



(Print Copy For Reference Only)
Auctions: Form 683

Status: Submitted
 Date Received: 2/16/21
 File Number: 0009417117

Applicant Information

Legal Classification

Limited Liability Company

Applicant Name

Entity Name	Address	Jurisdiction of Formation
NW Fiber, LLC	212 S Main St Ste 1 Colfax, WA 99111 United States	Washington

Responsible Party: Limited Liability Company

Name	Phone	Email	Address
James C Kuszniir Governor	(509) 339-7670 x204	jim@nwfiber.com	212 S Main St Ste 1 Colfax, WA 99111 United States

Contact Information

Name	Phone	Fax	Email	Address
James Kuszniir	(509) 339-7670 x204	(509) 339-7730	jim@nwfiber.com	212 S Main St Ste 1 Colfax, WA 99111 United States

Winning Bids ETC Designation

Package/Item Name	ETC	State
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Financial Statements

Question	Response
Did the applicant submit audited financial statements with its short-form application?	No
Does the applicant request that the financial statements contained in this application be withheld from public inspection pursuant to section 0.459(a)(4) of the Commission's rules?	No

Winning Bids

Winning Bids Attachments

File Name	Type	Description	State	Date Uploaded	Upload Status
RDOF Technical Summary.pdf	Initial Project Overview	Technology Summary (not detailed)	WA	02/14/2021 06:00:46 PM ET	Converted Successfully

File Name	Type	Description	State	Date Uploaded	Upload Status
NW Fiber-Pet for Designation as an Eligible Telecommunications Carrier-2-16-21.pdf	ETC Designation	Petition to be designated ETC filed with state UTC	WA	02/16/2021 12:58:47 PM ET	Converted Successfully
NW Fiber Long Form Deadline Waiver Feb 2021.docx	Waiver	Petition for late filing of long form	WA	02/16/2021 01:00:44 PM ET	Converted Successfully
RDOF.pdf	Technology and System Design Description	Network Diagram (separate file)	WA	02/16/2021 01:04:45 PM ET	Converted Successfully
NWF RDOF Drawing Review.pdf	Technology and System Design Description	Certification of network diagram	WA	02/16/2021 01:05:23 PM ET	Converted Successfully
RDOF Technical Details.pdf	Technology and System Design Description	Main technical design description	WA	02/16/2021 01:06:08 PM ET	Converted Successfully
RDOF Project Plan Summary - Summary.pdf	Project Funding Description	Funding plan spreadsheet	WA	02/16/2021 02:47:45 PM ET	Converted Successfully
RDOF LoC Explanation.pdf	Letter of Credit Commitment Letter	explanation	WA	02/16/2021 02:54:02 PM ET	Converted Successfully

Winning Bids Summary

X indicates a package (followed by the number of items within the package)

Show Bid Details

Winning Bid	State	Items	ETC	Status of Support
WA-075-0002005	WA	1	No	-
WA-075-0004001	WA	1	No	-
WA-075-0006001	WA	1	No	-
WA-075-0006002	WA	1	No	-
WA-075-0007003	WA	1	No	-
WA-075-0007004	WA	1	No	-
WA-075-0007005	WA	1	No	-
WA-075-0010002	WA	1	No	-
SPUW 2	WA	2	No	-
Diamond 4	WA	4	No	-

Agreements

Agreements with Other Parties

Yes, the applicant *has* entered into partnerships, joint ventures, consortia, or other agreements, arrangements, or understandings of any kind relating to the potentially eligible areas being auctioned, including any agreements that address or communicate directly or indirectly bids (including specific prices), bidding strategies (including the specific potentially eligible areas on which to bid or not to bid), or the post-auction market structure, to which the applicant, or any party that controls or is controlled by the applicant, is a party.

Agreements

Agreement ID	Agreement Type	Name	Type	FRN
St. John Telephone Co	Consortium	St John Telephone Co	Entity	0004528410

Ownership

Disclosable Interest Holders of this Applicant

Theresa Kuszniir

Disclosable Interest Holder Information

Type	FRN	Address	
Individual		113202 SR 26 Lacrosse, WA 99143	
Type of Interest in Applicant	Type of Ownership Interest in Applicant	Disclosable Interest Held in Applicant	Country of Citizenship
<ul style="list-style-type: none"> ▪ Direct Ownership Interest in Applicant 	<ul style="list-style-type: none"> ▪ Membership Shares 	81.00%	United States

FCC Regulated Business held by this Disclosable Interest Holder

You have not specified any FCC Regulated Businesses held by this Disclosable Interest Holder

James C Kuszniir

Disclosable Interest Holder Information

Type	FRN	Address	
Individual		113202 SR 26 Lacrosse, WA 99143	
Type of Interest in Applicant	Type of Ownership Interest in Applicant	Disclosable Interest Held in Applicant	Country of Citizenship
<ul style="list-style-type: none"> ▪ Direct Ownership Interest in Applicant ▪ Director 	<ul style="list-style-type: none"> ▪ Membership Shares 	19.00%	United States

FCC Regulated Business held by this Disclosable Interest Holder

You have not specified any FCC Regulated Businesses held by this Disclosable Interest Holder

FCC Regulated Businesses of this Applicant

You have not specified any FCC Regulated Businesses.

Certify and Submit

Certify Auction Application

I certify the following:

1. that the applicant is in compliance with all statutory and regulatory requirements.
2. that the applicant is financially and technically qualified to meet the public interest obligations of section 54.309 of Title 47 of the Code of Federal Regulations for each relevant performance tier and latency combination and in each area for which it seeks support.

