

CALIFORNIA PUBLIC UTILITIES COMMISSION

Communications Division
Annual Report to the Governor and the Legislature

Annual DIVCA Report
For the Year Ending December 31, 2014

The Digital Infrastructure and Video Competition Act of 2006

“To promote competition, the state should establish a state-issued franchise authorization process that allows market participants to use their networks and systems to provide video, voice, and broadband services to all residents of the state . . .” DIVCA 5810



May 9, 2016



Team Responsible for this Report:

Michael Pierce

Dion Good

Michael Morris, Program Supervisor

Robert Wullenjohn, Program Manager

Michael Amato, Acting Director

1.	Executive Summary	1
2.	DIVCA Implementation	3
A.	<i>Role of Communications Division Staff in DIVCA Consumer Protection</i>	3
B.	<i>Franchise Renewal Decision of 2014</i>	5
3.	Analysis of Video Data	6
A.	<i>AT&T and Verizon Have Met Their Build-out Requirements</i>	6
B.	<i>Video Deployment by AT&T and Verizon Increased by 6.2% in 2014</i>	7
C.	<i>AT&T & Verizon Have Met Their Low Income Obligations</i>	8
D.	<i>State of Video Competition: Choices Among Video Service Providers Increased in 2014</i>	9
E.	<i>Video Subscribership Plateaued, While Broadband Subscribership Continues to Grow</i>	11
F.	<i>Over-The-Top Video Beginning to Compete with Traditional Bundled Video</i>	11
G.	<i>Shift From Local Franchises to State Franchises Continued</i>	13
H.	<i>Amendments to Existing State Video Franchises Continue to be Recieved</i>	15
4.	Analysis of SVF Holder Broadband Data	18
A.	<i>Seventy-Two Percent of California Householdss Are Offered Wireline Broadband by Two or More SVF Holders at Speeds of 10/1 Mbps</i>	21
B.	<i>Broadband Availability at Each Advertized Speed Tier Exceeds Consumer Subscriptions for That Available Tier</i>	24
C.	<i>Subscribers to Broadband Faster than 25 Mbps Increased by 63% in 2014</i>	25
D.	<i>More than 1.7 Million New Households Subscribed to Broadband Speeds Faster than 100 Mbps During 2014, Due to the Deployment of New Technology</i>	26
E.	<i>Weighted Average of Subscribed Broadband Download Speed Has Increased</i>	27
F.	<i>Wireline and Fixed Wireless Broadband Speeds Are Faster in Urban Areas</i>	28
G.	<i>Mobile Broadband Subscriber Growth and Penetration Rates Are Greater Than For Wireline Broadband</i>	30
H.	<i>Subscription to Cable Broadband Exceeds DSL Subscriptions and the Difference Is Widening</i>	34
5.	Appendicies	36
	Appendix A: DIVCA History	36
	Appendix B: DIVCA Decisions and Resolutions	38
	Appendix C: DIVCA Data Collection, Methods, Sources and Limitations	42
	Appendix D: Broadband Subscriptions and Availability by Broadband Speed Tier	48
	Appendix E: Video Franchise Area Maps	49

1. Executive Summary

This report to the legislature presents the annual video and broadband service information of California state video franchise holders and their affiliates (SVF holders)¹ pursuant to the Digital Infrastructure and Video Competition Act of 2006 (DIVCA),² for the period January 1, through December 31, 2014. The Act seeks to promote competition via a state-issued franchise authorization process that allows market participants to use their networks and systems to provide video, voice and broadband services to all residents of the state.³

Finding: Video availability and competition increased

As of December 2014, AT&T and Verizon offered wireline video to almost 7.3 million households – more than half of all California households. During 2014, AT&T and Verizon increased the number of households to whom they offer video by over 6%, almost an additional 500 thousand households over the prior year.⁴

Since implementation of DIVCA in 2007, almost 7 million more households gained a choice of wireline video provider. In 2007, only 3.4 million households had a choice of more than one provider; as of December 2014, 10.3 million do.

However, while metropolitan areas tend to have two franchise holders offering wireline video (and in few cases, three or four choices), 2.4 million California households still had access to only one wireline video provider, typically located in non-metropolitan rural areas. Further, 140,000 households have no wireline video providers. Though satellite-delivered video services may be available to many of these households, satellite providers are not required to obtain a video franchise so are not considered in this report.

Both AT&T and Verizon exceeded their two, three and five year video build-out obligations.⁵ Further, both AT&T and Verizon met their three and five year low income household build-out obligations and continue to meet the annual 30% video availability requirement.

¹ Examples of affiliates include those providing wireless service, and video programming pursuant to unexpired local Cable TV franchises. State Video Franchise holders, other than affiliates, hereafter referred to as “SVF holders.”

² Cal. Pub. Util. Code §5800 – 5970.

³ Cal. Pub. Util. Code §5810(a)(1)(C).

⁴ FCC and DIVCA census tract data for video have the presumption that if one household in a census tract is offered service by any SVF holder, all households within the block are served. Broadband subscription data is reported by smaller census block. For both, the presumption is rebuttable and adjustments are later described.

⁵ Based on the PU Code § 5890(e)(4) in 2013.

Finding: Wireline advertised broadband speed-availability increased

Broadband at speeds within the 100 Mbps to 1 Gbps range was made available to an additional 4.5 million California households in 2014. At the end of 2013, only 54% of California households had such availability, while at the end of 2014, 89% of households did. This increase is largely due to cable TV providers' deployment of DOCSIS 3.0 technology.

Broadband speed alone is not a determinant of a network's capability to support high-quality voice services. While this report presents availability by speed tier, in consideration of IP transition issues, decision makers also need to consider quality factors, such as jitter, packet loss, latency and others, in addition to speed that affect access to over-the-top voice services. The CPUC's CalSPEED.org testing application can provide network quality information. Such testing requires end-user initiation.

Finding: Broadband subscribership increased while video subscribership plateaued

Wireline broadband subscriptions in the 25-100 Mbps download speed tier (the most subscribed tier) increased 11%, an additional 348,546 households over the prior year. Services meeting the benchmark to be considered "advanced communications services," (i.e., greater than or equal to 25 Mbps download), increased by 63%, an additional 2 million households over the prior year. All wireline broadband subscriptions grew by 3.8%, an additional 371,123 households over the prior year.

As of December 2014, 94% of California households had wireline broadband available from at least one SVF holder at advertised download speeds between 25 Mbps and 100 Mbps, and 30% of those subscribed. Further, 89% of households had wireline broadband available at download speeds between 100 Mbps and 1 Gbps; however, only 15% of those subscribed.

The three year plateau of video subscribership at about 6.6 million may be related to the availability of "over-the-top" video providers like Netflix, Hulu, YouTube, HBO and Amazon, that may substitute for bundled linear video Cable TV offerings.

Finding: Franchise renewal application can first be filed beginning fall of 2016

On August 28, 2014, the CPUC issued Decision (D.)14-08-007 implementing the franchise renewal provisions of DIVCA by adopting rules for the renewal of the 10-year state issued franchises.

2. DIVCA Implementation

Holders of SVFs are required to submit data annually, on April 1, relating to their provision of video and broadband services, and information pertaining to their service to low-income households within the holders' video service areas, as of December 31 of the previous year. DIVCA directs the CPUC to aggregate this data and report it to the Governor and the Legislature annually, on July 1. (See Appendix A for a history of DIVCA, Appendix B for DIVCA decisions, and Appendix C for data collected).

While DIVCA provides that the CPUC is the sole franchising authority for issuing state video franchises, the statute also provides that video service providers are not public utilities and prohibits the Commission from imposing any requirements on state-issued franchise holders that are not expressly provided by DIVCA.⁶ DIVCA defined the jurisdiction of the Commission, limiting its enforcement authority, to the following provisions:

- Issuing and renewing 10-year video franchises.⁷
- Gathering data from state-issued video franchise holders on their deployment of video and broadband services on an annual basis.⁸
- Aggregating data submitted by holders for use in an Annual Report from the CPUC to the Governor and Legislature.⁹
- Verifying that holders of video franchises have complied with build-out and anti-discrimination requirements.¹⁰
- Enforcing the prohibition on the use of telco-video cross-subsidization.¹¹
- Collecting fees from video franchise holders to equal the cost of carrying out duties.¹²

A. Role of Communications Division Staff in DIVCA Consumer Protection

Section 5900(c) of the Public Utilities Code states that “the local entity (county or municipality) shall enforce all of the customer service and protection standards of this section with respect to complaints received from residents within the local entity’s jurisdiction.”¹³

⁶ Cal. Pub. Util. Code §5840 (a).

⁷ *Id.* at §5840 (a).

⁸ *Id.* at §5960 (b).

⁹ *Id.* at §5960 (c).

¹⁰ *Id.* at §5890.

¹¹ *Id.* at §5940, 5950; Decision Adopting a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006 at 174 [D. 07-03-014] (2007). (Phase 1 Decision). See the 2013 DIVCA Report for a discussion of the telco-video cross-subsidization issue.

¹² Cal. Pub. Util. Code § 5810(a)(3).

¹³ Public Utilities Code § 5900(c-j).

Consumer protection enforcement must occur through local entities' civil procedures for which results may be appealed to superior court for *de novo* review.

DIVCA adopted specific consumer protection provisions and is explicit about how local entities should enforce them. These standards include, but are not limited to, office and telephone service hours, pricing and programming notices, and billing and disconnect practices and policies. DIVCA orders local entities to adopt these standards and a schedule of penalties for any material breach of the consumer protection provisions by ordinance. For any alleged material breach of consumer protection standards, a local entity must provide the state video franchise holder written notice of the alleged breach and give the holder at least thirty days to remedy the specified material breach.

DIVCA also set forth the method for compounding penalties that local entities can impose (up to \$7,000 per occurrence) and prescribes the distribution of penalty proceeds between the local entity and the state's Digital Divide Account. Any interested person may seek judicial review of a local entity's decision in a court of appropriate jurisdiction.

Despite local entity authority for enforcement of customer service and protection standards, Communications Division (CD) staff at the CPUC receives and answers calls from residents and local municipalities who have complaints and questions about services provided by holders of state-issued video franchises. Examples of questions and topics that the CD staff typically addresses include: quality of service issues, pricing concerns, line extension disputes, and public, educational, and governmental (PEG) access issues. Staff responds to inquiries and complaints, and when appropriate, refers people to their local municipality. In addition, CD staff may contact local municipality staff about complaints received and provide information relating to their role in the process. When it can, staff also assists the municipality by contacting the video franchise holder about the specific situation and informally mediating discussions between the local municipality or customer and the video franchise holder.

The CPUC is responsible for ensuring that video service providers have valid state video franchises and for enforcing other franchise provisions of the statute. Some small video service providers have been found to be operating without either state or local video franchises. In these situations, CD staff begins by sending the video service provider a compliance letter demanding that it obtain a state franchise as required by law. Staff coordinates with affected local governments to advise them of the status of the matter and to seek input. Should the service provider not comply, the matter is escalated to a formal proceeding. Enforcement proceeding, I.14-08-015, was initiated in 2014 against New Day Broadband for operating without a State-Issued Franchise.

B. Franchise Renewal Decision of 2014

On August 28, 2014, the CPUC issued D.14-08-007 implementing the franchise renewal provisions of DIVCA by adopting rules for the renewal of state issued franchises. Initial franchises are granted for a period of 10 years and may be renewed.

Section 5850 requires that the process for renewing an existing franchise be identical to the process set forth in DIVCA for obtaining an initial franchise except that the renewal process must be consistent with federal law governing the renewal of cable television franchises and the applicant seeking renewal must not be in violation of any non-appealable court order issued pursuant to DIVCA. In addition, §5900(k) of DIVCA requires that ORA be allowed to advocate on behalf of consumers during the renewal process.

The decision finds that these requirements are met by adopting rules for the renewal of existing franchises that are identical to the rules for the issuance of an initial franchise with two exceptions. First, the renewal applicant must attest to the fact that it is not in violation of any non-appealable court order issued pursuant to DIVCA. Second, the rules for renewal require that ORA and local entities be provided with notice of the renewal application and the opportunity to comment on the sole issue of whether the applicant is in violation of a non-appealable court order.

Renewal applications must be submitted no later than 3 months prior to the date the current franchise is due to expire but no earlier than 6 months prior to that date. Comments on the application must be submitted in writing to the Commission's Video Franchising and Broadband Analysis team within 15 days after the application is served on local entities and ORA. Comments must be limited to whether the Applicant is in violation of a non-appealable court order issued pursuant to the Digital Information and Video Competition Act (Cal. Pub. Code §§ 5800 et seq.) and must be accompanied by a court order supporting the existence of such a violation. ORA's comments may also include whether the renewal Application meets the requirements of §5840(h)(2).¹⁴

In addition, ORA may comment on whether the applicant has complied with DIVCA's obligations during the term of its existing franchise. Comments submitted by ORA on compliance with DIVCA's obligations may lead to future action by the Commission but have no bearing on the disposition of the application for renewal.¹⁵

¹⁴ General Order 169, Section V.B.

¹⁵ D.14-08-007 at COL 6 ("In addition, allowing ORA to provide the Commission with information regarding the applicants compliance with the obligations referenced in § 5840(e) when subject to the limitations discussed in this decision will have no bearing on the process for renewal of franchises set forth in § 5840.") In addition, at p. 21 ("We will also allow ORA to include additional information regarding the applicant's compliance with the obligations referenced § 5840(e), which the Commission will not consider as part of the franchise renewal process but may lead to further action outside the renewal process.")

On July 1, 2015, ORA filed a petition seeking to modify the renewal decision in order to include consideration of past performance.¹⁶ Responses to the petition were filed on July 31, 2015, and a reply was filed by ORA on August 10, 2015. The Commission has taken no action on the petition to date.

3. Analysis of Video Data

This section of the report summarizes data describing video services that are provided by state-issued video franchise holders and their local affiliates, submitted in response to the statutory requirements of DIVCA.

A. AT&T and Verizon Have Met Their Build-out Requirements

DIVCA requires the CPUC to monitor state-issued franchise holders’ deployment of infrastructure and services to enforce build-out requirements contained in the statute.¹⁷ The build-out requirements for holders with over one million telephone customers¹⁸ are shown in the table below:

Build-out Requirements		
Time Frame	Holders with more than One Million Telephone Customers in CA	
	Predominantly Fiber Optic to Premises (Verizon)	Predominantly Non-fiber Optic to Premises (AT&T)
Within 2 years	25% of customer households in a telephone service area must have access to video service	N/A
Within 3 years	N/A	35% of households in telephone service area must have access to video service
Within 5 years*	40% of customer households in a telephone area must have access to video service	50% of households in telephone service area must have access to video service

*** Not required to meet these requirements until 2 years after at least 30% of households with access become subscribers for 6 consecutive months**

¹⁶ DIVCA’s intention is to separate the franchising / renewal processes from the enforcement process.

