



SAN FRANCISCO LOCAL AGENCY FORMATION COMMISSION • THE CITY AND COUNTY OF SAN FRANCISCO

• 1 DR. CARLTON B. GOODLETT PL. • SAN FRANCISCO, CA 94012

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# **STUDY ON THE UNDERGROUNDING OF UTILITY WIRES AND EXPANSION OF FIBER NETWORK IN SAN FRANCISCO**

## **FINAL REPORT**

JASON FRIED, EXECUTIVE OFFICER

AMY BRENNEN, POLICY RESEARCH INTERN

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## I. INTRODUCTION

The objective of this report is to analyze the 1996 Utility Undergrounding Program (1996- 2006), with a particular focus on options for the City and County of San Francisco (CCSF) to continue undergrounding utility wires and methods by which the City's fiber network can be expanded. This study provides a summary of findings on five major areas:

1. The state of undergrounding in the City
2. The 1996 Utility Undergrounding Program
3. Options for viable, equitable undergrounding.
4. Possible ways to reduce overall costs for undergrounding
5. Potential funding sources.

This report stems from the interest in reviving utility undergrounding and the expansion of the city's fiber network in San Francisco, as well as to learn from past challenges. In light of this discussion, San Francisco's Local Agency Formation Commission (LAFCo) has undertaken a Special Study of undergrounding utility wires and expansion of the city's fiber network per the request of Supervisor Katy Tang. This study, undertaken pursuant to Government Code §56378 and LAFCo Policies on Special Studies §2.6, §2.62, §2.63, and §2.64, was conducted with the intent of providing an objective analysis of these programs, policies, and procedures - and as such relies primarily upon data provided by City and County agencies and departments, as well as other outside agencies and organizations.

To best provide information for the purpose of this study, LAFCo examined previous reports from the San Francisco Budget and Legislative Analyst's Office and the Utility Undergrounding Task Force (UUTF), in addition to documents produced by various CCSF departments and agencies around best practices of other cities - both in California and nationwide.

While throughout the report third-party insights and suggestions have been included, none should be viewed as an endorsement or rejection by LAFCo but rather staff making sure that all possible suggestions are included. The "Next Steps" section is where LAFCo staff offered its opinion on where CCSF may want to take further action.



## II. EXECUTIVE SUMMARY

This report captures in one place the ongoing work that has been conducted by CCSF for both the undergrounding of utility wires, and the expansion of the city’s fiber network. While the city can combine in some places the work of undergrounding of utility wires and the expansion of the fiber network concurrently, both systems have divergent issues that therefore require separate review. For the undergrounding of wires, the city’s various reports have captured the main ways by which this work is funded. While LAFCo staff were unable to find any new funding sources, there are some suggestions around places where costs can be shared. This, however, would require CCSF to perform more in-depth analysis on what costs would look like and how those costs gets charged. As well, LAFCo staff did find a couple of areas which CCSF may wish to look at for possible small-amount funding sources. Given that these funds would not be sizeable relative to the projects overall costs; they could be used to cover costs such as street light replacement.

The City has recently begun a more thorough review of what is involved in expanding the fiber network system. In February 2015, the report’s first part was released – with the second part slated for release in summer 2015. This report consequently addresses the work that has been performed to date in San Francisco, as well as examples of other cities’ network expansions that could serve as insightful models. Since the original drafting of this report, additional work has been completed by the Budget and Legislative Analyst. This work will continue in conjunction with work performed by other agencies, and should conclude shortly after the issuance of this report. While the majority of this report reviews all previous reports done to date, the “Next Steps” section contains several LAFCo recommendations that CCSF may wish to consider so as to better understand the undergrounding costs and possible funding sources.



### III. UNDERGROUNDING: THE CURRENT SITUATION

#### UTILITY WIRES

San Francisco has a total of 990 miles of utility wires, with 520 miles currently undergrounded and 470 miles remaining aboveground – of which there are 400 miles on the street side and 70 miles in rear yards.<sup>1</sup> From 1996 to 2006 the 1996 Utility Undergrounding Program placed 45.8 miles of utility wire underground in San Francisco. However, funding and efficiency challenges emerged that must now be addressed if the project is to be revived.

The 1996 Utility Undergrounding Program was based on an estimated cost of \$1 million per mile; yet actual costs of undergrounding averaged \$3.8 million per mile. A recent Budget and Legislative Analyst report predicts the real costs of planning and construction by Pacific Gas and Electric (PG&E) will be between \$2.8 - \$5.9 million per mile.<sup>2</sup>

The 1996 Utility Undergrounding Program had unanticipated costs, which when combined with insufficient program oversight and lack of a comprehensive master plan, considerably slowed the pace of construction. This subsequently led San Francisco to advance \$53.7 million of its future Rule 20A funds. Rule 20A funds is a mechanism the CPUC established through which PG&E uses a portion of customer-based revenue to fund the undergrounding of utility wires throughout its service territory. Details of Rule 20 funds are discussed in greater depth later in this report. In 2011, PG&E revised 20A funding formulas, which resulted in the halving of annual undergrounding allocations from approximately \$6 million to \$3.1 million.<sup>3</sup> Should this number remain the same it, will take roughly 17 years before the city can repay this advance and resume using 20A funds for undergrounding.<sup>4</sup>

#### FIBER NETWORK

In February 2015, the Connectivity Plan was released by CCSF. This plan was assembled with the collaboration of The Committee on Information Technology (COIT) and the Department of Technology (DT). The report looks at how to better connect the City’s buildings, Public Connectivity, and the use of #SFWiFi as different options to provide Internet access. As well, it looks at how the CCSF can use the “Dig Once” policy to better incorporate the expansion of the city’s fiber system, with the city’s current fiber network at approximately 170 miles in length. While the report does provide some basic costs of expanding the network, CCSF is currently analyzing the costs of expanding the trenching of conduit through

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<sup>1</sup> Budget and Legislative Analyst’s Office. (March 2015) Utility Wire Undergrounding Costs. City and County of San Francisco. (p. 14)

<sup>2</sup> Budget and Legislative Analyst’s Office. (March 2015) Utility Wire Undergrounding Costs. City and County of San Francisco. (p. 22)

<sup>3</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p.6)

<sup>4</sup> Budget and Legislative Analyst’s Office. (March 2015) Utility Wire Undergrounding Costs. City and County of San Francisco. (p. 15)



Dig Once. This analysis will also take into consideration the parallel trenching impacted by other projects already included in the same process. The report should be completed by summer of 2015.