3. that the applicant will have available funds for all project costs that exceed the amount of support to be received from the Phase II auction for the first two years of its support term and will comply with all program requirements, including service milestones.
4. that the applicant will meet the public interest obligations for each relevant tier, including the requirement that it will offer service at rates that are equal to or lower than the Commission's reasonable comparability benchmarks for fixed services offered in urban areas.
5. that the applicant acknowledges that it must be designated as an Eligible Telecommunications Carrier pursuant to section 214(e) of Title 47 of the United States Code (47 U.S.C. § 214(e)) in the area(s) in which it will receive support prior to being authorized to receive such support. If the applicant has already been designated as an Eligible Telecommunications Carrier in any area(s) in which it will receive support, the applicant has provided a certification of its status in each such area and relevant documentation supporting that certification in this application. If the applicant has not yet been designated as an Eligible Telecommunications Carrier in an area in which it will receive support, the applicant will submit a certification of its status as an Eligible Telecommunications Carrier in each such area and relevant documentation supporting that certification no later than 180 days after the public notice identifying the winning bidders and prior to being authorized to receive such support.
6. that the description of spectrum access in areas for which the applicant will seek support provided in this application to participate in competitive bidding is correct and the applicant will retain such access for at least ten (10) years after the date on which it is authorized to receive support.
7. that the applicant and any party to this application are not subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988.
8. that the applicant is aware that if this application is shown to be defective, the application may be dismissed without further consideration and penalties may apply.

I declare, under penalties of perjury, that I am an authorized representative of the above named applicant, that I have read the instructions and the foregoing certifications, and that all matters and things stated in this application, its schedules, and attachments, including exhibits, are true and correct.

Signature

James Kuszniir

Governor, NW Fiber, LLC

- 1) **Overall Network Design.** *A long-form applicant, regardless of the technology (or technologies) it proposes to use, is expected to:*

- a) Describe the proposed last mile architecture(s), design, and technologies.

We intend to utilize GPON (GPON ITU G.984) over fiber to deliver the proposed services over the last-mile. We will be using Zhone MSK electronics. Individual PONs will be split no more than 32 customers per PON, using a field split topology. Field splitters will use a combination 1x2, 1x4, 1x8, 1x16, and 1x32 splitters to achieve up to 32 splits per PON, with a maximum distance of 20km per PON. Voice, Video, and Internet will be separated by VLAN. For QOS, we are using 802.1p markings (0-7) to prioritize VOIP traffic over Internet traffic. These 802.1p marks are carried in the 802.1q VLAN s-tag assigned to all frames carried within the system. VOIP traffic is assigned priority 5 while Internet traffic is assigned priority 0.

- b) Describe the proposed middle mile/backhaul topology,1 architecture, design, and technologies.

Middle-mile/backhaul will be provided over ethernet switches. Transport will be DWDM Wavelengths at 10Gbps or 40Gbps as needed. Quality of Service will be provided by over-provisioning all links and 802.1p. All remotes will be fed with redundant links on separate fiber paths. Inside routing will use OSPF.

- c) Describe the proposed interconnection architecture, design, and technologies solution to connect to the Internet. This will include the likely service providers,1 link data-rate/size, locations, dual-homing, and multi-homing characteristics.

Internet access will be 10GigE hand offs to other carriers. Currently we are using 2 redundant connections. The first connection is from Wholesale Communications handed off in Colfax CO via dedicated underground fiber. The second is a 10Gigabit wave circuit on Zayo to the Westin Building in Seattle WA, cross connected to Cogent. BGP is used on both circuits for multihoming and load balancing.

- d) Describe the proposed architecture that will be used to provide voice service.1 Describe whether the proposed voice services will: 1) be internally provided, 2) use a managed voice service provider, 3) use a voice over the top service, or 4) use another type of voice service

Voice service will be provided using SIP on a dedicated VLAN using 802.1p QoS provisioned on the POTS ports of the ONT. SIP sessions will terminate on the two existing redundant FusionPBX servers running FreeSwitch as the switching engine. PSTN connectivity is via SIP Trunks to Skyetel with backup trunks to Voyant. SIP trunks ride over two different internet connections for full redundancy. Voice traffic will be on a dedicated vlan.

- e) Describe the network's scalability to support customer growth and network data usage growth to account for: 1) ever increasing application requirements, 2) increasing quality demands, and 3) lower response/latency demands for ever increasing usage of highly interactive applications.

Current internet access contracts are easily upgradable to higher speeds upon request with minimal lead time. In addition, we keep track of all ISP and interconnect possibilities in the region and can easily augment with additional connections should it become prudent or necessary.

Middle mile connections are fiber over owned or leased dark strands, and therefore can be upgraded to higher speeds easily. Most such network links will be DWDM from the beginning and thus additional links can be easily added. Switch capacity can also be added easily.

PON areas take into account any obvious locations where additional customers may be added in the future leaving some unused splitter ports, with vault placement positioned to ensure new builds can be added as well. All last mile fiber counts will be at under 40% utilization at deployment time, and each additional strand can accommodate an additional 32 subscribers making allowances for new rural subdivisions.

OLT electronics used are modular and can add additional line cards if needed in the future. They also support replacement line cards with XGPON support, and dual-mode support (concurrent XGPON and GPON on the same strand) to allow for a customer migration path for speeds over gigabit.

- f) Describe the design and features that it proposes to implement that will: improve reliability (such as redundancy) for equipment, links and software; dual homing; and multi-homing connectivity.

