

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## Communications Division

Annual Report to the Governor and the Legislature

# Annual DIVCA Report

## For the Year Ending December 31, 2013

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

September 10, 2015



Team Responsible for this Report:

Michael Pierce

Dion Good

Michael Morris, Program Supervisor

Robert Wullenjohn, Program Manager

Ryan Dulin, Director

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## Executive Summary

This report to the legislature presents the annual video and broadband service information of California state video franchise holders and their affiliates<sup>1</sup> pursuant to the Digital Infrastructure and Video Competition Act of 2006 (DIVCA),<sup>2</sup> for the period January 1, 2013 through December 31, 2013.

### Video Competition Continues to Increase

As of December 2013, AT&T and Verizon offered wireline video to almost 7 million households (HHs) – more than half of all California households. During 2013 AT&T and Verizon increased the number of households to whom they offer video by 5.5% (359,735 HHs).

Since the passage of DIVCA in 2006, almost three times as many households (9.9 million households) have two or more wireline video providers to choose from than were available in 2007 (3.4 million). Most urban and suburban areas have two or more franchise holders offering wireline video. Fewer rural areas have two or more franchisees offering wireline video. As of December 2013, 2.6 million California households still had access to only one wireline video provider; most areas with one wireline provider are located in rural areas. Satellite-delivered video services, as well as “over-the-top” video utilizing broadband service, are additional options.<sup>3</sup>

### 93% of California Households have 25 Mbps Broadband Available; 27% of Those Subscribe

In 2013, 93.9% of the households in California had broadband available at download speeds of between 25 Mbps and 100 Mbps. However, only 27.1% of the households that had broadband available between 25Mbps and 100 Mbps, subscribed to broadband with download speeds faster than 25 Mbps.<sup>4</sup> The 27.1% subscription rate to broadband between 25 Mbps and 100 Mbps might have been lower had three of the four largest cable companies in the state not raised their broadband customers’ service speeds to 25 Mbps and above automatically, at no additional charge.<sup>5</sup>

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

<sup>2</sup> Cal. Pub. Util. Code §5800 – 5970.

<sup>3</sup> Satellite providers have never been required to obtain a video franchise.

<sup>4</sup> 3,239,650 subscribers to 25 Mbps to 100 Mbps downstream broadband, divided by 11,948,753 households who had 25 Mbps broadband available = 27.1%. The denominator in this fraction represents 93.9% of the total households in CA.

<sup>5</sup> See for example the following press release from Comcast: <http://www.prnewswire.com/news-releases/comcast-to-double-speeds-of-two-of-its-most-popular-xfinity-internet-speed-plans-in-california-> Staff also contacted both Cox and Charter and although they confirmed that although they did not issue a press

## **There are More Mobile Broadband Subscribers than Wireline; Mobile Broadband Subscriptions are Increasing Faster than Wireline**

While wireline broadband subscriptions have continued to increase, mobile broadband subscriptions have increased faster. Consequently, the number of AT&T and Verizon mobile broadband subscribers at the end of 2013 exceeded total wireline broadband subscriptions by more than 4 million subscribers, and has been rising at a faster rate since 2008<sup>6</sup>. A chart illustrating this can be found on page 32.

### **Broadband Competition Between Video Franchise Holders Continues to Increase**

The percentage of households offered wireline broadband service at speeds greater than 200 kbps<sup>7</sup> by **two or more** state video franchise holders or their affiliates, increased to 91.2% of HHs (11.6 million HHs) in 2013. The percentage of households offered wireline broadband service at such speeds by **three or more** state video franchise holders or their affiliates, increased to 11.4% (1.5 million HHs) in 2013.

### **Wireline Broadband Penetration**

Residential wireline broadband subscriptions to state video franchise holders and their affiliates<sup>8</sup> at speeds greater than 200 kbps continued to increase during 2013, growing by 2.5% to 9.8 million subscribers. Consequently, residential wireline broadband penetration for broadband at downstream speeds faster than 200 kbps increased to 77.2% of California households during 2013. In addition, penetration of broadband at downstream speeds equal to or greater 25Mbps increased to 27.1% of households.<sup>9</sup>

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release, during 2013, they upgraded some of their broadband subscribers 25 Mbps or above at no charge at-no-additional-cost-198997021.html

<sup>6</sup> 2008 was the first year a DIVCA report was published.

<sup>7</sup> See the beginning of the broadband section of this report (page 27) for a detailed explanation of the FCC's definition of broadband "from as low as 200 kbps," used in this and all previous DIVCA Reports. Sources: FCC at: <http://www.fcc.gov/guides/getting-broadband>, *Sixth Broadband Progress Report, 2010*, 25 FCC Rcd at 9559–64, paras. 5–10 (discussing the 200 kbps symmetrical standard).

<sup>8</sup> Examples of affiliates include those providing cellular service and video programming pursuant to unexpired local cable TV franchises. State Video Franchise holders other than affiliates, are hereafter to be called "Holders".

<sup>9</sup> In all past DIVCA reports our baseline threshold for reporting broadband began with minimum downstream speeds of 200 Kbps and above. We continue to maintain that base line in this report for historical continuity and other reasons. In the broadband section of this report, the FCC recently changed its definition of "advanced telecommunications capability" as requiring access to broadband download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps (25 Mbps /3 Mbps.)

## **Cable Modem is The Most Used Wireline Broadband Technology**

Cable modem continues to be the technology most used by providers of wireline and fixed wireless broadband to serve residential households. At the end of 2013, 54% (5.5 million) of all HHs in California used cable modems to access broadband. In addition, fiber optic technology deployed to the home expanded to 8% (762,641) of all wireline broadband subscribers in 2013.

### **Build-out and Low-income Requirements**

DIVCA includes a statutory two, three and five year build-out obligation that applies to Verizon and AT&T.

Both AT&T and Verizon exceeded their two and three year build-out obligations, as defined in §5890(e) of the PU Code. However, only Verizon met its five year build-out obligation by offering video services to at least 40% of the households in its telephone service area, while for the years 2011 and 2012, AT&T was entitled to an extension to meet its 50% obligation based on the Public Utilities Code § 5890(e)(4). AT&T has since met its build-out obligation in 2013.

### **Limited Data is Available to Determine Whether Basic Telephone Service Rate Increases Have Subsidized Video Network Deployment**

DIVCA prohibits state-issued video franchise holders that provide stand-alone, residential, primary line, basic telephone services from increasing the rate they charge customers for this service to finance the cost of deploying a network to provide video service.<sup>10</sup>

However, current state and federal industry reporting requirements do not provide sufficient information for Staff to definitively determine on an empirical basis whether such cross subsidization does, or does not exist. A pending Proposed Decision still subject to Commission adoption rejects ORA's request that the Commission commence an investigation into whether DIVCA's cross subsidy provision has been violated.<sup>11</sup>

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<sup>10</sup> Cal. Pub. Util. Code §5940

<sup>11</sup> CPUC Proceeding number: C1312005

## Overview of DIVCA

On September 29, 2006, the Governor signed into law Assembly Bill 2987, the Digital Infrastructure and Video Competition Act of 2006 (DIVCA).<sup>12</sup> 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 fundamentally 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 fundamentally reform video franchising to facilitate competitive video and broadband entry.<sup>13</sup> As of 2014, 25 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.<sup>14</sup>

Prior to DIVCA, cable television franchises were issued by cities, counties and special districts. 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 inevitably have been an arduous process, delaying their entry into the market by many years. 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.

In order to carry out its statutory goals, the CPUC developed and adopted rules to implement

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<sup>12</sup> A.B. 2987, Ch. 700, Stats. 2006.; Cal. Pub. Util. Code, §5800 – 5970 - Digital Infrastructure and Video Competition Act of 2006 (DIVCA).

<sup>13</sup> Communications Daily, Passage of Cal. Video Bill Expands Franchise Reform to California: <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/videofranchising.htm>

<sup>14</sup> National Conference of State Legislatures, <http://www.ncsl.org/research/telecommunications-and-information-technology/statewide-video-franchising-statutes.aspx>. Last Visited March 24, 2014.



DIVCA through a series of three formal decisions and several resolutions. See Appendix B for descriptions of these decisions.

Following the adoption of these new rules, the CPUC began issuing ten-year state video franchises. 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.

Holders of state video franchises 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. A description of the data collected is contained in Appendix B: Collecting Data Mandated by DIVCA.

While DIVCA provides that the CPUC is the sole franchising authority for issuing state video franchises,<sup>15</sup> 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.<sup>16</sup>

DIVCA defined the jurisdiction of the Commission, limiting its enforcement authority to the following provisions:

- Issuing and renewing 10-year video franchises.<sup>17</sup>
- Gathering data from state-issued video franchise holders on their deployment of video and broadband services on an annual basis.<sup>18</sup>
- Aggregating data submitted by holders for use in an Annual Report from the CPUC to the Governor and Legislature.<sup>19</sup>
- Ascertaining that holders of video franchises have complied with build-out and anti-discrimination requirements.<sup>20</sup>
- Enforcing the prohibition on the use of telco-video cross-subsidization.<sup>21</sup>

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<sup>16</sup> Cal. Pub. Util. Code §5840 (a).

<sup>17</sup> *Id.* at §5840 (a).

<sup>18</sup> *Id.* at §5960 (b).

<sup>19</sup> *Id.* at §5960 (c).

<sup>20</sup> *Id.* at §5890.

<sup>21</sup> *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).

- Collecting fees from state-issued video franchise holders to equal the cost of carrying out the CPUC's duties under DIVCA.<sup>22</sup>

## **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. These summaries show the trends in video deployment and subscribership since DIVCA was implemented in 2007. This includes the continuing transition from local franchises to state-issued franchises.

The data represented in this video section were collected from such holders. The data collected include the number of households to which video has been deployed, the number of state-issued franchises and amendments granted, and the number of subscribers to video service offered by state-issued video franchise holders. A description of the data collected is contained in Appendix C: Collecting Data Mandated by DIVCA.

Additionally, this report discusses AT&T and Verizon's progress in meeting the wireline build-out and low income requirements as established by DIVCA. Lastly, this report discusses the prohibition against telco-video cross-subsidization.

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<sup>22</sup> Cal. Pub. Util. Code § 5810(a)(3).

## 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.<sup>23</sup> The build-out requirements for holders with over one million telephone customers 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

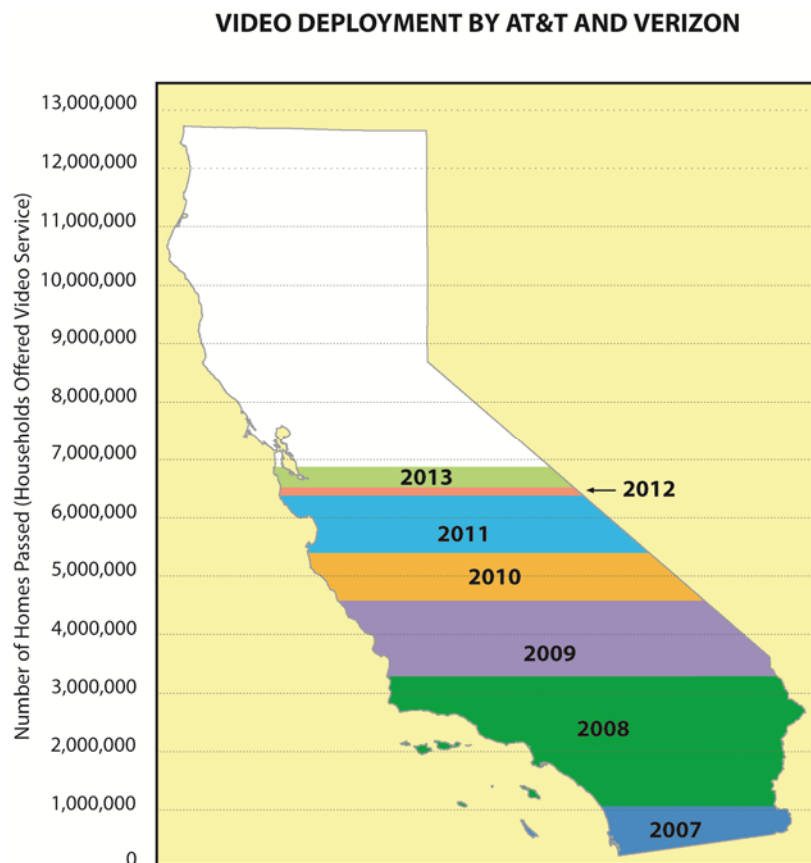
Both AT&T and Verizon exceeded their two and three year build-out obligations, as defined in §5890(e) of the PU Code. However, only Verizon met its build-out obligation within the five-year time frame set forth in the statute, by offering video services to at least 40% of the households in its telephone service area. In contrast, AT&T qualified for an extension to meet its obligation during 2011 and 2012 based on §5890(e)(4). In 2013, AT&T met its build out obligation by offering video services to at least 50% of the households within its telephone service area. DIVCA 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 2013, AT&T met its build-out obligation by offering video to at least 50% of the households within its telephone service area.

<sup>23</sup> Phase I Decision, at 7; *See* Cal. Pub. Util. Code § 5890.

## B. Overall Video Deployment Increased at a Modest Pace

Video deployment measures the number of households that are offered video services. The number of households offered video by all Holders increased 4.4% to 21.5 million households during 2013, compared with a 3.2% increase to 20.6 million HHs in 2012 and a 4.5% increase to 19.97 million HHs in 2011.<sup>24</sup>

The chart below shows that AT&T and Verizon increased their deployment of video services during 2013 by 5.5% to almost 7 million households, more than half the households in the state. In comparison, during 2012 AT&T and Verizon increased deployment by 2.3%. During 2011, AT&T and Verizon increased their video deployment by 18%.

