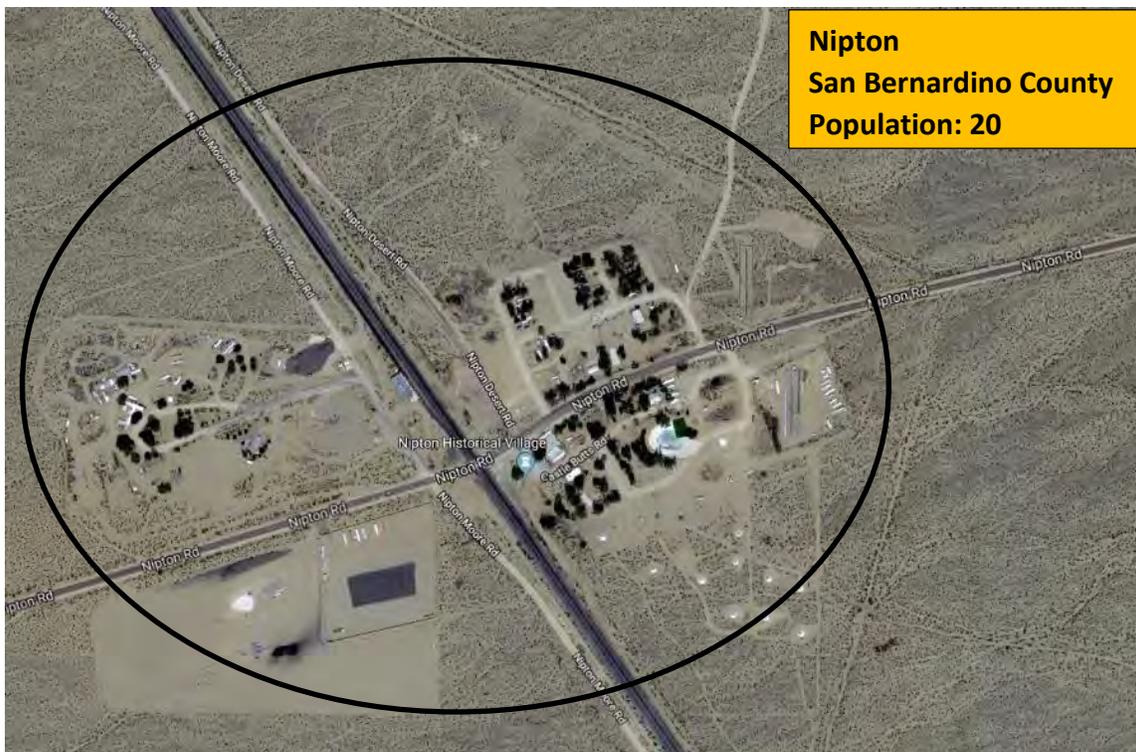
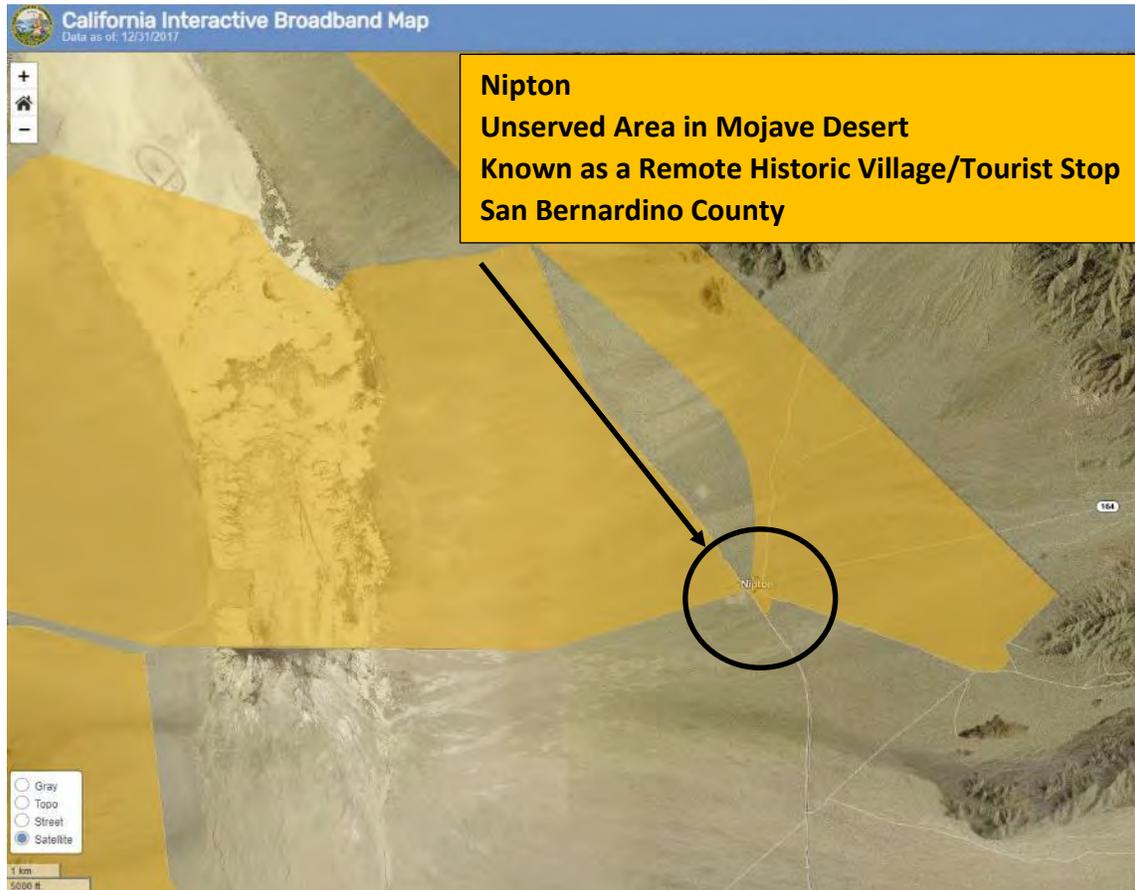
Below is a map of the unincorporated area of Nipton located in a remote area of the Mojave Desert within the north east corner of San Bernardino County.