## IV. AN OVERVIEW OF THE 1996 UTILITY UNDERGROUNDING PROGRAM

The 1996 Utility Undergrounding Program faced a number of challenges, as will future undergrounding programs. This report outlines a number of program obstacles, listed immediately below, and later will offer various funding and policy solutions to these issues - some of which are outside of CCSF direct control and will therefore require changes to be agreed upon by others.

### A. PROGRAM OBSTACLES

#### UNCLEAR FUTURE FUNDING

Undergrounding in San Francisco faces a number of challenges, fiscal and otherwise. Thus far, the utilities undergrounding program has relied upon 20A funding. Yet as noted previously, because the \$53.7 million of 20A funding is advanced, this revenue source will not be available until roughly 17 years from the present. Alternatives - such as 20A credit swaps, expanding the use of 20B and 20C funding, and various taxes and municipal charges - should be considered if this program is to restart.

The Utility Undergrounding Task Force (UUTF) outlined a number of possible taxes and fees to address this gap, many of which will be discussed at a later point in this report. However, the use of taxes is constrained by two Propositions: Proposition 26 and Proposition 218. Proposition 26 stipulates there can be no taxes, assessments, or fees without voter approval - most of which require a two-thirds supermajority, though it does cite exceptions for what is considered a 'tax'. Proposition 218 gives specific guidelines for interpreting what is a "property related fee" and how these can be used.<sup>5</sup>

#### UNANTICIPATED COSTS

The 1996 Utility Undergrounding Program costs ballooned to nearly four times original estimates, in part due to unanticipated costs and a lack of cost transparency. Recently, CBS News San Francisco reported on a different program the city wanted to implement that required gunshot monitoring devices installed by PG&E on utility poles. City officials initially received quotes of \$1400 per device for this program, which was then revised down to just \$200 - \$400 per device. This revision came after government officials questioned the high per-

OBSTACLES

-  **Unclear Future Funding**
-  **Unanticipated Costs**
-  **High Population Density**
-  **PG&E Contract**
-  **Undergrounding Coordination**
-  **Right of Entry Issues**

<sup>5</sup> San Francisco City Attorney. (Nov. 2010) *Impact Of Proposition 26: Initiative State Constitutional Amendment That Imposes A New Requirement For Voters to Approve Certain Local Fees And Charge*. City and County of San Francisco.



unit cost for a program that should have economies of scale. <sup>6</sup> With respect to undergrounding, PG&E has refused to provide the City with detailed or line-item explanations for undergrounding costs.

Original cost estimates were not detailed and did not include major expenses such as connection costs - i.e. connecting private properties to the main grid, the cost of city services during construction - nor did it include the purchase of streetlight replacement during the undergrounding process. The 1996 undergrounding required 1,800 new streetlights to be installed and this replacement comprised 10 percent of the project's budget<sup>7</sup>, yet it was not included in the original cost estimates.

In all, the project cost more than \$173 million - substantially more than original estimates. These unforeseen costs caused the cost-per-mile to rise from \$1 million per mile to \$3.8 million, and did not include City administrative costs or expenses incurred by telecommunications and cable TV utilities. <sup>8</sup> For a detailed exploration of program costs, please see the work by the Budget and Legislative Analyst's Office on comparative undergrounding expenses.

### HIGH DENSITY

San Francisco's undergrounding appears to be more expensive and more time-consuming than other cities, in part due to San Francisco's relatively high urban density as well as the increased number of building connections necessary for each mile undergrounded.

San Francisco is the second-densest city in the U.S., and has more than four times the population density of San Diego (respectively 17,000 people per square mile vis-a-vis 4000).<sup>9</sup> The City also generally requires infrastructure (such as utility connection hubs) to be constructed below-ground and placed near the public right-of-way (PROW) or on private property through easements, which further adds to the length and expense of projects. <sup>10</sup>

### PG&E CONTRACT

Unlike other cities, the San Francisco's franchise agreement with PG&E dates back to 1939, and provides for a .5% fee and no renegotiation. <sup>11</sup> Therefore, even if the city hoped to increase the fee to capture the

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<sup>6</sup> CBS San Francisco. (Oct. 2014) *PG&E Will Cut Installation Fees For Gunshot-Tracking Devices In San Francisco*. Accessed online.

<sup>7</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) *Utility Undergrounding Task Force Report*. City and County of San Francisco. (p.11)

<sup>8</sup> Budget and Legislative Analyst's Office. . (March 2015) *Utility Wire Undergrounding Costs*. City and County of San Francisco. (p.15)

<sup>9</sup> Population Density for U.S. Cities. Retrieved from [Governing.com](http://Governing.com) (SF: 17,179.2 / SD 4,020.4)

<sup>10</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) *Utility Undergrounding Task Force Report*. City and County of San Francisco. (p.15)

<sup>11</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) *Utility Undergrounding Task Force Report*. City and County of San Francisco. (p.25)



difference between the franchise fees in effort to support the undergrounding program, they would have to obtain PG&E’s approval to reopen a standing 70+ year agreement – the consequences of which could expose the company to decades of new legal, financial, and policy requirements. It is thus highly unlikely PG&E would be willing to reexamine the terms of the contract.

### UNDERGROUNDING COORDINATION

Most of the 45.8-miles undergrounded were done in conjunction with existing undergrounding plans. 25 miles were undergrounded with PG&E natural gas pipeline replacements, while 3.84 miles were done in conjunction with Department of Public Works projects. The remaining 17 miles of undergrounding were done through neighborhood petitions that had more than two-thirds property-owner approval. These neighborhoods tended to be more affluent and civically-engaged, as property owners often agreed to bear some portion of the costs of undergrounding.<sup>12</sup>

### RIGHT OF ENTRY ISSUES

The Utility Undergrounding Task Force Report found that accessing property in order to perform customer conversions could “take longer than two years, or more than half the duration of a project.” Property owners’ unresponsiveness to property access requests has the effect of delaying program schedules and the overall project duration.

