



CITY OF PACIFIC GROVE
300 Forest Avenue, Pacific Grove, California 93950
AGENDA REPORT

TO: Honorable Mayor and Members of the City Council
FROM: Ben Harvey, City Manager
MEETING DATE: May 18, 2015
SUBJECT: CTC Analysis Report of the SiFi proposal
CEQA: Does not constitute a “Project” under California Environmental Quality Act (CEQA) Guidelines

RECOMMENDATION

Receive the report and the response to the report.

DISCUSSION

In early 2014, SiFi Networks of America approached the City with a proposal to build a fiber-to-premises telecommunications network infrastructure utilizing existing sewer connections and other advanced construction methods.

At the May 20, 2015 City Council Meeting, Council directed staff to come back with more information about the project, potential risk to the City and details about the numbers used in the SiFi proposal.

In August, 2015, the City signed an agreement with Columbia Telecommunications Corporation (CTC) to advise the City on the creation of an optical fiber network, in general, and the proposed SiFi network and model, in particular.

On February 3, 2016, CTC released the final report “Analysis of SiFi Networks; Proposal to the City of Pacific Grove”. While the report points to several positive aspects of the SiFi proposal, CTC found that there were significant issues that would need to be addressed before moving forward with the SiFi project.

On May 5, 2016, SiFi Networks provided the City with a response to the CTC report. The response is included as an attachment.

Summary of CTC analysis:

The proposed technical model and technical partners are sound.

The prospect of a public-private partnership as a means of building a broadband network in Pacific Grove is promising.

The potential for “open access” competition is attractive, but unproven.

SiFi lacks specific experience executing a project like this in a city in the U.S.

The 60 percent take rate projections (number of households purchasing a service) is high.
Revenue projections in the financial model are high
The financial model does not include adequate provision for equipment refreshes

FISCAL IMPACT

None.

ATTACHMENTS

1. CTC Report dated January 18, 2016.
2. SiFi Networks Response dated May 5, 2016

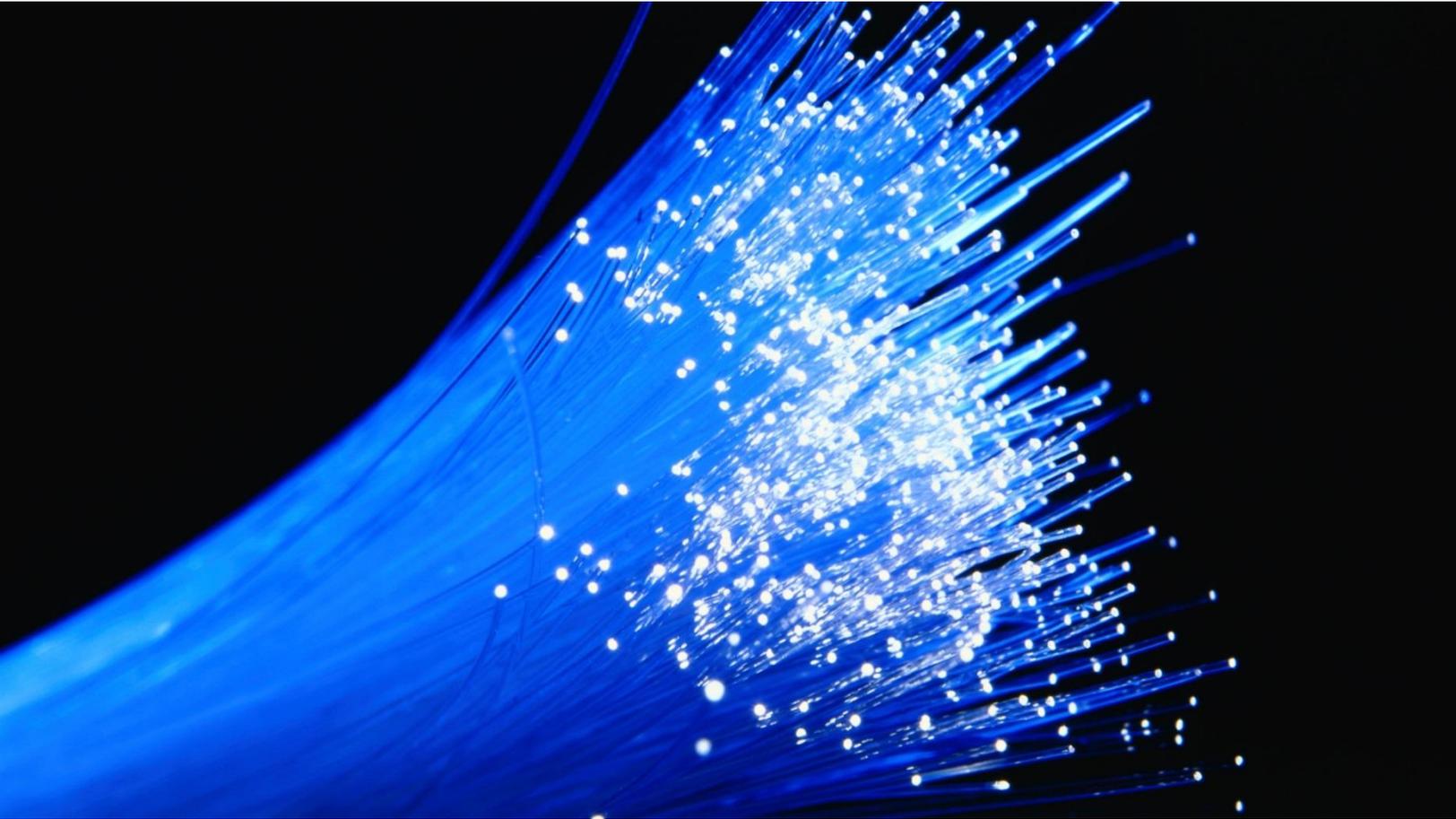
RESPECTFULLY SUBMITTED:

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Analysis of SiFi Networks' Proposal to the City of Pacific Grove

**Prepared for the City of Pacific Grove
January 18, 2016**

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1. Introduction

This report represents a brief analysis of SiFi Networks' fiber-to-the-premises (FTTP) partnership proposal to the City of Pacific Grove, California. The report was prepared by CTC Technology & Energy (CTC) in late 2015.