Nipton was founded in 1905 as a mining camp and is now known as a remote village with a historic hotel and camping. Today, Nipton has a population of about 20 people.

Nipton residents rely on mobile phone and low quality wireless internet service. There is free Wi-Fi for hotel guests but not for the campground. Nipton is shown as unserved on the Broadband Map below.

There are no fixed wireless or wireline ISPs in the area providing service. It is unclear if ISP would consider applying for CASF funding programs, or other grants to bring broadband service to Nipton. Therefore, this type of area needs further study in order to determine broadband service feasibility. There are many of these types of unserved locations in remote areas throughout Riverside and San Bernardino Counties which would need dedicated study to determine if there is a case for future broadband deployment.

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Preferred Scenario for Unserved Households in the Inland Empire
October 1, 2020



4. Public Assets and Programs for Inland Empire Preferred Scenario Broadband Deployment

There may be public assets and programs that that government is able to contribute to ISPs in order to provide service to the unserved households and help deploy broadband to implement the Inland Empire Preferred Scenario. These could include the following:

a. Coordinated Environmental Clearance

Coordinated environmental clearance documents, such as California Environmental Quality Act (CEQA) Environmental Impact Reports (EIRs) and Mitigated Negative Declarations, as well as National Environmental Policy Act (NEPA) Environmental Impact Statements (EIS) and Environmental Assessments (EAs). When local agencies are processing these types of environmental documents for projects as lead agencies, they could as standard procedure, work with the project proponent and ISPs to include wireline or fixed wireless broadband service in the project description to eliminate duplicative environmental clearances and provide a more streamlined process for when ISPs are ready to deploy broadband to unserved areas.

This type of environmental documentation coordination is not being done in the Inland Empire, nor are there examples found of it being done in other parts of the state.

As part of the preferred scenario, the Cities and Counties in the Inland Empire should be encouraged to include ISPs in their notifications to Responsible Agencies and interested organizations regarding preparation of environmental documents. The ISPs should take advantage of this type of opportunity when receiving notice of environmental document preparation to request if their future broadband deployment needs can be incorporated in project description and be part of the environmental clearance process.

It would help if the cities and counties would all routinely post their CEQA notices and documents online. This is being done by some local government agencies, but mostly for larger, controversial projects—not as a matter of standard practice. However, as of January 1, 2019, California updated its CEQA Guidelines and is encouraging all lead agencies to post CEQA Notices and documents on their agency websites, as well as online at the State Clearinghouse operated by the Governor’s Office of Planning and Research (OPR). OPR is also looking to put all of their environmental documents (not just CEQA notices) online and has indicated, it may potentially in the future, become the platform for all local agency environmental clearance documents to be posted and available online.