## B. PROGRAM FUNDING

The 1996 Utility Undergrounding Program used prior 20A allocation credits and advanced future-year allocations to reach \$115.9 million of the total \$173.2 million in actual project costs. 20A funds have to-date been advanced by \$53.7 million; thus alternative funding sources must be considered for undergrounding to continue. CPUC Tariff Rule 20 has three distinct funding mechanisms: 20A, 20B, and 20C - although to date only 20A funds have been used.

### CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) RULE 20

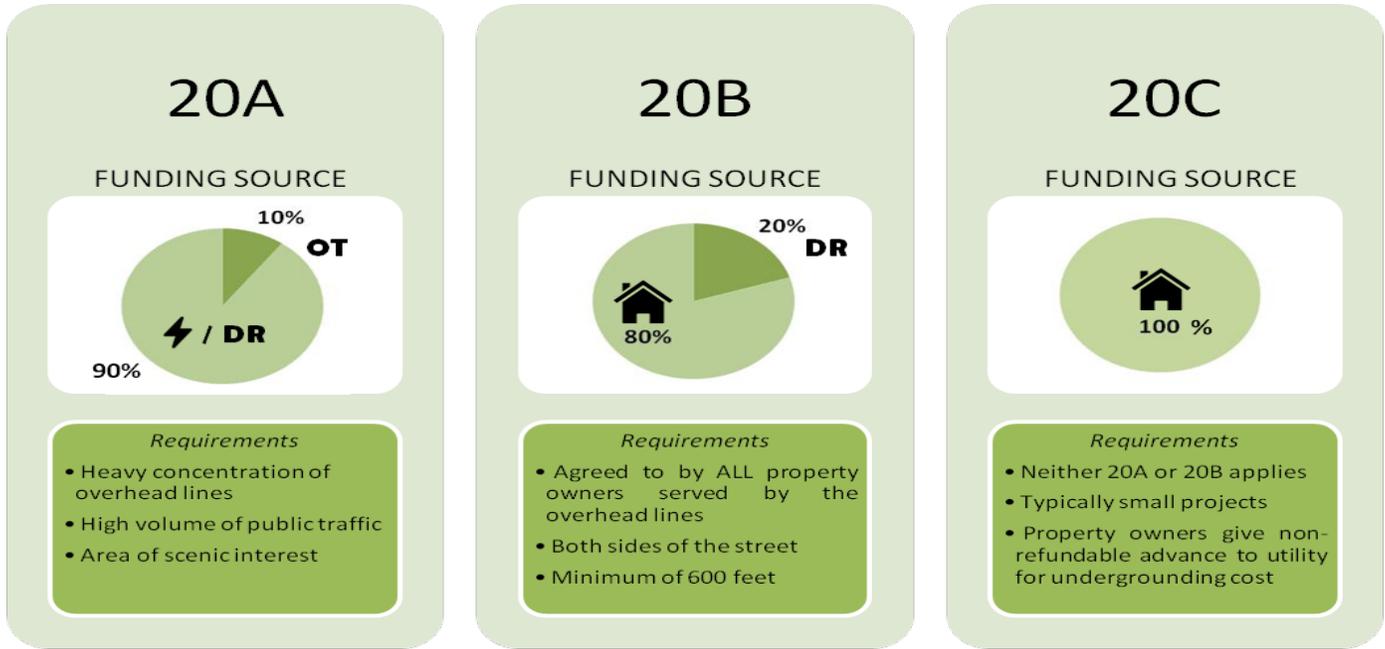
The California Public Utilities Commission (CPUC) Tariff Rule 20 provides three mechanisms for Electric Utility funding undergrounding projects Rule 20: A, B and C.

The CPUC approves a maximum-allowable amount to be used for undergrounding projects for the utility’s entire service area on a yearly basis. This means that the quantity credited to the City can change yearly, depending on San Francisco’s power usage relative to the total PG&E service area.

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<sup>12</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p.12)

**DIFFERENT CHOICES OF FUNDING UNDER RULE 20<sup>13</sup>**



 **Property Owners**     
  **PG&E**     
 **DR** **District Ratepayers**     
 **OT** **Other**

**Rule 20A Funding**

- 90% of costs are paid for by the utilities, and these costs are then passed on to ratepayers as capital improvements through the CPUC
- 10% of the costs (such as required new streetlights) are paid for by the City, property owners, or the utility company
- Telephone and cable 20A Undergrounding costs are paid by each respective utility
- 20A rule does not cover rear easement overhead wires; this must be paid by alternate sources

**Rule 20B Funding**

- Property owner applicants pay 80%, ratepayers pay 20%
- Requires 100% approval by property owners
- 20B undergrounding is paid usually in a special assessment Mello-Roos District
- The City may pay for the property owner share of costs if funding is available from other sources, such as an undergrounding utility surcharge

**Rule 20C Funding**

- Property owner applicants pay 100%
- If neither Rule 20A or 20B applies, Rule 20C allows property owners to pay for undergrounding electric lines and equipment
- Typically used for small projects
- Property owners must make a non-refundable advance to the utility equaling the cost undergrounding

<sup>13</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p.6-7) All graphic icons courtesy copyright-free vector graphic services including Pixabay, Clker, and Flaticon



## V. FIBER NETWORK IN SAN FRANCISCO

### CURRENT STATE OF THE FIBER NETWORK

Over the years, CCSF has analyzed its current fiber system in search of possibilities for expansion. Cities and counties across the country have various methods around how citizens and businesses attain Internet connectivity - ranging from private control, to public-private partnerships, to government control. The City's Connectivity Plan suggests that CCSF should move towards developing more public/private partnerships.<sup>14</sup> The report gives four suggestions that require completion:

1. Collect neighborhood-scale data, as none currently exists
2. Conduct formal research and analysis of the various roles that government can play
3. Engage the public in a discussion on the role of government
4. Update report to include findings.



