



"The City With a Heart"

Jim Ruane, Mayor
Marty Medina, Vice Mayor
Ken Ibarra, Councilmember
Rico E. Medina, Councilmember
Irene O'Connell, Councilmember

AGENDA

SAN BRUNO CITY COUNCIL – SPECIAL MEETING

December 22, 2015

6:00 p.m.

Meeting Location: San Bruno City Hall, 567 El Camino Real, Room 115, San Bruno

City Council meetings are conducted in accordance with Roberts Rules of Order Newly Revised and City Council Rules of Procedure. You may address any agenda item by standing at the microphone until recognized by the Council. All regular Council meetings are recorded and televised on CATV Channel 1 and replayed the following Thursday, at 2:00 pm. You may listen to recordings in the City Clerk's Office, purchase CD's, access our web site at www.sanbruno.ca.gov or check out copies at the Library. We welcome your participation. In compliance with the Americans with Disabilities Act, individuals requiring reasonable accommodations or appropriate alternative formats for notices, agendas and records for this meeting should notify us 48 hours prior to meeting. Please call the City Clerk's Office 650-616-7058.

1. CALL TO ORDER/ROLL CALL:

2. PUBLIC COMMENT ON ITEMS NOT ON THE AGENDA:

3. CONDUCT OF BUSINESS:

- a. Receive City Council Cable Subcommittee Recommendation and Authorize Cable System Fiber to the Home Project at the Shelter Creek Complex.
- b. Receive Report and City Council Surface Infrastructure Subcommittee Recommendation on Temporary Lighting and Permanent Repair of the Crestmoor Neighborhood Streetlight System Outage.

4. ADJOURNMENT:

The next regular City Council Meeting will be held on January 12, 2016 at 7:00 p.m. at the Senior Center, 1555 Crystal Springs Road, San Bruno.



City Council Agenda Item Staff Report

CITY OF SAN BRUNO

DATE: December 22, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Connie Jackson, City Manager

SUBJECT: Receive City Council Cable Subcommittee Recommendation and Authorize Cable System Fiber to the Home Project at the Shelter Creek Complex

BACKGROUND:

San Bruno Cable TV was originally established as a municipal enterprise in 1971 to provide basic cable television services to residents of San Bruno. Over 3 decades, as the only provider serving San Bruno residents, the enterprise gradually increased subscriber connections to over 12,000 and established a stable financial platform that allowed the enterprise to fund necessary system upgrades twice in the 1980's and in 1998 with accrued revenue reserves. Subscribers enjoyed high quality, local customer service, affordable rates at amounts below those charged by the private sector providers in all surrounding areas and a full range of cable TV channels and services that rivaled and typically exceeded those provided in other communities by other providers.

Beginning in 2000, San Bruno Cable has experienced increasing competitive pressure in the delivery of high quality cable television and technology services to the residents of San Bruno and loss of basic cable system subscribers as a result. The Federal Cable Act of 1996 and subsequent State legislation significantly reduced local government franchising and regulatory authority and effectively eliminated previous barriers to entry by multiple cable and other technology service providers in a single local market area. In this same time period, a virtual explosion of technology advancement has occurred bringing a wide variety of new technology services and providers into the industry and vastly increasing subscriber need and expectation for a broad range of not only traditional cable services, but also for telephony, high speed internet and a variety of other technology services. Today there are at least 2 other broadband technology services providers active in San Bruno.

By continuing its initiative to make strategic investment in its system infrastructure to stay not only current, but at the leading edge of the industry's technologic advancement, and by continuing its focused commitment to delivery of highest quality, local customer service and affordable pricing policies, San Bruno Cable has retained a strong position as the incumbent service provider with just over 50% penetration (market share) in the community. To date no other similar full service provider like Comcast or Time Warner has attempted to enter San Bruno and "overbuild" the community. While San Bruno Cable has lost a significant number of basic cable subscribers over the past decade, growth in the number of internet subscribers has increased by a larger number in the same time period. (A summary of San Bruno Cable

subscriber numbers from 1998-99 to present is attached to this report.) Internet and broadband service revenues are an increasingly large proportion of the system's overall revenue base. However, relatively flat growth in total subscriber revenues resulting from deferred rate increases, heavy increases to video programming costs, reduced total subscriber counts and the need for significant investment in the cable system infrastructure has resulted in an overall financial deficit in the Cable Fund totaling \$7.967 million as of June 30, 2015. (A summary of the annual year-end financial position of the enterprise from FY 2006-07 to present is attached to this report.)

