

Fish, Robert

From: Fish, Robert
Sent: Tuesday, November 9, 2021 12:51 PM
To: programcoordinator; Adam Bornstein; Hallquist, Christine
Subject: FW: VCUDA Allocation and Pricing

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.


From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 9, 2021 12:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: VCUDA Allocation and Pricing

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Per your request, we were able to do the 2000 mile split with an equal 50/50 split based on allocation request from NEK and VCUDA.

Below is the breakdown as it applies to VCUDA.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT-144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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Fish, Robert

From: Hallquist, Christine
Sent: Thursday, December 9, 2021 4:54 PM
To: Adam Bornstein; Fish, Robert
Subject: RE: Two things as requested

Thanks. I was working from third party information. I will update the presentation to reflect these numbers. Very impressive.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Thursday, December 9, 2021 4:50 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Two things as requested

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okay...it was just aligning Christine's presentation with the press release...whatever you think works...just wanted to flag

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, December 9, 2021 4:46 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Fwd: Two things as requested

Hi Adam this is the cost just for the Okudah proposal. I don't have an exact cost savings for NEK but it should be even more

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, December 8, 2021 5:11 PM
To: Fish, Robert
Subject: Two things as requested

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

CVFiber	\$302,016
DVFiber	\$370,656
Lamoille	\$143,352
NWCUD	\$101,112
Maple	\$184,272
VCUDA	\$1,101,408

Rob,

The above table represents our savings on 2021 prices versus those of 2022.

Here is a proposal for a matching funds policy to be added to the revised RFP.

Please note this is not an official recommendation of VCUDA or of any CUD.

The VCBB will provide matching funds for the investment of local relief funding from the American Rescue Plan in CUDs. Each CUD will be designated with a maximum match amount, devised based on the percentage of the state's underserved addresses that lie within its territory.

Maple: \$1,450,000
CVFiber: \$1,545,000
DVFiber: \$1,700,000
ECFiber: \$900,000
Lamoille: \$1,100,000
NEK: \$3,800,000
Northwest: \$1,500,000
Otter Creek: \$660,000
SouthernVT: \$630,000

Additionally, there will be matching funds reserved for towns that are not in a CUD. The VCBB will match local ARPA funds invested with an eligible provider that will be serving a town along the lines of a universal service plan, up to an amount that reflects the percentage of underserved addresses in non-CUD towns statewide.

Non-CUD Towns: \$1,715,000

As such, the fund for ARPA matches will total \$15,000,000.

CUDs and other eligible providers may provide details of ARPA investments that they have received to the VCBB, at which point the Board may approve or deny the request based on the amount of remaining match funds.

Hope this helps.

Will

Fish, Robert

From: Fish, Robert
Sent: Saturday, October 23, 2021 12:55 PM
To: Hallquist, Christine; Christine Hallquist
Subject: RE: Fiber share based on road miles

Ok – Then let's forward you analysis on to Doug Farnham and ask for a letter approving that amount for Fiber and Electronics Purchases. We still don't have a quote for substituting the 72 for the 47, but here are the quotes at the moment.

Part Number	Member Cost /Foot	Total Footage	Extended Member Cost
OFS-AT-3CEH2YT-24	0.27	1,320,000	\$356,400
OFS-AT-3CEH2YT-48	0.36	1,320,000	\$475,200
OFS-AT-3CEH2YT-144	0.88	2,640,000	\$2,323,200

The goal is for him to issue a letter approving spending \$X for materials via the construction program.

Also, we need him to up the amount available to the preconstruction program to address the Make-Ready issue.

Thanks

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:51 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: Re: Fiber share based on road miles

That is why we don't wanna get too far ahead of ourselves in terms of getting pre-stocked with the fiber. 2000 miles is probably safe, 3000 you start getting risky because do you need the detailed design

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:48:45 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>

Subject: Re: Fiber share based on road miles

That would be practically impossible at this point. That would probably take about 24 hours of work. Even then, it would not be much value. We are better off assuming that the cable percentages are about even for now. That is an analysis that requires detail design. This is the best we're gonna do right now.

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From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Saturday, October 23, 2021 12:46:46 PM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>

Subject: RE: Fiber share based on road miles

Is it possible to remove cabled areas from the analysis?

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Saturday, October 23, 2021 12:45 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>

Subject: Re: Fiber share based on road miles

I would not be able to give a breakdown by strands. That has to be done as part of the detail design. We can only use an estimate right now, and let's stick to what we determined before. 50% 144, 25% 72, and 25% 24

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Saturday, October 23, 2021 12:44:22 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>

Subject: Re: Fiber share based on road miles



Done

Photo



Robert >

them all moving along finally

Nice

Read 11:30 AM

Today 12:39 PM

OK. You have this year's analysis by road miles. Well the road miles look like a lot, this includes cable areas. Well we should do an analysis removing cabled areas, that would take far too long. Overall, that should equal out in the end. I did update to include the towns you mentioned. I also removed the

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Saturday, October 23, 2021 12:40:19 PM
To: Christine Hallquist <christinehallquist@gmail.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Fiber share based on road miles

Also, my phone is being used as a sound machine at the moment. Get me on chat if you need me for the next hour or so.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Christine Hallquist <christinehallquist@gmail.com>
Sent: Saturday, October 23, 2021 12:37 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: Fwd: Fiber share based on road miles

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----- Forwarded Message -----

Subject: Fiber share based on road miles
Date: Sat, 23 Oct 2021 12:29:48 -0400
From: Christine Hallquist <christinehallquist@gmail.com>
To: christine.hallquist@vermont.gov

EC fiber has the served areas removed

CUD	Road Miles Share	
NEK Community Broadband	3011	26%
Lamoille FiberNet	655	6%
CVFiber	1443	12%
EC Fiber	706	6%
Addison	1055	9%
Otter Creek	998	9%
Southern Vermont	842	7%
Deerfield Valley	1543	13%
Northwest	<u>1318</u>	11%

Total Miles 11573

Fish, Robert

From: NEK Executive Director <director@nekbroadband.org>
Sent: Thursday, December 9, 2021 5:12 PM
To: Fish, Robert
Cc: Adam Bornstein; Nate Clark; programcoordinator; Gregory Huysman; Hallquist, Christine; schapin@vsecu.com
Subject: Re: Fiber - DRAFT Press Advisory (Resend)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

So - I just got all my RFP quotes in. I had one quote that was almost the same - I will do the math now - won't be super high but the leadtime was 2 months longer. Everything else was significantly higher and longer.

Christa

On Thu, Dec 9, 2021 at 5:05 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

I am still waiting for #'s from NEK, but here are the savings vs the 2022 prices for the VCUDA purchase. Since the purchase was similar mileage, I would expect the savings to be equal of greater, but please confirm Christa.

