

Financial & Strategic Assessment - Phase I

Date: September 2021

Prepared for: City of San Bruno

Suggestion: Add Agenda Slide

Agenda

- Background
- Market Dynamics
- Suggested Slide – Investment scenarios in broadband infrastructure
- Analysis Summary – Base, Base + FTTP, FTTP Optimized
- Analysis Summary – Base, Base + CATV Retrofit, CATV Retrofit Optimized
- Analysis Summary – No CATV, No CATV + FTTP, No CATV + FTTP Optimized
- Recommendations *for Business Continuity*

Background

JSI was contracted by the City of San Bruno (“SB” or the “City”) to conduct financial assessments of the the CityNet Enterprise as well as CityNet’s current voice, video, and broadband (“VVB”) offerings (operating under the “CityNet” name).

The assessment was to be conducted in two phases with Phase I designed to help the City understand the:

1. Commercial & financial viability of upgrading the City’s network infrastructure examining both an upgrade to the City’s principally Coax-based infrastructure as well as a Fiber to the Premise (“FTTP”) overbuild of CityNet’s current network,
2. Level of operating performance required to address the forecasted CAPEX implications of the upgrade paths examined; and,
3. Potential for the City to exit the market as a service provider should the prospects of an exit appear more beneficial to the City’s interest than making additional investments necessary to support its service suite.

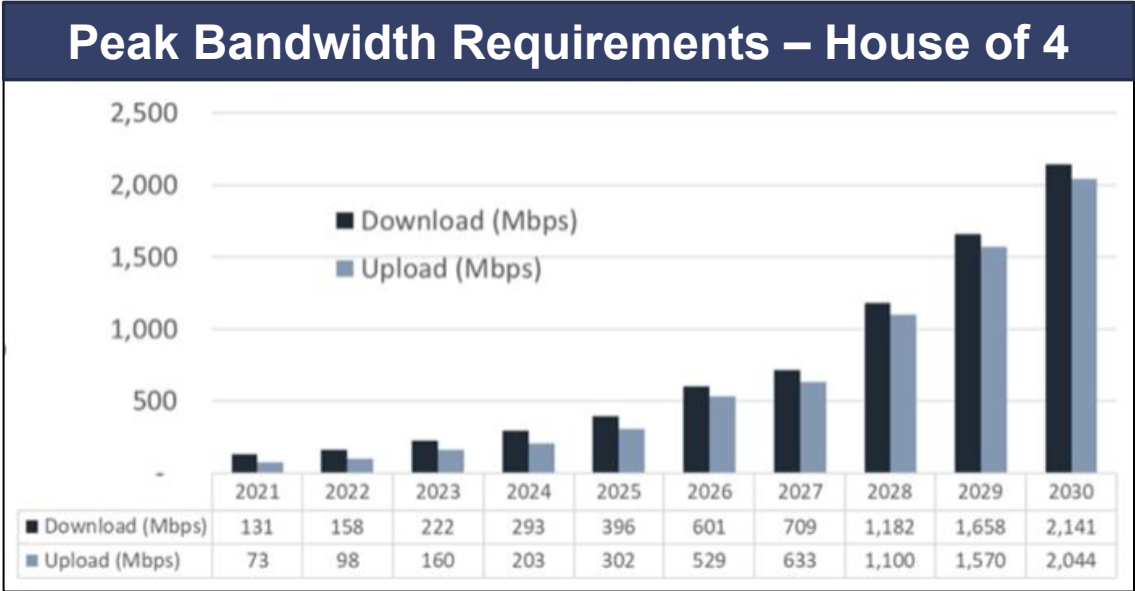
Phase II entails the calculation of an enterprise value associated with the CityNet operation and is addressed through a separate presentation and report.

Market Dynamics

Market dynamics surrounding traditional cable television (CATV) services and broadband internet are undergoing significant and accelerating change.

CityNet’s CATV services continues to suffer material erosion with subscription declines accelerating and programming costs outpacing inflation. While Management is taking aggressive, prudent, and productive steps to address the financial dynamics of the business case, underlying subscription trends in linear CATV service which are systemic to the service will continue to pose challenges to CityNet’s operation.

From a Broadband perspective, projected peak bandwidth requirements are expected to grow exponentially over the next 10 years (see chart) and the current Coax cable-heavy network will simply not be able to support these needs absent material remediation.