1.1. Report Summary

It's CTC's conclusion that SiFi's core proposal—a broadband public–private partnership with the City of Pacific Grove—holds potential value for the City. In summary, we suggest that SiFi's proposed technical model and technical partners are sound and the prospect of a public–private partnership as a means of building a broadband network in Pacific Grove is promising. In addition, many elements of the SiFi proposal, including the potential for “open access” competition, are very attractive. However, we raise concerns about the risks to the City inherent in the SiFi model as reflected in the contract documents SiFi provided and our conversations with SiFi executives. We do think that many of these risk factors can be addressed in negotiations if SiFi is willing to commit in writing, in formal contracts, to some of the matters to which it committed verbally.

SiFi's proposed business model is, from a policy perspective, extremely compelling, particularly in two respects:

- First, the proposed model could ensure that FTTP is built throughout the community rather than (as in some private sector business models) to select or “desirable” areas only.
- Second, the “open access” element of the model has the theoretical potential to enable competition over the network, though that competition may not materialize immediately.

However, we have concerns about the viability of elements SiFi's proposal. As compelling as the open access model is, it is essentially untested in the U.S., and the newness of the model presents risk for the City. Our concerns about the newness of the open access model would be alleviated if SiFi had deployed this model in other markets and if resulting data were available. However, to our knowledge, SiFi itself has not executed this model in any other city.

We note further that some other specific elements of SiFi's proposal increase the City's risk. To summarize these concerns, we believe the following areas of risk should be addressed:

- First, there should be accounting for direct costs to the City for this undertaking (including such items as project management staffing, loss of cable franchise fees, and right-of-way permitting and oversight). Stated otherwise, we believe that there are costs to the City that are not reflected in the project documentation to date.
- Second, we are concerned that SiFi's financial model projects unrealistic increases in service revenue, based on an annual consumer price index (CPI) escalation factor. Industry experience suggests that data service fees do not grow over time (unlike cable television fees).

- Third, we note that the anchor tenant payment from the City to SiFi will also grow with CPI under SiFi's proposal—even though SiFi's financing costs will presumably remain flat.

That said, we believe these concerns are not insurmountable. If the City and SiFi are able to resolve those matters and some of the other risk factors in the proposed agreement, implementing this model could be beneficial to the City. Specifically:

- First, the City should have a right to exit without cause or conditions.
- Second, SiFi should demonstrate conclusively that credit-worthy and technically qualified Internet service providers (ISPs) will commit to minimum payments under long-term contracts with the City.
- Third, the anchor tenant payment from the City to SiFi should not be subject to a CPI factor unless the bond interest or other factors are sufficiently below market rates.

SiFi has represented to us in extensive conversations that it will resolve the first two factors to the City's satisfaction. We look forward to seeing the resolution, but we remain concerned, for the following reasons:

- First, without the City's long-term guarantee of the debt, the project may not be financeable. Potential investors would presumably require robust assurances that SiFi would and could stand behind the City's obligations in the event that the City chose to exit the agreement.
- Second, while we are enthused at the prospect of ISPs committing in the long-term to provide services over an open access network, we've not yet seen evidence that these commitments will materialize and we know that this approach is a novel one for American ISPs. Further, to truly mitigate the City's risk, the ISPs would not only have to make long term commitments but would have to have the financial depth and resources for those commitments to be enforceable—or SiFi would have to guarantee the ISPs' commitments to address the scenario that an ISP fails to meet its commitments and simply defaults—leaving the City short of revenues to meet its anchor tenant commitments.
- Third, we have raised the CPI concern to SiFi several times throughout the evaluation process and have not yet received a consistent response.

If, as SiFi executives have told us, the first two matters can be resolved in the City's favor and if the City is confident about these areas of risk, we believe that SiFi's proposal is well worthy of the City's further consideration.

We do, however, recommend that the City consider a competitive process to determine the final contours of its broadband partnership. While, as is discussed above, we find many of the elements of SiFi's proposal compelling, particularly in light of the City's policy goals of building

open access FTTP throughout Pacific Grove, this field is very fluid at the moment and new opportunities are presenting themselves. As a result of the enormous, growing interest in FTTP among cities, new companies are entering the field and proposing new public-private partnership models. At the same time, companies who are already engaged in broadband are expanding their models to encompass potential partnerships with cities. A competitive process would allow SiFi to put its best terms before Pacific Grove and at the same time allow Pacific Grove to compare SiFi's proposal to those of its competitors.

1.2. Report Methodology

This report was prepared in late 2015 by CTC Technology & Energy at the request of the City of Pacific Grove. Per the City's request, we evaluated the pros and cons of the SiFi proposal with a particular focus on risks and benefits to the City.