As it is nearly impossible to find CEQA documents and detailed development plans on local agency websites, until this is addressed by cities, counties and the State, the opportunity to include ISPs in environmental documents is a more of a “wish list” item, and is something that should be addressed regionally as well as in statewide planning procedures.

b. Coordinated Project Permitting

ISPs should be coordinating with federal, state, and local agencies to alert them of their potential future broadband projects as they may be able to be included in other permits that are being processed for projects in the region.

Federal, state, and local agencies should be open to this type of streamlining, even though it is not the norm, because it would be beneficial to help reach the 98% broadband deployment goal in the region.

c. Government Agencies and ISP Shared Facility Agreements

Government agencies may be able to offer their buildings, poles, and public land to ISPs in the unserved areas in order to reduce the cost of broadband equipment installation and stimulate the ISPs to deploy in an area where they may not have found feasible without this type of cooperation.

The availability, feasibility, and sustainability of utilizing government facilities and poles for broadband deployment has not been studied in the Inland Empire. The preferred scenario to reach 98% broadband deployment includes this as a potential method to stimulate deployment in unserved areas.

Implementing this concept is most probable as a pilot type effort where local government is actively looking for solutions to improve broadband for unserved residents in their community and is open to new ideas in working with ISPs to stimulate deployment for these areas.

Government agencies and ISPs will need to be open to mutually beneficial agreements and to resolving issues related to shared government facilities for this to work effectively.

5. Identify Middle-Mile Back-Haul Facilities in the Inland Empire

The Inland Empire is fortunate to have several known middle-mile back-haul facilities, including public-purpose dedicated networks and dark or excess fiber owned by public utilities.

a. Southern California Edison (SCE) Carrier Solutions Network

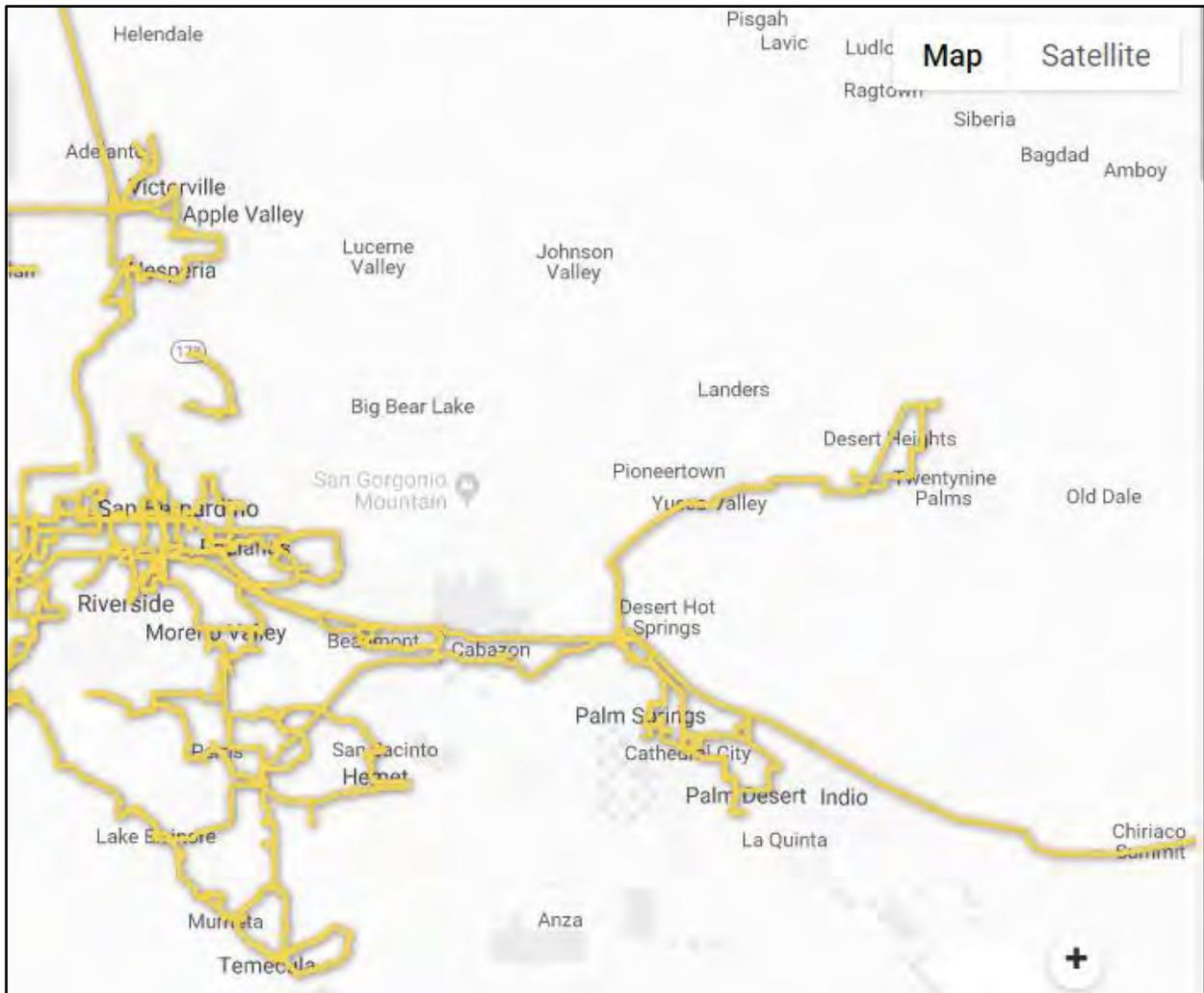
[SCE Carrier Solutions Network](#) provides localized, customizable network services in Southern California, including the Inland Empire region. SCE can provide dedicated internet access, dark fiber, ethernet, wavelength services, wireless infrastructure, wireless backhaul, and fiber optic infrastructure.

