IMPROVING BROADBAND IN EL DORADO COUNTY

CONCLUSIONS FROM ROUTE VERIFICATIONS AND FURTHER FINANCIAL MODELING

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Part 1: Verification of Capital Cost Assumptions and Property Assessments

Background Information

The County of El Dorado hired NEO Connect (NEO) to conduct a feasibility study for improving broadband services throughout the County. The County desired a network that is capable of ubiquitous Gigabit services or 1,000 Mbps in download and upload speeds. NEO completed the feasibility study and initial projected capital cost estimates for constructing a Fiber to the Home (FTTH) network throughout the County.

The initial cost estimates were prepared utilizing the base information received from the County. This information included parcel data, roads, city and county boundaries and planned road improvement projects. NEO obtained construction labor and material cost estimates through additional research and by soliciting contractor pricing quotes for the conceptual scope of work to be performed. After the preliminary report was provided, the County asked NEO's team to further verify the construction cost estimates through meeting with various local and national contractors, and through obtaining information on the soil and rock conditions throughout the County. This provided further verification of the capital cost estimates of building a County-wide fiber network to each home and business within the County. After this, the County asked NEO's team to ride-out the potential primary routes of the network to further determine assumptions of use of aerial vs. underground fiber construction methodologies. During this phase, NEO's team also obtained access to California's Pacific Gas and Electric **(**PG&E's) pole data information to further determine which routes could be constructed using PG&E's poles for aerial placement of fiber.

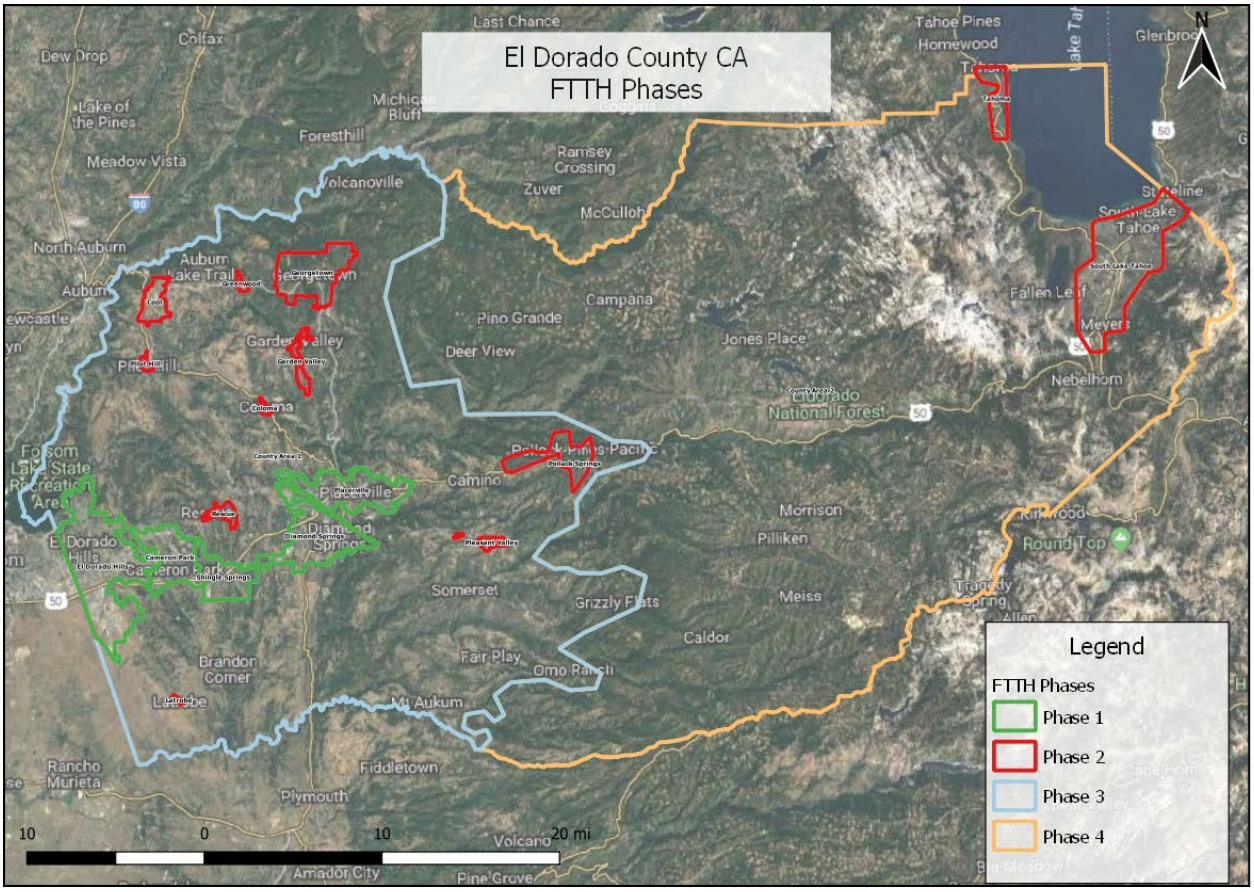
Although much information was gained from the ride-out process and by accessing PG&E's pole data, the estimates derived from this process are still preliminary, as no final engineering and design has yet been completed. This report discusses the assumptions used in the capital cost estimates.

NEO re-ran several financial models to determine the impact of various strategies towards creating a financially feasible plan. These strategies have been implemented by other local governments who have embarked upon building a network to improve broadband services for their constituents and are well proven for their viability and successful outcomes.

Summary of Capital Costs

Building a Fiber to the Home network is extremely capital intensive. The costs of building a FTTH in California are approximately 40% higher than other states because of a number of factors. These factors include prevailing wage laws, higher taxes and higher fuel costs. Costs for building the network in El Dorado County are high because the County has a lot of rock and impermeable materials in its soil, increasing the costs for underground construction. Additionally, Caltrans and PG&E have higher permitting fees and the time to obtain a permit is much longer than working with other states' departments of transportation and pole owners. These issues all contribute to higher costs for construction of the FTTH network.

In order to arrive at projecting the capital costs of a fiber network to every home and business within the County, NEO divided the County into four phases or areas to be constructed. These phases reflect population density and rock or soil condition considerations.



Phase 1, outlined in green in the map shown above, includes the build in more densely populated areas within the County. These included Cameron Park, Diamond Springs, El Dorado Hills, Placerville and Shingle Springs. These areas have less rock-adder per the USGS mapping data obtained through the US Geological Survey database.

Phase 2, shown outlined in red, include the areas that the State of California has designated as “Priority Areas” and areas that have more rock adder. Phase 3 encompasses the western part of the County that is rural. Phase 4 includes the eastern part of the County that is rural.

Below is the summary of the capital costs plus interest expense on a 40-year bond.

Summary of Capital Cost Estimates	Total Capital Costs	# of Units	Interest Expense, 40-Year Bond	Total Capital Costs + Interest
Phase 1, Densely Populated	$ 235,590,258	34,960	$ 241,184,152	$ 476,774,410
Phase 2, Less Densely Populated and Priority Areas	$ 163,517,015	25,349	$ 167,399,591	$ 330,916,606
Phase 3, Rural Western County	$ 407,537,613	17,989	$ 417,214,252	$ 824,751,865
Phase 4, Rural Eastern County	$ 209,169,254	2,878	$ 214,135,804	$ 423,305,058
Vacant Parcels		20,308		
Totals	**$ 1,015,814,139**	**101,484**	**$ 1,039,933,800**	**$ 2,055,747,939**

The County could use a model in which it built the Fiber to the Home network, paid for the capital costs of the network and leased the network to service providers to provide Internet services. This model has been used in Fullerton, CA. In Fullerton, the network owner has negotiated a revenue share, paid by the service providers, of 35% of gross revenues to be paid in exchange for use of the network. If El Dorado County had a 35% revenue share, the amount of capital costs to be financed can be reduced to the following:

Summary of Capital Cost Estimates, with Revenue Share	Total Capital Costs	# of Units	Interest Expense, 40-Year Bond	Total Capital Costs + Interest
Phase 1, Densely Populated	$ 235,590,258	34,960	$ 241,184,152	$ 476,774,410
Phase 2, Less Densely Populated and Priority Areas	$ 163,517,015	25,349	$ 167,399,591	$ 330,916,606
Phase 3, Rural Western County	$ 407,537,613	17,989	$ 417,214,252	$ 824,751,865
Phase 4, Rural Eastern County	$ 209,169,254	2,878	$ 214,135,804	$ 423,305,058
Vacant Parcels		20,308		
Totals	**$ 1,015,814,139**	**101,484**	**$ 1,039,933,800**	**$ 2,055,747,939**
Revenue Share Adjustment, Net Profit	$ 216,638,869			
Adjusted Capital and Interest with Revenue Share	**$ 799,175,270**		**$ 798,751,386**	**$ 1,597,926,657**

With this strategy, the County could pay for the 40-year bond with a property assessment fee. If the property assessment fee is applied to all parcels equally, the annual property tax would be $393.64 over a 40-year period. If this fee was paid up-front and the County did not incur interest expenses, the up-front property assessment would be $7,875 per parcel.

