


CALIFORNIA PUBLIC UTILITIES COMMISSION

Communications Division

Video Franchising and Broadband Deployment:
The Digital Infrastructure and Video Competition Act of 2006
(DIVCA)

"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

First Annual Report to the Governor and the Legislature

Submitted March 12, 2009







Executive Summary

This is the first annual Report under the Digital Infrastructure and Video Competition Act of 2006 (DIVCA).[1] It is submitted on behalf of the California Public Utilities Commission (CPUC) to the Legislature and Governor. As indicated by the Act's title, the purpose of DIVCA is twofold:

1) Promote widespread competition in the video and broadband markets.

2) Accelerate the deployment of video and advanced broadband infrastructure and services within California, especially in unserved and underserved areas.

DIVCA fundamentally changed video franchising within California by transferring the authority for issuing video franchises from municipalities and counties to the State. The Legislature named the CPUC as the sole franchising authority for issuing state video franchises as of January 1, 2007.

During 2008, the CPUC began executing all of the tasks delegated to it in order to reach the goals described in the DIVCA legislation. The complete list of tasks and goals are included in Appendix A of this Report.

The data used in this Report were submitted by state-issued video franchise holders, on or before April 1, 2008, as required by DIVCA. The data indicate how many households were offered broadband and video services, by census tract, as well as the number of households that subscribed to those services. CPUC staff aggregated and analyzed the submitted data to determine the extent of broadband and video availability by state franchise holders and their affiliates throughout the state.

DIVCA's reporting requirements were designed to enable the CPUC to track the success of the Legislature's goals over time. To that end, this report aggregates and analyzes data reported to the CPUC by the 28 service providers that were granted state video franchises through March 31, 2008. Approximately 50% of the incumbent cable operators made the transition to state-issued franchises by March 31, 2008, while the remaining cable operators continue to operate under local franchises. Video and broadband services offered in the State by entities which have not been granted state video franchises are not included in this Report. While this first annual Report largely serves as a baseline from which to measure progress, it illustrates the following key points:

- Incumbent cable operators offer video programming to 96% of the households in their state & locally-issued franchise territories.

- Incumbent Local Exchange Carriers (ILECs) AT&T and Verizon have already invested billions in recent years upgrading their network infrastructure in California to provide

[1] A.B. 2987, 2005-2006 Session, (Ca. 2006); Cal. Pub. Util. Code, Division 2.5, The Digital Infrastructure and Video Competition Act of 2006. ("DIVCA").

video, broadband and wireless services.[2] However, as DIVCA authorized the CPUC to begin issuing state video franchises in 2007, ILEC progress toward DIVCA's build-out requirements for the delivery of video programming is still in an early stage.

Consequently, by year end, ILECs offered video programming to 6% of the households in their telephone service areas.[3] We anticipate the 2008 data will show an increase in the number of households receiving video service from AT&T and Verizon. We look forward to receiving their 2008 data in April 2009.

- Availability of broadband Internet access services in the state is estimated to be more widespread than video programming, with substantial portions of the state subject to broadband competition among ILECs, incumbent cable operators and others.

- Using data provided by state-issued video franchise holders, CPUC staff estimates that 99.3% of California's 12.5 million households are located in census tracts where at least one video franchise holder offers wireline broadband service.[4] This finding is based on the census tract method of reporting availability data, as defined in DIVCA. [5]

- The Governor's Broadband Task Force Report,[6] which was published in January 2008, concluded that 96% of California households were offered broadband service by at least one provider. Because the Task Force was able to gather broadband deployment data at the street address level, it was able to calculate the number of households served by broadband with greater accuracy than this Report. In contrast, DIVCA requires franchise holders to report data on a census tract basis and provide subscriber data in addition to availability data. The limitations of the data submitted under DIVCA are described in the section of this Report titled "Census Tract Data Limitations" on page 7.

  Because of these differences, the broadband availability findings in the Governor's Broadband Task Force Report are more accurate in terms of specific location than this DIVCA Report's findings about broadband availability. However, because DIVCA requires the provision of data not collected by the Task Force, this Report contains information that is not included in the Task Force Report. Examples include findings about wireless and wireline broadband subscribers, as well as video availability and video subscribers.

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[2] On March 31, 2008, AT&T issued a press release stating that "by the end of 2008, the company will have invested more than $1 Billion as part of the first phase of its network upgrade, adding more fiber-optics to bring advanced services to California…. Currently, customers in parts of more than 140 cities and counties across California have access to AT&T U-verse services." On February 2, 2009, Verizon issued a press release stating "The company's ongoing network investment now totals more than $5.2 billion in California since 2000."

[3] These are aggregated numbers based on the most current data provided by AT&T and Verizon, as of 12/31/07. They will provide updated data through 12/31/08 in April 2009.

[4] This DIVCA Report only analyzes the services offered by state video franchisees and their affiliates. This Report does not include the services offered by unaffiliated Internet service providers, or unaffiliated cable, satellite or wireless service providers, as DIVCA does not compel them to provide data to the state.

[5] The limitations associated with the census tract basis of reporting data are described on page 7 of this Report.

[6] Created by Executive Order S-23-06, the Task Force was charged with identifying opportunities for and challenges to broadband deployment and adoption. In January, 2008, the Task Force released a report that included maps of broadband availability by speed and recommendations to achieve ubiquitous access throughout California. The full report is available at http://www.calink.ca.gov/pdf/CBTF_FINAL Report.pdf.

- 55% of the state's households currently subscribe to wireline broadband from holders of state-issued video franchises. This 55% figure does not include customers of cable operators that are not affiliated with a state franchisee or the state's small local exchange carriers, who provide DSL service but are not state video franchisees at this time, or other independent satellite, wireless or broadband providers.

- The level of broadband subscribership varies significantly from county to county. The highest penetration levels occur in urban areas and tend to drop as counties become less densely populated and more rural in nature. Six counties have broadband penetration rates over 70%[7] and ten have penetration rates of below 10%[8]. These county by county penetration rates are described in more detail on pages 21-25 of this Report.

- 33% of the state's 7,115 census tracts are served by two or more state-issued video franchisees. However, limitations caused by the census tract method of reporting and analyzing data make it impossible for us to determine, in areas with multiple providers serving the same census tracts, if they are in fact competing with each other for the same customers. For details about these census tract data limitations, see page 7 of this Report.

- Eighty or 1.1% of the total 7,115 census tracts in the state are not offered wireline broadband by any holders of state-issued video franchises. These unserved 80 census tracts contain only 81,973 households. Of those, 42,550 or 51.9% are low income households.[9] These 42,550 low income households that do not have broadband service available, make up less than 1% of the total low income households in the state.

- Guarding against discrimination by applying deployment metrics specified in DIVCA is one of the Act's goals. All of these franchises were granted in 2008 and none of the discrimination metrics apply until two years after franchises have been granted. Therefore we do not have any specific conclusions or recommendations about discrimination at this time. However, we have begun to analyze video and broadband penetration data in lower income and higher income census tracts. Those analyses are contained in the sections analyzing the broadband and video digital divide beginning on pages 14 and 31.

[7] Contra Costa (80%), Santa Clara (77%), San Mateo (76%), Marin (76%), Solano (75%), Alameda (71%).
[8] Humbolt (20%), Amador (20%), Lake (18%), Mono (18%), Plumas (17%), Inyo (17%), Sierra (9%), Mariposa (4%), Colusa (3%), Lassen (0%), Modoc (0%), Trinity (0%).
[9] Low income households are defined as those earning less than $35,000 in household income per year. *See* Cal. Pub. Util. Code §5890 (j)(4).

I. Franchising Activities under DIVCA

Following the adoption of rules implementing DIVCA, in March 2007, the CPUC began issuing new ten-year state video franchises.[10] Table 1 below summarizes the number of applications received, the number granted and the number of households and low-income households within the video service areas of the franchises that were granted as of March 31, 2008.

Twenty-eight (28) video franchises were granted (including amendments), as of March 31, 2008. The first two state franchises were issued to AT&T and Verizon. The next 26 were issued to incumbent cable operators because their local franchises had expired, or because they were eligible to opt out of their local franchises due to the entry of a state-franchised competitor. Already, about half of incumbent cable operators' customers in California are served pursuant to new state issued franchises rather than locally issued franchises.

Table 1 – State Issued Video Franchises Granted Through March 31, 2008

APPLICATIONS FOR VIDEO FRANCHISE OR AMMENDMENT RECEIVED	NUMBER GRANTED	HOUSEHOLDS IN STATE FRANCHISE AREAS[11]	LOW INCOME HOUSEHOLDS IN STATE FRANCHISE AREAS
29	28	20,327,139[12]	6,939,795[13]

As of March 31, 2008, video franchises have been issued to Verizon California, AT&T California, Cox Communications, Wave Broadband, Time Warner Cable, Cableview Communications, Charter Communications, Northland Cable Television, Comcast and Baldwin County Internet.

[10] The aggregated data contained in this report reflects data submitted by video franchise holders as of April 1, 2008. The reported data was intended to be current as of January 1, 2008, however, incumbent cable operators reported data that was more recent. All reported data pertinent to new franchises granted after this date will be reflected in next year's report. *See* General Order 169, Implementing the Digital Infrastructure and Video Competition Act of 2006 (DIVCA) (Cal. P.U.C. March 1, 2007), at VII (C)(1). (G.O. 169).

[11] The total households reported by ILECs and cable companies differ from each other and from the total number used by the CPUC in the report. This is due to the fact that each organization may have used a different method to project 2007 household totals from 2000 census data.

[12] While the CPUC has estimated there are 12.5 million households in the state of California, due to the way that video and broadband franchise holders report data on services they offer, many households included in the aggregate total of 20.3 million households, were double counted. This double counting occurs because multiple video franchise holders, some of which we know have overlapping franchise areas, reported to the CPUC that they offer video services to households in the same census tracts. The CPUC does not have the data needed to eliminate double counting of households and identify which of the 20.3 million households are offered video or broadband services by multiple franchise holders. This is due to the census tract level reporting methodology specified in DIVCA and described in the data limitations section on page.

[13] The number 6.9 million seems like a high estimate of the number of low income households. The reasons for this are very similar to those described in footnote 24 above.

Map 1 on the next page illustrates the state video franchise territories. Appendix C contains a list of all 28 video franchise applications and amendments to existing video franchises that were filed through March 31, 2008. Appendix E, beginning on page 60, contains maps of the territories of most state video franchises.

The state video franchise application process is ministerial. Because video franchise holders are not public utilities, the DIVCA application process does not include the opportunity for protests by interveners.

DIVCA allows "incumbent" cable operators with existing locally-issued franchisees, under certain circumstances, to file applications for state-issued franchises to become effective on or after January 2, 2008.[14] As a part of their applications, such operators must identify one of four circumstances under which they become eligible for a state franchise:[15]

1) The expiration of an existing local cable franchise.
2) A mutually agreed upon date set by both the local franchising entity and video service provider to terminate the franchise provided in writing by both parties to the Commission.
3) A video service provider that holds a state franchise has provided notice to a local jurisdiction that it intends to initiate providing video service in all or part of that jurisdiction.
4) Local entities may also require all operators to seek a state franchise to replace their local franchise with a state-issued franchise if and when such a local entity has received notice that any one video service provider has received a state-issued franchise and is about to provide service.[16]

Map 1 on the next page is color-coded to graphically show the state-issued video franchise territories of the local exchange carriers (Green) as well as the cable companies (Red Cross hatch) as of April 1, 2008. Both the new entrant LECs and incumbent cable companies have franchises that cover the major urban areas of the state. See Appendix E for maps of individual franchisees.

[14] P.U. Code §5930 (b).
[15] P.U. Code §5840 (o).
[16] P.U. Code §5390(c). No local entity has yet triggered the transition to a state-issued franchise through a unilateral decree.

Map 1 – State Video Franchise Territories

II. Collecting Data Mandated by DIVCA

A. DIVCA's Data Reporting Requirements

Holders of state video franchises are required to submit data relating to their provision of video and broadband services annually by April 1.[17] Pursuant to DIVCA, all video franchise holders must report, by census tract, the following: [18]

1. Broadband Information:

a. The number of households to which the franchise 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. Whether the broadband provided by the franchise holder utilizes wireline-based facilities or another technology.

2. Video Information:

a. If the franchise holder is a telephone corporation:
   i) The number of households in the holder's telephone service area.
   ii) The number of households in the holder's telephone service area that are offered video service by the holder.
b. If the holder is not a telephone corporation:
   i) The number of households in the holder's video service area.
   ii) The number of households in the holder's video service area that are offered video service by the holder.

3. Low-Income Household Information:

a. The number of low-income households in the holder's video service area.
b. The number of low-income households in the holder's video service area that are offered video service by the holder.

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.[19] In the following sections, we will discuss the broadband and video data submitted by the Video Franchise holders as of April 1, 2008.

[17] P.U. Code §5960.
[18] *Id*.
[19] *Id*. The issuance of this first Report has been delayed due to start-up issues regarding data formatting and the delayed hiring of staff.

B. Reconciling FCC Form 477 and DIVCA Broadband Data

The FCC collects broadband information on a nationwide basis using the Local Telephone Competition and Broadband Reporting Form (FCC Form 477). This form collects information about broadband connections to end user locations, and about wired and wireless local telephone services in individual states. FCC Form 477 requires four types of entities to file the form: facilities-based providers of broadband connections to end user locations, providers of wired or fixed wireless local telephone services, wireless internet service providers, and providers of mobile telephony services. These entities must report all broadband connections by the type of technology over which the connections are established. The number of connections in FCC 477 data is a measure of broadband subscribership or adoption.

Table 2 below, shows a comparison of subscribership as reported on FCC Form 477 and DIVCA filings. For the reporting period ending in June 2007, the number of residential broadband connections reported by the entities that filed FCC Form 477 totaled 8,727,780 in California.

Table 2 - FCC Form 477 and DIVCA Broadband Subscribers

	Total Broadband Subscribers	Total Broadband Penetration	Wireless Broadband Subscribers	Wireless Broadband Penetration	Wireline Broadband Subscribers	Wireline Broadband Penetration
FCC Form 477	8,727,780	70%	897,284	7%	7,830,497	63%
DIVCA	7,628,646	61%	776,903	6%	6,851,743	55%

In comparison, the number of broadband subscribers reported by the state-issued video franchise holders totaled 7,628,646. The broadband data collected under DIVCA captures 87% of the data reported to the FCC. The difference can be explained by the fact that the FCC collects data from 127 companies in California while DIVCA collects data from ten parent companies that hold state franchises.

DIVCA data show wireline broadband penetration in California as 55%, while FCC data show wireline broadband penetration as 63%.

Wireless broadband penetration is 6%, using DIVCA data, while FCC data show wireless broadband penetration at 7%. DIVCA data show 776,903 wireless broadband subscribers, while the FCC counted 897,284 wireless broadband subscribers.

These differences result because the FCC collects data from broadband providers not required to report under DIVCA. For example, locally-franchised cable operators not affiliated with a state video franchise holder would report to the FCC, but not be required to report under DIVCA. Similarly, unaffiliated wireless, satellite, local exchange carriers, and broadband Internet service providers that are not affiliated with holders of state-issued video franchises would be captured by the FCC, but not by DIVCA.

Even though wireless internet service providers are required to file Form 477 data with the FCC, it appears that compliance by wireless Internet service providers with this reporting requirement appears to be quite low. Wireless Internet service providers generally use technologies such as Wi-Fi and WiMAX to reach their customers. They may actually be offering broadband service in sparsely populated rural areas, as their wireless technology is particularly well suited to those areas which we currently show as unserved.

The FCC has changed its Form 477 requirements to provide for data to be submitted by census tract and to show broadband speed tiers.[20] As a result, some of the discrepancies between the DIVCA data and the FCC's Form 477 data will not be repeated in future reports. However, other discrepancies may persist to the extent that the CPUC does not gain timely access to Form 477 data for providers who are not state video franchise holders.