The SCE regional dark fiber and lit services network is available to ISPs, government agencies, education providers, and for enterprise solutions, such as business parks, apartment complexes, hospitals, etc.

The SCE Carrier Solution Network has over 5,700 miles of Fiber over 50,000 square miles. The SCE network may be able to be utilized by ISPs to provide service to unserved households in the Inland Empire.

Below is a map of the SCE network in the Inland Empire.

**SCE Carrier Solutions
Network Map
Inland Empire Region
Riverside and San Bernardino Counties**



b. Digital 395 Middle Mile Network

[Digital 395](#) is a publicly funded broadband middle-mile high speed internet network built from Reno to Barstow along Highway 395 covering over 580 route miles.

Digital 395 was built with federal stimulus and CPUC CASF Broadband Infrastructure funding and has been available statewide, including the Inland Empire, since 2013.

Digital 395 provides all ranges of speeds up to and exceeding Gigabit levels. The network is available to local and last mile ISPs. It also provides competitive rates for internet service to “anchor institution” which include government, hospitals, schools, and community centers.

Below is a map showing the Digital 395 Network Route from Reno to Barstow.

Digital 395 Middle Mile Network Route from Reno to Barstow



In San Bernardino County, the Digital 395 network is located in the Mojave Desert and runs from the northwest San Bernardino County Line to the City of Barstow.

Digital 395 is a middle mile resource In San Bernardino County that can be utilized as part of the preferred scenario for last mile providers. Digital 395 has already been used by Race Communications to leverage a CASF Broadband Infrastructure Grant to serve over 200 unserved households in the Red Mountain area along Highway 395 north of Barstow.