Absent investment in broadband infrastructure, the City’s ability to address the evolving demands of the marketplace will progressively erode and financial performance will further deteriorate

Network Deployment / Upgrade Scenarios Examined

1. Fiber to the Premise (“FTTP”)

This scenario examined an overbuild of the City’s existing Coax-based plant with a hybrid Active-E and XGS-PON design.

Introduction of dedicated strands at aggregation points allows CityNet to address the specialized needs of customers requiring dedicated, higher bandwidth speeds supported by an Active-E topology.

XGS-PON provides four times the downstream bandwidth of standard GPON with its basic implementation, and up to sixteen times the bandwidth with the expansion of wavelengths.

Such a framework represents the “Gold Standard” for broadband networks, and would position the City to:

- Address both present and future needs of its constituents. Bandwidth demand continues to experience double digit growth, with the Fiber Broadband Association projecting the average usage for a family of four will exceed 2Gbps (symmetrical) by 2030.
- Position the City to competitively differentiate the services offered from those available from alternative providers.

Forecasted CAPEX Investment – FTTP Scenario

San Bruno City FTTP

Full build-out model; no restrained materials

4/21/2022

Drop and Home Connections
\$ 3,953,500

* Does not include private ROW

	Estimated Establishments	Estimated Service Penetration	Adjusted Total	Route Mi	Outside Plant	Drop Mi	Drops	Electronics	Rewire & Cutover	Land & Building	Subtotal
Residential	7,700	100%	7,700	111.88	\$ 6,473,958	131.92	\$ 3,859,576	\$ 5,027,925	\$ 2,200,000	\$ 95,000	\$17,656,592
Comm/Ind.	1,100	100%	1,100								
	8,800		8,800	Premises							

TOTAL PROJECT COST \$ 18,684,402

OSP / ISP Engineering	Project Management & Inspection	Environmental/Archaeological Surveys	Total	CAPEX Per Establishment
\$ 614,464	\$ 413,347	Not Included	\$18,684,402	\$ 2,123.23

Notes:

Route miles are derived from road centerlines in city limits.
 Outside plant costs and aerial/buried percentages can be adjusted on the OSP Cost Estimate tab, as can the costs per mile.
 Residential and Commercial drop footages and cost/foot can be adjusted separately on the OSP Cost Estimate tab.
 Adjustments to the estimated service penetration (above) affect drop, electronics, rewire & cutover, engineering, and \$ per establishment estimates.
 Electronics costs do not include routers or transport equipment/cards for upstream paths.
 Estimate assumes all electronics are located in a hut or building. Distribution includes remote passive PON cabinets for splitters.

Network Deployment / Upgrade Scenarios Examined

2. CATV / COAX Network Retrofit

This scenario examined a retrofit of the City's existing Coax-based plant.

Benefit of this scenario is that it leverages existing infrastructure within the core network. While a reasonable level of new fiber is assumed, it is far less than that required for a full FTTP-based network deployment.

Such a scenario would allow the City to offer Gigabit level speed on an asymmetrical basis (Fiber offers the ability to provide symmetrical bandwidth).

Given trends in broadband speed demand, this design will require subsequent investment/remediation in order to remain in step with marketplace trends.

Forecasted CAPEX Investment – Coax Retrofit Scenario

San Bruno City FTTP
4/25/2022

Node + Zero Architecture upgrade

* Does not include private ROW

	Estimated Establishments	Estimated Service Penetration	Adjusted Total	Route Mi	Outside Plant	Drop Mi	Drops	Electronics	Rewire and Cutover	Land & Building	Subtotal	OSP/ISP Engineering	Project Management & Inspection	Environmental / Archeological Surveys	Total	Investment Per Establishment
Residential	7,700	100%	7,700	22.38	\$ 1,294,792	13.19	\$ 385,958	4,033,875	\$ 220,000	\$ -	\$ 5,934,637	\$ 228,585	\$ 67,230	not included	\$ 6,230,453	\$ 708.01
Comm/Ind.	1,100	100%	1,100													
	8,800		8,800	Premises												

TOTAL PROJECT COST \$ 6,230,453

Notes:

Route miles are derived from road centerlines in city limits, and an estimate of extending off each existing node location. with re-use of all existing optical fiber feeding nodes and expansion via DWDM optics.