Internet connectivity comes from two unrelated carriers, and internet feeds ride over fiber in different cables and routes. Routers are operated in a redundant pair to provide failover and maintenance without downtime (currently using CARP).

Links between COs will utilize 802.3ad LAGs over different fiber paths wherever possible.

- g) Describe network infrastructure ownership. Indicate which parts of the network will use the long-form applicant's or another party's existing network facilities, including both non-wireless and wireless facilities extending from the network to customers' locations. For non-wireless facilities that do not yet exist, the description should

indicate whether the new facilities will be aerial, buried, or underground. This includes leased lines, transit services, rented tower space for radios, etc.

The current network makes use of leased dark fiber from the Port of Whitman for existing middle mile connections. As the project is completed, new fiber construction (underground) will replace those links, as the paths are also needed to support end users and the leased fiber is not viable for end user connections. These links will carry both end user (last mile) and backhaul (middle mile) connections whenever needed.

Currently, one of the internet feeds is purchased in Seattle, and transported over a Zayo Wavelength circuit to Pullman. Handoff is DWDM, where it is mux'ed into our Port of Whitman leased dark fiber to our Colfax CO. When the Pullman CO is completed, this circuit will terminate in the Pullman CO over newly constructed underground fiber.

The 2nd feed is routed through St. John Telephone fiber to Port of Whitman fiber, and connected directly into Wholesail Networks' PoP in Colfax. Both of those fiber feeds are inside the City of Colfax and underground.

- h) Provide technical information about the design methods, "rules of thumb," and engineering assumptions used to size the capacity of the network's nodes (or gateways), links and wireless base stations. These are often expressed as ratios, such as "oversubscription ratio" applied in the middle-mile/backhaul and interconnection network levels that funnel the consumer traffic to the Internet. The information provided should demonstrate how the required performance for the relevant performance tier will be achieved during periods of peak usage, downstream and upstream speed, and latency assuming a 70% subscription rate by the final service milestone.

For the Internet feed, no standard ratio will adequately capture need as usage varies widely by demographics and changes in society usage patterns (such as the recent COVID pandemic demonstrated). Instead, we will monitor utilization levels of internet feeds and augment internet connectivity at or before 80% utilization levels during peak times assuming one failed feed. (eg, with 2 10Gbps feeds, we will assume only 10Gbps of bandwidth, and augment before utilization reaches 8.1Gbps during peak periods).

Last mile feeds are GPON and thus utilize a 1:32 split ratio on the 2.5x1.5Gbps PON. Higher utilization customers (offices, MDUs, etc) will be placed on a 1:16 split or a dedicated active ethernet circuit.

Middle mile circuits will be overdesigned, eg, using 2x10 or 2x40Gbps to interconnect our two COs, which are feeding not more than 500 subscribers (our largest CO). These links will be monitored with Zabbix monitoring

software and will be augmented whenever they reach 70% utilization.

Our remote OLT has two 10Gbps ports on it, both ports will be lit; there is no possibility of feeding more to that piece of equipment. It is a small remote.

We will also make use of CPE speed and performance testing software to ensure performance out to the end user. If a customer fails to test to the full speed of their circuit during peak periods, we will investigate and augment as required.

We always have taken pride in ensuring customers always have their full contracted speed available, and that will not change. We never use oversubscription ratios to dictate our network as some other local incumbents do, as the incumbents have used them as excuses for under-performing networks. Our network philosophy is make sure no network link ever gets to full capacity.

- i) Finally, describe how the long-form applicant's design will meet the peak period end-to-end performance requirements for the path from the consumer premises to the Internet. This requires that the applicant detail consumer path use case(s) that the long-form applicant will use to move traffic to and from the consumer premises to the Internet. This description should define the technical, planning and capacity parameters that a stream of packets would experience along this end-to-end path.

Due to our size, the network topology will be very simple. Use case 1: Customer on Pullman CO GPON: data will enter Customer ONT, be tagged as Internet (as opposed to Voice or Video), pass through the GPON (2.5Gbps/1.5Gbps) to the OLT, from the OLT to a core switch (10Gbps ethernet), and from the core switch to the primary router (10 Gbps ethernet), and from there, to the Internet over one of the Internet links (10Gbps ethernet). Colfax CO customers (West/Central parts of the county) will be identical, except there will be a 10Gbps or 40Gbps ethernet over DWDM fiber hop (about 12 miles long) between the core switches in the two COs.

As the routers use CARP, should the primary router fail, the backup router will assume the primary's customer facing addresses, and immediately take over responsibility for routing traffic to the Internet. The hop count is the same, just the piece of equipment at the edge changes.

Both internet routes will appear at both routers, so the routers will choose the best internet route for that packet based on the routes received from the providers and any additional load balancing tweaks applied. Obviously a failed internet feed will be disabled by routing protocol, and all traffic will flow through the remaining link(s).

In the finished network all packet transit to the router will be on

company-owned underground fiber. While the network is under construction, some parts may utilize leased fiber until the owned fiber for that leg is built. Leased fiber will be leased dark fiber strand(s).

2) Project Plan:

This project plan includes the build-out schedule for construction of backhaul/middle-mile and last-mile infrastructure to provide FTTH (fiber to the home) to 100% of the service locations within 14 census blocks. These census blocks include 530750002005, 530750003002, 530750004001, 530750006001, 530750006002, 530750007003, 530750007004, 530750007005, 530750008002, 530750008003, 530750008004, 530750009003, 530750010001, and 530750010002.