We based our analysis on the documents provided by SiFi and on the in-person and telephone conversations with SiFi representatives. Specifically, we analyzed multiple legal documents and a financial model provided by SiFi. CTC senior staff-members, including president Joanne Hovis, principal engineer Lee Afflerbach, P.E., and principal business analyst Tom Asp, MBA, spoke with representatives of SiFi on a number of occasions by phone and by WebEx during the fall and winter of 2015. In addition, at the request of SiFi and its partner organization, Alcatel-Lucent, Joanne Hovis met with SiFi CEO Ben Bawtree-Jobson and Marketing and Communications Director Sara Pickstock in October 2015. During the in-person meeting and in subsequent WebEx calls, Mr. Bawtree-Jobson and Ms. Pickstock, as well as their colleagues Mike Harris and Roland Pickstock, described to us in detail their business model and the parameters for the relationship they would like to develop with Pacific Grove and other cities.

We note that we did not see a complete set of draft documents and that much of our understanding of SiFi's model is based on its verbal representations rather than on documentation. We note further that CTC cannot provide legal guidance and reviewed the SiFi documents and verbal representations from the standpoint of business, financial, and technical matters only. We encourage the City to seek specialized legal counsel with respect to the documentation and contracts proposed by SiFi.

2. Overview of SiFi Proposal

SiFi Networks proposes a complex relationship in which it finances and builds the FTTP network and the City leases access from SiFi and then, in turn, leases access to Internet Service Providers (ISPs) who offer services to homes and businesses. The financing acquired by SiFi will be secured by the lease payments from the City.

In brief summary, the following is our general understanding of the proposed partnership framework:

- SiFi will secure financing to build an FTTP network and will provide turn-key execution with respect to design, construction, marketing, and day-to-day operation of a citywide high-capacity fiber-optic broadband network. SiFi will build the FTTP network using contractors it selects and in accordance with standards it defines. In addition, SiFi will operate and maintain the network.
 - The City will provide a right of access to the public rights of way for the full potential term of the partnership.
 - To secure the financing SiFi will bring to the table, the City will commit to pay SiFi for access to the network on a lease basis for 30 years. The City's payment is not fixed in dollars, but rather based on a contract defining lease payments, which will escalate a minimum of 2 percent annually starting in year 4.
 - The City will take on obligations to fund and operate the network. Through another set of contracts, those obligations will then be taken on by SiFi in return for ongoing payments from the City for operations.
 - At the termination of the 30-year lease, the network will be deeded over to the City.
- Under SiFi's financial model, the City's financial obligations to SiFi will be offset by fees paid by competing ISPs who will offer services over the network.
 - SiFi will endeavor to identify willing ISPs to offer services and to commit to minimum payments to the City.
 - The City, as holder of the lease on the network, will execute contracts with these ISPs. Contracts between the City and ISPs will be subject to SiFi's approval.
 - In SiFi's projections, revenues the City receives from the ISPs will fully cover the City's lease and other payments to SiFi. Should revenues exceed the City's costs, SiFi will share in the revenues the City receives from ISPs.
 - SiFi does not guarantee that ISP payments to the City will be sufficient to cover the City's costs.

3. SiFi's Proposed Technical Model and Technical Partners Are Sound

From a technical standpoint, the network SiFi proposes to construct in Pacific Grove is state of the art. In addition, SiFi's technical partners—Alcatel-Lucent for equipment and managed services, Henkels & McCoy for outside plant—are experienced and well-known in the industry. We do note our concerns that the financial model does not include sufficient provision for equipment refreshes and that SiFi itself has limited experience building a network of the sort contemplated here, though its partners' capabilities serve to offset that inexperience.

3.1 SiFi's Technical Model is Based on Sound Design

SiFi has provided the City with a system-level design in sufficient detail to define the overall system functionality, capacity, and upgradability. The system design is schematic in nature and does not provide details on the location of fiber optic cable, neighborhood distribution cabinets, or the central control or monitoring facilities. The City should expect to receive this information as part of SiFi's requests for construction permit to build the network.¹

SiFi proposes a high-capacity self-healing ring architecture for the Pacific Grove network. The network plant would be constructed entirely underground. Multiple distribution cabinets would link the backbone network to subscribers using direct fiber optic connections. The distribution cabinets would be linked through a self-healing fiber optic ring. The preliminary design includes 18 cabinets, each of which could support up to 576 user sites.

The electronic interface equipment at the control center and at the distribution cabinets would be supplied by Alcatel-Lucent and would be capable of providing Gigabit transmission capacity to all network subscribers on day one. The equipment would support 24/7 central monitoring of network performance at all levels from the backbone core to the individual subscriber drops.

All network electronics at the core and distribution sites would have backup power supplies to operate the network in the event of a commercial power failure. The initial system would be supplied with on-site hardware sparing.² SiFi proposes to subscribe to a long-term maintenance contract with Alcatel-Lucent to ensure that all network hardware is regularly upgraded to conform to the most up-to-date network software version and equipment configuration.

SiFi or a contractor under its direction would be responsible for maintenance and operations. The network would be monitored 24/7 by the network operations center. In the event of an outage, the network operations center would alert and dispatch local contractors to perform repairs.

The proposed system design would provide a highly reliable, citywide broadband infrastructure to support a wide range of modern consumer and commercial data network needs. The capacity of this network would far exceed the capacity of all existing hybrid fiber/coaxial (HFC) networks and would meet or exceed the capacity of existing urban fiber networks. The network as designed

¹ Since the SiFi proposal has a defined cost for the lease of the system it will be incumbent on the City to ensure that the network is installed to the best commercial standards.

² On-site stocking of adequate supply of spare electronics and networking hardware.

would also readily accommodate upgraded electronics as system demand and advances in technology dictate.