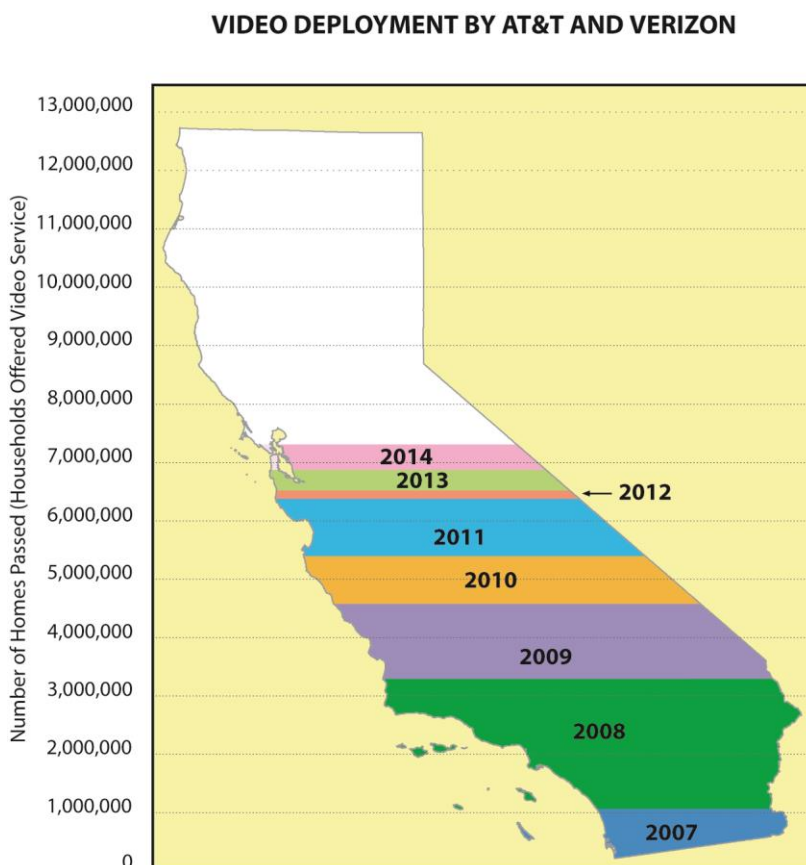
¹⁷ Phase I Decision, at 7; *See* Cal. Pub. Util. Code § 5890.

¹⁸ Because cable companies offer video service to any HH offered voice service the Commission did not impose on them DIVCA’s low-income / build-out requirements. *See* D.07-03-014, at p.163 and D.07-10-013, at p. 3.

Both AT&T and Verizon exceeded their two and three year build-out obligations, as defined in §5890(e) of the Pub. Util. Code. However, only Verizon met its build-out obligation within the five-year time frame set forth in the statute, by offering video services to at least 40% of the households in its telephone service area in 2011. DIVCA §5890(e)(4) permits a video service provider with more than one million telephone subscribers to delay meeting this obligation until it has a 30% video take rate for six consecutive months. In contrast to Verizon, AT&T qualified for this extension to meet its obligation during 2011 and 2012. In 2013, AT&T met its build-out obligation by offering video to at least 50% of the households within its telephone service area.

B. Video Deployment by AT&T and Verizon Increased by 6.2% in 2014

To measure video deployment, we count the number of households offered video services. The chart below shows that during 2014, AT&T and Verizon increased their combined deployment of video services by 6.2%, to 7.3 million households, more than half the households in the state. This compares with a 5.5% increase during 2013. During 2011, AT&T and Verizon had increased their combined video deployment by 18%.



The number of households offered video by all holders of state-issued video franchises increased by 392,143 (1.8%) to 21.9 million households during 2014. That is compared with a 4.4% increase in 2013, a 3.2% increase in 2012 and a 4.5% increase to 19.97 million households in 2011.¹⁹

C. AT&T & Verizon Have Met Their Low Income Obligations

DIVCA includes low income build-out requirements for state-issued franchise holders with more than one million telephone customers in California.²⁰ Based on this threshold, AT&T and Verizon are the only two state video franchise holders subject to this requirement. The low income requirement is shown in the table below:

Low Income Obligations

Time Frame	Holders with more than one million telephone customers in CA
Within 3 years	25% of households in a telephone service area with access to video service must be low-income households
Within 5 years	30% of households in a telephone service area with access to video service must be low-income households.
Annual requirement after 5 years	30% of low-income households in a telephone service area must continue to have access to video service.

Under DIVCA, five years after Verizon and AT&T begin offering video service and continuing thereafter, each is obliged to ensure that at least 30% of the households with access to video service in their respective video service territories are low income households. Both AT&T and Verizon met this this ongoing requirement at the five year mark, in 2012.

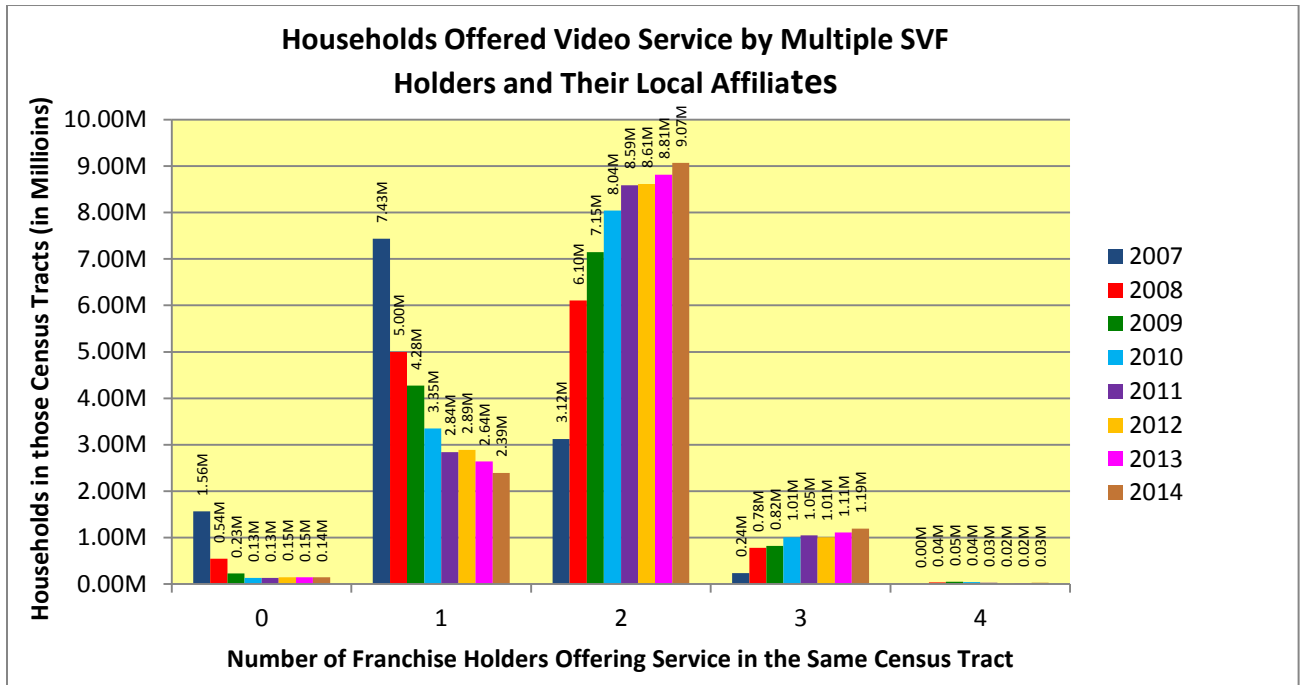
¹⁹ Due to multiple franchisees offering video to the same households, more households are offered video services than there are households in the state (12,830,035). For details, see Appendix D: Methods, Sources, and Data Limitations.

²⁰ Cal. Pub. Util. Code § 5890(j)(4); "Low income household" means those residential households located within the holder's existing telephone service area where the average annual household income is less than thirty-five thousand dollars (\$35,000), based on the 2000 United States Census Bureau estimates adjusted annually, to reflect rates of change and distribution through January 1, 2007. The low income household percentages derived from these 2007 estimates are the basis for calculating low-income compliance thereafter.

D. State of Video Competition: Choices Among Video Service Providers Increased in 2014

The chart below illustrates that the number of households located in census tracts in which two or more SVF holders or their local affiliates offer service increased in 2014. Since the passage of DIVCA, three times as many households (10.26 million households in 2014) have two or more video providers to choose from than were available in 2007 (3.4 million).

During 2014, 252,684 more households were offered a second video provider. That compares with an increase of 200,180 during 2013, and an increase of 28,075 during 2012. As of December 2014, 2.4 million households still had access to only one wireline video provider and 140,000 had no video providers.



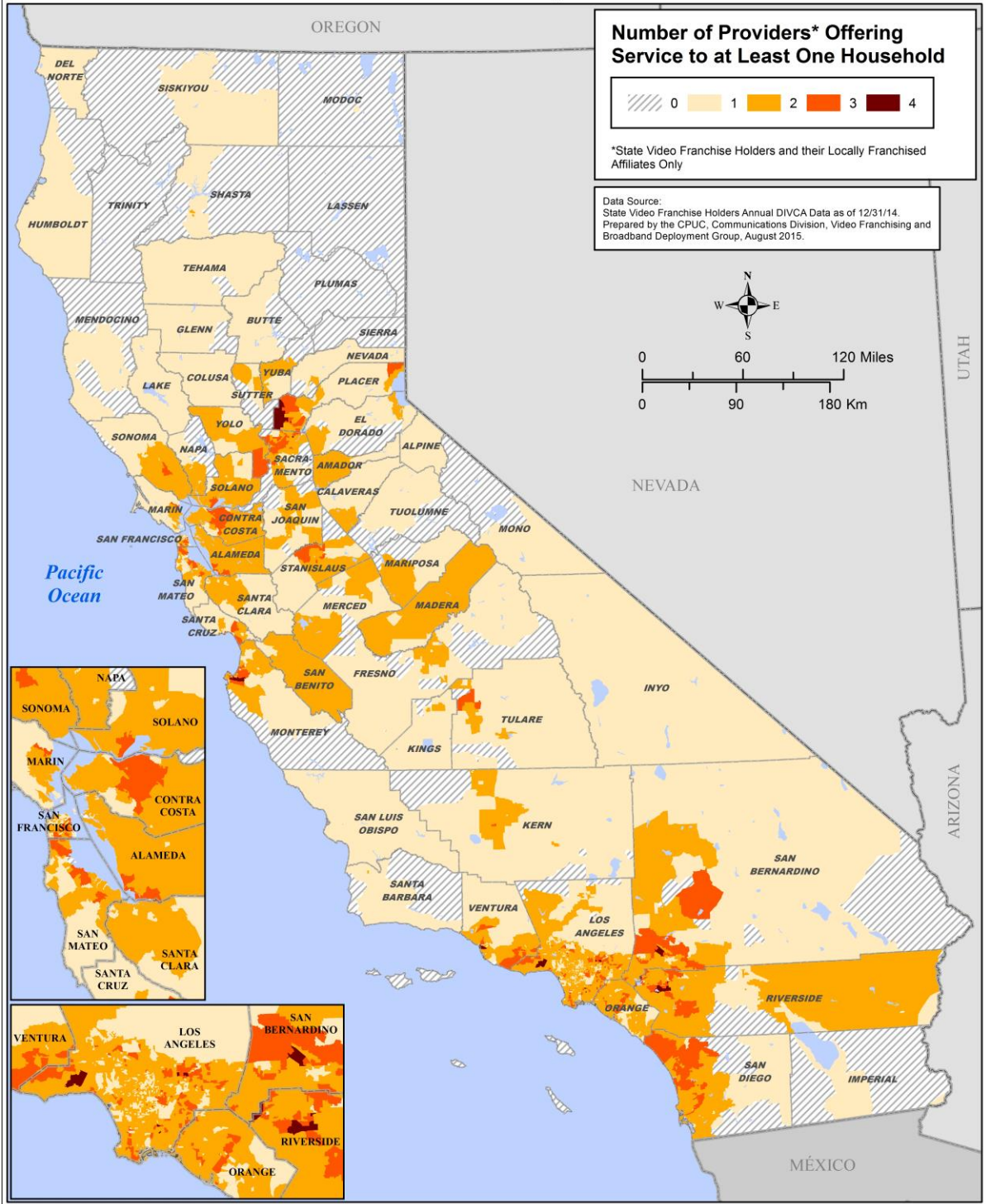
The map on the opposite page (10) indicates the number of video providers by census tract relative to county boundaries. The map indicates that many rural areas of the state have only one or no video provider and multiple providers serve metropolitan areas. The map also shows generally that urban areas have more than one provider. However, the number of providers within a census tract does not ensure availability to all households within the census tract. For some households within a census tract, competitive options may be overstated. This problem exists more in rural areas because they have large geographic areas within a census tract relative to urban areas.²¹

²¹ One solution, if the CPUC could, would be to demand more granular data from SVF holders. However, DIVCA specifies that such data is to be provided at the census tract level and prohibits the CPUC from imposing additional requirements. Pub. Util. Code § 5960(b).



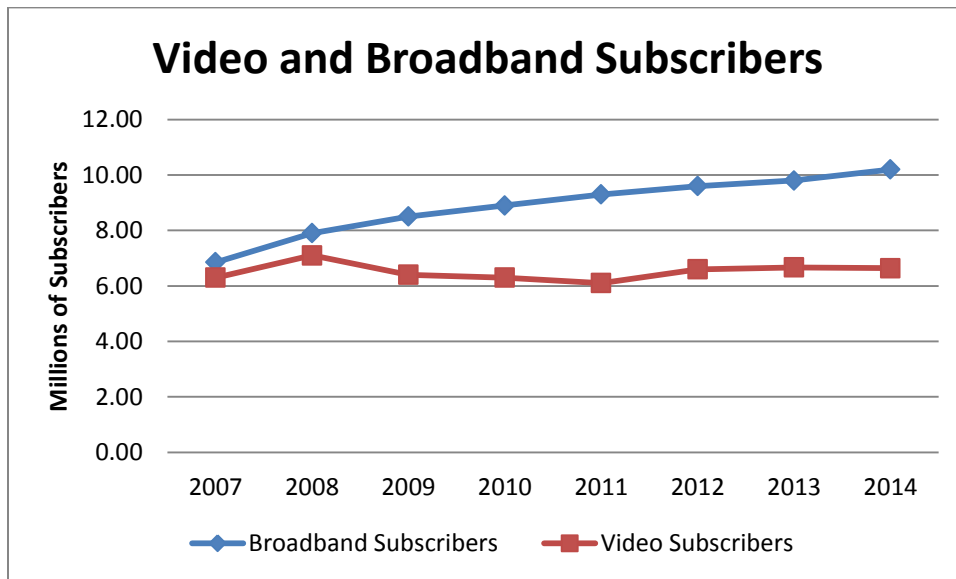
STATE OF CALIFORNIA VIDEO FRANCHISING

Video Providers by Census Tract



E. Video Subscribership Plateaued, While Broadband Subscribership Continues to Grow

The graph below shows that video subscribership has remained essentially flat at just over 6.6 million subscribers over the past six years, while broadband subscribership has continued a steady growth to over 10 million, from roughly the same base of 6 million. Specifically, video subscribership decreased by 0.5% (33,543) to 6.6 million households during 2014, while broadband subscribership grew 3.8% to 10.2 million during 2014. Since 2007, broadband subscribership to SVF holders (including their local affiliates) has grown by 48%, while video subscribership has plateaued.