The backhaul of this project will be composed of a 96-count fiber, which will be referred to as the “backbone.” The backbone will primarily traverse highways and main roads, where middle-mile fiber lines will split off to service homes along roads. The middle-mile will consist of 24-count fiber, and will be referred to as “laterals.” From each lateral, last-mile single fiber lines will proceed to each home to provide FTTH service. These last-mile lines will be referred to as “drops.”

Construction for these census blocks will be split into eight phases. The projected completion dates and percentage of locations serviced will be included following the description of each phase listed below.

Phase 1: Construction will include census blocks 530750007003, 530750007005, 530750008002, 530750009003. Phase 1 is to be completed by the end of year one.

Inland Fiber Construction is currently building a fiber network in Palouse, WA which will include backbones that will feed census block 530750007005. The town of Palouse fiber construction is set to be completed early August. This completion includes the necessary construction to provide FTTH service to 90% of the service locations in census block 530750007005. The other 10% which are located in the upper part of census block 530750007005 near Grinnell, WA will be reached by October.

During the building of the fiber in Palouse there will be a second team working on the construction for feeding both Steptoe, WA and Thornton, WA. Both towns reside in census block 530750007003. Construction for the backbone from Colfax, WA to Steptoe, WA will begin one month after approval confirmation. The first leg of construction will be for the backbone and will begin at the intersection of WA-26, US 195, and Green Hollow Rd. The backbone will then proceed north following Green Hollow Rd until it reaches WA-23, where it will then proceed east into Steptoe. After that leg is complete construction will continue North following US 195 to Old Thornton Hwy

where it will then follow Old Thornton Hwy into Thornton and ending at the intersection of E 4th St and Old Thornton Hwy. The construction of the backbone from Colfax to Thornton will be completed by month two. After completion of the backbone, construction will begin in Thornton and be completed by June. This will also include building the lateral running from Thornton along Sunset Rd to Hitchings Rd then to Harry Davis Rd and up to Sunset, WA. Next construction will begin in the town of Steptoe and be completed by the middle of July.

After the completion of the 530750007003 census block construction will begin on a backbone to feed the 530750008002 census block. This backbone will proceed from the intersection of WA-26, US 195, Green Hollow Rd and follow WA-26 to Endicott Rd where it will continue down Endicott Rd until it reaches 2nd St in Diamond, WA which will be completed by the end of July. After the backbone is completed construction on a laterals running along McNeilly Rd and WA-26 will begin and be completed by September.

Census blocks 530750007003, 530750008002, 530750007005 will be completed by the end of year one, bringing the total number of service locations reached to 23.18% of the total bid locations.

Phase 2: Construction will include census blocks 530750008003, 530750008004. Phase 2 is to be completed by the end of Q2 of year two.

After the completion of Phase 1, Inland Fiber Networks will begin construction on Phase 2, which will include census blocks 530750008003 and 530750008004.

Starting with census block 530750008003, construction will begin with a backbone to feed the locations within the census block. This backbone will begin at the intersection of WA-26 and US 195. This backbone will then head west along WA-26, and continue on until it reaches Endicott Rd, from there, a lateral line will split off and continue along WA-26 until it reaches Filan Rd. Filan Rd is one of three roads that will be used to feed this census block.

The lateral on this leg will continue down Filan Rd, providing FTTH service drops to the locations along this road that are within the census block.

Backtracking slightly, along Filan Rd, the lateral will split off down Kammerzell Rd to provide service to the locations along this road as well. This will conclude the first leg of this census block.

The second leg of this lateral will continue from the intersection of WA-26 and Filan Rd., and continue along WA-26 until it reaches Sommers Rd. This will be the second of three roads that will feed this census block. This leg of the lateral will provide FTTH service to

locations along Sommers Rd up until the intersection of Sommers Rd and Wilcox Rd. This will conclude this leg of the lateral.

The third leg of this census block will be fed utilizing a separate backbone coming from census block 530750008004. The path of this backbone will be further explained within the description of census block 530750008004.

This backbone comes into census block 530750008003 from the intersection of Almota Rd. and Conrad Rd, then continues west along Almota Rd until the intersection of Almota Rd. and Sommers Rd, thus concluding the third and final leg for census block 530750008003.

Completion of this census block will provide FTTH service to the 18 locations residing within.

Moving to census block 530750008004, the primary backbone feeding this census block will be coming from the intersection of Almota Rd and Prune Orchard Rd. The backbone will continue south along Almota Rd into the census block. This leg of the backbone will continue along Almota Rd to the intersection of Almota Rd and Upper Union Flat Rd, then will continue along Upper Union Flat Rd to the intersection of Upper Union Flat Rd and Pat Oneil Rd. The backbone will then follow Pat Oneil Rd to the intersection of Pat Oneil Rd and Conrad Rd, which will head all the way back to Almota Rd, providing FTTH service to all locations along the way, thus completing the first leg of the backbone for this census block.

The second leg of this census block will be a lateral line which will start at the intersection of Almota Rd and Prune Orchard Rd, heading east along Prune Orchard Rd to US 195 and continue north to Bennett Rd, concluding the second leg.

The third and final leg for this census block is a continuation of a separate backbone between census block 530750003002 and 530750002005. This leg of the backbone travels along Hamilton Hills Rd, from the intersection of Pat Oneil Rd, to the intersection of Hamilton Hills Rd, US-195 and Albion Rd.

Completion of census block 530750008004 will provide FTTH service to the 49 locations residing within.

Census blocks 530750008003, 530750008004 will be completed by Q2 of year two, bringing the total number of service locations reached to 29.52% of the total bid locations.