CVFiber	\$302,016
DVFiber	\$370,656
Lamoille	\$143,352
NWCUD	\$101,112
Maple	\$184,272
	VCUDA
TOTAL	\$1,101,408

Rob Fish

Deputy Director

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Thursday, December 9, 2021 4:35 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Nate Clark <nclark@vermontcf.org>; NEK Executive Director <director@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; Gregory Huysman <ghuysman@vsecu.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>; schapin@vsecu.com
Subject: Re: Fiber - DRAFT Press Advisory (Resend)

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Just a fact check -

This deal allows the CUDs to purchase fiber at 2021 prices that will arrive in time for construction next year and save the state up to \$2 million.

and in Christine's presentation for tomorrow...this number is just \$1M

A

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, December 9, 2021 3:52 PM
To: Nate Clark <nclark@vermontcf.org>; Adam Bornstein <abornstein@vermontcf.org>; NEK Executive Director <director@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; Gregory Huysman <ghuysman@vsecu.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>; schapin@vsecu.com <schapin@vsecu.com>
Subject: RE: Fiber - DRAFT Press Advisory (Resend)

Thank you Nate. I've updated the release. Below is the new Summary Description. I made your corrections and adjusted some language. I'd prefer to send this out tonight.

VSECU – Do we have confirmation who will be speaking?

Any other comments?

Thanks

Rob

Summary:

On Monday morning, the Vermont Community Broadband Board (VCBB), in coordination with the Vermont Communications Union Districts, VSECU, the Vermont Community Foundation (VCF), and other partners will hold a press event to announce an innovative deal that ensures Communications Union Districts (CUDs) have access to the materials necessary to begin construction as early as next Spring.

Lead times for the purchase of eligible, domestically-produced fiber are currently as high at 52 weeks. Prices for purchase in 2022 prices are also 30-40% higher. This deal allows the CUDs to purchase fiber at 2021 prices that will arrive in time for construction next year and save the state up to \$2 million.

Participants at the event will also share information on opportunities for Vermont towns, businesses, and additional partners to assist in overcoming the two other major challenges facing groups planning to construct broadband infrastructure next year: access to capital and securing the necessary workforce.

Rob Fish

Deputy Director

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Fish, Robert

Sent: Thursday, December 9, 2021 3:51 PM

To: Nate Clark <nclark@vermontcf.org>; Adam Bornstein <abornstein@vermontcf.org>; NEK Executive Director <director@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; Gregory Huysman

<ghuysman@vsecu.com>; schapin@vesecu.com; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Fiber - DRAFT Press Advisory

Rob Fish

Deputy Director

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Nate Clark <nclark@vermontcf.org>

Sent: Thursday, December 9, 2021 3:20 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>; NEK Executive Director <director@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; Gregory Huysman <ghuysman@vsecu.com>; schapin@vesecu.com; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Fiber - DRAFT Press Advisory

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Thanks, Rob! I noticed a few typos, which I've revised in the attached. I also listed Dan Smith as the VCF representative, as he will be speaking on our behalf.

More tomorrow!

Nate

Nate Clark

Communications Associate

nclark@vermontcf.org

802-388-3355 ext. 246 (Office)

610-417-2822 (Direct)

(Pronouns: He/Him)

COVID-19 RESPONSE AND RECOVERY: The Community Foundation is committed to helping Vermont communities that are impacted by COVID-19.

Visit [VCF's COVID19 Response Fund](#) page to learn more about what we're doing.

Visit [CommonGood VT's](#) page for nonprofit resources.

Visit the [Statewide Covid19 Resources page](#) to find assistance where you live.

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, December 9, 2021 12:43 PM

To: Adam Bornstein <abornstein@vermontcf.org>; NEK Executive Director <director@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; Gregory Huysman <ghuysman@vsecu.com>; schapin@vesecu.com; Nate Clark <nclark@vermontcf.org>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: Fiber - DRAFT Press Advisory

Importance: High

Good Afternoon

A Draft Press Advisory is attached. Please send an edits, suggestions, and a green light as soon as possible. I plan to send this out at about 4:30 (or earlier w greenlights from everyone). In particular, I'm struggling with a) what to call "this" – Is it a deal, arrangement, collaborative effort; and b) how much to say in advance.

Please send quotes and confirm who will be speaking and suggested talking points. My plan is to draft the press release and supporting materials later tonight or tomorrow morning.

Thanks.

Rob

Press Advisory (DRAFT)

What: Press Conference to Announce Innovative Public-Private Deal to Address Supply Issues and Accelerate Fiber Broadband Construction

Who: Vermont Community Broadband Board, VSECU, Vermont Community Foundation, Vermont Communications Union Districts Association (VCUDA), NEK Broadband.

Location: VSECU, 1 Baily Avenue, Montpelier, VT

When: Monday, December 13 at 10 AM

Contact: Vermont Community Broadband Board

Rob Fish, 802-522-2617, Robert.fish@vermont.gov, 802-522-2617

Summary:

On Monday morning, the Vermont Community Broadband Board (VCBB), in coordination with the Vermont Communications Union Districts, VSECU, the Vermont Community Foundation (VCF), and other partners will hold a press event to announce an innovative deal that ensures Communications Union Districts (CUDs) have access to the materials necessary to begin construction as early as next Spring.

Lead times for the purchase of eligible, domestically-produced fiber are currently as high at 52 weeks. Prices for purchase in 2022 prices are also 30-40% higher. This deal allows the CUDs to purchase fiber at 2021 prices that will arrive in time for construction next year and save the state up to \$2 million.

The event will also present opportunities for Vermont towns, businesses, and other partners to assist in overcoming the two other major issues challenges facing groups planning to construction broadband infrastructure next year: access to capital and securing the necessary workforce.

Program:

- **10:00 Introductions and Welcome: Overcoming the Obstacles to a Successful Construction Seasons** – *Christine Hallquist, Executive Director Vermont Community Broadband Board*
- **10:05 Overview of the Deal** – *Robert Fish, Deputy Director, Vermont Community Broadband Board*
- **10:10 Communications Union Districts**

- *Will Anderson, Program Manager, Vermont Communications Union Districts Association (VCUDA)*
- *Christa Shute, Executive Director, NEK Broadband*
- **10:15 Financial and Philanthropic Partners**
 - *Greg Huysman, Director of Business Lending and Services, VSECU*
 - *Adam Bornstein, Mission Investment Manager, Vermont Community Foundation (VCF)*
- **10:20 Closing – Address Working Force Concerns and a Call to Action**
- **10:25 Q&A**

There will be time at the end of the conference for individual interviews.