F. Over-The-Top Video Beginning to Compete with Traditional Bundled Video

Over-the-top (OTT) video providers compete with traditional bundled linear video²² (Cable TV) by providing free and pay videos over any broadband connection (including existing cable operators' or telephone companies' broadband networks). The OTT distributors of both original and licensed content, such as Netflix, Hulu Plus, and Amazon, have seen significant growth as new entrants. In contrast to their growth, Cable TV providers are growing slowly. While OTT video may be a threat to the traditional Cable TV business model, 2014 DIVCA data have not yet shown a decline of video subscribers in

²² Linear video is a television service where the viewer has to watch a scheduled program at the particular time it is offered, and on the particular channel it is presented. Alternatives to this are OTT, digital video recorders and video-on-demand services.

California. Video subscribers in California have been stable at 6.6 million between 2012 through 2014, up from 6.4 in 2009, 6.3 million in 2010, and 6.1 million in 2011.²³

For some consumers, (a.k.a., cord cutters) OTT video services substitute for Cable TV services.²⁴ We hypothesize that OTT content will be a driver of increasing consumer demand for higher bandwidth broadband services, substituting for traditional bundled linear cable TV video service.

In response to the competitive challenges posed by OTT providers, traditional cable and IP-TV providers began market trials of their own over-the-top services during 2015. Comcast, Verizon, Time Warner, Charter, and AT&T have announced OTT and “skinny bundle” market trials and in some cases are reselling programming content over their broadband networks.

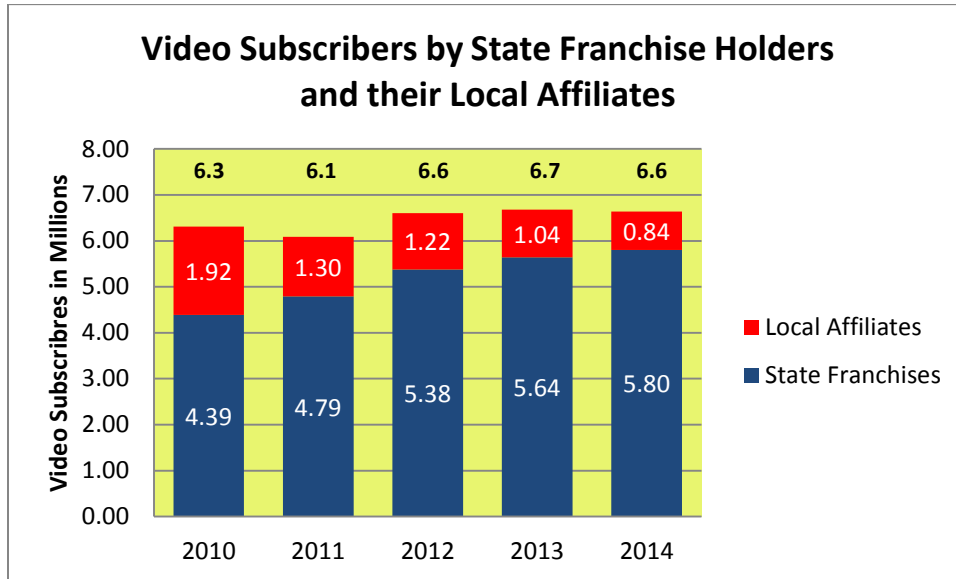
OTT substitution may well erode the Cable TV business model. This potential market change would impact products, services, prices, and industry structure. We will continue to evaluate and monitor the degree that such market changes impact the SVF program.

²³ See pages 17 and 21 for additional analysis.

²⁴ Most of the above network providers offer their own streaming video as “zero-rated.” i.e., viewing such programming does not count against any broadband capacity limitations. OTT viewing, though, would count against limits. There have been complaints that zero-rated programming violates the FCC’s network neutrality rules.

G. Shift From Local Franchises to State Franchises Continued

The shift towards state-issued video franchises has continued to grow each year. The chart below shows that the number of households subscribing to video provided under state-issued franchises increased by 32.2% (1.4 million) between 2010 and 2014, to 5.8 million households. We estimate that virtually all video subscribers will be served by state franchise holders by 2021. However, total subscribership to video declined from 6.7 to 6.6 million.

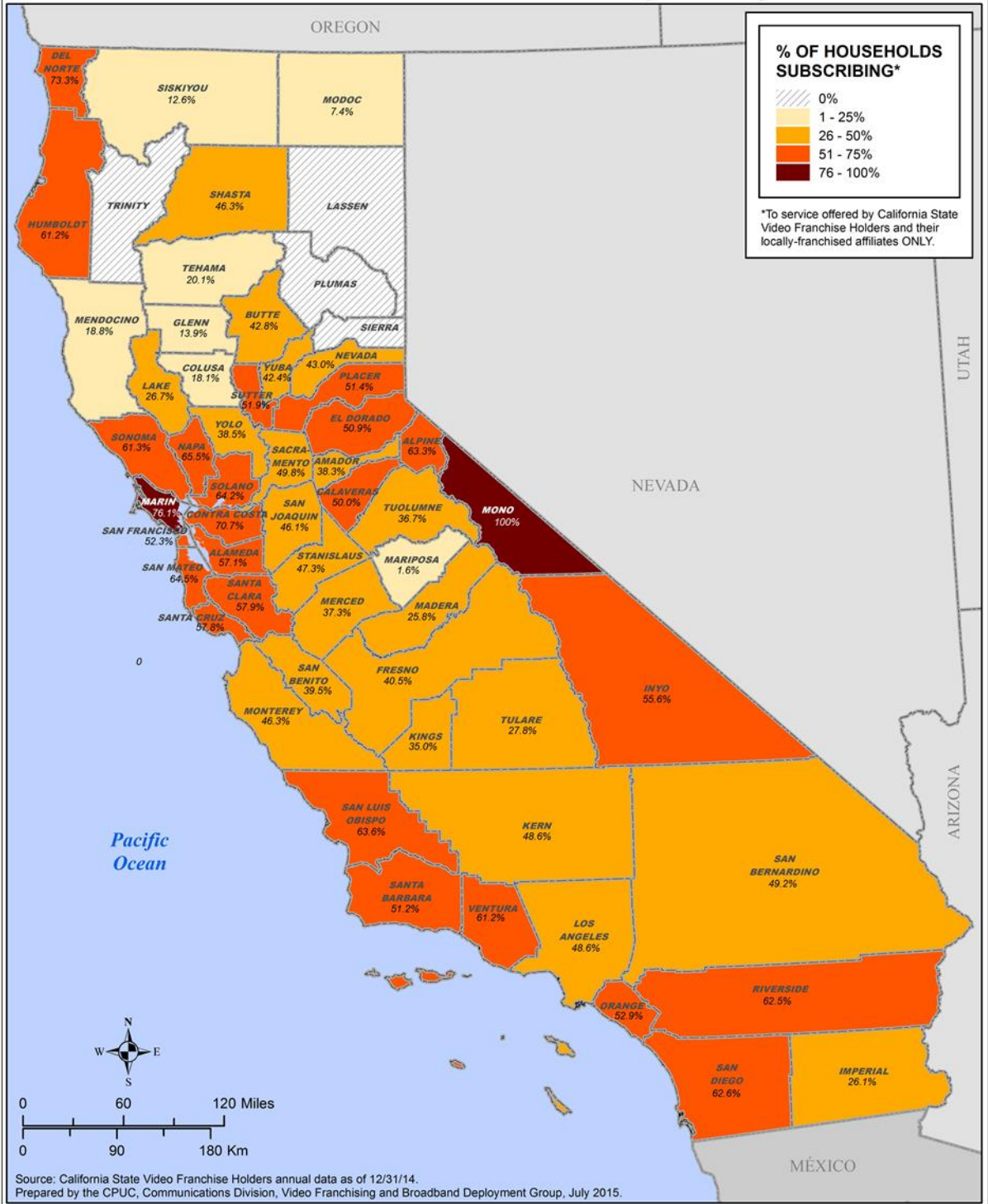


The map on the opposite page (14) shows the wireline video penetration rate for each county throughout the state for both state and local franchisees. The video penetration rate in each county is the total number of subscribers to video service in each county divided by the number of households in the county.



STATE OF CALIFORNIA VIDEO FRANCHISING

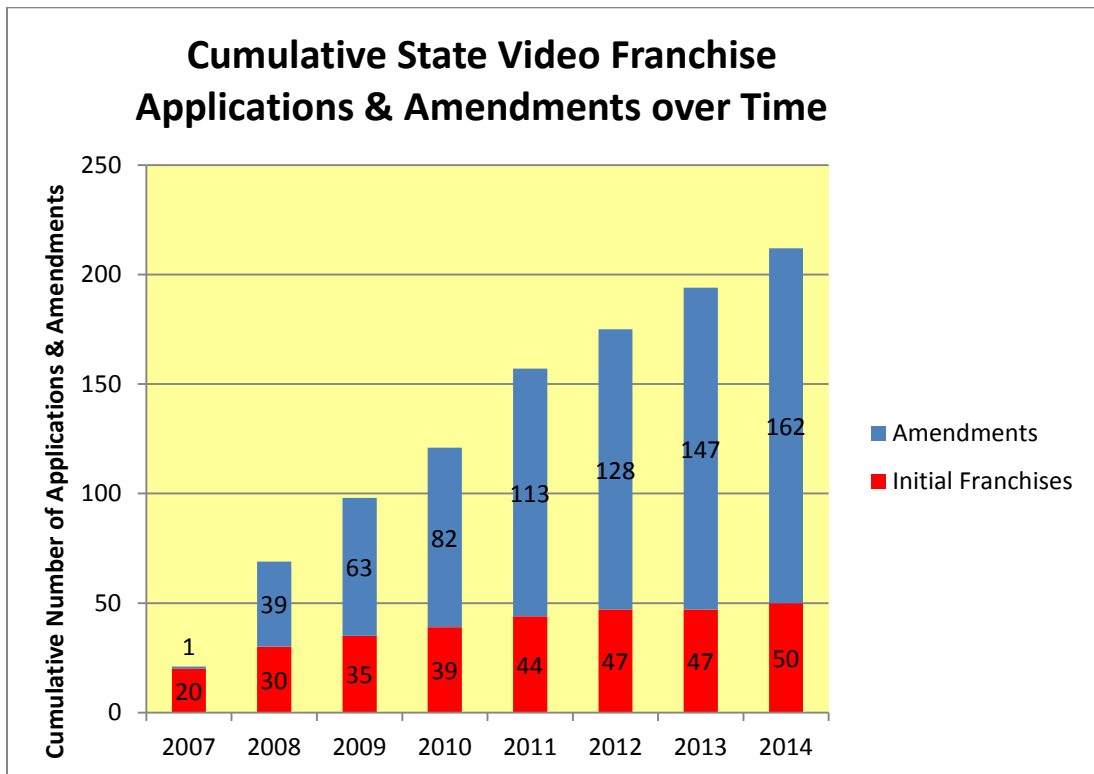
Video Penetration Rate by County



H. Amendments to Existing State Video Franchises Continue to be Recieved

The cumulative red bars in the bar chart below show that the growth of state-issued video franchises has slowed significantly since 2011. The red bars show that during 2014, there were 3 new franchise applications granted, in contrast to 0 new applications during 2013. The number of amendments increased by 15 during 2014, compared with 19 in 2013; 15 in 2012; and 31 in 2011. Amendments to existing video franchises “reflect changes to the franchise service area.”²⁵

A state-issued video franchise grants the holder the right to offer video services in all or part of the state. State-issued video franchises are not exclusive. Multiple video service providers can receive video franchises for the same geographic area.



The bar chart above reflects the continued transition from local franchises to state-issued franchises. We estimate that by 2021 virtually all video service providers will be holders of state-issued franchises and that all local video franchises will have been converted to state-issued franchises.

²⁵ CPUC, General Order 169, VI, C

Under DIVCA, an incumbent cable operator has the option of opting into a state-issued franchise, once a competing video provider having a state-issued video franchise begins operating in the incumbent operator's local franchise area. If the incumbent does not exercise this option or a new video service provider does not begin providing service in its local franchise area, the incumbent's local franchise remains in effect until the franchise expires, after which the incumbent must seek a state-issued franchise.

Most incumbent cable companies shifted to state-issued video franchises soon after new entrants (telephone companies) began providing video service in one or more of their local franchise areas in 2007. This shift is reflected by the 20 initial applications granted in 2007 and 10 additional initial applications granted in 2008. It is also reflected by the year-to-year cumulative increase between 2008 and 2014 in the number of amendments to the existing state-issued franchises, as competing video service providers expanded into more of the incumbent's local franchise areas or the incumbents' existing local franchises expired.

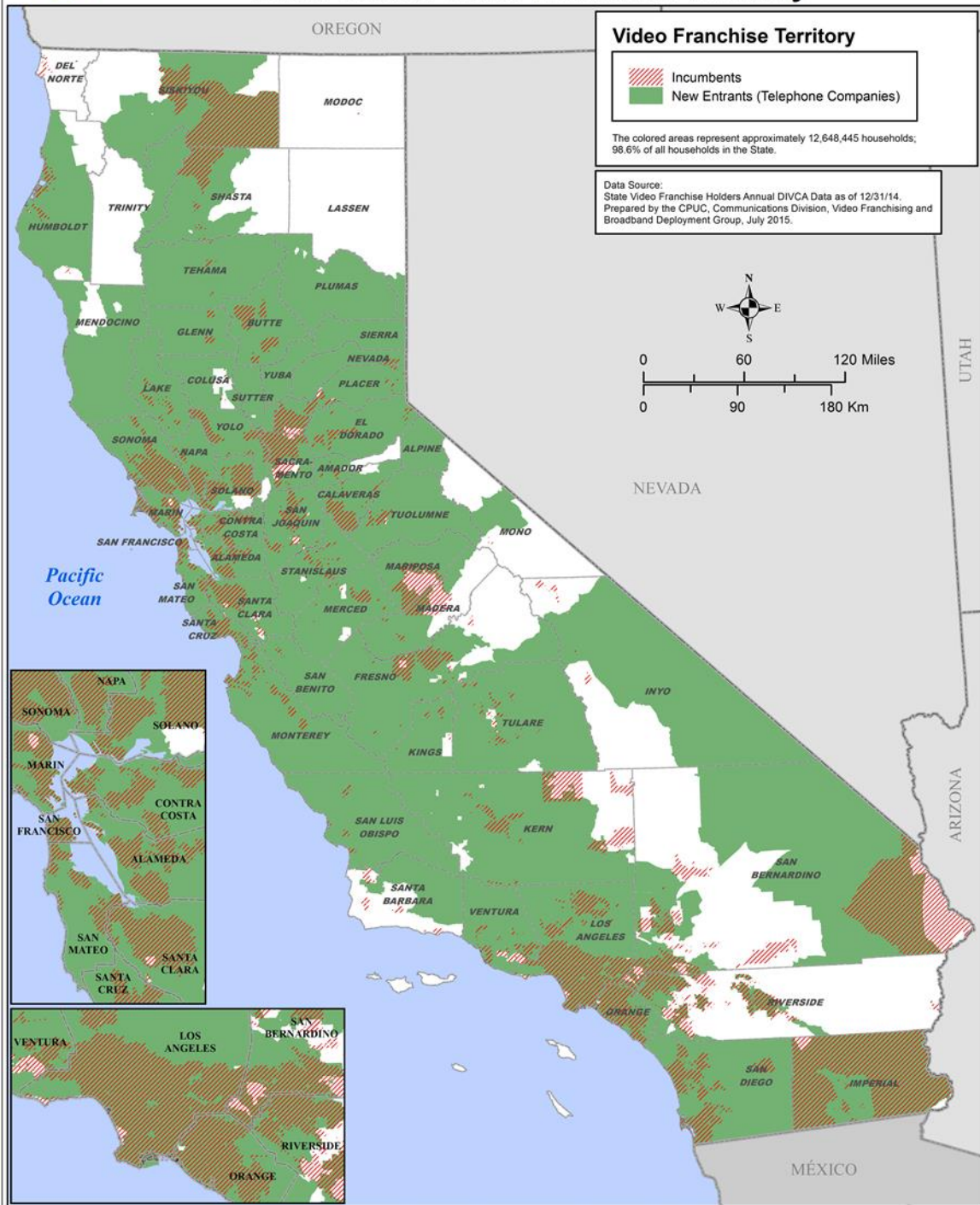
The map on page 17 represents both incumbent and new entrant video service providers in California. Of note is the large geographic area of service offered by new video service provider entrants relative to incumbent cable companies. Maps representing each video franchise are available on the CPUC website.²⁶

²⁶ See <http://www.cpuc.ca.gov/General.aspx?id=2134>.



