Executive Summary

Broadband deployment in the United States has seen two distinct pathways that can be attributed to the urban/rural divide. Since urban areas are more compact and offer access to a higher number of customers per constructed foot, these areas tend to have access to more robust networks that provide higher speeds and competitive service between multiple providers. Rural areas, in contrast, have more limited networks, with fewer options and many more physical boundaries for deployment. The Southern Alleghenies Six-County Region is an example of both scenarios existing in close proximity. One of the biggest challenges to bridging the urban/rural digital divide is determining the most optimal broadband network for reaching as many remote and underserved areas in a region as possible.

The Regional Fiber Optic Network Assessment and Design area is the Southern Alleghenies Region. The Southern Alleghenies Region spans 3,400 square miles and is comprised of six counties: Bedford, Blair, Cambria, Fulton, Huntingdon, and Somerset.

Foresite Group conducted a Strategy Session with representatives of the Southern Alleghenies Region and board members of Alleghenies Broadband (ABI), conducted a community survey with an online speed test known as demand aggregation, conducted a survey of county and community leaders throughout the region, and evaluated local broadband and telecommunications in the market. A needs case assessment and gap analysis were also performed to identify gaps in the region that can be improved by broadband.

Foresite Group identified three gaps as it related to broadband, six solutions, and one opportunity for the Southern Alleghenies Region.

Gap	Need meaningful region-wide partnerships with Internet Service Providers (ISPs)
Gap	Aging population and low broadband adoption rates
Gap	Construction Obstacles
Solution	Design a middle-mile ring
Solution	Develop a broadband masterplan
Solution	Construct a middle-mile network
Solution	Coordination with Local ISPs on Planned Infrastructure Projects
Solution	Coordination with Challenging Entities and Pole Owners
Solution	Community broadband education
Opportunity	Infrastructure policies and planning

Following the community engagement, Foresite Group recommended a Middle-Mile ring approach for the region. This would consist of a backbone ring running through all six counties with seventeen smaller rings located within and between the counties. The high-level design portion of the project included activities such as local data collection, determining the network

architecture and schema, field ride-out, and permit review. A bill of materials (BoM) was created for each of the eighteen rings which provides cost and material estimates for the project and is utilized in the proforma to project a potential model for estimated return on investment (ROI), forecasted profit generation, and ongoing network maintenance and operation costs.

Foresite Group also explored potential grant opportunities and various governance and ownership strategies and investigated potential strategies and incentives for third party participation, as well as gauged interest with various network providers.

Foresite Group's recommendation for ABI is to pursue a Middle-Mile network to serve the Southern Alleghenies Region. Due to the size of the region, it is recommended for ABI to implement multiple Middle-Mile rings. To achieve this Middle-Mile network, it is recommended that ABI pursue a partnership ownership model. A Partnership Model is a business model where ABI partners with one or more private organizations and could jointly plan, build, manage, and maintain a fiber optic network within a given area.