

**CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
BUDGET AND LEGISLATIVE ANALYST**

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Policy Analysis Report

To: Supervisor Farrell
From: Budget and Legislative Analyst's Office
Re: Utility Wire Undergrounding Costs
Date: March 2, 2015



Summary of Requested Action

Pursuant to your request, this report summarizes the recent cost of undergrounding utility wires in San Francisco. It examines the average per mile cost of undergrounding wires in other California cities and, using those costs, the report provides estimates of the cost of undergrounding the 470 miles of streets that still have overhead utility lines in San Francisco. It also reviews options for the alternative financing of undergrounding projects in San Francisco, including the potential for buying Tariff Rule 20A allocations from other Bay Area cities and counties in the PG&E service area.

For further information about this report, contact Fred Brousseau at the Budget and Legislative Analyst's Office.

Executive Summary

- San Francisco's most recent initiative to underground utility wires took place between 1996 and 2006 pursuant to the Board of Supervisors approving a program to underground 45.8 miles of overhead utility lines. This undergrounding program, executed by Pacific Gas and Electric Company (PG&E), was completed at a total cost of \$173,167,804, or an average of \$3.8 million per mile, significantly more than the utility's originally estimated costs of \$1.0 million per mile. The program was largely funded by ratepayer revenue made available for municipal utility wire undergrounding pursuant to Tariff Rule 20A authorized by the California Public Utilities Commission.
- Like all cities and counties in PG&E's service area, San Francisco currently receives an annual allocation of Tariff Rule 20A credits from PG&E's ratepayer revenue. The intent of these Rule 20A allocations is for them to be used to: 1) fund current utility undergrounding projects, 2) reserve the credits for future projects, and/or 3) borrow from up to five years' worth of future credits for current projects. The current annual allocation for San Francisco is approximately \$3.1 million.

- PG&E's costs for the 1996-2006 undergrounding program were covered with San Francisco's past unused credits and future annual allocations in excess of the normally allowed five years' worth of future credits needed to complete the 45.8 mile 1996 Undergrounding Program.
- The 1996-2006 total program costs of \$173,167,804 have still not been fully recovered by PG&E and will require approximately \$53.8 million in San Francisco's future annual Tariff Rule 20A allocations before the City can undertake additional undergrounding projects using Rule 20A funds. Given the City's current annual Rule 20A allocation amount of approximately \$3.1 million, it will take approximately 17.3 years to repay the 1996 undergrounding program costs with annual Rule 20A allocations.
- In 2010, the Department of Public Works (DPW) estimated the cost of undergrounding 0.3 miles of overhead wires on Leland Avenue based in part on 1996-2006 program costs. Updating those cost estimates to 2014 results in an average cost per mile of \$6.6 million for the electric utility and the City. These costs may be higher than necessary since they were based on a relatively small project subject to diseconomies of scale and assumed that some of the factors contributing to cost overruns from the 1996-2006 program would still be in place.
- The Budget and Legislative Analyst found that utility undergrounding costs in select other California municipalities is generally lower than in San Francisco. A range of \$2.8 – \$5.9 million per mile was found by examining undergrounding project costs in the city of San Diego and some Bay Area cities from the recent past, updated to 2014.
- Applying the average costs per mile found in other cities to the 470 miles in San Francisco where utility wires are still aboveground would result in total utility wire undergrounding costs of between \$1.3 and \$2.8 billion.
- Based on the 226,930 PG&E accounts on streets that still have aboveground utility wires in San Francisco, the cost per account using the costs from other cities would be between \$5,732 and \$12,222. If the cost per account is calculated based on all 395,137 PG&E accounts in the City, the cost per account would be between \$3,292 and \$7,019.
- Using DPW's estimated average of \$6.6 million per mile, total project costs would be \$3.1 billion, or approximately \$13,701 per account for the 226,930 PG&E accounts on streets with aboveground wires. If the cost per account is calculated based on all 395,137 PG&E accounts in the City, the total per account cost would be between \$7,869.
- PG&E asserts that the cost of completing undergrounding projects in San Francisco is greater than in other jurisdictions for a number of reasons, including: the need to dig trenches on both sides of many streets in the City; the high density of properties on each block; the City in the past has allowed

customers to choose their own electrical contractors, and it is difficult to coordinate these parties; permits, fees, and traffic control costs are high; restrictions are in place governing when work may be performed; and numerous street side obstacles prevent work from occurring, among others. While some of these factors may be impossible to change, the experience in some other cities provides some insights as to how future project costs in San Francisco might be limited or better controlled than in the past.

- Alternatives for financing future undergrounding of utility wires in San Francisco in lieu of Rule 20A funding include:
 - Issuing debt, possibly in concert with creating Mello-Roos Community Facilities Districts in specific areas to generate funding for undergrounding through property assessments.
 - Increasing the City's utility users tax, the access line tax, and/or the documentary transfer tax.
 - Passing a new parcel tax.
 - Purchasing unused Rule 20A credit allocations from other jurisdictions in the PG&E service area, as some cities and counties in California have done.
- Regardless of the financing approach to any future utility wire undergrounding projects, measures could be implemented to better control future undergrounding project costs, including:
 - Establishing a City utility undergrounding master plan to allow for improved planning of larger scale, more efficient projects.
 - Limiting the total number of miles to be undergrounded to less than the 470 miles with wires currently aboveground.
 - Requiring a greater share of project costs to be paid for by property owners than was the case in the City's 1996-2006 utility undergrounding program.
 - Achieving savings through increased use of competitively selected contractors for construction work.
 - Establishing more City control and quality checks of the construction process.
 - Coordinating future projects with other City trenching programs such as those executed by the Public Utilities Commission and the Department of Public Works.

I. Background

This memo describes the Tariff Rule 20A program operated by the California Public Utilities Commission (CPUC) to fund the conversion of existing overhead electric lines to underground service from ratepayer revenues. The report also reviews the cost per mile of undergrounding projects in San Francisco executed by Pacific Gas & Electric Company (PG&E) between 1996 and 2006, investigates the cost of undergrounding utility wires in other California cities, and discloses that utility undergrounding project costs in San Francisco between 1996-2006 exceeded the cost of work performed in some other California jurisdictions for utility wire undergrounding. Finally, this report provides estimates of the costs of undergrounding utility wires on the streets of San Francisco where they are still overhead, and suggests some financing alternatives and possible actions for the City to take to reduce or control costs on future undergrounding projects.

Recent Cost of Undergrounding in San Francisco

Under Tariff Rule 20A, the CPUC annually establishes a maximum amount of ratepayer revenue that can be spent on undergrounding electrical wires in each electric utility's service area based on the jurisdictions' shares of meters relative to all meters in the service area. This amount is then allocated to each city and county in the service area and is available for undergrounding projects in their jurisdiction. Cities and counties accumulate credits for unspent amounts of their annual allocations that can be applied to future undergrounding projects. Jurisdictions can also mortgage, or use advances, of up to five years of future annual allocations for undergrounding projects.

According to data from PG&E, San Francisco's annual allocation from PG&E declined to \$3,109,290 in 2015 from a high of \$6,151,049 in 2006. The allocation formula takes into account San Francisco's share of total meters system-wide, as well as its share of overhead meters.

San Francisco's most recent utility wire undergrounding program took place between 1996 and 2006. During that period, the Board of Supervisors approved and PG&E executed the undergrounding of 45.8 miles of overhead utility lines, referred to as the Undergrounding Utility Program. Part of the impetus for the Program was to expend a multi-year accumulation of approximately \$24 million in Rule 20A credits. The City also planned to allocate four years of projected future credits, amounting to approximately \$18 million, to the project for a grand total of \$42 million. At the time of project initiation, PG&E's estimated costs for the program amounted to approximately \$1 million per mile based on the initial project plan of 42 miles, later expanded to 45.8 miles.

While PG&E performed the work of undergrounding the wires approved in the Program and was responsible for most of its costs, the City's Department of Public Works was responsible for issuing authorizing permits and for coordinating the work. Soon after construction began, it became clear that the actual cost of undergrounding the wires would greatly exceed the projected cost of \$1.0 million per mile.