STATE OF CALIFORNIA VIDEO FRANCHISING

State-Issued Video Franchise Territory



4. Analysis of SVF Holder Broadband Data

The broadband section of this report analyzes data provided by state-issued video franchise holders and their affiliates. It does not include data from providers unaffiliated with state-issued franchise holders, although the vast majority of broadband connections are associated with state video franchise holders.²⁷ The CPUC has published the following reports that address *all* broadband service providers:

- *Market Share Analysis of Retail Communications Report, June 2001 through 2013.*²⁸
- *California Broadband Report: A Comparative Summary of Broadband Adoption for June 30, 2011 to June 30, 2012.*²⁹
- *The California Advanced Services Fund Report, January to December 2015.*³⁰

There are several purposes for the collection and analysis of SVF holder broadband data herein. Each of these purposes requires a focus on different broadband speeds, from a low of 200 Kbps to over 1 Gigabit downstream service.

Relevant to the collection and analysis of the lower broadband speeds is the fact that interconnected voice service can be supported by broadband services at various speeds. Asymmetrical DSL providers offer VoIP services utilizing internet connections less than 6 megabits per second (Mbps) download.³¹ Interconnected OTT VoIP providers advertise that their service requires a “high-speed internet connection”, which can include “any internet service”.³² Thus, data for the lower speed tiers may be relevant for assessing the availability of broadband to support interconnected VoIP services. However, speed is not the only

²⁷ Examples of broadband provider data not included in this report are Local Exchange Carriers that are not Video franchise holders, Wireless Internet Service Providers, and mobile service providers like Sprint, T-Mobile, US Cellular and Metro PCS.

²⁸ <http://www.cpuc.ca.gov/General.aspx?id=4170>

²⁹ Published in February 2014 by the Center for Economic Development at California State University, Chico in conjunction with the CPUC. See <http://www.cpuc.ca.gov/General.aspx?id=5753>

³⁰ <http://www.cpuc.ca.gov/General.aspx?id=5655>

³¹ Though asymmetrical DSL service speed degrades as distance between the end-user and the serving wire center/remote terminal increases, a DSL provider’s VoIP offering is network managed such that it can provide high quality VoIP over a slow broadband speed, such as at 3/1 Mbps or lower. Of note is that ISDN provided reliable voice service at only 128 kbps.

³² In a video chat between CPUC staff and a Vonage representative about whether there was a minimum speed requirement for its service to work well, the Vonage representative stated “you just need a high-speed internet connection”. And, further stated that 1 Mbps downstream and 300 Kbps upstream, “Will be more than enough. It will definitely work as long as you have the internet service”. www.vonage.com, May 3, 2016. Despite this assurance, such OTT services are affected by the vagaries of the underlying network through which the voice service is provided and are subject to greater quality variances than within a managed VoIP provider’s network.

determinant of whether Internet service can support VoIP.

In order to determine where IP voice services can be supported by networks in California, staff has been analyzing voice service quality criteria. Broadband speed alone is not a determinant of a network's capability to support high-quality voice services.³³ While this report presents availability by speed tier, in consideration of IP transition issues, decision makers also need to consider quality factors, such as jitter, packet loss, latency and others, in addition to speed that affect access to OTT voice services. The CPUC's CalSPEED.org testing application can provide network quality information. Such testing requires end-user initiation.³⁴

Another speed metric relates to the California Advanced Services Fund (CASF) which currently uses a minimum benchmark of 6 Mbps download and 1.5 Mbps upload for identifying underserved areas that are eligible for CASF funding.

Another important speed metric relates to the Connect America Fund, Phase II standard of 10 Mbps download and 1 Mbps upload. An analysis of Connect America Fund, Phase II areas relative to the CASF program is included in the 2015 CASF annual report.

Lastly, an important speed metric relates to the FCC's "advanced telecommunications capability" benchmark of 25 Mbps downstream and 3 Mbps upstream.³⁵ In February 1996, Congress, in its revision of the Communications Act of 1934, directed the FCC to evaluate annually "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."³⁶ In the FCC's 2015 Broadband Progress Report, The FCC found that, "having 'advanced telecommunications capability' requires access to actual download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps".³⁷ The FCC acknowledged that, "(w)hile the benchmark in this Report refers to actual speeds, as discussed below, we rely on SBI Data which provide deployment data on advertised speeds... the majority of residential wireline broadband consumers are receiving

³³ Many measures of quality (latency, jitter, TCP failures, mean packet loss) are factors in determining whether a network can support competing OTT voice services. See, e.g., "CalSPEED: California Mobile Broadband", Spring 2015, Quality vs Throughput Assessment, by Ken Biba. <http://www.cpuc.ca.gov/General.aspx?id=1778>

³⁴ The wireline test is available at <http://www.calspeed.org/>

³⁵ In the FCC's 2015 Broadband Progress Report, it clarified that "(f)or simplicity, in this Report we sometimes refer to 'advanced telecommunications capability' as 'broadband', but we note that 'advanced telecommunications capability' has a unique definition in section 706 that differs from the term 'broadband' in other contexts. Thus our discussion of broadband in this Report may not apply equally to discussions of broadband in other circumstances or in other proceedings." However, 'advanced telecommunications capability' is a statutory term with a definition that differs from the term 'broadband' as it is used in other contexts." 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action To Accelerate Deployment, GN Docket No. 14-126, FCC 15-10, page 2, note 1. (February 4, 2015).

³⁶ 47 U.S.C. § 1302(b).

³⁷ See: "2015 Broadband Progress Report and Notice of Inquiry on Immediate Action To Accelerate Deployment", GN Docket No. 14-126, FCC 15-10, § 26 (February 4, 2015).

performance close to the level advertised by their providers and thus, receiving speeds close to actual speeds.³⁸ Later, in the FCC’s 2016 Broadband Progress Report, the FCC wrote: “Our fixed broadband download speed threshold of 25 Mbps remains sufficient to ensure that a household can access a range of bandwidth intensive services, including HD video streaming, simultaneously over multiple devices.”³⁹

While the FCC has changed its benchmark of “advanced telecommunications capability” to 25 Mbps downstream, and 3 Mbps upstream in 2015, the FCC maintains its historical definition and use of broadband from as low as 200kbps.⁴⁰ For these reasons, we collect and analyze broadband speeds in the following speed tiers:

- 200 Kbps to 768 Kbps
- 768 Kbps to 1.5 Mbps
- 1.5 Mbps to 3 Mbps
- 3 Mbps to 6 Mbps
- 6 Mbps to 10 Mbps
- 10 Mbps to 25 Mbps
- 25 Mbps to 100 Mbps
- 100 Mbps to 500 Mbps
- 500 Mbps to 1 Gbps
- > 1 Gbps

Thus, we use the FCC’s definition of broadband and speed tiers to analyze each purpose accordingly. The 6/1.5 Mbps and higher speeds are necessary to provide policy makers facts that can inform their decisions regarding the CASF program and the FCC Connect America Fund. The FCC itself uses these speed tiers in its Annual Broadband Progress Reports which are issued pursuant to section 706 of the Telecommunications Act of 1996.

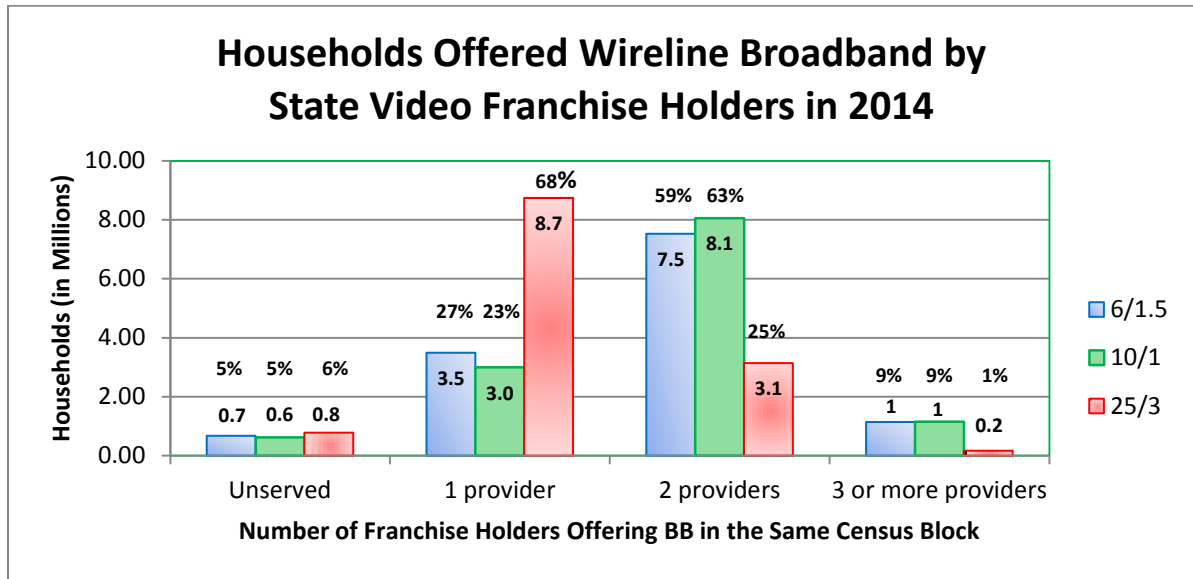
³⁸ Ibid, §26, footnote 137.

³⁹ FCC 16-6 “2016 Broadband Progress Report”, GN Docket No. 15-191 FCC 16-6, Releases January 29, 2016, § 54, page 24.

⁴⁰ Previous DIVCA reports used the FCC’s 2010 definition of broadband as does the FCC today. For example, the FCC wrote in the most recent 2016 Broadband Progress Report: “As of December 2014, 73 percent of households have a subscription to a fixed broadband service of at least 200 kbps in one direction, and 46 percent of these subscriptions were to services with a speed of at least 25 Mbps/3 Mbps.” Ibid, § 99, page 45.

A. Seventy-Two Percent of California Households Are Offered Wireline Broadband by Two or More SVF Holders at Speeds of 10/1 Mbps⁴¹

The chart below shows the number of households located in census blocks in which one, two, or three or more SVF holders offer broadband services by minimum speed.⁴² Of note is that 68% of households are offered wireline broadband service by a single SVF holder at a minimum speed of 25/3 Mbps, and 68% of households by two or more SVF holders at the minimum CASF “served” speed of 6/1.5 Mbps.⁴³



Broadband availability accuracy depends on the granularity of the data provided to the CPUC. DIVCA requires data to be provided the CPUC at the census tract level⁴⁴ and that the CPUC may not impose additional requirements.⁴⁵ However, staff has asked SVF holders to submit their broadband availability data at the census block level, as they do to the FCC, and most

⁴¹ The notation convention for 10 Megabits per second download and 1 Megabits per second upload is 10/1 Mbps, where download and upload is implied.

⁴² Like all previous FCC and CPUC analysis of reporting data relying upon census block, zip-code or other non-discrete location data, it is impossible to determine the degree to which multiple providers serve every household within a reporting area. Details about census block reporting limitations are described in Appendix C.

⁴³ The California Advanced Service Fund defines “served” status as a minimum 6/1.5 Mbps.

⁴⁴ Cal. Pub. Util. Code § 5960.

⁴⁵ Cal. Pub. Util. Code § 5840(a).

have voluntarily complied.⁴⁶ The benefit of block data over tract data is that it allows staff to conduct analysis that is much more granular and accurate relative to tract data.⁴⁷

Census block data results in the presumption that if one household in a census block is offered service by any SVF holder, all households within the block are served. It is common that not all households in census blocks are offered service by that provider (false positive). Therefore, the presumption is rebuttable. In order to make data more accurate, staff has engaged in outreach to generate public feedback via the CPUC website, and printed questionnaires and developed the CalSPEED crowd-sourced testing tools in order to identify false positives. In the case of SVF holders, public feedback has resulted in 97 blocks previously identified as served by the provider as being unserved by that provider. This public feedback results in instances of the opposite problem, where revised data now shows a census block being 100% unserved by that provider when there are indeed some households that are served by it (false negative). The effect on the following table is a reduction by one or more providers relative to households served in those blocks.

The table below illustrates that 68% of the households in the State are located in census blocks where wireline broadband was available from two or more SVF holders at minimum speeds of 6/1.5 Mbps. Similarly, 26% of the households in the State are located in census blocks where wireline broadband was available from two or more holders at minimum speed of 25/3 Mbps.

Speed Tier Down / Up	Served by 2 or more providers
Minimum of 200 kbps / 200 kbps	90.5%
Minimum of 6 Mbps / 1.5 Mbps	67.6%
Minimum of 10 Mbps / 1 Mbps	71.8%
Minimum of 25 Mbps / 3 Mbps	25.8%

The map below (page 23) indicates the number of broadband providers by census block. The number of providers within a census block does not ensure availability to all households within the census tract. For some households within a census block, competitive options may be overstated. This problem exists more in rural areas because they have large geographic areas within a census tract relative to urban areas. The map indicates that many rural areas of the state have only one or no broadband providers and multiple providers serve metropolitan areas.

⁴⁶ The CPUC has filed comments urging the FCC to adopt street address level reporting of broadband availability. The FCC has declined to do so.

⁴⁷ Notably, the census tract and block data are generally more accurate than prior analyses that relied upon prior FCC 477 data reported only by Zip Code, as reflected in prior CPUC broadband reports published in 2004 and 2005.