### WHERE A CITY STARTED SMALL AND EXPANDED ITS SYSTEM

Santa Clara started out with a small system aimed to serve 3 very large customers – with the intention of growing its customer base over time to increase revenue. In 2000, Santa Clara started with a 26-mile fiber loop with revenue of \$350,000. By 2012 the system had grown to 57 miles of fiber, with \$2.13 million in revenue that returned \$300,000-\$500,000 annually to Santa Clara.<sup>15</sup> It should be noted that in Santa Clara, the system was geared to serve commercial customers primarily in the social media and web search sectors. Santa Clara demonstrates a path of how to start with a smaller system and grow it over time.

### CURRENT ISSUES WITHIN THE FIBER NETWORK

<sup>14</sup> City and County of San Francisco (February 2015) Connectivity Plan (p. 119)

<sup>15</sup> Wall Street Journal. (March 14, 2012) In San Leandro, a Drive to Get Wired. Accessed online



As previously mentioned, there are approximately 170 miles of fiber throughout the city. However, there are some limits to the system. One limitation, which notably only occurs in a small portion of the overall system, is the third-party conduit used for stretches of the system - which requires for its usage limitation agreements around how the City can use these portions. A second limitation regards how the expansion of the system has occurred. There are locations where the fiber has been installed with the purpose of connecting a specific city building, with no design intent to connect any other priorities along the path. Therefore, while there are 170 miles of fiber throughout the City, one might be blocks away from having an access point to the system. These two issues occurred because they allowed the City to connect the various City departments and agencies to the system for a reduced price, but did not necessarily allow for easy access for others to the system.



## VI. MOVING FORWARD - OPTIONS FOR VIABLE, EQUITABLE UNDERGROUNDING

Undergrounding can provide a number of benefits to the people of San Francisco, from more beautiful neighborhoods and city streets to more reliable energy during extreme weather. To move the program forward, it is important to understand the City’s options. Over the past 20 years the program relied almost entirely on 20A funding with some limited amounts coming from other Rule 20 funding sources. As mentioned previously, Rule 20A funding comes from a formula established by the CPUC and PG&E. This formula takes a small portion of money collected from customer bills to pay for 90% of the costs, with the remaining 10% coming from the local justification (CCSF), property owners, or the utility company (PG&E). Future programs, however, will likely need to receive support from a variety of financial and policy solutions.

### A. FINANCIAL OPTIONS

San Francisco has until now relied almost exclusively on 20A funding to underground utility wires. With 20A funding at a deficit of \$53.7 million, alternative sources must be identified if the program is to continue prior to this advance being paid in full. Below is a list of possible funding options used by other cities, or options identified by Utility Undergrounding Task Force.

#### GENERAL OBLIGATION BONDS

Large scale capital programs are often funded by General Obligation bonds (G.O. bonds), which require two-thirds voter approval. G.O. bonds are paid back through property taxes; these taxes fund the bond’s annual debt service.<sup>16</sup> From 2001 to 2007, the City did not successfully pass a G.O. bond. Consequently, the City started a capital planning process that has since helped pass seven different bonds from 2008-2014. These included the 2008 Neighborhood Parks and Open Space, the 2008 Public Health Seismic Facilities (SFGH rebuild), the 2010 Earthquake Safety & Emergency Response, the 2011 Road Resurfacing and Street Safety, the 2012 Neighborhood Parks and Open Space, the 2014 Earthquake Safety & Emergency Response, and the 2014 Transportation bonds. As well, there will be a housing bond on the November 2015 election. The City has also approved a tentative list of other bond measures it may introduce in future elections, including a June 2016 Public Health bond, a November 2018 Parks and Open Space bond, a November 2020 Earthquake Safety & Emergency Response bond, a November 2022 Public Health bond, a November 2024 Transportation bond, and a June 2024 Parks and Open Space. While this

**Financial Options**

-  G.O. Bonds
-  Utility User’s Tax
-  Utility Connection Fee
-  Transfer Tax Fee
-  Residential User Surcharge
-  Transfer Tax Rate

<sup>16</sup> City and County of San Francisco Controller’s Office. (Jun. 2014) Financing Options for Undergrounding City Utility Lines.



list of future bonds could change, the City does have a policy that limits the amount of debt it will issue. That policy is:

- When issued, G.O. bonds proposed by this Plan will not increase voters' long-term property tax rates above FY 2006 levels. Therefore, new G.O. bonds are typically issued as existing approved and issued debt is retired and/or the property tax base grows.

- The City will maintain the percentage of the General Fund spent on debt service at or below 3.25 percent of discretionary revenues. As a result, the City's ability to issue secured debt is limited. Financing instruments will only be used when existing GF debt is retired and/or the City's General Fund grows.<sup>17</sup>

Given the City's current policy on G.O. bonds, if this mechanism was to be used it would either have to wait until after the current proposed list of items had been presented to the voters, or until the Capital Planning Committee reschedules or removes items it is considering for future bond measures (should it decide to do so). It should be noted that the list of future bonds to be taken to the voters can be changed, and items not currently listed can be added - such as the proposed 2015 housing bond, which is a recent addition.

### UTILITY USERS TAX

San Francisco currently levies a 7.5% Utility Users Tax (UUT) on monthly charges for electric, gas, and water service to commercial customers within the city.<sup>18</sup> This means that if a utility user's total PG&E energy charges were \$100 a month, their total bill would be \$107.50, with \$7.50 being remitted to the City by the service provider. These funds are collected by the respective utility companies and on a monthly basis are remitted to the City in the General Fund. The City charges an additional 7.5% User Tax on all cellular telephone bills in San Francisco for both commercial and residential users, which is also remitted to the General Fund.<sup>19</sup>

The Utility Undergrounding Task Force has noted that the Board of Supervisors could increase these fees to create additional resources for undergrounding. The table below from a City Controller report shows San Francisco's UUT of 7.5% is comparable to that of other California cities.<sup>20</sup> Any changes to the Utility Users Tax would be considered a Special Tax and would thus require approval by two-thirds of registered voters.<sup>21</sup> This can be accomplished with the proposal of the measure through an Initiative Petition, or through a measure submitted by the Mayor, Board of Supervisors, or four members of the Board of Supervisors.