Phase III of DIVCA, requires franchise holders to provide the CPUC with California-specific FCC Form 477 data at the same time that they are submitted to the FCC.[21] These data will allow CPUC Staff to be able to improve our own data collection methods and compare and contrast it to the information that the FCC is using in implementing its proposed national mapping program.

[20] *In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, Report and Order and Further Notice of Proposed Rulemaking, FCC 08-89 (rel. June 12, 2008) (Form 477 Order).

[21] *Order Instituting Rulemaking to Consider the Adoption of a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006*, Decision 08-07-007, *Decision Amending General Order* 169 (Cal. P.U.C. July 10, 2008) (Phase III Decision).

C. Census Tract Data Limitations

CPUC staff created methodologies to obtain, quantify and analyze data describing where video franchise holders offer broadband and video services in California and to what extent households are purchasing those services.

As specified in DIVCA and the CPUC's DIVCA Decisions, video franchise holders provided the CPUC with data identifying the number of households to which they offer broadband and video services in each of the state's census tracts. In addition, they reported by census tract the number of households that subscribe to their broadband and video services.

This census-tract level granularity is one of the key limitations of the data submitted under DIVCA.[22] All mapping and analysis had to be done at the level at which the data was submitted. Census tracts are too large a minimum mapping unit to accurately map broadband and video services throughout the state of California. There are 7,115 census tracts in California, ranging in size from 0.021 square miles to 8,007 square miles, averaging 22 square miles. The number of households in each tract ranges from 0 to 8,530, averaging 1,628 households per census tract. These variations made it difficult to determine the actual distribution of broadband and video availability in certain locations within the state.

At this time, DIVCA does not require franchise holders to provide the street-level, census block-level, or household-level data that would be needed to determine precisely where households are actually offered broadband and video services.

As a result, we found it to be impossible to determine where, within each census tract, service is being provided. Therefore, we assumed that if any household in a census tract was offered broadband by any video franchise holder, all households within that census tract are offered broadband and the entire tract was mapped as 'served' by broadband. We used the same methodology for video. This assumption results in some over counting of the number of households to which service is made available within some census tracts. For example, in some rural census tracts, it appears as if a census tract is completely served when in reality only a small geographic area within a rural tract is offered broadband or video service. Fortunately, because relatively few households in California are located in predominately rural census tracts, relatively few households are in the overstated category. Unfortunately, the areas where results may be somewhat overstated are exactly the areas where high accuracy would be important to identify unserved areas.

For census tracts in which there were multiple providers, it was impossible to know how many providers offered service to any given household. Adding the "households offered" figures from two or more providers could result in double or triple counting and create significant inaccuracies in estimates of service availability.

The methodology we used attempted to overcome these limitations. In most census tracts, we believe this methodology yielded accurate data. However, without census-block, street-level or household-level data, the precision of our estimates of the availability of service within a census

[22] The granularity of data refers to size of the geographic areas by which data are reported.

tract is uncertain. As a result, in some census tracts, this methodology resulted in an overstatement of the estimated level of broadband or video availability.

Our ability to analyze where competition exists was also limited. When multiple service providers report that they offer service in the same census tract, there was no way of knowing where within the tract each operates, and we were faced with the double-counting issue again. For example, consider an average sized census tract with 1,600 households. If two franchise holders each report that they offer broadband service to 800 households, it is not possible to know which of the households are served broadband by one, both, or neither of the service providers. It is possible that both service providers might be competing by offering services to the same 800 households, while the other 800 households are offered no service by either provider. Or, it is possible that all 1,600 households might be offered service by one provider and there is no real competition taking place within the census tract.

Finally, it is important to keep in mind that throughout this Report, only services offered by state-issued video franchise holders and their affiliates are reflected in DIVCA data. Broadband and video services are likely offered in many areas by other entities, unrelated to state video franchise holders. Examples of this would be small local exchange carriers, which provide broadband service, but are not yet providing video services, wireless and satellite ISPs, which provide broadband but are not affiliated with state franchise holders. These providers did not report data so we did not include them in the analysis contained in this Report.

D. Changes Expected in 2009 DIVCA Data

While compiling data for this report, the CPUC gained significant insight as to the number of households in California offered both broadband and video service under the state video franchising scheme. The CPUC has also learned where there are gaps in information that hinder the CPUC from knowing fully where there are unserved and underserved areas within the state. We expect the FCC to more precisely define unserved and underserved in 2009. This should assist us in analyzing this data in the future.

Several changes that will enhance the quality of broadband data are expected in 2009:

- The CPUC will have the benefit of broadband speed tier subscriber information collected from state video franchise holders that provide broadband service in addition to the information we collect now.[23]

- More incumbent cable operators will likely seek state franchises, giving the CPUC information about video and broadband service in areas where we have no data now.

- Data provided to the CPUC by those seeking California Advanced Services Fund grants, and by those opposing certain grants, will also be incorporated into our analysis

- The CPUC will use this new information to continue to develop and improve data collection, mapping, and aggregation methods, in order to provide a more robust analysis of statutorily required broadband and video data and the status of the video and broadband marketplaces in California.

[23] In the Phase III decision, footnote 21 supra, the CPUC required video franchise holders to include in their annual data submitted to the CPUC broadband speed "tiers." To accomplish this, holders are now required to submit to the CPUC simultaneously the same broadband speed information that they report to the FCC.

III. Video Findings

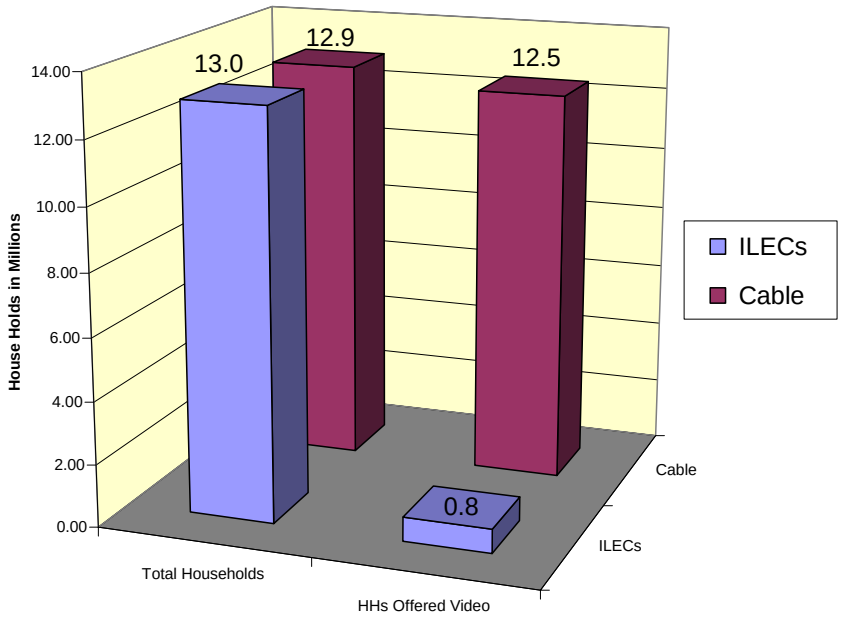
This section summarizes the data related to video services provided by video franchise holders in response to the statutory requirements of DIVCA. This section presents the analysis, which was enhanced by the application of geographic information system software capabilities.

A. Video Availability

Graph 3 below and tables 3 & 4 on the following two pages show that ILECs currently offer video service to 6% (771,192 HHs) of the 12.9 million households in their telephone service areas, while incumbent cable operators offer video service to 96% (12.45 million HHs) of the 12.9 million households in their video franchise territories.[24]

It is important to note that the ILECs just began installing video infrastructure in 2007 and are very early in their deployment cycle. As ILECs accelerate their marketing and deployment efforts, video competition will increase over time.

Graph 3 – Video Deployment: Households offered Video Services by ILECs and Cable Incumbents (Same as Graph 1 in the Executive Summary)



[24] The total households reported by ILECs (AT&T and Verizon) and cable companies differ from each other and from the total number used by the CPUC in the report. This is due both to the fact that each organization may have used a different method to project 2007 household totals from 2000 census data, and to the fact that that DIVCA specifies metrics for ILECs based on their telephone service territories, while incumbent cable operator metrics use their video franchise territories.

Under DIVCA, all video franchise holders, including telephone corporations, are required to report the number of households in their service territories and the number of households offered video services within their telephone service territories.[25] This information is shown in table 3 below.

Table 3 - Households Offered Video Service in California by Telephone Corporations

	Households	% HH Offered Video
Households in Telephone Corporations' Telephone Service Territories	12,962,926	
Households Offered Video in Telephone Corporations' Telephone Service Territories	771,192	6%

A primary goal of DIVCA is to promote the widespread access to the most technologically advanced cable and video services to all California communities, and to move to a system of state-issued franchises to speed the availability of such services by new entrants such as AT&T and Verizon.[26]

Six percent (771,192) of households in telephone service territories were offered video service in California by Incumbent Local Exchange Companies (ILECs) as of January 1, 2008. This number is promising, as it indicates that in its first year, DIVCA has provided the framework under which more than three-quarters of a million households are able to subscribe to video services from these two new entrants. Increased competition for advanced cable and video services will bring many benefits to consumers. We expect the number of households with access to AT&T and Verizon's video services to increase rapidly over the course of the next several years, in accord with DIVCA's build-out and non-discrimination requirements.[27]

Table 4 on the following page, shows the reported number of households and the number of households offered video service in the video service area by video franchise holders that are not telephone corporations.[28]

[25] The aggregate households offered video service includes those offered video service pursuant to state-issued franchises and excludes those video services offered by the ILECs pursuant to locally-issued franchises. For purposes of aggregating the data submitted pursuant to P.U. Code §5960(b)(2)(A), staff assumes that ILECs are the telephone corporations directed to submit this data related to their telephone service area. While many incumbent cable operators or their affiliates possess CLEC certificates, DIVCA's build out requirements, which reference total households and households offered video within a telephone companies' telephone service territory, have application only to ILECs.

[26] A.B. 2987, 2005-2006 Session, (Ca. 2006).

[27] *See* P.U. Code §5890.

[28] For the purposes of aggregating the data submitted pursuant to P.U. Code §5960 (b)(2)(B), staff assumes that holders who are not ILECs are the holders directed to submit this data related to video service areas.

Table 4 - Households Offered Video Service by Incumbent Cable Operators

	Households	% HH offered Video
Households in **State-Franchised** Cable Company Video Service Areas	6,350,911	
Households Offered Video by Cable Companies in Holders' **State-Franchised** Video Service Areas	6,332,737	99.7%
Households in Franchised Territory of Cable Company Holders' **Locally-Franchised** Affiliates	6,597,378	
Households Offered Video by Cable Company Holders' **Locally-Franchised** Affiliates	6,120,054	92.7%

The data in the top two rows of Table 4 above pertain only to those video service areas of incumbent cable operators that have already been converted from locally-issued franchises to state-issued franchises.

Table 4 above shows that many cable operators have made the transition from locally-issued to state-issued franchises. This has occurred to such an extent that almost one-half of their subscriber base is now served pursuant to state issued franchises. Eventually, all local cable franchises will be replaced by state franchises.[29]

Incumbent cable operators offer video service to nearly all the homes in their video franchise territories, whether the underlying franchise was issued by the state or local entities. That is a reflection of two factors:

1) Most cable systems have been in existence for many years, and in most instances decades.
2) Most local cable franchises contained strict build out requirements under which the entire franchise territory was required to be built out within a short period of time.[30]

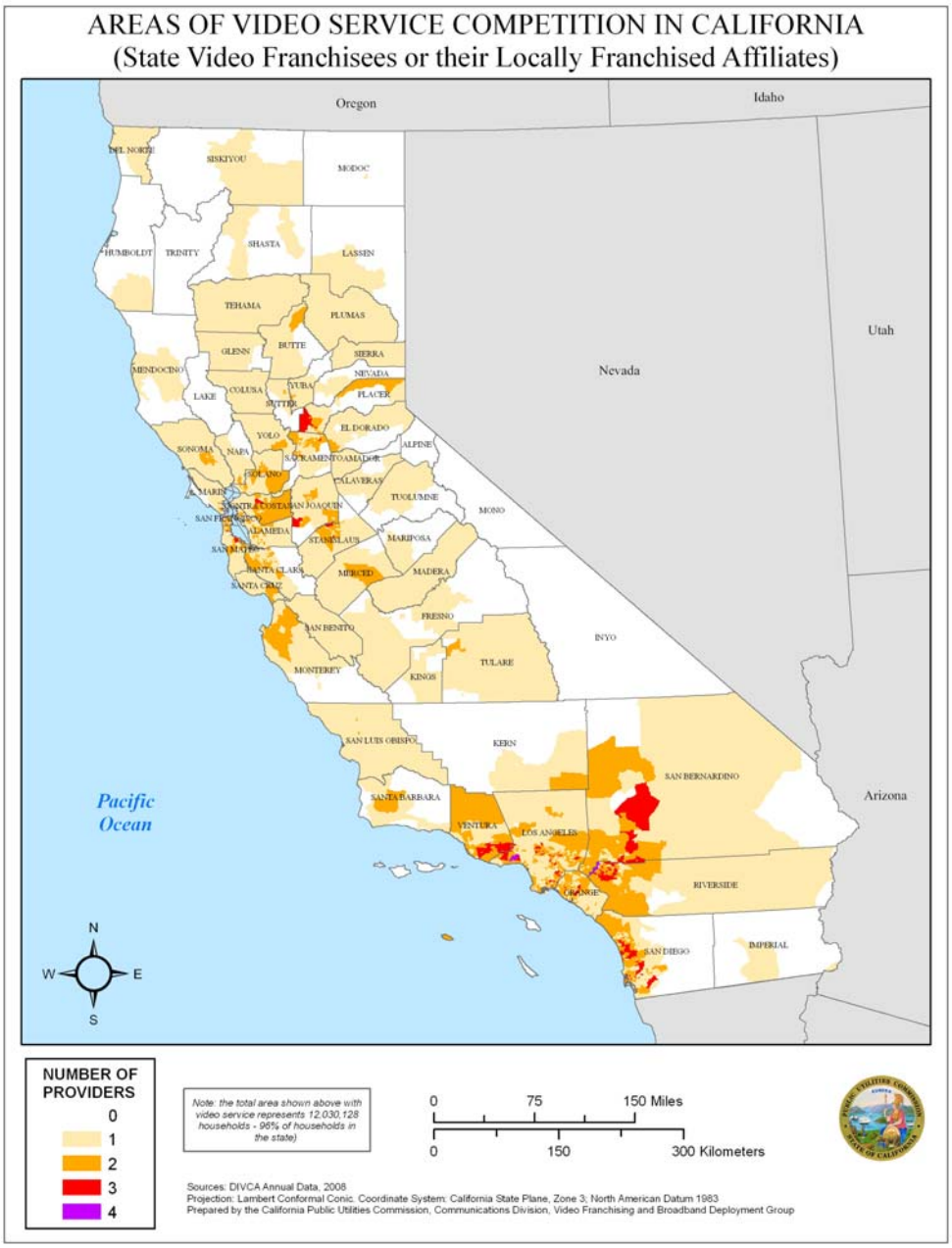
[29] This transition from locally-issued to state-issued franchises can occur only when: (1) Local franchises expire (2) Local entities and cable operators agree upon such a transition (3) Locally-franchised cable operators decide to opt out of their local franchises and seek a state franchise. They can do this after being notified that another state franchisee is about to provide video services in all or part of the jurisdiction of the local franchisor. (4) When a local entity unilaterally notifies an incumbent cable operator to seek a state franchise. [No local entity has yet triggered the transition to a state-issued franchise through a unilateral decree.]

[30] Subject to certain density and line extension exceptions.