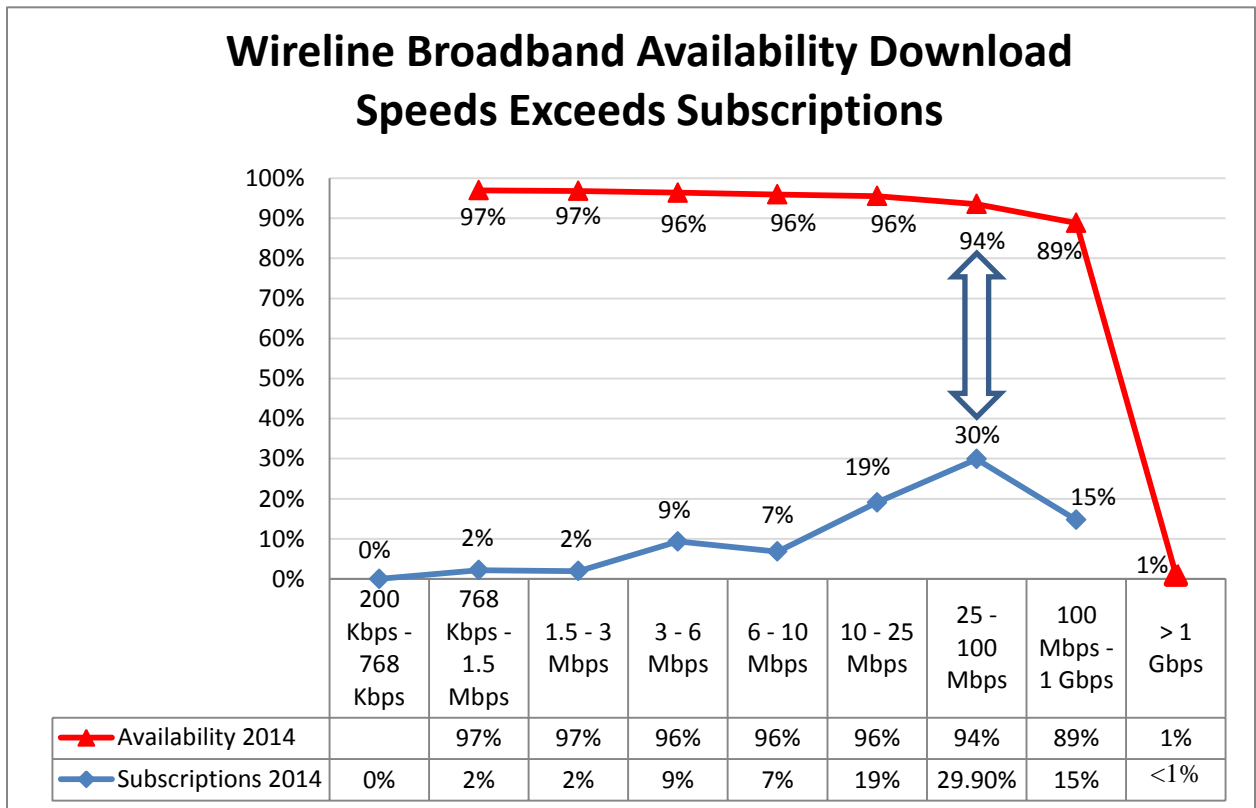
STATE OF CALIFORNIA VIDEO FRANCHISING Broadband Availability by Census Block



B. Broadband Availability at Each Advertised Speed Tier Exceeds Consumer Subscriptions for That Available Tier

The line graph / table below shows that 89% of California households had an advertised 100 Mbps to 1 Gbps wireline broadband download service available at the end of 2014; 15% of those subscribed. Further, 94% of households had available 25 Mbps to 100 Mbps broadband download service and 30% subscribed. Of note, 97% of households have available 1.5 Mbps and greater download speeds available, which may support VoIP.

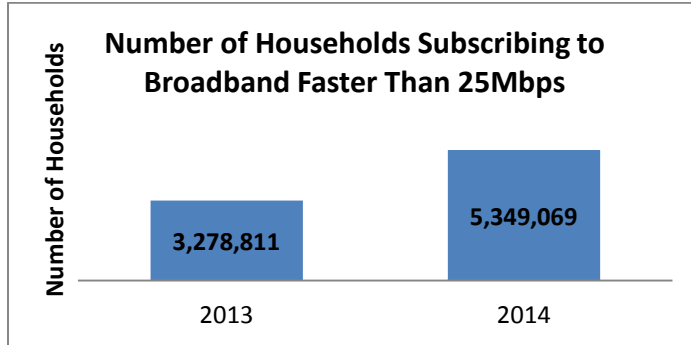
The 30% subscription rate to broadband within the 25 and 100 Mbps speed tier may well have been lower, had three of the four largest cable companies in the state not raised their broadband customers' service to the 25 to 100 Mbps speed tier, automatically, at no additional charge.⁴⁸ See Appendix D for data in graph below.



⁴⁸ See, e.g., <http://www.techtimes.com/articles/11989/20140805/comcast-doubles-internet-speed-in-select-markets-how-about-your-state.htm> Staff contacted the four largest cable companies in CA and three of them reported that they increased the broadband service speeds for at least some of their customers in CA to above 25 Mbps at no additional cost during 2013. In addition to Comcast, whose upgrades are described in the press release cited above, Cox and Charter both confirmed that during 2013 they increased the speeds of some of their broadband plans to above 25 Mbps, at no additional cost.

C. Subscribers to Broadband Faster than 25 Mbps Increased by 63% in 2014

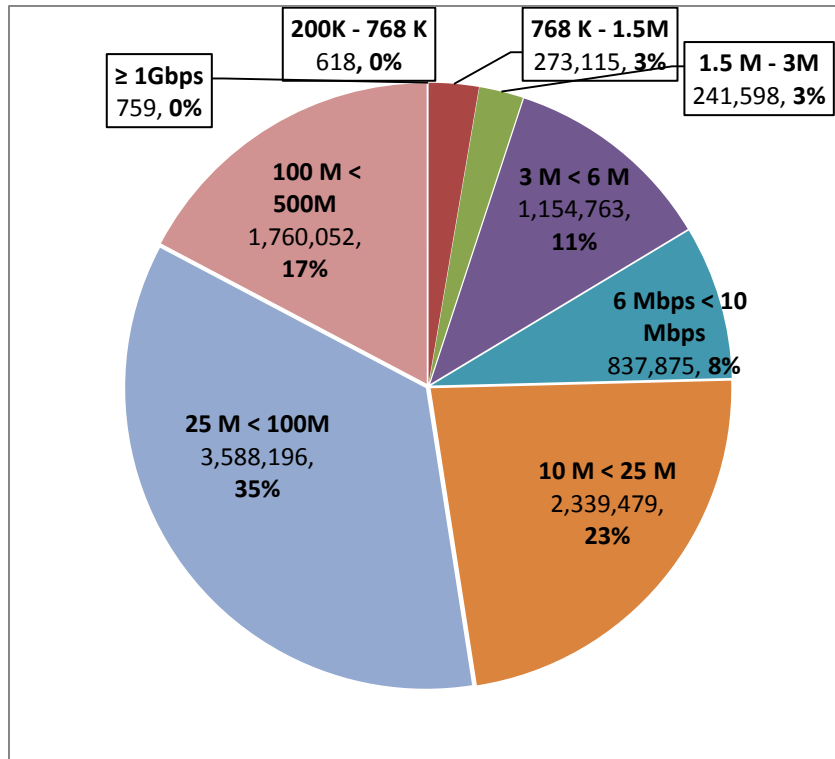
The bar chart below shows that subscriptions to residential wireline broadband advertised speed tiers greater than or equal to 25 Mbps (download) increased by 63% to 5.3 million households, during 2014.



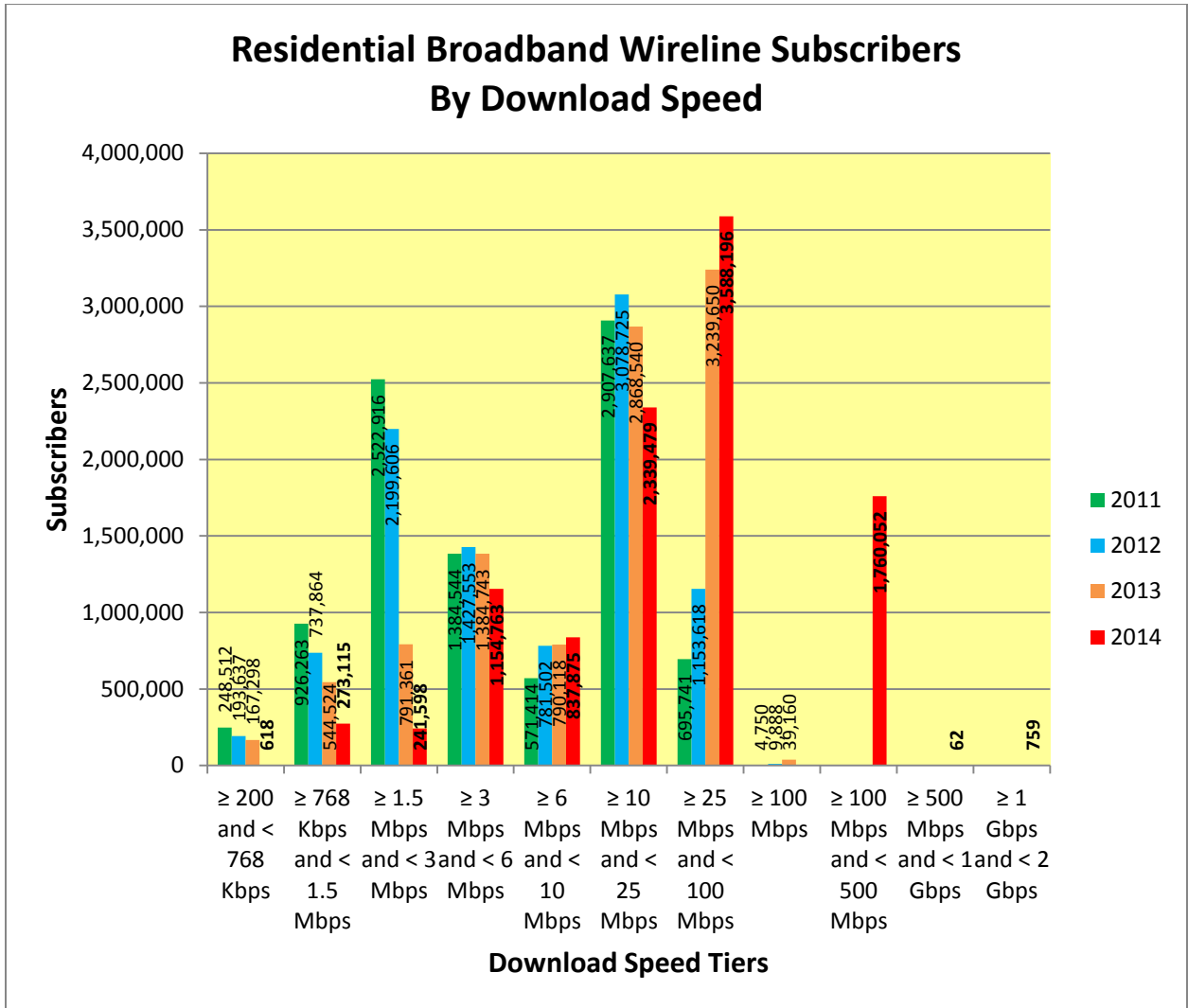
The pie chart below divides the 10.2 million households in CA that subscribed to wireline broadband provided by SVF holders into nine speed tiers.

- 75% subscribed to broadband faster than an advertised 10 Mbps
- 52% subscribed to broadband faster than an advertised 25 Mbps
- 17% subscribed to broadband faster than an advertised 100Mbps.

2014 Breakdown of Wireline Broadband Subscribers by Advertised Download Speed Tier



D. More than 1.7 Million New Households Subscribed to Broadband Speeds Faster than 100 Mbps During 2014, Due to the Deployment of New Technology



The 25-100 Mbps download speed tier was most frequently subscribed to in 2014 and subscriptions in that tier increased 11% over the prior year. In comparison, in 2011 and 2012, the most subscribed to speed tier was 10-25 Mbps. These changes reflect increasing broadband availability to consumers and increasing speed demands of consumers since 2008.⁴⁹

At the end of 2014, 35.2% (3.6 million) of the 10.2 million households that subscribed to

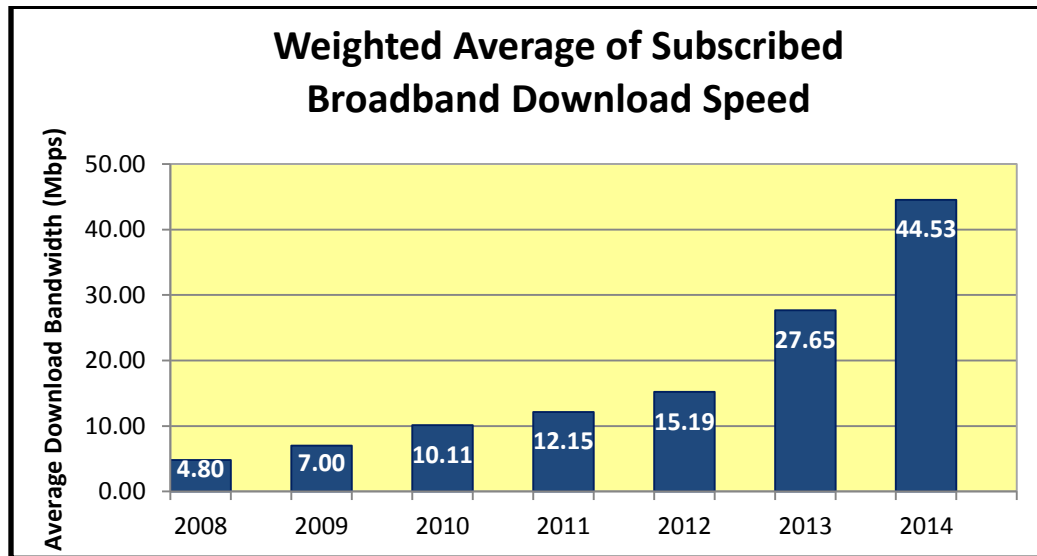
⁴⁹ In 2008, 3-6 Mbps was the most subscribed to download speed. See DIVCA Report, 2010.

broadband provided by SVF holders, subscribed to the most popular speed tier, 25-100 Mbps. 22.9% (2.3 million households) subscribed to the second most popular speed tier, 10-25 Mbps.

E. Weighted Average of Subscribed Broadband Download Speed Has Increased

The bar chart below shows that the weighted average of subscribed broadband download speeds almost tripled from 15.2 Mbps to 44.5 Mbps between 2012 and 2014.⁵⁰ Between 2008 and 2014, this weighted average increased by 927%.

The table indicates that consumers are subscribing to higher bandwidth services over time. The reported subscribers within each FCC speed tier are based upon the number of subscribers to a service's maximum available advertised speed offered by reporting SVF holders. Because consumer experience may differ from the maximum advertised speed to which they subscribe, the chart does not represent actual experience, rather it identifies the growth in subscribed speeds. While the consumer experience may vary and be less than the subscribed maximum advertised speed, the capabilities of the subscribed services are greater over time.



⁵⁰ This 44.53 Mbps metric is a state-wide weighted average, based on the number of reported subscribers within each FCC identified speed tier. The average advertised download bandwidth for each year (44.53 Mbps in 2014) was determined by: (1) multiplying the midpoint of the bandwidth in each of the 8 speed tiers by the number of subscribers to that speed tier; (2) summing the bandwidth-speeds for all 8 speed tiers; and (3) dividing the total bandwidth-speeds for all speed tiers by the total number of subscribers in the state. (44.53 Average download bandwidth Mbps) = 454,043,473 Mbps/10,196,517 million subscribers).

F. Wireline and Fixed Wireless Broadband Speeds Are Faster in Urban Areas

The map on the next page (29) shows wireline broadband availability in terms of maximum advertised download speed in California.