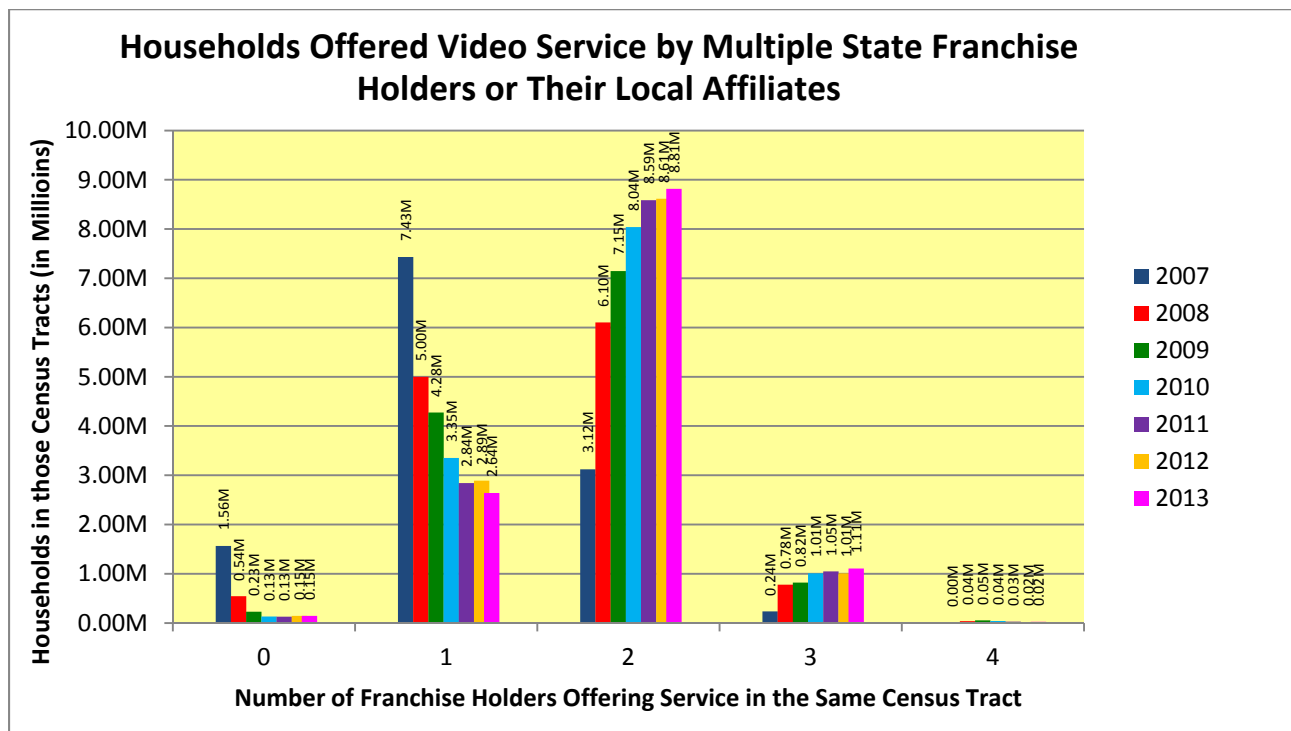


<sup>24</sup> Due to multiple franchisees offering video to the same households, more households are offered video services than there are households in the state (12,675,876). For details, see Appendix D: Methods, Sources, and Data Limitations.

### C. State of Video Competition: Choices of Video Service Increased Slightly in 2013

The chart below illustrates that the number of households located in census tracts in which two or more state video franchise holders or their local affiliates offer video services increased slightly during 2013. In contrast, during 2012 this metric remained flat.

Approximately 200,000 more households had a second video provider available in 2013, while 20,000 more HHs had a second video provider available in 2012. However, since the passage of DIVCA in 2006, almost three times as many households (9.9 million households) have two or more wireline video providers to choose from than were available in 2007 (3.4 million).



While the number of census tracts in which multiple providers offer traditional video service with bundled channels comprised of linear programming has slowed, there has simultaneously been huge growth in over-the-top video (OTT) viewing on broadband Internet infrastructure.

#### **D. Over-The-Top (OTT) Pay TV Revenue Forecasted to Rise 72% From \$5.8 billion in 2014 to Over \$10 Billion in 2018**

Over the Top (OTT) providers compete with existing cable operators' video business by providing free and pay videos over any broadband connection (including an existing cable operator's network).

“Subscription-based over-the-top (OTT) providers like Netflix, Hulu Plus, and Amazon have seen phenomenal growth over the last couple of years, according to market research firm Infonetics Research. With a combination of wide availability across end devices, user-friendly interfaces, and access to vast content libraries, these providers continue to challenge traditional pay-TV providers and are in the early stages of siphoning off revenue.”<sup>25</sup>

Infonetics forecasted that “over-the-top (OTT) pay TV revenue will increase from \$5.8 billion in 2014 to just over \$10 billion in 2018.” This is an increase of 72% over the 4 year forecast period. To put this fast growing forecast into context, Infonetics wrote that “the global pay TV market totaled \$117 billion in the first half of 2014 (1H14), an increase of 3.9% from the first half of 2013 (1H13).”

Several developments took place in the latter half of 2014 which support these projections. Programmers who had previously refused to provide programming on an OTT basis unless a consumer also subscribed to the same programming as part of a cable or satellite video package, announced plans to offer that programming directly to subscribers or as part of a bundled video package offered by other OTT providers. HBO, ESPN, Showtime, and Discovery networks all announced plans to make their programming available on an independent OTT basis.<sup>26</sup> In addition, at least one broadcast network, CBS, announced plans to do the same. While it is unclear whether all of the content offered by these entities as part of a traditional cable and satellite video package will be made available on an OTT basis, these developments suggest a rise in OTT competition and continued erosion of the traditional bundled video programming business model that has dominated the cable television industry.

Furthermore, regulatory changes designed to promote OTT competition have been initiated. In December of 2014, the FCC released a notice of proposed rulemaking in which it tentatively concluded that OTT providers who offer linear or scheduled video programming should be classified as Multichannel Video Distribution Providers or MVPDs.<sup>27</sup> This would compel

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<sup>25</sup> “Pay TV Services and Subscribers Report,” Infonetics Research, November 19, 2014, <http://www.infonetics.com/pr/2014/1H14-Pay-TV-Services-and-Subscribers-Market-Highlights.asp>.

<sup>26</sup> Prices have been announced for the following “a la carte” OTT services as follows: CBS All Access - \$6 per month, Showtime – approximately \$11 per month, HBO \$15 per month.

<sup>27</sup> FCC NPRM “Promoting Innovation and Competition in the Provision of Multichannel Video Programming Distribution Services, FCC 14-210, December 19, 2014.

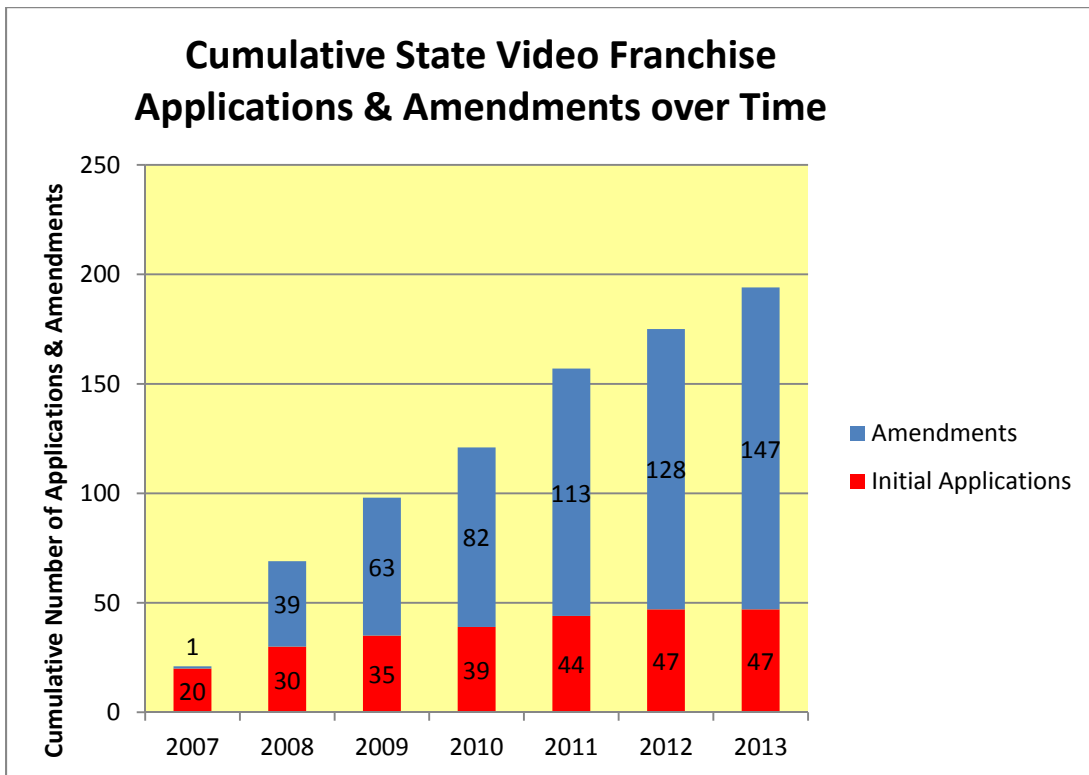
broadcast networks to enter into good faith negotiations with OTT providers for broadcast programming offered on a scheduled basis. In addition, it would give OTT providers the right to access scheduled programming owned by cable and satellite providers.

Perhaps an even more significant driver of OTT competition than the emerging availability of existing cable and satellite programming on an OTT basis, is the proliferation of new original programming, created by or for OTT providers. Program diversity has been a major policy goal, since the early days of broadcast regulation. The appearance of OTT providers such as Netflix and HBO in the marketplace has led to an explosion of original programming becoming available to the public. Increasingly, new video competition involves creating additional program diversity.

## E. Amendments to Existing State Video Franchises Continue to Rise

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. Maps representing each video franchise are contained in Appendix E: Video Franchise Area Maps.

The cumulative bar chart below shows that the rapid rate at which initial state-issued video franchises have been granted since 2007 has slowed. There were no new franchise applications in 2013, down from three in 2012 and down from five in 2011. The number of new amendments increased to 19 during 2013, compared with to 15 in 2012 and 31 in 2011. Amendments to video franchises “reflect changes to the franchise service area.”<sup>28</sup>



The growth in the cumulative number of initial franchises and amendments approved by the CPUC 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.

Under DIVCA, an incumbent cable operator has the option of opting into a state-issued franchise once a competing video provider, with a state-issued video franchise, begins operating in the

<sup>28</sup> CPUC, General Order 196, VI, C



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.

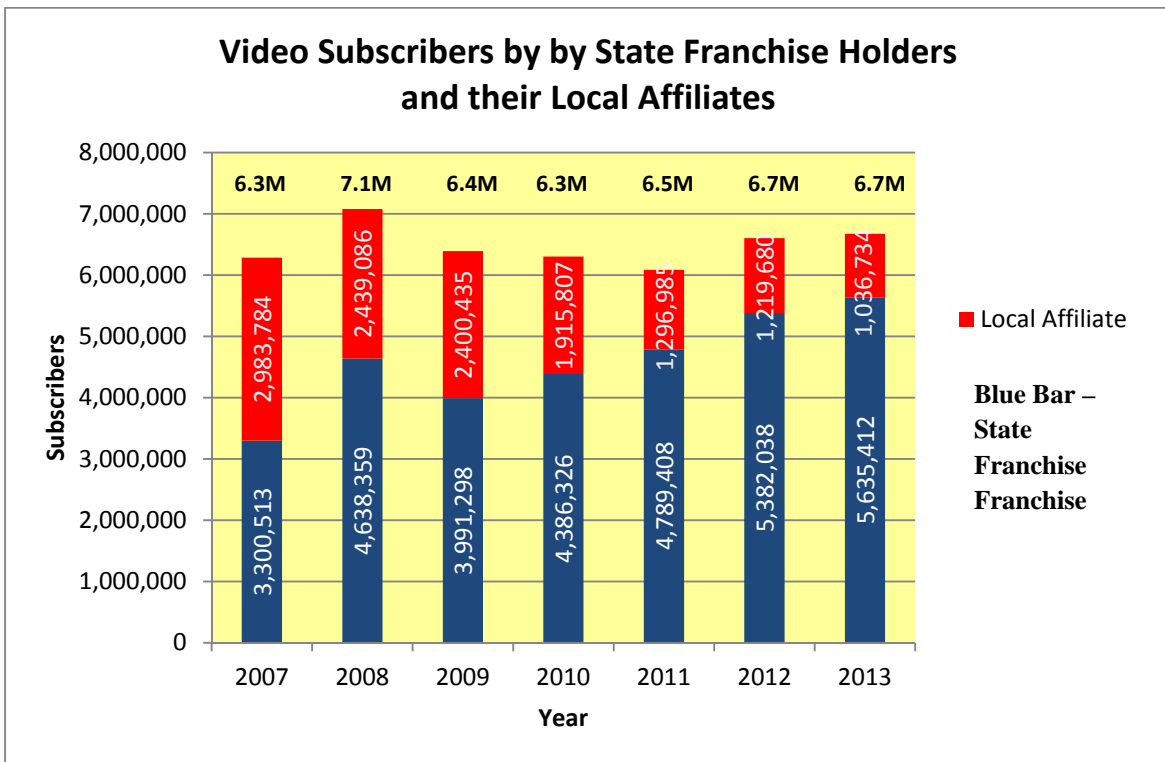
Most incumbent cable companies opted to shift to state-issued video franchises soon after new entrants began providing service in one or more of their local franchise areas in 2007. This shift is reflected by the 20 initial applications granted in 2007 and 10 additional initial applications granted in 2008. It is also reflected by the year to year cumulative increase between 2008 and 2013 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.