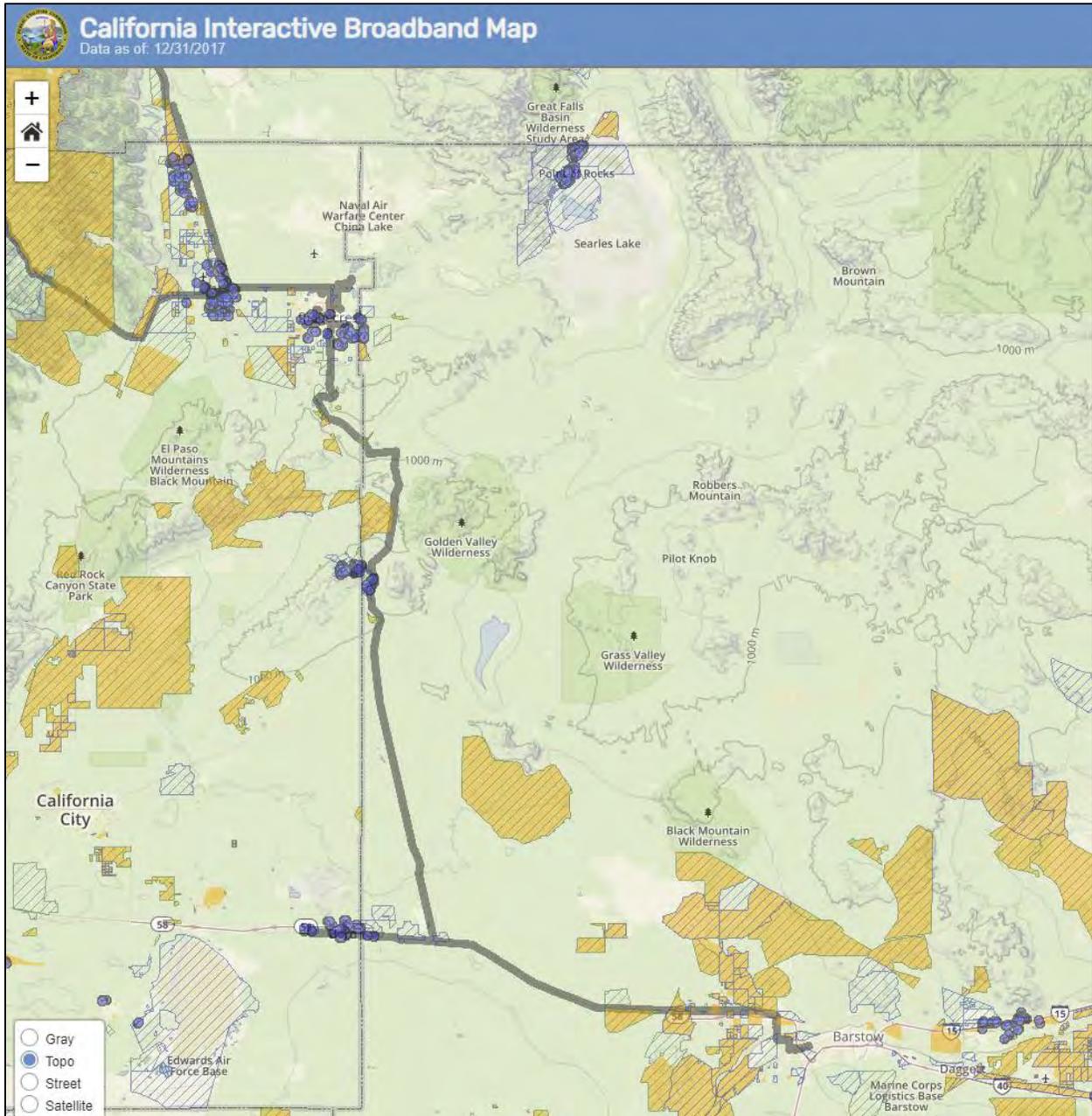
Below is a map showing the Digital 395 Network in San Bernardino County.

Digital 395 Middle-Mile Network in San Bernardino County



Below is a map showing unserved areas in San Bernardino County in relationship to Digital 395.

Digital 395 Network and Unserved Areas in San Bernardino County



c. City of Riverside Public Utilities (RPU) Dark Fiber Leasing Program

The [RPU Dark Fiber Leasing Program](#) is a dark fiber network in the City of Riverside for ISPs, telecommunications companies, wireless operators, enterprise networks, data centers and others with critical, high capacity needs. The network is operated and maintained by RPU.