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<sup>17</sup> Capital Planning Committee. (March 2015) Proposed Capital Plan Fiscal Years 2016-2025. (p.9)

<sup>18</sup> City and County of San Francisco Controller's Office. (April 2005) The Utility Users Tax. (p.2)

<sup>19</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p. 26)

<sup>20</sup> City and County of San Francisco Controller's Office. (April 2005) The Utility Users Tax. (p.2)

<sup>21</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p. 26)



## Utility Users Tax - Rate Comparisons

		Non-Residential				
10 Largest California Cities	Population[1]	Electricity Tax Rate	Natural Gas Tax Rate	Telephone Tax Rate	Water Tax Rate	Cable TV Tax Rate
Los Angeles	3,694,820	10.00%	10.00%	10.00%	N/A	N/A
San Diego	1,223,400	N/A	N/A	N/A	N/A	N/A
San Jose	894,943	5.00%	5.00%	5.00%	5.00%	N/A
<b>San Francisco</b>	<b>776,733</b>	<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>N/A</b>
Long Beach	461,522	10.00%	10.00%	10.00%	10.00%	N/A
Fresno	427,652	N/A	N/A	N/A	N/A	N/A
Sacramento	407,018	7.50%	7.50%	7.50%	N/A	7.50%
Oakland	399,484	7.50%	7.50%	7.50%	N/A	7.50%
Santa Ana	337,977	6.00%	6.00%	6.00%	6.00%	N/A
Anaheim	328,014	N/A	N/A	N/A	N/A	N/A
<b>Average (Mean) of 10 Largest Cities</b>		<b>7.70%</b>	<b>7.70%</b>	<b>7.70%</b>	<b>7.83%</b>	<b>7.50%</b>
<b>Median of Largest Cities</b>		<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>

**Source Data & Notes**

[1] 2000 Census Data from CA Dept. of Finance Website (10/21/2003)

City and County of San Francisco  
Controller's Office

### UTILITY CONNECTION FEE

San Francisco presently assesses a monthly Emergency Response Fee of \$2.75 per telephone. In the 2004-05 fiscal year, this source raised \$36.7 million. The UUTF recommended the Board of Supervisors consider raising this fee to supplement support for undergrounding projects. If this was increased to \$1 per month, nearly \$13.35 million additional revenue would be created each year. Similarly, the UUTF suggested the Board of Supervisors could add a utility connection fee for electric meters.<sup>22</sup> The UUTF report stated:

“While instituting specific voter approval requirements for particular taxes, assessments and fees, Proposition 218 left open to interpretation the definition of “property related fees.” If a fee is “property related,” its creation or adjustment requires approval of either a majority of property owners or two-thirds vote of the electorate. The Board of Supervisors could choose which of those groups to include in the voting process, and may weight ballots in proportion to fee liability. If an electric meter connection fee were determined to be not “property related” no vote would be required by Proposition 218 before it is instituted.”

<sup>22</sup> Ibid.



Since the UUTF report, Prop. 26 was approved by the voters of California. Therefore, even if the “property related” issue is addressed, it still may need voter approval.

### RESIDENTIAL USER SURCHARGE

The city of San Diego implemented a surcharge of 3.5% on residential electric bills to bolster 20B funds. San Diego obtains approximately \$50 million per-year from the surcharge, which is then added with 20A funding. However, changing this surcharge became possible only after San Diego renegotiated contract terms with San Diego Gas and Electric in 2002. In the case of CCSF, the contract with PG&E for the residential user surcharge dates back to an agreement from 1939. This contract does not have any provisions for renegotiation and it is unlikely to be reopened, since that would open the agreement to over 75 years of new laws and regulations. In the unlikely event it was reopened, more research would be required to understand how Prop 218 and Prop 26 would impact any new agreements, and whether it would require voter approval to do so. The UUTF has determined that this option would be very difficult to implement.<sup>23</sup>

### TRANSFER TAX RATE

San Francisco presently collects a tax on non-exempt transfers of real property located in the City. The rate for the property transfer is determined by the transfer value. For transfer values between \$100 and \$250,000 the rate is \$2.50 per \$500 of value (or an overall tax rate of approximately .5%). The transfer rate on property valued between \$250,000 and \$1 million is \$3.40 for each \$500 of value (.68%), while for transfers of \$1 million or more the rate is \$3.75 for \$500 of value (.75%).

In the 2004-05 fiscal year, San Francisco accumulated a total of \$116.71 million from all property transfers. The UUTF noted that if the transfer tax rates were raised one-quarter of one percent for transfers of \$1 million or more, an estimated \$22.11 million in additional revenue would be raised.

The implementation of a Transfer Tax requires a ballot measure and the approval of voters. If the objective is for money raised to be directed towards the undergrounding of utility wires, then it would likely take a 2/3 vote for approval. Since 2008, three different Transfer Taxes have been presented to the voters for approval. Although the 2008 ballot measure received 68%, support for a different measure in 2010 fell to 58%. In 2014, the transfer tax ballot received only 46% support. All of these were funds to be dedicated to the general fund. Only the 2008 measure, the oldest of the three efforts, received more than the 2/3 threshold that may be needed for the approval of a dedicated tax.

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<sup>23</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p. 7)



## B. OTHER ALTERNATIVES

In addition to new funding sources, there are also various policy and legislative options which can address the efficiency, equity, and financial challenges of undergrounding. These include developing a master plan, coordinating undergrounding with other excavation projects, public-private partnerships, community facilities districts, community benefit districts, permit fees, right-of-way regulations, and finding ways to help property owners and altering the PG&E contract.

### DEVELOP CLEAR FUNDING SOURCES AND MASTER PLAN

*PG&E reports that it did not have the resources or the personnel to carry out an undergrounding plan of such magnitude.*

*San Francisco is also the second densest city in the United States, a factor reportedly not properly considered during the creation of the original \$1 million per mile estimate.*

—Utility Undergrounding Task Force 2007

The 1996 Utility Undergrounding Program was done without detailed cost reporting and third party oversight. The above quote highlights the stark difference between the initial cost estimate of \$1 million per mile and the actual cost – which ranged from \$3.8 to \$9.6 million per mile.