Outside plant costs and aerial/buried percentages can be adjusted on the OSP Cost Estimate tab, as can the costs per mile.

Residential and Commercial drop footages and cost/foot can be adjusted separately on the OSP Cost Estimate tab

Adjustments to the estimated service penetration (above) affect drops, electronics, rewire & cutover, engineering, and \$ per establishment estimates

Electronics costs do not include routers or transport equipment/cards for upstream paths.

Estimate assumes all electronics are located in a hut or building. Distribution includes remote passive PON cabinets for splitters.

This design will probably not replace all amplifiers, but a high percentage of all, significantly cutting the number of subscribers accessing each Node, decreasing the latency and signal impairments on the existing coax cable.

Analysis Summary – Base, Base + FTTP, FTTP Optimized

This set of scenarios compares the forecast of the steady state business case to the steady state business case assuming the deployment of a FTTP network, as well a FTTP-based business case wherein the performance of the business case is optimized.

1. **Base** – Existing trajectory/performance of CATV, Broadband and Voice product offerings extended into the future using varied forecasting methodologies based on historic account activity.
2. **Base W/ Debt** – Base forecast with the introduction of a FTTP deployment and the debt service costs attendant to its financing.
3. **Modified W/ Debt** – Forecast of cash flows assuming a FTTP deployment in conjunction with an optimization of a range of revenue and expense related areas of operation/performance.
 - Broadband ARPU was assumed to increase from \$68.61 to \$81.29. This would be accomplished through 1) elimination of numerous grandfathered rate designs in conjunction with consolidating available broadband rate offerings and 2) more proactive/aggressive efforts to sell value related to higher speed tier offerings.
 - Increase in subscription levels ranging between 10%-15% depending on speed/pricing tier based on the assumption that higher market share would be enabled as a result of more compelling/robust offerings.
 - CATV programming costs indexed to 70% of associated CATV top-line revenue (reflecting material reduction from prevailing levels). Management has related they have orchestrated such an outcome and such savings are currently being implemented.)
 - Remaining operating costs paired by 25% over prevailing baseline levels except for City corporate allocated expenses, which were maintained at 100% of forecasted levels.

From Annual Summary			
CASH FLOW - Total			
	Base	Base W/ Debt	Modified w/ Debt
2023	(914,870)	(914,870)	2,827,864
2024	(1,082,558)	(1,572,365)	2,303,728
2025	(1,005,865)	(2,418,036)	1,362,792
2026	(832,325)	(2,664,331)	1,093,406
2027	(663,954)	(2,495,960)	1,178,628
2028	(530,509)	(2,362,515)	1,229,071
2029	(587,646)	(2,419,651)	1,173,772
2030	(676,778)	(2,508,784)	1,100,115
2031	(788,488)	(2,620,494)	1,004,226
2032	(879,615)	(2,711,621)	929,274
2033	(972,822)	(2,804,828)	852,602
2034	(1,068,687)	(2,900,693)	773,642
2035	(1,167,287)	(2,999,292)	692,322
2036	(1,268,702)	(3,100,708)	608,567
2037	(1,762,543)	(3,594,549)	132,778
	(14,202,648)	(38,088,697)	17,262,787

Analysis Summary – Base, Base + CATV Retrofit, CATV Retrofit Optimized

This set of scenarios compares the forecast of the steady state business case to the steady state business case assuming the deployment of an upgraded Coax-based network, as well an upgraded Coax-based business case wherein the performance of the business case is optimized.

1. **Base** – Existing trajectory/performance of CATV, Broadband and Voice product offerings extended into the future using varied forecasting methodologies based on historic account activity.
2. **Base W/ Debt** – Base forecast with the introduction of a FTTP deployment and the debt service costs attendant to its financing.
3. **Modified W/ Debt** – Forecast of cash flows assuming a FTTP deployment in conjunction with an optimization of a range of revenue and expense related areas of operation/performance.
 - Broadband ARPU was assumed to increase from \$68.61 to \$81.29. This would be accomplished through 1) elimination of numerous grandfathered rate designs in conjunction with consolidating available broadband rate offerings and 2) more proactive/aggressive efforts to sell value related to higher speed tier offerings.
 - Increase in subscription levels ranging between 10%-15% depending on speed/pricing tier based on the assumption that higher market share would be enabled as a result of more compelling/robust offerings.
 - CATV programming costs indexed to 70% of associated CATV top-line revenue (reflecting material reduction from prevailing levels). Management has related they have orchestrated such an outcome and such savings are currently being implemented.)
 - Remaining operating costs paired by 25% over prevailing baseline levels except for City corporate allocated expenses, which were maintained at 100% of forecasted levels.