Today San Bruno Cable subscribers, like virtually all other users are demanding increasingly fast internet speeds and bandwidth capacity. Providers in this region and elsewhere are increasingly supporting delivery of these services over a Fiber to the Home (FTTH) network. A FTTH system uses optical fibers (fiber optics), or glass fiber cables to deliver communications and information directly to each individual subscriber premise. Fiber optic cables have the capacity to carry information and communications at nearly infinitely more volume and speed than the copper wiring or radio waves now typically used at the home by technology service providers. In 1998, as part of a comprehensive system upgrade, San Bruno Cable was one of the first cable system operators to establish a fiber optics backbone for the existing cable plant. The fiber backbone was strategically located to allow San Bruno Cable to extend direct fiber connections to business areas of the City and thereby provide high speed communications and data services to local businesses. San Bruno Cable now serves over 40 business customers. Service to all residential areas of the community is currently provided via copper wire.

Over the last few years, San Bruno Cable staff have been evaluating the opportunity to upgrade the current Cable system infrastructure City-wide to FTTH while continuing to make those upgrades to the existing system that are necessary in the immediate and near term to retain reliability of the system's network of electronic components and to support delivery of increased bandwidth and high speed internet services. This evaluation has included consideration of alternatives for the City to build a FTTH network in a limited area of the City and to use this area as a sample or test area to determine the rate and amount of subscriber and revenue growth that would occur with FTTH. Due to the Cable Fund financial deficit, formal consideration of the additional investment that would be required for either a limited or a City-wide FTTH project has been deferred.

DISCUSSION:

Over the past several months, the Shelter Creek Condominium Board and its staff have been discussing their interest to install a FTTH network to serve the 1296 units at that complex. Shelter Creek residents and their Association leadership have historically shown strong support for San Bruno Cable and the system currently serves approximately 750 Shelter Creek subscribers; a penetration level of just over 58% for this location. While the emerging industry standard for high speed internet at the 1 gigabyte (GB) level can be delivered by San Bruno Cable with upgrade of the existing system components, Shelter Creek residents are increasingly advocating the installation of FTTH as their preferred approach. The Association Board has received a proposal from another provider to install FTTH. City staff recently learned that the Board will need to make a decision on the proposal in January unless San Bruno Cable is able to install a FTTH network in the very near future.

Installation of a FTTH network is most cost effective in a densely populated location like Shelter Creek where new fiber cables can be installed using relatively short extensions to each subscriber premise. The serious proposal by another provider to build FTTH at this location suggests that this is likely to be the first of other similar situations where other providers may already be making outreach and proposals to other multi-family complexes in the community such as Peninsula Place, Crystal Springs Terrace Apartments among others.

Staff has evaluated the potential impacts, opportunities and costs associated with a decision by the City to proceed with a FTTH project at Shelter Creek and recommends that the project is an important initiative to avoid loss of a significant number of current San Bruno Cable subscribers. While it is unlikely that all of the existing subscribers would leave San Bruno Cable quickly, or that a loss of subscribers would immediately threaten the system's overall viability, the Shelter Creek subscriber base is critically important to the system. San Bruno Cable would almost certainly lose a large number of subscribers and the system would lose the opportunity to grow its current Shelter Creek subscriber base. Staff expects that subscriber loss would be most significant in the internet category. The internet revenue category is the system's highest revenue and highest profit category.