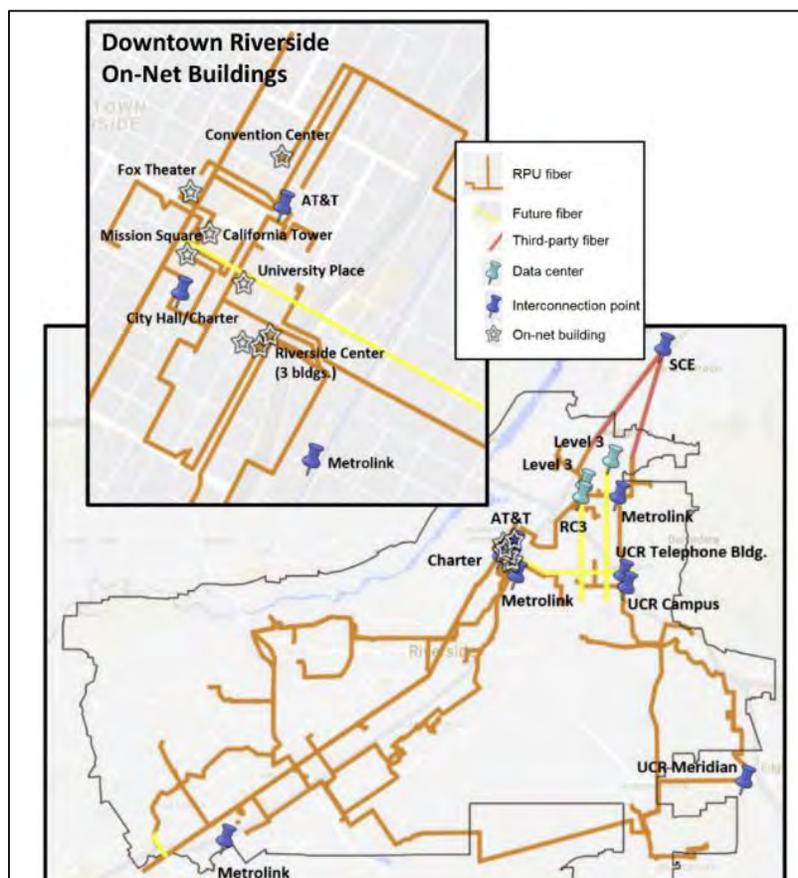
RPU operates its fiber network with connections to a limited number of office buildings, industrial properties and data centers within the Riverside city limits, as well as to ISPs.

RPU dark fiber network covers 120 route miles of fiber and is open access. Any ISP can lease fiber and use it to deliver bandwidth to customers. The network is connected with the SCE Carrier Solutions regional dark fiber and lit services network.

The RPU network is available to mobile carriers, wireless ISPs and infrastructure companies through the fiber, poles and power distributions throughout the City of Riverside, and may be an asset in providing service to unserved areas.

Below is a Map showing the RPU Dark Fiber Leasing Program Network in the City of Riverside.

**Riverside Public Utilities (RPU)
Dark Fiber Leasing Program Network Map**



6. New Last and Middle Mile Infrastructure Needed

It is difficult to determine the specific amount of last mile and middle mile infrastructure is needed in the Inland Empire for the preferred scenario. Fiber and wireless infrastructure location data is not tracked by local government. ISPs typically are not providing this type of detailed information to local government or the public.

IERBC recommends that local, regional, and state government use their GIS mapping to track ISP encroachment permit data, as well as request ISPs to disclose more data to them. With this type of mapping, the need for additional middle mile or last mile infrastructure could be assessed regularly and become a standard part of advanced planning within cities and counties, and the State, as well as, regularly support cooperative arrangements with the ISPs to streamline and combine environmental documents and permits.

In addition, many of the unserved areas are shown as eligible for CAF II funding, which indicates that there is an ISP interested in providing either fixed wireless or wirelines service many unserved households in the region. This could include constructing middle mile and last mile facilities, as well as the ISP upgrading its existing lines and facilities to upgrade service for the households to be considered served.

There has been discussion in the region for a need to extend a middle mile project in the Interstate 10 and Interstate 40 corridors within San Bernardino County that would extend to Nevada and Arizona. However, this project is at the concept level with no information available about any ISP actively working on specific project development activities or applying for CASF or other broadband funding.

Outside of this area, there has been no information about the desire for or need for other middle mile projects in the Inland Empire region. There has been no discussion about any other middle mile need that would be needed to bring broadband to unserved households. ISPs may be considering such facilities; but they have not provided any information to IERBC or regional leadership that is known at this time.

Last mile facilities are needed in the unserved areas and are eligible for CAF II, CASF and other broadband funding. With the CAF II funding scattered throughout so many unserved areas in the Inland Empire, the best approach is to encourage CAF II recipients to provide service for the last mile as often as possible.

IERBC encourages CAF II recipients to apply for CASF funds, and any other available funding, where additional cost would need to be covered in order to reach as many unserved households where CAF II funds are being deployed.

7. ISPs Willingness to Provide Broadband to Unserved Households in the Inland Empire

There is willingness from ISPs to provide broadband service to unserved households in the Inland Empire. With CAF II allocations awarded in our region, and CASF Broadband Infrastructure and Line Extension Funds available, IERBC encourages qualified ISPs to apply for any and all funding that will bring broadband to unserved households to help meet the 98% deployment goal.