B. Video Competition

Map 2 below shows the number of video providers offering video service in each census tract, whether by state-issued franchisees or their local affiliates. It is important to note that where two or three providers are shown in a given tract, that does not necessarily indicate that they are competing with each other. This is because the data provided to the CPUC is not granular enough to show where within a census tract a particular provider is offering service. Despite this limitation, this data / map provide a useful baseline which we will use in the future to show progress in providing broadband video service to the residents of California.

Map 2



C. The Digital Divide: Using DIVCA Data To Analyze Differences in *Video* Availability by Income

DIVCA requires state video franchise holders to provide information describing the number of low-income households in their video service areas, as well as the number of low-income households to which they offer video service.[31] These data have been aggregated, and are shown below in table 5.

Table 5 - Reported Low Income Household Data

	Households	Percentage of Low Income Households in California
Low Income Households in Holders' Video Service Areas	6,659,157	100%
Low Income Households Offered Video in Holders' Video Service Areas (**State-issued** franchises)	3,161,886	47%
Low Income Households Offered Video by Holders' **locally-franchised** affiliates	2,367,539	36%
Total Low Income Households Offered Video by both State- and locally-franchised affiliates	5,529,425	83%

The video data above represent the raw aggregation of the data submitted to the CPUC on a census-tract basis. However, in any census tract served by more than one provider, (e.g., by both an incumbent cable operator and an ILEC that has newly entered the market) the households reported by these providers will be duplicated. Thus, aggregating these data will, by definition, result in double counting low income as well as total households.

CPUC staff has begun the process of analyzing the factors involved in the digital divide. For this first DIVCA report, we began to try to examine the reported data by lower and higher income census tracts in the state of California. As we began this analysis, we discovered that of the state's 7,115 census tracts:

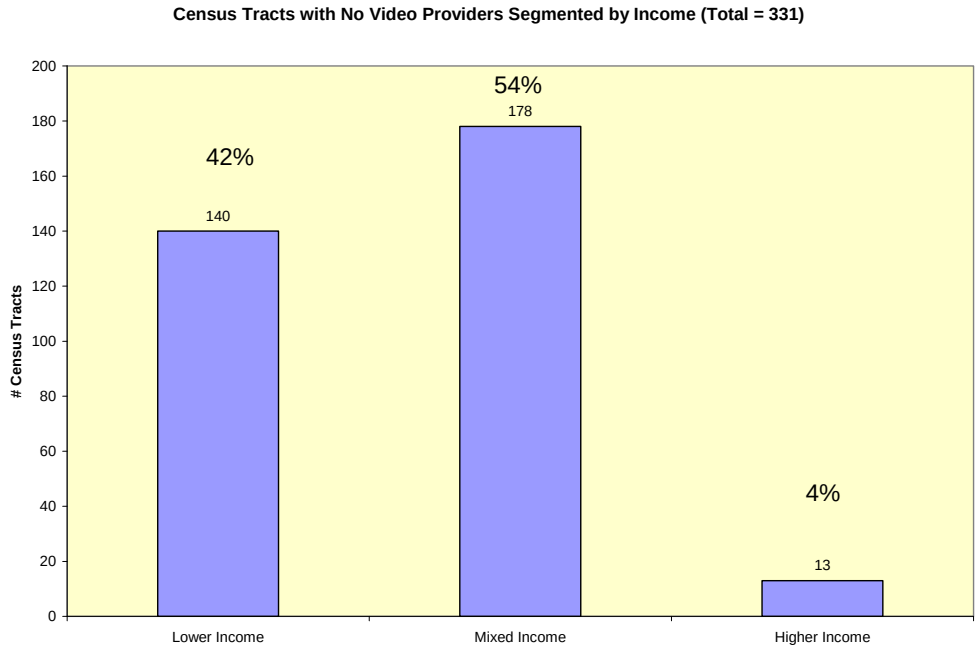
- 25% (1,779) of census tracts have more than half of households earning less than $35,000 per year. We call these **predominantly lower income** census tracts.
- 16% (1,138) of census tracts have more than half of households earning more than $75,000 per year. We call these **predominantly higher income** census tracts.
- 59% (4,198) of census tracts have more than half of households earning between 35,000 and $75,000 per year. We call these **predominantly mixed income** census tracts.

[31] P.U. Code §5960

Graph 4 below shows the 331 (5%) census tracts out of the total 7,115 census tracts in the state in which no wireline video is offered, segmented by income. These 331 unserved census tracts contain 471,773 households. 48% (228,497) of the households in the 331 census tracts are predominately low income households. Less than 5% of low income households in the state are in census tracts where video is not being offered by a holder of a state video franchise.

This graph also illustrates that households in 140 predominantly lower income and 178 mixed income, and 13 predominantly higher income census tracts are not offered video services by any state-issued video franchise holders.[32]

Graph 4



Map 2 on page 13 shows the number of video providers offering service in each census tract, whether by state- or locally-issued franchises. The map shows that in total, 96% of households in the state are located in census tracts where video service is offered pursuant to either a state or locally issued franchise. It also graphically shows where there is competition in the video marketplace.

Graph 5 on the next page shows that 62% of the 7115 census tracts in the state are offered video services by one service provider. However, half of that, or 30% are serviced by two providers. This two-to-one relationship is not reflected spatially in map 2 on page 13 because census tracts vary by geographic size. The red and purple areas of map 2, which represent 3% (241) of the census tracts with 3 or 4 video providers, are in five suburban areas surrounding Los Angeles, San Diego and east of San Francisco.

[32] Lower income census tracts are defined as those containing more than 50% of households with household incomes less than $35,000. Higher income census tracts are defined as those containing more than 50% of households with household incomes greater than $75,000. The mixed income category includes all the other census tracts.

Graph 5 below segments the video data by lower, mixed and higher income census tracts. Another view of this video data is also displayed in Graph 8 on page 27 in the broadband section. In the state of California, there are 7,115 census tracts. 25% (1,779) of those census tracts are predominantly lower income, while 16% (1,138) are predominantly higher income. The following findings combine this census tract data with the data illustrated in Graph 12 below:

- 33% of the state's 7,115 census tracts are served by two or more video providers. However, as stated above Map 2 on page 13, they may not compete against each other.

- 8% of predominantly lower income census tracts are unserved by video providers. 1% of predominantly higher income census tracts are unserved by video providers.

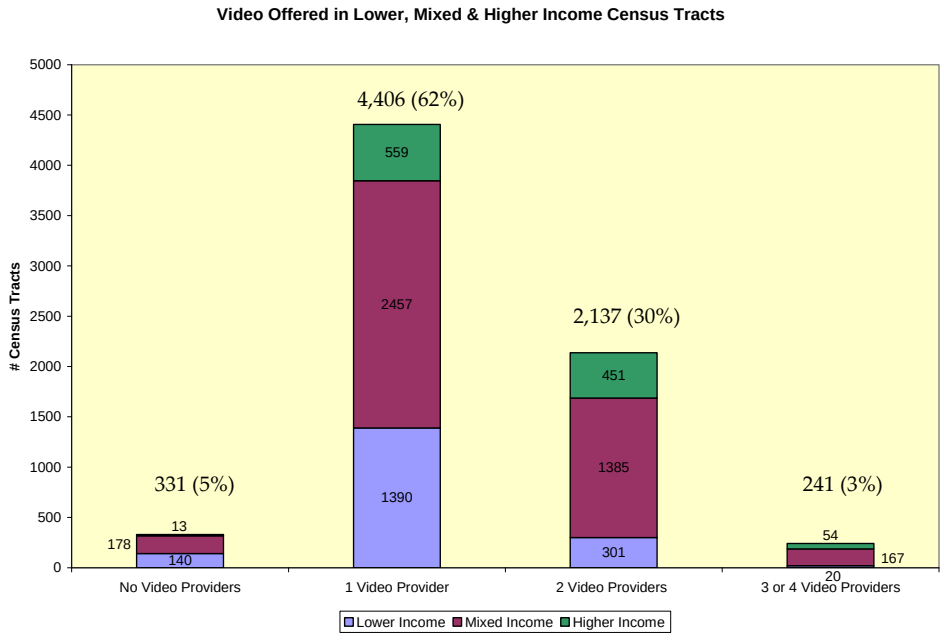
- 18% of predominantly lower income census tracts are offered video by two or more providers, while 44% of predominantly higher income census tracts are offered video by two or more providers.

- 17% of predominantly lower income census tracts are offered video by two providers. 40% of predominantly higher income census tracts are offered video by two providers.

- 1% of predominantly lower income census tracts are offered video by 3 or 4 providers. 5% of predominantly higher income census tracts are offered video by 3 or 4 providers.

- 78% of predominantly lower income census tracts are offered video by 1 provider. 49% of predominantly higher income census tracts are offered video by 1 provider.

Graph 5



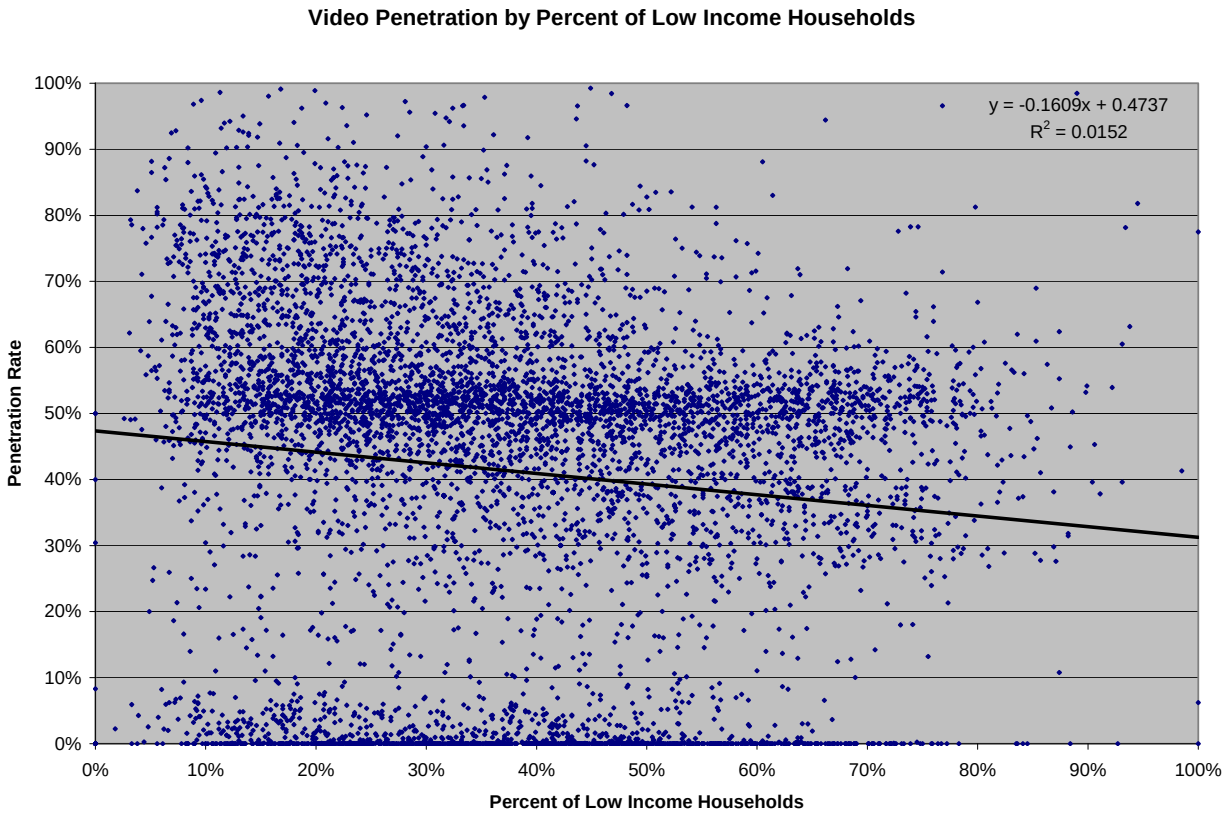
D. Video Penetration and Income Analyzed using Regression Analysis

Graph 6 below is a scatter plot and regression line that illustrates the results of a single- variable linear regression analysis using the independent variable "percent of low income households" (x-axis) and the dependent variable "video penetration rate" (y-axis) from a data set consisting of 6,652 census tracts in California.

The results from this single-variable linear regression analysis indicates that this regression equation (which is driven by the percentage of low income households), is capable of explaining only 1.5% of the total variance observed in video penetration. This very low R^2 statistic, combined with the regression line and scatter plot, all indicate that based on the data included in this regression analysis, statistically, the variable "percentage of low income households" **alone**, cannot be used to **fully explain** the variability of video penetration. For a more detailed description of the methodology used in this regression analysis, see Appendix B on page 48.

When income is combined with other demographic variables such as age, education, language spoken at home, ethnicity, or population density, in a multiple regression analysis, we may be able to better explain the variability in video penetration. We hope to be able to explore these and other factors in the future by performing additional analyses to better understand how income combined with other factors explain the variability of video penetration in California.

Graph 6



III. Broadband Findings

This section defines broadband, describes different broadband services offered by different types of service providers, and presents and analyzes aggregated broadband data obtained from franchise holders in response to the statutory requirements in DIVCA.

DIVCA defines broadband as: "any service defined as broadband in the most recent FCC inquiry pursuant to 706 of the Telecommunications Act of 1996 (P.L. 104)." Until very recently, the FCC considered services to be broadband if they involved transmission speeds in excess of 200 kbps in one direction. That is the definition that was in force for the period covered by this DIVCA Report.

The FCC has moved away from this single-speed approach to defining broadband. Beginning in March 2009, the FCC and the PUC will collect information on various speed tiers, beginning with 200kbps in either direction and extending to speeds in excess of 100 mbps in either direction.

Along with changing this view of broadband, the FCC passed new Form 477 Reporting Requirements for Broadband and Internet Service Providers on June 12, 2008.[33] This FCC order changes the way the FCC will require service providers to report broadband services beginning with their March 1, 2009 filing. This new order requires service providers to report their services and subscribers by different technologies and the following eight speed tiers in each census tract:

1) 200 kbps to 768 kbps
2) 768 kbps to 1.5 mbps
3) 1.5 mbps to 3 mbps
4) 3 mbps to 6 mbps
5) 6 mbps to 10 mbps
6) 10 mbps to 25 mbps
7) 25 mbps to 100 mbps
8) Greater than 100 mbps

[33] Form 477, available at http://www.fcc.gov/form477.

A. Broadband Technologies

Offerings of broadband services are changing rapidly due to competition and evolving technologies. As a result, providers are introducing newer and faster services and upgrading their network infrastructures. For example, in 2009, many cable providers will begin to introduce DOCSIS 3.0, which is capable of providing bandwidth at up to 160 mbps. AT&T and Verizon are continuing to invest billions of dollars to upgrade their networks to provide video and high speed broadband services to increasingly more households throughout California. Below is a list of technologies that service providers have deployed to offer Internet access services that transmit data in excess of 200 kbps:

- **DSL** (Digital Subscriber Line) services most often offered by wireline ILECs.
  AT&T's website advertised the following four packages of DSL downstream speeds:[34]
  (1) Basic DSL, 768 kbps
  (2) Express DSL, up to 1.5 Mbps
  (3) Pro DSL, up to 3 Mbps
  (4) Elite DSL, up to 6.0 Mbps
  Verizon's website advertised three downstream DSL speeds:
  (1) Starter, up to 1 Mbps
  (2) Power Plan, up to 3 Mbps
  (3) Turbo Plan, up to 7 Mbps

- **Cable modems**, typically offered by cable service providers. Bandwidth currently being advertised ranges from between 6 mbps to 18 mbps downstream speed[35] Beginning in 2009, cable companies are expected to begin to offer Internet access with downstream speeds initially up to 50 mbps, enabled by new DOCSIS 3.0- compliant equipment.