## F. Video Penetration Flattened During 2013, While the Shift to State Video Franchises Continues

The aggregate number of Franchise Holders' video subscribers remained flat at 6.7 million in 2013. This compares with an increase of 2.5% (162,358) during 2011, and an increase of 3.2% (205,207) in 2012 to 6.7 million. However, video subscribership has never recovered from its peak in 2008, at the beginning of the recession.

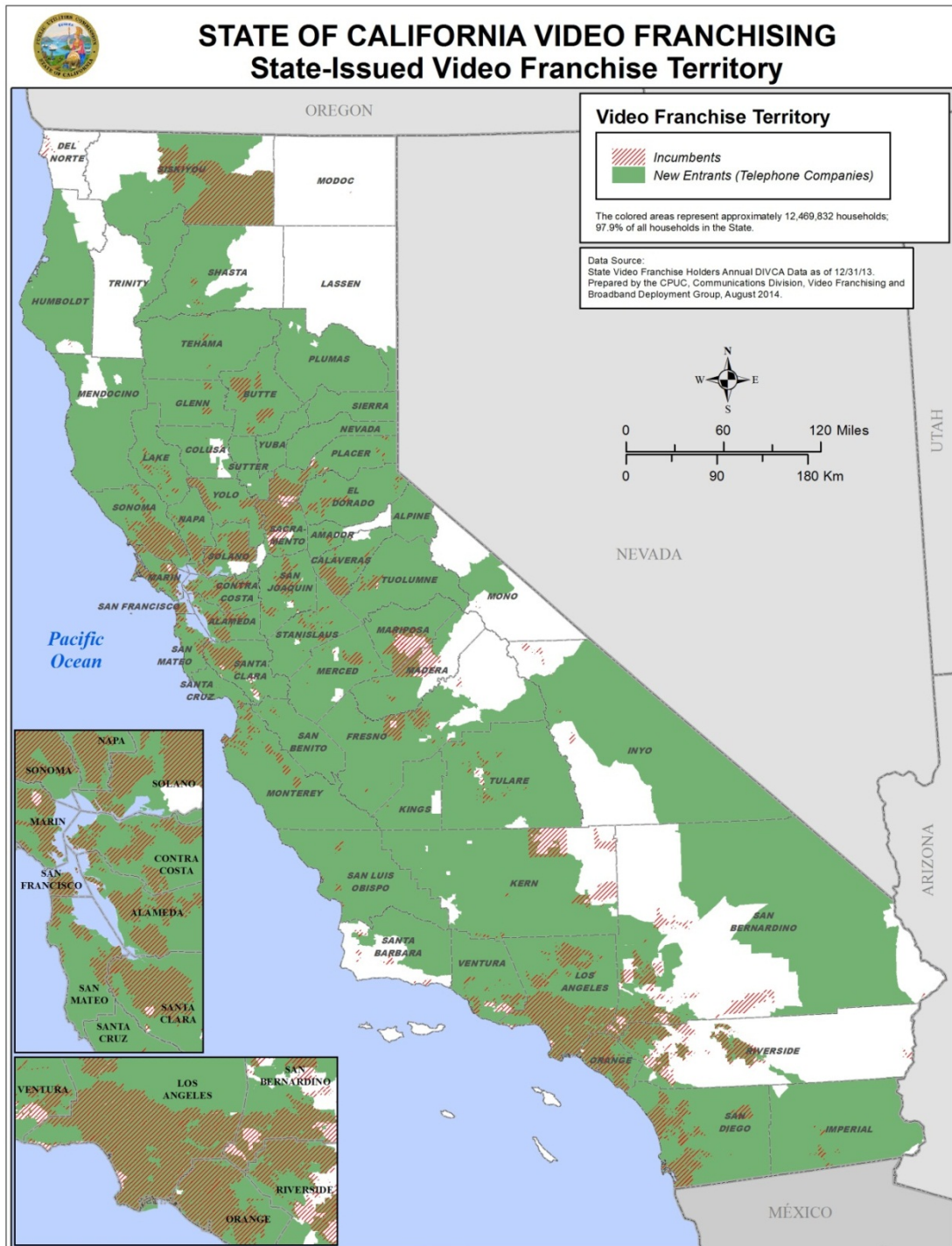
The shift towards state-issued franchises is also reflected in the number of households subscribing to video service from state-issued franchise holders, compared with households subscribing to video service from a legacy local franchise. The chart below shows that the number of households subscribing to video provided under state-issued franchises increased by 70.1% (2.3 million) between 2007 and 2013, to over 5.6 million households.

Video subscriber growth by state-issued video franchise holders slowed from 12.4% in 2012 to 4.7% in 2013. We estimate that virtually all local franchises will be converted to state franchises by 2021. Subscribership to Holders' video services may decline in the coming years, due to intermodal competition in the form of OTT video. It is unclear how many current subscribers to video services provided by wireline cable providers may in the future choose to cancel their video subscriptions and view OTT video that would be delivered over broadband services.



The map on the next page shows that the new entrants' (telephone companies') franchise territories cover most of California. The telephone companies' entry into the video service

market was expedited by the passage of DIVCA in 2006. A much more detailed version of the map below is available on the CPUC website.<sup>29</sup>



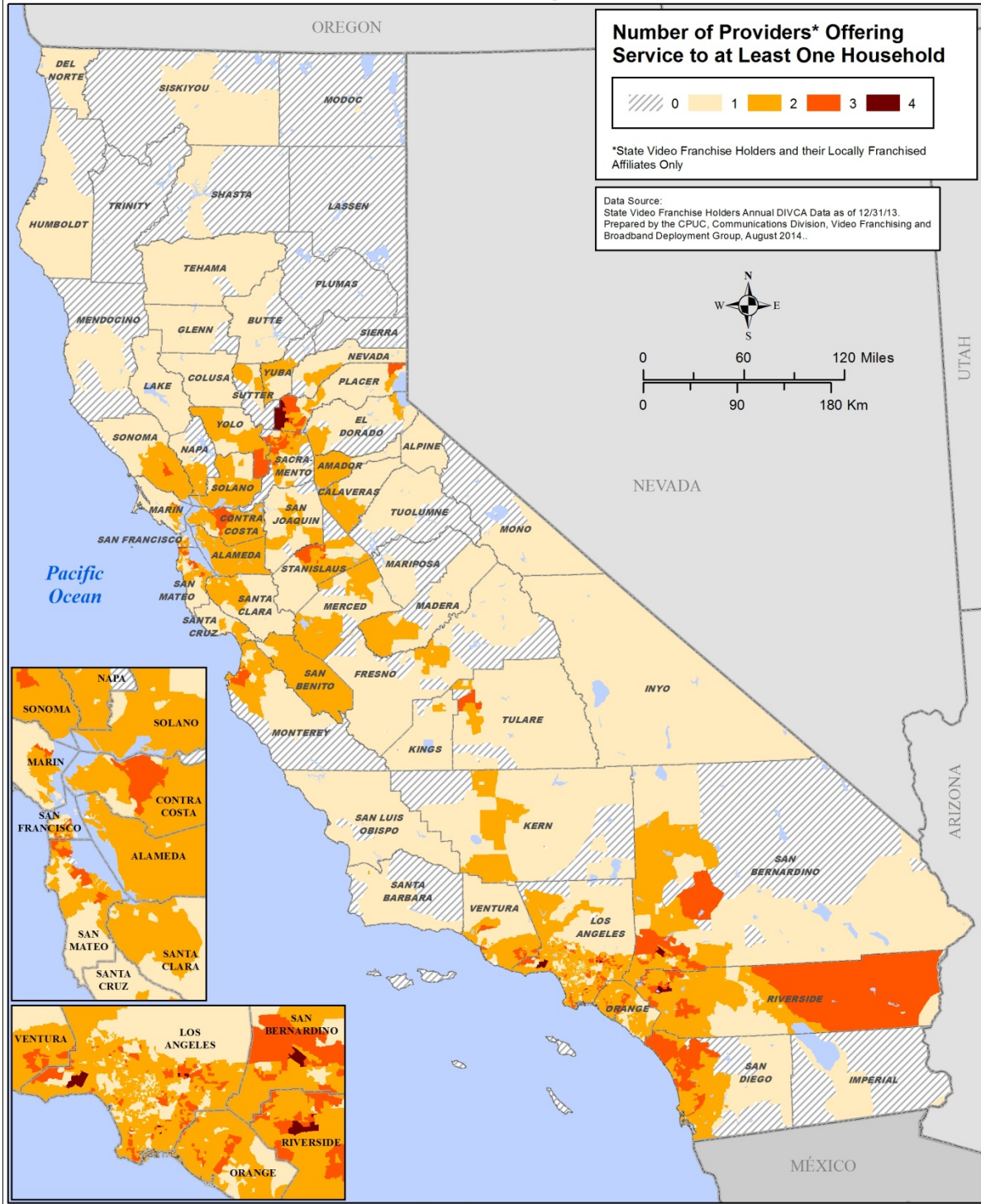
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[ftp://ftp.cpuc.ca.gov/VideoFranchiseTemplate/All%20Video%20Franchise%20Territory%2020140101%20\(by%20LEC%20Status\).pdf](ftp://ftp.cpuc.ca.gov/VideoFranchiseTemplate/All%20Video%20Franchise%20Territory%2020140101%20(by%20LEC%20Status).pdf)



# STATE OF CALIFORNIA VIDEO FRANCHISING

## Video Providers by Census Tract



## G. AT&T and 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.<sup>30</sup> AT&T and Verizon are the only two state video franchise holders meeting this threshold. 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 obligation at the five year mark and the continuing / ongoing requirement for 2012.<sup>31</sup>

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<sup>30</sup> 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 United States Census Bureau estimates adjusted annually to reflect rates of change and distribution through January 1, 2007.

<sup>31</sup> We are currently analyzing an ambiguity within DIVCA that may change the manner in which we calculate DIVCA's low income requirement. Some of the findings regarding compliance with this requirement in this report may be subsequently revised.

## H. Limited Data is Available to Determine Whether Basic Telephone Service Rate Increases Have Subsidized Video Networks

DIVCA prohibits state-issued video franchise holders that provide stand-alone, residential, primary line, basic telephone services from increasing the rate charged to customers for this service to finance the cost of deploying a network to provide video service.<sup>32</sup> Section 5810 of DIVCA set forth a number of principles to which the subsequent sections of the statute were intended to adhere. Section 5810(2)(A) states: “Legislation to develop this new process should adhere to the following principles: Create a fair and level playing field for all market competitors that does not disadvantage or advantage one service provider or technology over another....” Consistent with Section 5810 (2)(A), the cross subsidy provisions set forth in Sections 5940 and 5950 fulfill this principle of protecting against unfair competition.<sup>33</sup>

There is a critical market condition that must exist for the incumbent telephone companies to be able to unfairly increase its video market share by cross-subsidization enabling it to offer and sustain below cost video service pricing. Essentially, the incumbent must have sufficient market power in order to price its service above cost so that it would generate unreasonable profits for a sustained period, enabling it to cross subsidize a video network.<sup>34</sup> While traditional basic telephone service remains an important service, currently on a statewide basis, the market power for basic telephone service has been waning as consumers substitute mobile wireless services for traditional landline basic telephone service.<sup>35</sup> Further, the communications market has expanded beyond traditional telephone service-- Incumbent phone companies and incumbent cable operators are competing for voice, video and broadband customers.<sup>36</sup>

Given the increased market share of video providers in the broadband communications market; the shifting market demand in video services and the relatively small market share that incumbent LECs have in the video business, it is not easily ascertainable that cross-subsidy between basic service and video services is possible. If it had occurred, such cross subsidies could have resulted in significant loss of video market share by incumbent cable companies. On

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<sup>32</sup> Cal. Pub. Util. Code §5940.

<sup>33</sup> Should the incumbent telephone company retain sufficient market power for basic telephone service in which there is no substitute product, the basic telephones service could conceivably be overpriced relative to its cost thereby allowing it to cross-subsidize its video deployment and therefore substantially lower its video service rates below its cost of service in order to “unfairly” increase its video market share.

<sup>34</sup> To prevent "local media monopolies," Section 533(b) of the Cable Communications Policy Act of 1984 barred local phone service providers (local exchange carriers or LECs) from directly providing video programming to their local phone service subscribers. The government claimed that because LEC- controlled phone lines could also transmit video signals, allowing LECs to provide video programming would hurt competing cable companies. First, LECs could deny competitors access to their data lines. Second, LECs could offer lower cable prices than competitors by raising the costs of telephone service and using the extra profits to subsidize the costs of cable service. [http://www.oyez.org/cases/1990-1999/1995/1995\\_94\\_1893](http://www.oyez.org/cases/1990-1999/1995/1995_94_1893)

<sup>35</sup> Communication’s Division Staff Report: Market Share Analysis of Retail Communications in California, June 2001 Through June 2013, published January 2015, Chart 1 and 4.