Federal CAF II funding and CASF Grants are the most viable options in the Inland Empire for ISPs to reach the unserved households. The USDA Broadband ReConnect Program may also be a possibility to help fund service to the unserved households in the Inland Empire.

a. Federal CAF II Funding

Approximately 20,000 households in the Inland Empire are eligible for CAF II funding. Frontier Communications and Geo Links have both been awarded federal CAF II funds for Riverside and San Bernardino Counties which include many unserved households.

- Frontier Communications was awarded CAF II funds for approximately 18,000 locations in the Inland Empire. Frontier does not regularly engage with IERBC regarding their deployment efforts; however, their reporting to the CAF II program and the California Broadband Map, shows that they are in process of deploying broadband to the CAF II eligible sites. Frontier has not confirmed it will reach all of locations by the CAF II deadline in 2020. The CAF II program website states that areas where service providers accepted CAF II support, the Federal Communications Commission (FCC) plans to evaluate and address the areas that remain unserved after completion of the program in 2020. In areas remaining unserved, the FCC will award support through a competitive bidding process.
- GeoLinks was recently awarded CAF II funds for approximately 1,600 locations in the Inland Empire. GeoLinks is in the planning process and has six years to deploy. GeoLinks has met with leaders in the Morongo Basin—an IERBC and CPUC listed Priority Unserved Area—to determine if they can expand service beyond their CAF II locations.
- Note: Viasat, a satellite internet company, was also recently awarded CAF II funds for approximately 700 locations in the Inland Empire. When Viasat deploys internet service to these locations, the FCC will consider them served; however, CPUC will not as satellite service is not recognized by CPUC as broadband service. Therefore, the 700 viasat locations funded through the CAF II program will remain as unserved on the California Broadband Map.

b. CASF Grants

It is important for the preferred scenario that ISPs apply for CASF Grants in order to reach the unserved in the Inland Empire. I

IERBC provides a forum for leadership and stakeholders to address broadband policy and planning, broadband deployment, improved coordination with ISPs, and support for CASF and other broadband infrastructure grant applications, as well as helping to identify broadband deployment opportunities with ISPs.

IERBC has worked closely with ISPs to help foster, facilitate, and provide technical support for over \$39 million in successful CASF Broadband Infrastructure Grants in Riverside and San Bernardino County to bring service to 16,434 Unserved households.

IERBC encourages ISPs to apply for CASF Broadband Infrastructure Grants and offers technical assistance and help to the ISP in garnering support in the community and with regional leadership for CASF Grant Applications.

IERBC helps highlight priority unserved areas within the region, as well as gets the word out about the CASF Broadband Line Extension Program, which is now available and may be able to help unserved households that have been left out of broadband service in an area due to cost of extending service to them.

IERBC encourages ISPs to leverage CASF funds with CAF II allocations and other funding sources. In addition, now that CPUC only accepts CASF Broadband Infrastructure Grant program one time each year, IERBC emphasizes that ISPs needs to be proactive in their CASF grant preparation to get all of their project development, analysis, cost estimates, documentation, community support and attachments done by the annual deadline.

IERBC technical assistance includes IERBC setting up conference calls and meetings with the ISP and CPUC CASF staff, as needed, to ensure the ISP is able to discuss their project have their questions answered by CASF staff.

IERBC also helps ISPs connect, as needed, with local government, regional and state agencies to help clarify environmental processes, land use planning, engineering requirements, permitting, and other issues that may arise in the development of a potential CASF funded project.

IERBC keeps local, state and federal officials informed about their CASF Broadband Infrastructure Grant, often explaining the background, and how much effort is being made by the ISP to get service to the unserved.

It is difficult to estimate how many CASF Grants will be submitted in the Inland Empire since many of the unserved areas are CAF II eligible, and currently only the ISPs with CAF II allocations—Frontier Communications and GeoLinks—can apply for CASF Grants adjacent to the CAF II areas.

There are no pending CASF Grant Applications for the Inland Empire from CAF II ISPs that are known at this time in the Inland Empire. After 2020, if CAF II areas are not served, other ISPs can apply for CASF Broadband Infrastructure Grants.

As part of the preferred scenario, the best outcome would be for the CAF II funding to be utilized for the unserved households that are identified as CAF II eligible in our region. CASF Grants should be utilized by the CAF II ISPs to supplement their CAF II funded deployment.