A Path Forward, Partners and Grant Funding

The TAG committee challenged NEO to find strategies in which residential parcels would pay a property assessment fee of $100 annually. This scenario would work if the County secured grant funding for the western and rural areas of the County (Phases 3 and 4) and if the County secured a partner to do a joint build for the more densely populated areas (Phases 1 and 2).

Grant Funding. There are many state and federal grant programs that fund broadband infrastructure in rural areas that are unserved or underserved. For example, the Rural eConnectivity Pilot Program (ReConnect Program) provided $600 Million in grant funding and low-cost loans for rural areas that lack 10 Mbps in download and 1 Mbps in upload speeds. In order to be eligible for a 50% grant, the service area needs to be in a rural area where 90% of the households do not currently have 10/1 Mbps of broadband service. Areas where 100% of the households lack 10/1 Mbps coverage are eligible for a 100% grant. The window for this grant has been closed for this year; however, there has been indication that the grant funds may be available again next year in 2020.

According to the FCC website, there are 34,865 parcels in El Dorado County that lack 10/1 Mbps of service. There may be areas in which other federal funding has been provided such as the Connect America Fund (CAF) and area in which there is a protected borrower status. CAF and protected

borrower areas are not eligible for the ReConnect program. However, a good portion of El Dorado County would qualify. See attached map, "Eligible Grant Funding Areas, El Dorado County."

The grant will also fund pre-application costs such as design, engineering, and grant application costs up to 5% of the total grant award. These costs must be for work completed after the publication date of the grant notice.

In addition to the ReConnect Program, there are other federal programs that fund broadband infrastructure. Funding for infrastructure builds are available through the USDA Community Connect Programs, the Economic Development Administration (EDA) and the HUD's Community Development Block Grants and Choice Neighborhoods Grants. The State of California has the California Advanced Services Fund (CASF) Infrastructure Grant.

Partnerships. There may be opportunities in which the County could partner with entities that would share in the capital costs of the build. For example, there are a handful of investment companies that are co-investing with local governments to share in the capital costs of fiber builds. These companies invest in fiber to enable broadband and smart-city applications. Smart-city applications include the Internet of Things, self-driving cars and autonomous vehicles, 5G technologies and smart-lighting. In the coming years, there will continue to be an explosion of other smart-city applications that will rely on advanced 5G and fiber networks.

Some of these investment companies could assume the execution risk of building the network. In this scenario, the County could use the fiber network to connect its facilities and for use of the network for smart-city applications (like traffic management, smart-lighting, wi-fi services, etc.) at no charge. The investment company would negotiate agreements with service providers and provide a revenue share to the County. There would be benefits to the County in not needing to staff up to manage the purchasing, construction and operations of the network. The County could weigh in on the minimum service speeds and pricing from the service providers, as well as where and when to build out, and minimum service level agreements.

The primary benefits to the County would be mitigating the financial and operational risks of executing on the Fiber to the Premise network, while still getting the benefit of substantially improving broadband services for its constituents. The County would also own a network that could be utilized for the soon-coming smart-city applications, self-driving vehicles and public safety enhancements and any potentially needs for connecting various government-owned facilities or anchor institutions. The range of co-investing will vary based upon what type of agreement can be reached. A company could co-invest with El Dorado County, especially for Phase 1 and 2, paying 20-50% of the capital costs.

Other potential partners in a joint build may be Caltrans or PG&E, who may be willing to share in the cost of building fiber. Caltrans has indicated they are interested in a joint build project to build fiber to their traffic lights throughout the County. PG&E may want to extend fiber to better manage their power operations, connecting substations and communication devices in the field. Better power operations management would allow PG&E to turn off overhead power when there are high-winds or fires detected. They could route around power failures. Another potential joint build may be to partner with PG&E to bury their electric lines to mitigate risks of fire hazards from downed aerial electric lines.

If El Dorado County secured grant funding and a partner to co-invest, the residential property assessment target of $100 is within reach. The summary of capital costs with an assumption of 50%

grant funding for Phases 3 and 4 and a co-investment partner contribution of 30% in Phases 1 and 2 dramatically reduces the capital cost and interest expenses for the County.

Summary of Capital Cost Estimates, with Revenue Share, Partners and Grants	Total Capital Costs	Partner or Grant Contribution	Adjusted Capital Costs	Interest Expense, 40-Year Bond	Total Capital Costs + Interest
Phase 1, Densely Populated	$ 235,590,258	30%	$ 164,913,180.43	$ -	$ -
Phase 2, Less Densely Populated and Priority Areas	$ 163,517,015	30%	$ 114,461,910.40	$ -	$ -
Phase 3, Rural Western County	$ 407,537,613	50%	$ 203,768,806.33	$ -	$ -
Phase 4, Rural Eastern County	$ 209,169,254	50%	$ 104,584,627.00	$ -	$ -
Vacant Parcels					
Totals	**$ 1,015,814,139**		**$ 587,728,524**	**$ -**	**$ -**
Revenue Share Adjustment, Net Profit	$ 216,638,869		$ 216,638,869		
Adjusted Capital and Interest with Revenue Share	**$ 799,175,270**		**$ 371,089,655**	**$ 379,900,870**	**$ 750,990,525**

With these strategies, the average per parcel annual property assessment would be $185. Paying the assessment up-front would be $3,657 per parcel.

The County may determine a varying property assessment based upon type of parcel. For example, multi-dwelling, business and commercial properties may be assessed a higher fee than residential units. According to the County's GIS department, there are currently 114,986 total parcels in the County. NEO's design for the capital cost includes passing fiber to 81,176 parcels that had either a commercial or residential unit built. There are 20,308 vacant parcels in the County. The vacant and occupied parcel totals are 101,484 parcels. It was assumed that these 101,484 parcels were assessed an annual fee. Parcels that were identified as marinas, parking lots, agricultural and farming, cemeteries, environmentally sensitive land, timber preserves and unassigned parcels were not assumed to be assessed an annual fee. If the above strategies were deployed, the following parcel assessments would meet the capital costs plus interest costs:

Property Tax Assessment, Various Types of Parcels	# of Parcels	Property Tax Assessment	Total over 40 years
Commercial	1,365	400	$ 21,840,000
Vacant Commercial Land	663	300	$ 7,956,000
Industrial	1,159	400	$ 18,544,000
Vacant Industrial Land	404	300	$ 4,848,000
Multi-residential, 2-3 units	1,320	1200	$ 63,360,000
Multi-residential, 4+ units	557	2000	$ 44,560,000
Vacant Multi-residential, 4+ units	58	1200	$ 2,784,000
Retirement Housing	15	800	$ 480,000
Schools, Large - 101+ students	10	5000	$ 2,000,000
Schools, Medium - 13 - 100 students	19	3000	$ 2,280,000
Schools, Small - less than 13 students	3	1500	$ 180,000
Ski Resorts	3	5000	$ 600,000