3.2 The Financial Model Does Not Include Adequate Provision for Equipment Refreshes

We do note, however, our concern that SiFi's financial model does not include adequate funding for network equipment upgrades. Periodic equipment refreshes are universally understood in the industry to be a best practice and a necessary expense for a successful network. In our experience with fiber optic networks, an equipment refresh every seven to nine years is an industry best practice. SiFi's financial model includes costs for equipment refreshes—as a responsibility of the City—in year 13 (\$1.2 million) and year 26 (\$1 million).³

We believe that new equipment will absolutely be necessary in order to keep pace with the changing broadband market and constantly evolving demand for new services—and earlier than every 13 years, as currently reflected in SiFi's financial model. The contract term proposed by SiFi—30 years—amounts to an eternity in the broadband marketplace—a timeframe significantly longer than the entire history of the commercial Internet (whose advent is usually dated to 1995). The experience of the past 20 years demonstrates that no one can anticipate how broadband demand and applications will evolve over the next 30 years and that, as a result, prudent planners should sufficiently budget for new equipment to meet those demands and new uses.

This matter is the sole technical issue on which we had significant disagreement with SiFi's executives, who maintain that hardware refreshes every 13 years will be sufficient, with software upgrades in the interim.

We note that, whatever the frequency of equipment refreshes, the SiFi model makes that cost the obligation of the City.

3.3 SiFi Lacks Specific Experience Executing a Project Like This

While SiFi's technical partners are experienced and its network design appears sound, SiFi does not appear to have in-depth experience in design, construction, and operations of municipal broadband networks. To the best of our knowledge, SiFi as an operating entity has never built an FTTP or other type of broadband network and has never operated a broadband network, though many of its executives have some industry depth.⁴

This lack of experience is cause for concern, but we recognize that it can be mitigated through the relationships SiFi has developed with its technical partners.

³ In the financial model spreadsheet sent to us by SiFi ("Pacific Grove PL 240915.xls"), see row 49, "Equipment refresh contingency," in the "Model" worksheet. Cell Q represents year 13; cell AD represents year 26.

⁴ In its "City of Pacific Grove Due Diligence" submission to the City, SiFi provides background on the company founders and key staff members, but no information on the company's finances or broadband network operations.

4. SiFi's Proposed Partnership Is Attractive as it Relieves the City of Bonding, Construction, and Operations Responsibilities

The value of this kind of public-private partnership for a local or state government is two-fold. One, it brings financing to the table that alleviates the need to bond and reduces the amount of debt on the books of the government. (That said, the proposed model will likely count against the City's bonding capacity.) Two, all execution is handled by the private sector partner—and the public sector partner need not manage the significant, challenging efforts involved, including bonding, multiple procurements, service provision, marketing, customer service, and other operational tasks.

4.1 SiFi's Willingness to Assume Execution Risk Is a Strong Factor in Its Favor

While some cities are willing and able to take on these execution tasks, in our experience, most cities would prefer not to undertake them. A partnership of this sort relieves the public sector of the sheer effort of execution—and takes advantage of private sector execution capabilities.

But it's essential to understand where execution risk falls in the event something goes wrong, which may not be with the partner charged with the execution itself. In other words, will the private sector partner bear the cost of execution failure or complexity that may arise from the myriad factors that complicate fiber construction? These factors can include such items as:

- Delays acquiring materials (such as fiber optics themselves, which are in high demand at the current time);
- Labor challenges;
- Difficulty securing pole attachment agreements from the pole owners (usually, electric utilities and phone companies); and
- Unanticipated "make ready" costs associated with securing space on utility poles or, in the event the poles are particularly congested, purchasing and placing new poles.

In our experience, some private entities that seek broadband partnerships with the public sector insist on terms that place these execution risks on the public partner, even though the private partner will be the entity charged with execution and would thus have more control over risk mitigation.

Based on our conversations with SiFi, this is not that company's approach and, as a result, we believe SiFi's approach (to assume the risk of execution itself or with its partners) to be highly superior from the City's perspective to that of some of its competitors. If, indeed, final deal documents reflected this approach, with respect to this factor we would consider SiFi as a particularly good partner to public sector entities.

4.2 While the Financing Proposed Is Private, the Debt May Still Count Against the City's Bonding Capacity

We note, however, that while SiFi will presumably identify the financing so the City need not bond to fund the infrastructure, that financing is still likely to be considered by the rating agencies as counting against the City's bonding authority. This has been the case in our experience in other public sector projects and we believe it is likely, if not certain, in most. That said, the privately-arranged financing still relieves the public sector partner of the need to bond and of the associated effort.

5. SiFi's Proposed Open Access Model Is Attractive but Untested

SiFi's business model is very attractive from a policy perspective. The proposed public-private partnership offers a number of theoretical benefits:

- First, a means of deploying next generation communications infrastructure to all members of the community, without the inevitable cherry picking of "desirable" or "high value" neighborhoods that happens when the investment is purely private.
- Second, a way that the City can own the infrastructure at the end of the partnership term (while we note that the life of the fiber itself is not likely to exceed the 30-year term, the pole attachments, underground pathways, and network operations capabilities will hopefully have some value and enable continued operations even as fiber itself needs to be replaced).
- Third, the potential for enabling competition by multiple ISPs over the network in an open access environment. This outcome, if possible, would be incredibly beneficial to consumers in that the benefits of competition would include better per unit pricing, differentiated services, and improved customer services. Such competition has been non-existent in the U.S. in the broadband era, in part because such open access networks do not exist in broadband; rather than competing over a single, robust fiber infrastructure, U.S. ISPs in the broadband era have been required to build or buy their own network infrastructures in order to compete. The open environment contemplated by SiFi would dramatically change that model, if it is proven.

5.1 The Open Access ISP Business Model Is Unproven in the U.S. Market

We are however also concerned about SiFi's proposed business model. While the open access, public funding model itself is attractive in theory, we note that it is untested in the United States. The publicly owned, open access networks in the U.S. have struggled to maintain positive cash flow, in part because they have limited or no control over both the ISPs that provide service to customers and the collective subscriber take rates. This does not mean that SiFi's model will not work in Pacific Grove, but the City should recognize that an untested business model increases its risk (as do some of the financial elements of the SiFi proposal).