Identifying funding sources while developing a master plan would ensure undergrounding is distributed with greater geographic equity as well as with the cost savings that result from coordinating with other undergrounding organizations. A master plan could also increase the transparency of the undergrounding process, allow for greater public participation in the project, and add new auditing requirements.

In the Next Steps section below, LAFCo staff suggests CCSF to create an Implantation Plan that may accomplish by slightly different methods UUTF's intended plan.

### COORDINATE WITH OTHER EXCAVATION PROJECTS AND DIG ONCE POLICY

Numerous organizations utilize undergrounding - from utilities like PG&E to city agencies. Coordinating undergrounding therefore has the potential to create substantial cost savings. While more than half of the area involved in the 1996 Utility Undergrounding Program was coordinated with other projects, room for improvement remains. The City has been working to better coordinate all of the work that is being done through the creation of a “Dig Once” policy, which was approved by the Board of Supervisors in October 2014 with the passage of Ordinance 220-14. The City has been working to limit the number of times any section of a street has work performed on it. Instead of opening the street multiple times - which causes cost-repetition (i.e., street resurfacing), there is now coordination between departments. When a street is scheduled for major resurfacing, for example, the Department of Public Works (DPW) – as the agency that oversees the street resurfacing program - will first speak with the San Francisco Public Utilities Commission (SFPUC). The determination must be made at the outset by the SFPUC whether any water or



sewer systems lines are in need of replacement or repair. Should the SFPUC find any of its lines in need of repair, they will perform this work prior to DPW’s street resurfacing. Now with the “Dig Once” policy, fiber network expansion is also to be considered when street resurfacing is being performed. Should a long-term, stable funding source be identified for the undergrounding of utility wires, a similar policy should be considered for that as well.

At present, the San Francisco Public Utilities Commission (SFPUC), Department of Public Works (DPW), Municipal Transportation Agency (Muni), the Department of Technology (DT), and the Department of Parking and Traffic (DPT) use undergrounding for these respective purposes:



**SFPUC** is in charge of water, power, and sewers, in addition to the City’s extensive network of pipes



**DPW** takes care of the City's infrastructure, public rights-of-way, and facilities, and would likely oversee construction management and neighborhood notifications for undergrounding programs



**MUNI** undergrounds distribution lines



**DPT** is responsible for installing street signs when utility poles are taken down



**DT** can underground City networks, including fire alarm and police communication services, along with the City’s fiber network

One analysis of the undergrounding of fiber-optic cables projects that coordination with utility projects could yield a savings of 5-15% of project cost.<sup>24</sup>

In addition, the Board of Supervisors passed resolution 463-14 in December 2014 which allows for the SFPUC to obtain contracts on some of its current utility poles for wireless communication systems. The revenue from these leases is to be used for the City’s street light program. A possible use of these funds could be towards street light replacement as the current utility poles are taken down and replaced with new street lights as well.

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<sup>24</sup> Columbia Telecommunications Corporation. (Jan. 2007) Fiber Optics for Government and Public Broadband: A Feasibility Study. City and County of San Francisco



## CREATE A PUBLIC-PRIVATE PARTNERSHIPS

Some cities, such as Washington DC and San Leandro, CA, have developed successful Public-Private Partnerships for undergrounding utility wires and fiber networks, respectively.

According to the website for Washington DC's DC PLUG initiative:

The **DC PLUG** initiative will be financed through a combination of Pepco investment (\$500 million), funding from the District through District's Department of Transportation Capital Improvement funds (\$62 million) and funds from District issued bonds (\$375 million). Costs will be recovered through two surcharges on customer bills. The Pepco investment will be recovered through the "Underground Charge, Pepco" and will initially have a rate impact of \$.18 or 0.18% per month for the typical residential customer in 2015.

A second surcharge will cover the debt service on the bonds to be issued by the District to fund its portion of the work. Low-income customers receiving the Residential Aid Discount will be exempt from the rate impact.

In the case of San Leandro, the city had access to already-existing conduit and, in working with a private investor, they were able to install an 11-mile fiber optic loop. This loop was geared towards the industrial zone on the west side of the city and is slated for business-sector use, as opposed to residential.<sup>25</sup>

## COMMUNITY FACILITIES DISTRICTS

Community Facilities Districts (CFD), also known as Mello-Roos Districts, are non-profit corporations able to conduct undergrounding projects. These districts came about in response to the passage of Proposition 13 in 1982, which greatly limited local public agencies' ability to raise property taxes based on a property's assessed value. The Mello-Roos Community Facilities District Act allows counties, cities, and special districts to create CFDs in order to fund public improvements and services, including utility or fiber undergrounding. Establishing a CFD requires the approval of at least two-thirds of the registered voters in the proposed district, and it can be created to either cover the entire city or just a small portion. Since this would require a two-thirds vote, determining whether to go city-wide or simply cover a portion of the city can be challenging. If a CFD is formed to cover only a portion of the city, then the funds raised would be strictly designated for that specific CFD area. This could in turn lead to an imbalance regarding those areas where undergrounding occurs in the city, and those areas opposed to the areas that have the funding and support to form a CFD. One question that would arise, should an area form a CFD, would be in regards to whether payment of the undergrounding should be divided between what is raised through that CFD and any general city funds available for undergrounding.

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<sup>25</sup> Wall Street Journal. (March 14, 2012) In San Leandro, a Drive to Get Wired. Accessed online



### COMMUNITY BENEFIT DISTRICTS

Community Benefit Districts (CBD), also called Business Improvement Districts, are similar to CFDs, but are instead produced by city ordinance rather than state law and are thus independent non-profit bodies, rather than a statutory district that as such falls under local jurisdiction. CBDs are only formed and funded by the businesses in a specific area, as determined by those parties interested in forming the CBD. While the work performed by the CBD may be noticed by residents of the area in and around the CBD, the residents do not get a direct say in how the money gets spent. In order to form a CBD, two steps must be taken. First, a petition must be signed by 50% of those impacted by the fee. Thereafter, a vote requiring two-thirds approval takes place. There are currently 12 CBD's established; however none of them can perform undergrounding since, upon establishment of a CBD, it must also be understood within the CBD's management plan that undergrounding is part of what it can use the funds for. Finally, the CBD cannot hold funds for multiple years; rather, the funds need to be used in the fiscal year during which they were raised. Given the nature and timing of the work, this final issue would need to be addressed if CBD funding is used for undergrounding.