The following projections represent conservative estimates of the anticipated new annual revenues that would be realized with a FTTH installation at Shelter Creek:

15% subscriber growth, 114 subscribers	\$166,320 annual revenue
20% subscriber growth, 152 subscribers	\$220,800 annual revenue

This revenue increase would allow recovery of the initial FTTH installation costs over an approximate 5 year period. Staff recommends that installation of fiber at this location could be used as a test case to evaluate how quickly and at what rate subscriber counts and revenues can be increased. This information could be used to evaluate whether further deployment of FTTH is financially and operationally feasible City-wide.

The City Council Cable Subcommittee (Ruane/O'Connell) met on December 10th to review this issue and to consider a recommendation to the full City Council for the City to develop a project to install FTTH at Shelter Creek. In order to avoid consideration of this initiative without regard to the existing Cable Fund deficit, the Subcommittee discussion also covered alternatives for the City to address the deficit situation. At the meeting the Subcommittee identified its interest to proceed with a FTTH installation at Shelter Creek in order to avoid potential significant loss of subscribers and to protect the value of the Cable infrastructure asset. Regarding resolution of the Cable Fund deficit, the Subcommittee reviewed the following information and concurred with staff's recommendation to consider the deficit reduction/resolution strategy outlined below.

For at least the last 20 years, San Bruno Cable has transferred approximately 10% of gross annual revenues to the General Fund as an equity transfer. Staff believes that a transfer at a similar level has occurred since at or near the time the enterprise was originally established 44 years ago. During the recent 9 year period from FY 2006-07 through FY 2014-15, the cumulative amount of the equity transfer is \$8.922 million, or an amount that exceeds the \$7.967 million amount of the cumulative Cable Fund deficit as of June 30, 2015. Staff recommends City Council consideration to resolve the deficit over the next several years by gradually reducing the annual equity transfer amount. Two options for a multi-year schedule (5 years and 7 years) of equity transfer reduction and deficit reduction are attached to this report.

FISCAL IMPACT:

The estimated cost of a FTTH installation at Shelter Creek to serve all of the 1296 condominium units is \$1-1.2 million, depending in part on the number of Shelter Creek residents who subscribe to the upgraded system. The cost of a FTTH project is expected to be recovered within approximately 5 years as subscriber revenues increase from new connections to the system and from new high speed internet connections by existing subscribers. At this time no funds are budgeted for this project and would need to be appropriated. However, the current FY 2015-16 Capital Improvement Program Budget includes \$1.7 million for upgrade of the cable system electronic components City-wide to improve service reliability and to expand internet speed and bandwidth capacity to 1 GB. Funds in the amount of \$1.2 million could be re-appropriated to complete installation of FTTH at Shelter Creek.

Under this approach, staff would re-evaluate the schedule and funding for completion of system electronic component replacements and upgrades that are needed in the next 2-3 years to assure continuing reliability of the system City-wide. The amount of additional funding appropriations would depend on whether the City Council elects to consider deployment of a FTTH system throughout the community in the coming years and what the schedule for such a project would be. The cost of FTTH installation City-wide is currently estimated at \$10-12 million.

If the City Council elects to proceed with a FTTH project at Shelter Creek, staff recommends that the City Council consider authorization of a lease purchase borrowing to cover the cost of the project with a multi-year repayment schedule. This approach would not increase the existing Cable Fund deficit as it is currently shown in the City's financial records.

Staff further recommends that reduction of the annual equity transfer to the General Fund be considered for formal implementation beginning with the FY 2016-17 Operating Budget approval as a strategy to eliminate the Cable Fund deficit.

ALTERNATIVES:

1. Do not authorize work to develop a project for installation of a FTTH network at the Shelter Creek complex.
2. Provide direction to staff regarding needed investment in the Cable system infrastructure and the City Council's interests in the future direction and operation of the enterprise.