Fish, Robert

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 12, 2021 8:48 AM
To: Fish, Robert; Hallquist, Christine
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hey Rob, just tried calling you back. I got your message from yesterday.

I do have an opening at 4:00pm this afternoon. Would it help if I would bring someone to the call to discuss the contractual questions you have?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, October 12, 2021 8:38 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob
Do you have time for a call later this afternoon? Thanks.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 11, 2021 5:20 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Spec sheet attached.

I am still working on the contractual portion. The current contracts we have in place does not address letters of credit. Our standard MSA only has language like Net30 so waiting for clarification from my CFO.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 11, 2021 9:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Also, Bob – Could we please have the full specs on the fiber available? Thanks.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
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robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:32 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

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One clarification. It most likely won't be all 1000 miles it will be the first 300-400 miles. May another 300-400 with the remainder in June as it stands now.

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:28:30 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Thank you! You scared me for a moment.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:27:51 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Beginning of April

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:26:37 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Hi Bob
Delivery for the first 1000 would still be March or April? Thanks
Rob

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 5:05:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Happy Friday Rob and Christine,

Sorry for the late response but just got off the phone with David and team.

Here is what I know right now. For the first 1000 miles the pricing we gave for 144 and 48 is still good, but if you are considering moving forward with NRTC we will need to get a PO in place soon. OFS is putting pressure on us to make the commitment.

We have a request in for 24 but I have not heard back. I am hoping early next week. For the second 1000 miles, we are anticipating that cost will increase between 30-40% based on what OFS is telling us right now.

Delivery, because of the impact of COVID, OFS is struggling to keep the production lines fully staffed. They originally told us production on cable could start as early as December, that has now slipped to March. Hence why they are pushing us to commit to get into their product schedule.

Once production begins, they will produce between 300 to 400 miles per month until order is fulfilled. It's a very fluid situation right now and I will communicate if anything should change as soon as I know.

That's what I have to share for now and will get back to you with the 24 strand pricing as soon as I get it. Let me know if you have any questions and have a great weekend!



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, October 7, 2021 3:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

I'm still working to finalize numbers, but may have figured out an easier way. Is it possible to get 3 strand counts? 50% of 144; 25% of 48; and 25% of 24. What would the cost be for the first 1000? And for an additional? When could the additional be made available? We need to work with our funders to see if it's possible to do 2000 total. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 4, 2021 12:07:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 11:48 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 2:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:53 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
That may work, I'll run that thought internally and see what response I get back.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:42 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate


We would have a letter of credit guaranteeing the full purchase of all the 1,000 miles. Basically, we'd have a third party float the payment – or assurance of payment - that would be paid back to them via the grants as they are awarded. As you can see, we are still working out details.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:40 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
That is correct, however, if that proves to be problematic let me know and I can setup a call to discuss in more detail. We just want to limit our liability of spools of fiber in our leased warehouse that may not get used.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:31 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

So payment would be due as soon as it arrives at NRTC?
Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:28 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them and the CUDs. For NRTC purposes, VCBB would be our customer.
2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Thank you so much for the quick turnaround. I'm working a few leads on our end to help vet this and move quickly. What would you need upfront to secure this 1000 miles capacity?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, September 29, 2021 10:05 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Just received this morning,

Below is pricing for 1000 miles of OFS 48 and 144 count Loose Tube fiber for NEK. Please note this is very good pricing considering current market conditions. This pricing is based upon our current fiber allocation set up with OFS and is only available for the amount of fiber shown below. We anticipate that future pricing for fiber will be far higher and we are working to get more details on that. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. This pricing is for 5,280,000 feet of 48 and 5,280,000 of 144 fiber. Please note, once the order is placed, it cannot be cancelled.

Part Number	Cost /Foot	Total Footage	Extended Cost
OFS-AT-3CEH2YT-048	0.36	5,280,000	\$1,900,800
OFS-AT-3CEH2YT-144	0.88	5,280,000	\$4,646,400



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

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What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Tuesday, September 28, 2021 9:30 AM

To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,

Christine Hallquist

Executive Director

Vermont Community Broadband Board

Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Tuesday, September 28, 2021 9:24 AM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I wanted to send a note and let you know that I have not forgotten your request for quote.

Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can.

The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop


From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:30 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Got it, I just spoke to Kevin and we will get a quote over to you.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 2:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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Fish, Robert

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 8:54 AM
To: F. X. Flinn
Cc: programcoordinator; Fish, Robert; Hallquist, Christine
Subject: OFS Allocation

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning everyone, NRTC held our weekly meeting with OFS last night. OFS gave us a deadline 12/13 as the cutoff to get our allocation PO placed with them in order to hold the beginning delivery of fiber in the April/May timeline. Any time past that we are at the mercy of anyone else that jumps in the production schedule(its filling up fast) and we are looking at a mid to late summer delivery. If you plan to move forward I will need the signed quote sent to us by noon 12/13.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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Fish, Robert

From: Fish, Robert
Sent: Thursday, December 9, 2021 4:47 PM
To: Adam Bornstein; Hallquist, Christine
Subject: Fwd: Two things as requested

Hi Adam this is the cost just for the Okudah proposal. I don't have an exact cost savings for NEK but it should be even more

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, December 8, 2021 5:11 PM
To: Fish, Robert
Subject: Two things as requested

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CVFiber	\$302,016
DVFiber	\$370,656
Lamoille	\$143,352
NWCUD	\$101,112
Maple	\$184,272
VCUDA	\$1,101,408

Rob,

The above table represents our savings on 2021 prices versus those of 2022.

Here is a proposal for a matching funds policy to be added to the revised RFP.
Please note this is not an official recommendation of VCUDA or of any CUD.

The VCBB will provide matching funds for the investment of local relief funding from the American Rescue Plan in CUDs. Each CUD will be designated with a maximum match amount, devised based on the percentage of the state's underserved addresses that lie within its territory.

Maple: \$1,450,000
CVFiber: \$1,545,000
DVFiber: \$1,700,000
ECFiber: \$900,000
Lamoille: \$1,100,000
NEK: \$3,800,000
Northwest: \$1,500,000
Otter Creek: \$660,000

SouthernVT: \$630,000

Additionally, there will be matching funds reserved for towns that are not in a CUD. The VCBB will match local ARPA funds invested with an eligible provider that will be serving a town along the lines of a universal service plan, up to an amount that reflects the percentage of underserved addresses in non-CUD towns statewide.

Non-CUD Towns: \$1,715,000

As such, the fund for ARPA matches will total \$15,000,000.