Residential			
Manufactured Homes, =<2.5 AC	629	100	$ 2,516,000
Mobile Home on Rented Land	1,381	100	$ 5,524,000
Residential on Leased Land	1,915	100	$ 7,660,000
Rural Mobile Home 2.51+ AC.	1,623	100	$ 6,492,000
Rural Residential 2.51-20.0 AC. 1 SF UNIT	13,186	200	$ 105,488,000
Rural Residential 20+ AC. 1 RES. UNIT	1,068	200	$ 8,544,000
Single Family RES. <=2.5 AC.(INC. MAN. HMS	56,475	100	$ 225,900,000
Vacant NON-RES. IMPROVEMENTS <=2.5 AC.	359	100	$ 1,436,000
Vacant RURAL RES. LAND 20+ MINOR NON-RES IMPR	2,235	200	$ 17,880,000
Vacant RURAL RES LAND 2.51-20.0 AC. 1 UNIT	4,560	300	$ 54,720,000
Vacant RES. LAND <=2.5 AC. 1-3 UNITS	12,477	300	$ 149,724,000
	101,484	Total	$ 755,316,000
		Goal	**$ 750,990,525**
		Over or (Under) Goal	$ 4,325,475

Diving into the Details: Capital Cost Estimates

There are several main categories that comprise the capital cost estimates for a Fiber to the Home network. These categories include:

- Design and Engineering. This includes the costs to design and engineer the network, including the costs to drive the routes to verify whether the network can be constructed using aerial or underground construction methods.

  If aerial construction is used, this category includes the make ready engineering and pole analysis to determine what is needed to make space for the fiber optic cable and to determine the location of the fiber on the poles. If existing cable needs to be moved or repositioned on the pole, make ready engineering includes the engineering work to coordinate where on the pole fiber will be placed, considering the use of space by other providers. Make ready engineering and pole assessment includes determining whether the existing poles can accommodate the additional weight of fiber optic cable. In some cases, the entire pole may need to be replaced.

  If underground construction is used, the final design will identify rock samples to include notations of type of rock and the impact this may have on directional boring or trenching for placement of the conduit.

Additionally, design and engineering services include pulling permits for the construction of the network, preparation of construction documents and preparing as-built drawings after the network has been constructed.

- Materials Costs for the Construction of the Distribution Network. This includes the vaults, conduit and fiber optic cable of the distribution network.

- Construction Costs for the Construction of the Distribution Network. Construction costs take the form of aerial construction and underground construction. Aerial construction costs include the per foot cost to place fiber on the poles and to support the fiber with down guys, anchors, riser guards and grounding. It may also include costs for light and heavy tree trimming services and the costs to implement the make ready costs to accommodate the space and weight requirements of the fiber placement. Underground construction includes trenching, digging or boring for placement of conduit and fiber optic cable. This category also includes placement of vaults to access and splice the fiber.

- Technical Services. The fiber network is connected or spliced together.

- Labor and Materials for the Drop Fiber or Connection to the Home/Business, Testing and Turn-up of Services. After customers have signed up for service, this cost includes the labor to pull fiber from the street to the home or business, the costs to splice the fiber, as well as the materials costs of the Optical Network Terminal, or the equipment that is placed on the outside of the home. This category also includes the testing and turn up of services.

- Electronics. This includes the equipment needed at a centralized location to light and manage the fiber and services on the network.

Findings of Further Verification of Capital Costs

All of the initial assumptions and line items were further validated and verified for accuracy. A formal request for quotation or proposal was not used in the verification process. However, NEO's team did contact various vendors in the Fiber to the Home industry to receive informal quotes on services, materials costs, and construction estimates. A formal request for proposal or for a quote, issued by the County's Procurement Department, could further validate the price estimates and per unit costs. Most of assumptions used for the initial capital cost estimates were accurate and fell within the contingency fee of 10-20%. These categories include design, engineering, technical services, electronics, and materials.

There are several pricing factors that, on the surface, seem insignificant; yet, when combined, give the appearance of a very high overall price as compared to other projects of similar size and complexity in other areas of the United States. The following are a few of those contributing factors.

Permitting Fees and Length of Time to Obtain a Permit. The initial conceptual routes were within the permitting jurisdiction of many different agencies and authorities. Final permitting requirements and timelines cannot be finalized until after the final design is complete. Many of the

permitting jurisdictions that were tentatively identified are historically known to have cumbersome and difficult processes as compared to other agencies across the nation. Actual costs for permits are unknown and must be assumed until the final design is complete.

Permitting fees may be higher than the initial estimates submitted by NEO as **Caltrans** has been known to delay the permitting process up to a year. Having existing relationships between the County and Caltrans may help in getting permits approved in a timelier manner. Working with Caltrans whenever possible, to place shadow conduit through a dig-once policy, is highly encouraged to reduce the costs of placing conduit and fiber, as well as minimize potential construction delays due to the lengthy permitting process. Additionally, NEO has identified other primary routes throughout the County that are located on County and City roads to minimize the costs and timeframes for construction, rather than assuming use of Highway 50 and relying upon Caltrans' right of way.

The initial design of the Fiber to the Home network assumed the South Lake Tahoe area would be connected via fiber to the western part of the County (Placerville, El Dorado Hills, etc.) Given the challenges of working with Caltrans, it may be beneficial to include two separate networks that are connected with leased telecommunication facilities, or have separate, leased facilities from both parts of the County to obtain backhaul and transport services to Internet hubs. NEO's team provided estimates for separating these two regions of the County as part of future contracted work.

In the eastern part of the County, near South Lake Tahoe, the **Tahoe Regional Planning Authority** has additional permitting requirements that may increase the costs of and timeframe to obtain a permit.

California's Pacific Gas and Electric (PG&E) has come under pressure in the past two years with its involvement and response to several Northern California wildfires. Faced with billions of dollars in potential liabilities from two years of devastating Northern California wildfires as well as the possibility of future catastrophic blazes, PG&E filed for Chapter 11 bankruptcy protection in early 2019.

These issues may influence the time to receive a permit for fiber construction and should be mitigated by selecting routes that are located within the City's or County's right of way, avoiding working with Caltrans or PG&E whenever possible.

Construction Costs are the Primary Variance in the Capital Cost Estimates.

NEO requested informal quotes from several fiber construction companies to further verify and validate per unit cost assumptions. National companies stated that the construction costs for fiber are 40% higher in the State of California than any other state within the U.S. The reasons for this include California's requirement for prevailing wages, rock adder requirements, permitting costs and basic supply and demand variables. A further description of these and other conditions are described below.

Prevailing Wages.

California state law requires that, on public works projects, pay to workers must equal: *"the general prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate."*

Further, the law also states that:

"The contractor to whom the contract is awarded, and any subcontractor under him, shall pay not less than the specified prevailing rates of wages to all workmen employed in the execution of the contract."

Prevailing wages are established by regulatory agencies for each trade and occupation employed in the performance of public work, as well as by State Departments of Labor or their equivalents. Prevailing wage may include both wages, benefits, and other payments such as apprenticeship and industry promotion. The rates are published by the State's Department of Industrial Relations ("DIR"). The published rates include many different prevailing wage rates, which are based on the geographic location and the type of work that is performed.

This project will require a large labor force for completion, and labor rates in California are much higher than other areas of the country. For example, hourly labor rates in the California Western region average $26.93 per hour, whereas hourly rates average $21.83 per hour in the Midwest region, and $21.99 per hour in the Southern region. With California being a prevailing wage state, this requires a higher hourly rate for construction work. California-required benefits and employer mandates greatly affect the cost of labor as compared to other states.

Taxes. All for-profit companies participating in the project are subject to an 8.84% State of California Income tax on total income. This is significantly higher than other states with a lower or no state corporate tax. California has a complex and high sales tax rate and is classified as the 49th (out of 50 states) least-friendly business tax state. California has state sales tax of 6.00%, and allows local governments to collect a local option sales tax of up to 3.50%. Higher sales tax rates affect materials purchases. In California, many types of labor charges are subject to tax, in addition to materials.