PG&E completed the project in its entirety even though the costs exceeded the allocation credits available, as it was required to complete the projects under a Master Settlement Agreement reached with the City. As a result, the total cost incurred by PG&E for the undergrounding of the 45.8 miles of wires was \$173,167,804. These total project costs amounted to an average of \$3.8 million per mile, significantly more than the \$1.0 million per mile originally estimated by PG&E, and were covered by mortgaged future year credits beyond the normally allowed five years as authorized.

The City currently has \$53,760,782 in credits left to be repaid. Assuming that the City's annual Rule 20A allocation of approximately \$3.1 million remains unchanged, it will take the City a span of 17.3 years to repay the borrowed credits before it can access Rule 20A credits for new undergrounding projects. The \$173,167,804 in actual costs for the undergrounding projects completed in 2006 do not include administrative costs incurred by the City or costs incurred by telecommunications or cable TV utilities to simultaneously underground their wires and facilities which are paid by those utility companies separate from Rule 20A funding.

According to the 2007 Utility Undergrounding Task Force Report, cost overruns arose during the implementation of the Undergrounding Utility Program due to PG&E's lack of sufficient design and construction resources to execute the projects timely, uncoordinated and inefficient project site selections, lack of funds and uniform planning for new street lights, and uncoordinated customer conversions (the process for converting each affected property from overhead to the underground system requires electrical work on each property). The Utility Undergrounding Task Force also cited the City's permit fees, PG&E's labor agreements that require a certain amount of construction work be performed by their own crews rather than competitively selected contractors, the absence of independent engineering and fiscal reviews of the work performed, and San Francisco's density as further factors contributing to the cost overruns.

For the projects completed between 1996 and 2006, PG&E used Rule 20A funds to trench 100 feet for the service laterals to each private property in the affected undergrounding areas. Property owners paid for the remainder of the cost for the service trenches. The costs of converting the properties to the new system, which is typically approximately \$1,500 per property, was incurred by the City through a grant from the Mayor's Office of Housing.

City's Estimated Current Costs of Undergrounding Utility Wires in San Francisco

In 2010, DPW estimated the cost of undergrounding 0.3 miles of overhead wires on Leland Avenue. The estimate included planning costs, construction costs to underground, costs to convert houses to the new electric service and meter facilities, restoration costs, other utility costs, and third-party attachments. It did not include the cost for streetlight replacement.

The cost per mile for this undergrounding project for PG&E and the City would have been \$5.3 million based on the estimated costs of \$1,495,000 for the utility and \$108,000 for the City for cabling, overhead wire removal, traffic signal, stop sign and fire

alarm relocation work and administration for the 0.3 mile project, for a grand total of \$1,603,000 for the 0.3 mile project. Conversion of this cost estimate for the 0.3 mile project to a cost per mile results in \$5,343,333 ($\$1,603,000 / .3 = \$5,343,333$). This cost per mile estimate may be higher than average due to diseconomies of scale resulting from the relatively small size of the Leland Avenue project.

If telecommunications and cable company and street light replacement costs are added, another \$3.3 million and \$867,667 would be added to the per mile cost, respectively, for a grand total of \$9.5 million per mile. According to DPW, because of the high estimated cost, the City decided not to pursue utility wire undergrounding on Leland Avenue.

As shown in Figure 1, the per mile cost for just PG&E and the City would be \$5,877,667, which includes the cost of new street lights, estimated to add 10 percent to total project costs (other utility costs are omitted since the other utilities would be responsible for those costs rather than the City or PG&E ratepayers). Then, updating this 2010 cost estimate to 2014 at an assumed inflation rate of 3 percent per year brings the cost per mile to \$6,615,366. Depending on how other cities determine their undergrounding project costs per mile, this amount, or the cost figure that includes other utility costs, can be used for comparison.

**Figure 1: City Estimate of Cost of Undergrounding Utility Lines on Leland Avenue
 (total distance = 0.3 miles)**

Utility	Utility			City Agency		
	PG&E	AT&T	Comcast	DTIS	DPW	DPT
Planning/Design	\$145,000	\$50,000	\$50,000			
Construction Labor and Materials	\$810,000	\$270,000	\$270,000			
Cabling	\$270,000	\$90,000	\$90,000	\$15,000		
Overhead Removal	\$270,000	\$90,000	\$90,000	\$15,000		
City Agency						
Administration					\$65,000	
Traffic Signal and Street Signs Relocation Work						\$10,000
Fire Alarm Relocation Work				\$3,000		
Sub-Total	\$1,495,000	\$500,000	\$500,000	\$33,000	\$65,000	\$10,000
GRAND TOTAL (.3 miles)						\$2,603,000
Cost per mile	\$4,983,333	\$1,666,667	\$1,666,667	\$110,000	\$216,666	\$33,333
GRAND TOTAL (1 mile)						\$8,676,667
Including street lights (+10%)						\$9,544,333
PG&E/City Only	\$4,983,333			\$110,000	\$216,666	\$33,333
Subtotal: PG&E/City						\$5,343,333
PGE/City + street lights (+10%)						\$5,877,667
PG&E/City (including street lights) Inflation Adjusted through 2014						\$6,615,366

Source: DPW, with streetlight costs and cost-of-living adjustments through 2014 calculated by Budget and Legislative Analyst.

II. Cost of Undergrounding in Other California Cities

The purpose of this report is to determine whether it might be possible to underground utility wires for less than the \$6.6 million per mile based on DPW's estimate in 2010 for PG&E and City costs given that: 1) these estimates were based on a small 0.3 mile proposed project and are therefore subject to diseconomies of scale, 2) no project costs, such as lateral trenching and individual property conversions, were assumed to be covered by property owners, though City policy, as codified in the Public Works Code, calls for property owners to cover such costs, and 3) the Utility Undergrounding

Program between 1996 and 2006 in the City that was the basis of the Leland Avenue cost estimates were subject to significant cost overruns. This report section examines the cost of utility undergrounding projects completed in other California cities and extrapolates an average cost per mile of undergrounding wires.

Cities and utilities typically report the total size of an undergrounding project using a measure referred to as linear feet. Linear feet captures the total street distance along which overhead utility wires are to be undergrounded. It usually does not capture the total trench footage that will be dug for the project such as the service laterals that connect the undergrounded wires to each property in the designated undergrounding area.

Comparing costs between jurisdictions requires obtaining details on each jurisdiction's approaches to project measurement and project cost accounting as some municipalities do not report or track total trench footage, including the laterals between the main trench and each property. Some jurisdictions include the costs for the electric utility only whereas others include the costs for all utilities. A jurisdiction may include the utility's costs for trenching service laterals to each property and individual property system conversion work, but in other jurisdictions, these costs are borne by the property owners and are not included in the municipality's reported project costs.

For this report, the Budget and Legislative Analyst contacted and collected information from the comparison jurisdictions to determine how their undergrounding projects were measured and what components they included in their total project costs. This provided assurances that all projects were being measured as comparably as possible and that other cities' costs could be reasonably compared to San Francisco project cost estimates.

City of San Diego Approach

In addition to utilizing its Rule 20A allocations, the City of San Diego obtains additional revenue from a franchise fee surcharge paid by San Diego Gas and Electric (SDG&E) for the undergrounding of wires, thus allowing it to underground significantly more miles of wire than other municipalities since they have a funding source other than just Rule 20A funding. No other municipalities in the state have a similar financing arrangement, according to Mr. David Lee, Utilities Engineer with the CPUC.

As illustrated in the chart below, the average per mile cost for several projects that were completed between December 2012 and 2013 in the City of San Diego was \$3,025,000 (extrapolated to a cost per mile by using the linear feet measures for those projects). According to Mr. Mario Reyes, of the San Diego Department of Transportation and Storm Water, this total consists of the costs paid by SDG&E but not costs incurred by the City for street lighting and other costs, which added an estimated additional 15 percent to the SDG&E total costs, meaning that the average per mile cost of the projects, including City costs, was \$3,478,750 ($\$3,025,000 + 15\%$). Assuming three percent annual inflation through 2014 yields a total of \$3,664,843 per mile.

The average cost per mile estimate for the City of San Diego does not include costs incurred by other utility companies for the undergrounding or connection of their wires. It does, however, include the cost of trenching the laterals and of converting private properties to the underground system, which the City paid for, either through the spending of Rule 20A allocations or with surcharge revenues.