CUDs and other eligible providers may provide details of ARPA investments that they have received to the VCBB, at which point the Board may approve or deny the request based on the amount of remaining match funds.

Hope this helps.
Will

Fish, Robert

From: Fish, Robert
Sent: Wednesday, November 24, 2021 4:18 PM
To: David Jones; David Healy; jhansen@cvfiber.net; Executive Director; Evan Carlson; Ann Manwaring; sean@nwcud.com; Val Davis; programcoordinator; kristen@nekbroadband.org; Steve Huffaker; Hallquist, Christine; Jerry Diamantides; Magna Dodge; Nancy Cornell; Sean Kio; Emily Klofft
Subject: Fwd: Exact needs

FYI

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13 PM
To: Fish, Robert
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 24, 2021 4:03 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful. Thanks and have a great holiday.

Rob

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Fish, Robert

From: Fish, Robert
Sent: Tuesday, November 9, 2021 12:51 PM
To: programcoordinator; Adam Bornstein; Hallquist, Christine
Subject: FW: VCUDA Allocation and Pricing

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.


From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 9, 2021 12:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: VCUDA Allocation and Pricing

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Per your request, we were able to do the 2000 mile split with an equal 50/50 split based on allocation request from NEK and VCUDA.

Below is the breakdown as it applies to VCUDA.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT-144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: CUD fiber commitments
Date: Thursday, November 18, 2021 9:11:33 AM

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Rob,

For an update, Lamoille is on board, they signed the authorizing resolution and have indicated they'll be signing for 140 to 200 miles. Final count by tomorrow.

DVFiber has indicated that they can take on additional mileage of 48-count fiber, if need be to complete the purchase. They would prefer to stick to the 300 mile commitment they've already made.

I'm meeting with Sean Kio of Northwest this afternoon.

At this point, if Northwest goes like I think they will today, we will have 250 miles of 48-count fiber left to commit.

From: [NEK Executive Director](#)
To: [Bob Hagarman](#); [Kevin Fitzgibbons](#); [Jason Neeley](#); [Fish, Robert](#); [Hallquist, Christine](#); [programcoordinator](#)
Subject: fiber allocation
Date: Tuesday, November 9, 2021 2:38:11 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Our fiber allocation for the 1000 miles purchased by NEK Broadband directly will be as follows:

360 miles of 48 strand;

270 miles of 96 strand;

270 miles of 144 strand; and

100 miles of 96 strand ADSS that can be used along the state fiber network.

Please let me know if you have any questions. I have cc'd VCBB and VCUDA.

Christa

Christa Shute
Interim Executive Director
NEK Broadband
802-793-7077

From: [Fish, Robert](#)
To: [programcoordinator](#); [Steve Huffaker](#); [David Jones](#); [David Healy](#); [Jeremy Hansen](#); [Magna Dodge](#); [Nancy Cornell](#); [Ann Manwaring](#)
Subject: Fiber breakdown
Date: Friday, October 29, 2021 9:26:00 AM

Good Morning

We are working to finalize the fiber count breakdown for the 1,000. NEK is leveraging other funds to secure their 1,000 miles. This change was made to secure the deal on the 1,000 miles at same price split between the other CUDs.

1. If we go to 72 count vs 36, the total amount of fiber available decreases to 1800 miles (and the price goes up) if the breakdown is still 50/25/25. They have an allotment of total strands that can be divided among different counts. Can you each work with 36 instead of 72?
2. Since we are now facilitating a purchase for slightly denser areas, do we still want 50% of 144? If you now have a more detailed breakdown of what you would need between 144, 48, 24 OR 144, 72, 24 (OR 144,72,96 which may be cheaper!), please share ASAP.
3. Do you have any information on when the different types of fiber would be needed? We have the ability to shift the make-up in the shipments to ensure needs are met.

I think the goal is going to be to ensure enough fiber for the groups that are ready with some small amount remaining to allow other groups to get started for this first purchase.

Thank you

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Fiber commitments update
Date: Wednesday, November 10, 2021 9:34:30 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Hope you are doing well. Looks like to some extent we are in the hands of the lawyers now but honestly I like the way this is progressing.

Last night, CVFiber Board authorized their Executive Committee to fill in the details and sign a commitment to VCUDA at their meeting this Thursday. I'll be in attendance.

I am going to proceed with the same idea with DVFiber tonight, with the documents Primmer provided us. If modifications are necessary per the VCF lawyer, we will adjust accordingly.

If the Letter of Credit is indeed for 100%+ of the purchase price, we may have more resources than we know what to do with. I don't know to what extent CUD's know their need for other hardware, in terms of specs or quantity. We will know that with detailed design in the next two months, though. My thinking is wait for clarification and documents on the Letter of Credit from VCF and proceed accordingly.

It would be great if we could go ahead with a second purchase in December or so when more detailed design has been conducted. Maybe that means waiting to leverage the entire LOC.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: Fiber in NRTC Inventory
Date: Monday, December 6, 2021 3:22:45 PM
Attachments: [image001.png](#)
[Available Inventory 120121.xlsx](#)

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Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
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nrtc.coop

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From: [Fish, Robert](#)
To: [programcoordinator](#); [NEK Executive Director](#)
Subject: FW: 2022 prices
Date: Wednesday, December 8, 2021 11:58:00 AM
Attachments: [image001.png](#)

Here you go

Rob Fish
Deputy Director
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 10:29 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: 2022 prices

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Glad a checked, 24 strand jumps 39% for 2022.
2021 = .27 per foot
2022= .38 per foot

72 strand is not on our contract pricing, so I am giving you an average increase of 35%
2021 = .56 per foot
2022 = .75 per foot



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:59 AM
To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: 2022 prices

Thanks for sharing. There were #'s in the spreadsheet for 2022, but not for 24 and 72 count. Do you have those?


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 9:31:17 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: 2022 prices

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See column G. This is what I would call street level pricing.

As an FYI, we are currently in negotiation to lock our 2022 pricing. Don't have that to share just yet.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:07 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: 2022 prices

Hi Bob

Can you please send me the price list for OFS for 2022? I'm attempting to put a # on the savings we are realized by acting now. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Fish, Robert](#)
To: [Adam Bornstein](#)
Subject: FW: Estimate
Date: Thursday, September 30, 2021 1:34:00 PM
Attachments: [image001.png](#)

Fyi - Also, we are talking with VELCO too on this issue.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:28 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them and the CUDs. For NRTC purposes, VCBB would be our customer.
2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



Bob Hagarman
Director, Strategic Business Implementation
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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Thank you so much for the quick turnaround. I'm working a few leads on our end to help vet this and move quickly. What would you need upfront to secure this 1000 miles capacity?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, September 29, 2021 10:05 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Just received this morning,

Below is pricing for 1000 miles of OFS 48 and 144 count Loose Tube fiber for NEK. Please note this is very good pricing considering current market conditions. This pricing is based upon our current fiber allocation set up with OFS and is only available for the amount of fiber shown below. We anticipate

that future pricing for fiber will be far higher and we are working to get more details on that. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. This pricing is for 5,280,000 feet of 48 and 5,280,000 of 144 fiber. Please note, once the order is placed, it cannot be cancelled.