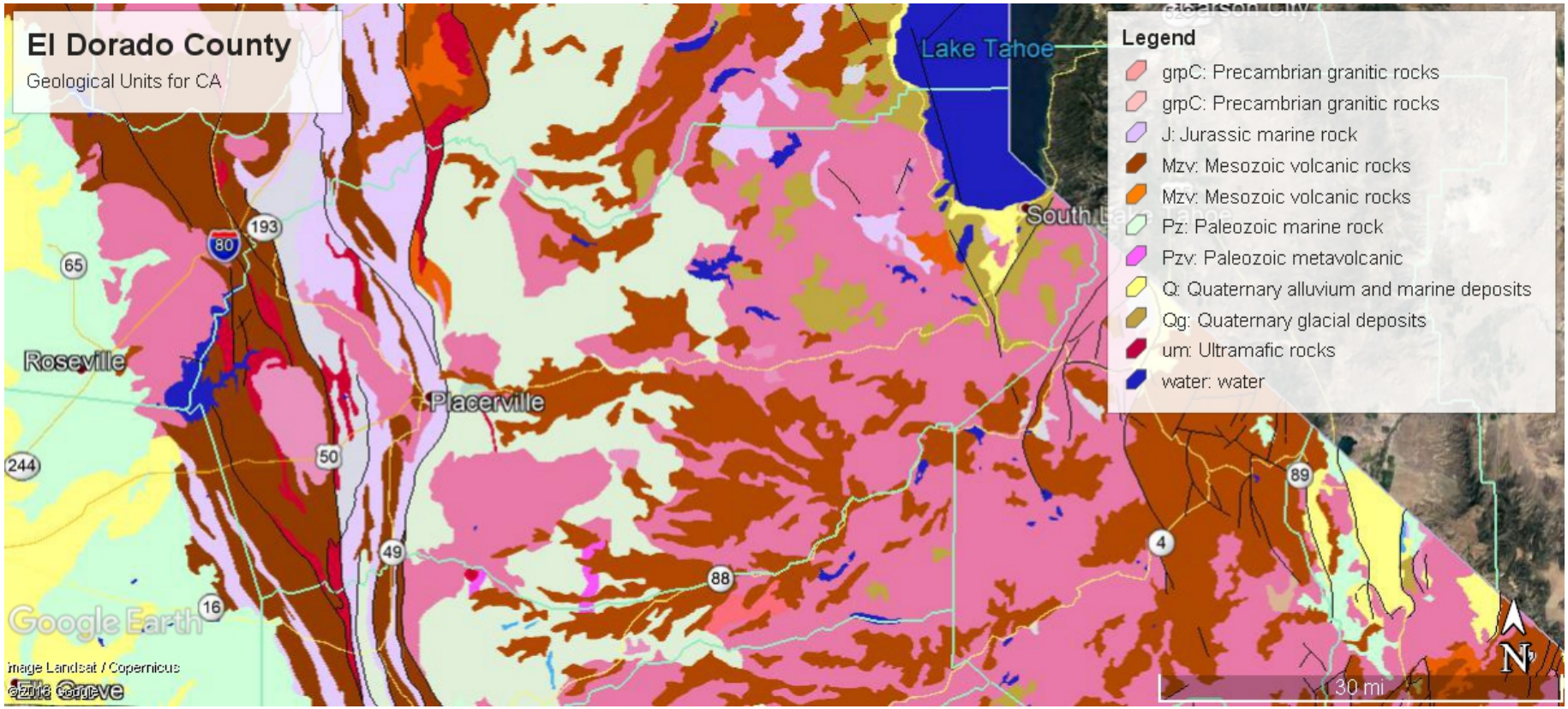
Fuel. A large portion of construction operation costs relate to fuel for machinery and transportation. California has the highest average fuel price for regular gasoline and diesel by a large margin. As of the date of this letter, the average price for a gallon of diesel in California was $4.08. In comparison, the national average which includes California, is $3.15 per gallon. Most states average between $2.87 to $3.20 per gallon.

National vs. Local Construction Companies. NEO contacted several national fiber construction companies, as well as locally-based, California construction companies. National companies across the board had consistently similar per-unit rates for construction services. Locally-based companies per unit costs were two to three times higher than national companies. This is alarming and will have a tremendous impact on the capital costs of a potential project in El Dorado County. This factor may inform the TAG Committee of its go-forward strategy. Using a national fiber construction company will have a significant impact on the capital costs of the project.

Supply and Demand. Basic economic drivers regarding supply and demand are impacting fiber construction rates. As more telecommunications, 5G, smart city and Internet applications are requiring the need for more fiber construction (i.e. demand is rising), the costs for construction are also rising. There is a nationwide shortage of skilled telecommunications and fiber-optic specialists. The demand for these services over the last 5 years outpaces the supply of qualified firms capable of this type of quality work. This also leads to higher overall underground and fiber-optic construction prices.

Route geography and undulation of the terrain. Parts of the conceptual route are along steep and difficult terrain with little area for basic underground equipment. This requires specialized equipment for portions of the build. This will impact the per unit costs for construction for both aerial and underground methodologies.

Subsurface or Rock Conditions. For further verification of the capital cost assumptions, NEO's team pulled subsurface (i.e. rock) conditions of the conceptual routes from the U.S. Geological Survey. The following maps were created to show type of rock. The subsurface conditions and the amount of rock and impermeable materials are significant. This causes a major impact upon the price to construct.



The map uses geologic terms for description of rock and therefore, a layman may have difficulty interpreting the map. The primary take-away is the following:

Light Blue/Light Green – Easy Rock
Yellow and/or Sand Color – Easy Digging
Other Colors, Red, Pink, etc. – Hard Rock

The western edge of El Dorado County and small portions of South Lake Tahoe have light rock and sand conditions (see yellow, sand color and light green).

The majority of the County has hard rock, granite, limestone, shale, etc. The light pink lines running north/south at Placerville and going west are considered medium rock and are not as challenging. From Placerville east towards the South Lake Tahoe area is mountainous and hard rock. This consideration may also validate the strategy of having two distinct network builds with leased facilities in between or fed separately.

Environmental compliance. As compared to other states, California has stringent compliance regulations that affect the price of doing business and construction activities. Contractor pricing is higher due to the risk of non-compliance and putting compliance procedures in place.

Per Unit Rate Comparisons

Below are the per unit costs, including the initial assumptions NEO's team made, the locally-based construction company's rate highlighted in blue and two national company quotes. For most of the assumptions, NEO's initial assumptions are within the 10-20% contingency; however, there are a few items that fall outside the contingency range and therefore, the capital costs should be adjusted as such. Note per above the dramatic increase in pricing of using a local construction company.

Construction Labor	Initial Assumption	Locally Based Company	Locally Based Company Increase	National Company #1	National Company #2	National Company #2 Increase over Initial Assumption
Directional Bore and place 2" conduit	$ 14.88	$ 87.00	485%	$ 18.00	$ 18.00	21%
Rock Cutting Adder, Medium Rock	$ 17.50	$ 95.00	443%	$ 28.00	$ 27.00	54%
Rock Cutting Adder, Hard Rock	$ 31.50	$ 95.00	202%	$ 40.00	$ 65.00	106%
Missile Bore and place 2"conduit	$ 10.50	$ 87.00	729%	$ 13.50	$ 13.50	29%
Bore and Place 1 - 1.25" SDR 11 HDPE Duct (over all cost including standard restoration)	$ 47.06	$ 127.95	172%	$ 52.00	$ 52.00	10%
Bore and Place 1 - 1.25" SDR 11 HDPE Duct (rock bore including standard restoration)	$ 47.06	$ 185.31	294%	$ 52.00	$ 52.00	10%
Place small vault, 24"x30"x24"	$ 262.50	$ 1,150.00	338%	$ 250.00	$ 250.00	-5%
Place drop vault	$ 148.75	$ 350.00	135%	$ 140.00	$ 140.00	-6%
Place large vault 36"x48"x36"	$ 420.00	$ 1,150.00	174%	$ 500.00	$ 500.00	19%
Place 24"x36"x24" handhole with gravel and soil removal (non hardscape placement)	$ 955.98	$ 1,691.34	77%	$ 1,200.00	$ 1,250.00	31%
Place 24"x36"x24" handhole with gravel and soil removal (place in concrete with restoration included)	$ 1,500.00	$ 2,478.18	65%	$ 1,800.00	$ 1,850.00	23%
Pull FOC in Duct	$ 1.91	$ 4.04	112%	$ 2.00	$ 2.00	5%
Install aerial fiber optic cable including make ready and all associated hardware and materials (does not include engineering or pole loading analysis)	$ 15.60	$ 13.60	-13%	$ 18.00	$ 18.00	15%
Splice and bi-directional test Fiber Optic Cable	$ 47.80	$ 66.18	38%	$ 55.00	$ 55.00	15%

Other Assumptions that Impact the Capital Costs

Other assumptions that affect the capital costs are the anticipated take rate percentages or the number of units that sign up for services, and the percentage of aerial vs. underground construction. Market share or take rate percentages are difficult to predict; however, based upon other similar markets, the average take rate range for a government-led Fiber to the Home network is between 30-55% take rate after two to three years. In order to minimize this risk, the County could set a pre-sign up take rate threshold prior to construction of the network. Further surveys can be developed in order to assess need, pricing and indication of signing up for services.

