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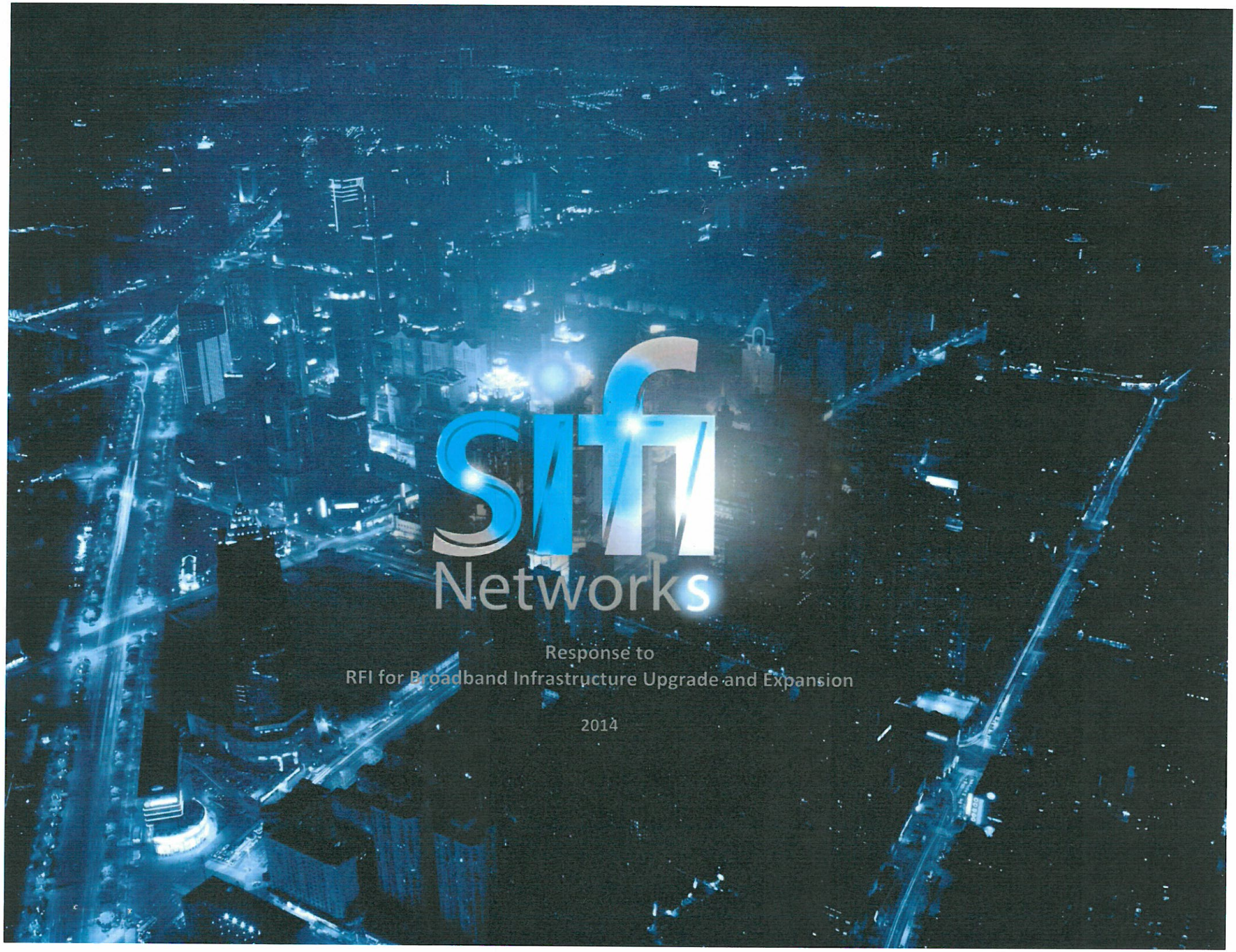
RFI for Broadband Infrastructure Upgrade and Expansion

3:00 EST on January 21 2014



sifi Networks

Response to

RFI for Broadband Infrastructure Upgrade and Expansion

2014

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EXECUTIVE SUMMARY

Within this response to the Broadband Infrastructure Upgrade and Expansion issued by Louisville Metro Government (LMG) RFI, SiFi Networks (SiFi) intend to illustrate and detail how our FiberCity™ solution will more than support Goal 1 and 3 and create the underlying platform to facilitate Goal 2, as set out by LMG. Moreover, our response will cover how our model brings together the digitally divided, whilst fostering innovation within existing or to-be-built commercial corridors. Notwithstanding that, we will note why our model is sustainable and how our proposed network architecture, FiberCity™, is a fully future-proofed platform, designed in readiness for expected user demand and technology advances.