Phase 3: Construction will include census block 530750002005. Phase 3 is to be completed by the end of Q1 of year three.

After the completion of Phase 2, Inland Fiber Networks will begin construction on Phase 3 in census block 530750002005. The initial feed for this block will be a backbone from a previous block. Starting at the intersection of US 195 and Albion Rd, the backbone will head north east along Albion Rd and continue on until it reaches the town of Albion.

Along this leg of the backbone, there are several split offs. The first being along the intersection of Albion Rd and Hoffman Rd, where a lateral fiber feed will follow Hoffman Rd north to Shawnee Rd. This segment will split off east and west along Shawnee road. The path headed west will continue to US 195, and the path headed east on Shawnee will continue on to Albion Parvin Rd, and head south into the town of Albion, stopping at W Front St.

The next split off will be at the intersection of Albion Rd and Old Albion Rd, where a lateral will continue south/south west to US 195.

The next section for this census block begins north east of Albion, where Main St turns into Palouse Albion Rd. This lateral leg will continue along Palouse Albion Rd until the intersection with Collins Rd. From here, there are two split offs to provide FTTH service to the rest of this census block.

The first split off will be at the intersection of Palouse Albion Rd and Collins Rd, and continues to the intersection with Parvin Rd. From here, there are several split offs from the previous path, headed east and west along Parvin Rd. The west path follows Parvin Rd all the way to Abbott Rd. Another path leads from the intersection of Parvin Rd and Mick Parvin Rd, and follows Mick Parvin Rd until it reaches Shawnee Rd, then follows Shawnee Rd west, and stops at McIntosh Rd.

The east path from the intersection of Collins Rd and Parvin Rd heads east along Parvin road to Tate Cutoff Rd, and follows Tate Cutoff Rd to Palouse Albion Rd, then heads south until Rebel Flat Rd, and stops there.

The second split off begins at the intersection of Palouse Albion Rd and Collins Rd, but continues along Palouse Albion Rd to Banner Rd. From here the path continues south along Banner Rd until Pullman Albion Rd, and follows Pullman Albion Rd to Palouse Hwy 27. The backbone follows Palouse Hwy27 north to Reid Rd and makes a split. One section follows Reid road back to Banner Rd, and the other split continues north along Palouse Hwy 27. At the intersection of Palouse Hwy 27 and Rose Creek Rd, the path continues along Rose Creek Rd to Palouse Albion Rd and stops there. This concludes phase 3.

Completion of census block 530750002005 will provide FTTH service to the 92 locations residing within.

Census block 530750002005 will be completed by the end of Q1 of year three, bringing the total number of service locations reached to 38.22% of the total bid locations.

Phase 4: Construction will include census blocks 530750006001, 530750006002, 530750007004. Phase 4 will be completed by the end of Q3 of year three.

After the completion of Phase 3, Inland Fiber Networks will begin construction of Phase 4.

Starting with census block 530750007004, as it is next to the city of Palouse, where Inland Fiber Networks has already installed a fiber system.

Starting in the intersection of WA-272 and Tamarack St in Palouse, WA, there will be a backbone in place along WA-272 that heads west to Church St. This will provide FTTH service drops to the residents within this census block.

To give service to residents south of the river from here, there will be a lateral fiber line in place along the intersection of W Main St and Division St that heads west along Main St that will provide FTTH service drops to the residents. From here, this census block is split up in an odd manner. There are three more sections to cover.

The first section will be at the intersection of WA-27 and Viola Rd, where a lateral fiber line will head south east along WA-27 to Estes Rd, ending here.

The next section will be at the intersection of Estes Rd and Trestle Rd, where a lateral fiber line will be in place, heading north along Trestle Rd to Mc Coy Rd, ending here.

The third and final section will be a continuation of the backbone fiber in Palouse, WA. Starting at the intersection of Palouse Cove Rd and Ringo Rd, the backbone travels south west along Ringo Rd, merges onto Mader Rd, then travels south east along Palouse Cove Rd, ending at the Washington Idaho Border just before Potter Rd.

This concludes service for zone 530750007004.

Continuing to census block 530750006001.

Starting at the intersection of Palouse Hwy 27 and Pullman Albion Rd, there will be a backbone in place that heads north along Palouse Highway 27 to Reid Rd, where a lateral fiber line will continue from here to R Zakarison Rd.

The next leg will be starting from the same point as the previous leg. At the intersection of Palouse Hwy 27 and Pullman Albion Rd and Whelan Rd, a lateral path will be in place that travels along Whelan Rd until the intersection with McGreevy Rd. Here the path splits off into 2 directions. One path will continue north along McGreevy Rd and stopping at Lawson Rd.

The other path will continue along Whelan Rd to Estes Rd, where it will split off again. One split off will continue north along Estes Rd to Trestle Rd, and continue to Mc Coy Rd and the other split off will head south along Estes Rd to Fleener Rd and stop here.

There will be another backbone starting at the intersection of Whelan Rd and Kitzmiller Rd, and will continue along Kitzmiller Rd to the intersection with Wexler Rd, where Kitzmiller Rd turns to Orville Boyd Rd. The backbone will follow this road to Airport Rd. From here, the backbone splits into a lateral path. This path follows Airport Rd north east to O Donnell Rd, and splits off.

One split will continue along Pullman Airport Rd to Pullman Moscow Hwy 270. The other split will head from the intersection of Airport Rd and O Donnell Rd, heading north along O Donnell Rd all the way to Gray Rd. This concludes this leg of this census block.

The Final leg of this census block will be fed by a backbone along the Pullman Moscow Hwy 270, with one path going along from the highway and Terre View Dr, north along Terreview Dr, and then along Antelope Dr.