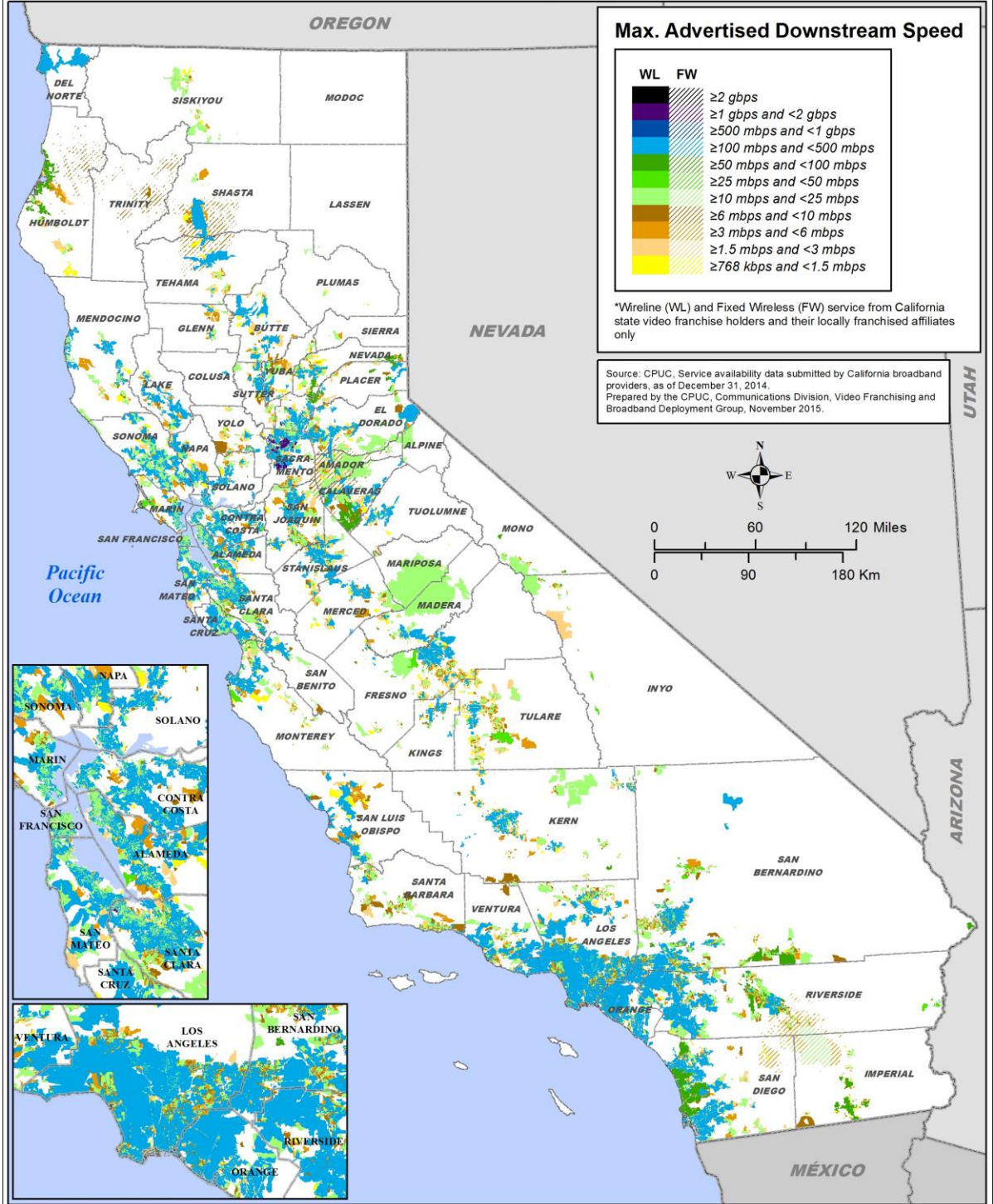
The color coding in the map shows that urban and suburban areas are more likely to have greater advertised maximum broadband download speeds than rural or less densely populated areas. Comprehensive statewide broadband availability data (including broadband providers that are not video franchise holders) can be viewed on the California statewide broadband availability map.⁵¹

The map displays SVF holders' download speed data collected by the Commission under the auspices of the National Telecommunications and Information Agency's (NTIA) State Broadband Initiative (SBI), which was part of the American Recovery and Reinvestment Act (ARRA). See *Appendix C: Methods, Sources, and Data Limitations* for more information.

⁵¹ California Broadband Availability Map, <http://www.broadbandmap.ca.gov/>.



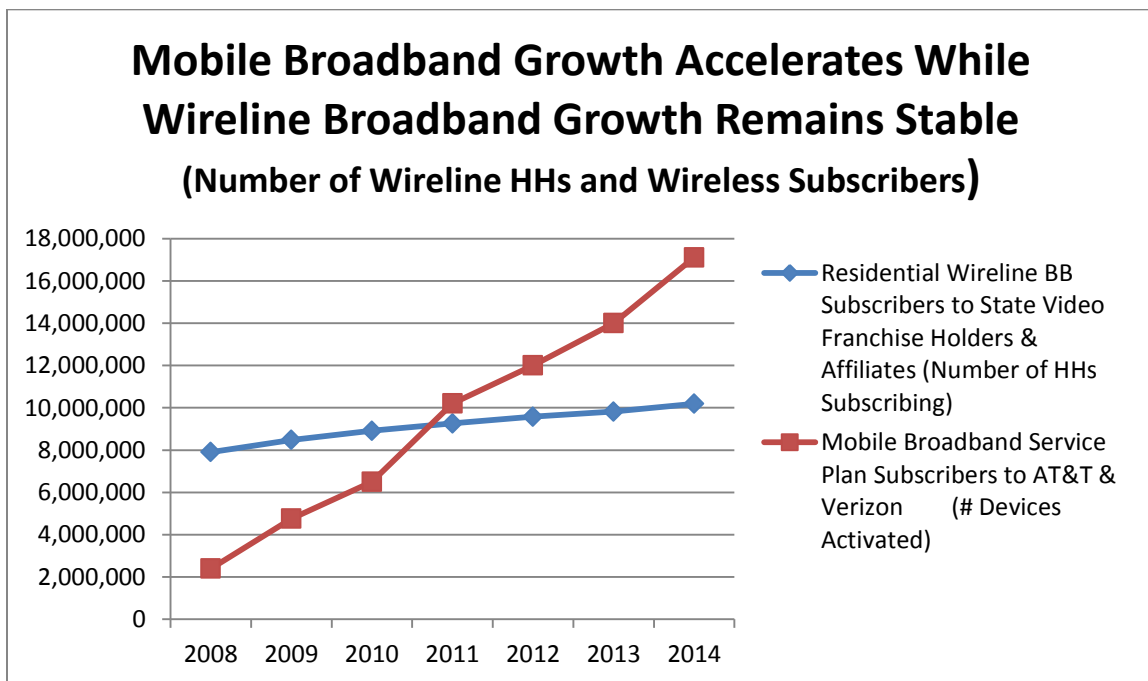
STATE OF CALIFORNIA VIDEO FRANCHISING Broadband Availability* by Census Block



G. Mobile Broadband Subscriber Growth and Penetration Rates Are Greater than For Wireline Broadband

Mobile broadband subscriptions continued to increase significantly faster than residential wireline broadband subscriptions, as shown in the line graph below. During 2014, the mobile broadband year-over-year subscription growth rate accelerated to 22.2%, compared to 16.6% in 2013. In contrast, residential wireline broadband (speeds faster than 200 kbps) subscriptions increased by 3.8% during 2014, compared with 2.5% in 2013. (See table on page 35)

The 44.2% mobile broadband penetration rate in 2014 highlights the fact that mobile broadband infrastructure is a key component of California's broadband infrastructure. In contrast, the residential wireline broadband (speeds faster than 200 kbps) penetration rate increased to 79.5% (10.2 million subscribers) in 2014 from 77.2% in 2013 and 70.7% in 2010. These penetration metrics can be seen growing over time in the table on page 32. The importance of mobile broadband will continue to increase over time, as mobile wireless facilities continue to be upgraded to support more IP-enabled services, and consumers increasingly demand mobility in their broadband access devices.



The line graph above shows that the mobile broadband subscriptions of AT&T Mobility and Verizon Wireless (the two mobile companies affiliated with SVF holders) surpassed video franchise holder wireline broadband subscriptions in 2011. Between 2008 and 2014, growth in these mobile broadband subscriptions increased more than eightfold. At the end of 2014,

mobile broadband subscriptions exceeded wireline by about 7 million.⁵²

In the table on the following page, wireline⁵³ residential broadband penetration rates are calculated by dividing the number of subscribers to broadband faster than 200 kbps by the total number of households in California. In contrast, mobile broadband service plan penetration rates were calculated by dividing the number of subscribers by the total number of adults 18 and over.⁵⁴ For the mobile broadband penetration calculation, this population group is used instead of households because multiple individual family members living in the same household often have their own mobile broadband subscriptions.⁵⁵

The data in the table on the table on the next page shows that penetration rates⁵⁶ to mobile broadband service plans offered by AT&T Mobility and Verizon Wireless in California, increased by 7.7 percentage points to 44.2% during 2014, up from 36.5% during 2013.⁵⁷ Between 2010 and 2014, the mobile broadband penetration rate in California more than doubled from 17.3% to 44.2%.⁵⁸

Additionally, following the table on page 33 is a map showing penetration rates and subscribership by census tract. Though the penetration rate in a tract is generally accurate, census tracts are large in rural areas and therefore the tracts visually overstate the area of service availability.

⁵² In contrast, for all providers of broadband, there were 23 million mobile broadband subscriptions and 11 million wireline subscriptions as of June 2014. See Market Share Analysis of Retail Communications Report, June 2001 through 2013. <http://www.cpuc.ca.gov/General.aspx?id=4170>

⁵³ These wireline penetration rates include the 754 subscribers who received broadband via fixed wireless Internet connections in 2014 and for each of the previous years.

⁵⁴ The 18 & over population was obtained from the US Census Bureau.

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1

⁵⁵ Because subscribers to mobile broadband plans include individuals under the age of 18, the mobile penetration rate may be overstated.

⁵⁶ Individual subscriptions, determined by cellular devices connected.

⁵⁷ AT&T and Verizon reported the number of subscribers to mobile broadband service plans using somewhat different methodologies. Verizon calculated the total number of subscribers by counting the total phone numbers associated with each service plan with California area codes and prefixes regardless of where the subscriber is physically located or where the bill is mailed. In contrast, AT&T calculated the number of subscribers based on the wireless phone numbers appearing on bills for service plans mailed to California addresses regardless of the phone number or area code associated with a particular service plan or the location of the particular subscribers whose phone numbers appears on the bill for that plan. Both methodologies result in an approximation of total mobile broadband service plan subscribers residing in California, which may be modestly understated or overstated.

⁵⁸ This penetration rate does not rule out the fact that people may have multiple devices.

Number of Wireline⁵⁹ and Mobile Broadband Subscribers and Penetration Rates by Year 2010 – 2014

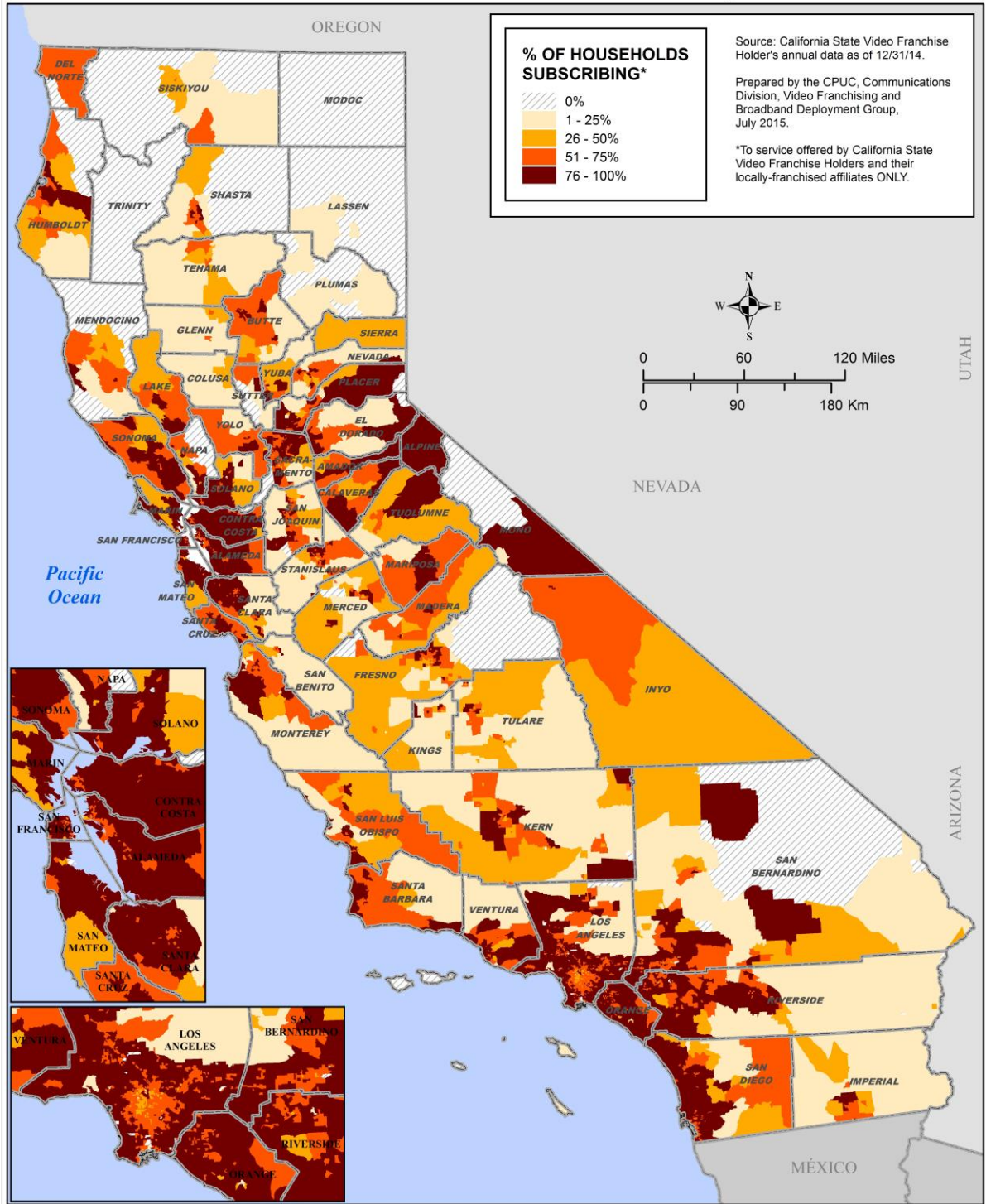
Technology	2010	2011	2012	2013	2014	2013-14 Growth	2010-14 Growth
Residential Wireline households Subscribing to Broadband faster than 200 kbps from State Video Franchise Holders & Affiliates	8,917,437	9,261,776	9,582,393	9,825,394	10,196,517	3.8%	14.3%
Mobile Broadband Service Plan Subscribers to AT&T & Verizon (# Devices Activated)	Confidential	Confidential	Confidential	Confidential	Confidential	22.2%	163.3%
Residential Wireline Penetration Rate (% Total households in CA)	70.7%	73.3%	75.6%	77.2%	79.5%	2.3 percentage points	8.8 percentage points
Mobile Wireless Penetration Rate	17.3%	27.1%	31.6%	36.5%	44.2%	7.7 percentage points	26.9 percentage points
Total Households in CA	12,609,150	12,633,403	12,675,876	12,731,223	12,830,035	0.8%	1.8%
Total Population in CA	37,510,756	37,678,563	37,966,471	38,340,075	38,714,725	1.0%	3.2%

⁵⁹ The wireline subscriber numbers on this page reflect the number of subscribers receiving broadband at download speeds faster than 200 kbps.