Figure 2: Linear Feet and Cost per Mile for San Diego Undergrounding Projects, 2010-2013

Project Name	Year Completed	# of Houses	Linear Feet*	Total Miles	Project Total	Per Mile**	Per Mile Inflation-Adjusted (2014)
Canon St.	2012	11	1,914	0.36	\$1,267,217	\$3,500,000	\$3,713,150
Block 2J Point Loma	2012	117	6,523	1.24	\$4,504,480	\$3,600,000	\$3,819,240
Block 6J	2012	580	22,334	4.23	8,800,000	2,100,000	\$2,227,890
Block 6I	2013	436	16,368	3.1	9,100,000	2,900,000	\$2,987,000
Average		286	11,785	2	\$5,917,924	\$3,025,000	\$3,186,820
City Administrative Costs & Street Lights (+15%)						\$453,750	\$478,023
Grand Total						\$3,478,750	\$3,664,843

Source: San Diego Department of Transportation and Storm Water

*The total linear feet measurement includes the reported linear footage for the projects, and does not include the additional trench footage for the laterals or for the transformers.

**The total cost includes the cost of trenching the laterals and transformers, as well as the cost of connecting properties to the system.

City of San Jose Combines Rule 20A and 20B Programs

The City of San Jose completes utility undergrounding projects mostly using a combination of Tariff Rule 20A and Rule 20B funding. The City implements undergrounding projects either as: 1) standard Rule 20A projects, 2) Rule 20B projects, funded through the City's In-Lieu Fee Program which requires developers to pay for undergrounding utility wires at or adjacent to their development projects, with some project costs subsidized by ratepayer funds, or 3) combined Rule 20A/Rule 20B projects in which undergrounding at new development sites is consolidated with Rule 20A projects to achieve greater project efficiency.

Mr. Leonardo Ruiz, of the City of San Jose's Department of Public Works, stated that the City's estimated current cost of utility undergrounding is \$880 per linear foot for Rule 20B projects, which is equal to approximately \$4,646,400 per mile. The City reports it derived this estimate by: 1) updating the actual cost per linear foot from a project completed in 2007 by the Engineering News Record 20-City Average Construction Cost Index, and 2) collecting bids from prospective contractors. Mr. Ruiz anticipates that this cost per foot will be increased again after the completion of the next undergrounding project.

The \$880 per linear foot estimate includes all costs associated with the planning, design, construction, inspection and administration aspects of the project for the electric and other affected utilities and the City of San Jose. It also includes the cost of trenching the laterals to connect individual properties to the service line. It does not include the \$1,500 reimbursement that is typically paid to customers by the City of San Jose during the course of Rule 20B projects to cover the cost of connecting their properties to the new underground system. While PG&E sometimes covers this cost entirely for Rule 20A projects, rather than just up to \$1,500, the City of San Jose only covered up to \$1,500 for the particular project used as the basis of this cost per mile estimate.

The City of San Jose is planning to undertake a Rule 20B project next year, after which the cost per linear foot estimate will be updated.

City of Oakland Undergrounding Projects

The City of Oakland undertook undergrounding projects in five assessment districts, beginning in 1998, using a combination of Rule 20A funding, City funds and pooled bond revenue generated by debt issued and overseen by the Oakland Joint Powers Financing Authority. The Official Statement for the bonds describing the five undergrounding projects lists the total linear feet and estimated project costs, shown below in Figure 3, as well as the total amount to be paid with the bond revenue, by the City, by affected property owners, and by PG&E and the other two relevant utilities: Pacific Bell and TCI. The other utility costs have been removed from the estimated total project costs by the Budget and Legislative Analyst to determine a cost per mile comparable to the other jurisdictions reviewed and to the \$6.6 million estimated cost per mile for undergrounding projects in San Francisco.

Assuming an annual three percent increase in cost due to inflation, the Budget and Legislative Analyst has updated the estimated costs per mile for the five City of Oakland projects. As illustrated in Figure 3 below, the average cost per mile across the five projects in 2014 dollars was \$2,767,524, which includes the amount to be paid by the city, property owners and PG&E. It also includes the cost of trenching the service laterals and connecting properties to the system. The role of “trenching agent”, responsible for coordination of the projects, rotated between the City of Oakland and each of the utilities for these projects.

Figure 3: Estimated Costs of Five Undergrounding Projects in Oakland Updated to 2014

Project Name	Total Linear Feet	Estimated Project Cost*	Cost per Mile (1997)	Inflation-Adjusted Cost per Mile (2014)^
Proctor	1,900	\$ 495,117	\$ 1,375,904	\$2,274,160
Lakeshore Phase III	8,300	\$ 2,652,254	\$ 1,687,217	\$2,788,713
Harbord, Estates, McAndrew, Wood Area	10,410	\$ 4,774,759	\$ 2,421,780	\$4,002,833
La Salle, Liggett, Pershing and Wood Area	11,720	\$ 3,866,827	\$ 1,742,052	\$2,879,347
Grizzly Peak	10,410	\$ 2,257,542	\$ 1,145,036	\$1,892,570
AVERAGE	8,548	\$ 2,809,300	\$ 1,674,398	\$2,767,524

Source: Official Statement, Oakland Joint Powers Financing Authority Issuance of \$1,250,000 Special Assessment Pooled Revenue Bonds, Series 1997. Cost-of-living adjustments through 2014 calculated by Budget and Legislative Analyst.

*Estimated project cost does not include the total paid by the other utilities: Pacific Bell and TCI.

^Adjustments to 2014 calculated by assuming 3 percent annual rate of inflation.

Recent PG&E Costs of Undergrounding in a Bay Area Municipality

PG&E provided the Budget and Legislative Analyst with the 2014 cost per linear foot of two undergrounding projects recently completed in a Bay Area municipality¹, the name of which PG&E did not disclose. The table below lists the extrapolated average costs per mile. The project cost includes the cost of trenching the laterals and of connecting properties to the system. PG&E did not indicate whether the project cost includes other city costs, or the cost of replacing street lights. If these costs are not included, the cost per mile would likely increase by 10-15 percent.

The total average per mile cost for these two projects was \$5,901,071. It is not possible to determine how this cost compares to estimated costs for San Francisco without knowing which municipality this is and how its characteristics compare with those of San Francisco.

¹ PG&E was able to provide cost information for these projects but not for the name of the jurisdiction. Similarities and differences between the jurisdiction and San Francisco in areas such as topography and density can therefore not be determined.

**Figure 4: Cost of Two Recent Undergrounding Projects
 Bay Area Municipality¹, 2014**

Project #	Year Completed	Total Linear Footage	Project Cost	Cost per Mile
1	2014	1,374	\$ 1,750,000	\$6,724,891
2	2014	3,099	\$ 2,980,000	\$5,077,251
AVERAGE		2,237	\$ 2,365,000	\$5,901,071

Source: PG&E

¹ Name of municipality not provided by PG&E.

Summary of Undergrounding Project Costs in Other Cities

Figure 5 below summarizes the average cost per mile of undergrounding projects in other jurisdictions. It separates out the City of San Jose’s estimate since it includes other utility costs whereas the other cities’ costs do not. The cost estimates that do not include other utility costs are more relevant for this report, as the goal is to determine what it would cost PG&E and the City to underground the remaining overhead wires in San Francisco, and to determine what alternative sources of funds are available for covering those costs, as Rule 20A credits are not currently available for San Francisco. The other utilities would still be responsible for covering their own costs. All estimates include the costs of trenching laterals from the main trench to individual properties.

**Figure 5: Estimated Cost of Utility Undergrounding Projects
 in Other Jurisdictions**

Year	City	Average Cost per Mile	Description
<i>Project Costs for the City and Electric Utility Only</i>			
2014	San Diego	\$3,664,843	Includes cost of trenching the laterals and of connecting properties to the system.
2014	Undisclosed Bay Area municipality ¹	\$5,901,071	Includes the cost of trenching the laterals and of connecting properties to the system. Cost of replacing street lights may not be included.
2014	Oakland	\$2,767,524	Includes cost of trenching the laterals and of connecting properties to the system. Average per mile cost estimated based on five 20A projects, updated for cost-of-living adjustments from 1997 through 2014.
<i>Project Costs for the City, Electric Utility and Other Utilities</i>			
2014	San Jose	\$4,646,400	Includes cost of trenching the laterals; does not include cost of connecting properties to the system. Average per mile cost estimated based on updated project costs from 2007.