Had SiFi secured a deal with another city already, and if there were preliminary data about ISP commitments to that city as the network wholesaler, then the proposal contemplated here would be less uncertain. But right now we are concerned that the City, as a pioneer of this model, will serve as the testbed for an uncertain business proposition.

5.2 ISP Willingness to Sign Binding Contracts Is Also Unproven Thus Far, but the City Can Require Such Contract as a Prerequisite for Contracting Itself

We are further concerned that, while the City will be required to execute contracts with the ISPs who will provide services, SiFi posits that ISPs will be willing to sign long-term contracts with the City that guarantee the City minimum revenues. SiFi has conveyed in discussions with us that the

ISPs with which it has talked so far are willing to sign multiyear contracts but not willing to sign long-term contract for the duration of the City's lease term. The ISPs are inclined toward three- to five-year contracts. In other words, even if the ISPs will enter into contracts to provide guaranteed services and revenues for a three- to five-year period, they will not at this time enter into contracts that will cover a significant portion of the 30-year time period the City has a financial obligation to SiFi.

During two extensive conversations among CTC and SiFi representatives over the past two months, SiFi's principals have made verbal assurances that its agreement with Pacific Grove would reduce risk in this key area. Specifically, SiFi says that neither it nor its investors will proceed with the deal unless and until it has acceptable commitments from the ISPs. In our view, this precaution presents the City with significant risk mitigation, in that the City would not enter into any binding contracts itself until acceptable contacts with qualified and credit-worthy ISPs are secured.

5.3 Take Rate Projections of 60 Percent Are High

In addition, based on our experience in this industry, it is our independent assessment that SiFi projected take rate of 60 percent is implausible in Pacific Grove. Indeed, it may be a challenge for the network to meet even the 36 percent take rate that SiFi suggests would be sufficient for the model to cash flow.

In a market where broadband services are already available from the cable and/or phone company,⁵ a capable new operator can generally attain a 30 percent take rate—but achieving market share beyond that level, if at all possible, requires aggressive marketing and pricing. And while we have seen overbuild markets in which a new operator has achieved 60 percent take rates, those are communities without cable modem competitors. Given that residents and businesses in Pacific Grove have cable and DSL service options, we do not believe that a network overbuild will achieve a 60 percent take rate and we believe that even 36 percent represents a significant challenge.

Further, to our knowledge, take rates at that level have never been achieved in an open access environment in the U.S. The two leading examples of open access networks, UTOPIA and iProvo, failed to meet their revenue targets and incurred enormous amounts of debt that they were unable to repay. We are therefore prudently concerned about overly optimistic take rate assumptions that are not borne out by empirical data.

5.4 Revenue Projections in the Financial Model Are High

Our concern is heightened by the manner in which SiFi has built its financial model to assume increases in network revenues that we believe are speculative rather than realistic. SiFi's financial analysis increases network expenses and revenues by the consumer price index (CPI) factor. SiFi's

⁵ This scenario is known as an "overbuild" scenario, in which a new competitor enters the market and competes against existing network providers, usually cable modem and DSL providers.

model applies a CPI factor to both expenses and revenue (see cells A3 and B3 of the financial model spreadsheet sent to us by SiFi, “Pacific Grove PL 240915.xls”). This results in projections showing annual net revenues increasing at the same escalation rate as expenses (e.g., net revenues also increase by the same CPI).⁶

This is an inaccurate representation of the functioning of broadband markets. In reality, based on our experience, while expenses will increase, the net revenues will at best remain constant.

Reducing or removing the CPI factor for revenue is, in our view, a more realistic approach to financial modeling, but this approach shows results that are less encouraging; indeed, under these more realistic assumptions, the model is hard pressed to demonstrate sufficient revenue to maintain a positive cash flow for the City.

Further, SiFi’s model applies the CPI factor to the City’s required community anchor payment, resulting in a near doubling of the City’s annual payments to SiFi over the course of the contract term. Given that the City’s payment covers the principal and interest on the network—a fixed cost, much like a fixed mortgage on a house—that payment should not increase annually.

⁶ Applying the same CPI factor to expenses and revenues automatically increases the network’s net margin by the same factor. If you have \$1 in revenue and 50 cents in expenses, you have 50 cents of net revenue. If you increase both revenue and expenses by 10 percent, you end up with \$1.10 in revenue and 55 cents in expenses—and have increased net revenue by 10 percent to 55 cents. And this increase will compound in later years of the financial model. As a result, the model shows net revenue increases over time that are unlikely, based on our industry experience, and that serve to suggest lower risk to the City than is the actual case.

6. SiFi's Proposal Does Not Offer the City a Risk-Free Exit Strategy

We are further concerned that the documents we have seen do not include a reasonable-risk exit strategy for the City from the financial obligations it would undertake. While SiFi principals suggest that the City can exit the contracts, there are provisions in the draft document that require extensive efforts and undertakings by City staff even to ensure annual appropriations to support the partnership. The lack of a condition-free exit strategy makes an exit far more complex, subject to dispute, and potentially costly.

The lack of an exit mechanism is particularly troubling to us because the City will have so little control over the network, how it is operated, how it is marketed and branded, and how services are provided. Under the draft documents, SiFi or the ISPs will have those controls – even as the City bears the financial risks—and the City will not be able to step in to make significant changes as it sees fit if financial goals are not met.