Furthermore, SiFi will detail how our FiberCity™ network is designed to offer a dedicated fiber to each premise allowing symmetrical, gigabit services to traverse our network to any residential premise from an ISP, with multi-gig and other services available to all to other premises; thus creating a development platform and springboard to stimulate economic growth by drawing innovative organisations to the community and supporting those within LMG today.

The viability and overwhelming opportunity for LMG to receive a FiberCity™ build is based upon the strength of its underlying structure. For this reason, our response will summarize the pedigree of our founding entrepreneurs and their international experience in the funding, build and delivery of construction and telecommunication projects on behalf of globally recognized organizations – delivery from concept to completion

SiFi Networks pass thanks to Louisville Metro Government for their consideration of our SiFi FiberCity™ response and we look forward to future dialogue surrounding our document.

Scott Bradshaw
President
SiFi Networks

WHO ARE SIFI NETWORKS?

SiFi was founded by two successful entrepreneurs, with extensive experience in the funding, build and delivery of large scale construction and telecommunications projects across the public and private sectors. SiFi is privately owned, headquartered in the UK and adopts a collaborative approach for the development of infrastructure assets via the utilization of leading and industry recognized in-country resource.

SiFi ensures we are involved in a project from the earliest point possible, allowing our team to use the full spectrum of our experience to deliver a turnkey solution for any community. SiFi understands that every community is diverse in its demographic structure; therefore, it is vital for us to not only understand the local governance's and topography of a community but also any initiatives that will support and drive economic development and stability.

SiFi wish to work with progressive communities that are keen to implement next generation fiber optic infrastructures, as they recognize such assets are crucial to economic development and growth strategies and are not merely an entertainment medium, with the initiative being led with full support from city council to allow private investors to utilize all available assets to fund and deliver such platforms.

***SiFi are an infrastructure enabler and not an Internet Service Provider (ISP)*:** SiFi fully fund and deliver community wide state-of-the-art fiber optic networks, known as FiberCity™, that allow municipal and private ISP's to deliver a variety of services to FiberCity™ network subscribers.

Most importantly, SiFi's experienced team are able to structure fiber optic networks in such a method that draws vital finance to a project. Through the utilization of various construction technologies and investable models, SiFi are able to deliver community wide Fiber to the Premise (FTTP) networks to a broad range of communities, from small villages to the largest cities in the world.

OUR FOUNDERS

Our founding members are invaluable assets to SiFi. Through the utilization of their knowledge and experience, they have created a unique opportunity and play highly active roles in all facets of the business. The combination of Roland's large scale construction and funding expertise and Mike's award winning experience in the telecommunication industry, provides an excellent foundation from which to deliver numerous FTTP network builds simultaneously across the Globe.

ROLAND PICKSTOCK:

Roland Pickstock is chairman and founder of The Pickstock Group of companies (www.thepickstockgroup.com). Thirty years since its inception, the group has a current turnover of $253m, with successful trading businesses across construction, property development, investment, manufacturing and food. The group has true international experience and works in both the private and public sector, landmark projects include, the London 2012 Olympics and the G8 Summit. As a successful developer Roland has engineered deals for blue chip companies and investors such as Walmart, Whitbread, Tesco's and Sainsbury's among others and has a current project pipeline valued at over $1.5bn.

MIKE HARRIS:

Mike Harris is also a British entrepreneur with an excellent track record, primarily within the communications industry. He founded his first company, building on the experience he gained working for British Telecom (BT Group plc). The company eventually became known as TNS (Total Network Solutions). Whilst growing the business, Mike won several awards, including becoming one of the UK's fastest growing companies with a three year compounded growth of 80%.

TNS were one of the country's leading IT solutions firms, installing and maintaining many significant Cisco based solutions and being recognized as having the best technical support and engineering capacity in their area.