<sup>36</sup> Id.

the contrary, cable providers have gained market share in the broadband market<sup>37</sup> whereas the incumbent LECs have a relatively small video market share.<sup>38</sup> Further, the video providers have not complained to the Commission about such unfair competitive practices-- that basic service rates have or are cross subsidizing video services. Lastly, traditional basic telephone service subscriptions and their ancillary services that contributed to its cost recovery have been declining, whereas broadband Internet access services have been ascending.<sup>39</sup> Given the services offered by the incumbent service providers today, it would be difficult for the Commission to attempt to assess utility cost to provide traditional basic telephone service.<sup>40</sup>

The Phase I decision implementing DIVCA adopted FCC ARMIS data for purposes of monitoring. However, the Communications Division staff has determined that ARMIS data does not include data that would be necessary to determine whether or not cross subsidy is occurring. Therefore, the only recourse available to enforce the prohibition of cross subsidy violations would be to conduct a cost study proceeding.<sup>41</sup> In sum, current state and federal industry reporting requirements do not provide sufficient information for Staff to definitively determine on an empirical basis whether cross subsidization is occurring. (See Appendix A, for more on analysis of changes in basic telephone service rates)

On December 6, 2013, The Utility Reform Network (TURN) filed a complaint with the Commission alleging that market forces have failed to sufficiently constrain AT&T's increases to its basic service rates and that rates for these services should be rolled back and capped.<sup>42</sup> This complaint is currently before the Commission.

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<sup>37</sup> Id, Chart 2 and 3.

<sup>38</sup> Determination based on confidential video revenues provided to the Commission.

<sup>39</sup> Between 2001 and 2013, the number of subscriptions for wireline basic voice services declined 53.6%, from 24.8 to 11.5 million lines; between 2008 and 2010, they fell by 26.4%, from 20.8 to 15.3 million lines and between June 2010 and June 2013, subscriptions fell by 28.6% from 16.1 to 11.5 million lines.

<sup>40</sup> A regulatory issue of the rate setting era was that many utility costs were not attributable to any single service which made it difficult to accurately assign costs among services and state and federal jurisdictions. In order to keep access rates low, high valued state and interstate services, such as long-distance, toll, special access and ancillary service revenues subsidized basic telephone access services. Recreation of "cost" based rates based on today's conditions using prior cost review methodologies might result in higher than current market rates since basic service subscriptions and subsidy contributing toll, access and ancillary revenue streams have declined from historical levels. (See Staff Report: Market Pricing Survey of Retail Communications Services in California, published December 2014, pages 13 -15)

<sup>41</sup> Such a proceeding would require a significant resource commitment to include many CPUC staff, outside consultants, and funding and would likely last 2-3 years.

<sup>42</sup> Utility Reform Network vs. AT&T California, C. 13-12-005 at 4,6

## **I. Role of Communications Division Staff in DIVCA Consumer Protection**

Though 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,”<sup>43</sup>

Communications Division (CD) staff at the CPUC continues to receive and answer many calls each year 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. CD staff always responds to the inquiries staff receives, often by telephone and sometimes in writing. In addition to answering questions and providing information relating to the inquiry, in most situations, CD staff also refers people to their local municipality. CD staff also often speaks by telephone with local municipality staff about the complaint received and provides them with information relating to their role in the process. When it can, CD staff also assists by contacting the video franchise holder about the specific situation and informally mediates discussions between the local municipality or customer and the video franchise holder.

CD Staff 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 letter demanding that it obtain a state franchise as required by law. If the video service provider does not obtain a franchise, staff escalates the matter to the Commission’s Safety and Enforcement and Legal divisions, who initiate a formal proceeding if other measures fail. Throughout this process, staff coordinates with affected local governments to advise them of the current status of the matter and to seek relevant input.

The last DIVCA Report stated that Staff was proposing to conduct workshops to seek input from local governments, consumers and other stakeholders regarding the performance of DIVCA from its inception. Unfortunately due to staff availability constraints, work in this area has been delayed.

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<sup>43</sup> Public Utilities Code § 5900 (c-j)



## Analysis of Broadband Data

This broadband section of the DIVCA Report summarizes data describing mobile broadband wireless service plan subscribers<sup>44</sup> (AT&T Mobility & Verizon Wireless), and wireline broadband services. The wireline broadband bandwidth is reported at downstream speeds greater than 200 kbps, 3 Mbps, 6 Mbps, 10 Mbps and greater than 25 Mbps in California.<sup>45</sup>

Specifically, the data presented in this section include: the number of franchise holders' fixed wireline and mobile broadband subscribers, penetration rates, census blocks with multiple broadband providers, download speed tier information, and the various technologies used to deploy broadband. The broadband section of this report analyzes data provided by state-issued video franchise holders and their affiliates, but does not include data from providers unaffiliated with state-issued franchise holders.<sup>46</sup> <sup>47</sup> The terms households and subscribers are used interchangeably.

A separate report includes broadband data collected from all broadband providers as of June 2012, including those unaffiliated with state-issued franchise holders, such as wireless Internet service providers and Local Exchange Carriers (LECs). The report, titled: "*June 2012 California Broadband Report: A Comparative Summary of Broadband Adoption for June 30, 2011, to June 30, 2012,*" was published in February 2014 by the Center for Economic Development at California State University, Chico in conjunction with the CPUC. In addition, "The 2013 California Advanced Services Fund Report," covering the period January to December 2012, is available on the CPUC website.<sup>48</sup>

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<sup>44</sup> The FCC states: "FCC Form 477 collects information about broadband connections to end user locations." FCC Form 477 Instructions, 3060-0816 This DIVCA report assumes the term "subscriber" to be synonymous with term "connection" as reported in the FCC's 477 reports.

<sup>45</sup> The FCC provides broadband providers with instructions regarding how to report speed tier information for their broadband connections in the FCC Form 477 instructions. These instructions state that broadband providers shall "categorize the connection (into a speed tier) based on the end user's authorized maximum download information transfer rate." FCC Form 477 Instructions, 3060-0816.

<sup>46</sup> Examples of broadband providers NOT included in this data 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.

<sup>47</sup> The terms households and subscribers are used interchangeably.

<sup>48</sup> To find the CASF reports on the CPUC website, type the following into your browser or in the search function at [www.cpuc.ca.gov](http://www.cpuc.ca.gov) : "CASF Performance and financial audit reports"

### **A. The FCC Changed its Definition of “Advanced Telecommunications Capability” to 25 Mbps Downstream and 3 Mbps Upstream**

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.”<sup>49</sup> In its most recent annual review, released on February 4, 2015, the FCC stated that it could no longer conclude that broadband at speeds of 4 megabits per second (Mbps) download and 1 Mbps upload (4Mbps / 1 Mbps upload) – a benchmark established in 2010 and relied on in its last three Broadband Progress Reports – supports the “advanced” function Congress identified.<sup>50 51</sup>

The FCC found that “having advanced telecommunications capability requires access to actual (broadband) download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps (25 Mbps / 3 Mbps).”<sup>52</sup>

The California Advanced Services Fund (CASF) currently uses a minimum benchmark of 6 Mbps download speed and 1.5 Mbps upload speed for identifying underserved areas to qualify applications for consideration for CASF funding. In addition, on December 11, 2014, the FCC adopted new definition for its Phase II Connect America Fund of 10 Mbps downstream and 1 Mbps upstream.<sup>53</sup>

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<sup>49</sup> 47 U.S.C. § 1302(b).

<sup>50</sup> 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action To Accelerate Deployment, GN Docket No. 14-126, FCC 15-10, § 3 (February 4, 2015).

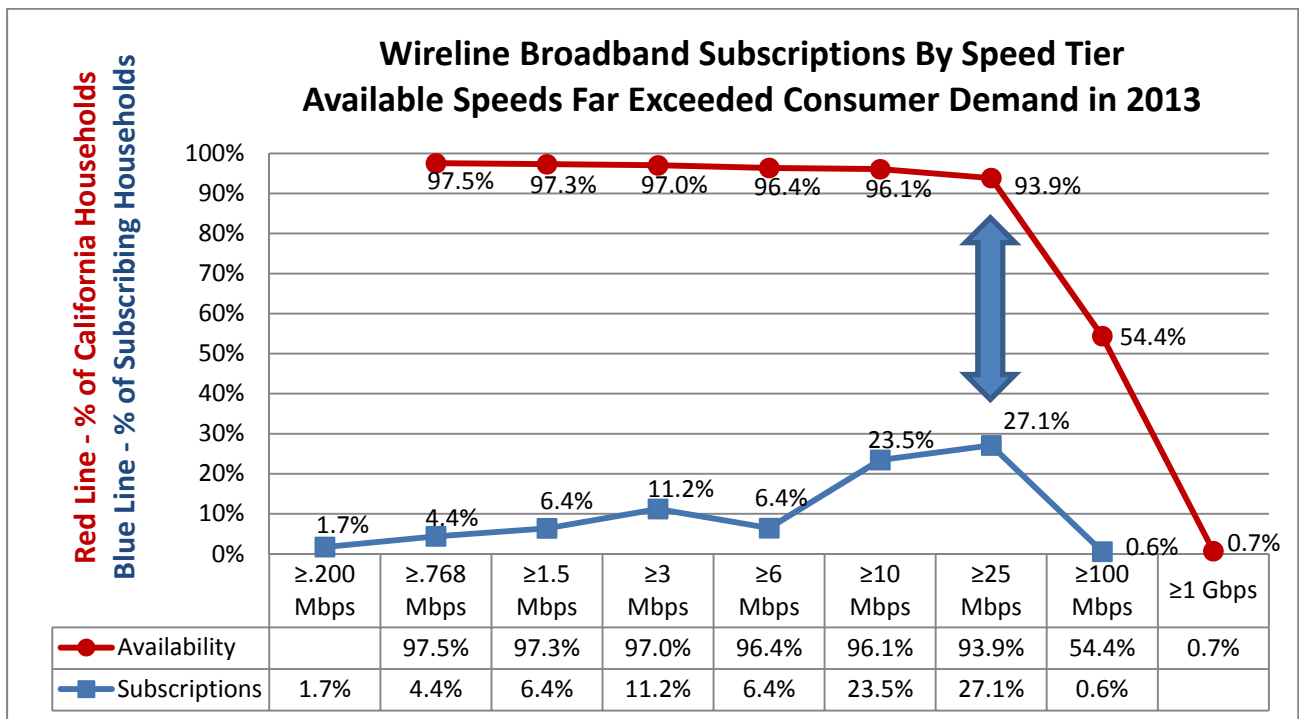
<sup>51</sup> Consequently, this current finding was published in the FCC’s “2015 Broadband Progress report and Notice of Inquiry on Immediate Action to Accelerate Deployment.

<sup>52</sup> 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action To Accelerate Deployment,” GN Docket No. 14-126, FCC 15-10, February 4, 2015

<sup>53</sup> FCC 14-190, Connect America Fund Report and Order, page 3, December 18, 2014.

## B. 93% of California Households have 25 Mbps Wireline Broadband Available; 27% of Those Subscribe

The red line on the graph of broadband subscriptions below shows that 93.9% of the households in California had broadband available at advertised download speeds of between 25 Mbps and 100 Mbps in December 2013.<sup>54</sup> The blue line in the graph below shows that 27.1% of households that had broadband available at advertised speeds of between 25 Mbps and 100 Mbps downstream subscribed to broadband between 25 Mbps and 100 Mbps downstream in December 2013. The 27.1% subscription rate, though, may well have been lower had three of the four largest cable companies in the state not raised their broadband customers' service speeds to 25 Mbps and above, automatically, at no additional charge.<sup>55</sup>

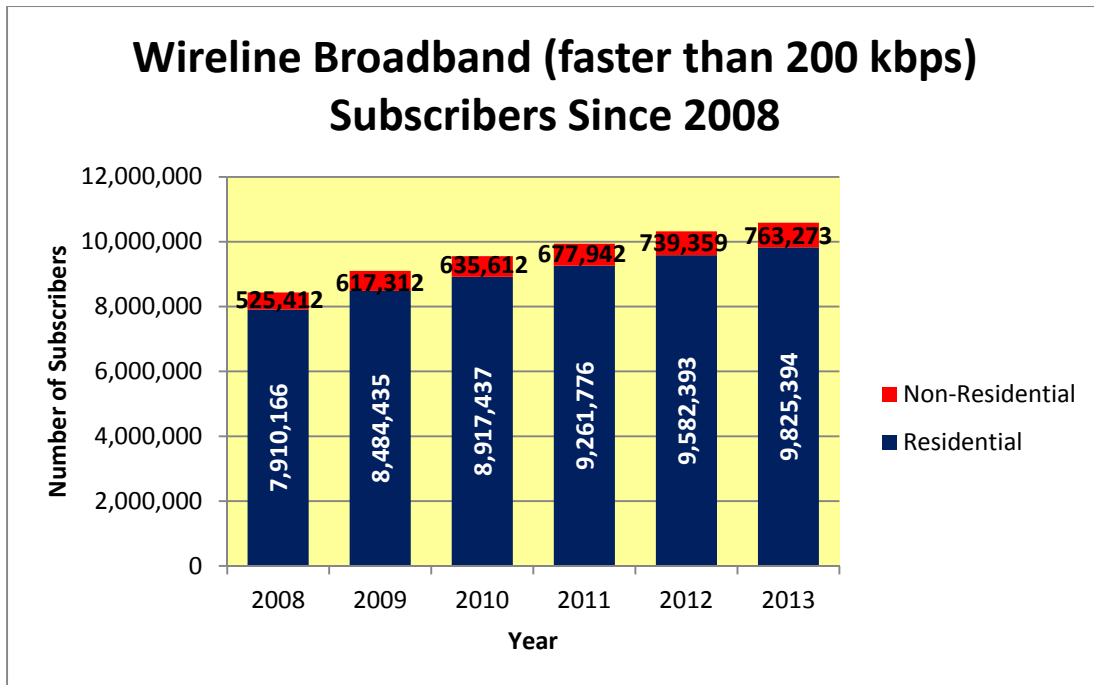


<sup>54</sup> Broadband availability data as of January 1, 2014, was collected by the California Public Utilities Commission pursuant to the NTIA's State Broadband Initiative.