Part Number	Cost /Foot	Total Footage	Extended Cost
OFS-AT-3CEH2YT-048	0.36	5,280,000	\$1,900,800
OFS-AT-3CEH2YT-144	0.88	5,280,000	\$4,646,400



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:30 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:24 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Friday, September 24, 2021 3:36 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,

Christine Hallquist

Executive Director

Vermont Community Broadband Board

Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Friday, September 24, 2021 3:30 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

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M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, September 24, 2021 3:29 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 2:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: FW: Estimated Shipping Charges State of VT
Date: Thursday, November 11, 2021 2:56:51 PM
Attachments: [image001.png](#)
[image002.png](#)

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See below, one note, freight will be charged at cost, without any markup. Freight cost is fluctuating right now but this is what it is looking like.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
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From: Bill Cole <bcole@nrtc.coop>
Sent: Thursday, November 11, 2021 1:22 PM
To: David Primmer <dprimer@nrtc.coop>; Bob Hagarman <bhagarman@nrtc.coop>
Cc: Jim DaBramo <jdabramo@nrtc.coop>; Tom Whitaker <twhitaker@nrtc.coop>; Alana Pilkington <APilkington@nrtc.coop>
Subject: RE: Estimated Shipping Charges State of VT

Bob,

The 150 miles of 48 fiber will require 40 reels and 144 fiber will require 40 reels. (20,000 foot reels)

So you are looking at:

48 Fiber can do 10 reels per truckload so you will need 4 truckloads of the 48 fiber for the 150 miles
144 reels you can do 6 reels per truckload so you will need 7 truckloads of the 144 fiber for the 150 miles

I was able to get some freight estimates online that vary greatly from \$5500 per truckload to \$7500 per truckload. It is a 950 mile trip from Greenfield to Vermont. You may want to figure on the higher side.

48 fiber/ 4 truckloads pricing is \$22,000 at the low end to \$30,000 on the higher end
144 Fiber/7 truck loads pricing is \$38,500 on the low end and \$52,500 on the higher end

Any questions please let me know.

Thanks



Bill Cole
Vendor Manager
2121 Cooperative Way, Suite 600, Herndon, VA 20171
M 717-688-4864 E bcole@nrtc.coop
nrtc.coop

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From: [Fish, Robert](#)
To: [programcoordinator](#)
Subject: FW: Exact needs
Date: Monday, November 29, 2021 8:55:00 AM
Attachments: [image001.png](#)

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 29, 2021 8:36 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Keep in mind, once manufacturing begins its not easily changed, it impacts the production line. I was told 45 day notice to make a change but could be longer so its best to get this as close as we can from the very beginning.

Here is the latest allocation with the addition of 24 strand.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	100	528,000	\$ 0.27	\$ 142,560.00
OFS-AT-3CEH2YT-048	360	1,900,800	\$ 0.36	\$ 684,288.00
OFS-AT-3CEH2YT-072	290	1,531,200	\$ 0.56	\$ 857,472.00
OFS-AT-3CEH2YT144	330	1,742,400	\$ 0.88	\$ 1,533,312.00
	1,080	5,702,400		\$ 3,217,632.00



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:24 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Exact needs

Thank you Bob! And What flexibility do we have after the first few shipments? And do we gain anything by keeping them in the same type of fiber? Have a great holiday

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13:06 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful. Thanks and have a great holiday.

Rob

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From: [Fish, Robert](#)
To: [Hallquist, Christine](#)
Subject: FW: Fiber Prepurchase -- Specifications
Date: Wednesday, October 6, 2021 12:50:00 PM

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: David Jones <clerk@dvfiber.net>
Sent: Wednesday, October 6, 2021 12:33 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Cc: Ann Manwaring <Chair@dvfiber.net>; Steven John <vice.chair@dvfiber.net>; Kerem Durdag <kdurdag@staff.gwi.net>
Subject: Fiber Prepurchase -- Specifications

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Hi Rob and Will,

I believe I have provided our general specification for fiber cable previously but am repeating it here in case it has been lost in the shuffle:

Dielectric, gel-free, loose tube, SMF28 of various strand counts (288, 144, 96, 48).

We prefer Corning or Commscope but the spec is most important.

Please advise if this is not the same as what other CUDs are considering.

Many thanks,

David
David W. Jones
Operations Committee Chair

DVFiber | 802.368.2217

From: [Fish, Robert](#)
To: [Hallquist, Christine](#)
Subject: FW: FW: Mileage answers
Date: Monday, October 4, 2021 10:18:00 AM

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: David Jones <clerk@dvfiber.net>
Sent: Monday, October 4, 2021 10:07 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Ann Manwaring <Chair@dvfiber.net>; Steven John <vice.chair@dvfiber.net>; WAnderson@vcuda.org
Subject: Re: FW: Mileage answers

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Rob,

We hope the statewide fiber purchase will extend beyond the CUDs that are working with NRTC.

Our goal is to complete our Phase One next year, which will cover an estimated 378 road miles.

We provided to Will a few weeks back a loose specification: Corning or Commscope dielectric, gel-free, loose tube, SMF28 of various strand counts (288, 144, 96, 48.).

We will not have a more detailed spec, e.g., how many miles of what fiber counts until 3 weeks after we get preconstruction grant approval and can complete a high level design.

Many thanks,

David

David W. Jones
Operations Committee Chair

DVFiber | 802.368.2217

On Mon, Oct 4, 2021 at 8:37 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Ann and David

I requested from Will the fiber count needs of each CUD. DVFiber wasn't included. Based on the HLD design, do you know how many miles you will need next year. An estimate is fine. Also, a breakdown between 1) 144, 72 count and 2) 144, 74, and 48 would be helpful. At this time, it looks to be more economically to focus on 2-3 counts in bulk vs 6-8 where the factory needs to be reconfigured for small amounts of other fiber.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, October 1, 2021 2:20 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Re: Mileage answers

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I have tried to get an answer on that question as well, as I mentioned yesterday there hasn't been anyone with a hard answer as to what they will need yet. A couple such as Lamoille are planning on reporting back to me about it.

The general impression I have gathered is that the majority of what will be needed early on is 144-count. For the longer-distance "backbone" of the networks. As for the ratio of what will be needed with that and 72- and 48-count, I really can't say but will keep trying to press for an answer.