From Annual Summary			
CASH FLOW - Total			
	Base	Base W/ Debt	Modified w/ Debt
2023	(914,870)	(914,870)	2,827,864
2024	(1,082,558)	(1,245,888)	2,630,205
2025	(1,005,865)	(1,476,764)	2,304,064
2026	(832,325)	(1,443,221)	2,314,516
2027	(663,954)	(1,274,850)	2,399,738
2028	(530,509)	(1,141,405)	2,450,181
2029	(587,646)	(1,198,542)	2,394,882
2030	(676,778)	(1,287,674)	2,321,224
2031	(788,488)	(1,399,384)	2,225,336
2032	(879,615)	(1,490,511)	2,150,383
2033	(972,822)	(1,583,718)	2,073,712
2034	(1,068,687)	(1,679,583)	1,994,752
2035	(1,167,287)	(1,778,183)	1,913,431
2036	(1,268,702)	(1,879,598)	1,829,677
2037	(1,762,543)	(2,373,439)	1,353,888
	(14,202,648)	(22,167,630)	33,183,854

Analysis Summary – No CATV, No CATV + FTTP, No CATV + FTTP Optimized

No CATV: This foundational scenario assumes elimination of CATV based on accelerating marketplace subscription trends and is also divided into three sub-scenarios:

- 1. **Base** – Existing trajectory/performance of Broadband and Voice product offerings with the simple elimination of CATV revenue and expenses directly / solely related to the provision of CATV services (programming costs).
- 2. **Base W/ Debt** – Base scenario with the introduction of debt associated with the deployment of a FTTP topology.
- 3. **Modified W/ Debt** – Forecast of cash flows assuming elimination of CATV made conjunctively with a FTTP deployment and the optimization of a range of revenue and expense related areas of operation/performance.
 - Broadband ARPU was assumed to increase from \$68.61 to \$81.29. This would be accomplished through 1) elimination of numerous grandfathered rate designs in conjunction with consolidating available broadband rate offerings and 2) more proactive/aggressive efforts to sell value related to higher speed tier offerings.
 - Increase in subscription levels ranging between 10%-15% depending on speed/pricing tier. Assumption, more compelling/robust offerings result in higher marketplace demand.
 - Remaining operating costs were paired by roughly 56% over prevailing baseline levels except for programming costs which were eliminated entirely, and City corporate allocated expenses which were maintained at 100% of forecasted levels.

From Annual Summary			
CASH FLOW - Total			
	Base	Base W/ Debt	Modified w/ Debt
2023	(1,442,638)	(1,442,638)	1,973,173
2024	(1,478,475)	(1,968,282)	1,713,959
2025	(1,545,938)	(2,958,109)	762,524
2026	(1,625,128)	(3,457,134)	374,757
2027	(1,709,786)	(3,541,792)	342,093
2028	(1,796,997)	(3,629,003)	293,178
2029	(1,886,835)	(3,718,841)	242,820
2030	(1,979,381)	(3,811,387)	190,973
2031	(2,095,220)	(3,927,225)	117,089
2032	(2,193,434)	(4,025,440)	62,122
2033	(2,294,610)	(4,126,616)	5,527
2034	(2,398,839)	(4,230,845)	(52,746)
2035	(2,506,215)	(4,338,220)	(112,749)
2036	(2,616,834)	(4,448,839)	(174,539)
2037	(3,120,323)	(4,952,329)	(627,694)
	(30,690,653)	(54,576,701)	5,110,486

Broadband as a Public Good

Broadband is widely regarded as the essential service of our age.

As noted by the Brookings Institute, “Increasing access and usage of broadband infrastructure..... (and the amenities, digital skills, online education, and job search opportunities that come with it) lead to higher property values, increased job and population growth, higher rates of new business formation, and lower unemployment rates.*”

In the evaluation of its business case options, assessment of the “Public Good” nature of Broadband, and the City’s unique position of the “guarantor” of equitable broadband access is a worthwhile point of examination.

