



The LinkIDAHO SBI Cost Model

The basics...a brief overview

Additional information available at www.linkidaho.gov

Please refer questions to the LinkIDAHO program office.

This summary document provides a brief overview of the LinkIDAHO SBI Cost Model. Initial model results and additional information are available at www.linkidaho.org.

- **IMPORTANT PERSPECTIVE:** The benefits of broadband are clear and compelling...from economic development, to advances in home/remote healthcare, from improved public safety to the ability to advance ones skills anywhere/anytime. From enabling small business development in every corner of the state to simply staying touch with family and friends...broadband is vital to the promise of Idaho and all who call her home. As we pursue these benefits it is important to also keep an eye on costs. The purpose of the LinkIDAHO SBI Cost Model is to help us in this regard.
- **MODEL PURPOSE:** The SBI Cost Model assesses existing coverage, determines population densities, estimates likely subscribers and computes relevant network costs to enhance broadband coverage in unserved areas. Network cost estimates are developed separately for wireline and for wireless service gaps. In this sense the SBI Cost Model is really two models in one. As such the model is focused on a fundamental policy level issue: what are the core costs to enable the provisioning of broadband to our most chronically unserved populations by one of two options: wireline or wireless.
- **WIRELINE & WIRELESS:** The two networks developed by the SBI Cost Model are best considered as complimentary and not direct substitutes. Each provides a viable broadband solution (and hence a legitimate policy alternative), albeit with a different utility. Wireless mobile broadband has a unique and celebrated economic value while at the same time the importance of a fiber landline network for interconnection / middle mile – and as a high speed access technology – is well known. The purpose of the cost model is not to suggest one is better or worse or frankly even more or less expensive. Rather the purpose of the model is to help size two complimentary alternatives for expanding the reach of broadband across the state.
- **CENSUS BLOCKS:** The model identifies Census Blocks unserved by wireline – and then, separately it identifies Census Blocks unserved by wireless. Obviously, these are different geographies.
- **SERVED:** The model defines “served” as an area (i.e., a Census Block) having 768X200 or greater access...which is the FCC’s threshold (minimum) definition of broadband.
- **WIRELINE NETWORK:** The wireline component of the model builds a second-mile fiber network capable of 4X768 coverage which is consistent with / allowed by the FCC’s ongoing CAF consideration. While a longer term target is 4X1, the FCC recognized comments to that proceeding suggesting that moving from .768 to a 1 Mbps upload imposes costs in excess of the benefits realized.
- **WIRELESS NETWORK:** The wireless component of the model builds an LTE mobile wireless network which is generally capable of comparable speeds...although again, the networks estimated by the costs model are best considered as complimentary and not as substitute services. The mobile wireless network obviously has a unique utility.
- **SECOND / MIDDLE MILE:** The modeled second mile fiber network is neutral to any number of last mile access technologies (e.g., conditioned copper DSL, distribution fiber and/or Hybrid Fiber Coax or potentially fixed wireless delivery technologies). Likewise the modeled mobile broadband (LTE) network is neutral to any number of final access alternatives (e.g., smartphone, data card/device, etc.). The wireline second mile fiber network extends service from an existing CO (and the cloud) to a DSLAM within 12,000 feet of modeled subscriber locations.

- MODEL RESULTS:** Results from the cost model for both wireline and wireless environments are available by planning region, by county and by Census Tract...and include the following:
 - The upfront investment or cash outlay (CAPEX) required to build the modeled network (e.g., tower placement, trenching and fiber / electronics placement, etc.)
 - The monthly operating cost or cash outlay (OPEX) required to maintain and operate the network (e.g., cable and/or tower maintenance, network monitoring, etc.)
 - A five year estimate of cash outlay required to build and maintain the network (e.g., CAPEX plus five years of OPEX).
 - The monthly expense (in the context of a tradition income statement) to build and operate the network (i.e., where cash outlay is replaced with traditional depreciation, cost of money and related income statement charges).
 - The monthly expense (in the context of a traditional income statement) on a per subscriber basis.
- MODELED SUBSCRIBERS:** The model estimates subscribers by applying (1) a wireline-specific take rate to unserved households and businesses on the wireline side and (2) a wireless-specific take rate to unserved population on the wireless side.
- MODELING STANDARDS:** Where appropriate the SBI Cost Model fundamentals (including engineering standards, equipment prices, operating cost components, market take rates, etc.) are consistent with modeling algorithms and rules employed in the FCC’s Connect America Cost Model (CACM) and their National Broadband Plan’s Broadband Assessment Model (BAM).
- UPDATES:** Model results will be updated from time to time to reflect current broadband coverage (as reflected on the National Broadband Map).
- MODEL APPLICATION:** Potential uses for the model includes informing regional planning efforts, informing local city and county officials, informing federal and state policy makers, supporting a variety of broadband related grant applications, assisting providers with potential build-out / market development considerations and supporting a variety of downstream applications (e.g., Impact Model, Bandwidth Assessment Tool, etc.)
- INITIAL RESULTS:** At the state level of model results, the costs to provide wireline or wireless service to communities that currently lack the most basic service are outlined below.

	<u>WIRELINE</u>	<u>WIRELESS</u>
CAPEX	\$348.8M	\$115.3M
OPEX (annual)	\$29.8M	\$22.7M
Five Year Cash	\$497.7M	\$228.6M
Modeled Subscribers	78,018	14,838
Monthly Expense	\$6.2M	\$3.4M
Monthly Ex per subscriber	\$80	\$229

Additional detail available via www.linkidaho.org