Will

On Fri, Oct 1, 2021 at 2:16 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Yeah easy fiber is sat with their fiber for the year from what I've been told. I don't believe auto Creek is gonna be doing anything on their own. I also don't know how Southern Vermont is going to use it but ...

Any chance you could try to reach back out to these groups and see if they have suggestions on

how to a lot of between 144 and 72 or potentially 144 73 and 48

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, October 1, 2021 2:04:17 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Mileage answers

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

CVFiber: 600 miles

NEKBroadband: 500 miles (highly approximate, based on projections for a five-year period)

LamoilleFiberNet: 100 miles

Southern Vermont CUD: 217 miles (Need for materials would vary based on outcome of NTIA grant application)

So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do hope this helps at least going forward for Monday.

Will

From: [Fish, Robert](#)
To: [programcoordinator](#)
Subject: FW: monthly allocation
Date: Thursday, October 28, 2021 4:19:00 PM
Attachments: [image001.png](#)

Hi Will

The new outstanding question is whether Maple will accept 48 instead of 72. The higher the number of strands, the lower the total allotment -2000 vs 1800. One question always leads to another! See the email below.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, October 28, 2021 3:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: monthly allocation

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Let me know if this answers your questions.

Question 1:

The amount produced per month will depend on the allocation everyone decides on. Here is what happens when fiber count increases based upon the allocation request.

When we received the initial request from VCBB it was

144 – 50%

48 – 25%

24 – 25%

It worked out to a clean 2000 miles making it an easy 50/50 split at a 1000 miles each.

We are working on the pricing for the following

144 – 50%

72 – 25%

24 – 25%

It drops the mileage allocation down to approximately 1800 miles so it would be a 50/50 split of approximately 900 miles each.

The drop by 200 miles may matter based on the needs of CUD allocation if you move to 72 count, including the additional cost of 72 count fiber. Let us know what your thoughts are regarding that shift.

Once we have this locked down we will be able to give a more accurate forecast of miles per month.

Question 2:

The easy answer is what mileage is produced per month its split 50/50. However, I think NRTC would be open to looking at the allocation on a per month basis and see how that would work out between all parties. I think if we come to terms on all fronts it's a matter of getting everyone on a call to hash out the details.

Question 3:

We do have control over how we flow the fiber allocation out to the CUDs. As an example we may want to consider the first several shipments to be heavier on 144 so backbone construction can begin and then pivot into the lower fiber counts as allocation rolls out month over month for distribution construction.

Here is the catch, we have to give the factory 45 days notice on any change to the allocation that is being made. So its very important we get as much of this right at the beginning because we will not be able to make last minute on the fly changes to that allocation once the order is placed.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, October 28, 2021 2:03 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: monthly allocation

Hi Bob

Few more questions.

1. On the call your mentioned 350 mils/mo. Is it 300 or 350?
2. If NEK has a separate deal, how do we allocate between two
3. What will the fiber counts be each month? Are they a mix of the various counts?

Thanks

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: FW: Pre-purchasing update?
Date: Thursday, November 11, 2021 11:43:05 AM
Attachments: [image003.png](#)
[image004.png](#)
[image005.png](#)

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I don't think is sent this to you, very sorry please see below.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: David Primmer <dprimer@nrtc.coop>
Sent: Friday, November 5, 2021 9:11 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Bill Cole <bcole@nrtc.coop>; David Primmer <dprimer@nrtc.coop>
Subject: RE: Pre-purchasing update?

Good morning Bob,

In answer to Robert's questions below:

1. We have this answered with the allocations received on 11/08/21
2. Freight charges are not included in our pricing – we will add actual freight charges to the invoices for cable at cost. Not sure what Robert means by temporary storage, but it is not included in our pricing. We will ship to the NEK or VCUDA locations which they identify to us, based on a combination of their requested delivery schedule as well as available factory capacity.
3. Per our standard contract terms (I believe already shared with VCBB), "Customer, not NRTC Broadband, is responsible for any and all damages or loss of shipments of Customer's orders of Products once the Products have been tendered to the carrier at NRTC Broadband's shipping point. Customer is responsible for providing insurance for such shipments..."
4. No 45 days is not sufficient notice to change manufacturing output in terms of fiber count. Per contract, we must notify our supplier **12 weeks prior to the scheduled ship date** of any change to fiber count of the cable requested. Furthermore, shifting between ADSS and loose tube cable types is not supported by our contract. We are able to shift delivery locations with at least four weeks notice prior to the scheduled ship date.

Regards,
Dave



Dave Primmer
Vice President Supply Chain Management
2121 Cooperative Way, Suite 600, Herndon, VA 20171
D 703-787-7281 **C** 571-436-4719 **E** dprimer@nrtc.coop
www.nrtc.coop

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, November 4, 2021 9:10 AM

To: David Primmer <dprimer@nrtc.coop>

Cc: Bill Cole <bcole@nrtc.coop>

Subject: FW: Pre-purchasing update?

David, this came in this morning from Rob.

- For question 1, I explained the allocation will be based on final request from NEK and VCUDA
- I referred him to the terms document we sent earlier, for questions 2 and 3 I pointed him to bullet 10 on the doc attached.
- Question 4, I have not answered this question but my understanding is that we can adjust with a 45 day notice but wanted to get clarification.
- Can you let me know any clarifications about these questions you would like me to send back to VCBB?
- I was in Herndon on Tuesday and explained to Bill that is looking like a 75% security on the fiber combining NEK and VCF LOC's.
- I sent clarification on the grant process to you and Bill yesterday.
- I am being told from NEK and VCF that the LOC's should be coming in today.
- Bill ask now that we got it to this point that I need to take this to Jim so Jim can present to Tim and Bill on which path he wants to take.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 **E** bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, November 4, 2021 8:17 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

Thanks Bob

The final allocation and amount will be important for the letter of credit. I'll check on the status of the LOC. Below are a few questions I'm hearing.

1. If NEK is finalized, how much fiber remains via this allocation – about the 1000? I.e. which fiber counts could be increased? I'm think we'd do the increase in the 48 or the 144.