### CHANGE THE PG&E AGREEMENT

When the City of San Diego changed their PG&E agreement, they amended the terms to include a surcharge of 3.5% on residential electric bills to accumulate 20B funds. This allowed the city to gain \$50 million annually for undergrounding. However, changing the terms of the PG&E contract would be very difficult in San Francisco as the agreement dates back to 1939, has no expiration date, and could require PG&E to comply with decades of new regulations as noted above.

### CHANGE RIGHT-OF-WAY REGULATIONS

The inability to access private property slowed the undergrounding process, and it can take up as much as half the duration of a given project. However, the City has the power to change the Public Works Code and excavation regulations regarding public right-of-way. The UUTF notes that it could consider measures which would facilitate property access, ensure proactive property owner outreach, and expedite the undergrounding process.

### ALLEVIATE PROPERTY OWNER COSTS

Options should also be considered for alleviating the cost of undergrounding borne by property owners. 20A funding does not support the cost of streetlamp design or installation, nor does it support the cost of customer conversions, when a private property is connected to the rest of the undergrounded system. The Utility Undergrounding Task Force estimates the average cost for a San Francisco home with 25 feet of linear frontage to be approximately \$13,500.<sup>26</sup>

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<sup>26</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p.25)



Future projects must consider if and how much of the cost should be borne by property owners, and what funding could be used to fill these gaps. One option that would relieve property owners from the costs of installing streetlights is the Landscaping and Lighting Act of 1972 (LALA), of the California Streets and Highways Code Section 22500 et seq. This act gives cities the ability to set up assessment districts to finance landscaping and lighting projects.<sup>27</sup> This is accomplished through special taxes that are added to property tax bills based on property size, square, rather than value. As with Commercial Benefit Districts, LALA district requires approval by two thirds of property owners.

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<sup>27</sup> Utility Undergrounding Task Force (UUTF). (Jan. 2007) Utility Undergrounding Task Force Report. City and County of San Francisco. (p.30)



## VII. NEXT STEPS

CCSF has conducted several reviews of the undergrounding of utility wires and the expansion of the fiber network. While no new unknown funding sources have been identified, there are nevertheless cost-savings measures available.

Some items may take considerable time, and therefore should not be relied upon for short-term planning.

Any of the suggestions below would help expedite the undergrounding process. Each suggestion may impact the undergrounding of utility wires, expansion of the fiber network, or both in some cases. After each suggestion, you will see bracketed the item(s) to which the suggestion pertains.

- The need for an ‘Implementation Plan’ for the undergrounding of utility wires is critical. All previous research has found cost-savings when work is done in coordination with other projects. LAFCo staff recommends that CCSF conduct a thorough cost-estimate on merging the undergrounding of utility wires and the expansion of the fiber network with current DPW projects. At present, DPW has a rolling five-year plan of street resurfacing. Prior to street resurfacing, the SFPUC will do an evaluation of its underground water and sewer lines. If it is determined that any of these lines are in need of repair, SFPUC will contact DPW so that the work can be administered prior to the street resurfacing. Each year, roughly 15-30 miles are completed. LAFCo staff further recommends that CCSF do a multiple-step approach to help determine what costs savings, if any, could be achieved by doing the DPW/SFPUC work using the “Dig Once” policy for both utility wires and fiber networking.

Step 1 – Review the previous five years of street work completed by DPW along with plans for the next five years. This would produce ten years’ worth of work that has either been completed or is scheduled for completion – thus providing a comprehensive cost estimate in current dollars. Streets would then be divided between those that need utility or fiber undergrounding and those that do not. Streets requiring undergrounding must undergo further review and subdivision into two different groups:

- Group 1: Those streets where SFPUC undergrounded in conjunction with DPW work.
- Group 2: Those streets on which SFPUC has not yet performed any work but where undergrounding for either utility wires or fiber expansion could occur.

Step 2 – Take each of the two groups from step 1 and perform a cost analyst on how additional costs incurred to do the utility and/or fiber undergrounding simultaneously. When regarding those streets in group 1, it should be understood that this will add several new layers of coordination - thus requiring more city and possible non-city management of the project. The impacts of additional coordination will need to be determined explicitly so that they can in turn be properly factored into the timeline and cost-analysis of each project. Additional coordination, where needed, will lengthen project timelines – which will subsequently impact the timeframe of



other street projects within any given year, unless additional crews are added to complete current project scheduling. With the determination of additional coordination factored in, a cost analysis can be completed for both street groupings. In each instance, the cost for doing the work should be compared against when utility and/or fiber is undergrounded at the same time. A cost analysis should be completed as well if the utility and/or fiber work was done independent of other projects. Since it is possible that the funding for utility wires and the fiber network will come from different sources, it would be insightful to further include each as its own distinct line item in the project.

Step 2a – As mentioned in step 2, where multiple things are being undergrounded a cost saving may be achieved. However the question then arises as to how these cost savings are then distributed. While step 2 is being finalized, a discussion can be initiated around how the cost savings from adjoined projects are distributed between each project. CCSF would need to determine which project pays for the work - and whether it is paid by percentage of linear feet dug per individual item within the project, whether utility wires and fiber pay the additional cost beyond that which SFPUC has already covered, or some other formula.

While step 2 and step 2a are being completed separately, each has issues that could impact the other. Therefore both need to be done in conjunction.

Step 3 – Once a costs analysis has been completed, advocates for undergrounding and the city can then determine in what manner and if it is possible to raise the needed funds to complete this work as a joint project.