Finally, the construction costs will also vary depending upon aerial vs. underground construction. NEO's team drove the primary routes of the preliminary design to identify condition of the poles, to ascertain the level of make ready costs and to identify soil conditions for underground construction. Additionally, we met with PG&E to better understand their permitting process and to identify where they have existing utility poles. This work was then applied to the capital cost estimates.

In Conclusion

We believe that this process results in a reasonable assurance that the resulting costs are free of material misstatement or error. However, without final design and an engineering study, many factors that affect the estimated costs are dependent upon the individual estimator's and engineer's judgement. This includes assessing construction risks associated with a project of this magnitude.

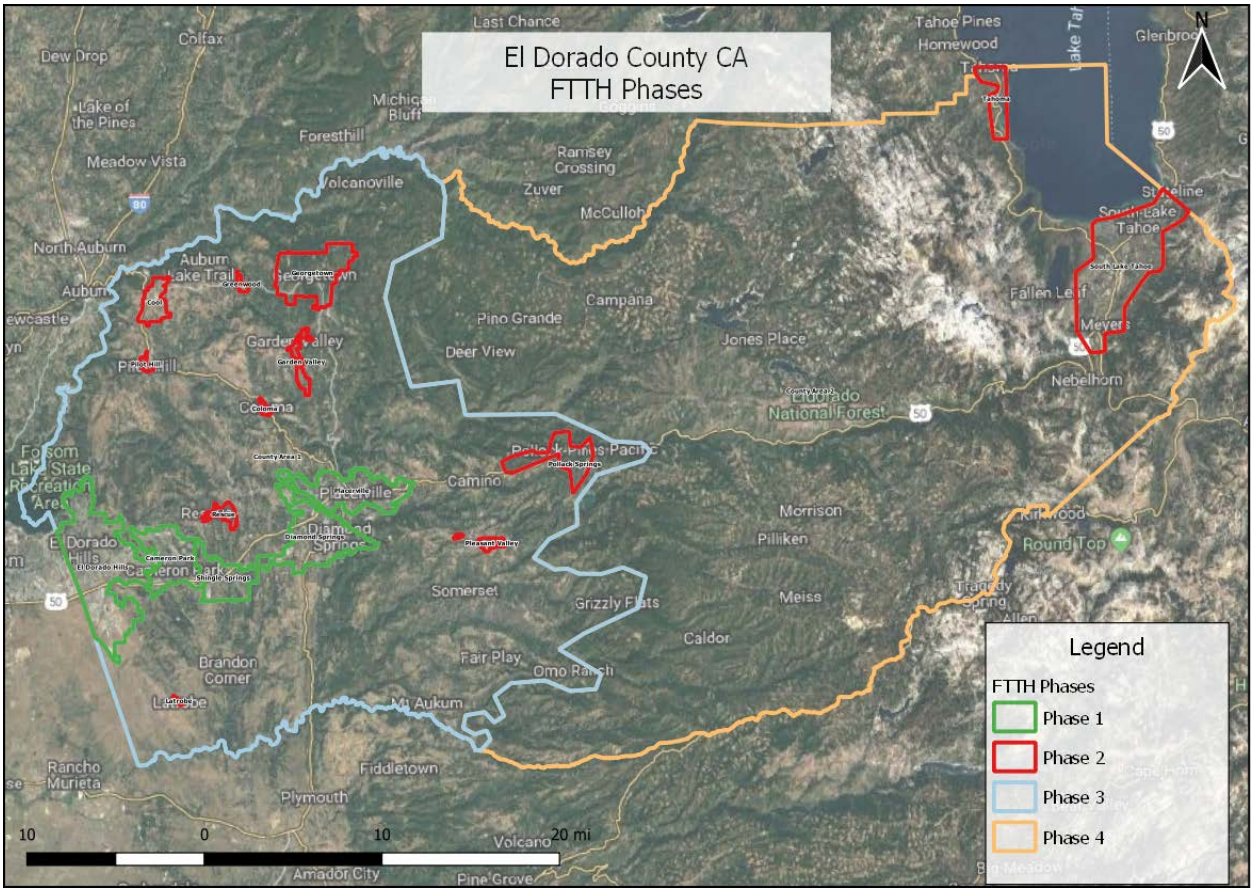
Part 2: Re-running the Capital Cost Estimates, Impact on the Financial Model

The TAG committee asked NEO to re-run the capital cost estimates using the following changes from the original capital cost estimates:

1. Use the higher of the two National Company per unit rates for construction labor. Increase labor per unit rates by 40% to provide for the increase in labor costs with prevailing wages, taxes and fuel costs.
2. Assume two separate networks initially. One for the South Lake Tahoe area and one for the western portion of El Dorado County. Redraw the boundary maps for the design.
3. Create a set of assumptions with 30% underground and 70% aerial construction.
4. Create another set of assumptions using nearly 100% underground construction. NEO created another set of assumption using 98% underground and 2% aerial.
5. Create a set of assumptions based upon the results of the ride-out. This resulted primarily in using the assumption of 90% underground for Phase 1, 80% underground for Phases 2, 3 and 4. There are aerial poles available for all of the phases; however, the make ready expenses identified by PG&E make aerial deployment more cost prohibitive. Additionally, PG&E has antiquated infrastructure and their overhead lines are problematic with the recent fires in California. There may be a good case to partner with PG&E to bury their utility lines with a joint build in partnership with the County.
6. Provide a cost analysis of the savings in operational expenses with use of primarily underground construction and weigh this against the additional capital expenses of underground construction.
7. Provide an updated financial model, identifying annual and up-front property assessments.
8. Provide a format to assess property parcels varying rates of assessments.
9. Provide proforma estimates of capital costs plus interest payments using a 20-year, 30-year and 40-year bond or loan.

Boundary Maps and Phasing

NEO refined the phasing and boundaries to better reflect the population density and rock considerations. We created four phases. The map below shows the four distinct phasing. Phase 1, shown on the map below, is outlined in green. Phase 1 includes the more densely-populated areas of the County that have less rock-adder per the USGS maps. Phase 2, shown outlined in red below, include the areas that the State of California has designated as “Priority Areas” and areas that have more rock adder. We split the County to include phases for the very rural, hard rock, less populated areas of the County. Phase 3 encompasses the western part of the County that is rural. Phase 4 includes the eastern part of the County that is rural.



What is the Impact to the Capital Cost Estimates of Increasing the Construction Labor by approximately 40-50% and Assuming use of County Roads (vs. Caltrans) for Fiber Deployment?

NEO reran the capital cost estimates for the County using the above phasing, rock adder and higher construction labor costs.

The initial capital cost estimates were between $354-$400 Million. With consideration for additional rock adder, prevailing wages, higher-cost fuel, and overall construction costs being at least 40% higher in California, the new capital cost estimates for 30% underground and 70% aerial construction are $600-$640 Million, an increase of approximately 37.5%-41%.