24	300	1584000
48	200	1056000
72	200	1056000
144	300	1584000

2. Are there other costs not included in the estimate? I assume shipping, temporary storage are included, but want to confirm
3. Insurance – I assume the items are insured until they arrive?
4. Adjusting allotments – Will the # be set in stone or could it adjust some to be more exacting as the different groups get their detailed designs (with the fiber counts)? I'm not sure this will happen, but it's a question that I've been asked.
 - a. For instance, if the detailed designs come in and it's 325, 300, 175, 200, can that change the order and price if it's at least 45 days out (note those #'s are arbitrary)
 - b. When do you need the allotment to each CUD? – i.e. where it will be shipped

Thanks.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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Got it,

Have not received the letter of credit from anyone so we can move this forward. I believe what will happen once that is agreed upon is a version of the terms and conditions will be made official for signatures. We need the LOC language to add in and most likely the final fiber count may be required for the allocation.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 3, 2021 4:08 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: Pre-purchasing update?

VCUDA is made up of the CUDs...that's what I was referring too

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Wednesday, November 3, 2021 4:04:00 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Pre-purchasing update?

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The miles may be a little higher once we get the allocation solidified with NEK and VCUDA. I am juggling two sets of numbers in trying to balance this out. What's tricky is NEK threw in a 96 count ADSS cable request.

The only thing I think we will be able to share is once everything is locked in would be the terms and conditions. The terms are between NRTC to VCUDA, not to the CUDs.

So the way we see it is we are selling 1000 miles to VCUDA, how they disperse from that point would be up to them.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 3:57 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles?
I.e. go higher than 1,000?

	Miles	Feet	\$ per ft	Total	
	24	300	1584000	0.27	\$427,680.00
	48	200	1056000	0.36	\$380,160.00
	72	200	1056000	0.56	\$591,360.00
	144	300	1584000	0.88	\$1,393,920.00
		288	1000		\$2,793,120.00

Also, the CUDs are looking for paperwork to review – i.e. contract language. Anything I can share.

Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 3:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So I am close to getting the NEK allocation settled in. Based upon last week request. Here is where it stands.

The numbers don't match what you have below but its close.

Once we get everything locked down on the contract side then we can do a best and final for the allocation and place the PO.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	325	1,716,000	\$ 0.27	\$ 463,320.00
OFS-AT-3CEH2YT-048	205	1,082,400	\$ 0.36	\$ 389,664.00
OFS-AT-3CEH2YT-072	215	1,135,200	\$ 0.56	\$ 635,712.00
OFS-AT-3CEH2YT144	255	1,346,400	\$ 0.88	\$ 1,184,832.00
	1,000			\$ 2,673,528.00

I still have not received the LOC's from either party so still waiting to move this forward.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 2:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: FW: Pre-purchasing update?

And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b) if the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board

802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Pre-purchasing update?

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Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber
200 miles of 48-count fiber
200 miles of 72-count fiber
300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson
Program Coordinator, Vermont Communications Union Districts Association
WAnderson@vcuda.org
802-552-0273

VCUDA

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From: [Adam Bornstein](#)
To: [Fish, Robert](#)
Subject: Fw: price of fiber - 2022-2023 (forecast)
Date: Monday, October 25, 2021 8:38:21 AM

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i guess Bob is out of the office. is there someone you can forward this email to at nrtc?
the manufacturer PPI is at the all time lows so it would be great to have some insights that
point in another direction...A

From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Monday, October 25, 2021 8:35 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>; Paul Giuliani <pgiuliani@primmer.com>
Subject: price of fiber - 2022-2023 (forecast)

Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144
48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that
would be great.

Many thanks,

Adam

From: Fish, Robert
Sent: Tuesday, October 19, 2021 2:19 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Bob Hagarman <bhagarman@nrtc.coop>; Adam Bornstein <abornstein@vermontcf.org>; programcoordinator <programcoordinator@vcuda.org>; Paul Giuliani <pgiuliani@primmer.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: VT Fiber Conversation
When: Wednesday, October 20, 2021 1:30 PM-2:30 PM.
Where: Microsoft Teams Meeting

If there are others that should be invited, please forward the invite. That being said, let's keep this
focused. For instance, having every CUD chair would not be productive at this time. Thanks.

Rob

Microsoft Teams meeting

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From: [Fish, Robert](#)
To: [Hallquist, Christine](#)
Subject: Fwd: compiled fiber #'s
Date: Tuesday, October 5, 2021 5:13:01 PM

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Tuesday, October 5, 2021 4:47:16 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: compiled fiber #'s

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Rob,

I'll work on getting the bylaws changed, I think we can push that through but depending on what the lawyers say I have a feeling the process could take longer than we like. I'm going to push it.

I have had the same concern about the way NEK is shifting the allocation, let me see what I can do to find a way to balance the equation.

It's true that Consolidated will, in theory, provide all materials for Southern Vermont. But I think we need to operate under the assumption that they won't receive the grant from the NTIA that would fund the partnership.

NEK- 420 miles of 144 count, 280 miles of 48 count

DVFiber- 378 miles in some combination of 48, 96, 144, and 288.

Lamoille- 100 miles of 144 count

Southern Vermont- 217 miles, unknown specifications at this point in time.

Maple- Maple needs 63 miles of 48 count, and 15 miles of 144 count. Maple is supportive of the purchasing proposal and believes they may be able to use far more of 48 and 144 count than projected.

CVFiber- 600 miles for first phase of construction, more information incoming from David Healy in the next few days.

Northwest and Otter Creek- no information yet

The way I calculate the ratios out, between 144 and 48 count we are looking at a ratio of 55% to 45%. So for 1000 miles, 550 miles of 144-count and 450 miles of 48-count. I'm inclined to simply present this proposal to the VCUDA meeting. Many voices are leaning more towards an initial purchase of two kinds of fiber rather than all of one count. I think we simply don't have the information needed for the second purchase yet but that will emerge as soon as pre-construction this year.

Will

On Tue, Oct 5, 2021 at 1:51 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Thanks Will

Few things

1. Please check VCUDA's bylaws and make sure now change is necessary to move this forward.
2. With Maple; if I take the 12, 24, and 48 and assign that to 48 count; and the rest to 144, it's 70% 48 and 30% 144. Quite the opposite of NEK. I'm concerned that NEK's excess mileage, low density is shifting the percentage a bit too far.
3. SoVT: I'm concerned about SoVT needs – if they are going with Consolidated and the NTIA, I assume Consolidated would be providing the materials since it would have to match their specs exactly?
4. Without SoVT, we are at about 2000 miles. Before I can get a price quote, I need a breakdown. When I find the lead time for the second batch, I may be able to make the first batch all one type (144 the more expensive and where the discount would be most helpful) and the second batch the other (48).

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Tuesday, October 5, 2021 1:37 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Re: compiled fiber #'s

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Rob,

I'm working on it now, I've got conversations with Lamoille and Northwest today to see where they're at, as well as with Maple to address their concerns about an initial purchase that doesn't correspond exactly to their specifications.