RECOMMENDATION:

Receive City Council Cable Subcommittee Recommendation and Authorize Cable System Fiber to the Home Project at the Shelter Creek Complex

DISTRIBUTION:

1. Ronnie Rosen, General Manager, Shelter Creek Condominium Owners Association

ATTACHMENTS:

1. Cable Fund 10 Year Analysis
2. San Bruno Cable TV 18 Year Subscriber Summary
3. Cable Analysis – 5 and 7 Year Plans

DATE PREPARED:

December 18, 2015

CABLE FUND - TEN YEAR ANALYSIS

	2006-07	2007-08	2008-09	2009-10	2010-11	2010-11
	Budget	Budget	Budget	Budget	Budget	Actual
Beginning Fund Balance	\$ 434,769	\$ 434,769	\$ (765,720)	\$ (2,424,952)	\$ (3,012,111)	\$ (3,012,111)
Operating Revenues	8,689,763	9,307,708	10,190,698	10,823,624	11,710,217	10,570,043
Non-Operating Transfers in	-	-	-	-	91,576	91,576
Lease Proceeds	-	1,800,000	-	-	-	-
Total Revenues	8,689,763	11,107,708	10,190,698	10,823,624	11,801,793	10,661,619
Operating Expenditures	6,575,978	7,029,241	7,135,801	7,940,026	9,441,924	8,532,767
Franchise Fee	366,314	444,571	470,834	515,379	542,693	490,256
Internal Allocations	1,188,955	1,010,465	1,747,512	1,719,989	446,415	445,848
Equity Earnings Transfer	732,629	857,134	941,669	1,037,067	1,122,583	980,511
Capital Expenditures	771,227	731,778	958,167	558,270	504,087	305,300
Total Expenditures	9,635,103	10,073,189	11,253,983	11,770,731	12,057,702	10,754,682
Surplus (Deficit)	(945,340)	1,034,519	(1,063,285)	(947,107)	(255,909)	(93,063)
Ending Fund Balance	\$ (510,571)	\$ (776,943)	\$ (1,829,005)	\$ (3,372,059)	\$ (3,268,020)	\$ (3,105,174)

	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget	Budget	Actual	Budget	Budget
Beginning Fund Balance	\$ (3,105,174)	\$ (3,608,312)	\$ (4,178,964)	\$ (5,407,662)	\$ (7,357,532)
Operating Revenues	11,057,830	10,036,180	10,598,474	10,447,278	10,584,058
Non-Operating Transfers in	10,440	-	-	-	-
Lease Proceeds	-	-	-	-	-
Total Revenues	11,068,270	10,036,180	10,598,474	10,447,278	10,584,058
Operating Expenditures	8,741,707	7,957,021	8,444,002	7,938,800	8,871,790
Franchise Fee	519,180	445,981	462,147	371,323	489,430
Internal Allocations	479,514	407,446	504,016	537,270	536,708
Equity Earnings Transfer	1,000,000	891,962	924,295	858,507	800,000
Capital Expenditures	500,573	311,463	1,774,916	3,264,059	1,770,878
Total Expenditures	11,240,974	10,591,468	12,109,376	12,969,959	12,468,806
Surplus (Deficit)	(172,704)	(555,288)	(1,510,902)	(2,522,681)	(1,884,748)
Ending Fund Balance	\$ (3,277,878)	\$ (4,163,600)	\$ (5,689,866)	\$ (7,930,343)	\$ (9,242,280)