Source: Budget and Legislative Analyst Summary

¹ Data provided by PG&E but utility could not disclose name of jurisdiction.

The cost per mile estimate derived for the Leland Avenue project in San Francisco, including City costs but not the costs for other utilities, was \$6.6 million per mile. This figure is higher than the \$2.8 million to \$5.9 million range of project costs in other jurisdictions.

The wide range for project costs may be due in part to economies (or diseconomies) of scale. The projects in the City of San Diego, which averaged \$3.7 million per mile in 2014 dollars, tend to be significantly larger than the undergrounding projects completed in other jurisdictions, meaning that it may be cheaper to underground more wires at a time. They are also completed according to an Undergrounding Master Plan that may increase the efficiency with which they are completed.

According to the Rule 20A Program Liaison for PG&E, undergrounding projects are “significantly more expensive” in San Francisco. The following reasons were provided as to why this might be the case:

- It is necessary to dig trenches on both sides of many streets;
- The City allows customers to choose their own electrical contractors for connecting to the new system, and the difficulty of coordinating between these groups causes delays;
- There is a high density of properties on each block so there is more work to be done per mile, particularly service lateral trenching and individual property conversions;
- There are restrictions as to the extent to which there may be an open trench on a street (150' feet only at a time);
- Permits, fees and traffic control costs are high;
- Traffic control may require police officers working overtime shifts;
- There are restrictions on hours when work may be performed;
- There are high street restoration costs;
- Restrictions on lane closures slows productivity;
- Restrictions are in place on which materials may be stored on the project streets at any given time;
- Conduit, wire, and street light boxes must be installed for each City-owned streetlight location;
- The high density of obstacles impacts work progress;
- There are major overhead electric feeders within the underground districts; and
- Trenching over Muni tracks is difficult/expensive.

While many of the factors on this list cannot be changed, such as the presence of Muni tracks on the streets which most other municipalities do not have, others could potentially be changed to help expedite and lower the cost of utility wire undergrounding in San Francisco. Examples of factors that might be changed to lower undergrounding costs include temporarily rescinding some of the existing regulations and restrictions such as hours when work may be performed, lane closure restrictions, allowing property owners to choose their own electrical contractors for installing conversions between the utility underground wires and individual properties, and others.

In 2010, PG&E began requiring municipalities to sign a written agreement that delineates which costs will be covered by the utility and which by the local government. PG&E aimed to control its costs through the use of the agreements. The standard written agreement indicates that the municipality will pay for paving and restoration costs beyond the standard excavations and restorations necessary for the construction of the project. The agreement also states that the municipality will pay for streetlight costs, and for the cost of removing municipally-owned streetlights that are attached to utility poles and located within the undergrounding district.

According to a spokesperson from PG&E, the written agreement is currently being revised to further clarify responsibility for costs.

III. Cost of Undergrounding the Remaining Overhead Wires in San Francisco

San Francisco had a total of 990 miles of overhead wires eligible for undergrounding. Of those, 520 miles have been undergrounded, and 470 miles remain. Of the remaining wires, 400 miles are street side and 70 miles are rear yard overhead utility wires, which are not eligible to be undergrounded with Tariff Rule 20A funds.

As described in the previous section, the average recent cost per mile to the cities and electric utilities for undergrounding wires in other urban municipalities ranged from \$2.8 million to \$5.9 million. The recent per mile cost estimate for a project in San Francisco that also included the costs to the city and to the primary utility was \$6.6 million.

Using the cost per mile range from other jurisdictions reviewed by the Budget and Legislative Analyst, the estimated cost of undergrounding the 470 miles of remaining wires in San Francisco would be between \$1.3 and \$2.8 billion (\$2.8-\$5.9 million/mile x 470 miles). Using the estimated \$6.6 million per mile cost for the City prepared by the Department of Public Works in 2010 (and updated for cost-of-living increases through 2014 by the Budget and Legislative Analyst), the total cost would be \$3.1 billion.

As of April 2014, PG&E has a total of 395,137 billable accounts in San Francisco. The breakdown of these accounts by the categories of residential, commercial, industrial, agricultural and other is shown in Figure 6 below. The chart also indicates the number of accounts that are served by overhead wires and that are served by wires that are already underground.

Dividing the range of total costs for undergrounding utility wires by just the 226,930 accounts still served by overhead wires yields between \$5,732 and \$12,222 per account based on the low range of costs of \$2,767,524 per mile and the high range of \$5,901,071 per mile. Dividing the cost range by the total 395,137 PG&E accounts yield a cost per account of between \$3,292 and \$7,019. Using the City estimate of \$6,615,366 per mile, the cost per account would be \$13,701 for just the accounts on streets with aboveground wires and \$7,869 for all accounts in San Francisco.

Figure 6: Breakdown of PG&E Accounts in San Francisco by Type

Account Type	Overhead Wires	Underground Wires	Total
Residential	207,866	148,374	356,240
Commercial	14,223	13,832	28,055
Industrial Billings	3,865	4,613	8,478
Agricultural	19	0	19
Other	957	1,388	2,345
Total	226,930	168,207	395,137

Source: PG&E

It may not be necessary to underground all of the remaining wires in San Francisco, and certainly some wires can be prioritized for undergrounding over others. While the City of San Diego does aim to underground the entirety of its wires, its annually updated Undergrounding Master Plan prioritizes certain streets in each City Council district. The priority for San Francisco could be to underground the 400 miles of street side wires only rather than the full 470 miles of street with utility wires currently aboveground. Criteria could be developed to determine which wires should be undergrounded first.

IV. Financing Alternatives

As discussed in the Background section of this report, the cost per mile of undergrounding 45.8 miles of wires in the 1996 Underground Utility Program far exceeded the estimated cost of \$1 million per mile. Project costs totaled approximately \$173.2 million, or an average of \$3.8 million per mile, and only \$115.9 million was has been covered by Tariff Rule 20A allocation credits. PG&E notes that, as of the writing of this report, San Francisco has \$53,760,782 in credits left to repay, which will require another 17.3 years given the City's current annual credit allocation of approximately \$3.1 million per year.

No Rule 20A funds will be available for other utility undergrounding projects in San Francisco until the credits are repaid. If the City plans to pursue undergrounding projects in the interim, other financing solutions must be found.

Tariff Rules 20B and 20C

Tariff Rule 20 includes two other options in addition to Tariff Rule 20A for financing projects: Rules 20B and 20C. Under Rule 20B, PG&E ratepayer revenues cover only approximately 20 percent of undergrounding project costs and property owners and/or the local jurisdiction cover 80 percent of costs. Under Rule 20C, projects are paid for entirely by property owners, with no ratepayer funds used, though the electric utility is still involved in the installation of the underground wiring. Undergrounding projects approved under these two options are still subject to CPUC regulations and project criteria.

Issuing Debt for Undergrounding Assessment Districts

Absent using Rule 20A funds for undergrounding projects, alternative financing methods include the City issuing debt for such projects. Doing so could expedite timing of these projects by removing the estimated 17.3 year period until Rule 20A credits will again be available to San Francisco, as discussed above.

Debt could be issued through a general obligation bond, which would require approval by the Board of Supervisors and two-thirds of the voters. Another approach that would link the benefits of undergrounding with the affected property owners would be creation of one or more assessment districts, such as a Mello-Roos Community Facilities District (CFD), as allowed by State law, subject to support by the majority of property owners in the designated area. Under this arrangement, special tax bonds could be issued by the City to fund the undergrounding projects, with debt service on the bonds paid from special taxes levied on the parcels within the district(s).

There are no restrictions on the size of a Community Facilities District, so it would be possible to create numerous districts throughout the City, or to form one large district. Two-thirds approval of residents living within the boundary of the CFD is required for formation. A CFD might also qualify for Tariff Rule 20B funding, which would mean that approximately 20 percent of the costs could be covered by utility rate revenue. For that to occur, all property owners in the CFD jurisdiction would need to approve it. The City and any newly developed CFDs will not be eligible for Tariff Rule 20B funding until the previously used Tariff Rule 20A credits are repaid.