SiFi's principals have attempted to alleviate our concern in this regard by noting that SiFi will take over the City's financial obligations (and long-term ownership of the network) in the event that the City does not make all required payments, but this assurance does not address our concerns. In the scenario that the network does not generate enough revenue to offset the City's costs and the City chooses not to appropriate funds to support all the proposed obligations, there is likely to be more conflict and controversy than SiFi suggests—unless the City's exit right is condition-free and at will.

Frankly, we fail to see how SiFi can agree to a condition-free exit for the City. Given that SiFi will no doubt use the City's anchor tenant commitment to obtain financing, the investors will consider the City's bond rating and its long-term contractual commitment in determining whether to invest. If the relationship does allow the City to exit at will, there is no security for the investors and likely no investment commitments. As a result, the financing of the network is likely premised on the City's long-term financial commitment—which entails significant risk to the City.

6.1 SiFi Has Made Convincing Verbal Assurances on This Risk Factor

We are concerned about this element of SiFi's proposal, because the documents we have seen do not include a clean exit strategy for the City if it cannot or decides it will not continue the partnership. During two extensive conversations among CTC and SiFi representatives over the past two months, SiFi's principals have made verbal assurances that its agreement with Pacific Grove would reduce risk in this two key area. In particular, SiFi is willing to negotiate an absolute-out based on non-appropriation of funds on a yearly basis.

We suggest that the City's legal and finance offices closely evaluate how meaningful the City's exit from the agreement would be. For example, would the City's exit from the partnership have repercussions for its credit rating? Also, the operating entity that SiFi would create to run the network would likely be a relatively modestly resourced and untested company (SiFi's primary resources are based in the UK); the question for the City's finance officers is whether that entity would have sufficient financial backing and depth to alleviate the risk to the City.

7. The Potential for a Public–Private Partnership Is Attractive and Worth Pursuing and We Recommend that the City Initiate a Competitive Process

Finally, and in light of both the strengths and potential challenges of the SiFi proposal, we recommend that the City consider initiating a competitive process to maximize the potential of securing the best possible deal with a private partner.

7.1 A Competitive Process Is a Low-Cost, Low-Burden Way to Identify Other Potential Partners or Improve the Terms of SiFi’s Proposal

Initiating a competitive request for proposal (RFP) process would enable the City to examine alternative strategies for forming a partnership with an entity qualified to design, build, operate, and market a broadband network.

This is a particularly promising moment with regard to public–private partnerships—we see new models emerging, and incredible interest nationwide—but it is still a very early moment and there are no tried-and-true paths. There are also very limited data on the efficacy and long-term sustainability of the models that have been tested.

Against that backdrop, we view SiFi’s proposal with caution. The particular path that the company proposes has very limited data (though we note that, from a policy standpoint, open access is extremely attractive). Because of the uncertainty of the model, however, we recommend that the City consider ways to reduce its risk.

Extended negotiation with SiFi is one way to achieve this risk-reduction goal. But consider that the City has not yet had the benefit of examining the market to determine if there are alternative partners or business models.

Even if the City ultimately chooses to move ahead with SiFi, we recommend that the City consider a competitive process to improve its terms and develop more information. If there are no other private partners that are interested in engaging with the City, then the competitive process will clarify and foreclose that option—and the City would know how much negotiating power it has with SiFi. And of course, if there are other options, the competitive process will reveal them. In either case, a competitive process could also serve to make SiFi sharpen its pencil and offer the City better terms.

7.2 The City Will Not Lose Out by Taking a Reasonable Amount of Time for Its Decision-Making Process

The City is contemplating a long-term investment with a very significant financial outlay over many years; the City’s lease costs under the current proposal will escalate to \$1.5 million annually in addition to the cost of the operating contract, and the agreement’s other costs and obligations (including marketing, promotions, sales, and maintenance). This is a very significant financial outlay over time.

The issue of time is important here because we believe the City should not rush to make a decision on the SiFi proposal. Looking at the big picture, we are still in the era when cities that are able to build gigabit networks (or entice private investment in gigabit networks) have a real competitive advantage. There is still a first-mover advantage in this realm—one that we do not anticipate will disappear in the next few years.

Time in this industry is not measured in months or even a year. Time is on the City's side. Even if the City goes through some kind of competitive process to look at other broadband partnership options, it will not be losing the moment. To the contrary, it might benefit from not being the first community with which SiFi contracts.

SiFi Networks,
55 Madison Avenue,
Morristown,
NJ 07960

May 5, 2016

Mr. Ben Harvey,
City of Pacific Grove,
300 Forest Avenue,
Pacific Grove,
CA 93950

Dear Mr. Harvey,

For the most part CTC's report portrays SiFi Networks' proposal to the City accurately, we should note that this was on the basis of our proposal 5 months ago and having heard similar concerns as raised in CTC's report elsewhere we have since adapted some of the finer points in our agreement to suitably address these.

In Summary:

- Letter of Intent from qualified ISPs shall be presented (see attached)
- Revenue assurances from ISPs shall be sufficient to cover the city's lease obligations
- SiFi Networks shall be responsible for all Operations and Maintenance of the network
- SiFi Networks shall be responsible for network equipment refreshes throughout the term of the agreement
- SiFi Networks reiterate that the lease is subject to annual appropriation

Detail in response to CTC's analysis:

1. **The first concern raised by CTC surrounds open access:** on analysis of several deals that CTC have advised cities to implement open access models we find this sentiment surprising. Santa Cruz, CA, Westminster, MD and Champaign-Urbana, IL are all examples of open access fiber networks, however, during their construction and until full completion a single ISP is offered a period of exclusivity to serve those where the network passes, including the competing ISP being the network operator. These models which have been implemented are examples of municipalities taking on the vast majority of the financial risk and debt to enable a FTTH to be built and also see significant risks in the physical and commercial reality of having a sole ISP operate the network. SiFi Networks model alleviates this through an independent operational layer reducing risk in the project considerably.
 - a. It's worth highlighting that we also have a signed LOI from an ISP who is willing and able to enter into the proposed terms that gives the assurances that CTC has advised upon. Please find Letter of Intent attached.