- While the maps used by SFPUC and DPW indicate which streets have aboveground and underground wiring, they do not include information indicating which streets have fiber networks installed. This information will therefore need to be shared between departments. Another consideration for fiber expansion is that the network does not always require open trenches for its expansion, but instead has other processes for undergrounding that are otherwise not available to utility wires. An assessment should be completed to show which streets require the open-trench process for fiber expansion. Based on discussions with COIT and DT staff, it appears a review is currently underway as of the finalization of this report. (Fiber network)
- Currently there is no oversight of the costs for projects using Rule 20A funds. While the BLA, along with others, has requested a cost-breakdown from PG&E, none has ever been provided. Therefore, it is impossible to determine whether PG&E costs were appropriate, or if in fact there are alternative ways to perform the work at a lower cost. When LAFCo staff discussed this issue with CPUC staff, it appeared that bills are submitted to the CPUC for remittance but no questions are asked as to whether the work is being done in the most cost-effective manner. It should be noted that this is outside of CCSF's purview and would require either state legislation or the CPUC to



change this process -- unless PG&E voluntary decided to be more transparent around its project costs with outside agencies. (Utility wires)

- CCSF may wish to consider contacting other cities for whom PG&E is currently performing undergrounding work to gauge support for a request that CPUC and PG&E increase the amount of money in 20A funding back to either pre-2011 funding levels or higher. Based on the recent BLA report, CCSF receives more in its allocation than other jurisdictions; yet that funding does not cover even one mile of work in a year. If we returned to pre-2011 funding levels, we would reduce by roughly half the amount of time required to pay in full the debt from prior undergrounding, as well as enable more than one mile per year to be completed – even if no other funding or cost-reduction measures were taken. (Utility wires)
- In the BLA report, one city arranged to purchase another city’s 20A credit previously held in reserve for non-20A money. If CCSF finds other funding sources for the undergrounding of wires, it should ascertain whether other jurisdictions not currently performing 20A projects would be willing to make this same arrangement. If this is done while we are still paying the amount owed for previous project overruns, CCSF will need to finish paying that debt before new projects can be started using 20A funds. (Utility wires)
- As mentioned previously with the passage of Board of Supervisors Resolution 463-14, there is some funding made available for street light replacement from SFPUC’s contracts with wireless companies for use of existing poles. The overall cost estimates of the undergrounding projects reveal that about 10% of the money spent is used for the replacement of the old streetlights. While funding from the use of street lights would likely not cover the full amount needed, it could help to pay for some of the related costs of this part of the undergrounding process if properly timed and meet the goals of Resolution 463-14 as well. Further, there is some desire for the SFPUC to take ownership of the remaining PG&E street lights in the City; however a funding source has not been identified to do this. Should a funding source be identified, LAFCo staff recommends coordination to the degree possible with any street light replacement that occurs as overhead wires or undergrounded. Finally, the desire to change street lights may have various reasons that do not line up with the undergrounding priority structure, meaning that coordination may not always possible. (Utility wires)
- As mentioned above, CCSF has initiated discussions around what the City’s fiber network should look like and the role of CCSF therein. LAFCo staff support the four suggestions of the connectivity plan: 1) collect neighborhood-scale data, since none currently exist; 2) conduct formal research and analysis of the various roles that government can play; 3) engage the public in a discussion of government’s appropriate role; and 4) update the report to cover findings. Additional items to possibly regard as the review of these four areas is to include the short-term items that it may wish to change - i.e., the policy of designing fiber installations to reach city buildings and other community anchor institutions such as public housing. For new fiber installation, DT should take into account not only the use for current and future city buildings, but also reaching



nongovernmental buildings by incorporating opportunities to access fiber by third parties into its design. CCSF should also avoid any future agreements limiting use of its expanded system. (Fiber network)

- A full expansion of the underground fiber network will be a lengthy process. Therefore, as COIT and DT undertake the four questions above, LAFCo staff would recommend the consideration of methods by which to expand the customer base to areas that have yet to be connected. In the short term, this could be accomplished through use of a wireless system to connect customers unless or until the fiber network becomes available in their area. One of the priorities of the expansion would then be the identification of key areas in need of access. Should the CCSF either become a completely government-controlled system, or enveloped in a public-private partnership, the ability to create a customer base will open a new revenue stream that will, in turn, help cover the costs of the expansion. This would require planning and review of necessary equipment costs, as well as the estimated length of time for its payment. This planning and review process will help lay out a plan for payment of the equipment and potential extension of the network at a particular location. This could be considered a modified version of the Santa Clara model, which employed current customer revenues to help expand the system. (Fiber network)



## VIII. LIST OF ACRONYMS

- BLA- Budget and Legislative Analyst
- CCSF - City and County of San Francisco
- CBD- Community Benefit Districts
- CFD - Community Facilities Districts
- CPUC – California Public Utilities Commission
- COIT - Committee on Information Technology
- DPT - Department of Parking and Traffic
- DPW - Department of Public Works
- DT- Department of Telecommunications
- MUNI - Municipal Transportation Agency
- PG&E - Pacific Gas and Electric
- PROW- Public Right-Of-Way
- SFPUC - San Francisco Public Utilities Commission
- LAFCo - San Francisco’s Local Agency Formation Commission
- UUTF - Utility Undergrounding Task Force
- UUP - Utility Undergrounding Program
- UUT- Utility Users Tax



## IX. LIST OF DOCUMENTS

All government documents can be found on the LAFCo website.

Budget and Legislative Analyst's Office. (March 2015) Utility Wire Undergrounding Costs. City and County of San Francisco.

CBS San Francisco. (October 19, 2014) PG&E Will Cut Installation Fees For Gunshot-Tracking Devices In San Francisco.

City and County of San Francisco (February 2015) Connectivity Plan

City and County of San Francisco Controller's Office. (April 2005) The Utility Users Tax

City and County of San Francisco Controller's Office. (June 2014) Financing Options for Undergrounding City Utility Lines.

Columbia Telecommunications Corporation. (January 2007) Fiber Optics for Government and Public Broadband: A Feasibility Study. City and County of San Francisco

San Francisco Board of Supervisors Resolution 463-14 (2014)

San Francisco City Attorney. (November 2010) Impact Of Proposition 26: Initiative State Constitutional Amendment That Imposes A New Requirement For Voters to Approve Certain Local Fees And Charge. City and County of San Francisco.

Utility Undergrounding Task Force (UUTF). (January 2007) Utility Undergrounding Task Force Report. City and County of San Francisco

Wall Street Journal. (March 14, 2012) In San Leandro, a Drive to Get Wired

Capital Planning Committee. (March 2015) Proposed Capital Plan Fiscal Years 2016-2025. (p.9)