STATE OF CALIFORNIA VIDEO FRANCHISING

Residential Broadband Penetration Rate by Census Tract



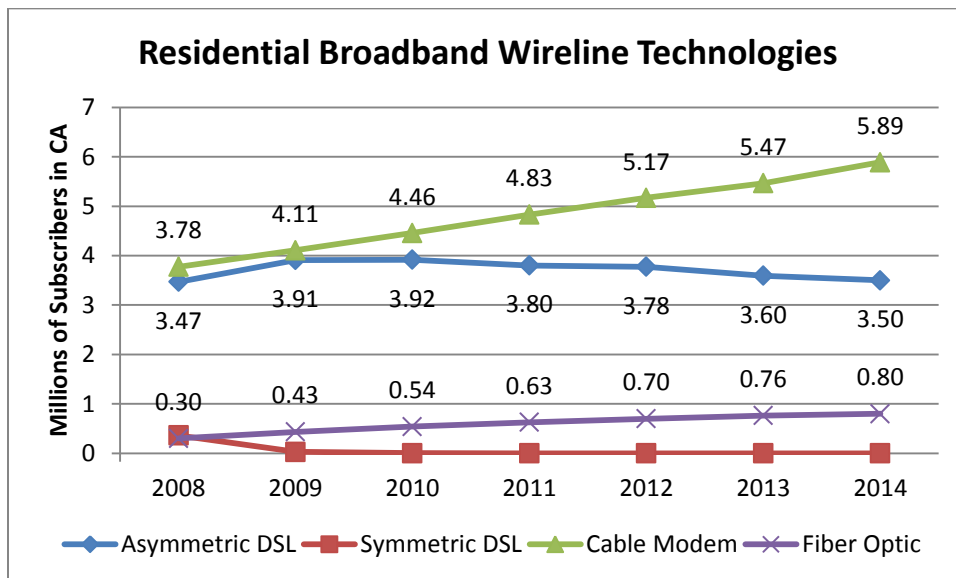
H. Subscription to Cable Broadband Exceeds DSL Subscriptions and the Difference Is Widening

The line chart below and the pie chart and bar chart on the following pages show the technologies that SVF holders and their affiliates used to deploy broadband as of December 31, 2014.

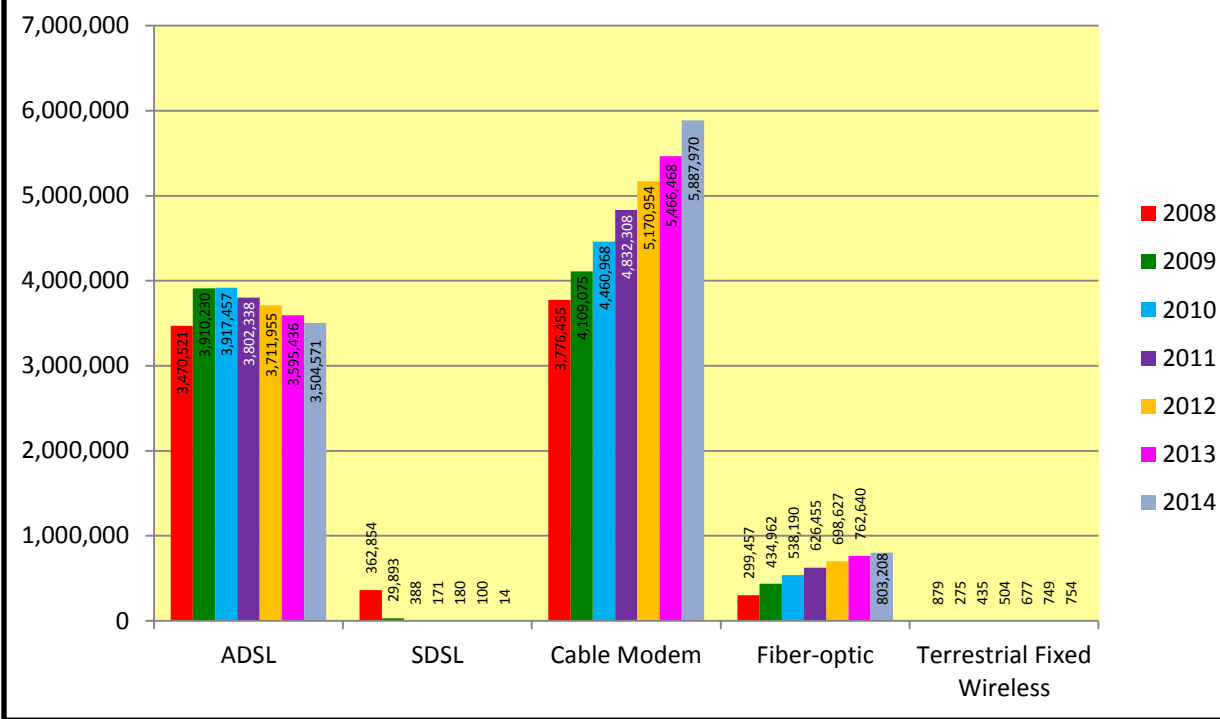
Cable modems were the most frequently used residential broadband wireline technology at the end of 2014. Cable modems were used by 58% (5.9 million) of the residential households to subscribe to broadband in 2014, up from 56% in 2013 and 52% (4.8 million) in 2011. Cable Modem usage has increased by 55.8% between 2008 and 2014.

Digital Subscriber Line (DSL) technology peaked in 2009 and since then has declined to 34% of broadband subscribers. This is a decrease of eight percentage points from 44% in 2010. DSL technology typically is used by telephone companies to deploy broadband over their existing copper plant. U-Verse uses a version of DSL to provide data speed over 25 Mbps.

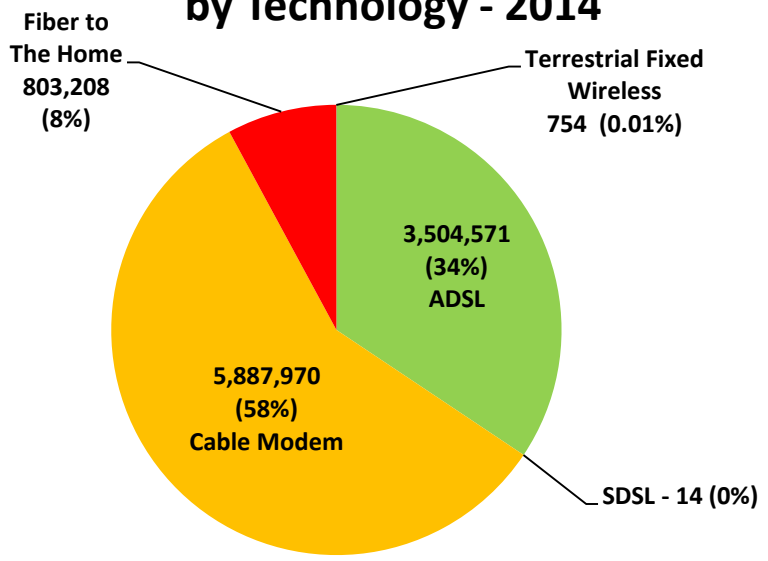
Fiber-to-the-home technology provides broadband to a smaller percentage of residential subscribers in California, but it continues to show growth. In 2014, eight percent (8%) of residential users were served by fiber optic technology, up from 7% in 2012, six percent (6%) in 2010 and 4% in 2008. Fixed wireless technology provided broadband to 754 subscribers in California in 2014, up from 504 in 2011, but down from 879 in 2008.



Residential Wireline and Fixed Wireless Broadband Subscribers by Technology



Residential Broadband Wireline Subscribers by Technology - 2014



5. Appendices

Appendix A: DIVCA History

On September 29, 2006, the Governor signed into law Assembly Bill 2987, the Digital Infrastructure and Video Competition Act of 2006 (DIVCA). DIVCA's goals are to promote rapid, widespread competition in the broadband and video markets, and accelerate the deployment of additional infrastructure in California.

DIVCA is implemented by the CPUC and addresses not only video franchising, but also provides a vehicle for the deployment of additional broadband infrastructure within California, particularly to unserved and underserved areas. DIVCA changed video franchising within California by transferring the authority for issuing franchises for the provision of video services from local entities to the State of California. The State Legislature designated the CPUC as the sole franchising authority for issuing state video franchises as of January 1, 2007.

California was the eighth state to reform video franchising with the intent to facilitate competitive video and broadband entry. As of 2014, twenty five states had transferred video franchising authority to the state. These states include California, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Indiana, Kansas, Louisiana, Michigan, Missouri, New Jersey, North Carolina, Nevada, Ohio, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, and Wisconsin.

Prior to DIVCA, cable television franchises in California were issued by cities, counties and special districts, as provided by state statute. This required cable operators to negotiate separate franchise agreements with each local entity where they wished to provide video service. California contains 58 counties encompassing 482 incorporated municipalities (cities and towns). These local franchise agreements required that service providers comply with specific customer service and performance standards and other requirements that often varied by locality.

For new entrants seeking to provide video and broadband services over a large area, the process of negotiating franchise agreements with each individual local entity would have been an arduous process, delaying entry into the market by many years and increasing startup and operating costs. To speed the entry of new video and broadband providers into the marketplace, the Legislature sought to replace the local franchising system with one in which the State would issue video franchises. The CPUC was designated as the agency charged with issuing state video franchises.

Following the adoption of DIVCA implementation rules, the CPUC began issuing ten-year state video franchises. (See Appendix A for summaries of implementing decisions). The Commission will issue a state video franchise so long as an applicant is eligible for a state franchise, the application is complete, the applicant pays the \$2,000 application fee and provides evidence of having obtained an appropriate surety bond, and the applicant swears that it will adhere to all state and federal laws, rules, and regulations.

Appendix B: DIVCA Decisions and Resolutions

Rules Adopted to Implement DIVCA

Shortly after DIVCA was enacted on September 29, 2006, the CPUC, on October 5, 2006, issued its Order Instituting Rulemaking to consider the adoption of a General Order and procedures to implement DIVCA (R. 06-10-005) (“Rulemaking”). Under this Rulemaking, the CPUC developed rules for implementing DIVCA. This was accomplished in three phases.

Phase I - Adopting Rules to Implement DIVCA

On March 1, 2007, following the receipt of comments and reply comments in the Rulemaking and subsequent Proposed Decision, the CPUC issued (D.) 07-03-014 establishing rules for implementing DIVCA and adopting General Order 169. These rules set forth application requirements, CPUC procedures for considering applications, build-out, anti-discrimination, annual reporting requirements of both cable and broadband information by census tract, and other requirements as mandated by DIVCA.⁶⁰

Phase II - Adopting Non-Discriminatory Buildout Requirements for Small Local Exchange Carriers (LECs)

On October 4, 2007, the CPUC issued a Phase II Decision 07-10-013(D.07-10-013) adopting non-discriminatory build-out requirements for smaller companies and additional reporting requirements.⁶¹ In Phase II, the CPUC determined that the “reasonable time” deployment standard applicable to franchise holders who are telephone companies with fewer than one million telephone customers should largely mirror the build-out timetable required of the larger telephone companies. Further, the CPUC determined that, in their annual reports to the CPUC, holders must provide video subscriber data, finding that such data are necessary in order for the CPUC to determine whether franchise holders are adhering to the requirements of DIVCA.⁶²

⁶⁰ On October 5, 2006, the Commission issued Opinion Modifying Decision 07-03-014 [D. 10-07-050], Cal. PUC Lexis 298 (2010) in order to amend the form of the franchise certificate adopted in Phase I to conform to statutory requirements.

⁶¹ Order Instituting Rulemaking to Consider the Adoption of a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006 Opinion Resolving Issues in Phase II [D. 07-10-013] 2007 Cal. PUC Lexis 548 (2007).

⁶² Previously, the Commission’s Rules required the submission of data related to the number of households offered video services, but not the number of households subscribing to such services.

Phase III - Adopting New Rules to Administer DIVCA

On July 10, 2008, the CPUC issued the Phase III of Decision 08-07-007 (D.08-07-007) amending the bonding requirements under DIVCA, adopting new rules regarding deadline extensions for build-out requirements, and additional reporting requirements.

Under DIVCA, holders of a state video franchise are subject to statutory requirements regarding, among other things, the extent and pace at which franchise holders must build-out facilities and offer video services to households. The statute provides that franchise holders may apply to the CPUC for an extension of the time for such build-out requirements to be satisfied, under certain circumstances. The Phase III added procedural requirements to ensure that holders' extension requests are made and decided in a timely fashion.

Further, Phase III eliminates an unintended and unfair asymmetry in the bond requirement under General Order 169 between new entrants in the video marketplace and incumbent cable operators. Local franchises held by incumbent cable operators tend to be held by many separate affiliates of an ultimate parent. Verizon and AT&T, by contrast, have each applied for only one state franchise covering their entire video service areas. The Phase III decision changes the rules under DIVCA to require only one bond to be posted to cover all affiliated holders rather than separate bonds so that "incumbent" applicants for video franchises do not have additional burdens placed on them due to their historic corporate organization under the local franchising scheme.

Finally, Phase III requires holders to include in their annual data submitted to the CPUC, broadband data they have reported to the FCC of Form 477. Numerous commenters urged the CPUC to wait until the FCC released its order requiring broadband reporting by census tract, broken down Form 477 connections, by speed tier and technology, and, thereafter, to adopt the FCC's speed reporting regime. The FCC released its Report and Order and Further Notice of Proposed Rulemaking adopting new requirements for reporting broadband service by speed tier on June 12, 2008.⁶³ The CPUC issued this decision to reflect the FCC's requirements for reporting broadband service. Holders are now required to report the same broadband speed information that it reports to the FCC to the CPUC.

Phase IV – Franchise Renewal Rules

On August 28, 2014, the CPUC issued Decision 14-08-007 (D. 14-08-007) implementing the franchise renewal provisions of DIVCA by adopting rules for the renewal of state issued franchises. Initial franchises are granted for a period of 10 years but may be renewed by a franchise holder if it wishes to continue to provide service. Section 5850 requires that the process for renewing an existing franchise be identical to the process set forth in DIVCA for

⁶³ F.C.C., Form 477 Order, fn. 21, *Supra*.

obtaining an initial franchise except that the renewal process must be consistent with federal law governing the renewal of cable television franchises and the applicant seeking renewal must not be in violation of any non-appealable court order issued pursuant to DIVCA. In addition, §5900(k) of DIVCA requires that ORA be allowed to advocate on behalf of consumers during the renewal process.