- In assessing the relative value and/or “weight” assigned to the importance of the public good provided by CityNet’s suite of products, the following considerations merit examination.
 - If the City were to exit the market, would access to high-speed broadband within the City be materially impacted?
 - Would affordability of broadband access suffer as a result of the City’s exit from the market?

Ultimately, the foregoing questions provide an important qualitative public policy consideration for the City’s Management and Board. The weight assigned to such a qualitative public policy consideration should in turn be influenced by the relative confidence assigned by the City’s Board and Management to its operational ability to engineer a business case reflective of consistent positive cash flows and financial sustainability.

*Brookings – The Benefits and Costs of Broadband Expansion – 2021.

Summary

Given market placed trends related to Broadband and CATV services, CityNet Management has recommended a pivot in its service provider position from one in which CATV is the foundational offering, to a framework in which Broadband is positioned as the organization's leading solution. JSI strongly endorses this strategy.

With regard to Broadband, given the forecasted explosive growth in bandwidth demand, **mid to long-term viability of CityNet's operations is reliant on a material retro-fit of the City's existing Cable infrastructure, or deployment of a FTTP topology.**

A FTTP deployment represents the most robust option to future proof the City's technology/service delivery position. Such a deployment would:

- Position CityNet to meet the prospective needs of its citizenry well into the future,
- Allow the organization to offer multi-gigabit, symmetrical bandwidth services enhancing its ability to maximize the "public good" value of the services offered to the City's residents while competitively differentiating its offering relative to the market's competitive alternatives.

A retrofit of the City's Coax-based infrastructure would allow the extension of asymmetrical gigabit enable broadband services which would:

- Enable the City to offer a substantially more robust broadband offering than is presently available, while
- Producing materially more free cash flow after debt service than the FTTP deployment scenario (all else equal).

Recommendations *for Business Continuity*

1. **Fiber – the gold standard**

Fiber represents the gold standard, and places providers deploying the technology in the most robust competitive position, with the capability of leveraging a network flexible enough to adapt to the market's forecasted ongoing bandwidth demand growth. The eroding competitive stature of CityNet's product offerings is directly related to the deferment of investment required to sustain product relevancy. Plans involving limited or short-term remediation of the City's service capabilities may temporarily stem the customer attrition trends presently in play, but will not place CityNet in a position to provide a service that is positively differentiated from other marketplace options, or effectively address mid to longer-term trends related to growing broadband demand.

2. **Business case optimization – necessary to enable required upgrade investment**

The issue the City must confront is whether it can successfully engineer an optimization of its present business case of the nature and scope reflective in the optimized scenarios detailed herein. Absent this ability, the City's financial wherewithal to financially underwrite the deployment of either the remediation of its existing Coax plant, or the more extensive capital requirements related to the deployment of a FTTP network, would be materially compromised.

3. **Tactical plan recommended for financial optimization**

JSI recommends the City formulate a detailed tactical plan to produce the level of financial optimization reflected in the scenarios set forth in JSI's analysis. This plan could then be assessed by the City as to the feasibility of producing the financial outcomes deemed necessary to warrant sustaining its service provider position.

Phase II – Enterprise Valuation

This briefing reflects analysis, observations and recommendations surrounding the options before the City relative to re-invigorating the service capabilities inherent in CityNet's technology offerings.

As noted herein, without a solid, executable tactical plan to optimize operations, the ability for the City to finance the upgrades necessary will be compromised.

CityNet Management requested that JSI conduct a valuation of the CityNet enterprise in order to provide insight as to whether an exit from its current service provider position represented a more fiscally prudent step than engaging in a network upgrade and accompanying operational optimization initiative.

A separate valuation report has been delivered which provides guidance relative to the enterprise value of CityNet's operation. When assessing the options to re-invest in the City's service operations, or exit the market through a sale of the organization's assets, care must be taken to assess several critical considerations.

- Presently, the City recovers material dollars from CityNet's operation by way of allocated expenses.
- The City will continue to be responsible for pension payments to current and past employees. Presently such pension costs are supported through CityNet's operation.
- As noted herein, there are potential paths to profitability to both finance the upgrades modeled herein, as well as re-pay the Enterprise Loan extended from the City's General Revenue Fund.

Examination of the City's available options, including a potential sale of the enterprise and exit from the business must include careful consideration of the foregoing points.