What is the Impact to the Capital Cost Estimates and Operational Expenses Assuming Mostly Underground Construction?

The TAG Committee asked NEO to identify the capital cost estimates of nearly 100% underground construction versus assuming use of PG&E poles. The initial estimates included the assumption of 30% underground construction and 70% aerial construction. It was noted with PG&E's recent bankruptcy filing, that the length of time to secure a permit or a pole attachment agreement with PG&E may be up

to a year. Additionally, PG&E may require substantial make-ready expenses for use of their utility poles. NEO assumed generous make ready expenses of $30,000 per mile for both the initial and new estimates. From an operational expense standpoint, PG&E charges $28 per year per pole for use of their pole.

The impact on capital costs of using nearly 100% underground construction versus a 70-30% split of aerial and underground construction is significant. We assumed 98% underground for all phases. This produced a capital cost estimate of $1.034 Billion. (An increase in $500 Million). It may be unrealistic to assume that 98% of the network could be constructed using underground construction. The terrain in the County of El Dorado is rocky, undulating and vastly dispersed. To build the network with mostly underground construction would take 5-7 years to complete, at best. This may not be realistic and based upon the additional capital costs; it may also not be feasible.

As aerial construction has higher maintenance expenses, the question was posed, can the operational savings of deploying primarily underground construction outweigh the increase in capital costs? Before we dive into this question, there are a few other things to consider for aerial vs. underground construction.

What are the advantages and disadvantages of Aerial and Underground Construction?

Aerial deployments are normally faster and less expensive to deploy than underground-constructed networks. The ground may be undulating, rocky or both, making burying cable more difficult. The undulating and rocky terrain may in fact make underground construction impossible or improbable for Phase 3 and 4, as the time to construct could take significantly longer than aerial construction for these phases. It may also be unrealistic to construct Phase 1 and 2 with primarily underground construction.

Here are the advantages and disadvantages of aerial and underground construction.

Advantages of Aerial/Overhead Utilities

- **Service Restoration** – Overhead or aerial fiber optic cable faults can be located easier and more quickly, resulting in reduced outage times. Underground fiber requires special equipment such as fault indicators and cable thumpers to locate and isolate cable cuts and cable faults. Once located, a splice pit must be opened to expose the damaged cable before repairs can be made. Underground utilities are more difficult to inspect, diagnose and repair increasing outage times.
- **Excavation** – There is no threat of damage to overhead utilities from excavators except at poles and guy wires.
- **Streetlights** – Streetlights can be easily installed on poles and maintained at a lower cost.
- **Operating Temperatures** – Overhead conductors can operate at a much higher temperature than underground conductors. Excessive heat in underground conductors may result in more cable failures.
- **Subsurface Terrain Construction** – Overhead utilities are not as adversely affected by terrain, rocks, water and existing sub-surface utilities.
- **Capital Costs** - Aerial or overhead utilities require less materials and labor to install resulting in lower construction costs as compared to underground utilities.

Disadvantages of Overhead Utilities

- **Storms** – Overhead utilities are more susceptible to outages associated with storms, lightning, wind and ice.
- **Wildlife** – Overhead lines are exposed to wildlife
- **Vehicular Contact** – The risk of motor vehicle contact with poles and guy wires is greater.
- **Hazards** – Contact with overhead lines from people and equipment is more likely with overhead utilities than underground facilities. Guy wires can be a danger to the public especially if there are no guy guards.

Advantages of Underground Utilities

- **Joint-Use and Joint Builds** – Underground utilities can utilize a joint-use trench or a joint-build to reduce the overall construction costs of a project. Construction costs can be shared by a number of utilities or entities, resulting in lower construction costs
- **Increased Public Safety** – Downed utility lines represent a hazard to the public. Often these downed lines are still energized with very high voltages and can cause harm to citizens and potential fires, as seen in California within the past two years.
- **Aesthetics** – A primary reason to bury overhead utilities is the aesthetic benefit received with more attractive streetscapes.
- **Tree Trimming** – Underground utilities do not require regular tree trimming/bush clearing.
- **UV Exposure** – Underground utilities are not exposed to the elements of animals or UV degradation.
- **Vandalism** – Burying utilities reduces vulnerability to vandalism. Interference – Burying utilities will reduce interference of vandalism to fiber optic cables.
- **Maintenance Costs** – Maintenance costs are lower for underground fiber utilities.

Disadvantages of Underground Utilities

- **Costs** – Underground utilities have higher installation and construction costs.
- **Excavation** – Disruption in service can occur as private property or lawns are excavated, or when a new real estate development is established.
- **Cable Failures/Repair Costs** – It is more difficult and time consuming to repair subsurface utilities as special equipment is needed to locate the fault or cable break.

Can the reduced operating expenses of underground construction pay for the increased capital costs of deploying underground construction?

The primary operating expenses that can be saved or reduced with underground construction are pole attachment fee and overall maintenance of the network. We will examine whether or not the reduced operating expenses of underground construction can justify the increase capital expenses.

Pole Attachment Fees

The projected annual pole attachment fees of using 70% aerial construction are projected to be $1,468,458. Over 20 years, this results in expected fees of $29.37 Million.

# of Poles, 70% Aerial and 30% Underground	# of Poles
Phase 1	16,083
Phase 2	350
Phase 3	35,529
Phase 4	483
Total	52,445
Operational Expenses	
Annual Pole Attachment Fee	$ 28.00
Annual Expenses, Pole Attachments	$ 1,468,458
Over 20 years	$ 29,369,161

It may not be realistic to assume that underground construction is feasible with Phase 3 and 4, however. Deploying underground fiber in these phases would take substantially longer to install. If we take out the assumption of underground fiber for Phase 1 and Phase 2, yet keep the use of aerial fiber for Phases 3 and 4, the annual pole attachment fees are expected to be:

Annual Expenses, Phase 3 and 4, Pole Attachments	$ 1,008,340
Over 20 years	$ 20,166,807

Annual Maintenance Fees

Annual maintenance fees of aerial fiber are higher than annual maintenance fees of underground fiber. On average, annual cost per mile for maintenance for aerial fiber is estimated at $1,069 per mile. The annual cost per mile for maintenance of underground fiber is $536 per mile.

Below a chart showing the number of miles of fiber optic plant and the comparison of 70/30% aerial/underground construction and associated maintenance costs and the associated maintenance costs for 98% underground.

Estimated Maintenance Costs	Plant Miles	70% Aerial	30% Underground	Total Maintenance Costs	2% Aerial	98% Underground	Total Maintenance Costs
Phase 1	653	$ 488,423	$ 104,956	$ 593,379	$ 13,955	$ 342,856	$ 356,810
Phase 2	496	$ 371,411	$ 79,811	$ 451,223	$ 10,612	$ 260,717	$ 271,329
Phase 3	1,442	$ 1,078,996	$ 231,862	$ 1,310,859	$ 30,828	$ 757,417	$ 788,245
Phase 4	687	$ 513,805	$ 110,410	$ 624,215	$ 14,680	$ 360,673	$ 375,353
Total	3,278	$ 2,452,636	$ 527,040	$ 2,979,675	$ 70,075	$ 1,721,663	$ 1,791,738
Cost per mile for Aerial Fiber	$ 1,069						
Cost per mile for Underground Fiber	$ 536						
Annual Maintenance Savings of Use of Primarily Underground	$ 1,187,937						
Over 20 years	$ 23,758,739						

The savings for pole attachment fees and annual maintenance would not cover the increase in capital expenses. However, with PG&E possibly looking into burying their electric utilities, there may be an opportunity to partner with them on sharing the capital costs of burying fiber through a joint trench agreement or shadow conduit agreement.

Refining the Capital Costs based upon the Results of the Ride-out

As noted above, NEO used the following assumptions based upon the results of riding out the primary routes of the preliminary design:

- Phase 1: 90% underground and 10% aerial
- Phase 2: 80% underground and 20% aerial
- Phase 3: 80% underground and 20% aerial
- Phase 4: 80% underground and 20% aerial

What is the impact to the financial model of these increased capital costs?