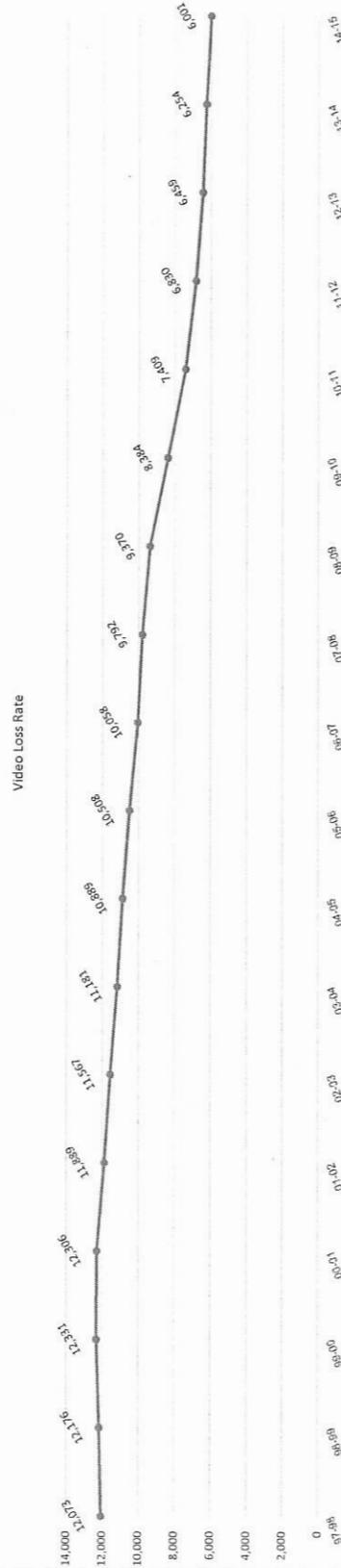
SAN BRUNO CABLE TV
SUBSCRIBER SUMMARY

	SUBSCRIBER Gain / (Loss)																			
	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	Net
Basic Cable	0	103	155	(25)	(417)	(322)	(386)	(292)	(381)	(450)	(266)	(422)	(986)	(975)	(579)	(371)	(205)	(253)	(200)	(4,664)
Expanded	0	103	155	(25)	(417)	(899)	(109)	(72)	(424)	(491)	(496)	(496)	(1,064)	(1,026)	(436)	(311)	(344)	(89)	(176)	(5,034)
Internet	134	344	438	609	797	797	633	586	655	388	503	311	4	123	254	158	86	128	50	5,525
Digital Cable																				
HD Basic																				
HD Plus																				
DVR																				
Phone																				
Change in RGUs	340	654	388	(225)	113	493	908	1,122	710	4,449	1,428	(2,089)	(2,114)	(712)	(802)	(665)	192	(402)	4,443	

	SUBSCRIBER TREND																			
	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	
Basic	12,073	12,176	12,331	12,306	11,889	11,567	11,181	10,889	10,508	10,058	9,792	9,370	8,384	7,409	6,830	6,459	6,254	6,001	5,801	
Expanded	11,602	11,705	11,860	11,835	11,418	10,519	10,410	10,338	9,914	9,423	9,154	8,658	7,594	6,568	6,132	5,821	5,477	5,388	5,212	
Internet	134	478	916	916	1,525	2,322	2,955	3,541	4,196	4,584	5,087	5,398	5,402	5,525	5,779	5,937	6,023	6,151	6,201	
Digital																				
HD Basic																				
HD Plus																				
DVR																				
Phone																				
Total RGUs	23,675	24,015	24,669	25,057	24,832	24,945	25,438	26,346	27,468	28,178	32,627	34,055	31,966	29,852	29,140	28,338	27,673	27,865	27,463	

RGU Cumulative Growth 0 340 994 1,382 1,157 1,270 1,763 2,671 3,793 4,503 8,952 10,380 8,291 6,177 5,465 4,663 3,998 4,190

Sub Growth/Loss Rate 0.85% 1.27% -0.20% -0.20% -3.39% -2.71% -3.34% -2.61% -3.50% -4.28% -2.64% -4.31% -10.52% -11.63% -7.81% -5.43% -3.17% -4.05%



Cable Analysis - 7 year plan

	2015-16 Budget	2016-17 Budget	2017-18 Budget	2018-19 Budget	2019-20 Budget	2020-21 Budget	2021-22 Budget
Beginning Fund Balance	\$ (7,966,603)	\$ (9,621,340)	(9,318,359)	(8,487,193)	(7,101,722)	(5,134,133)	(2,754,816)
Operating Revenues	10,584,058	11,176,765	11,802,664	12,463,613	13,161,576	13,898,624	14,676,947
Total Revenues	10,584,058	11,176,765	11,802,664	12,463,613	13,161,576	13,898,624	14,676,947
Operating Expenditures	9,634,742	9,923,784	10,221,498	10,528,143	10,843,987	11,169,307	11,504,386
Equity Earnings Transfer	800,000	600,000	400,000	200,000	-	-	-
Capital Expenditures	1,804,053	350,000	350,000	350,000	350,000	350,000	350,000
Total Expenditures	12,238,795	10,873,784	10,971,498	11,078,143	11,193,987	11,519,307	11,854,386
Surplus (Deficit)	(1,654,737)	302,981	831,166	1,385,471	1,967,589	2,379,317	2,822,561
Ending Fund Balance	\$ (9,621,340)	(9,318,359)	(8,487,193)	(7,101,722)	(5,134,133)	(2,754,816)	67,745
7-year annual rate increase	5.60%						
Estimated annual inflation factor	3%						