The last segment will follow Pullman Moscow Hwy 270 from Terreview Dr to finish this census block.

Census Block 530750006002 is the final block for Phase 4, and will be fed by a single backbone from census block 530750006001.

The backbone will start at the intersection of Kitzmiller Rd and Osprey Ln, and head east along Kitzmiller Rd, which turns to Orville Boyd Rd. This backbone will follow Orville Boyd Rd to Airport Rd, ending here for this census block. This concludes census block 530750006002

Completion of Phase 4 will provide FTTH service to the 139 locations residing within the three census blocks.

Census blocks 530750006001, 530750006002, 530750007004 will be completed by the end of Q3 of year three, bringing the total number of service locations reached to 51.37% of the total bid locations.

Phase 5: Construction will include census block 530750003002. Phase 5 will be completed by the end of Q3 of year four.

After completion of Phase 4, Inland Fiber networks will begin on construction for Phase 5, which will include census block 530750003002.

The first leg of this census block will be fed from a backbone at the intersection of US 195 and Hamilton Hill Rd, which will continue along Hamilton Hill Rd to Bar Rd, where it will split off. One split will continue down Bar Rd and continue back to US 195, splitting off again going north west and south east along the highway. The south east segment will continue to Joe Babbitt Rd, and provide FTTH service to a resident there.

The other split off from Hamilton Hill Rd will continue down Hamilton Hill Rd to the intersection with Upper Union Flat Rd, where the backbone will split off. One path will follow Upper Union Flat Rd to Kincaid Rd, where it will continue along Kincaid Rd and stop at the only home on this road. The other path will continue down Hamilton Hill Rd to Enman Kincaid Rd, thus starting the next leg.

This leg starts at the intersection of Hamilton Hill Rd and Enman Kincaid Rd, following Enman Kincaid Rd to Joe Babbitt Rd. From here there will be a split off, one path continuing Enman Kincaid Rd and the other will follow Joe Babbitt Rd heading north, and stopping to service the first home there.

The other path that follows Enman Kincaid Rd will continue to the intersection with Carothers Rd. From here the path will head north and south along Carothers Rd. The north path will continue up Carothers to the intersection with Landfill Rd, where it stops. The south path of Carothers Rd will continue to the intersection with Wawawai Pullman Rd. From here, the paths will split north east and south west along Wawawai Pullman Rd, with the north east path continuing to US-195 and stopping here for this census block.

The south west path of Pullman Wawawai Pullman Rd will have a split off at Flat Rd, which will continue along Flat Rd to Country Club Rd. From here, the path will follow Country Club Rd north east to Wilbourn Rd, where the path will split off again. The Wilbourn Rd path will continue to Barbee Rd, and then US-195, providing FTTH service to residents along the way.

The Country Club Rd path will continue north east along Country Club Rd to US-195 and stop there.

The other split off of Wawawai Pullman Rd that heads south west will continue along Wawawai Pullman Rd to the intersection with Klemgard Rd.

At the intersection of Klemgard Rd and Ewartsville Rd, the backbone will split off to two paths.

One path will follow Ewartsville Rd north west to Kamerrer Rd north all the way to WA-194, where it will follow US-194 south east to Ewartsville Rd, where it will split off. One split will continue along WA-194 to provide FTTH service to two homes, and then stop. The other split will continue south along Ewartsville Rd to provide service to one home, then stop.

Back to the intersection of Klemgard Rd and Ewartsville Rd where the backbone split off earlier, the other path will continue south along Klemgard Rd and continue on to the intersection with Ryan Rd, where the path will split. One split will continue along Klemgard Rd to Story Rd, where it will stop for this census block. The other path will head south along Ryan Rd and continue to Wawawai Pullman Rd. After this the

backbone will head north along Wawawai Pullman Rd, stopping at the intersection with Klemgard Rd. This finishes this leg of the census block.

The next segment will start at the intersection of Wawawai Pullman Rd and Union Flat Rd, where the path will follow Union Flat Rd to the intersection with Lithe Rd where the path will split. One split will head north east along Lithe Rd to provide FTTH service to one home along Lithe Rd. The other split will continue along Union Flat Rd to M Druffel Rd, where the path will follow M Druffel Rd to US-195. From here, the path will follow US-195 north west to Lithe Rd, where it will split off. To finish this census block, the path will follow Lithe Rd, split off onto Dunning Rd, split off north onto Barbee Rd to service two homes there, and then stop, thus concluding this leg and finishing service for census block 530750003002.

Completion of Phase 5 will provide FTTH service to the 192 location residing within.

Census block 530750003002 will be completed by the end of Q3 of year four, bringing the total number of service locations reached to 69.54% of the total bid locations.

Phase 6: Construction will include census blocks 530750004001. Phase 6 will be completed by the end of Q1 of year five.

Following the completion of Phase 5, Inland Fiber Networks will begin construction on Phase 6, which will include census block 530750004001.

The first backbone of this census block will start at the intersection of Pullman Moscow Hwy (WA-270) and Sunshine Rd. The backbone will head south along Sunshine Rd to Old Moscow Rd, where the path will split. One path will head west along Old Moscow Rd to provide FTTH service to five homes along the way. The other path will be a continuation of the backbone, heading east along Old Moscow Rd to Brown Rd, where it will then head south along Brown Rd to Sand Rd. The backbone will then head south east along Sand Rd to Jennings Rd where the backbone will split. A lateral path will continue along Sand Rd, splitting off at Bursch Rd to service several homes, and also continuing on Sand Rd to the Washington and Idaho border (Blue Heron Ln.)