The decision finds that these requirements are met by adopting rules for the renewal of existing franchises that are identical to the rules for the issuance of an initial franchise with two exceptions. First, the rules require that a renewal applicant attest to the fact that it is not in violation of any non-appealable court order issued pursuant to DIVCA. Second, they require that ORA and local entities be provided with notice of the application and the opportunity to comment on the sole issue of whether the applicant is in violation of a non-appealable court order.

Renewal applications must be submitted no later than 3 months prior to the date current franchise is due to expire but no earlier than 6 months prior to that date. Comments on the application must be submitted in writing to the Commission's Video Franchising and Deployment Group within 15 days after the application is served on local entities and ORA and must be accompanied by a court order supporting the claim that the applicant is in violation of a non-appealable court order.

In addition, the rules permit ORA to comment on whether the application is complete and the extent to which the applicant has complied with DIVCA's obligations during the term of its existing franchise. Comments submitted by ORA on past compliance with DIVCA's obligations may lead to future action by the Commission but have no bearing on the disposition of the application for renewal.

On July 1, 2015, ORA filed a petition seeking to modify the renewal decision. Responses to the petition were filed on July 31, 2015 and a reply was filed by ORA on August 10, 2015. The Commission has not acted on the petition to date.

Resolutions

After gaining experience in processing applications, CPUC staff has made several recommendations for revisions to the application forms through two resolutions, T-17107 and T-17141, which were subsequently adopted by the CPUC. In addition, DIVCA provides for video franchise holders to pay fees to the CPUC calculated to equal the amount authorized in the CPUC budget for DIVCA implementation. Resolution T-17137 set the user fee due per household in a video franchise holders' service area for the 2007-2008 fiscal year. Subsequent to this Resolution, the user fee will be determined annually based on the pro-rata percentage of all state video franchise holders' gross state video franchise revenues that is attributable to an individual state video franchise holder.

DIVCA Application Process

The application process was designed to be simple and straight-forward. It requires applicants to file the following: a completed application form; a \$2,000 application fee; confirmation of technical, managerial, and financial qualifications demonstrated through the posting of a bond (\$100,000 to \$500,000); an affidavit attesting to the lawful operation of the franchise; a definition of the video service area sought; demographic information by census block group; the expected date for the deployment of video service in the video service area; and, a list of affected local entities.

The CPUC must determine within 30 days if an application is complete and issue the franchise within 14 days of such determination.⁶⁴ If the application is not complete, CPUC staff is required to notify the applicant, and the 30-day clock restarts. If the CPUC does not issue the franchise within the required 14 days, it is deemed issued. The new franchise holder then notifies the affected local entities.⁶⁵

The CPUC's Phase I Decision allowed applicants, except for incumbent cable operators, to begin filing applications for state-issued video franchises as of March 1, 2007.⁶⁶ The first such application was filed by Verizon California Inc. on March 2, 2007. AT&T California filed its application on March 7, 2007. These franchise applications were reviewed for completeness, and video franchises Nos. 0001 and 0002 were issued to Verizon and AT&T on March 8 and March 30, 2007, respectively. All franchise applications and grants may be viewed on the Commission's web site.⁶⁷

⁶⁴ Cal. Pub. Util. Code §5840 (h).

⁶⁵ Cal. Pub. Util. Code §5840 (n).

⁶⁶ Phase I Decision at Appendix B at 4; DIVCA required the CPUC to begin accepting applications no later than April 1, 2007; Cal. Pub.Util. Code §5847(g).

⁶⁷ <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/videofranchising.htm>

Appendix C: DIVCA Data Collection, Methods, Sources and Limitations

DIVCA's Data Reporting Requirements

Holders of state-issued video franchise holders are required to submit data relating to their provision of video and broadband services annually by April 1.⁶⁸ Pursuant to DIVCA, all video franchise holders must report, by Census tract, the following:⁶⁹

1. Video Information:

- a. The number of households in the holder's video or telephone service area.⁷⁰
- b. The number of *low-income* households in the holder's video or telephone service area.
- c. The number of households in the holder's video or telephone service area to which video service is offered by the holder.
- d. The number of *low-income* households in the holder's video or telephone service area to which video service is offered by the holder.
- e. The number of subscribers in the holder's video or telephone service area.⁷¹

2. Broadband Information:

- a. The number of households to which the holder makes broadband available in California. If the holder does not maintain this information on a Census tract basis, in its normal course of business, the holder may reasonably approximate the number of households based on information it keeps in the normal course of business.⁷²
- b. The number of households that subscribe to broadband that the holder makes available in this state.
- c. The number of subscribers to each download and upload broadband speed tier.
- d. Whether the broadband service provided by the holder utilizes wireline-based facilities or another technology.
- e. Types of technology used to deploy broadband services.

⁶⁸ Cal. Pub. Util. Code § 5960.

⁶⁹ *Id.*

⁷⁰ Incumbents must report by video service area; telephone corporations by telephone service area.

⁷¹ Phase II DecisionD. 07-10-013

⁷² DIVCA census tract reporting can be satisfied with the Holder's form 477 data which is at the census block level.

DIVCA directs the CPUC to aggregate the data described above and to report the aggregated totals to the Governor and the Legislature annually no later than July 1.⁷³ In the following appendices, we will discuss the broadband and video data submitted by the state video franchise holders as of April 1, 2008.

Video and Broadband Subscribership Data Sources

DIVCA requires state video franchise holders to submit annual data describing their territories, availability of service, and subscribership (see Appendix B: Collecting Data Mandated by DIVCA). The data used in this report were current as of December 31, 2014. These data were used throughout this report and provided a base from which to compare and evaluate providers' year-to-year performance under DIVCA.

All state video franchise holders who had state franchises and/or amendments issued before December 31, 2012, submitted annual data pursuant to Cal. Pub. Util. Code §5960. Each parent company of a state video franchise holder filed one annual report which included broadband and video service data for all of their state-franchised operations as well as their locally-franchised affiliates that operate in California and provide video or broadband service in the state.

The analyses of video and broadband service are based on these self-reported data from parent companies of the state video franchise holders and exclude companies that are not yet state franchise holders.⁷⁴

To aggregate the data reported by Census tract and map and analyze it, we used an Oracle database and a Geographic Information System (GIS). We also used Excel spreadsheets to aggregate, analyze and create graphs of the annual data. The findings are illustrated in maps, graphs, and charts throughout the report.

Analyses of broadband subscribership and penetration rates in this report were conducted using data collected from franchisees under the FCC's Form 477 requirements, as required by DIVCA.

Broadband Availability Data Sources

Broadband availability data used previously in this analysis was first collected pursuant to the CPUC's State Broadband Initiative Program (SBI) grant, under the auspices of the

⁷³ Cal. Pub. Util. Code § 5960.

⁷⁴ Some of the small video franchisees did not report broadband availability data.

National Telecommunication and Information Administration's (NTIA). The NTIA used the data collected by the CPUC for its National Broadband Map.

At the end of the 5-year SBI program, the responsibility for broadband data collection and for the National Broadband Map shifted from the NTIA to the FCC, and the FCC began collecting broadband availability data every six months on Form 477. While SVF holders are required by DIVCA to report broadband availability data by census tract, we ask SVF holders to submit their Form 477 data, in lieu of data mandated under the 2006 DIVCA. We used this data because the 477 data is aggregated to the census block level, and therefore can be up to 8,991 times more granular than data that could be collected at the census tract level under DIVCA.⁷⁵

In submitting their data to the FCC, a broadband provider may elect to provide data on the availability of their service by either 1) address, or 2) Census block. If a provider offers service in a census block the entire block is assumed to be served. After collecting the raw broadband data from providers, staff subjects it to validation using several available resources. More details are available on the State Broadband Mapping Program webpage.⁷⁶

Build-out and Non-Discrimination Data Sources

Under California Public Utilities Code §5890(e), telephone companies with more than one million subscribers are required to submit data supporting their compliance with the statute's 5-year build-out and non-discrimination requirements. These data were provided to the Commission as separate filings by AT&T and Verizon by their respective 5-year franchise anniversaries.

Determining the Number of Providers and Households Served per Census Block or Tract

The broadband availability data from each provider were incorporated into feature classes in a file geodatabase according to State Broadband Initiative standards, where they exist in a many-to-one relationship to the Census blocks. That is, many availability records exist for each Census block, based on differences in provider name, technology type, and upstream and downstream speed. To estimate the number of distinct broadband providers per Census block, data from each provider was exported to shapefile then attribute-joined to a clean Census block shapefile, which removes any "duplicate" records, thereby enforcing a one-to-one relationship. After all provider data has been exported and joined, each distinct provider

⁷⁵ There can be up to 999 Census blocks (CBs) in a single Census block group (CBG), and up to nine CBGs in a single census tract.

⁷⁶ <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/Broadband+Mapping/>

name, contained in a separate field, is concatenated together into a single field, using the field calculator's "&" operator. The resulting concatenation sequences were then sorted alphabetically, common blocks of sequences identified visually and selected, and the number of distinct providers entered in a new field. The same method was used for the street segment data.

Video data mandated under DIVCA are gathered in Excel data templates and stored permanently in an ORACLE database, from which data is queried. Calculations, such as the number of distinct providers per Census tract, were performed directly in the queried tables, then exported to Excel and immediately joined to a Census tract shapefile for mapping. Once the number of broadband providers per Census block and video providers per census tract were determined, the aggregate number of households associated with each of these provider numbers could be summed from the shapefile attribute table.

2010 Census Data

Census 2010 household data were used as the basis for estimating the aggregate number of households in Census blocks with a common number of broadband providers (0, 1, 2, 3, 4, or 5). These data were combined with household growth factors derived from the California Department of Finance's (CDF) annual household estimates by incorporated city and county, to project a household estimation to the current year for each Census block. We derived the household growth factor by dividing the CDF's current year household estimate by their previous year household estimate for each incorporated city, and the unincorporated balance of each county. This growth factor was then applied to all Census blocks whose centroid fell within the incorporated city or unincorporated balance of the county in question, to arrive at a new current year projected household estimate for each census block.

This method of household projection is a significant improvement over the methods used in the earliest DIVCA reports. In 2008 we used a single statewide growth rate for every calculation, both county and Census tract. We refined the method in 2009 by using separate growth rates for each county, and their component census tracts. This addressed the regional variation in growth rates but failed to address the urban/rural dichotomy,⁷⁷ which most likely resulted in an overestimation of the number of households served by multiple providers, painting a rosier picture of broadband competition in California than may actually be the case.

The current method accounts for variations in both regional household growth rates and urban and rural areas. As a result, the projections are closer to reality. But it also creates a statistical disconnect with previous reports, which became progressively less accurate the

⁷⁷ With the exception of purely rural counties, such as Alpine, Modoc, and Trinity.

further away from Census 2000 they were. Prior to January 2011, when the 2010 census data were released, our best estimate of households in California was 12,790,143. The 2010 Census data showed that the actual number of households in California (in April 2010) to be 12,577,498. We had overestimated by about 1.7% statewide, and probably much more in locally.

2010 Census Boundaries

The 2010 Census delivered more than just up-to-date household estimates, it also added new blocks and tracts and redrew existing boundaries. The number of Census blocks in California increased by 33.2% (533,136 to 710,145) over 2000. The number of Census tracts increased by 14.1% (7,049 to 8,043) over 2000. The effect of these increases is to reduce the average size of both blocks and tracts, thereby increasing their overall granularity as mapping units, and increasing the accuracy of any household estimation based on their selection. This increased accuracy can manifest as a decrease in the household estimate in specific areas outside urban cores, because the blocks or tracts which now comprise these areas have a smaller overall footprint. Blocks and tracts within urban cores are far less likely to have been split or redrawn – they therefore manifest only an increased overall household estimate.

Census Data Aggregation Limitations

Despite the use of more granular Census boundaries and up-to-date data, there are still limitations inherent in their use for household estimation in local areas. Although Census blocks are a much more granular mapping unit than Census tracts, and provide a much better picture of broadband availability than Census tracts do of video availability under DIVCA, the unavoidable fact of aggregation means that staff’s ability to perfectly analyze and depict the availability of broadband and video service is still limited.

The table below compares the relative sizes of Census tracts and blocks in California.

Geo- graphy	Count	Size (in sq. mi.)			Number of Households		
		Min.	Max.	Ave.	Min.	Max.	Ave.
Census Block	709,128	<0.000001	523	0.22	0	1,392	18
Census Tract	8,043	0.00052	7,008	19.7	0	8,362	1,562

Census tract reporting for video availability data, rather than actual address reporting, makes it impossible to know exactly how many households are offered service in any given Census tract, or how many households exist within the franchise territory of any given state franchise holder. Individual franchise holders report the number of households to which they offer

service by Census tract, and for Census tracts where they are the only provider, this figure can be taken as the actual number of households offered service in that tract; but for Census tracts in which there are multiple providers, it is impossible to know whether or not the competing services are offered to the same households. Therefore, simply adding the “households offered video” figures from two or more providers may result in double or triple counting, bringing some availability and subscription rates to over 100%.

Consequently, mapping where competition has occurred (one of the core concerns of DIVCA) is complicated. Since it is impossible to know where within each Census tract video service is being offered, we can only classify tracts as being either served or unserved by each provider, then add up the number of providers in each tract. In this way, the current level of video competition was also overstated.

Similarly for broadband, if one household in a Census block was offered service by any franchise holder, then it was assumed that all households within it were offered the service, and the block was considered “served.” This naturally results in an overstatement of the level of availability. Error estimation was not done for this report, so it is not known how inaccurate these estimates are. Nor would error estimation be of much use in this case, due to the use of aggregated data, rather than discreet data points. On the other hand, the population density within California varies widely, as reflected in the extreme variation in its Census geography sizes. This means that the Census tracts comprising California’s vast rural north and east (where most of the error in the results probably lie) are relatively few, and that the total number of households this represents are also relatively few.

When drawing conclusions from this report, it is important to keep in mind that only services offered by state-issued video franchise holders and their locally-franchised affiliates are reflected. Broadband and video services offered by local independent wireline providers and wireless and satellite ISPs are, by definition, excluded.

Appendix D: Broadband Subscriptions and Availability by Broadband Speed Tier

Data for Broadband Availability and Subscriptions by Speed Tiers Line Graph

Downstream Speed	Subscriptions 2013	Subscriptions 2014	Availability 2013	Availability 2014
200 Kbps - 768 Kbps	167,298	618		
768 Kbps - 1.5 Mbps	544,524	273,115	12,418,408	12,443,272
1.5 - 3 Mbps	791,361	241,598	12,386,936	12,421,133
3 - 6 Mbps	1,384,743	1,154,763	12,350,898	12,364,221
6 - 10 Mbps	790,118	837,875	12,268,043	12,305,283
10 - 25 Mbps	2,868,540	2,339,479	12,230,611	12,258,226
25 - 100 Mbps	3,239,650	3,588,196	11,948,753	12,002,408
100 Mbps - 1 Gbps	39,160	1,760,873	6,922,200	11,394,700
> 1 Gbps				137,024

Appendix E: Video Franchise Area Maps

Maps of Video Franchise areas can be found in the video franchising section of the CPUC website at:

<http://capuc.maps.arcgis.com/home/webmap/viewer.html?webmap=84e56f2c02834408a6b7a5f3bebb044b>

If you need assistance locating maps of state-issued video franchise holders, please contact Michael.Pierce@cpuc.ca.gov or call him at (415) 703-2618.