NEO separated the financial models' operating expenses and revenues, assigning various roles and responsibilities to the service provider(s) and to the County. For the models, the following assumptions were used:

Capital Costs

It was assumed that 100% of the capital costs would be assigned to the County. Realistically, in negotiations with the service provider(s), there may be an opportunity to share in the capital costs. For example, in most public private partnerships for fiber networks, the service provider pays, at a minimum, the capital costs for equipment to light the fiber network. There may be other capital costs that the service provider absorbs in constructing the network.

As discussed previously, there may also be opportunities to apply for grant funding to pay for 50-100% of the capital costs in areas that lack 10/1 Mbps in broadband service. Additionally, partnerships with companies or entities to participate in a joint build may reduce the overall capital costs for the County, especially in Phases 1 and 2.

A number of financial models were ran based upon various property assessment fees, loan terms and various partnership and grant funding awards. The amount of property assessment fees received by the County is dependent upon the term and amounts needed for capital costs, as well as the interest rate on the loan. Other than these factors, the operating budgets remain the same. An interest rate of 4.33% was used and various amortization schedules of 20-, 30- and 40-year loan schedules were modeled. The results of various amortization terms were provided to the TAG committee. The assumption of use of a 30-year amortization schedule was used for purposes of financial modeling for this report.

Revenue Assumptions

The service provider would receive revenues for broadband services, voice services and other recurring revenue. A revenue share of 35% would be provided to the County. The following assumptions were used for residential services:

Residential Services	Pricing	% of Customers Taking Service
100 Mbps	$ 60.00	65%
1 Gbps/1 Gbps	$ 89.00	35%
Residential Voice	$ 15.00	10%
Managed WiFi	$ 4.95	5%
Static IP	$ 9.95	1%
Wireless Booster/AP	$ 9.95	5%

Business and commercial customers pay greater monthly fees for broadband services; however, most businesses in El Dorado County are considered small businesses. For this reason, the model assumes the same business pricing as the residential pricing. In reality, there would be greater revenue potential for business, commercial and enterprise customers.

Sales churn of 2% of total revenues and an annual revenue inflation factor of 3% was assumed for broadband and voice services for the service provider.

Each phase assumed a ramp-up period to reach a 40% take rate or market share. The following ramp-up was assumed:

Take Rate or Market Share Assumptions	%
Take rate after year 1	10%
Additional Take Rate, Year 2	20%
Additional Take Rate, Year 3	5%
Additional Take Rate, Year 4	5%
Additional Take Rate, Year 5	0%
Additional Take Rate, Year 6	0%

The County's revenue would be based upon an annual property assessment to cover the obligations of principal and interest payments and the County's operating expenses of the network. A worksheet summarizing the capital cost estimates, interest payments and operating expenses, with various loan terms and with the ability to plug in various assumptions for property assumptions, was given to the TAG committee as a deliverable of this project.

Operating Expenses

It was assumed that the service provider would be responsible for marketing, sales, customer support, capital costs to refresh the equipment every 7-years, trouble resolution, internet access, backhaul or transport costs, and software maintenance on the equipment. Assumptions were also modeled for the service provider's rent of co-location space and offices, salaries for additional managers, as well as, general and administrative costs. Below is a list of operating expense assumptions for the service provider:

- Internet Access, Backhaul and Transport Costs: $2500/Gigabit plus $1/customer/month
- Software Maintenance: $6 per subscriber per year
- Equipment refresh: Every 7 years, $300 per subscriber
- $24,000 per year in co-location space

- $60,000 per year in facilities rent
- Network technician salaries of $80,000 per year
- Network technician supervisor salaries of $120,000 per year
- Payroll taxes of 26% of gross payroll plus $30,000 per employee per year in health and dental benefits
- Marketing and Sales of 5% of gross revenues
- Customer service costs of $1/subscriber
- General and administrative cost of 7% of gross revenues

The County, as the network owner, would be responsible for operating and maintaining the network, materials for maintaining the network, vehicle and fuel costs for network technicians, annual pole rental fees, plus marketing and general and administrative costs.

The County would hire (3) administrative, supervisory and managerial staff in the first year to manage the relationship(s) with the service provider(s) and oversee the project. Managerial staff would increase to (5) full-time people in year 2 through year 5. The County would need network technicians to maintain the network. It was assumed that the County would hire (2) network technicians in year 1, an additional (2) in year 2 and ramp up to (9) technicians in year 3 and (11) in year 4 and thereafter.

The following operating expenses were assumed for the County:

- $28 per pole in annual pole rental fees
- Network technician salaries of $80,000 per year
- 300 miles of fiber plant per network technician
- $150 per mile for maintenance materials
- $250 per month per technician for vehicle repair and fuel
- Network technician supervisor salaries of $120,000 per year
- Administrative and managerial salaries of $120,000 per year
- Payroll taxes of 26% of gross payroll plus $30,000 per employee per year in health and dental benefits
- Marketing and Sales of 5% of gross revenues
- General and administrative cost of 1% of gross revenues

Proforma Financials, Service Provider

The assumptions for the service provider yield the following proforma income statement results:

Service Provider Income Statement	El Dorado County, All Phases, 35% Revenue Share, County Assumes All Debt									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Service Revenues										
Phase 1	$ 1,900,700	$ 6,843,000	$ 10,074,500	$ 11,594,900	$ 12,165,200	$ 12,165,100	$ 12,165,100	$ 12,165,100	$ 12,165,100	$ 12,165,100
Phase 2	$ -	$ 1,378,300	$ 4,961,800	$ 7,304,800	$ 8,407,100	$ 8,820,700	$ 8,820,700	$ 8,820,700	$ 8,820,700	$ 8,820,700
Phase 3, West Rural	$ -	$ -	$ 978,000	$ 3,521,000	$ 5,183,600	$ 6,259,700	$ 7,042,100	$ 7,824,500	$ 8,607,200	$ 9,389,600
Phase 4, East Rural	$ -	$ -	$ -	$ 156,400	$ 563,100	$ 876,200	$ 1,001,500	$ 1,126,500	$ 1,251,900	$ 1,377,000
Tap Fee or Installation Fee - Residential (one time)	$ 349,600	$ 952,690	$ 861,670	$ 690,105	$ 274,250	$ 104,335	$ 104,335	$ 104,335	$ 104,335	$ 104,335
Total Revenues from Operations	**$ 2,250,300**	**$ 9,173,990**	**$ 16,875,970**	**$ 23,267,205**	**$ 26,593,250**	**$ 28,226,035**	**$ 29,133,735**	**$ 30,041,135**	**$ 30,949,235**	**$ 31,856,735**
SubTotal Revenues	$ 2,250,300	$ 9,173,990	$ 16,875,970	$ 23,267,205	$ 26,593,250	$ 28,226,035	$ 29,133,735	$ 30,041,135	$ 30,949,235	$ 31,856,735
Revenue Inflation	$ 67,509	$ 275,220	$ 506,279	$ 698,016	$ 797,798	$ 846,781	$ 874,012	$ 901,234	$ 928,477	$ 955,702
Total Revenues from Operations	**$ 2,317,809**	**$ 9,449,210**	**$ 17,382,249**	**$ 23,965,221**	**$ 27,391,048**	**$ 29,072,816**	**$ 30,007,747**	**$ 30,942,369**	**$ 31,877,712**	**$ 32,812,437**
Expenses										
Internet Access	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000
Additional Internet Access Costs per Customer	$ 41,952	$ 156,275	$ 259,675	$ 342,488	$ 375,398	$ 387,918	$ 400,438	$ 412,958	$ 425,479	$ 437,999
Annual Growth/Reduction of Internet Access Costs	$ -	$ (18,627)	$ (28,968)	$ (37,249)	$ (40,540)	$ (41,792)	$ (43,044)	$ (44,296)	$ (45,548)	$ (46,800)
Software Maintenance	$ 20,976	$ 78,137	$ 129,838	$ 171,244	$ 187,699	$ 193,959	$ 200,219	$ 206,479	$ 212,739	$ 218,999
Utilities, Power & Environmental	$ 24,000	$ 48,000	$ 72,000	$ 96,000	$ 96,000	$ 96,000	$ 96,000	$ 96,000	$ 96,000	$ 96,000
Facilities Rent	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
Salaries, Technicians	$ 856,220	$ 1,032,396	$ 1,094,997	$ 1,094,997	$ 1,094,997	$ 1,094,997	$ 1,094,997	$ 1,094,997	$ 1,094,997	$ 1,094,997
Salaries, Managerial Staff	$ 302,427	$ 548,742	$ 604,133	$ 584,850	$ 454,896	$ 401,797	$ 401,797	$ 401,797	$ 401,797	$ 401,797
Payroll Taxes and Benefits	$ 301,248	$ 411,096	$ 441,774	$ 436,760	$ 402,972	$ 389,166	$ 389,166	$ 389,166	$ 389,166	$ 389,166
Health and Dental Insurance	$ 396,689	$ 524,334	$ 561,657	$ 556,836	$ 524,348	$ 511,073	$ 511,073	$ 511,073	$ 511,073	$ 511,073
Equipment Refresh, CPE	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,010,955	$ -	$ -	$ -
Sales Churn, percent of Total Revenue	$ 45,006	$ 183,480	$ 337,519	$ 465,344	$ 531,865	$ 564,521	$ 582,675	$ 600,823	$ 618,985	$ 637,135
Marketing and Sales, percent of Total Revenue	$ 112,515	$ 458,700	$ 843,799	$ 1,163,360	$ 1,329,663	$ 1,411,302	$ 1,456,687	$ 1,502,057	$ 1,547,462	$ 1,592,837
Residential Customer Care, Operations	$ 3,496	$ 10,488	$ 14,035	$ 19,669	$ 21,144	$ 22,187	$ 23,230	$ 24,274	$ 25,317	$ 26,360
Business Customer Care, Operations	$ -	$ 2,535	$ 7,605	$ 8,872	$ 10,140	$ 10,140	$ 10,140	$ 10,140	$ 10,140	$ 10,140
General and Administrative Overhead, % of Revenue, Service Provider	$ 162,247	$ 661,445	$ 1,216,757	$ 1,677,565	$ 1,917,373	$ 2,035,097	$ 2,100,542	$ 2,165,966	$ 2,231,440	$ 2,296,871
Total Expenses	**$ 2,356,775**	**$ 4,187,000**	**$ 5,644,821**	**$ 6,670,737**	**$ 6,995,953**	**$ 7,166,365**	**$ 17,324,876**	**$ 7,461,434**	**$ 7,609,047**	**$ 7,756,574**
Service Provider EBITDA Before Revenue Share	$ (38,966)	$ 5,262,210	$ 11,737,428	$ 17,294,484	$ 20,395,094	$ 21,906,451	$ 12,682,871	$ 23,480,935	$ 24,268,665	$ 25,055,863
Revenue Share to County	$ 787,605	$ 3,210,897	$ 5,906,590	$ 8,143,522	$ 9,307,638	$ 9,879,112	$ 10,196,807	$ 10,514,397	$ 10,832,232	$ 11,149,857
Service Provider EBITDA After Revenue Share	$ (826,571)	$ 2,051,313	$ 5,830,839	$ 9,150,962	$ 11,087,457	$ 12,027,339	$ 2,486,064	$ 12,966,538	$ 13,436,433	$ 13,906,006

Income dips in year 7 because the equipment on the network is refreshed. The service provider still has healthy earnings after paying a 35% revenue share to the County

Proforma Financials, County

The County's proforma income statement is shown below. The proforma income statement shown above is based upon a 30-year amortization schedule, with an average annual property assessment of $483.07.

County or Network Owner Income Statement	El Dorado County, All Phases, 35% Revenue Share, County Assumes All Debt									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Total Property Assessment Fees	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480	$ 56,557,480
County Revenue Share	$ 787,605	$ 3,210,897	$ 5,906,590	$ 8,143,522	$ 9,307,638	$ 9,879,112	$ 10,196,807	$ 10,514,397	$ 10,832,232	$ 11,149,857
Total Property Assessment Fees and Revenue	$ 57,345,085	$ 59,768,377	$ 62,464,070	$ 64,701,002	$ 65,865,118	$ 66,436,592	$ 66,754,287	$ 67,071,877	$ 67,389,712	$ 67,707,337
Expenses										
Pole Rent	$ 450,318	$ 460,118	$ 1,454,934	$ 1,468,458	$ 1,468,458	$ 1,468,458	$ 1,468,458	$ 1,468,458	$ 1,468,458	$ 1,468,458
Maintenance materials	$ 97,907	$ 172,358	$ 388,647	$ 491,642	$ 491,642	$ 491,642	$ 491,642	$ 491,642	$ 491,642	$ 491,642
Salaries, Technicians (Maintenance)	$ 174,056	$ 306,413	$ 690,928	$ 874,029	$ 874,029	$ 874,029	$ 874,029	$ 874,029	$ 874,029	$ 874,029
Salaries, Managerial Staff	$ 302,427	$ 548,742	$ 604,133	$ 584,850	$ 454,896	$ 401,797	$ 401,797	$ 401,797	$ 401,797	$ 401,797
Payroll Taxes and Benefits	$ 123,885	$ 222,340	$ 336,716	$ 379,309	$ 345,520	$ 331,715	$ 331,715	$ 331,715	$ 331,715	$ 331,715
Health and Dental Insurance	$ 140,878	$ 252,091	$ 410,131	$ 473,974	$ 441,485	$ 428,210	$ 428,210	$ 428,210	$ 428,210	$ 428,210
General and Administrative Overhead, $475,000 Annually	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000	$ 475,000
Total Expenses	$ 1,764,470	$ 2,437,062	$ 4,360,489	$ 4,747,261	$ 4,551,030	$ 4,470,851	$ 4,470,851	$ 4,470,851	$ 4,470,851	$ 4,470,851
County or Network Owner EBITDA	$ 55,580,615	$ 57,331,315	$ 58,103,581	$ 59,953,740	$ 61,314,088	$ 61,965,741	$ 62,283,436	$ 62,601,026	$ 62,918,861	$ 63,236,486
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Depreciation	$ 10,812,783	$ 16,401,960	$ 28,577,350	$ 34,648,596	$ 34,648,596	$ 34,648,596	$ 34,648,596	$ 34,648,596	$ 34,648,596	$ 34,648,596
County or Network Owner Earnings Before Interest and Taxes	$ 44,767,832	$ 40,929,354	$ 29,526,231	$ 25,305,144	$ 26,665,491	$ 27,317,145	$ 27,634,840	$ 27,952,430	$ 28,270,265	$ 28,587,890
Interest Expense	$ 14,832,426	$ 19,413,366	$ 29,530,280	$ 34,206,833	$ 33,552,362	$ 32,868,984	$ 32,155,421	$ 31,410,340	$ 30,632,349	$ 29,819,994
Principal Payments	$ 5,749,851	$ 7,862,053	$ 12,257,265	$ 14,817,171	$ 15,471,642	$ 16,155,020	$ 16,868,583	$ 17,613,664	$ 18,391,656	$ 19,204,010
Interest Expense - Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
County or Network Owner Income Before Taxes	$ 24,185,554.57	$ 13,653,936	$ (12,261,314)	$ (23,718,860)	$ (22,358,513)	$ (21,706,859)	$ (21,389,164)	$ (21,071,574)	$ (20,753,739)	$ (20,436,114)

Additionally, NEO modeled a 20-, 30- and 40-year amortization schedule and the impact to the property assessments needed. The results of each model were provided to the TAG committee as a deliverable of this project.

In Summary

To summarize, there may be a path forward for the County to consider investing in a Fiber to the Home network to provide Gigabit bandwidth to its constituents. This network could be used for the original intention of improving broadband services throughout the County and could also be used for a number of other applications. In addition to supporting ultra-fast broadband services, the network could be used for video and cable TV, video streaming, voice services, cellular backhaul, smart city applications, supporting infrastructure for self-driving vehicles, 5G and LTE technologies and a number of other unforeseen applications that require fiber in the future.