- **Verizon's FiOS (Fiber to the Home) Internet service.** The speeds advertised on the Verizon website for FiOS Internet Service is "from up to 10 Mbps all the way up to 50 Mbps."[36]

- **AT&T's U-Verse High Speed Internet service**. AT&T's U-Verse service uses fiber to the neighborhood and VDSL (Very-high-data-rate Digital Subscriber Line over copper) technologies. AT&T offers the following five different Internet downstream speeds as part of U-verse:[37]
  (1) Express, up to 1.5 Mbps
  (2) Pro, up to 3 Mbps
  (3) Elite up to 6.0 Mbps
  (4) Max, up to 10 Mbps
  (5) Max 18, up to 18 Mbps

[34] AT&T Website using 94102 zipcode on 11/13/08.
[35] Comcast salesperson via telephone on 11/13/08.
[36] Verizon website 11/13/08.
[37] From AT&T Website on 11/13/08.

B. Broadband Availability

Based on the census tract basis of reporting data, CPUC staff estimated that 99.3% of California's 12.5 million households are located in census tracts where at least one video franchise holder offers wireline broadband service.

The Governor's Broadband Task Force,[38] which was published in January 2008, concluded that 96% of California households were offered broadband service by at least one provider. Because the Task Force was able to gather broadband deployment data at the street address level, it was able to calculate the number of households served by broadband with greater accuracy than the CPUC.

Table 6 below displays the aggregated DIVCA data, which are consistent with the Governor's Broadband Task Force Report finding.[39] CPUC's finding that 99.3% of California households are located in census tracts where broadband is offered, exceeds the Task Force report finding that broadband is offered to 96% of households. This three percentage point difference is likely largely explained by the difference in the granularity of the data and the different analytical methodologies used.

When viewed together, the reports validate the conclusion that wireline broadband services are widely available to at least 96 percent of California households. In addition, the CPUC is working to bring broadband to all Californian's thorough its Advanced Services Fund and Emerging Technology Fund efforts.

Table 6 - Households in Census Tracts Where Broadband Service is Offered

	# Households [40]	% Households offered Broadband
Total households in California	12,499,644	N/A
Households in census tracts where **wireline broadband** is offered to at least one HH by at least one video franchise holder	12,419,916	99.3%
Households in census tracts where **wireless or wireline broadband** is offered to at least one HH	12,463,864	99.7%
Broadband Task Force Report Finding		96.0%

[38] Created by Executive Order S-23-06, the Task Force was charged with identifying opportunities for and challenges to broadband deployment and adoption. On December 15, 2007, the Task Force released a report that included maps of broadband availability speed and recommendations to achieve ubiquitous access throughout California. The full report is available at http://www.calink.ca.gov/pdf/CBTF_FINAL Report.pdf.

[39] The Governor's BBTF used a different methodology than that mandated by DIVCA.

[40] See Appendix A for an explanation of how this estimate of total number of California households in 2007 was derived using data obtained from the 2000 census.

C. Broadband Penetration

The data in table 7 below show penetration rates[41] for both wireline and wireless broadband services in California. While DIVCA data show that broadband offerings are widely available, table 7 below shows that 55% of the state's households currently subscribe to wireline broadband from holders of state-issued video franchises and that 6% (776,903) of the households subscribe to a wireless broadband service[42]. The wireline totals include DSL services offered by video franchise holders AT&T and Verizon, as well as cable modem broadband services offered by cable operators.[43]

This 55% wireline penetration rate does not include customers of cable operators that are not affiliated with a state franchisee or customers of the state's small local exchange carriers, who provide DSL service, but are not state video franchisees at this time. Because some households may subscribe to both wireline and wireless, the combined broadband penetration ranges between 55% to 61%. Thus, the non-subscribing households could range between 39% to 45%.

Table 7 - Households Subscribing to Broadband & Offered Broadband Service

	Households Subscribing to Broadband	% Penetration (# HH Subscribing / Total HH in CA)
WIRELINE	6,851,743	55%
WIRELESS	776,903	6%[44]
Combined WIRELESS & WIRELINE	7,628,646	Between 55% to 61%
Total HHs	12,499,644	N/A

[41] Penetration rate is the ratio of households that subscribe to broadband services to the number of households in CA.

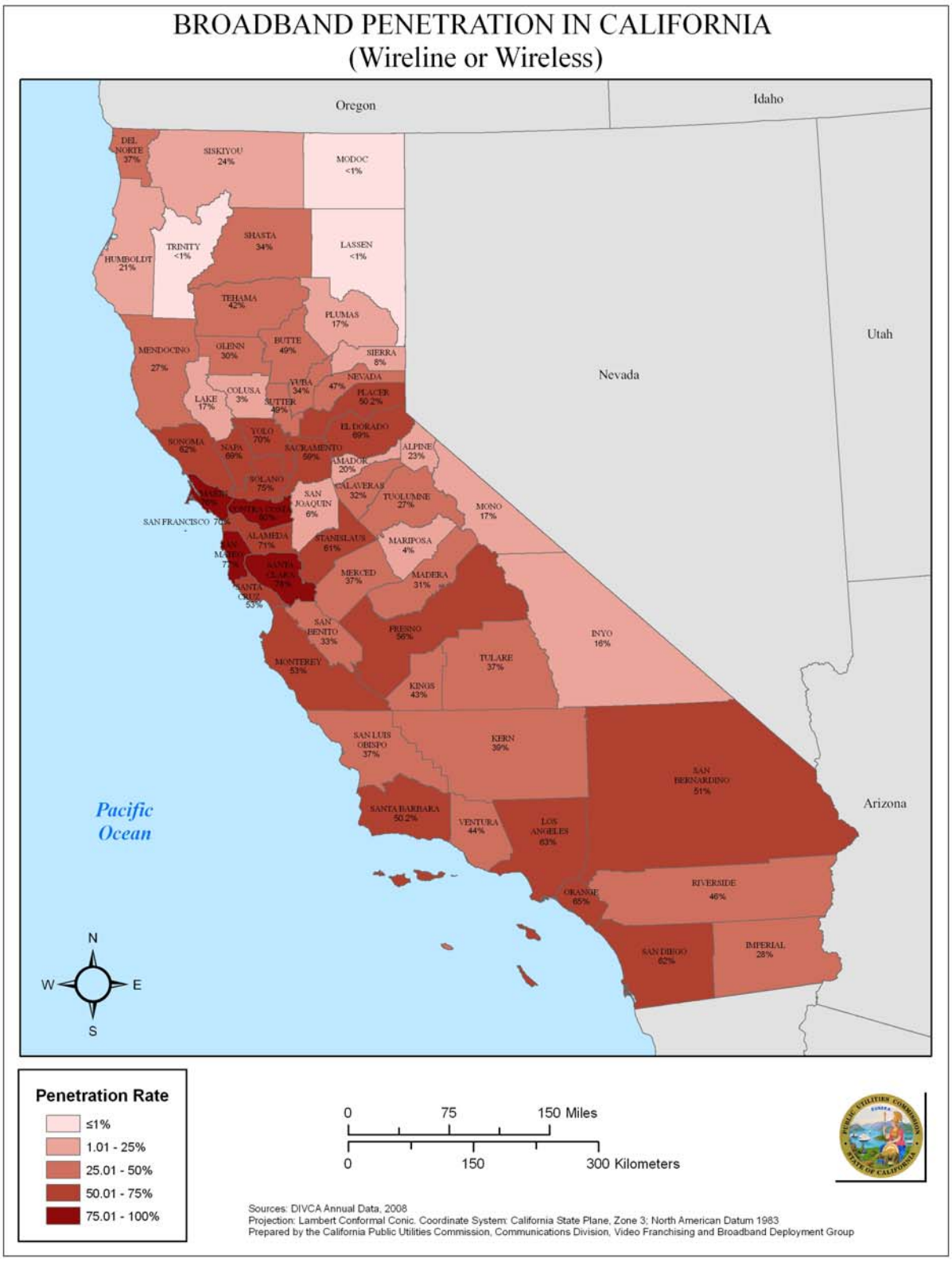
[42] While the Report assumes only one wireline broadband connection per household, it is possible that both a wireline service and a wireless service are purchased by the same household.

[43] G.O. 169 requires that the parent company of state franchise holders are to report data not only for its state-franchised operations, but also for any and all of its affiliates that operate in California and provide video or broadband service in the state. Thus, broadband services aggregated in this Table include traditional DSL service offered by AT&T and Verizon, as well as the new broadband services offered over facilities used to provide their video services. In addition, the data includes broadband services offered by incumbent cable operators pursuant to both state and local franchises.

[44] In some cases, wireless broadband is purchased by many of the same households that also purchase wireline broadband. However, the DIVCA data do not allow this to be quantified.

Map 3 below illustrates the broadband penetration rates for the broadband services (wireline and wireless combined) in each county in California.

Map 3



Map 3 on page 22, Table 8 below, and graph 7 on page 25 are three different ways of comparing the same broadband penetration rates by county.[45] The data were derived by aggregating broadband subscriber figures reported by state-wide video franchise holders by county, then calculating penetration from total households.[46] The highest penetration levels occur in metropolitan urban / suburban areas. Penetration rates tend to drop as counties become less densely populated and more rural in nature. The median county broadband penetration rate is 42.5% and the average (mean) is 41.9%.[47]

DIVCA data shows broadband penetration levels range from a high of 80% in Contra Costa County, down to 0% in Modoc, Lassen and Trinity counties. While the Broadband Task Force Report shows that broadband service is available in portions of those three counties, it is offered by providers unaffiliated with state-issued video franchise holders. Consequently that data was not provided to the CPUC and is not included in the analysis of the DIVCA data.

Table 8 – Broadband Penetration by County

County		County		County	
Contra Costa	80%	San Bernardiono	51%	Glenn	30%
Santa Clara	78%	Placer	50%	Imperial	28%
San Mateo	77%	Santa Barbara	50%	Mendocino	27%
Marin	76%	Butte	49%	Tuolumne	27%
Solano	75%	Sutter	49%	Siskiyou	24%
Alameda	71%	Nevada	47%	Alpine	23%
Yolo	70%	Riverside	46%	Humboldt	21%
Napa	69%	Ventura	44%	Amador	20%
San Francisco	69%	Kings	43%	Lake	17%
El Dorado	69%	Tehama	42%	Mono	17%
Orange	65%	Kern	39%	Plumas	17%
Los Angeles	63%	Tulare	37%	Inyo	16%
San Diego	62%	San Luis Obispo	37%	Sierra	8%
Sonoma	62%	Merced	37%	Mariposa	4%
San Joaquin	61%	Del Norte	37%	Colusa	3%
Stanislaus	61%	Shasta	34%	Lassen	0%
Sacramento	59%	Yuba	34%	Modoc	0%
Fresno	56%	San Benito	33%	Trinity	0%
Santa Cruz	53%	Calaveras	32%		
Monterey	53%	Madera	31%		

The combined number of households in Modoc, Lassen and Trinity counties, which are not offered broadband by any state-issued video franchise holders, was 20,479 households in 2007.

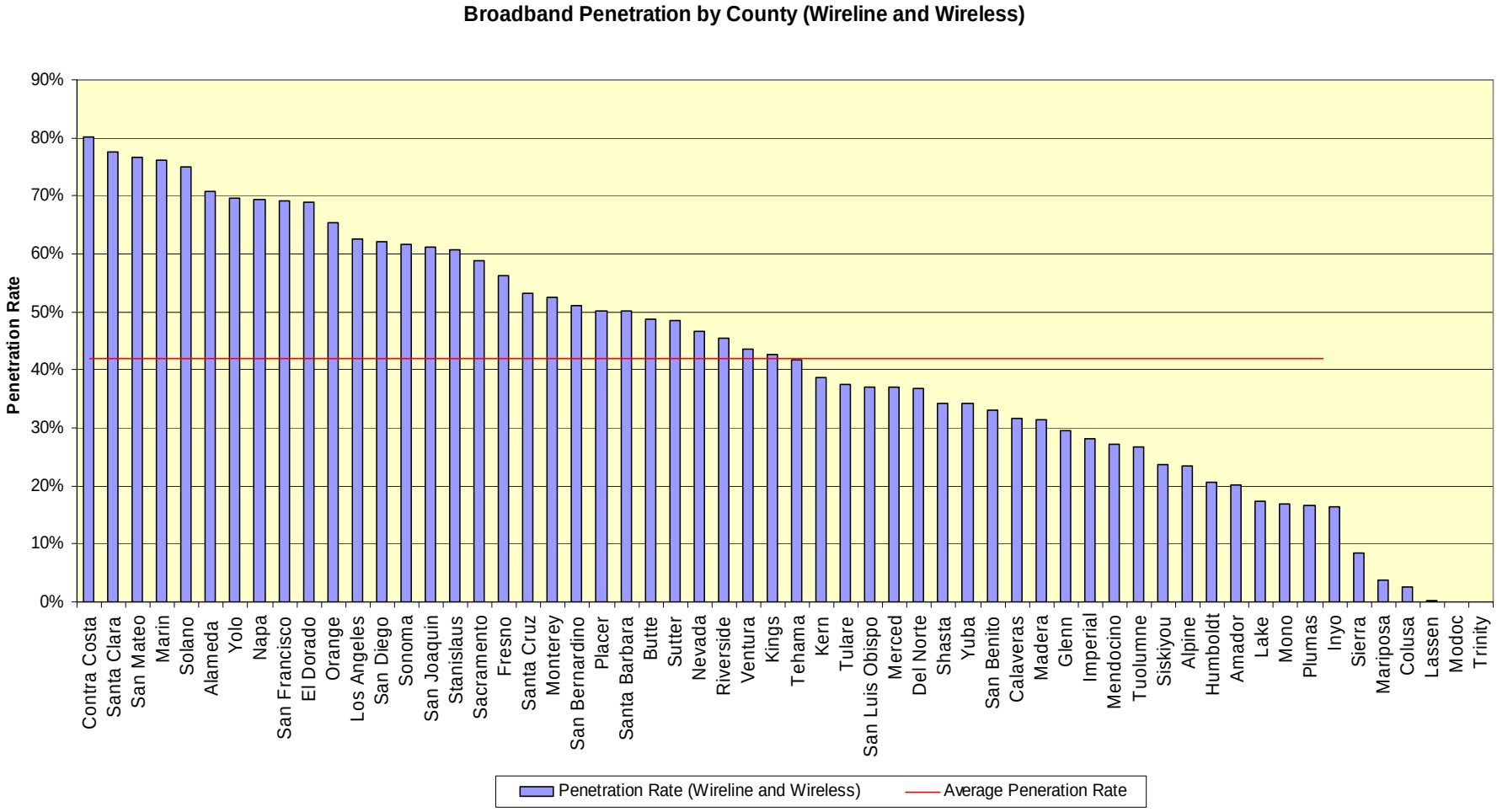
[45] These numbers reflect responses by holders and their affiliates only. Some areas where 0% broadband penetration is indicated may actually be served by non-reporting companies. In those cases, the actual penetration for each county would be higher if data from non-reporting companies were captured.

[46] Note that these broadband penetration rates do not include broadband subscribers to local LECs, ISPs, satellite service providers or cable companies that are not affiliated with state-issued video franchise holders.

[47] Because census tracts nest within counties, we used census tract data to calculate the broadband penetration rate for each county.

The difficulty of determining accurate penetration rates for Modoc, Lassen and Trinity counties illustrates one of the limitations of the DIVCA data. These limitations are described in the census tract data limitations section on page 7.

Graph 7 on the next page illustrates a county-by-county comparison, as well as how each county compares to the average county broadband penetration rate of 41.9%.