Cable Analysis - 5 year plan

	2015-16 Budget	2016-17 Budget	2017-18 Budget	2018-19 Budget	2019-20 Budget
Beginning Fund Balance	\$ (7,966,603)	\$ (9,851,351)	(9,265,905)	(7,515,913)	(4,472,966)
Operating Revenues	10,584,058	11,730,311	13,000,704	14,408,680	15,969,141
Total Revenues	10,584,058	11,730,311	13,000,704	14,408,680	15,969,141
Operating Expenditures	9,897,928	10,194,866	10,500,712	10,815,733	11,140,205
Equity Earnings Transfer	800,000	600,000	400,000	200,000	-
Capital Expenditures	1,770,878	350,000	350,000	350,000	350,000
Total Expenditures	12,468,806	11,144,866	11,250,712	11,365,733	11,490,205
Surplus (Deficit)	(1,884,748)	585,446	1,749,992	3,042,947	4,478,935
Ending Fund Balance	\$ (9,851,351)	(9,265,905)	(7,515,913)	(4,472,966)	5,970
annual rate increase beginning 2016-17	10.83%				
Estimated annual inflation factor	3%				



City Council Agenda Item Staff Report

CITY OF SAN BRUNO

DATE: December 22, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Connie Jackson, City Manager
Jimmy Tan, Acting Public Services Director/City Engineer

SUBJECT: Receive Report and City Council Surface Infrastructure Subcommittee Recommendation on Temporary Lighting and Permanent Repair of the Crestmoor Streetlight System Outage

BACKGROUND:

Since late October, the Crestmoor 1 neighborhood has been experiencing a streetlight outage that is affecting 57 streetlights along the following streets: Alpine Way, Crestmoor Dr. (north of San Bruno Ave.), Dover Ct., Essex Ct., Hamilton Ave., Kingston Ave., Lexington Way, Madison Ave., Markham Ave., Princeton Dr., Trenton Dr., Whitecliff Ave. and Whitman Way.

These streetlights are operated through a regulated output (RO) circuit system that was installed as part of the original subdivision development. The streetlights in a RO circuit are connected in a series and they share a single power source. The transformer that supplies power to the circuit operates at a high voltage that is sufficient to operate all of the lights in the series. A failure in any one location within the RO circuit can cause the entire circuit to fail and create a streetlight outage throughout the entire neighborhood.

The Crestmoor neighborhood RO streetlight circuit is one of 9 similar RO systems in the City including a total of 322 of the City's approximately 3,000 streetlights. Although the City's RO streetlight circuits have been generally reliable over the 50+ years they have been in place, system failures can be very difficult to troubleshoot and repair in part because the entire system must be de-energized before work on the circuit can be done and the system must then be re-energized by PG&E in order to evaluate if the repair was successful. As identified above, a failure in a single location within the circuit can cause the entire system to fail and a wide spread outage to occur. Over the past several years when outages have occurred and more recently during the consideration of the current upgrade of streetlights in the entire City with new energy and cost saving LED fixtures, the City Council has evaluated replacement of the 9 RO circuits with parallel circuits. The estimated cost for upgrade of all of the City's RO circuits to parallel is \$3.5-4 million.