The other split at Sand Rd and Jennings Rd will continue south along Jennings Rd, splitting again at Weber Rd. One path follows Jennings Rd to service two homes there. The other split is a continuation of the backbone that follows Weber Rd south to Whitman Rd, where the path will split again. One path will follow Whitman Rd all the way to the end of the road. The other path is a continuation of the backbone on Weber Rd. This backbone will continue west along Weber Rd to the intersection with Busby-Johnson Rd, where the path will split off, heading south to service four homes along Busby-Johnson Rd. The other path is the backbone continuing from Weber Rd, which then heads north along Busby-Johnson Rd to Staley Rd

From here the backbone will head north along Staley Rd, which turns into Johnson Ave splitting off once at Jennings Rd to service one home, then continuing north along Johnson Ave. The backbone continues to Kirkendahl Rd, and then Sand Rd, with a split off happening on each road. The Sand Rd split off will continue along Sand Rd to Brown Rd, stopping here.

The Kirkendahl Rd split will continue along Kirkendahl Rd to US-195, where it will split off north and south. The north split will continue to Country Club Rd, stopping there. The south split on US-195 will continue south all the way to the intersection with US-195, M Druffel Rd and Johnson Cutoff Rd, ending there.

Along the US-195 path, there will be two split offs. One at Staley Rd, which will head north east along to Staley Rd, and tie in with a previous backbone located at the intersection of Staley Rd and Busby-Johnson Rd. along this backbone on Staley Rd, there will be a lateral split at the intersection of Staley Rd and Gimlin Rd, which will follow Gimlin Rd west to US-195, where it will tie in to a previous backbone.

The other split off will be at the intersection of US-195 and Chambers Rd, which will follow Chambers Rd south east to Busby-Johnson Rd, heading south onto Johnson Cutoff Rd, and ending at Johnson Rd.

This concludes Phase 6 construction, completing census block 530750004001.

Completion of Phase 6 will provide FTTH service to the 98 locations residing within..

Census block 530750004001 will be completed by the end of Q1 of year five, bringing the total number of service locations reached to 78.81% of the total bid locations.

Phase 7: Construction will include census block 530750010002. Phase 7 will be completed by the end of year five.

Following the completion of Phase 6, Inland Fiber Networks will begin construction on Phase 7, which will include census block 530750010002.

The primary feed for Phase 7 will be a backbone and lateral split off that covers the entire north east side of this census block. This feed starts at the intersection of Hamilton Hill Rd and Upper Union Flat Rd, and follows Upper Union Flat Rd north west to the intersection with Almota Rd.

From here, the backbone travels west along Almota Rd to the intersection with Sommers Rd, which then heads west along Sommers Rd. The backbone follows Sommers Rd west to WA-26, which then follows WA-26 west to Dusty Rd, and stopping there. This will be the primary feed for all lateral split offs into this census block.

Starting at the intersection of Hamilton Hill Rd and Upper Union Flat Rd, the backbone will head north west along Upper Union Flat Rd, providing FTTH service to residents along the way. At the intersection of Upper Union Flat Rd and Stevick Rd, the path will head south along Stevick Rd to the intersection with Almota Rd. From here the path will split off.

Traveling south on Almota Rd, the path will continue south to Long Hollow Rd and split off again. One path will continue on Long Hollow Rd all the way to Getz-A E Seavers Rd.

At the intersection of Long Hollow Rd and Steiger Rd, one path will travel north along Steiger Rd to the intersection with Wilcox Rd, where the path will split to head both directions on Wilcox Rd. The split heading south west will continue to Penawawa Rd, and begin to travel south along Penawawa Rd for a long distance along the Snake River to service several homes within the census block before stopping there.

The path traveling north east will continue along Wilcox Rd to the first driveway on the right hand side. This is an unnamed road, however there are several houses along this driveway that will be serviced.

Back to the intersection of Almota Rd and Long Hollow Rd, the backbone will continue south east along Almota Rd, spitting off in both directions along WA-194. The path heading south will continue along US-194 to Jenkins Rd, splitting off to provide service to several homes along this road. Another path will continue south along WA-194 to service several homes there before stopping.

The other split off going north east on Almota road will continue north / north east along WA-194 to Evans Rd. From here there will be several split offs to service nearby roads. The first split off will be at the intersection of WA-194 and Evans road, with this path following Evans Rd east all the way to the end of this road.

The next split off will be at WA-194 and Benedict Rd, with this path following Benedict Rd west to Jenkins Rd, with one split going north on Jenkins Rd to service one home, and the other split continuing on Benedict Rd to service several more homes before stopping.

The next split off from WA-194 and Benedict Rd will continue south along WA-194 to Halpin Rd, where the path will split off again. One path will head west along Halpin Rd to service one home.

The next path will continue along WA-194 to Kamerrer Rd, where the path will split off down Kamerrer Rd heading south to Halpin Rd, then heading west along Halpin Rd to service several homes before stopping. The final split off for this leg of the census block will be at the intersection of Kamerrer Rd and WA-194, where the path will continue north east along WA-194, and stopping at Hamilton Hill Rd.

The next leg for this census block will start at the intersection of Upper Union Flat Rd and Almota Rd. The backbone will travel south along Almota Rd to Klaus Rd, where the path will split. One path will continue south on Almota Rd to tie in at Stevick Rd where another lateral path is already in place at this point.