Broadband Penetration by County (Wireline and Wireless)
Penetration Rate
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Contra Costa
Santa Clara
San Mateo
Marin
Solano
Alameda
Yolo
Napa
San Francisco
El Dorado
Orange
Los Angeles
San Diego
Sonoma
San Joaquin
Stanislaus
Sacramento
Fresno
Santa Cruz
Monterey
San Bernardino
Placer
Santa Barbara
Butte
Sutter
Nevada
Riverside
Ventura
Kings
Tehama
Kern
Tulare
San Luis Obispo
Merced
Del Norte
Shasta
Yuba
San Benito
Calaveras
Madera
Glenn
Imperial
Mendocino
Tuolumne
Siskiyou
Alpine
Humboldt
Amador
Lake
Mono
Plumas
Inyo
Sierra
Mariposa
Colusa
Lassen
Modoc
Trinity
Penetration Rate (Wireline and Wireless)
Average Peneration Rate

The percentage of California households subscribing to broadband from state-wide video franchise holders (55%), is very similar to broadband penetration rates published by others. For example, The "Pew Internet and American Life Project" found that in 2008 "55% of adult Americans [not households] reported that they now have broadband internet connections at home, up from 47% (in 2007)."[48]

The wireless broadband penetration rate of 6% shown in this Report only includes subscriber data submitted by state-issued video franchise holders AT&T and Verizon. The relatively low broadband wireless penetration rate of 6% may also be due to the fact that previous generations of wireless data services offered data rates that were too slow to qualify as broadband under the FCC's definitions.

Future DIVCA reports will track the growth of California's wireless broadband marketplace. It is unclear at this point whether wireless data services will become substitutes for wireline service in the same way wireless voice services are increasingly substituting for wireline voice service, or whether mobile data services will be complementary to wireline service.

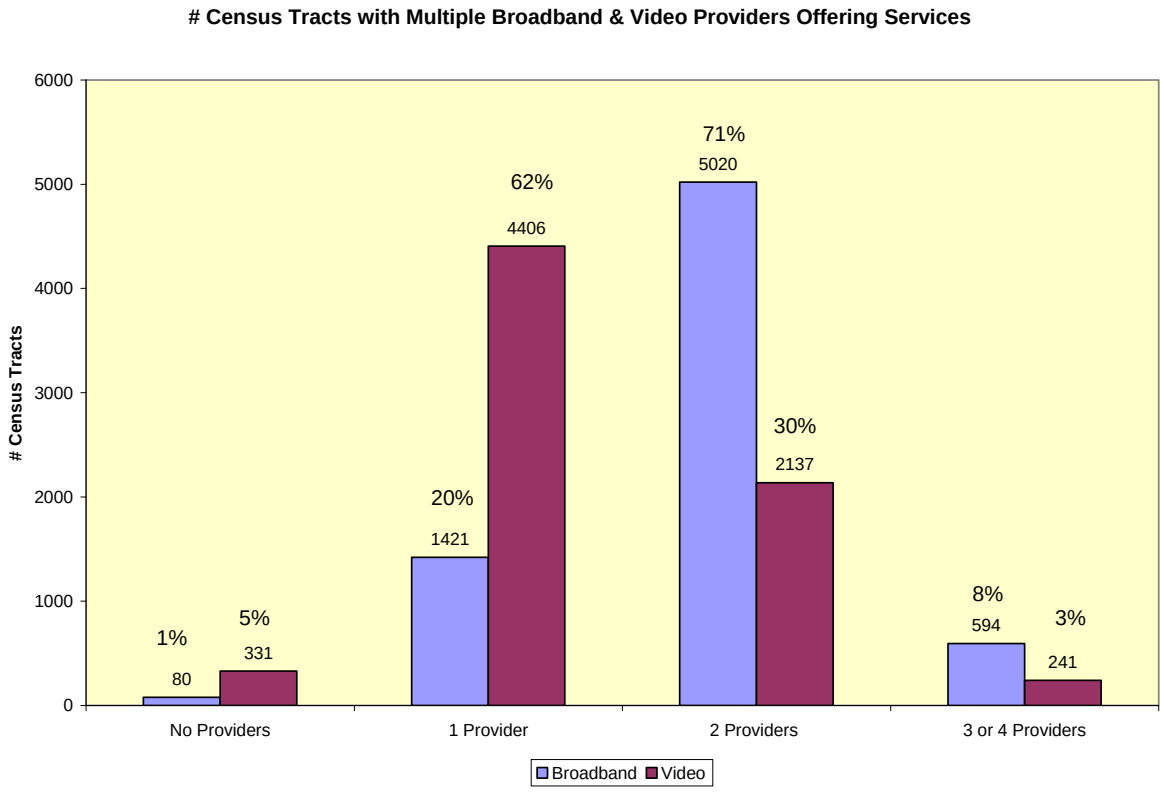
[48] "Home Broadband Adoption 2008," Pew Internet & American Life Project, July 2008, available at www.pewinternet.org. Readers should note that this Pew study focuses on a national population and it is based on very different sources of data and methodologies than DIVCA. While DIVCA data are based on "census tract level" reporting of households as reported by video franchise holders in California, the Pew Internet and American Life Project based their findings on a market research survey of 1,553 adults across the country.

D. Broadband Competition

Graph 8 below shows the number of census tracts that are offered broadband and video services, segmented by the number of video franchise holders offering broadband and video services in each census tract.[49]

Wireline broadband, which includes the ILECs' DSL service and the new broadband services associated with their video platforms as well as cable companies' high speed data service, is offered by two or more service providers in more than twice as many census tracts as video. Conversely, video is offered by one or no providers in more than three times as many census tracts as broadband. Video is analyzed in more depth in the Video Findings section of this report, which begins on page 10.

Graph 8



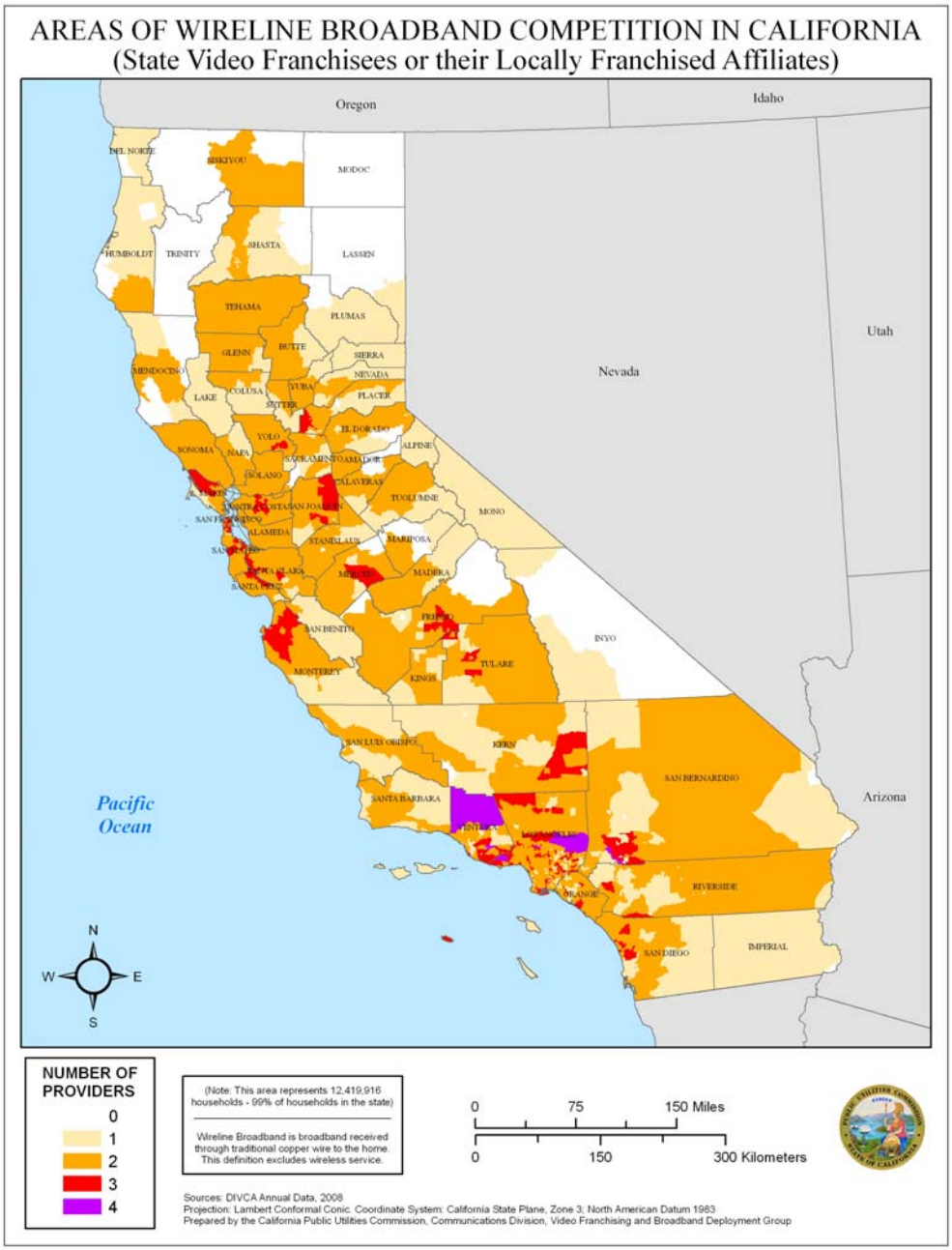
Regarding broadband, graph 8 above shows:

- 1% (80) of the state's census tracts are not offered wireline broadband service by any holders of state video franchises.
- 20% (1421) of the state's census tracts are offered broadband by one franchise holder.
- 71% (5020) of the state's census tracts are offered broadband by two franchise holders.
- 8% (594) of the state's census tracts are offered broadband by three or four video franchise holders.

[49] Graph 5 on page 16 and graph 9 on page 35 further segment this data by income level.

Map 4 below is color-coded to show where different numbers of state or local video franchise holders offer broadband service. It should be noted that we do not know where within each census tract the individual providers have deployed their service. Therefore, it is possible that in the areas showing multiple providers offering broadband within the same census tracts, there may be no direct competition. Given the limitations of the DIVCA data, we can only say theoretically that these are areas in which broadband service providers may be competing. These limitations are explained in detail in the census tract data limitations section on page 7.

Map 4



E. Infrastructure Build-out: Deployment Incentives

There are a number of efforts underway to provide incentives to service providers to increase their deployment of broadband services in rural, unserved and underserved areas.

Though market forces in conjunction with lower-cost technology will always influence broadband availability, a variety of programs are underway to encourage more competition and investment in video and broadband infrastructure. DIVCA is but one example. Below are brief descriptions of several programs that are intended to create incentives for deployment of additional infrastructure in unserved and underserved areas throughout California:

- **The California Advanced Services Fund (CASF)** provides matching funds for the deployment of broadband infrastructure in unserved and underserved areas in California. Senate Bill 1193 (Padilla, Chapter 393, 2008), requires the CPUC to provide for transfer payments to telephone corporations to encourage deployment of high quality advanced communications services to all Californians that will promote economic growth, job creation and substantial social benefits of advanced information and communications technologies.

- **The California Rural Telecommunications Infrastructure Grant Program** aids in the establishment of telecommunications service in areas not currently served by existing local exchange carriers. In 2008, the Governor signed SB 1149 which extended the program to January 2012. The CPUC can now grant $40 million over a four year period and can issue individual grants of $5 million.

- **The California Emerging Technology Fund** makes investments in programs and projects to minimize the digital divide by accelerating the deployment and adoption of broadband and other advanced communication services to unserved and underserved communities, and to increase subscribership to these services.

- **The California Telehealth Network** is a three year pilot program funded by a $22 million grant from the FCC. The Telehealth network uses advanced telecommunications and information services to connect more than 300 rural healthcare sites with a network of specialized healthcare providers at academic medical centers and other healthcare providers throughout the state of California.

- **The Federal American Recovery and Reinvestment Act of 2009 (Stimulus)** appropriates approximately $7.2 billion dollars to be used to fund the Broadband Technology Opportunities Program. The purposes of the program are to:

    - Provide access to broadband service to consumers residing in unserved and underserved areas of the United States.

    - Provide broadband education, awareness, training, access, equipment, and support to:
      -- Schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, and other community organizations

      -- Organizations that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by low-income, unemployed, aged, and

otherwise vulnerable populations
-- Job-creating strategic facilities located within a State-designated economic zone, Economic Development District designated by the Department of Commerce, Renewal Community or Empowerment Zone designated by the Department of Housing and Urban Development, or Enterprise Community designated by the Department of Agriculture

- Provide public safety agencies with improved access to broadband services.
- Stimulate the demand for broadband, economic growth, and job creation.
- Provide $350 million in grants to develop and maintain broadband inventory maps.
- Allocate an additional $12.5 billion to the Department of Agriculture for support of distance learning, telemedicine and broadband through Rural Utility Service loans and guarantees.

F. The Digital Divide: Using DIVCA Data to Analyze Differences in *Broadband* Availability and Penetration

DIVCA provides that the CPUC should promote widespread access to the most technologically advanced cable and video services to all California communities in a nondiscriminatory manner regardless of socioeconomic status, and complement efforts to increase investment in broadband infrastructure and close the digital divide.[50]

There are many different definitions and descriptions of the digital divide. A typical description is "the gap between those who have access to and/or use digital technologies and those who do not; particularly among women, racial and ethnic minorities, people with lower incomes, rural residents and less educated people."[51]

One indicator of a digital divide in a population is the existence of different broadband penetration rates in higher income and lower income census tracts. Table 8 on the following page, shows that the broadband penetration rate of households in predominantly higher income census tracts is 73%, while households in predominantly lower income census tracts have a broadband penetration rate of 43%.

CPUC staff has begun the process of analyzing the factors involved in the digital divide. For this first DIVCA report, we began to try to examine the reported data by predominantly lower and higher income census tracts in the state of California. As we began this analysis, we discovered that of the state's 7,115 census tracts:

- 25% (1,779) of census tracts have more than half of households earning less than $35,000 per year. We call these **predominantly lower income** census tracts.
- 16% (1,138) of census tracts have more than half of households earning more than $75,000 per year. We call these **predominantly higher income** census tracts.
- 59% (4,198) of census tracts have more than half of households earning between 35,000 and $75,000 per year. We call these **predominantly mixed income** census tracts.

[50] *Order Instituting Rulemaking to Consider the Adoption of a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006*, Decision 07-03-014, *Decision Adopting a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006* (Cal. P.U.C. March 1, 2007) (Phase I Decision), at p. 7. *See* P.U. Code §5890.

[51] *See, e.g.*, "The Digital Divide and What To Do About It," Eszter Hargittai, available at http://www.princeton.edu/~eszter/research/pubs/hargittai-digitaldivide.pdf.

Table 8 below shows the wireline penetration rates for predominantly lower income and higher income census tracts. It also shows that the 25% of census tracts which are defined as predominantly "lower income," have lower broadband penetration rates than the 16% of census tracts that are defined as predominantly "higher income."

Table 8 - Wireline Broadband Penetration Rates
Segmented by Predominantly High Income and Low Income Census Tracts

	Number Broadband Subscribers	Total # Households 2007 Projected	Penetration Rate	# Census Tracts	% Census Tracts
Census Tracts with > 50% Lower Income Households[52]	1,245,784	2,910,574	**43%**	1,809	25%
Census Tracts with > 50% Higher Income Households[53]	1,363,795	1,880,006	**73%**	1,077	16%
Census Tracts with > 50% Mixed Income Households[54]	4,240,421	7,708,420	55%	4,229	59%
Total	6,850,000	12,499,000	55%	7,115	100%

Care must be taken in drawing conclusions from this data. To examine this further, we conducted two regression analyses; one analyzing broadband penetration and one analyzing video penetration.

The results from the broadband regression analysis is described on page 36 and the results from the video regression analysis is described on page 17. The results from both of these regression analyses indicate that statistically, the percentage of low income households **alone** cannot be used alone to **fully explain** variations in broadband or video penetration.