The City Council has previously received reports at the November 10th and November 24th City Council meetings regarding the Crestmoor outage and the on-going efforts being completed by staff and City contractors to trouble-shoot and resolve the outage. The November 10th staff report provides a detailed explanation of the RO circuit and trouble-shooting efforts. At that meeting, the City Council authorized staff to identify and hire an electrical contract firm with

expertise in RO system circuitry to assist with the on-going testing and repair effort. In summary, since the outage was reported on October 23rd, PG&E has replaced the transformer that powers the entire RO circuit and the City and its contractor have completed testing and evaluation throughout the entire system and have made numerous repairs in areas showing failure including replacement of over 1,000 feet of underground wiring, repair of 50 slices, removal and replacement of failed fixture heads, installation of LED replacement fixtures including installation of step-down transformers, replacement of the wiring inside each streetlight pole and removal/bypass of lights on the system that failed.

For a brief period of time in late November, staff was able to energize the streetlights in the neighborhoods on the north side of San Bruno Ave. after identifying localized failures in the system. The area south of San Bruno Ave. was disconnected to determine whether the north side streetlights would operate based on the repair efforts. Following additional testing of the wiring on the south side of San Bruno Avenue the following week, staff reconnected the entire circuit on both sides of San Bruno Ave. and once again the entire system failed.

As a result of the extensive testing, repair and evaluation work completed to date by staff and City contractors, and the very discouraging system failure that occurred in late November following the effort to re-energize the entire system, staff has concluded that it is highly unlikely that any additional testing or localized repair to the circuit will provide a viable and sustainable solution to the outage.

In early December, the City procured portable flood lights that are powered by generators and installed them at 10 intersection locations throughout the outage area in order to provide some lighting within the neighborhood. For the past two weeks, the flood lights have been operating between 5:00 pm and 11:00 pm daily through assistance of City's staff turning the lights on and off. Although the flood lights provide some lighting in the neighborhood, long stretches of the mid-block areas remain dark and staff has received a few complaints from residents living adjacent to the locations where flood lights have been placed about the noise from the generator, the appearance of the lights and the elimination of parking space on the street. The cost for the portable flood lights, including rent for the lights, staff time to turn them on and off each night and fuel for the generators is approximately \$28,000 per month for the 10 lights currently in operation.

DISCUSSION:

In order to address both the near term need for reliable temporary lighting in the neighborhood and the need to consider the available options for permanent comprehensive repair of the streetlight system, staff requested a meeting of the City Council Surface Infrastructure Subcommittee (R. Medina/Ibarra) which was held on December 10th. At that meeting, the Subcommittee received a report outlining the several options and recommendations developed by staff. The following outlines the four options for temporary neighborhood lighting.

The City has submitted an application to PG&E for design and development of a secondary power connection for twenty nine (29), or roughly half of the streetlights in the neighborhood. Secondary power would be provided from the power lines that supply homes in the neighborhood. These electric power lines are generally located behind the homes. The cost for design and installation of a secondary power supply system is approximately \$5,000 per connection totaling \$145,000. PG&E currently estimates that this work would take 3-5 months to complete.

Staff has recently identified a type of solar panel that is small and lightweight enough that it can be attached to each streetlight fixture. In order to test and evaluate the device to determine if it can provide sufficient light and can be powered adequately in cloudy winter weather, staff has ordered a sample fixture and expects delivery in about 2 weeks. Staff recommends that the need to test the solar panels and the timeline to order and receive a sufficient supply makes this option less than optimal for the current situation, but this could be a viable back-up solution to a future streetlight outage if the testing produces a satisfactory result.

Flood lights are currently in place at ten (10) intersection locations throughout the neighborhood at the cost of about \$28,000 per month. The City could rent additional flood lights and place them in additional locations in the neighborhood. While this option would provide more lighting in the area, the lights provide only a relatively narrow radius of illumination and are fairly costly if the outage continues for more than a short period of time.