<sup>55</sup> See, e.g., <http://www.prnewswire.com/news-releases/comcast-to-double-speeds-of-two-of-its-most-popular-xfinity-internet-speed-plans-in-california-at-no-additional-cost-198997021.html>. Staff contacted the four largest cable companies in CA and three of them told us 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 documented 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. Wireline Broadband Subscriptions Continue to Increase

The bar chart below shows that, the number of Holders’ residential subscribers who subscribed to broadband service at download speeds faster than 200 kbps has grown by 24.2% since 2008 to 9.8 million residential connections at the end of 2013, up from 7.9 million in 2008.<sup>56</sup>



The historical bar chart above shows the historical longitudinal metrics using the FCC’s original definition of broadband, “from as low as 200 kbps.” This chart shows the penetration rate growth using a constant definition of broadband that the first DIVCA Report used in 2008.<sup>57</sup>

At the end of 2013, there were only 167,298 broadband connections with download speeds between 200 kbps and 768 kbps in California, and 544,524 broadband connections with download speeds between 768 kbps and 1.5 Mbps.

<sup>56</sup> These totals include subscribers who receive broadband via fixed wireless Internet connections. The total numbers of subscribers to fixed wireless broadband services offered by state-issued franchise holders and their affiliates is de minimus. For example, in 2012 there were only 677 subscriptions to broadband delivered over fixed wireless technology.

<sup>57</sup> The FCC’s website: <http://www.fcc.gov/guides/getting-broadband> *Sixth Broadband Progress Report*, 25 FCC Rcd at 9559–64, paras. 5–10, 2010 (discussing the 200 kbps symmetrical standard), and <http://www.fcc.gov/guides/getting-broadband>.

## **D. Both Mobile and Wireline Broadband Penetration Rates Continue to Increase, with Mobile Broadband Penetration Rates Increasing Faster**

The table on the following page shows that the 2013 wireline<sup>58</sup> residential broadband penetration rate for households served by holders of state-issued video franchises or their affiliates at speeds greater than 200 kbps, increased 1.6 percentage points to 77.2% (9.8 million subscribers) during 2013, up from 75.6% in 2012 and up from 73.3% during 2011 and 70.7% in 2010 (8.9 million subscribers). This wireline broadband penetration rate has steadily increased, as more households subscribe to wireline broadband service at speeds greater than 200 kbps from state-issued video franchise holders or their affiliates.<sup>59</sup>

The 36.5% mobile broadband penetration rate in 2013 highlights the fact that mobile broadband infrastructure is a key component of California's broadband infrastructure. The importance of Mobile broadband will increase over time, as mobile wireless facilities continue to be upgraded to support IP enabled services, and consumers increasingly demand mobility. In fact, many devices are no longer equipped with Ethernet (wireline) interfaces, only Wi-Fi and cellular (mobile) interfaces.

In this Report, wireline<sup>60</sup> residential broadband penetration rates are calculated by dividing the number of subscribers by the total number of households in California. In contrast, mobile broadband service plan penetration rates are calculated by dividing the number of subscribers by the total number of adults 18 and over in California.<sup>61</sup> 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.<sup>62</sup>

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<sup>58</sup> These wireline penetration rates include the 677 subscribers who receive broadband via fixed wireless Internet connections in 2012 and for each of the previous years.

<sup>59</sup> The metrics in this and all previous DIVCA reports continue to use the FCC's 2010 definition of broadband as ranging "...from as low as 200 kbps.... Some recent broadband offerings even include 50 to 100 Mbps." Sources: FCC at: <http://www.fcc.gov/guides/getting-broadband>, *Sixth Broadband Progress Report, 2010*, 25 FCC Rcd at 9559-64, paras. 5-10 (discussing the 200 kbps symmetrical standard).

<sup>60</sup> These wireline penetration rates include the 677 subscribers who receive broadband via fixed wireless Internet connections in 2012 and for each of the previous years.

<sup>61</sup> The 18 & over population was obtained from the US Census Department, [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC\\_10\\_DP\\_DPDP1](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1).

<sup>62</sup> Of course, subscribers to mobile broadband plans also include individuals under the age of 18.

**Number of Wireline<sup>63</sup> and Mobile Broadband Subscribers and Penetration Rates by Year 2008 – 2013**

<b>Technology</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2012-13 Growth</b>	<b>2008-13 Growth</b>
<b>Residential Wireline Subscribers to State Video Franchise Holders &amp; Affiliates (Number of HHs Subscribing)</b>	7,910,166	8,484,435	8,917,437	9,261,776	9,582,393	9,825,394	2.5%	24.2%
<b>Residential Wireline Penetration Rate (% Total HHs in CA)</b>	63.5%	67.5%	70.7%	73.3%	75.6%	77.2%	1.6 percentage points	13.7 percentage points
<b>Mobile Wireless Penetration Rate</b>	6.5%	12.8%	17.3%	27.1%	31.6%	36.5%	4.9 percentage points	30.0 percentage points
<b>Total Households in CA</b>	12,462,043	12,577,498	12,609,150	12,633,403	12,675,876	12,731,223	0.4%	2.2%
<b>Total Population in CA</b>	36,966,713	37,253,956	37,510,756	37,678,563	37,966,471	38,340,075	1.0%	3.7%

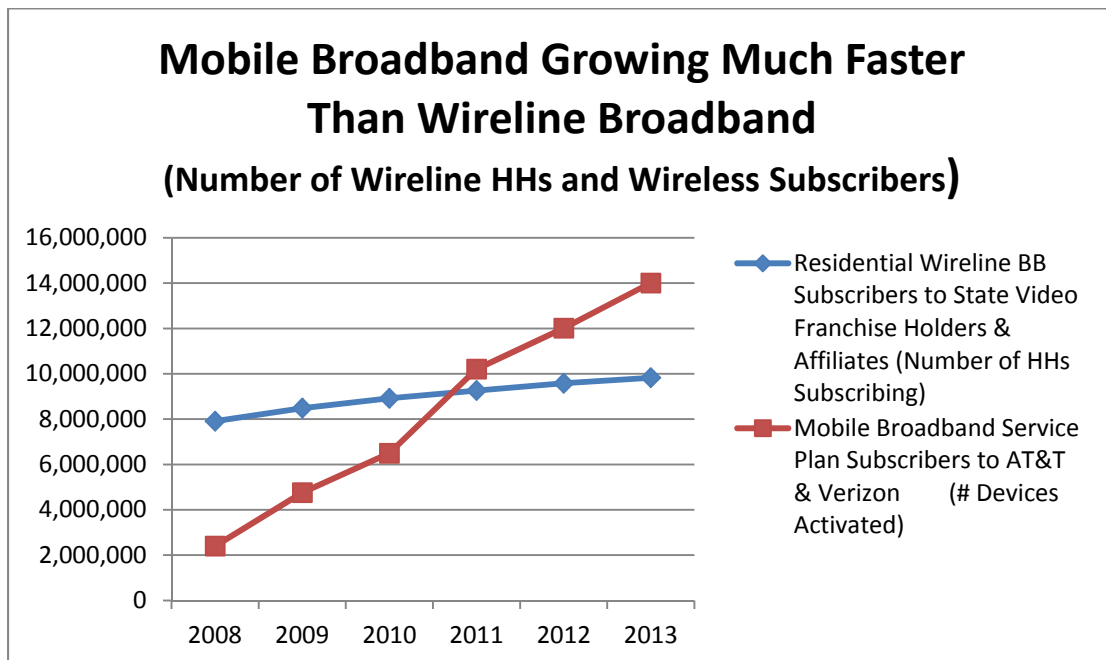
<sup>63</sup> The wireline subscriber numbers on this page reflect the number of subscribers receiving broadband at download speeds faster than 200 kbps.

The data on the table on the previous pages show that penetration rates<sup>64</sup> to mobile broadband service plans offered by AT&T Mobility and Verizon Wireless increased by 4.9 percentage points during 2013 to 36.5% during 2013.<sup>65</sup> Between 2010 and 2013, the penetration rates (people may have multiple devices) more than doubled from 17.3% to 36.5%.

As can be seen in the line graph below, in 2011, the number of mobile broadband subscriptions surpassed wireline broadband subscriptions for the first time. Between 2008 and 2013, growth in wireless plan subscriptions increased by 484%. Subscriptions to mobile broadband service plans at the end of 2013 exceeded wireline broadband subscribers by more than 4 million subscribers.

**Blue -  
Wireline  
Households**

**Red -  
Wireless  
Subscribers**



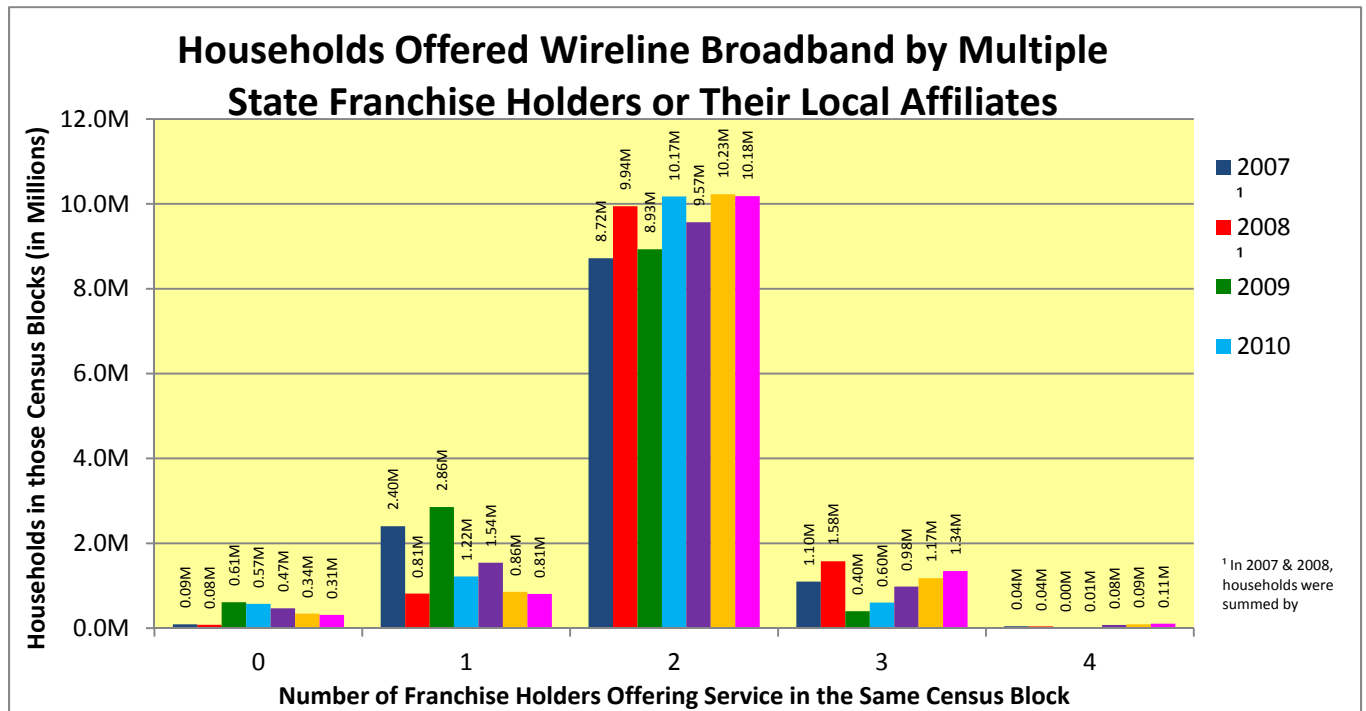
<sup>64</sup> Individual subscriptions, determined by cellular devices connected.

<sup>65</sup> AT&T and Verizon calculated the 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.

### E. State of Broadband Competition: More Californians Have Access to More Wireline Broadband Competitors Than During The Previous Year

The chart below illustrates that 91.2% (11.6 million) of the households in the State are located in census blocks where wireline broadband<sup>66</sup> was offered at speeds faster than 200 kbps by two or more state-issued video franchise holders or their affiliates in December 2013. This is a 1.2% increase over the data at the end of 2012 and a 9.7% increase over the 84% (10.6 million) households at the end of 2011.

At the end of 2013, 11.4% (1.5 million) of the households in the State were located in census blocks with three or more wireline broadband providers. This is an increase of 3.4 percentage points above the 8% (1.06 million) of Households (HHs) that had three or more broadband providers in 2011.<sup>67</sup> Equally important, the number of census blocks with no broadband service has decreased to 310,000 in 2013, from 610,000 in 2009.



<sup>66</sup> The metrics in this and all previous DIVCA reports continue to use the FCC’s 2010 definition of broadband as ranging “...from as low as 200 kbps.... Some recent offerings even include 50 to 100 Mbps.” Source FCC at: <http://www.fcc.gov/guides/getting-broadband>, *Sixth*

*Broadband Progress Report, 2010*, 25 FCC Rcd at 9559–64, paras. 5–10 (discussing the 200 kbps symmetrical standard). By December 2013, downstream speeds as high as 100 Mbps were reported as available.

<sup>67</sup> Staff cannot know whether multiple providers in each census block each serve the entire block. The increasing numbers of blocks with multiple providers is a strong indicator of increased competition.