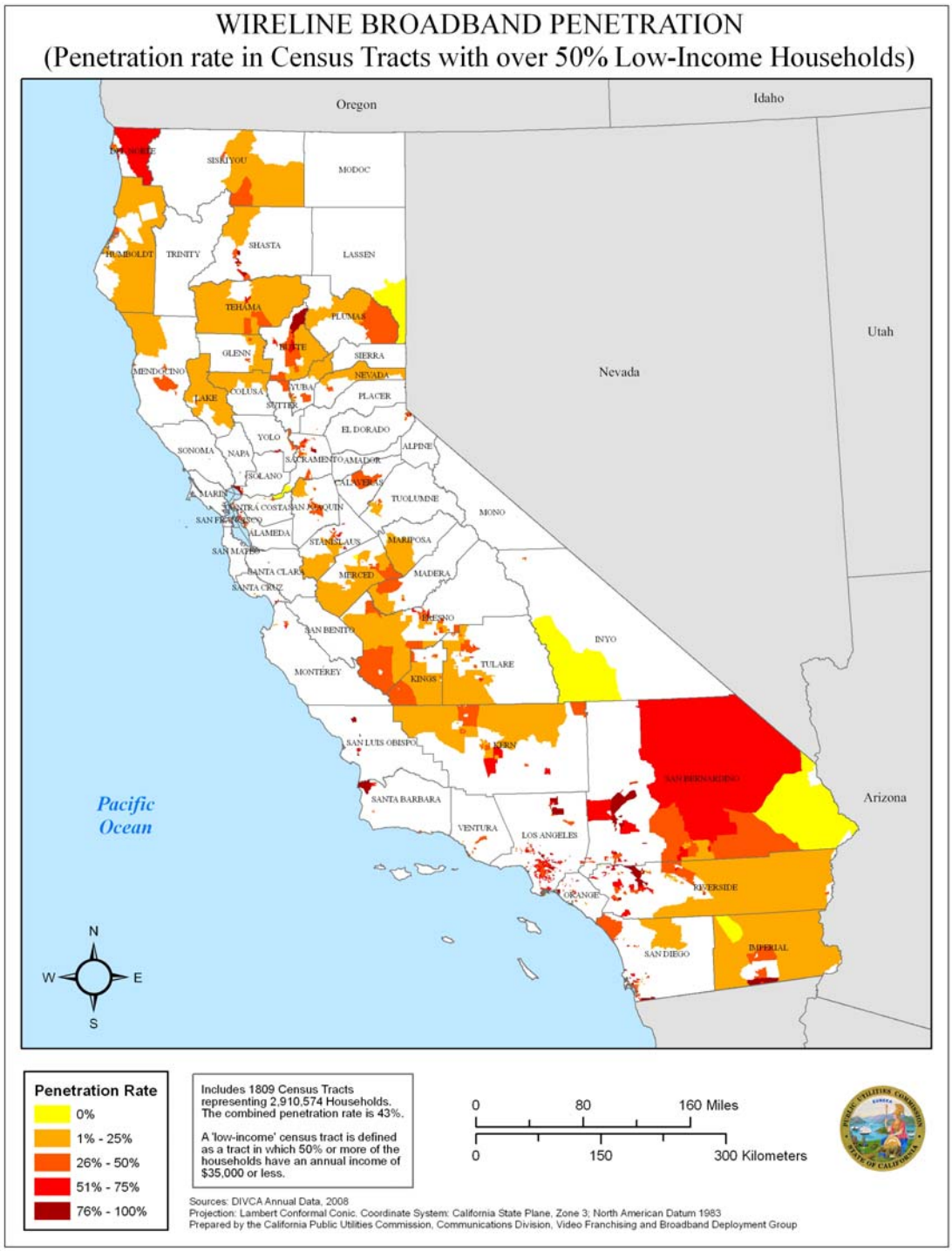
[52] **Lower Income census tracts** are defined as those containing greater than 50% of households earning less than $35,000 in household income per year.

[53] **Higher Income census tracts** are defined as those containing greater than 50% of households earning greater than $75,000 in household income per year.

[54] **Mixed Income census tracts** are defined as containing greater than 50% of households earning between $35,000 and $75,000 in household income per year.

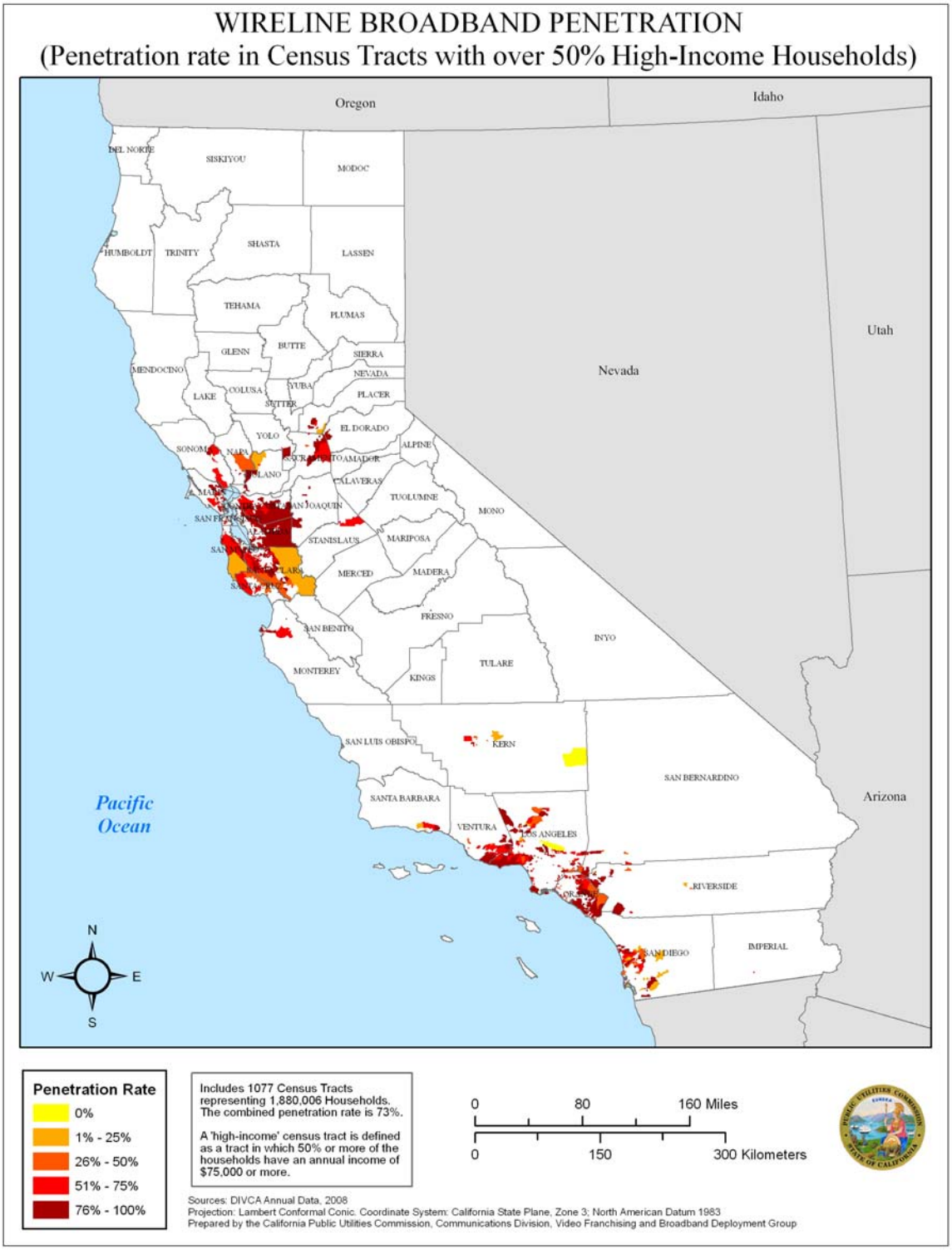
Map 5 depicts wireline broadband penetration in census tracts where over 50% of the households within each tract are considered lower income ($35,000 or less). This map illustrates the lower income data in table 8 on the previous page. When compared to Map 6 on the following page, this map shows that overall, there is a 43% broadband penetration rate in lower income census tracts, while higher income census tracts have a 73% broadband penetration rate.

Map 5 – Lower Income Census Tracts Broadband Penetration



Map 6 depicts wireline broadband penetration in census tracts where over 50% of the households within each tract are considered higher-income ($75,000 or more) households. This map illustrates the higher income data in table 8 on page 32 and can be compared to Map 5 on the previous page.

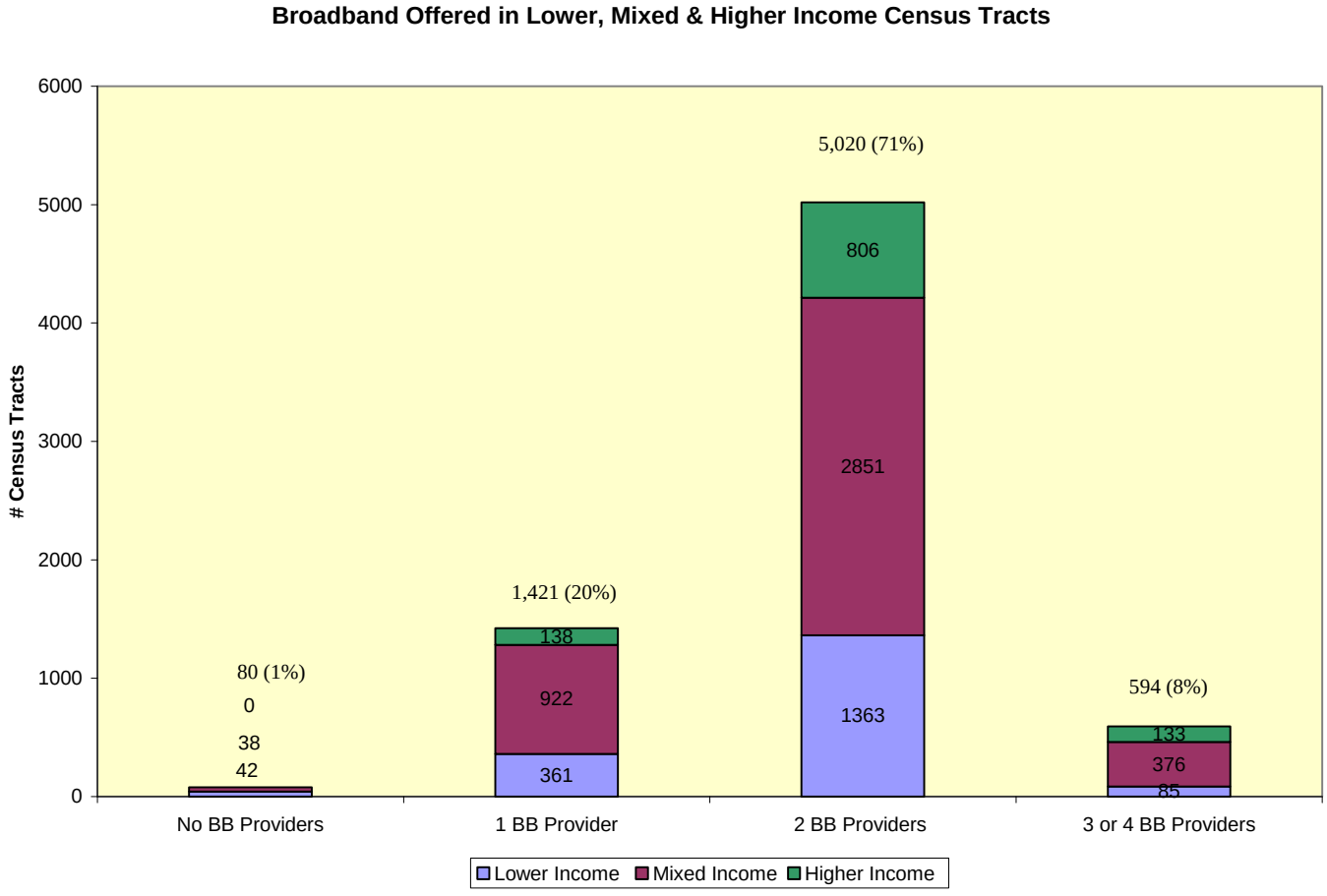
Map 6 – Higher Income Census Tracts Broadband Penetration



Graph 9 below takes the broadband data and segments it by lower, mixed and higher income census tracts. Another view of this broadband data is also displayed in Graph 8 on page 27 in the video section. In the state of California, there are 7,115 census tracts. 25% (1,779) of those census tracts are predominantly lower income, while 16% (1,138) are predominantly higher income and 59% (4,198) are predominantly mixed income. The following findings describe key facts illustrated in Graph 9 below:

- The majority of low and high income census tracts are served by two broadband providers.
- 5% of low income census tracts are served by 3 or 4 broadband service providers, while 12% of high income census tracts are served by 3 or 4 broadband service providers.
- 20% of low income census tracts are served by 1 broadband service provider, while 13% of high income census tracts are served by 1 broadband service provider.

Graph 9



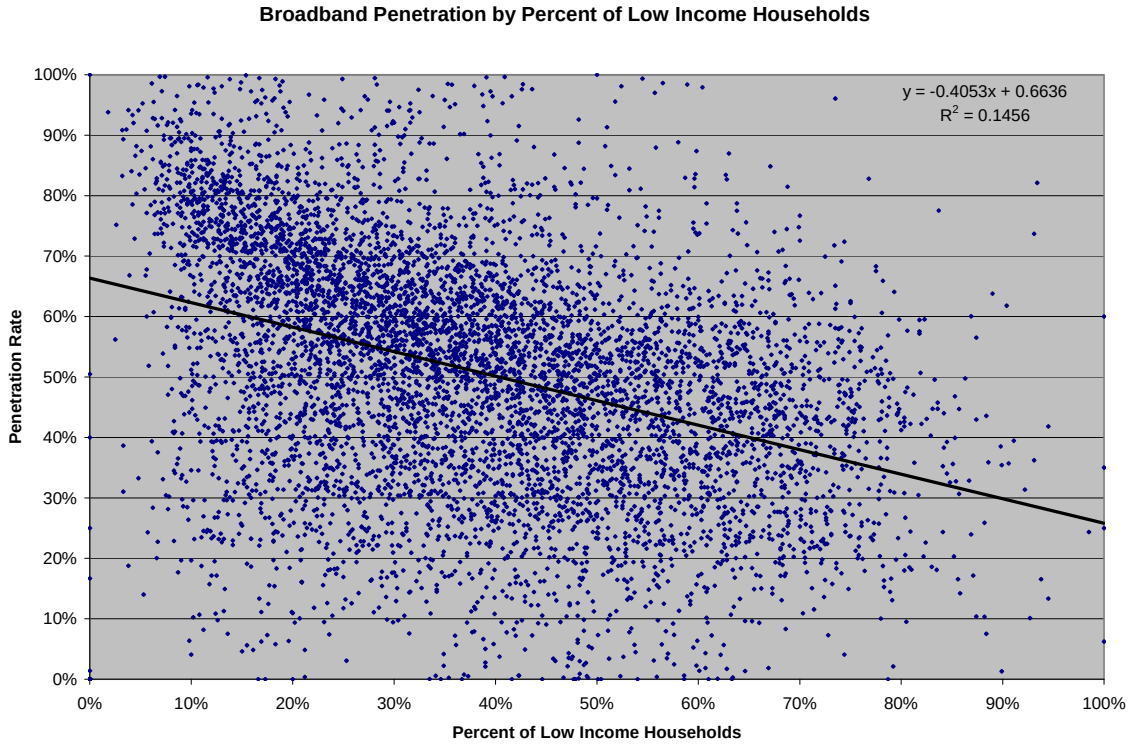
G. Broadband Penetration and Income Analyzed Using Regression Analysis

Graph 10 below is a scatter plot and regression line that illustrates the results of a single-variable linear regression analysis using the independent variable "percent of low income households" (x-axis) and the dependent variable "broadband penetration rate" (y-axis) from a data set consisting of 6,668 census tracts in California.