Creation of a CFD could give the City and property owners more control over undergrounding projects as they would participate in selection of their own contractors for the primary construction work (i.e., trenching). PG&E would still need to be involved in the project to oversee conversion of all properties to the new underground system including creation of laterals to each property, removing overhead wires, and switching service over to the new underground lines. The conversions by each property to the new underground lines could be conducted by contractors.

Parcel Tax

A municipality may raise funds through the adoption of a parcel tax, which is a form of property tax that is based on the characteristics of the parcel, rather than on the value of the property itself. Parcels may be divided by single-family home; by acre; by apartment unit; and by square foot. Parcel taxes may only be adopted if a two-thirds majority of voters approves them. Parcel taxes can be used for any type of spending.

Inclusion of Undergrounding Projects in Development Agreements

Similar to the City of San Jose's Rule 20B In-Lieu Fee Program, the City of Concord partners with developers to implement utility undergrounding projects. The City makes its Rule 20A funds available for the undergrounding of utilities along the public street abutting developments. The developer provides the needed matching funds that

otherwise the City would provide for design, construction inspection, administrative and streetlight replacement costs, and any other costs that cannot be covered by Rule 20A funds. As of 2010, the City of Concord had partnered with developers on three utility undergrounding projects. A program of this nature could be established by the City and County of San Francisco to provide additional funding for undergrounding utility wires.

Other Options from the 2007 Utility Undergrounding Report

The 2007 Utility Undergrounding Task Force Report to the Board of Supervisors proposed raising existing, related fees and taxes and dedicating the additional revenue to a fund for the undergrounding of wires.

Fees and taxes that could be raised to dedicate revenue to undergrounding include:

- The Utility Users Tax, which currently assesses a 7.5 percent tax on monthly charges made for electric, gas and water service to commercial utility customers. It also includes a 7.5 percent tax assessment on cellular telephone usage billed in San Francisco without regard to the characterization of whether the service is commercial or residential;
- The Access Line Tax, which is \$3.09 per month for standard access lines, \$23.18 per month for trunk lines, and \$417.29 per month for high capacity lines; and
- The Real Property Transfer Tax (also known as the Documentary Transfer Tax), which is a tax on non-exempt transfers of real property located within the City.

The Utility Users Tax rate has not been raised since FY 1993-94. Increasing the Utility Users Tax rate would require voter approval under Proposition 218. The UUT generated approximately \$83.5 million in FY 2013-14 from \$1.113 billion in commercial utility sales. Based on the FY 2013-14 figures, if the UUT were raised 1% from 7.5 to 8.5 percent, an additional \$11.1 million would be generated. If the UUT were raised to 10%, as is the rate in Los Angeles, an additional \$27.8 million would be generated.

The Access Line Tax increases by a small percentage annually and generated an estimated \$42.2 million in FY 2013-14, according to the Controller's Office. The Office of the Treasurer and Tax Collector, which is responsible for collection of this tax, did not provide the number of each type of account for this analysis. Assuming that 50% of the accounts are standard access lines, 35% are trunk lines and 15% are high capacity lines, there are an estimated total of 48,442 lines. If the amount charged for each type of account were to be increased by \$.20 this year, an additional \$116,261 would be raised.

The Controller's Office projected that the Real Property Transfer Tax would generate \$254.7 million in FY 2013-14 from the transfer of 17,720 real properties. If an additional \$100 were charged per property transfer, a total of \$1,772,000 would be collected that could be earmarked for undergrounding wires. Increasing this tax would likely require voter approval, pursuant to Proposition 218.

The tax rate for each property transfer is determined by the value of the property itself, as shown in Figure 7 below. If the rate were increased by .05% for each category of

property value, an additional \$8.86 million would be raised per year, assuming the annual transfer of properties and values were the same as in FY 2013-14.

Figure 7: Total Revenue Collected by Real Property Transfer Tax Given Current and Proposed Tax Rates

Property Value	Current Tax Rate	Number of Properties	Total Revenue FY 13-14 (millions)	Proposed Tax Rate	Proposed Total Revenue (millions)	Difference in Revenue (millions)
<\$250K	.5%	180	\$.9	0.55%	\$0.99	\$0.09
>\$250K	.68%	3,176	\$21.6	0.73%	\$23.18	\$1.58
>\$1 million	.75%	6,360	\$47.7	0.80%	\$50.88	\$3.18
>\$5 million	1.5%	1,560	\$23.4	1.55%	\$24.18	\$0.78
>\$10 million	2.5%	6,444	\$161.1	2.55%	\$164.32	\$3.22
Total		17,720	\$254.7		\$263.6	\$8.86

Source: Controller's Office and Budget and Legislative Analyst Summary

Inter-Municipal Trading of Tariff Rule 20A Credits

Cities and counties are able to trade or sell unallocated credits, according to representatives from both PG&E and Southern California Edison (SCE). There are examples of municipalities in both service areas selling their unused credits, often for less than the full dollar value of the credits themselves. If the City and County of San Francisco were to engage in such exchanges, it could expedite undergrounding project timing by removing the estimated 18 year waiting period until Rule 20A credits will again be available to San Francisco, as discussed previously.

Following negotiations and Council approval in July of 2013, the City of Newport Beach entered into a memorandum of understanding (MOU) with the City of Mission Viejo to purchase unallocated Rule 20A credits at a cost of \$0.55 on the dollar. Mission Viejo also granted Newport Beach the first right of refusal to purchase future Rule 20A allocations between July 1, 2013 and July 1, 2015 at the same rate of \$0.55 on the dollar.

In June of 2014, the City of Mission Viejo agreed to sell the City of Newport Beach a balance of \$99,143 in Rule 20A funds. Newport Beach will pay Mission Viejo a total of \$54,528 for the allocation. Mission Viejo agreed to sell its credits because it did not have undergrounding projects planned for the near future.

Similarly, the City of Foster City recently negotiated the transfer of \$1.7 million of its Rule 20A credits to the City of Belmont. According to a representative from PG&E, cities and counties in the service area can create agreements between themselves to transfer Rule 20A credits under varying conditions as long as they provide PG&E documentation of the agreements.

The City could negotiate similar agreements with other municipalities in the PG&E service area, as a means of repaying its \$53.8 million in Rule 20A credits and for developing new undergrounding projects.

PG&E provided the Budget and Legislative Analyst with a list of the jurisdictions in the PG&E service area and their current balance of Rule 20A credits. Ten Bay Area cities and counties in the PG&E service area had over \$10 million in credits as of January 1, 2014. The complete list of jurisdictions and their credit allocations as of the beginning of 2014 is included in Appendix A of this report.

Figure 8: Bay Area Jurisdictions in the PG&E Service Area with Greater than \$10 Million in Rule 20A Credits

Name of Jurisdiction	Credit Balance as of December 31, 2013	2014 Credit Allocation	Credit Balance as of January 1, 2014
1) Alameda County	\$13,026,607	\$508,753	\$13,535,360
2) Contra Costa County	\$14,352,988	\$529,822	\$14,882,810
3) City of Oakland	\$27,335,231	\$1,702,757	\$29,037,988
4) City of San Jose	\$47,098,969	\$2,276,539	\$49,375,508
5) City of San Mateo	\$10,615,507	\$377,296	\$10,992,803
6) Santa Clara County	\$16,241,876	\$266,397	\$16,508,273
7) City of Santa Rosa	\$10,163,059	\$470,210	\$10,633,269
8) Sonoma County	\$12,083,391	\$740,235	\$12,823,626
9) City of Sunnyvale	\$13,251,816	\$443,179	\$13,694,995
10) City of Vallejo	\$10,718,019	\$349,126	\$11,067,145

Source: PG&E

V. Efforts to Lower and Control Costs

As reported above, the most recent estimated cost for undergrounding utility wires in San Francisco is above the range of costs incurred in other jurisdictions in California surveyed for this report. Some of these additional costs may be unavoidable, such as those incurred due to the relatively high density of San Francisco compared to other jurisdictions. However, some of the higher costs assumed for undergrounding projects in San Francisco may be able to be lowered by pursuing one or more of the following approaches for future projects. The City has already taken steps to prevent the building of additional overhead wires. Since 1972, the City has required that utility wires be installed underground when new streets are constructed. (Public Works Code, Article 18, Section 937)

Establish and follow a citywide utility wire undergrounding master plan

The 2007 Utility Undergrounding Task Force Report identifies some methods for reducing the cost of future undergrounding projects. It describes the Master Planning process used by the City of San Diego to identify priority undergrounding projects and to undertake all undergrounding work in a systematic manner. It recommends that the

Board of Supervisors approve two and five-year undergrounding plans that prioritize streets with significant overhead wires, such as streetcar and trolley bus routes, and that incorporate public feedback. The report also recommends developing a plan for the allocation of resources by districts, with priority given to districts that were underserved in the past.