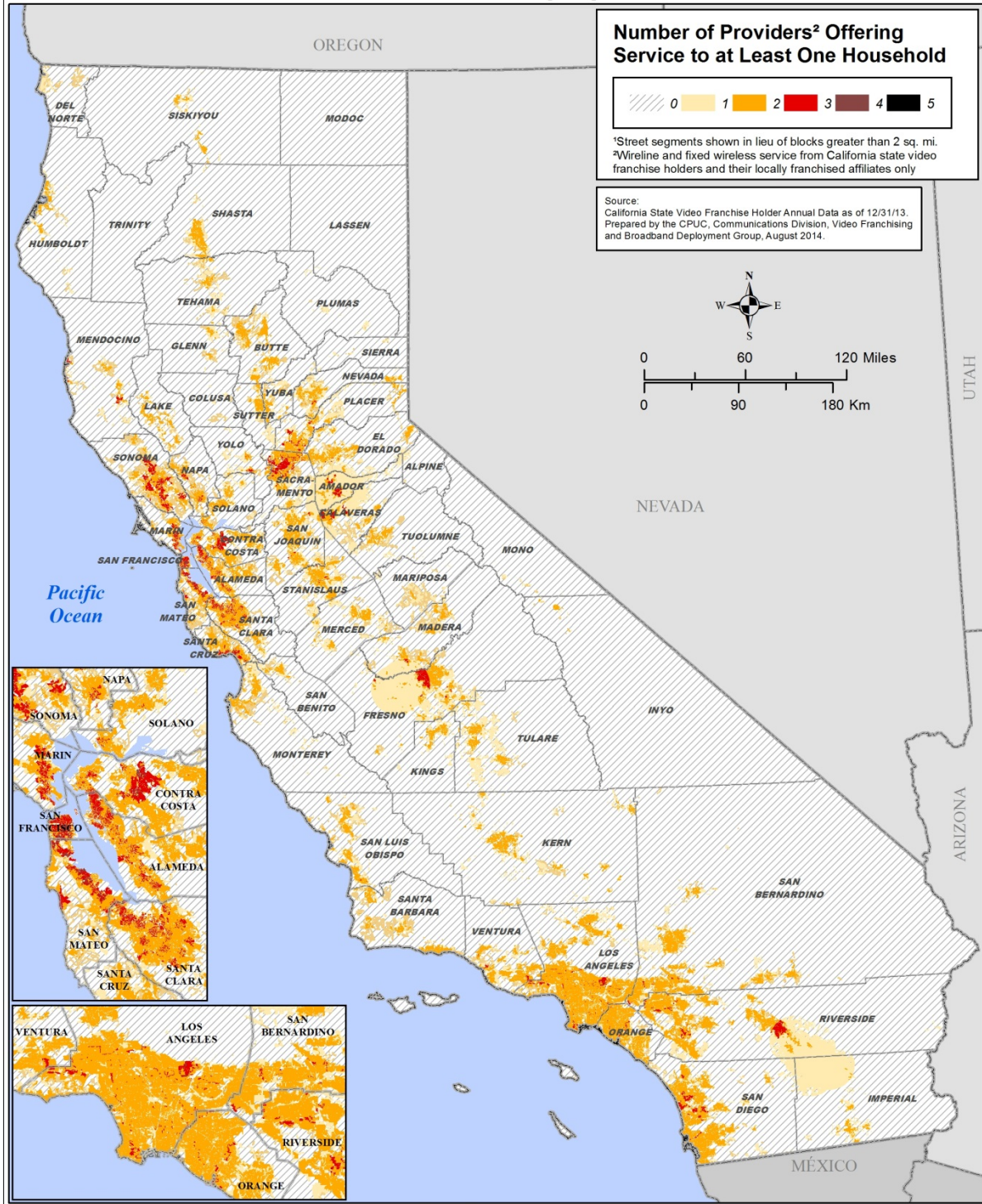


The bar chart on the previous page is intended to indicate the state of broadband competition between state video franchise holders over time. It is NOT intended to provide data about broadband availability. The CASF report analyzes the state of broadband availability in the entire state using a more complete set of service providers. The most recent CASF Annual report for January 2014 – December 2014 shows that when including both state video franchise holders as well as non-state video franchise holders, statewide wireline broadband availability was 95.5% for 6 Mbps downstream and 1.5 Mbps upstream or greater.

The map on the next page shows wireline broadband availability in terms of census blocks where 0, 1, 2, 3, 4, and 5 providers are offering service. The map includes data from state-issued franchise holders and their affiliates providing service using wireline and fixed wireless technology. This map shows that many rural areas have fewer choices in wireline or fixed wireless broadband providers than urban and metropolitan areas. We note that the map includes many unpopulated rural areas with no households, and sparsely populated rural areas. Consequently, these areas have no video franchise holders or their wireline affiliates providing broadband.



# STATE OF CALIFORNIA VIDEO FRANCHISING Broadband Availability by Census Block<sup>1</sup>



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

The map on the next page shows wireline broadband availability in terms of maximum advertised download speed in California. It displays Holders' download speed data collected by the Commission under the auspices of the National Telecommunications and Information Agency's (NTIA) State Broadband Initiative (SBI), part of the American Recovery and Reinvestment Act (ARRA). See *Appendix C: Methods, Sources, and Data Limitations* for more information.

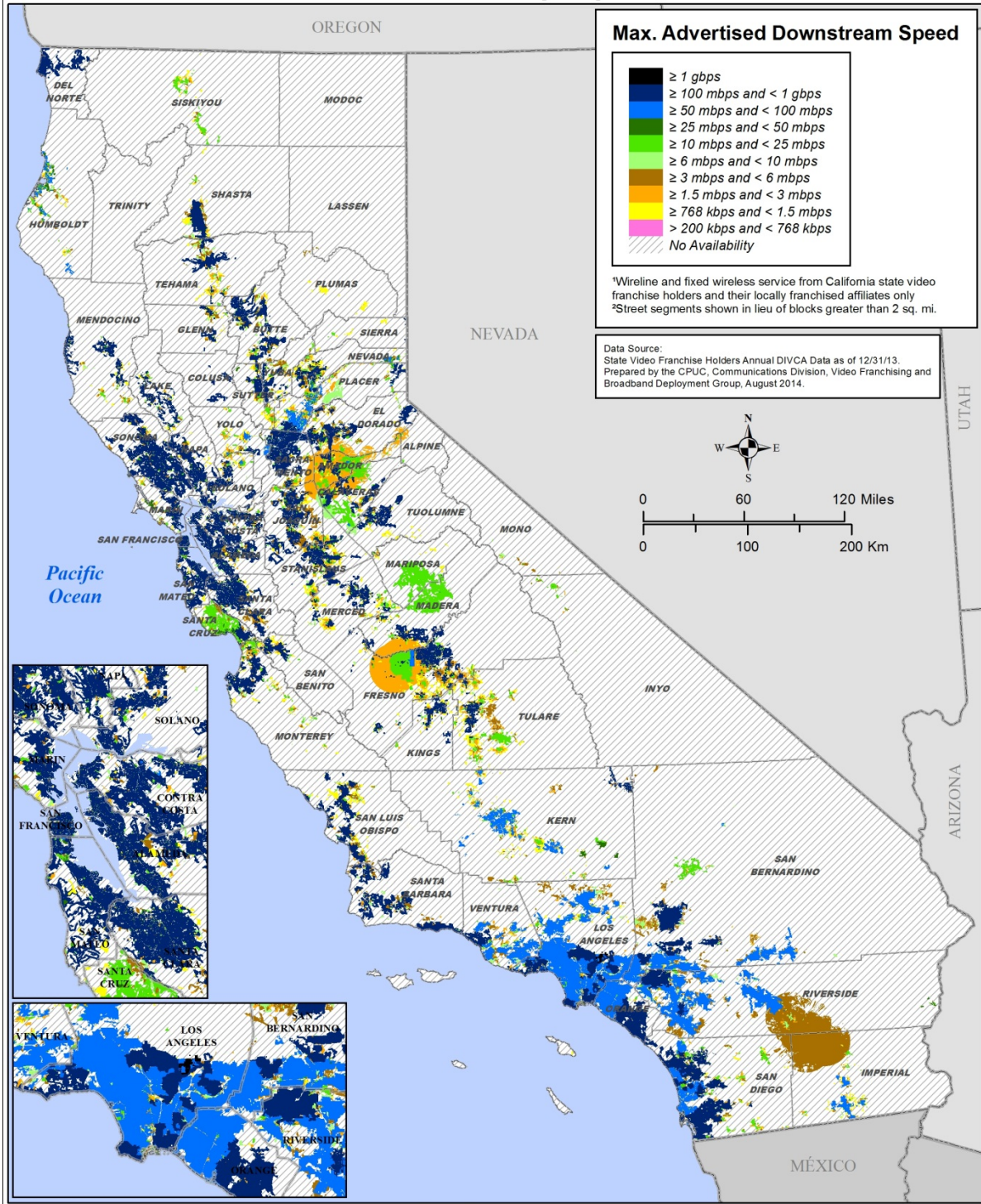
The color coding in the map shows that urban and suburban areas are more likely to have greater advertised maximum broadband download speeds than rural or less densely populated areas. Comprehensive statewide broadband availability data (including broadband providers that are not video franchise holders) can be viewed on the California statewide broadband availability map.<sup>68</sup>

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<sup>68</sup> Cal. P.U.C., California Broadband Availability Map, <http://www.broadbandmap.ca.gov/>.



# STATE OF CALIFORNIA VIDEO FRANCHISING Broadband Availability<sup>1</sup> by Census Block<sup>2</sup>

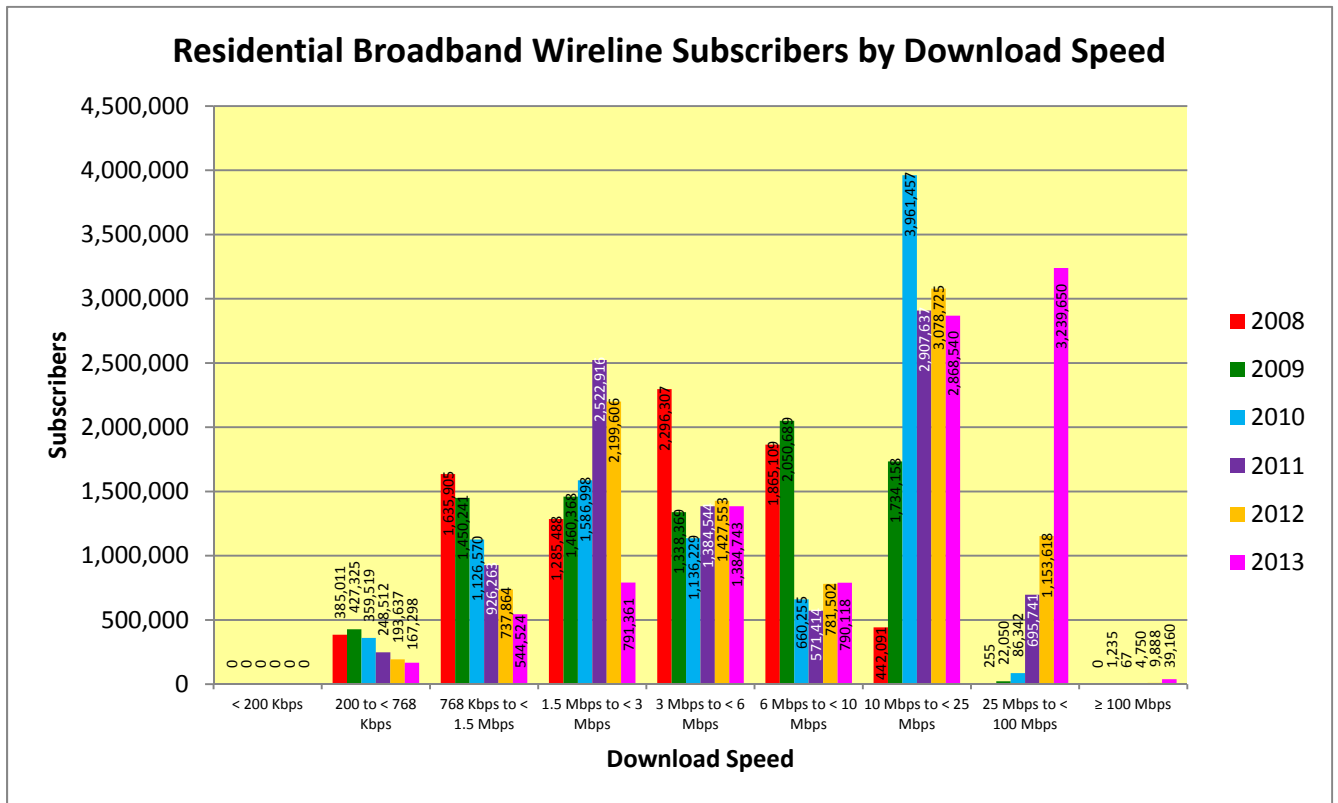


## G. Subscriptions to Faster Speed Tiers Increased

The bar chart below shows that during 2013, 2.1 million more households subscribed<sup>69</sup> to wireline or fixed wireless broadband faster than 25 mbps down, compared to 2012.<sup>70</sup>

The download speed subscribed to most frequently in 2013 was 25-100 Mbps. During 2012, 10-25 Mbps, was the most subscribed to download speed. In 2008, 3-6 Mbps was the most subscribed to download speed.