The results from this single-variable linear regression analysis indicates that this regression equation (which is driven by the percentage of low income households), is capable of explaining only 14.5% of the total variance observed in broadband penetration. This very low R^2 statistic, combined with the regression line and scatter plot, all indicate that based on the data included in this regression analysis, statistically, the variable "percentage of low income households" **alone**, cannot be used to **fully explain** the variability of broadband penetration. For a more detailed description of the methodology used in this regression analysis, see page 48 in Appendix A.

When income is combined with other demographic variables such as age, education, language spoken at home, ethnicity, or population density, in a multiple regression analysis, we may be able to better explain the variability in broadband penetration in California. We hope to be able to explore these and other factors in the future by performing additional analyses to better understand how income combined with other factors explain the variability of broadband penetration in California.

Graph 10 – Broadband Penetration Regression Analysis Scatter Plot and Regression Equation



Appendix A:
Overview of The Digital Infrastructure and Video Competition Act

A. 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).[55] DIVCA's overriding goal, is to promote rapid, widespread competition in the broadband and video markets and accelerate the deployment of additional infrastructure in California.

DIVCA, which the CPUC implements, addresses not only video franchising, but also 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 entry.[56] To date, 17 states have transferred video franchising authority to the state. These states include California, Florida, Georgia, Iowa, Illinois, Indiana, Kansas, Michigan, Missouri, New Jersey, North Carolina, Nevada, Ohio, South Carolina, Texas, Virginia and Louisiana.[57]

Prior to DIVCA, cable television franchises were issued by local entities, primarily cities, counties and special districts. This required cable operators to negotiate separate franchise agreements with each locality where they wished to provide video service. California is made up of 58 counties encompassing over 6,000 cities and towns.[58] These local franchise agreements required that service providers comply with specified customer service and performance standards and other requirements that often varied by locality.

For new entrants seeking to provide video and broadband services on a widespread basis, the process of negotiating franchise agreements with each individual local entity would inevitably have been a long process, delaying the widespread market entry of additional competitive service providers for 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 video franchises would be issued by the state. 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 DIVCA through a series of three formal decisions and several resolutions. See pages 54 – 57 in Appendix B for descriptions of these decisions.

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[55] A.B. 2987, 2005-2006 Session, (Ca. 2006); Cal. Pub. Util. Code, Division 2.5, The Digital Infrastructure and Video Competition Act of 2006. ("DIVCA").

[56] *Passage of Cal. Video Bill Expands Franchise Reform to 1/3 of U.S. Population*, Communications Daily, September 5, 2006.

[57] Miller & Van Eaton, PLLC., State Cable Franchise Laws at a Glance, available at http://www.millervaneaton.com/00130020.pdf. (Last visited June 16, 2008).

[58] California Gazetteer: City Profiles, Physical and Cultural Features, http://california.hometownlocator. com/cities/ (Last visited June 16, 2008); California State Association of Counties, http://www.csac. counties.org/ (Last visited June 16, 2008).

Following the adoption of these new rules, the CPUC began issuing ten-year state video franchises. The state video franchise application process is ministerial. A state video franchise will be issued, so long as an applicant is eligible for a state franchise, the application is complete, 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 certain 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 the data described above and to report the aggregated totals to the Governor and the Legislature annually.

This First Annual Report to the Governor and the Legislature (Report) will review each task assigned to the CPUC under DIVCA and explain what the CPUC has done to complete these tasks since DIVCA's enactment. This Report will describe, in an aggregated fashion, video and broadband availability and subscribership data submitted to the CPUC by video franchise holders. Further, this Report will present analysis of the submitted data to show the status of video competition and broadband infrastructure deployment in the state.

While DIVCA provides that the CPUC is the sole franchising authority for issuing state video franchises,[59] the statute also provides that video service providers are not public utilities and prohibits the Commission from imposing any requirements on state franchise holders that are not expressly provided by DIVCA.[60]

DIVCA defined the jurisdiction of the Commission quite narrowly. The Commission is charged with the following tasks:[61]

- Issuing and renewing 10-year video franchises.
- Gathering data from franchise holders on their deployment of video and broadband services on an annual basis.
- Aggregating data submitted by holders for use in an Annual Report from the CPUC to the Governor and Legislature.
- Monitoring Franchise holders' deployment of infrastructure and services to protect against discrimination and enforce build-out requirements contained within the statute.
- Protecting against telco-video cross subsidization.
- Collecting fees from state franchise holders to equal the cost of carrying out the CPUC's duties under DIVCA.

[59] P.U. Code § 5890.
[60] Id. at §5840 (a).
[61] Phase I Decision, at p. 7.

DIVCA guided the CPUC in its job of implementing the act by setting forth the following goals:[62]

- Create a fair and level playing field for all market competitors that does not disadvantage or advantage one service provider or technology over another.
- Promote widespread access to the most technologically advanced cable and video services to all California communities in a nondiscriminatory manner regardless of socioeconomic status.
- Protect local government revenues and their control of public rights-of-way.
- Require market participants to comply with all applicable consumer protection laws.
- Complement efforts to increase investment in broadband infrastructure and close the digital divide.
- Continue access to and maintenance of the public, education, and government (PEG) channels.
- Maintain all existing authority of the California Public Utilities Commission as established in state and federal statutes.

[62] *Id*. at §5840 (a).

B. Enforcement of Video Build-out Requirements: Protecting Against Discrimination and Closing the Digital Divide

DIVCA requires the CPUC to monitor holders' deployment of infrastructure and services to protect against discrimination and enforce build-out requirements contained in the statute.[63] Also, as discussed above, DIVCA mandates that the CPUC should promote efforts to increase investment in broadband infrastructure and close the digital divide.

In order to carry out these goals, the Commission applies a number of nondiscrimination and build-out tests to protect against discrimination and enforce DIVCA's build-out requirements. For example, the build-out requirements for holders with over one million telephone customers are set out in Table 10 below.

Table 9

	More than ONE million telephone customers in CA	
	Predominantly fiber optic to premises	**Not predominantly fiber optic to premises**
Within 2 years	25% of customer households in telephone service area must have access to video service	
Within 3 years		35% of households in telephone service area must have access to video service

As can be seen in this table, the trigger points for this build-out requirement do not occur until the end of the second year of operation (in the case of holders predominantly deploying fiber optic to the premises) or the end of the third year (in the case of holders not predominantly deploying fiber optic to the premises.)[64] Similarly, the other benchmarks that holders must reach with regard to building out facilities and doing so in a nondiscriminatory manner are only to be applied in future years.

To date, no holders have held a State Video Franchise for the requisite amount of time to be subject to review of their build-out requirements. As such, the level at which holders are building infrastructure and their methods for funding that build-out have not yet been subject to review under these requirements. Staff will assess rates and costs to assure that cross-subsidization is not occurring when the matter is ripe for review.

[63] Phase I Decision, at 7; *See* P.U. Code §5890.
[64] *Id*. at (e)(1) and (2).

C. Funding CPUC's DIVCA Related Activities

DIVCA directs the Commission to collect fees from state franchise holders to equal the cost of carrying out the Commission's duties under the Act. The Commission's authorized DIVCA-related budget for the fiscal year 2007-2008 was $950,000. On March 13, 2008, the Commission adopted Resolution T-17137 adopting a fee of $.047 per year for each household in a Holder's state-issued video service area.[65] The aggregate fee resulting from this rate was calculated at $947, 829. The list of state franchise holders and their assessed fees is shown in Table 11 below.

Table 10 - User fees for FY 2007-08, under PUC Resolution T-17137, March 13, 2008

Video Franchise Holders with Franchises Effective on or before November 30, 2007	**Franchise Issue Date**	**Franchise Effective Date**	**No.of Households in Video Service Area**	**User Fee Assessment**
AT & T California	March 30, 2007	March 30, 2007	*9,439,085*	*$443,637.00*
Verizon California Initial	March 8, 2007	March 8, 2007	*1,070,984*	*$50,336.25*
Cox Communications Initial	April 27, 2007	April 27, 2007	*9,747*	*$458.11*
Wave Broadband	September 7, 2007	September 7, 2007	*25,053*	*$1,177.49*
Subtotal			10,544,869	$495,608.84
Video Franchise Holders with Franchises Effective after November 30, 2007	**Franchise Issue Date**	**Franchise Effective Date**	**No.of Households in Video Service Area**	**User Fee Assessment**
Cableview Communications	December 6, 2007	January 2, 2008	3,832	$180.10
Charter Communications Subtotal			*1,104,494*	*$51,911.22*
Charter-American Cable Entertainment Company	December 13, 2007	January 2, 2008	63,809	$2,999.02
Charter-Charter Communications Entertainment II	December 13, 2007	January 2, 2008	162,960	$7,659.12
Charter-Charter Communications Properties II LLC	December 13, 2007	January 2, 2008	22,128	$1,040.02
Charter-Falcon Cablevision	December 13, 2007	January 2, 2008	148,912	$6,998.86
Charter-Falcon Cable Systems Company II	December 13, 2007	January 2, 2008	320,341	$15,056.03
Charter-Falcon Telecable	December 13, 2007	January 2, 2008	7,987	$375.39
Charter-Long Beach	December 13, 2007	January 2, 2008	159,680	$7,504.96
Charter-Marcus Cable	December 13, 2007	January 2, 2008	218,677	$10,277.82
Northland Cable Television	December 14, 2007	January 2, 2008	10,012	$470.56
Time Warner Cable Subtotal			*5,908,824*	*$277,714.73*
TWC -Time Warner NY Cable LLC	November 15, 2007	January 2, 2008	813,038	$38,212.79
TWC -Time Warner Cable LLC	December 19, 2007	January 2, 2008	591,427	$27,797.07
TWC-CAC Exchange 1	December 19, 2007	January 2, 2008	2,757,951	$129,623.70
TWC-TimeWarnerEntertainment Advance/Newhouse Partnership	December 19, 2007	January 2, 2008	243,456	$11,442.43
TWC-Time Warner Entertainment Company	December 19, 2007	January 2, 2008	22,756	$1,069.53
TWC-C Native Exchange 1	December 20, 2007	January 2, 2008	1,480,196	$69,569.21
Verizon California Amended	December 19, 2007	December 19, 2007	904,580	$42,515.26
Cox Communications Amended	January 2, 2008	January 2, 2008	83,902	$3,943.39
Comcast	January 2, 2008	January 2, 2008	1,606,072	$75,485.38
Subtotal			9,621,716	$452,220.65
Total			20,166,585	$947,829.50

[65] All franchise applications, service maps, and franchises are available at http://docs.cpuc.ca.gov/PUBLISHED/FINAL_RESOLUTION/80254.htm

D. Protecting Against Telco-Video Cross Subsidization

Finally, DIVCA directs the Commission to assure that a holder that also provides stand-alone, residential, primary line basic telephone service shall not increase its rate for such service to finance the cost of deploying a network to provide video service.[66] Both DIVCA[67] and the Commission's Uniform Regulatory Framework (URF) decision[68] prohibited AT&T and Verizon from raising these rates at all, prior to January 1, 2009, except to reflect increases in inflation.

To date, these safeguards have served to protect against cross-subsidization.

[66] P.U. Code § 5940

[67] *Id*. at § 5950

[68] *Order Instituting Rulemaking on the Commission's Own Motion to Assess and Revise the Regulation of Telecommunications Utilities*, Decision 06-08-030, *Opinion* (Cal. P.U.C. August 24, 2006).

Appendix B: Methodology

A. Data & Method

Annual Data

DIVCA requires that applicants submit annual data on their territories, availability of service, and subscribership. First-year data were to be as of December 31, 2007 for new competitive entrants to the cable market, and for incumbent cable providers seeking a new state franchise in 2008. However, more current data were accepted, if available. These data were used throughout this report and will provide a base from which to compare and evaluate providers' year-to-year performance under DIVCA in the future.

All state video franchise holders who had state franchises issued before April 1, 2008 submitted annual data pursuant to Sec. 5960. Each parent company 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 local affiliates that operate in California and provide video or broadband service in the state. The ten parent companies that filed annual reports are AT&T California Inc., Baldwin County Internet/DSSI Services, LLC, Charter Communications, Inc., Comcast Cable Communications Holdings, Inc., Cox Enterprises Inc., Great Western Alliance Group, Inc., Northland Telecommunications Corporation, Time Warner Inc., Verizon Communications Inc., and WaveDivision Holdings, L.P. All state video franchise holders reported, by census tract as of January 1, 2008, the following:

1. Broadband service
    a. The number of households to which the holder makes broadband available. 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 to which the holder makes available
    c. Whether the broadband provided by the holder utilizes wireline-based facilities or another technology
2. Video service
    a. If the holder is a telephone corporation:
        i. The number of households in the holder's telephone service area
        ii. The number of households in the holder's telephone service area that are offered video service by the holder
    b. If the holder is not a telephone corporation:
        i. The number of households in the holder's video service area
        ii. The number of households in the holder's video service area that are offered video service by the holder
    c. The number of low-income households in the holder's video service area
    d. The number of low-income households in the holder's video service area to which video service in made available by the holder

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.

Method

We used a Geographic Information Software System (GIS) to aggregate and analyze data by census tract, and Excel spreadsheets to aggregate and analyze raw totals in the annual data. The findings are illustrated in maps, graphs, and charts throughout the report.

Broadband speed tier data were not available this year. It is anticipated that speed data will be collected by the CPUC in 2009, in accordance with the FCC's new *Form 477 Reporting Requirements* www.fcc.gov/broadband/data.html which changed the way the service providers are to report broadband services. The change takes effect March 1, 2009. For a statewide analysis of broadband speed data, please see the California Broadband Task Force's January 2008 report *The State of Connectivity: Building Innovation Through Broadband* www.calink.ca.gov/taskForce report.

Because annual data was reported to us by census tract rather than by address, staff was limited in its ability to analyze and depict the availability of broadband and video service. Census tracts are the largest census geography before the county level. There are 7115 census tracts in California, ranging in size from 0.021 square miles to 8007 square miles, averaging 22 square miles. The number of households in each tract ranges from 0 to 8530, averaging 1628. As a result, using census tracts as the minimum mapping unit, is far too large to map with accuracy, or make well informed decisions about, the distribution of broadband and video availability in certain locations.

Nor was it possible to accurately estimate an absolute number of households offered broadband or video service by census tract. Individual franchise holders reported the number of households to which they offered service by census tract, and for census tracts where they were the only provider, this figure could be used as an accurate estimate of the total number of households offered service in that tract. But for census tracts in which there were multiple providers, it was impossible to know whether the two (or more) services were offered to different households, or to the same households. Adding the "households offered" figures from two or more providers could result in double or triple counting and impossible results, such availability and subscription rates over 100%. This would have added an additional level of uncertainty.

Consequently, if one household in a census tract was offered broadband or video service by any franchise holder, then it was assumed that all households within it were offered the service, and the tract was mapped as 'served.' This naturally resulted 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.

On the other hand, the population density within California varies widely (as evidenced by the extreme variation in its census geography sizes). This means that the total number of census

tracts comprising California's rural heartland (where most of the error in the results may lie) are relatively few, and that the total number of households this represents are also relatively few.

Mapping where competition has occurred (one of the core concerns of DIVCA) is also complicated by this lack of granularity. Rather than being able to show where different franchise holders are providing service in a census tract, we were forced to classify an entire census tract as being either served or unserved by each provider, then simply add up the number of providers for each tract, regardless of where they are actually offering service within that tract. In this way, the current level of broadband and video competition was also overstated.