The option that staff recommends is to work with neighborhood residents whose properties are adjacent to a streetlight pole to install an extension cord from the base of the pole to an electrical outlet on the exterior or inside the garage of the resident's home. The cord is simply plugged into the outlet like any household light, device or appliance. The amount of electricity required to power the streetlight is comparable to that required to power a home table lamp; about 38 watts. A Right of Entry Agreement signed by the resident is needed to secure the City's ability to access the resident's property to install the extension cord and to avoid City liability related to the installation of the extension cord across the resident's property. In order to provide an incentive for residents to participate in the program and consideration for the liability waiver and the cost of electricity, staff recommends providing a small monthly payment to participating residents of \$50. While this option may not be feasible at every streetlight location, it is likely to provide a reasonable amount of light area-wide.

In addition to establishing reliable temporary neighborhood streetlighting, the City needs to determine how best to restore the streetlight system for long term, permanent operations. As a result of the testing and repairs that have occurred over the past several weeks, the City has replaced all of the streetlight fixture heads, the wiring inside each pole and over 1,000 feet of underground wiring that runs between poles. As previously indicated in this report, PG&E has also replaced the system transformer. The only remaining component of the existing RO system that is not newly replaced is the underground pole to pole wiring throughout the entire system. Staff has obtained a proposal from the City's contractor in the amount of \$360,000 to complete replacement of the underground wiring. This work is estimated to take up to 4 months to complete. Staff is currently working with the contractor to refine the cost proposal.

Alternatively, replacement of the entire RO system circuitry and upgrade of the existing series circuit with a parallel circuit that powers each streetlight pole independently would significantly reduce or eliminate the possibility of another system-wide failure and streetlight outage. As previously reported and discussed on several occasions with the City Council, upgrading to parallel circuitry is costly. Staff estimates that the cost to replace the circuit in the Crestmoor neighborhood would be at least \$500,000. In the current outage situation however, an even more difficult consideration is that the work to plan, design and then construct the parallel circuit through PG&E would take as long as 18 months to 2 years. Staff recommends that this schedule is not feasible from either a cost or an operations perspective if the City is to also provide reliable temporary streetlighting until the permanent repair/upgrade is completed.

The Subcommittee concurred with staff's recommendations to work with neighborhood residents to provide power to streetlight poles as a temporary solution to the outage and to

proceed with development of a project to replace the underground wiring to restore operation of the RO system. The Subcommittee further requested that staff proceed with implementation of the temporary lighting solution and that the matter of the permanent repair be brought forward to the City Council for authorization to proceed with development of an underground wiring replacement project. Staff has initiated work to contact area residents and has completed connections to two streetlights along Crestmoor Dr. that are working well.

FISCAL IMPACT:

The current cost to provide temporary lighting with flood lights in the outage area is approximately \$28,000 per month. If each of the 57 light poles were connected to an electric outlet in an adjacent resident's home under the recommended option for temporary lighting with a monthly payment to each participating resident of \$50, the monthly cost for temporary lighting is \$2,850 per month. The estimated one-time cost for power cords and other supplies to connect each pole to the home outlet is approximately \$250. At these amounts, the total estimated cost for temporary lighting using all 57 poles for a period of 4 months is \$25,650.

As outlined above, staff is continuing to work with its contractor to develop a precise cost for the work to replace the pole to pole underground wiring throughout the neighborhood. A final recommendation to proceed with this permanent repair approach and a final cost is expected to be presented to the City Council for approval at the January 12, 2016 meeting.

The total cost of the extensive testing and repair work that has been completed on an emergency basis has not yet been assembled. These costs, the cost of the temporary lighting solution and the going forward cost to provide a permanent system repair are not budgeted and will need to be incorporated as a budget amendment once they are available.

ALTERNATIVES:

1. Continue providing flood lights at key locations throughout the neighborhood.
2. Complete testing of streetlight solar panels to provide temporary lighting.
3. Work with PG&E to install secondary power source to each streetlight.
4. Direct staff to proceed with development of a project to convert the Crestmoor neighborhood RO streetlight circuit to a parallel circuit.

RECOMMENDATION:

Receive Report and City Council Surface Infrastructure Subcommittee Recommendation on Temporary Lighting and Permanent Repair of the Crestmoor Streetlight System Outage

DISTRIBUTION:

None.

ATTACHMENTS:

None

DATE PREPARED:

December 18, 2015