This shift in the most subscribed to tier (from 3-6 Mbps to 25-100 Mbps) between 2008 and 2013 reflects the increasing speed demands of consumers as they begin to utilize applications and services that require more bandwidth, such as streaming video and gaming.<sup>71</sup>



<sup>69</sup> The FCC states: “FCC Form 477 collects information about broadband connections to end user locations.” This DIVCA report assumes the term “subscriber” to be synonymous with the term “connection” as reported in the FCC’s 477 reports. FCC Form 477 Instructions, 3060-0816, page 1.

<sup>70</sup> The FCC provides broadband providers with instructions regarding how to report speed tier information for their broadband connections in the FCC Form 477 instructions. These instructions state that broadband providers shall “categorize the connection (into a speed tier) based on the end user’s authorized maximum download information transfer rate.” FCC Form 477 Instructions, 3060-0816, Filing due 3/1/2014.

<sup>71</sup> These trends appear to be consistent since 2008 with the exception of the 10-25 mbps speed tier in 2010. It is unclear what may have caused the large increase in the 10-25 mbps speed tier in 2010 and the decline in 2011.

## H. Broadband Technologies: Cable Modems Extend Lead Over DSL Modems

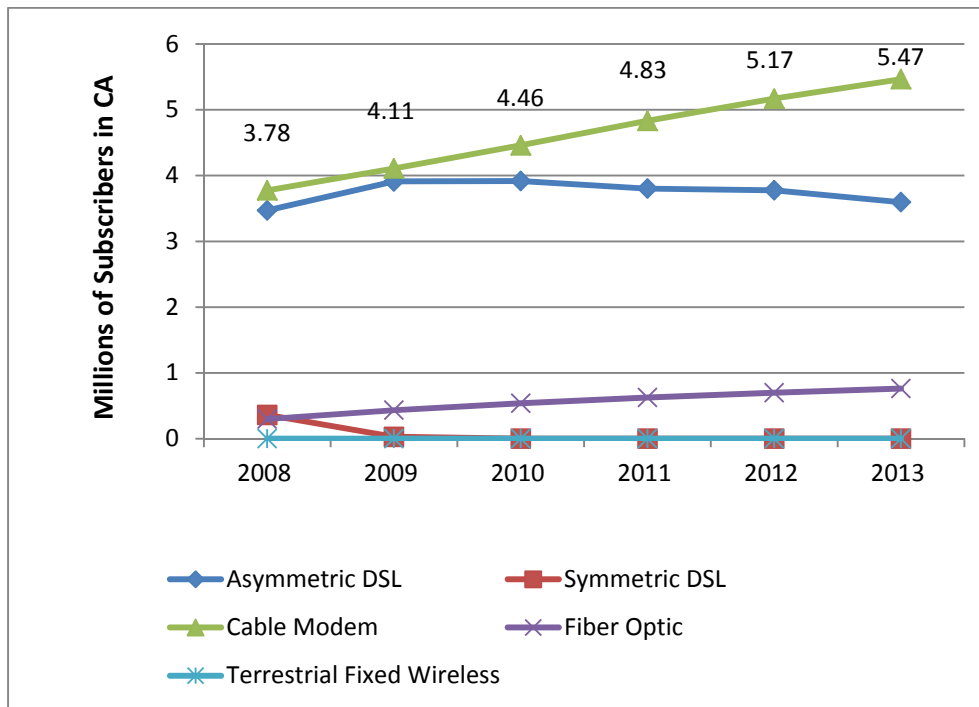
The line chart below and the pie chart and bar chart on the following pages show the technologies that state-issued video franchise holders and their affiliates used to deploy broadband as of December 31, 2013.

Cable modems were the most used wireline technology by holders of state-issued video franchises during 2013. Cable modems served 56% (5.5 million) of the residential households in franchise territories that subscribe to broadband, up from 54% in 2012 and 52% (4.8 million) in 2011. This is an increase of six percentage points from 50% in 2010.

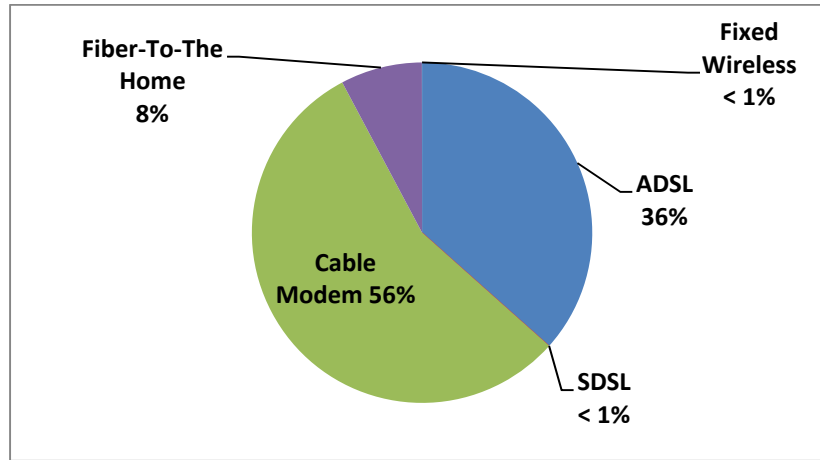
Digital Subscriber Line (DSL) technology peaked in 2009 and since then has been declining compared to cable modems. In contrast, the number of subscribers using cable modems has continued to increase every year since 2008.

During 2013, the percentage of residential subscribers to broadband delivered using digital subscriber line technology (DSL - both asymmetric and symmetric provisioned speeds) declined to only 36% of the total 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.

**Residential Broadband Wireline Subscribers by Technology over Time**

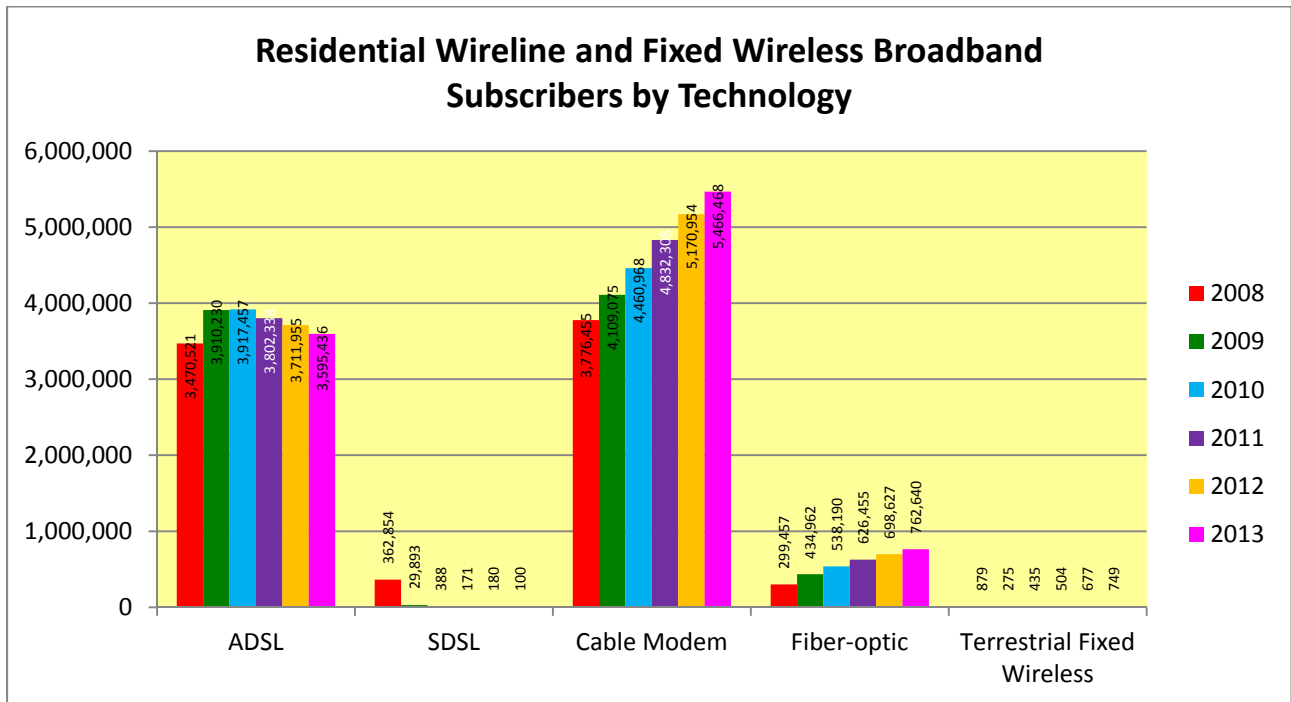


## Residential Broadband Wireline Subscribers by Technology – 2013



Fiber-to-the-home technology provides broadband to a smaller percentage of residential subscribers in California, but it continues to show steady growth. In 2013, 8% of residential users were served by fiber optic technology, up from 7% in 2012, 6% in 2010 and 4% in 2008.

Fixed wireless technology provided broadband to 749 subscribers in California in 2013, up from 504 in 2011, but down from 879 in 2008.



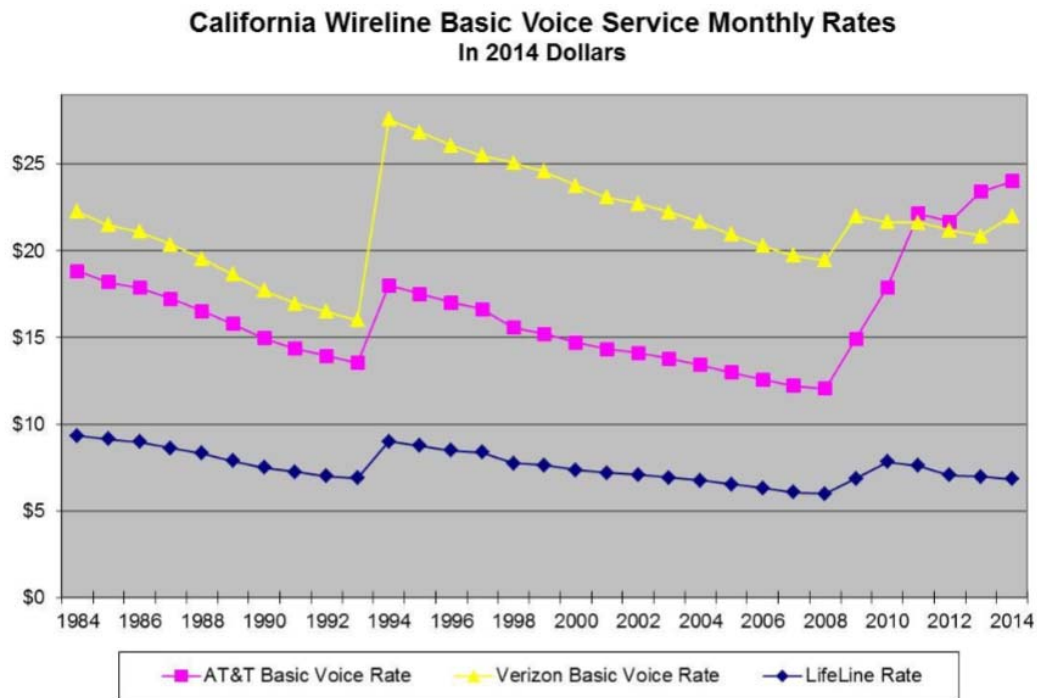
# **Appendix A:**

## **Changes in Basic Telephone Service Rates**



## Appendix A. Changes in Basic Telephone Service Rates

The stand-alone, residential, primary line, basic telephone rate adjustments authorized by D. 08-09-042 were designed to account for the fact that rates had remained fixed between the mid-1990s and 2008.<sup>72</sup> Based on estimates of inflation and other factors, the Commission allowed AT&T, Verizon, and the other Uniform Regulatory Framework (URF) Local Exchange Carriers (LECs) to raise rates for flat rate basic telephone service by \$3.25 annually between 2009 and 2010, and to raise their rates for measured service by a percentage amount equal to the authorized increase for each URF LECs' flat rate service.



Both DIVCA<sup>73</sup> and the CPUC's Uniform Regulatory Framework (URF) decision prohibited AT&T and Verizon from raising basic and measured service telephone rates, prior to January 1, 2009, except to reflect increases in inflation.<sup>74</sup> Consequently, when adjusting for inflation, AT&T's rates for wireline basic voice telephone service FELL from \$17.50 in 1995 to \$12.05 in 2008 in inflation adjusted dollars.<sup>75</sup> (See tables below)

<sup>72</sup> Inflation was measured by the Commission on a cumulative basis reflecting the estimated amount by which AT&T's basic rates would have increased due to inflation had they not been frozen in 1995 (D.08-09-042 at 37).

<sup>73</sup> *Id.* at §5950.

<sup>74</sup> Order Instituting Rulemaking on the Commission's Own Motion to Assess and Revise the Regulation of Telecommunications Utilities (D.06-08-030, Aug. 24, 2006).

<sup>75</sup> The actual rates AT&T charged for basic wireline voice telephone service were \$11.25 in 1995 and 10.94 in 2008.