From the outset, SiFi Networks has always been clear that ISP(s) minimum financial commitments to the project will be in place prior to construction of the network being built. SiFi Networks would like to agree a heads of terms and progress to full legal agreements with the City and ISP(s) under the understanding that the City shall not execute our agreements until we have signed agreements in hand from ISP(s).

- b. There is a lot of focus made on the ISP(s) who would deliver service over the network, however, the network is also designed to serve many other benefits required by the Police and Fire departments, educational and health facilities and the City itself, all of which are an important consideration for the City's future.
2. **CPI argument on bond structure:** CTC's assumption that our cost of finance remains flat is incorrect; our financing structure is also linked to an annual increase in CPI and affords the flexibility to have such low rates through construction and the first 10 years of the agreement.
3. **CPI point on revenues:** as per the LOI attached, CTC are incorrect in their assumption ISP(s) will not sign into a wholesale fee structure that increases annually with CPI. Forethought's LOI clearly states they are comfortable with such a structure
4. **CTC suggest the City is responsible for paying to SiFi Networks to operate the network:** this structure gives the City revenue upside. However, The City may be more comfortable with SiFi Networks covering all costs of operations. I'm pleased to say that SiFi Networks are comfortable to take on all operating costs and a revised Heads of Terms can be drafted to reflect this position.
 - a. **Internal expenses for permitting have not been factored:** This is correct, and we would await advice from the City as to the extent of the costs associated with processing the permits that are submitted.
 - b. It should also be noted that the indirect benefits have also not been factored into the model i.e. Public Safety improvements, enhanced educational services, City Wi-Fi, economic development. Furthermore, the City is experiencing a natural decline in cable franchise revenues which will continue as more services become delivered directly to homes via the internet.
 - c. A competitive process will serve to add significant additional cost of consultancy and further delay when a robust sustainable proposal has already been presented to the City at great expense of SiFi Networks. SiFi Networks had an independent consultant review the business case for the town, which included a scientific survey of the underlying demand within the community. Detailed engineering review and construction assessment, community workshops allowing citizens the opportunity to ask executives about the project and the implications on the City. Detailed negotiations with ISPs to serve on the network and procurement of backhaul circuits out of Pacific Grove have all been undertaken in the formation of this turnkey, sustainable fiber project. It is highly unlikely that any other private party would entertain the level of diligence required for a community as small as Pacific Grove. Our involvement and investment has been in good faith to this point.



5. **CTC state that SiFi Networks do not provide adequate coverage for equipment refreshes:**
Whilst we do not agree with this analysis we are happy to put our money where our mouth is and SiFi Networks shall take over the entirety of this responsibility in return for an increased share of the revenues generated by the network. We had discussed this as a likely alternative in discussions with CTC.
6. **CTC claim SiFi Networks' do not have in-depth experience:** SiFi Networks' management team has a wealth of experience in the development and operation of such networks and is dedicated to FTTx network development. Our in house team of engineers, network architects, financial analysts and developers have well over 100 years of experience in the industry and are driven by influencing significant improvements in economically efficient deployment techniques such as Micro-trenching, blown fiber, Wastewater Fiber Technology and world leading network architecture as well as developing innovative financing structures, all of which are centred around creating long term sustainable FTTx networks.

Our global Network Operations Center (NOC) is led by Chief Operations Officer, David Thomas, who has over 33 years' experience in the telecommunications sector and brings a unique level of expertise in the development and implementation of workflows for large service centers that specialize in the delivery of high quality customer service. David formerly worked at the world renowned BT Central Operations Unit, where he was responsible for service development, engineering and customer operations at Carrier1, which operated Europe's largest telecoms and IP backbone serving over 13 countries.

Furthermore, Mike Harris, one of our co-founders, was the network architect of the well renowned Open Access citywide network in Reykjavik – capital of Iceland - which was built during 2002, serves 70,000 homes today and is cash-flow positive returning over €5,000,000 per annum back to the city. Mikes' company was also the network Managed Services operator of the network. CTC recently accepted an offer from Mike Harris and the CEO of Reykjavik fiber network to visit the NOC and further understand the projects journey and our experience.

As noted above, our founders have vast experience in delivering projects 10 times the size of the Pacific Grove fiber project, including others where the complexity of the development deals our team and founders are accustomed to are significantly greater than that proposed in FTTH deployment. Nokia, Henkels and McCoy, Corning and ARCADIS are all engaged contractually in partnership with SiFi Networks and between us our delivery team have an unrivalled package for deliver to Pacific Grove.

7. **May count against bond capacity:** this is a question for your bond council, but in many cities we have evaluated a lease subject to annual appropriation does not count against the city's bond capacity.
8. **Open Access:** see above
9. **ISP commitments:** see above and attached LOI from ISP willing and able to commit to Pacific Grove.



10. **Take Rate assumption:** SiFi Networks have not structured the project viability on a 60% take rate; the network is sustainable at take rates in the mid to high 30% range, which is conservatively lower than those being experienced today through the USA. Furthermore, the projections are structure such that the take rate is not achieved until after 4 years from a spade going in the ground, and not from the outset – attached is a view of the residential fiber network adoption rate from a leading USA FTTx research company.

SiFi Networks believe that through a vastly superior network, increased reliability and affordable pricing a greater take rate can be achieved but only over time and on the back of excellent performance.