Stipulate certain undergrounding costs to be paid by property owners only

The costs of service lateral trenching up to 100 feet on private property were paid for with Rule 20A funds in San Francisco's undergrounding projects between 1996 and 2006, as allowed for under Rule 20A and if approved by the local governing board. The City also paid for converting private properties to the system through a grant provided by the Mayor's Office of Housing. However, Rule 20A and San Francisco's Public Works Code allows for those costs to be borne by the property owners.

If an approach requiring property owners to cover the costs of service laterals and individual property conversions were adopted, considerable City and/or PG&E costs could be reduced. Those costs have not been separately identified for the 1996-2006 projects, but Rule 20A allows for \$1,500 per property in costs for conversions to the underground wires for each affected property. Applying just this \$1,500 cost to the 226,930 accounts in San Francisco with overhead wires would amount to \$340,395,000 in costs that could be removed from the estimated \$1.3 to 2.8 billion in total costs for all remaining streets with overhead wires to between \$960 million and \$2.4 billion. These total project costs would be reduced even further by a greater, but unknown, amount if responsibility for lateral trenching costs were also transferred to property owners.

Establish more City control over undergrounding project costs and related regulations

Utility wire undergrounding projects executed in San Francisco between 1996 and 2006 were managed by PG&E and subject to the utility's timeline, contractors, and project management approach. The City did not have any official control over these project cost elements. Independent engineering or fiscal reviews were not conducted to identify areas where the work could be performed more efficiently and/or costs reduced. The utility performed the services under agreements with their employees that require that a certain portion of all utility construction work be performed by their employees rather than competitively selected contractors that, if used, might have resulted in lower construction costs.

If the City were to assume more management responsibility for undergrounding projects, it is possible that some costs could be curtailed. Further, as discussed above, the City could temporarily suspend some regulations that result in project costs being higher in the City than in other jurisdictions, such as some of those articulated by PG&E and enumerated above: work hour restrictions, lane closure restrictions, permit fees, and others.

As discussed above, the Cities of San Diego and San Jose have established and follow master plans for their utility wire undergrounding projects which reportedly allows for more efficient project execution. Such a plan in San Francisco may help reduce costs

because, once the project is defined, less planning and design time should be required for each individual project and the construction work could be more efficiently executed due to economies of scale.

As mentioned above, PG&E now requires agreements with jurisdictions in which it performs utility undergrounding to clarify responsibilities for various cost components of the projects. While this is most likely intended to serve as a control on PG&E's costs, such an agreement between the City and PG&E could also be advantageous to the City for ensuring that certain cost controls are in place, that cost maximums are set for certain elements of the projects, and that a process is established for resolving how unexpected costs will be covered.

Reduce miles of streets selected for undergrounding

Through a master planning process, the City could also decide to postpone or eliminate the undergrounding of certain types of utility wire. For example, the City could prioritize the undergrounding of street side wires, while delaying the undergrounding of rear street wires. If the goal is to underground the remaining 400 miles of street side wires, the total project cost would fall to between \$1.1 and \$2.4 billion instead of \$1.3 to \$2.8 billion for all 470 miles, using the range of costs per mile obtained from other cities.

Achieve project economies by undergrounding in coordination with other City agency trenching and paving projects

Another method for reducing the cost of undergrounding is to identify opportunities for joint trenching and joint paving wherever possible. The DPW Street Resurfacing five-year plan could be utilized as a tool and all work could be coordinated through the plan. The repaving of concrete streets, curbs, and sidewalks on steep hillside slopes is required by the Excavation Code; the undergrounding of wires should occur simultaneously. The San Francisco Public Utilities Commission also has a Sewer System Master Plan that could be used to coordinate the undergrounding work.

Possible cost differential of tunnel vs. trench

Some utility undergrounding stakeholders have raised the question of whether it would be preferable to tunnel beneath city streets, rather than trench the pavement, for the undergrounding of wires. The creation of utility tunnels, also referred to as utility ducts, is common at industrial sites, and on college campuses, as they allow for the easy provision of electricity and other services among a set of buildings that are in close proximity to each other. They also can be more easily accessed than paved over trenches in the case that repairs need to be made.

There are examples of utility tunneling occurring across metropolitan areas as well. In an effort to prevent the loss of service following earthquakes, the Ministry of Land, Infrastructure and Transport in Tokyo, Japan, created the Abazu-Hibiya Common Utility Duct, which collects all utility lines underground in a single tube, and is served by a light rail network that can transport heavy equipment to a specific site when a repair is

needed. Other cities in Asia and in northern Europe have also developed underground tunnels to store utility lines.

It may also be possible to place utility lines within tunnels that already exist, such as those created for the BART and Muni transportation systems.

According to Ms. Lynn Fong, Permit Manager for the Department of Public Works, it would be difficult to require PG&E, Comcast, AT&T and other telecommunications utilities to redesign and reconstruct their facilities to be placed in an underground tunnel, since they already have their infrastructure installed within the public right-of-way.

VI. Conclusions

The Budget and Legislative Analyst estimates a per mile cost of undergrounding overhead utility wires of \$2.8 – \$5.9 million in 2014 dollars based on the costs of undergrounding projects in other California municipalities, or less than the \$6.6 million per mile estimate for San Francisco prepared as part of a street improvement project on Leland Avenue by the City's Department of Public Works in 2010 using updated costs for the utility wire undergrounding projects executed by PG&E between 1996 and 2006.

Given that there are 470 miles remaining to be undergrounded in the City, the total estimated cost of undergrounding wires in San Francisco would be \$1.3 – \$2.8 billion based on comparable costs from other jurisdictions, not including the costs incurred and separately paid for by other utilities. Dividing these total estimated costs per mile by the 226,930 PG&E accounts still served by overhead utility wires, the per account cost would be \$5,732 – \$12,222. Dividing the cost range by the 395,137 total number of PG&E accounts in San Francisco yields a per account range of between \$3,292 and \$7,019. Using the City's estimated \$6.6 million per mile, the total cost of undergrounding utility wires on the 470 miles where they are still aboveground would be \$3.1 billion and the cost per account would be \$13,701 based on the 226,930 accounts currently served by aboveground wires and \$7,869 per account for all PG&E accounts in San Francisco.

Appendix A

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
ALAMEDA COUNTY	\$13,026,607	\$508,753	\$13,535,360
ALBANY	\$2,750,091	\$72,384	\$2,822,475
ALPINE COUNTY	\$3,944	\$2,924	\$6,868
AMADOR CITY	\$43,231	\$1,378	\$44,609
AMADOR COUNTY	\$2,750,479	\$136,664	\$2,887,143
AMERICAN CANYON	\$327,722	\$30,778	\$358,500
ANDERSON	\$576,570	\$40,594	\$617,164
ANTIOCH	\$532,611	\$213,413	\$746,024
ARCATA	\$1,311,230	\$71,122	\$1,382,352
ARROYO GRANDE	\$959,785	\$60,462	\$1,020,247
ARVIN	\$626,065	\$33,446	\$659,511
ATASCADERO	\$2,953,163	\$113,634	\$3,066,797
ATHERTON	\$1,248,892	\$25,855	\$1,274,747
ATWATER	\$2,005,364	\$68,134	\$2,073,498
AUBURN	\$1,216,262	\$56,293	\$1,272,555
AVENAL	\$680,543	\$23,491	\$704,034
BAKERSFIELD	\$11,268,362	\$807,147	\$12,075,509
BELMONT	\$5,177,105	\$106,391	\$5,283,496
BENICIA	\$1,956,801	\$77,190	\$2,033,991
BERKELEY	\$5,835,483	\$530,368	\$6,365,851
BIGGS	\$928	\$175	\$1,103
BLUE LAKE	\$329,101	\$6,542	\$335,643
BRENTWOOD	\$1,039,164	\$90,937	\$1,130,101
BRISBANE	\$426,871	\$19,267	\$446,138
BUELLTON	\$112,965	\$11,185	\$124,150
BURLINGAME	\$4,908,740	\$140,657	\$5,049,397
BUTTE COUNTY	\$12,477,967	\$427,581	\$12,905,548
CALAVERAS COUNTY	\$7,450,417	\$278,043	\$7,728,460
CALISTOGA	\$670,948	\$19,574	\$690,522
CAMPBELL	\$2,547,790	\$161,948	\$2,709,738
CAPITOLA	\$1,816,536	\$47,250	\$1,863,786
CARMEL	\$670,302	\$36,006	\$706,308
CHICO	\$1,653,802	\$289,457	\$1,943,259
CHOWCHILLA	\$1,176,608	\$35,085	\$1,211,693
CLAYTON	\$236,503	\$21,185	\$257,688
CLEARLAKE	\$2,715,125	\$86,644	\$2,801,769
CLOVERDALE	\$700,547	\$25,181	\$725,728
CLOVIS	\$355,781	\$201,931	\$557,712
COALINGA	\$930,726	\$36,405	\$967,131
COLFAX	\$158,131	\$9,463	\$167,594
COLUSA	\$867,964	\$23,145	\$891,109