Adoption or subscription to broadband and video services was analyzed using penetration rate, or the ratio of households that purchase broadband or video service to the total number of households in the census tract. The holders used a variety of consultants to derive census numbers for 2007, since the Census Bureau does not report population and household counts by census tract for inter-census years. Accordingly, the census tract values reported by the holders vary.

As a result, staff calculated its own estimates of population and household counts for each census tract. The 2007 figures used by staff in this report are estimates based on the assumptions that 1) the average number of persons per household in 2007 is the same as it was in 2000, and 2) the state's population growth rate between 2000 and 2007 did not vary between census tracts. Therefore, this method is less accurate for census tracts that experienced varied population growth or decline from 2000 to 2007. It also explains why some census tracts had penetration rate over 100%. These tracts were less dense in 2000 and most likely experienced a high rate of population growth over the past seven years. For the upcoming inter-census years, staff is exploring potential data sources for more accurate projections or estimates of census data.

Additional analyses of households subscribing to services verses households that have services available would be interesting. However, the same issue exists with estimating the number of households that have services available, as mentioned above.

B. Single-Variable Linear Regression Methodology and Analyses

The results of the video penetration regression analysis are described on page 17. The results of the broadband penetration regression analysis are described on page 36.

To better understand the variation in broadband and video penetration rates throughout the state, we conducted two separate single-variable linear regression analyses. To execute these two linear regression analyses, we gathered data about the percentage of lower income households, and broadband and video penetration rates from census tracts in the state of California. We did not analyze any other variables at this time. However, in 2009 we hope to use other analytical techniques such as multiple regression analysis to analyze other variables in addition to income to see how they correlate with broadband and video penetration.

We then calculated the penetration rate for each of the 7,035 census tracts served by broadband, and 6,784 census tracts served by video. Then we removed from the sample those tracts with anomalous data, such as no households, or a penetration rate greater than 100%. The resulting sample size was 6,668 census tracts for broadband, and 6,652 census tracts for video.[69] The percentage of low-income households for each census tract was obtained from the 2000 U.S. Census Bureau, and was assumed not to have changed by 2007.

Next, we performed the regression analyses using a statistical software program that plotted each point on a scatter plot, and generated a regression line for both broadband and video penetration in the state. (See scatter plot graph 6 on page 17 and graph 10 on page 36).

The key question that the regression analyses seek to explain is: how well does the independent variable (percent of low-income households) explain the variation in the values of the dependent variables (broadband or video penetration rates)? The results are expressed as a regression equation, which includes an R^2 value ("coefficient of determination"). The greater the coefficient of determination, the stronger the explanatory relationship.

The coefficient of determination can vary from 0 to 1.0 (0 to 100%). A coefficient greater than 0.5 (50%) indicates that the independent variable alone is a good determinant of the variation in the values of the dependent variable. A coefficient from 0.25 to 0.50 (25 to 50%) indicates that the independent variable alone is a moderate determinant of the variation in the values of the dependent variable.[70]

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[69] A total of 7035 census tracts had broadband penetration data for analysis. 366 census tracts had penetration rates over 100%. We observed that these 366 census tracts spanned all income levels. So we concluded that removing them would not change the correlation between penetration rate and income. Therefore, these 366 census tracts were not included in the scatter plot. Percent of low-income households is based on data from Census 2000; penetration rate is based on subscribership data provided by state franchise holders and projection of households for 2007 by staff. See the methodology section in Appendix A for details.

[70] Boyd, Westfall, Stasch, "Data Analysis II: Explaining observed Differences – Correlation, and Regression," Chapter 16, Marketing Research Text and Cases, Richard D. Irwin, 1985.

For broadband penetration (Graph 10 on page 36), the coefficient of determination, R^2,is 0.145. This means that the percentage of low-income households alone can explain only 14.5% of the variation in the broadband penetration rate.[71] For video penetration (Graph 6 on page 17), the coefficient of determination, R^2, is 0.015. This means that the percentage of low-income households alone can explain only 1.5% of the variation in video penetration rates.

While DIVCA data reveals a trend toward lower broadband and video penetration rates in lower income census tracts, the regression analyses we conducted indicate that statistically, the variable "percentage of low income households" **alone**, cannot be used to **fully explain** the variation of broadband or video penetration rates in the state. For a description of the results of these two regression analyses, see pages 17 and 36.

There may be other factors besides income that explain the level of broadband and video penetration in the state of California such as: age, education, language spoken at home, ethnicity, or population density. We hope to be able to explore these and other factors in the future by performing additional analyses to better understand how these and other factors relate to broadband and video penetration.

[71] The P-value of the Percent Low Income Household coefficient, or r is <0.0001. P-value represents the significance of the coefficients, or how much confidence one has that the coefficients are accurate. A lower p-value means higher significance; generally 0.05 and lower is seen as an acceptable p-value. Based on these P-values, we are 95% certain that the coefficients are accurate. However, it does not explain the variation in video or broadband penetration rates among low income households.

C. Census Projections

Basic Data for Comparison

All of the annual data (described above in this appendix) provided to the Commission under DIVCA for the purpose of this report is as of December 31, 2007. Therefore, obtaining an independent estimate of the total number of households in each census tract for 2007, as a base from which to estimate the total number of households offered video and broadband service and the broadband penetration rate, was the key to this analysis (the U.S. Census Bureau does not provide inter-census estimates of households). These rates were derived by the following simple ratios using U.S. Census Bureau data:

$$\frac{\text{33,871,648 (2000 Population)}}{\text{11,582,667 (2000 households)}} = \text{2.924339274 (average number of persons per household, 2000)}$$

$$\frac{\text{36,553,215 (2007 Pop estimate)}}{\text{33,871,648 (2000 Population)}} = \text{1.079168 (estimated population growth rate, 2000-2007)}$$

$$\frac{\text{36,553,215 (2007 Pop estimate)}}{\text{2.924339274 (pers/HH - 2000)}} = \text{12,499,644 (2007 household estimate)}$$

To check the above calculations, we can compare the 2000 household total to our 2007 household estimate. This gives a growth rate for households identical to that for population:

$$\frac{\text{12,499,644 (2007 HH estimate)}}{\text{11,582,667 (2000 households)}} = \text{1.079168 (estimated household growth rate, 2000-2007)}$$

D. Derivation of State Video Franchise Territory and Broadband Data

Two of the main metrics for measuring the implementation of the DIVCA statute are:

The percentage of households that are in a state video franchise territory.

The percentage of households offered video service pursuant to a state franchise.

These relationships can be expressed as:

1)

$$\frac{\text{HH in a state video franchise territorv}}{\text{HH in state}} = \%\text{ of HH in a state video franchise territory}$$

2)

$$\frac{\text{HH offered video service pursuant to a state franchise}}{\text{HH in state}} = \%\text{ of HH in state offered video service pursuant to a state franchise}$$

In order to arrive at this estimate, a five step process was used:

1) A Geographic Information System (GIS) was used to define the state franchised territories. This information was attained from each state video franchisee through the DIVCA application process.

2) Using GIS, overlay and select the 2000 census block nodes that intersect (fall within) any state video franchise boundary (defined by either a collection of census block groups or a GIS digital boundary file)

3) Sum the household data from the GIS attribute table (Note: this sum was checked against the similar household sums from census block group and census tract GIS datasets, and was found to be identical).

4) Multiply this sum by the growth rate derived above to arrive at the 2007 estimates

5) Compare this 2007 estimate to the total household estimate for the entire state to arrive at a percentage within franchise territory.

Plugging in the numbers, we get:

10,676,760 (2000 HH in state video franchise territory)
x 1.079168 (estimated growth rate, 2000-2007)
11,522,018 (estimated 2007 HH in state video franchise territory)

$$\frac{\text{11,522,018 (estimated 2007 HH in state video franchise territory)}}{\text{12,499,644 (estimated 2007 HH in state)}} = \textit{92.18\% of state HH in state video franchise territory}$$

This figure, 92.2%, should be used as baseline from which any future expansion of state video franchise territory under DIVCA can be measured. Similar calculations have been made for population, using the method above. They show that 93.1% of the people in the state reside within a state video franchise territory.

The same method was used to calculate the percent of households in the state offered broadband service (99.3% - see *Broadband Findings* section, page 19), and the percentage of households in the state offered video service pursuant to a state franchise (62% - see *Video Findings* section). It should be noted that these figures are independently derived estimates, not based on data submitted by the providers through DIVCA. In order to calculate these estimates, therefore, it must be assumed that every household within a census tract where broadband and video service is available is offered service.

For the second metric, percentage of households in the state offered video service pursuant to a state franchise, we get:

7,190,569 (2000 HH offered video service pursuant to a state franchise)
x 1.079168 (estimated growth rate, 2000-2007)
7,759,832 (estimated 2007 HH offered video service pursuant to a state franchise)

$$\frac{\text{7,759,832 (estimated 2007 HH offered video service by state franchised entity)}}{\text{12,499,644 (estimated 2007 HH in state)}} = \textit{62.08\% of HH in state offered video service pursuant to a state franchise}$$

These figures, 92.2% and 62.1%, should be used as baseline figures against which any future evaluation of the success of the DIVCA statute should be made. Similar calculations have been made for population. They show that 93.1% of the people in the state reside within a state video franchise territory, and that 61.2% of the people in the state have been offered video service by a state video franchised entity.

Appendix C Implementing DIVCA: Decisions and Resolutions

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

Phase I - Adopting Rules to Implement the DIVCA

On March 1, 2007, following the receipt of comments and reply comments on the OIR and subsequent Proposed Decision, the Commission issued Decision 07-03-014 establishing rules for implementing DIVCA and adopting General Order 169. ("Rules") These rules set forth application requirements, Commission 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. [72]

Phase II - Adopting Non-Discriminatory Build-out Requirements for Small LECs

On May 7, 2007 the assigned Commissioner issued a Scoping Ruling setting out issues to be addressed in Phase II of the Rulemaking. On October 4, 2007, the Commission issued a Phase II decision adopting non-discriminatory build-out requirements for smaller companies and additional reporting requirements.[73] In Phase II, the Commission 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 Commission determined that, in their annual reports to the Commission, holders must provide video subscriber data, finding that such data are necessary in order for the Commission to determine whether state franchise holders are adhering to the requirements of DIVCA.[74]

Phase III - Adopting New Rules to Administer DIVCA

On March 27, 2008, the Commission issued a Scoping Ruling setting out issues to be addressed in the third, and final, phase of the DIVCA Rulemaking. On July 10, 2008, the Commission issued the Phase III decision amending the bonding requirements under DIVCA, adopting new rules regarding deadline extensions for build out requirements, and additional reporting requirements.

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[72] On October 5, 2006, the Commission issued an Opinion Modifying Decision 07-03-014, in order to amend the form of the franchise certificate adopted in Phase I to conform to statutory requirements (available at http://docs.cpuc.ca.gov/published/FINAL_DECISION/65225.htm).

[73] *Order Instituting Rulemaking to Consider the Adoption of a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006*, Decision 07-10-013, *Opinion Resolving Issues in Phase II* (Cal. P.U.C. October 4, 2007).

[74] 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.

Under DIVCA, holders of a state video franchise are subject to statutory requirements regarding, among other things, the extent and pace at which state franchise holders must build out facilities and offer video services to households. The statute provides that state franchise holders may apply to the Commission 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 GO 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 Commission broadband speed "tiers" that state video franchise holders make available. Numerous commenters urged the Commission to wait until the FCC released its order requiring broadband reporting by census tract, broken down 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.[75] The CPUC issued this decision to reflect the FCC's speed tier reporting requirements. Holders are now required to report the same broadband speed information that it reports to the FCC to the CPUC.

Resolutions

After gaining experience in processing applications, Commission 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 Commission. In addition, DIVCA provides for video franchise holders to pay fees to the Commission calculated to equal the amount authorized in the Commission 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.

[75] Form 477 Order, fn 21, *Supra*.

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.[76] 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 and Commission staff then notify the affected local entities.[77]

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.[78] 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.

[76] P.U. Code §5840 (h).
[77] See P.U. Code §5840 (n).
[78] DIVCA required the CPUC to begin accepting applications no later than April 1, 2007; P.U. Code §5847(g)

Appendix D: Video Franchises Granted through March 31, 2008

Video Franchises Granted through March 31, 2008

Franchise No.	Application Received	Original Franchise	Amendment 1	Ultimate Parent Company	Franchisee	d/b/a
1	2-Mar-07	8-Mar-07	19-Dec-07	Verizon Communications, Inc.	Verizon California, Inc.	Verizon California, Inc.
2	7-Mar-07	30-Mar-07		AT&T Inc.	Pacific Ball Telephone Company d/b/a SBC Pacific Bell Telephone Company d/b/a AT&T California	AT&T California
3	11-Apr-07	27-Apr-07	2-Jan-08	Cox Enterprises, Inc.	CoxCom Inc.	Cox Communications
4	9-Aug-07	7-Sep-07		Sandler Capital Management as General Partner of Sandler Capital Partners V,L.P., SCP V FTE Wave-Division Holdings, L.P.and SCP V Germany WaveDivision Holdings, L.P.	WaveDivision VI, LLC	Wave Broadband
5	24-Oct-07	2-Jan-08		Time Warner Inc.	Time Warner NY Cable LLC	Time Warner Cable
6	7-Nov-07	2-Jan-08		Great Western Alliance Group, Inc	Great Western Alliance Group, Inc	Cableview Communications
7	16-Nov-07	2-Jan-08		Charter Communications, Inc.	American Cable Entertainment Company, LLC	Charter Communications
8	16-Nov-07	2-Jan-08		Charter Communications, Inc.	Charter Communications Entertainment II, LLC	Charter Communications
9	16-Nov-07	2-Jan-08		Charter Communications, Inc.	Charter Communications Properties II, LLC	Charter Communications
10	16-Nov-07	2-Jan-08	25-Feb-08	Charter Communications, Inc.	Falcon Cable Systems Company II, LP	Charter Communications
11	16-Nov-07	2-Jan-08	25-Feb-08	Charter Communications, Inc.	Falcon Cablevision	Charter Communications
12	16-Nov-07	2-Jan-08		Charter Communications, Inc.	Falcon Telecable	Charter Communications

(Continued) Video Franchises Granted through March 31, 2008

Franchise No.	Application Received	Original Franchise	Amendment 1	Ultimate Parent Company	Franchisee	d/b/a
13	16-Nov-07	2-Jan-08		Charter Communications, Inc.	Long Beach, LLC	Charter Communications
14	16-Nov-07	2-Jan-08		Charter Communications, Inc.	Marcus Cable Associates, LLC	Charter Communications
15	19-Nov-07	2-Jan-08		Northland Telecommunications Corporation	Northland Cable Television, Inc.	Northland Cable Television
16	19-Nov-07	2-Jan-08	29-Feb-08	Time Warner Inc.	CAC Exchange I, LLC d/b/a Time Warner Cable	Time Warner Cable
17	19-Nov-07	2-Jan-08		Time Warner Inc.	C-Native Exchange I, LLC d/b/a Time Warner Cable	Time Warner Cable
18	19-Nov-07	2-Jan-08		Time Warner Inc.	Time Warner Cable LLC	Time Warner Cable
19	30-Jan-08	2-Jan-08		Time Warner Inc.	Time Warner Entertainment - Advance / Newhouse Partnership	Time Warner Cable
20	14-Mar-08	2-Jan-08		Time Warner Inc.	Time Warner Entertainment Company, L.P.	Time Warner Cable
21	2-Jan-08	2-Jan-08	15-Mar-08	Comcast Cable Communications Holdings, Inc.	Comcast Cable Communications Management, LLC	Comcast
22	3-Mar-08	3-Mar-08		Baldwin County Internet/ DSSI Service, LLC	Baldwin County Internet/ DSSI Service, LLC	Baldwin County Internet/ DSSI Service, LLC