Mike was awarded Entrepreneur of the Year by Ernst and Young, and subsequently sold Total Network Solutions to BT Group plc for an undisclosed sum. He now chairs a number of companies including Voice Comms Warehouse – a leading distributor of communications and security products – and owns The New Saints football club - Welsh soccer champions.

COMMUNITY WIDE FIBER TO THE PREMISE OVERVIEW – FIBERCITY™

A SiFi FiberCity™ delivers a state-of-the-art fiber optic network that serves an entire community, with an overbuild capacity to support future business and residential development zones.

SiFi's core goal is to deliver a FiberCity™ network in a cost effective and efficient manner which can be leased by a tenant to either deliver services to network subscribers or create a competitive environment by way of wholesaling the network to multiple service providers – the tenant can be a private or municipal entity, with the latter positioned to offer subscriber services or a wholesale platform at highly competitive rates to best serve its citizens.

SiFi utilize one or many construction techniques, which form part of our FOCUS™ system, within the public right-of-ways to lower the overall FiberCity™ capital build costs, creating a network which can be leased to a tenant on commercially favourable terms, thus ensuring a high take rate across all demographic subscribers. Such build techniques would include one or many of the following: directional boring, wastewater duct, aerial, micro-trenching and wireless, in conjunction with each other.

Depending upon the community structure, current fiber initiatives, economic strategies, commercial direction and policy support from LMG, a FiberCity™ network can be built upon either Active Ethernet (AE) or GPON technology, with the former being the preferred given the level of future-proofing, scalability and access capability.

ECONOMIC DEVELOPMENT

The proposed FiberCity™ network is not only designed for today but also for tomorrow, ensuring future capacity will be readily available to support the expected demands from network subscribers within LMG, as well as fostering innovation and economic development strategies to serve underdeveloped and developing areas. As part of the build, the core and trunk aspect of the FiberCity™ network will provide redundancy through multiple, resilient fiber rings in the community, serving all premises types, including carrier cell sites to drive emerging technologies.

"The [internet] is a cornerstone for innovation, economic development and frankly job creation, which is something we all want…research shows that for every 10% increase in penetration of high speed (internet) changes GDP by 1%" - Patrick Pichette Google CFO

Furthermore, a state-of-the-art FiberCity™ network within LMG presents a tremendous opportunity for the city, healthcare, public, educational and community center facilities to transfer or increase their existing network capacity, ***on a best value basis,*** by entering into FiberCity™ fiber agreements that offer unparalleled gigabit speeds and opportunities.

Communities today are realizing the vast potential that fiber optic networks offer to their citizens, specific applications include:

- Community CCTV and security
- Library facilities and online courses
- Automated traffic control
- Sponsored Wi-Fi points to serve parks and other public spaces, including underserved and disadvantage areas.
    - SiFi is very much open to Initiatives, discussion and collaboration between the city, future FiberCity™ ISP and SiFi to establish where such points could be implemented during the infrastructure build-out.
- Increasing teleworking and videoconferencing, reducing carbon emissions and costs, in addition to improving interworking
- Intelligent and automated metering reading
- Wastewater management SCADA connectivity
- Intra-building remote site training department training
- Healthcare services have dozens of possible improved applications
- Regeneration of stagnant retail development and residential areas

….applications of today waiting for the universal platform of tomorrow.

SIFI FRAMEWORK PARTNERS AND QUALIFICATIONS

SiFi believe in working with highly reputable companies with unrivalled experience within their chosen fields. Creating a synergy between our own internal expertise and those of our partners we will create sustainable projects that serve each community on an individual basis.

To deliver a community wide FiberCity™ network within LMG, SiFi will draw on the ability from the very best of over 30,000 employees within our US Framework partners, as illustrated above. Each engineering partner provides breadth and depth of experience with fiber optic network deployments and have collectively deployed over 50,000 route miles of fiber throughout the US for commercial carriers and utilities alike, as well as delivering many Smart Utility programs on intelligent infrastructures.

A FiberCity™ within LMG will be built through a phased and proactive build scheduled, with each premise that is passed having the option to receive fiber at that time, ready for ISP service, rather than SiFi building the core and trunk of the network and retrospectively visiting each premise to connect it with fiber at an undetermined date – all premises have the option to connect to the network, though SiFi will work with the ISP to achieve an effective subscriber take-up during the initial build-out.