11. **CPI:** Demand Pull inflation dictates that as demand increases the cost of those goods and service increases. Demand for bandwidth is increasing, so naturally one can assume an increase in the cost of those goods. In the internet market what has been observed as cost per Mbps decrease on the transport and transit that's serves *into* a community, but an increase in the demand for the amount of Mbps that the consumer wants and needs, equating for an increase in the total cost to the home for receiving service.

The biggest increase per annum in a residential subscriber's package is video content, which is driven by the programming rights/charges to the video content provider. This is well in excess of the CPI rates today, with some Service Providers experiencing increases in excess of 8% from the previous year. We can also anticipate that with increasing reliance on bandwidth to provide video content rather than through the traditional cable TV medium that the overall cost of bandwidth to the home will increase as Service Providers seek to make the margins necessary to provide services. This can already be seen today in the mobile phone space where the cost of your data package now exceeds the cost of your traditional phone services.

12. **Not a clean exit:**

- a. **CTC note they are not qualified to legally review the documents:** we agree that a specialist attorney should be appointed to negotiate final agreements with SiFi Networks.

That being said, we do not agree with their analysis. The intention of the annual appropriation is to enable the City a clean exit, and prevent the agreement being constituted as indebtedness. No other FTTx PPP structure in the USA has such a possibility. Santa Cruz will not have such a right to relinquish their financial obligations as the structure proposes they raise the debt; the same is also true of Westminster, MD.

A clean exit is unique to SiFi Networks' approach and we would strongly support CTC's advice of a specialist legal counsel to work with the City. SiFi Networks and our financing partners is highly confident that language would be drafted that was agreeable and conforms to this intent.

- b. **CTC state that they fail to see how we can agree to a clean exit:** municipal leases subject to annual appropriation are very familiar to the City of Pacific Grove and that is the current structure that the City's golf course has been financed through.



The City may stand to gain through a competitive process, however they may also stand to lose a strong and sustainable PPP structure that is in front of them today, as well as the cost and time involved in running such a process.

The real benefit is a world leading communications infrastructure allowing economic development, public safety, e-health, home security, e-learning, smart meter reading and city Wi-Fi, amongst other applications for the City. On top of this, the homes and businesses of Pacific Grove will gain improved reliability and 20x faster speeds of internet and beyond, with exceptional customer service and more importantly competitive pricing than available today.

The real risk to the City is fundamentally the demand for services – will the community adopt a model that offers superior products that those available today at a lower cost. *The Broadband Group's* independent analysis yielded a 38% take rate by year 4 which is sustainable. Furthermore, the demand is underwritten by ISPs and as CTC's evaluation suggests, if SiFi Networks can bring the ISPs to the table and cover the operations (which we are willing to do) ***this is truly a positive deal for the City of Pacific Grove.***

We are excited for the City that we have an initial ISP who is willing and able to financial commit to project, to ensure it comes to fruition as well as support its long term sustainability.

Sincerely

A handwritten signature in black ink, appearing to read 'Ben Bawtree-Jobson'.

Ben Bawtree-Jobson

May 3, 2016

Mr. Ben Harvey
City of Pacific Grove
300 Forest Avenue
Pacific Grove, CA 93950

RE: City of Pacific Grove Fiber to the Premise – Letter of Intent (LOI)

Dear Mr. Harvey

As you are aware, City of Pacific Grove, CA, has been working with SiFi Networks to privately fund, build, operate and maintain an Open Access fiber-optic (FTTx) network in the City. The network will allow residential, business, municipal, emergency service, education, healthcare and other locations the opportunity to receive next generation services such as but not limited to Gigabit internet connectivity, from internet service providers (ISP).

Key components of the proposal to ISPs who access the FTTx network are:

- Initial dual and scalable 10G Transport connection, shared between ISPs on the network
- Citywide aggregation cabinets populated with all necessary active and passive equipment work using the Nokia 7360 ISAM FTTx platform
- Cabinets and associated equipment monitored directly by Nokia
- Fiber network all the way to and including installation of an ONT at the premise, followed by a Cat6 cable connection to a surface mounted dual Rj45 socket within the premise
- FOCUS system – a collection of construction techniques that are all underwritten with fully repairing and insuring policies throughout the lifetime of the project
- Stringent and responsive equipment vendor and construction engineering Service Level Agreements (SLA) through the lifetime of the project
- All operational and maintenance responsibilities of the network held with SiFi Networks
- Network independently operated of any ISP on a 24/7 basis, including SLA agreements and coordinates repairs to the network, where needed
- Equipment refreshes throughout the lifetime of the project
- Every premise throughout the City will be a potential subscriber
- Each block of homes will be released within c.40 days of being passed, allowing sufficient time for ONT installation and testing and premarketing.

Forethought understand that SiFi Networks and the City of Pacific Grove are interested in Forethought being an ISP on the network to provide the community with next generation services, through a public private partnership structure, and as part of our commitment to the project Forethought would be required to enter into the below contractual terms prior to commencement of network construction.

Terms:

- Agree to pay the City a network fee per residential subscriber that you connect to for the delivery of service(s).
- Share an agreed percentage of the gross revenues you derive from business subscribers over the network.
- Annual minimum financial commitment to the project which shall be lower in the early years and increase to its cap in year 3 post completion of the network.
- Be the sole ISP on the network, from the outset, for an agreed period of time with the City, serving any subscriber throughout the City that requests service(s), **OR** be a participating ISP in an open access environment
- Enter into a commitment term with the City for 15 years with a break option at year 10.

I confirm that Forethought find the above **Terms** acceptable and that we have an interest in being an ISP on the above proposed FTTx network based upon the information with this Letter of Interest.

Printed Name: Eric W. Hager

Title: Vice President Business Development



Signed: _____

Date: May 6, 2016