Year	AT&T Basic Service Rates <i>Actual (nominal)</i>	AT&T Basic Service Rates (2014 Dollars) <i>Inflation Adjusted</i>	AT&T Basic Service Rates <i>Authorized</i>
2008	\$10.94	\$12.05	\$12.05
2009	\$13.50	\$14.92	\$15.30
2010	\$16.45	\$17.44	\$18.55
2011	\$19.95	\$21.00	Deregulated
2012	\$21.00	\$21.65	Deregulated
2013	\$23.00	\$23.32	Deregulated
2014	\$24.00	\$24.00	Deregulated

Year	Verizon Basic Service Rates <i>Actual (nominal)</i>	Verizon Basic Service Rates (2014 Dollars) <i>Inflation Adjusted</i>	Verizon Basic Service Rates <i>Authorized</i>
2008	\$17.66	\$19.42	\$19.42
2009	\$19.91	\$21.97	\$22.67
2010	\$19.91	\$21.62	\$25.92
2011	\$20.91	\$22.01	Deregulated
2012	\$20.91	\$21.56	Deregulated
2013	\$20.91	\$21.25	Deregulated
2014	\$22.00	\$22.00	Deregulated

Year	AT&T Measured Service Rates <i>Actual (nominal)</i>	AT&T Measured Service Rates (2014 Dollars) <i>Inflation Adjusted</i>	AT&T Measured Service Rates <i>Authorized</i>
2008	\$5.83	\$6.41	\$6.41
2009	\$7.28	\$8.03	\$8.33
2010	\$8.87	\$9.63	\$10.25
2011	\$12.37	\$13.02	Deregulated
2012	\$15.37	\$15.85	Deregulated
2013	\$18.25	\$18.55	Deregulated
2014	\$21.25	\$21.25	Deregulated

Year	Verizon Measured Service Rates <i>Actual (nominal)</i>	Verizon Measured Service Rates (2014 Dollars) <i>Inflation Adjusted</i>	Verizon Measured Service Rates <i>Authorized</i>
2008	\$10.24	\$11.26	\$11.26
2009	\$11.80	\$13.02	\$13.29
2010	\$11.80	\$12.81	\$15.42
2011	\$12.39	\$13.04	Deregulated
2012	\$12.39	\$12.78	Deregulated
2013	\$12.39	\$12.59	Deregulated
2014	\$13.40	\$13.40	Deregulated

**Neither AT&T nor Verizon raised rates by the full amount authorized by D. 08-09-042 for either flat rate or measured service during 2009 and 2010.**

AT&T was authorized to raise rates for **flat rate basic** telephone service from \$12.05 at the end of 2008<sup>76</sup> to \$15.30 in 2009 and to \$18.55<sup>77 78</sup> by the end of 2010, in inflation adjusted 2014 dollars. Similarly, AT&T was authorized to raise rates for **measured service** by 30% in 2009 and 23% 2010. That meant that AT&T was authorized to raise measured service rates from \$6.41 in 2008 to \$8.33 in 2009 and to \$10.25 by the end of 2010, in inflation adjusted 2014 dollars.

Verizon was authorized to raise rates for **flat rate basic** service in inflation adjusted 2014 dollars from \$19.42 in 2008 to \$25.92 in 2010. Verizon was authorized by D.08-09-042 to raise rates for **measured service** from \$11.26 in 2008 to 13.29 in 2009 and to \$15.42 in 2010 using inflation adjusted 2014 dollars.<sup>79</sup>

The amount Verizon charged for flat rate basic service in 2010 was \$21.62, in inflation adjusted dollars, \$4.30 less than the authorized rate. Four years later, in 2014, Verizon had raised basic rate service by 38 cents, to \$22.00 in inflation adjusted 2014 dollars. Verizon's \$22.00 basic rate in 2014 was \$3.92 less than they were authorized to charge in 2010 in inflation adjusted 2014 dollars. Between 2010 and 2014, Verizon raise their flat rate basic service rate by \$0.38 (1.8%) in inflation adjusted 2014 dollars. Between 2008 and 2014, Verizon raised this rate by \$2.58 (13.3%) in inflation adjusted 2014 dollars.

D.08-09-042 allowed AT&T to charge \$18.55 for flat rate basic telephone service in 2010, in inflation adjusted dollars. In 2010, AT&T's flat rate basic telephone service was \$17.44 in inflation adjusted 2014 dollars, \$1.11 below the authorized rate. In 2011, AT&T increased their flat basic telephone service rate by 20.4% to \$21.00, eventually reaching \$24.00 in 2014.

Between 2008 and 2014, AT&T raised rates for flat rate basic service rates from \$12.05<sup>80</sup> to \$24.00 in inflation adjusted dollars. This represents an inflation adjusted increase of \$5.45 (29.3%) over the rate authorized in D.08-09-042 for flat rate basic telephone service.<sup>81</sup> Between 2008 and 2014, AT&T's flat rate basic telephone service increased by \$11.95 (99.2%) in inflation adjusted 2014 dollars. Between 2009 and 2014 AT&T's rate increased by 60.9%,

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<sup>76</sup> 10.94 was actual rate charged by AT&T in 2008 dollars.

<sup>77</sup> In 2014 dollars.

<sup>78</sup> \$16.45 was the actual basic rate charged by AT&T in 2010 dollars.

<sup>79</sup> To determine rates in 2014 dollar, we used the inflation calculator created by the US Government Department of Labor Statistics at: [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm)

<sup>80</sup> \$18.55 was the inflation adjusted rate for basic telephone service authorized by D.08-09-042 for 2010.

<sup>81</sup> Without adjusting for inflation, AT&T's basic rate increased from \$16.45 in 2010 to \$24.00 in 2014. This was an increase of \$7.55 or 45.9%.

between 2010 and 2014 it increased by 37.6% and between 2011 and 2014, it increased by 14.3%.<sup>82</sup>

AT&T raised rates for measured telephone service between 2010 and 2014 from \$9.63 in 2010 to \$21.25 in 2014 in inflation adjusted dollars. This represents an inflation adjusted increase of \$11.62 (121%). D.08-09-042, authorized AT&T to raise measured service rates to \$10.25 in 2010 in inflation adjusted 2014 dollars. AT&T increased the rate for measured service between 2010 and 2014 by \$11.00 (105.3%) over the rate authorized for measured service in 2010.

Verizon raised rates for measured telephone service from \$12.81 in 2010 to \$13.40 in 2014 in inflation adjusted 2014 dollars. This represents an increase of \$0.59 (4.6%). While D.08-09-042 authorized Verizon to raise measured service rates to \$15.42 in 2010, Verizon's measured rate was \$12.81, \$2.61 less than they were authorized to charge, in inflation adjusted 2014 dollars. In Contrast, AT&T increased the rate for measured service between 2010 and 2014 by \$11.00 (105.3%) over the rate authorized for measured service.

The fact that after 2010 AT&T raised rates for basic service beyond the levels authorized in D. 08-09-042 or that Verizon may do so in the future does not prove or disprove that residential basic telephone services are cross-subsidizing a network used to provide video service. To make a determination as to whether cross-subsidization occurred, additional significant analysis would need to be performed. Revenues for residential basic telephone service, video service and other services that use the shared network to provide video service would need to be compared to their respective costs. The Commission would need to audit those costs to ensure they have been accurately assigned to each service. Such an audit would be difficult, complex and resource intensive, as it would require the Commission to perform a cost of service analysis. Such an audit has not been performed in decades, since the Commission adopted its New Regulatory Framework and established price caps to replace cost of service regulation. In addition, if either AT&T or Verizon provides residential basic telephone service and video service through separate corporate affiliates, the transactions between those affiliates would need to be audited to ensure that they have not resulted in cross-subsidization.

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<sup>82</sup> AT&T's nominal flat rate basic telephone service rates increased (NOT adjusting for inflation) between 2008 and 2014 by 119.4%, increased between 2009 and 2014 by 77.8%, increased between 2010 and 2014 by 45.9%, and increased between 2011 and 2014 by 20.3%.

**Appendix B:**

**Implementing DIVCA:  
Decisions and Resolutions**

## **Appendix B: Implementing 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.<sup>83</sup>

#### **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.<sup>84</sup> 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.<sup>85</sup>

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<sup>83</sup> 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.

<sup>84</sup> 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).

<sup>85</sup> 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.<sup>86</sup> 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 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

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<sup>86</sup> F.C.C., Form 477 Order, fn. 21, *Supra*.

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.



## 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.<sup>87</sup> 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.<sup>88</sup>

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.<sup>89</sup> 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.<sup>90</sup>

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<sup>87</sup> Cal. Pub. Util. Code §5840 (h).

<sup>88</sup> Cal. Pub. Util. Code §5840 (n).

<sup>89</sup> 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).

<sup>90</sup> <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/videofranchising.htm>

# **Appendix C:**

## **Collecting Data Mandated by DIVCA**

## Appendix C: Collecting Data Mandated by DIVCA

### 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.<sup>91</sup> Pursuant to DIVCA, all video franchise holders must report, by Census tract, the following:<sup>92</sup>

#### 1. Video Information:

- a. The number of households in the holder's video or telephone service area.<sup>93</sup>
- 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.<sup>94</sup>

#### 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.
- 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.

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.<sup>95</sup> In the following appendices, we will discuss the broadband and video data submitted by the state video franchise holders as of April 1, 2008.

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<sup>91</sup> Cal. Pub. Util. Code § 5960.

<sup>92</sup> *Id.*

<sup>93</sup> Incumbents must report by video service area; telephone corporations by telephone service area.

<sup>94</sup> Phase II DecisionD. 07-10-013

<sup>95</sup> Cal. Pub. Util. Code § 5960.

# **Appendix D:**

## **Methods, Sources, and Data Limitations**

## **Appendix D: Methods, Sources, and Data Limitations**

### **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 sixth annual report were current as of December 31, 2012. 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 companies that filed annual reports for 2013 are: Astound Broadband, AT&T California, Bright House Networks, USA Communications, Cableview Communications, Calaveras Cablevision, CalNeva Broadband, Champion Broadband, Charter Communications, Comcast Cable, Cox Communications, Horizon Cable TV, Lone Pine TV, Mediacom Communications, Northland Cable Television, Sebastian Enterprises, Suddenlink Communications, Consolidated (Formerly SureWest Broadband), Time Warner Cable, Verizon California, and Volcano Communications.

The analyses of video and broadband service are based on these self-reported data from parent companies of the state video franchise holders listed above and exclude companies that are not yet state franchise holders.<sup>96</sup>

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 in this analysis was collected pursuant to the CPUC's State Broadband Initiative Program (SBI), under the auspices of the National Telecommunication and

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<sup>96</sup> Some of the small video franchisees did not report broadband availability data.

Information Administration's (NTIA). The SBI program, implements the joint purposes of the American Recovery and Reinvestment Act (ARRA) and the Broadband Data Improvement Act (BDIA). The NTIA has authorized the CPUC to be the sole authority in California for collecting, compiling, analyzing, and presenting broadband data.

Broadband availability data collected under the CPUC's SBI program from current state video franchisees have been used in this report in lieu of data mandated under the 2006 Digital Infrastructure and Video Competition Act (DIVCA). We used this data because the SBI data is aggregated to the Census block and street segment level, and therefore can be up to 8,991 times more granular than data collected at the Census tract level under DIVCA.<sup>97</sup>

According to SBI rules, a broadband provider may elect to provide data on the availability of their service by either 1) address, or 2) Census block and street segment. If a provider offers service in a Census block that is less than 2 square miles in size, they may assert that they provide service to all households in that block. If a provider offers service in a block that is 2 square miles in size or larger, they must specify to which segments they provide the service. All collected data is aggregated by Census block and street segment, preserving the 2 square mile break. More details are available on the State Broadband Mapping Program webpage.<sup>98</sup>

## **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 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

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<sup>97</sup> 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.

<sup>98</sup> <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/Broadband+Mapping/>

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.

### **New 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,<sup>99</sup> 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 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.

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<sup>99</sup> With the exception of purely rural counties, such as Alpine, Modoc, and Trinity.

## New 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.

### Data Limitations

**Census Data Aggregation.** 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. Data is reported to us in a number of different units – address, street segment, Census block (under SBI), and Census tract (under DIVCA). Address-level availability data is aggregated to either Census blocks or street segments before being permanently stored in file geodatabase feature classes, reported to the National Telecommunications Information Agency (NTIA), and incorporated into the analyses in this report. For the purpose of estimating households, street segment availability was also “rolled up” to Census blocks. Most of our work here, therefore, deals only with Census geographies (block and tract).

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.

Geography	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.

### ***Street Segment Data Aggregation***

Street segments amounted to about a third of all broadband availability data collected; yet linear (polyline) data has no associated Census household data. It was therefore necessary to derive the data by an overlay selection with another layer. A simple overlay selection with a Census block layer containing provider and household data wouldn’t work since street segments, by their very nature, overlap or straddle multiple Census blocks, which would result in double counting of households in many Census blocks. Instead, we applied a Census block overlay selection for each group of street segments with a common number of providers; then removed any selected blocks that may already have had a non-zero provider count (i.e. blocks 2 square miles in size or larger), before summing the households in those blocks.<sup>100</sup> The Census blocks and street segments with no providers could not be directly selected and summed; since they overlap each other (they are not spatially exclusive). So instead, that total was derived by subtracting the

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<sup>100</sup> Note that Census blocks and street segments with a non-zero provider count are spatially exclusive, due to the 2 square mile SBDD criteria; so a simple additive approach was used.

Census block / street segment household totals for 0, 1, 2, 3, or 4 providers from the statewide household grand total.

An implicit assumption in this method is that a single served street segment causes an entire block (and all households in it) to be classified as served. The same assumption is also made regarding the number of households being served by 0, 1, 2, 3, or 4 video providers, in this, and previous, years' reports.

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 E:

## Video Franchise Area Maps

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

<http://www.cpuc.ca.gov/PUC/Templates/Default.aspx?NRMODE=Published&NRNODEGUID=%7b7F8DB3C8-C109-46E4-8008-33D1E35EC304%7d&NRORIGINALURL=%2fPUC%2fTelco%2fInformation%2bfor%2bproviding%2bservice%2fvideofranchising%2ehtm&NRCACHEHINT=Guest#apply>

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