FIBERCITY™ NETWORK

At SiFi we know that no matter how well you document fiber maps, label services or think your network is protected, accidents do happen, fiber does get damaged and service will be interrupted. If a core piece of fiber has been damaged the potential is that several thousand homes and businesses could have lost service for a considerable amount of time. For this reason we firmly believe in designing any FiberCity™ network within LMG to be as fault tolerant as possible and to deliver high availability of services. Therefore, the core network will be deployed in a ring configuration to enable higher SLA's, which are all insurable.

By using ring based topologies, each node on the FiberCity™ network will be served by fiber from the east and the west path.

The objective of the network design will be to serve many uses, with the primary focus on AE but can also accommodate GPON. As an example, GPON would use a single fiber to the street cabinet to serve up to 36 homes per ring; whereas, AE requires 36 fibers per ring at the street cabinet, each with their own benefits.

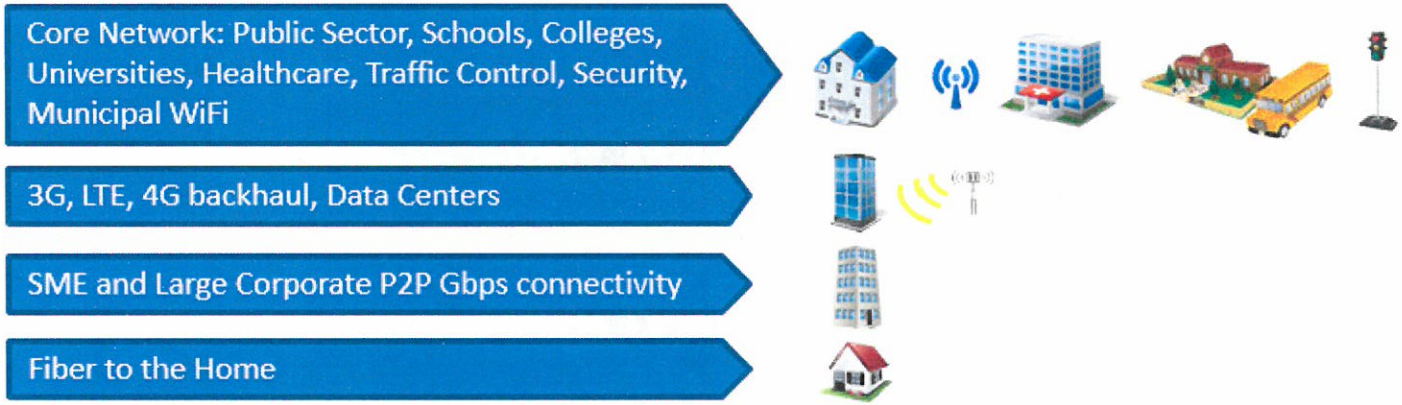
The FiberCity™ network is based on aggregating multiple rings of several properties into a passive cabinet. A number of these passive cabinets connect together to provide a core fiber back to the active cabinet from where an ISP would provide services.

COMPARISON TO EXISTING PRIVATE INVESTOR FTTH BUILDS WITHIN THE USA

SiFi are aware of various fiber to the home (FTTH) builds and initiatives that have taken place through private investment over the last decade within the USA, where some of the networks are initially serving the more affluent areas of a community or are only being built within sections of the community that have rallied together to satisfy certain criteria, thus creating a demographic and social divide.

- Every FiberCity™ network is built on a community wide basis. The primary network topology design will be such that each premise has the option to receive a dedicated fiber, which is not shared with other premises. Moreover, each FiberCity™ would be an overbuild platform for tomorrow, where necessary capacity is installed in line with the city's Economic Development plan for future residential and business development zones.

STRUCTURING A FIBERCITY™ WITHIN LMG



CONNECTING THE PREMISES

- The FiberCity™ network will pass each and every premise within a designated LMG community, allowing for any premise within that design to receive a fiber connection either during the initial or post build-out phase.
- Prior to the FiberCity™ network passing a premise, a premise owner/tenant will be offered the opportunity to subscribe and receive one or many services from an ISP over the network. Should the owner/tenant take such service then a fiber will be taken to that premise during the initial build-out.