Then once the CAF II work is completed, other ISPs should be ready to develop and submit qualified CASF Grants for the remaining unserved areas.

In addition, the CASF Line Extension Program should be utilized in as many places as possible by any ISP providing service in the area where disadvantaged unserved households qualify for the program.

8. Detail the Preferred Scenario for the Inland Empire Region

The Inland Empire Preferred Scenario includes a combination ISP resources, effort and funding sources to deploy broadband to 28,857 unserved households to achieve the 98% goal.

The Preferred Scenario will include the following approaches by ISPs in the region to reach the 98% goal.

- a. CAF II Funding Deployment**
- b. ISPs receiving CAF II funding should apply for CASF Grant Applications to leverage CAF II**
- c. ISPs apply for CASF Broadband Infrastructure Grants**
- d. ISPs apply for CASF Line Extension Grants**
- e. ISPs apply for USDA Broadband ReConnect Funding where feasible**
- f. ISPs use their own resources and/or work with property owners to connect small clusters of unserved households**
- g. Incumbent ISPs address the high number of unserved households in mobile home parks in pockets around served areas in the Inland Empire. Broadband service for the mobile homes could be achieved through a combination of ISPs using their own resources, working with mobile home park owners and residents, developing MDU options including cost sharing, and applying for CASF Broadband Infrastructure or Line Extension Grants were feasible.**
- h. ISPs should clean up their data with the CPUC on the California Broadband Map if they are serving an area or household and it is shown as unserved.**
- i. CPUC should provide data on the Broadband Map that is up-to-date so that resources and time is not wasted by ISPs, IERBC, or by CPUC working on CASF Grant Applications where unserved households are shown; however, it turns out half-way through the CASF Grant application process, or after the CASF Grant is submitted to CPUC that in fact another ISP is actually providing service.**
- j. The Technology will need to be a combination of fiber and fixed wireless to reach the unserved households.**

9. Inland Empire Preferred Scenario Estimated Cost

Below is a chart showing the Inland Empire Preferred Scenario estimated cost for deployment.

Inland Empire Region Preferred Scenario Cost Estimate			
Type of Unserved Household and Funding Source	Estimated Number of Households Served	Cost per Household to Serve	Total Remaining Cost to Reach 98% Deployment
CAF II Eligible Locations Unserved Households *Frontier Communications	18,057	CAF II Award	0
CAF II Eligible Locations Unserved Households *GeoLinks	1,656	CAF II Award	0
CASF Broadband Infrastructure Grants Unserved Households Priority Areas and Small Clusters *Incumbent and new ISPs	6,000	\$10,000	\$60,000,000
CASF Line Extension Grant Unserved Households in Sparsely Populated and Remote Areas *Incumbent ISPs	144	\$9,000	\$1,296,000
CASF Broadband Infrastructure and/or Line Extension Grants Unserved Mobile Home Households *Incumbent and New ISPs	2800	\$5,000	\$14,000,000
Total Unserved Households to Reach 98% Deployment:	28,857	Total Cost to Serve Remaining Unserved Households:	\$75,296,000

References

In developing the Inland Empire Preferred Scenario, IERBC evaluated the CPUC California Interactive Broadband Map data, CPUC data, as well as the following documents identifying broadband data, unserved households, and priority areas in the Inland Empire region:

- CPUC CASF Annual Reports, 2011 – 2018
- CPUC Resolution T-17443, Appendix 4, Broadband Infrastructure Priority Areas, June 26, 2014
- [Inland Empire Broadband Infrastructure and Access Plan](#), November 4, 2014
- CPUC High Impact Areas for Broadband Availability, Staff Whitepaper, February 2017
- CPUC Communications Division Workshop Materials on CASF Reform, May 25, 2017
- CPUC Inland Empire Consortium Area CASF Summary Data, February 24, 2018
- CPUC Inland Empire Consortium Region CASF Planning Tool Household Density in Wireline Unserved Census Blocks, February 24, 2018 (Based upon CPUC California Interactive Broadband Map data as of 12/31/2016)
- CPUC CASF Regional Consortia Summit Inland Empire Priority Areas Identification and Region Needs Report, March 6, 2018
- CPUC CASF Eligible High Density Census Blocks by Broadband Consortia, April 2018
- CPUC CASF Broadband Adoption Gap Analysis, June 2019
- [California Interactive Broadband Map](#), Mapping and Broadband Data as of 12/31/2017