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
COLUSA COUNTY	\$2,787,722	\$71,821	\$2,859,543
CONCORD	\$7,488,318	\$385,800	\$7,874,118
CONTRA COSTA COUNTY	\$14,352,988	\$529,822	\$14,882,810
CORCORAN	\$1,016,115	\$39,246	\$1,055,361
CORNING	\$237,194	\$29,356	\$266,550
CORTE MADERA	\$23,336	\$40,486	\$63,822
COTATI	\$490,687	\$20,769	\$511,456
CUPERTINO	\$3,684,860	\$169,208	\$3,854,068
DALY CITY	\$5,537,984	\$269,405	\$5,807,389
DANVILLE	\$295,166	\$96,418	\$391,584
DAVIS	\$4,324,367	\$160,137	\$4,484,504
DEL REY OAKS	\$337,818	\$7,418	\$345,236
DINUBA	\$892,202	\$54,303	\$946,505
DIXON	\$494,912	\$40,738	\$535,650
DOS PALOS	\$663,316	\$17,101	\$680,417
DUBLIN	\$222,798	\$112,684	\$335,482
EAST PALO ALTO	\$2,336,178	\$67,259	\$2,403,437
EL CERRITO	\$1,928,391	\$116,093	\$2,044,484
EL DORADO COUNTY	\$14,212,193	\$543,753	\$14,755,946
EMERYVILLE	\$689,061	\$41,472	\$730,533
ESCALON	\$551,864	\$18,488	\$570,352
EUREKA	\$4,191,253	\$146,054	\$4,337,307
FAIRFAX	\$430,632	\$36,330	\$466,962
FAIRFIELD	\$4,635,515	\$220,102	\$4,855,617
FERNDALE	\$459,820	\$9,088	\$468,908
FIREBAUGH	\$578,726	\$17,749	\$596,475
FORT BRAGG	\$1,032,690	\$36,728	\$1,069,418
FORTUNA	\$1,016,955	\$47,963	\$1,064,918
FOWLER	\$60,382	\$16,357	\$76,739
FREMONT	\$8,561,923	\$496,072	\$9,057,995
FRESNO	\$17,170,206	\$1,312,961	\$18,483,167
FRESNO COUNTY	\$17,154,443	\$876,874	\$18,031,317
GILROY	\$2,520,124	\$104,993	\$2,625,117
GLENN COUNTY	\$2,918,314	\$94,843	\$3,013,157
GONZALES	\$403,461	\$16,002	\$419,463
GRASS VALLEY	\$418,917	\$54,933	\$473,850
GREENFIELD	\$781,239	\$26,623	\$807,862
GROVER BEACH	\$673,811	\$59,452	\$733,263
GUADALUPE	\$311,303	\$15,998	\$327,301
GUSTINE	\$260,177	\$19,580	\$279,757
HALF MOON BAY	\$112,739	\$34,395	\$147,134
HAYWARD	\$9,377,260	\$440,309	\$9,817,569
HEALDSBURG	\$9,930	\$2,049	\$11,979
HERCULES	\$899,422	\$32,691	\$932,113

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
HOLLISTER	\$254,404	\$68,682	\$323,086
HUMBOLDT COUNTY	\$9,762,167	\$345,108	\$10,107,275
HURON	\$122,685	\$11,654	\$134,339
IONE	\$448,741	\$14,002	\$462,743
ISLETON	\$275,844	\$4,831	\$280,675
JACKSON	\$222,342	\$21,232	\$243,574
KERMAN	\$406,489	\$27,669	\$434,158
KERN COUNTY	\$22,428,942	\$804,605	\$23,233,547
KING CITY	\$670,584	\$27,168	\$697,752
KINGS COUNTY	\$1,853,170	\$102,848	\$1,956,018
KINGSBURG	\$560,355	\$33,505	\$593,860
LAFAYETTE	\$227,116	\$104,213	\$331,329
LAKE COUNTY	\$7,005,803	\$289,968	\$7,295,771
LAKEPORT	\$822,205	\$27,609	\$849,814
LARKSPUR	\$1,189,818	\$47,659	\$1,237,477
LASSEN COUNTY	\$363,175	\$9,458	\$372,633
LATHROP	\$198,437	\$33,743	\$232,180
LINCOLN	\$677,259	\$85,810	\$763,069
LIVE OAK	\$566,887	\$18,966	\$585,853
LIVERMORE	\$3,909,270	\$212,072	\$4,121,342
LIVINGSTON	\$647,014	\$18,939	\$665,953
LOOMIS	\$843,895	\$23,893	\$867,788
LOS ALTOS	\$1,596,219	\$118,914	\$1,715,133
LOS ALTOS HILLS	\$85,037	\$27,642	\$112,679
LOS BANOS	\$1,039,476	\$82,786	\$1,122,262
LOS GATOS	\$3,132,998	\$122,490	\$3,255,488
MADERA	\$1,816,165	\$130,028	\$1,946,193
MADERA COUNTY	\$7,346,141	\$402,775	\$7,748,916
MANTECA	\$3,249,179	\$151,180	\$3,400,359
MARICOPA	\$288,478	\$5,714	\$294,192
MARIN COUNTY	\$2,519,502	\$271,068	\$2,790,570
MARINA	\$1,377,662	\$57,457	\$1,435,119
MARIPOSA COUNTY	\$2,652,063	\$120,767	\$2,772,830
MARTINEZ	\$2,600,234	\$110,576	\$2,710,810
MARYSVILLE	\$2,277,137	\$53,662	\$2,330,799
MCFARLAND	\$427,954	\$15,597	\$443,551
MENDOCINO COUNTY	\$6,244,815	\$317,422	\$6,562,237
MENDOTA	\$750,228	\$20,008	\$770,236
MENLO PARK	\$5,249,116	\$134,412	\$5,383,528
MERCED	\$765,436	\$186,210	\$951,646
MERCED COUNTY	\$8,328,874	\$298,996	\$8,627,870
MILLBRAE	\$2,868,091	\$78,951	\$2,947,042
MILPITAS	\$3,627,650	\$136,029	\$3,763,679
MONTE SERENO	\$439,666	\$11,845	\$451,511