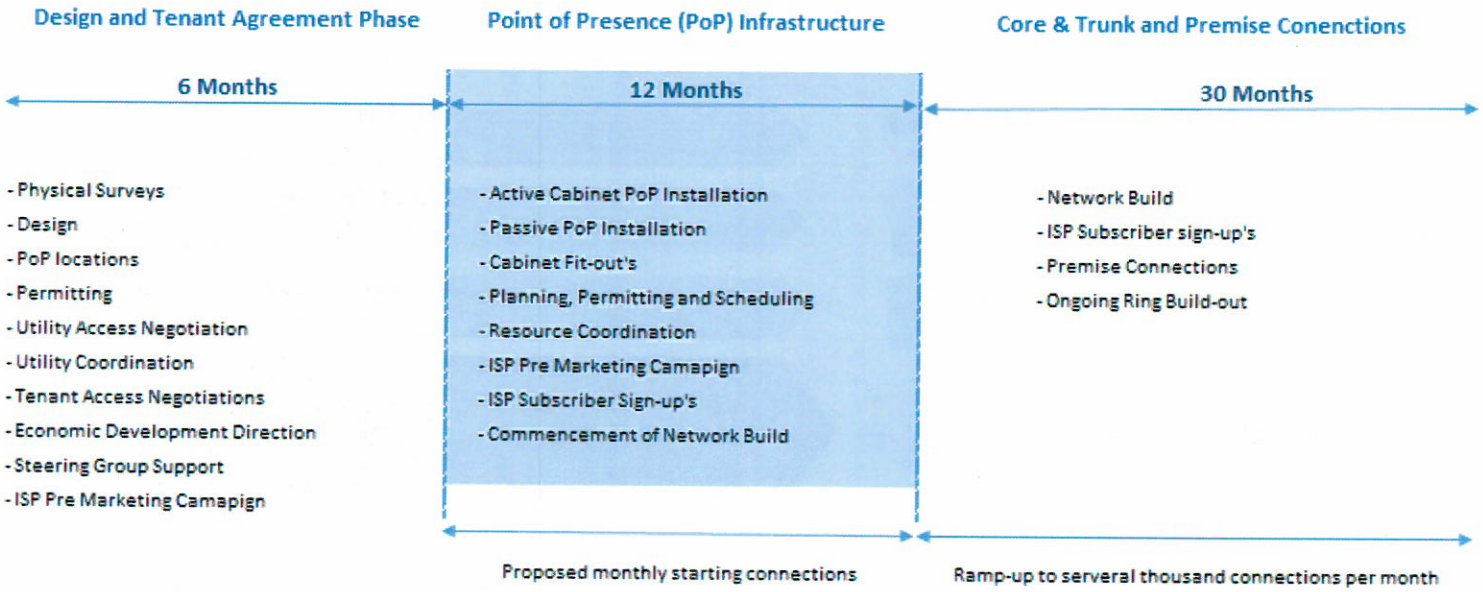
LIGHTING THE NETWORK

- Following termination of the FiberCity™ network to a premise by a SiFi Framework partner, the FiberCity™ network ISP will engage with the subscriber to complete the necessary installation of all ancillary equipment that will facilitate and enable ISP services to be delivered to the premise.

PROPOSED BUILD SCHEDULE

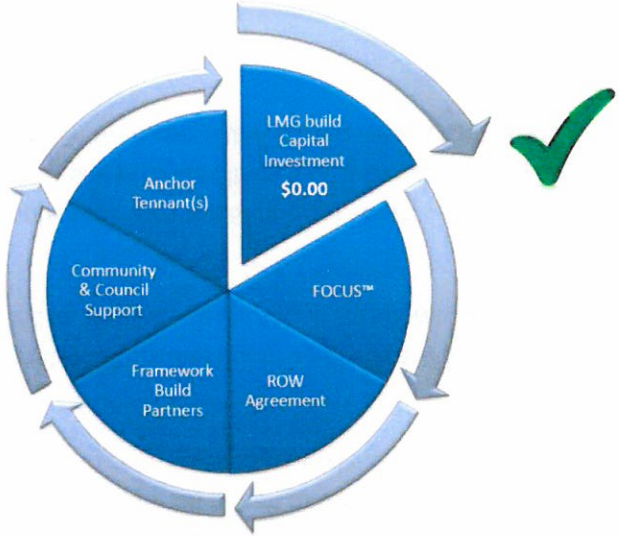
The following section outlines the approach SiFi Framework partners will take to implement a FiberCity™ within an LMG community. The engineering study and design will enable our partners to split the community into manageable build phases. At this time and subject to further discussions, it is likely that SiFi would implement a phased build-out approach within LMG; the Urban Services District (USD) would be Phase1. This will enable SiFi to create a sustainable platform and foundation to extend the network into other LMG communities.