The other path from Almota Rd and Klaus Rd will continue north along Klaus Rd with one split off to Aeschliman Rd to service several homes there. The path that continues north along Klaus Rd will continue to Wilcox Rd, where it will split off in each direction along Wilcox Rd. The north path on Wilcox Rd ties into the backbone along Sommers Rd, which continues the main feed for this census block.

The other path will head south west along Wilcox Rd to B.P. Major Rd, where the path will split off.

One Path will travel south east along B.P. Major Rd to service one home. The other path will continue along Wilcox Rd to Carroll Rd, to which the path continues west along Carroll Rd to Musgrove Rd. From here, the path heads west along Musgrove Rd to Penawawa Rd.

From here, the path splits north and south on Penawawa Rd. The south path on Penawawa leading to Little Alkali Rd, where the path continues along Little Alkali Rd to the intersection with Brink Rd. One path travels along Little Alkali Rd to the south west, traveling to Rock Gulch Rd and heading south there. The path continues on Rock Gulch Rd to service several homes there before stopping at the end of the road.

Back to the intersection of Little Alkali Rd and Brink Rd, the other path will head north along Brink Rd and tie in to the backbone along WA-26.

Back to the intersection of Musgrove Rd and Penawawa Rd, the north path will continue north along Penawawa Rd and tie in to the backbone along WA-26, which continues east and west as mentioned previously. One last path is along WA-26 and Helen Repp Rd, where the path travels north along Helen Repp Rd to service several homes, and stopping before C J Ochs Rd.

This concludes the construction of Phase 7 and census block 530750010002. Completion of Phase 7 will provide FTTH service to the 142 locations residing within.

Census block 530750010002 will be completed by the end of year five, bringing the total number of service locations reached to 92.24% of the total bid locations.

Phase 8: Construction will include census block 530750010001. Phase 8 will be completed by the end of year six.

After the completion of Phase 8, Inland Fiber Networks will begin construction on Phase 8, which includes census block 530750010001.

Starting at the intersection of Benedict Rd and Halpin Rd, the first path will head south east along Halpin Rd to Kamerrer Rd and splits off north and south. The north path travels along Kamerrer Rd and ties into the backbone along WA-194. The south path travels south along Kamerrer Rd to Ewartsville Rd. This path services census block 530750003002, but loops back around to tie into census block 530750010001 (Phase 8) at the intersection of Klemgard Rd and Ryan Rd. From here, the path splits along each road. One path follows Klemgard Rd west to the intersection of Klemgard Rd and Story Rd, heading in each direction. One path continues south along Klemgard Rd, servicing several homes before stopping. The other path continues north along Story Rd, with one path splitting off to service a home on Haeder road, and the other path servicing several homes along Story Rd before stopping.

Back to the intersection of Klemgard Rd and Ryan Rd, the other path continues south along Ryan Rd, servicing several homes before tying in to the backbone along Wawawai Pullman Rd.

For the next leg, starting at the intersection of Ryan Rd and Wawawai Pullman Rd, there will be several split offs. The first being a path along Union Flat Rd, which heads east to Little Rd, where the path splits. One path heads north east along Little Rd to service one home, and the other path continues along Union Flat Rd, and turns off at M Druffel Rd, heading east to US-195 and stopping here to finish this leg of the census block.

The next leg starts back at the intersection of Ryan Rd and Wawawai Pullman Rd, traveling south and servicing homes along the way. One split off occurs at Boone Hill Rd, where one path heads north along the road to service one home before stopping. After this, the path heading south along Wawawai Pullman Rd continues to the intersection of Wawawai Grade Rd, Baker Rd, and Wawawai Rd.

One path travels along Wawawai Rd to the east, stopping at Rimrock Rd. Another path heads south along Baker Rd, continuing to the end of this road. The final path travels west along Wawawai Grade Rd all the way to Wawawai Rd, then heading south. This backbone continues south along Wawawai Rd for miles before ending at the bridge intersection of WA-193 and WA-128, ending at the state border of Washington and Idaho. This concludes Phase 8 and census block 530750010001.

Completion of Phase 8 will provide FTTH service to the 82 locations residing within. Census block 530750010001 will be completed by the end of year six, bringing the total number of service locations reached to 100% of the total bid locations.

3. Network Management and On-going Operations. The applicant's detailed description should:

a) Describe the applicant's plans for monitoring network usage/capacity, performance, congestion, and other parameters.¹

We actively monitor the traffic loads on our network using Zabbix to analyze network performance and determine near and long term upgrade or expansion requirements.

Any PON showing utilization rates at or above 80% more than 4 times in one month will be split.

When any middle mile link capacity exceeds 80% for more than 4 times in one month, capacity will be augmented.

When total broadband feed utilization exceeds 60% of total available, we will begin procuring additional bandwidth.

b) Describe how the applicant will maintain the performance and quality of the service for the duration of the 10-year support term.²

Answered above.

c) Describe who will provide these services. Will the applicant: 1) use existing internal organizations, 2) use contracted management service providers, 3) create new internal organizations, or 4) engage new contractors?

We run our own infrastructure for monitoring and management, and will continue to do so.

d) Describe how the applicant will comply with Commission performance measures for speed and latency.³ The description should include whether the applicant plans to use the Measuring Broadband America (MBA) system, off-the-shelf testing mechanisms such as existing network management systems and network management tools, or provider-developed self-testing mechanisms.

DZS ONTs include support for the MBA system which we will utilize for end user total performance. The parts of our network and our augmentation plans are detailed in part (a) above.

4. Network Diagram. The network diagram must be certified by a professional engineer and should:

Diagram and certification attached as separate documents.