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
MONTEREY	\$3,652,697	\$132,293	\$3,784,990
MONTEREY COUNTY	\$11,760,252	\$423,979	\$12,184,231
MORAGA	\$1,453,021	\$44,092	\$1,497,113
MORGAN HILL	\$2,149,951	\$76,786	\$2,226,737
MORRO BAY	\$2,159,277	\$67,296	\$2,226,573
MOUNTAIN VIEW	\$5,463,812	\$283,025	\$5,746,837
NAPA	\$7,732,204	\$244,577	\$7,976,781
NAPA COUNTY	\$3,634,475	\$156,889	\$3,791,364
NEVADA CITY	\$530,958	\$18,970	\$549,928
NEVADA COUNTY	\$10,025,965	\$339,608	\$10,365,573
NEWARK	\$2,067,274	\$109,014	\$2,176,288
NEWMAN	\$256,598	\$23,183	\$279,781
NOVATO	\$3,487,890	\$158,332	\$3,646,222
OAKDALE	\$115,630	\$55,862	\$171,492
OAKLAND	\$27,335,231	\$1,702,757	\$29,037,988
OAKLEY	\$596,050	\$65,831	\$661,881
ORANGE COVE	\$863,960	\$20,971	\$884,931
ORINDA	\$2,138,002	\$71,527	\$2,209,529
ORLAND	\$974,971	\$28,434	\$1,003,405
OROVILLE	\$792,532	\$66,732	\$859,264
PACIFIC GROVE	\$1,745,160	\$85,073	\$1,830,233
PACIFICA	\$4,229,852	\$140,624	\$4,370,476
PARADISE	\$3,952,801	\$130,326	\$4,083,127
PARLIER	\$349,170	\$24,664	\$373,834
PASO ROBLES	\$1,640,433	\$84,816	\$1,725,249
PETALUMA	\$2,484,286	\$162,080	\$2,646,366
PIEDMONT	\$376,884	\$37,209	\$414,093
PINOLE	\$1,256,377	\$56,550	\$1,312,927
PISMO BEACH	\$1,210,884	\$40,084	\$1,250,968
PITTSBURG	\$2,139,423	\$127,275	\$2,266,698
PLACER COUNTY	\$6,252,715	\$376,915	\$6,629,630
PLACERVILLE	\$1,426,817	\$46,440	\$1,473,257
PLEASANT HILL	\$3,894,296	\$115,216	\$4,009,512
PLEASANTON	\$1,244,780	\$144,544	\$1,389,324
PLUMAS COUNTY	\$2,193,546	\$101,605	\$2,295,151
PLYMOUTH	\$201,943	\$4,438	\$206,381
POINT ARENA	\$126,682	\$2,935	\$129,617
PORTOLA VALLEY	\$424,125	\$15,074	\$439,199
RED BLUFF	\$1,208,418	\$56,850	\$1,265,268
REDWOOD CITY	\$6,932,337	\$281,970	\$7,214,307
REEDLEY	\$675,445	\$57,074	\$732,519
RICHMOND	\$8,765,160	\$363,707	\$9,128,867
RIO DELL	\$367,892	\$14,900	\$382,792
RIO VISTA	\$553,912	\$28,919	\$582,831

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
RIVERBANK	\$587,407	\$35,429	\$622,836
ROCKLIN	\$1,848,500	\$115,799	\$1,964,299
ROHNERT PARK	\$2,121,337	\$78,987	\$2,200,324
ROSEVILLE	\$1,103	\$231	\$1,334
ROSS	\$201,523	\$9,868	\$211,391
SACRAMENTO COUNTY	\$945,334	\$20,120	\$965,454
SALINAS	\$7,700,008	\$337,849	\$8,037,857
SAN ANSELMO	\$434,611	\$61,250	\$495,861
SAN BENITO COUNTY	\$3,131,905	\$81,865	\$3,213,770
SAN BRUNO	\$5,214,799	\$150,731	\$5,365,530
SAN CARLOS	\$1,296,059	\$136,458	\$1,432,517
SAN JOAQUIN	\$326,622	\$7,854	\$334,476
SAN JOAQUIN COUNTY	\$20,424,791	\$613,918	\$21,038,709
SAN JOSE	\$47,098,969	\$2,276,539	\$49,375,508
SAN JUAN BAUTISTA	\$329,289	\$7,691	\$336,980
SAN LEANDRO	\$8,507,596	\$314,420	\$8,822,016
SAN LUIS OBISPO	\$1,517,931	\$178,543	\$1,696,474
SAN LUIS OBISPO COUNTY	\$10,168,083	\$507,156	\$10,675,239
SAN MATEO	\$10,615,507	\$377,296	\$10,992,803
SAN MATEO COUNTY	\$7,373,593	\$247,501	\$7,621,094
SAN PABLO	\$1,361,288	\$92,506	\$1,453,794
SAN RAFAEL	\$3,742,194	\$229,355	\$3,971,549
SAN RAMON	\$1,126,394	\$127,053	\$1,253,447
SAND CITY	\$184,362	\$4,155	\$188,517
SANGER	\$878,524	\$57,725	\$936,249
SANTA BARBARA COUNTY	\$4,724,580	\$222,004	\$4,946,584
SANTA CLARA COUNTY	\$16,241,876	\$266,397	\$16,508,273
SANTA CRUZ	-\$147,656	\$208,452	\$60,796
SANTA CRUZ COUNTY	\$15,768,639	\$541,259	\$16,309,898
SANTA MARIA	\$5,481,280	\$209,373	\$5,690,653
SANTA ROSA	\$10,163,059	\$470,210	\$10,633,269
SARATOGA	\$3,382,724	\$96,426	\$3,479,150
SAUSALITO	\$1,654,035	\$44,863	\$1,698,898
SCOTTS VALLEY	\$998,660	\$33,709	\$1,032,369
SEBASTOPOL	\$800,885	\$32,341	\$833,226
SELMA	\$1,381,169	\$58,087	\$1,439,256
SHAFTER	\$1,110,587	\$42,940	\$1,153,527
SHASTA COUNTY	\$7,904,192	\$331,609	\$8,235,801
SHASTA LAKE	\$5,016	\$515	\$5,531
SIERRA COUNTY	\$377,561	\$12,390	\$389,951
SISKIYOU COUNTY	\$36,287	\$467	\$36,754
SOLANO COUNTY	\$3,313,936	\$114,756	\$3,428,692

Jurisdiction	Balance (12-31-13)	Allocation (2014)	Balance (1-1-14)
SOLEDAD	\$617,260	\$26,708	\$643,968
SOLVANG	\$484,633	\$20,008	\$504,641
SONOMA COUNTY	\$12,083,391	\$740,235	\$12,823,626
SONORA	\$1,105,947	\$30,327	\$1,136,274
SOUTH SAN FRANCISCO	\$5,764,881	\$204,829	\$5,969,710
ST HELENA	\$984,252	\$28,275	\$1,012,527
STANISLAUS COUNTY	\$3,147,985	\$85,473	\$3,233,458
STOCKTON	\$9,174,367	\$711,280	\$9,885,647
SUISUN CITY	\$851,996	\$43,746	\$895,742
SUNNYVALE	\$13,251,816	\$443,179	\$13,694,995
SUTTER COUNTY	\$6,370,544	\$137,433	\$6,507,977
SUTTER CREEK	\$529,072	\$14,220	\$543,292
TAFT	\$1,069,559	\$28,584	\$1,098,143
TEHAMA	\$54,605	\$2,368	\$56,973
TEHAMA COUNTY	\$7,271,102	\$229,546	\$7,500,648
TIBURON	\$614,645	\$30,926	\$645,571
TRACY	\$2,151,904	\$157,497	\$2,309,401
TRINITY COUNTY	\$950,286	\$19,287	\$969,573
TULARE COUNTY	\$5,868,111	\$166,115	\$6,034,226
TUOLUMNE COUNTY	\$7,553,840	\$311,432	\$7,865,272
UNION CITY	\$2,844,410	\$112,288	\$2,956,698
VACAVILLE	\$3,676,068	\$186,557	\$3,862,625
VALLEJO	\$10,718,019	\$349,126	\$11,067,145
WALNUT CREEK	\$2,878,554	\$224,543	\$3,103,097
WASCO	\$1,504,255	\$48,147	\$1,552,402
WATSONVILLE	\$2,545,318	\$114,978	\$2,660,296
WEST SACRAMENTO	\$626,461	\$142,518	\$768,979
WHEATLAND	\$324,204	\$10,350	\$334,554
WILLIAMS	\$429,611	\$13,827	\$443,438
WILLITS	\$679,908	\$22,961	\$702,869
WILLOWS	\$658,393	\$25,955	\$684,348
WINDSOR	\$385,414	\$44,715	\$430,129
WINTERS	\$387,107	\$17,239	\$404,346
WOODLAND	\$3,047,542	\$145,708	\$3,193,250
WOODSIDE	\$786,688	\$22,326	\$809,014
YOLO COUNTY	\$4,326,074	\$117,376	\$4,443,450
YOUNTVILLE	\$130,537	\$7,263	\$137,800
YUBA CITY	\$2,941,699	\$169,910	\$3,111,609
YUBA COUNTY	\$5,505,714	\$207,558	\$5,713,272