Prior to a SiFi Framework partner commencing construction (spade in the ground), a detailed engineering study will have been undertaken to produce the most advantageous design for the community, along with SiFi entering into an agreement with an ISP to deliver one or many services to the FiberCity™ network subscribers. Final competition date for the core and truck fiber of the FiberCity™ network will be determined by how many construction crews are permitted to simultaneously work together throughout the community.



SUSTAINABLE INFRASTRUCTURE

Through sustainable models that attract significant investment, SiFi propose to fully fund a FiberCity™ network throughout USD, with no capital build investment required from LMG. SiFi will enter into various commercial lease models with tenants that wish to utilize the network for one or many purposes, an example of this would be a traditional Indefeasible right of use (IRU) agreement, commonly used throughout the USA.



Upon LMG deciding that our FiberCity™ model is one they wish to see implemented within an LMG community, SiFi will have in place the following committed agreements prior to any spade in the ground: LMG Franchise public rights-of-way agreement and one or many commercial agreements for use of the FiberCity™ network, with an overriding agreement being in place with an ISP to serve residential premises.

Such a structure ensures the necessary commitments are in place to deliver the project throughout its project lifecycle and the success of the project is not beholden on securing retrospective agreements to satisfy the debit.

Given the magnitude of the required investment to deliver a FiberCity™ within the USD, SiFi will utilize our existing relationships with institutional investors across the globe to fund 100% of the FiberCity™ project. Institutional investment will deliver a considerable degree of comfort and certainty to LMG that should the project move forward, then the necessary funds will be available to see from day 1 of the build through to completion.

As the FiberCity™ network will pass throughout the USD community, there will be no demographic segmentation. Moreover, the design phase of the network would be the ideal opportunity for LMG, SiFi and any tenant that wishes to utilize the FiberCity™ infrastructure to present their ideas and initiatives on ways that the network can best serve but not be limited to low-income and disadvantaged areas and community centers. Such a progressive example would be the existing program that currently provides very low cost connectivity options for qualifying households.

CONCLUSION

In this document we have outlined how SiFi Networks propose to ***"fund and build"*** a FiberCity™ throughout the Urban Services District (USD), as the Phase1 of a LMG wide approach, with ***no capital build investment*** required from LMG. The FiberCity™ infrastructure will allow an ISP to deliver but not be limited to symmetrical, Gigabit services through a future-proofed fiber optic network, whilst building a foundation to foster innovation, support economic development, drive business retention and growth and serve developing areas of the community.

SiFi will use high fiber count within our FiberCity™ design, which will be deployed using many of the FOCUS™ system techniques to create a risk mitigating ring around USD, to ensure a high degree of redundancy and resilience.

Furthermore, SiFi will provision the latest industry leading Access platform and gateway terminal devices within the FiberCity™ build to support any tenant providing services to any FiberCity™ network subscriber.

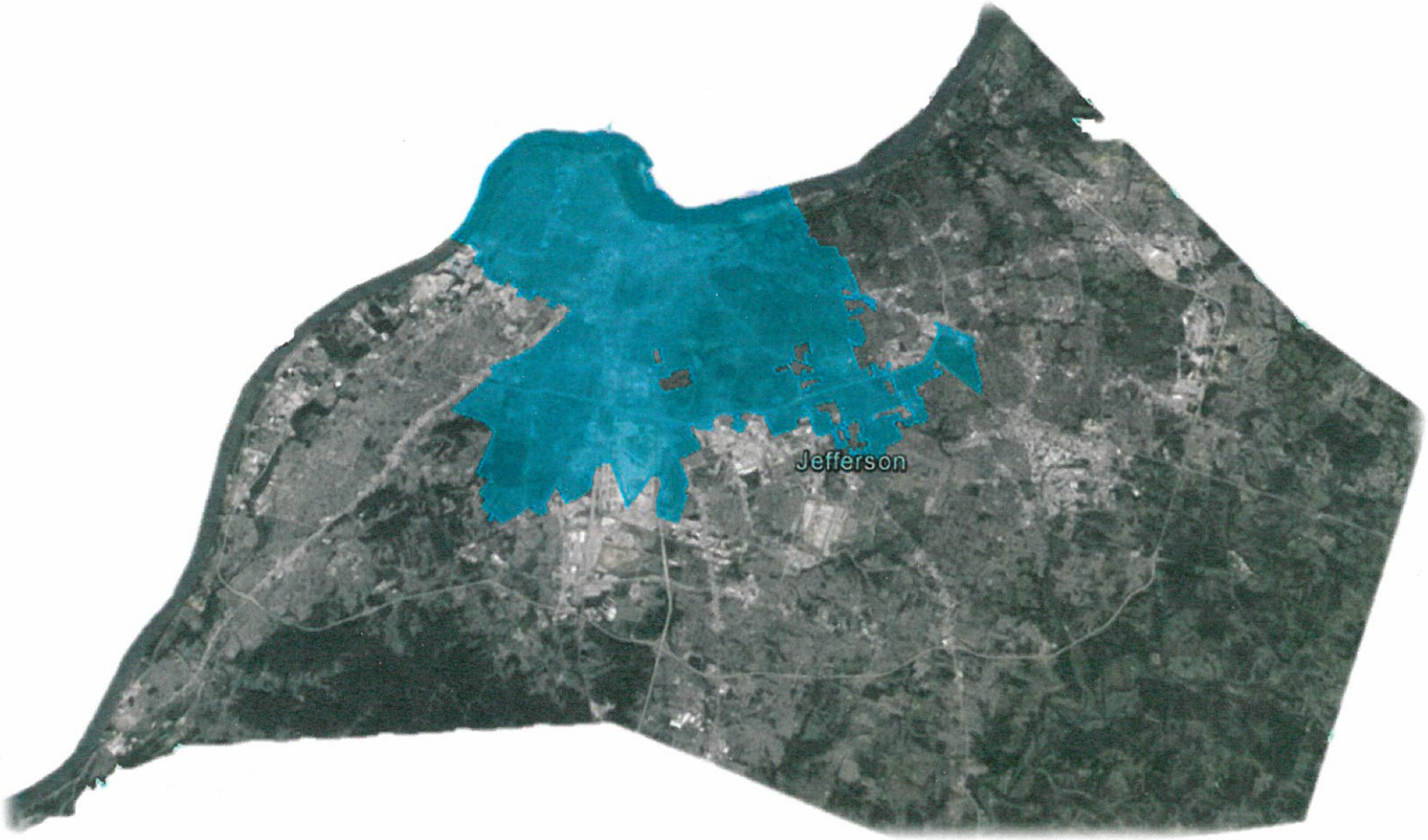
Moreover, by allowing SiFi to bear the construction and financial risk on behalf of LMG and each tenant that utilizes the FiberCity™ network, LMG has no requirement to enter into any debt structure obligations to build their desired infrastructure on behalf of their citizens and the tenants will have a readymade network from which to serve network subscribers, enabling them to redirect their capital investment to other projects.

SiFi welcome the opportunity to work with LMG to understand and investigate existing and viable assets that could be used to expedite and reduce the capital build investment for the FiberCity™ project. Such assets will be investigated in detail along with their location to support deployment of small cell and other emerging technology.

SiFi also welcome the opportunity for the Department of Economic Growth to facilitate introductions with the Supporters of this RFI initiative to understand how we may best serve their short, medium and long term requirement over our future-proofed FiberCity™ network. Moreover, should surrounding communities feel that a state-of-the-art FiberCity™ network is required within their community, then we ask that City officials within that community contact SiFi Networks.

SiFi Networks finance and framework partners are ready to go. The next step is for LMG to meet with SiFi and discuss our response in detail…

PHASE1 - FIBERCITY™ USD WITHIN LMG



APPENDICIES

APPENDIX 1 – SIFI TECHNOLOGY

APPENDIX 2 – FIBERCITY™ NETWORK CONFIGURATION

APPENDIX 3 – MARKET ANALYSIS TO DELIVERY OF SERVICE

APPENDIX 4 – SUGGESTED POLICY CHANGES

APPENDIX 5 – INFORMATION ABOUT THE RESPONDENT