I'm leaning increasingly towards pitching an initial purchase at the VCUDA meeting on Monday, for 700 miles of 144-strand count fiber, and 300 miles of 48-count. It's arbitrary sure, but it's based on what immediate construction needs will be and I'd like to approve this so that we can proceed with making a deal.

Let me know what you think, and I'll send you all my latest numbers before the end of the day.

Will

On Tue, Oct 5, 2021 at 12:45 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

Have you compiled the fiber #'s including the new data? Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Fish, Robert](#)
To: [David Jones](#); [David Healy](#); ihansen@cvfiber.net; [Executive Director](#); [Evan Carlson](#); [Ann Manwaring](#); sean@nwcud.com; [Val Davis](#); [programcoordinator](#); kristen@nekbroadband.org; [Steve Huffaker](#); [Hallquist](#); [Christine](#); [Jerry Diamantides](#); [Magna Dodge](#); [Nancy Cornell](#); [Sean Kio](#); [Emily Klofft](#)
Subject: Fwd: Exact needs
Date: Wednesday, November 24, 2021 4:18:11 PM
Attachments: [image001.png](#)

FYI

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13 PM
To: Fish, Robert
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 24, 2021 4:03 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful. Thanks and have a great holiday.

Rob

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From: [David Jones](#)
To: [Fish, Robert](#); [programcoordinator](#)
Cc: [Steven John](#); keith.thompson@dvfiber.net
Subject: Fwd: Fiber Specs
Date: Monday, November 15, 2021 11:06:18 AM

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Hi Rob and Will,

We agree with the quantities of 144, 72, and 48 count cables as proposed.

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

----- Forwarded message -----

From: **Chris Whelan** <cwhelan@staff.gwi.net>
Date: Mon, Nov 15, 2021 at 10:59 AM
Subject: Re: Fiber Specs
To: David Jones <David.Jones@dvfiber.net>
Cc: Kerem Durdag <kdurdag@staff.gwi.net>, Steven John <Steven.John@dvfiber.net>, Keith Thompson <keith.thompson@dvfiber.net>

Yes, the pricing and strand count adjustments make sense to proceed with.

Christopher Whelan
Director of Network Engineering
GWI

office 207-602-1115
cell 207-751-5013
www.gwi.net

On Mon, Nov 15, 2021 at 10:23 AM David Jones <David.Jones@dvfiber.net> wrote:

Hi Chris and Kerem,

I need confirmation that we should sign up for these quantities and prices:

Details	Unit	Quantity	Unit Price
48-strand count fiber cable	Miles	30	1900.80
72-strand count fiber cable	Miles	120	2956.80
144-strand count fiber cable	Miles	150	4646.40

The idea that NEK dropped out was a miscommunication.

Many thanks,

David
David W. Jones
Project Director

DVFiber

Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 8:53 PM David Jones <David.Jones@dvfiber.net> wrote:

Hi Chris and Kerem,

I noted that the draft VCUDA order form listed 144, 72, and 48 count fiber but no 24 count.

I asked if it would be possible to purchase 24 count and got the response below, including a part number.

I have no opinion about the proportions of the different strand counts are right and will rely on your input.

There is also the possibility that we could get more than 300 miles because at least one CUD, NEK, will pursue an RFP process rather than participate in the advance purchase now.

Many thanks,

David

David W. Jones
Project Director

DVFiber

Land: 802.368.2217
Cell: 917-538-4649

----- Forwarded message -----

From: **Will Anderson** <programcoordinator@vcuda.org>

Date: Thu, Nov 11, 2021 at 5:43 PM

Subject: Re: Fiber Specs

To: David Jones <David.Jones@dvfiber.net>

David,

It may still be possible, I will have to inquire to Rob Fish and the people at NRTC tomorrow. Admittedly I don't fully understand the way their factory works, that prevents them from producing different combinations of fiber at a given time.

I can give you the part number, OFS-AT-3CEH2YT-024

Our thinking was that 24 would be purchased in our next tranche, but it can't hurt to pursue the idea of picking up some now. After all, the backbone mileage for the three CUDs that are proceeding with construction next year comes out to around 900, so there may be room in the extra 100 to shift down for some to-the-premises fiber now.

WA

On Thu, Nov 11, 2021 at 5:28 PM David Jones <David.Jones@dvfiber.net> wrote:

Hi Will,

When we started we had specified 10% 24 count, figuring we would use this between splitters and premises. Now the smallest count is 48. Is there an opportunity to get 24 count and, if so, what is the OFS part number?

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 3:40 PM Will Anderson <programcoordinator@vcuda.org> wrote:

David,

I've attached an updated VCUDA Allocation Order with further specifications.
Let me know if this is suitable or if further changes and/or additions are necessary.
There are also some minor changes to the other documents to reflect the participation in the Letter of Credit from VSECU. Once I am sure that it is all in order, I will send them over to you.

Will

On Thu, Nov 11, 2021 at 9:48 AM David Jones <David.Jones@dvfiber.net> wrote:

Hi Rob and Will,

OFS will be fine. When you have determined the best way to clarify the description of the goods in the purchase documentation, please provide a draft so we can run it past GWL.

Many thanks,

David

David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 9:42 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

That makes sense. Yes, the supplier purchases from a variety of different suppliers on behalf of their members. The fiber available at earlier prices is OFS.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may

be subject to disclosure under the Vermont Public Records Act.

From: Will Anderson <programcoordinator@vcuda.org>
Sent: Thursday, November 11, 2021 9:40 AM
To: David Jones <David.Jones@dvfiber.net>
Cc: Chris Whelan <cwhelan@staff.gwi.net>; Kerem Durdag <kdurdag@staff.gwi.net>; Steven John <Steven.John@dvfiber.net>; keith.thompson@dvfiber.net; Elijah Emerson <eemerson@primmer.com>; Fish, Robert <Robert.Fish@vermont.gov>; Ann Manwaring <Ann.Manwaring@dvfiber.net>
Subject: Re: Fiber Specs

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

David,

Thanks for your email, I expect we will be able to provide you with the specifications, and I there's no reason why they can't be incorporated into the Allocation Order.

I will check the information with Rob Fish who has been leading the negotiations with the supplier. I only mentioned Corning to give context to the manufacturers they work with and am not sure to what extent they will be involved in the manufacture of the fiber we are purchasing. But I understand your concerns and will have you the information as soon as possible.

Will

On Thu, Nov 11, 2021 at 9:34 AM David Jones <David.Jones@dvfiber.net> wrote:

Hi Will,

Thanks for joining the Governing Board meeting last night to speak about the fiber purchase plan. The Board is generally in agreement with the plan but will want to iron down key details regarding the actual fiber to be delivered.

As previously indicated, we will need dielectric, gel-free, loose tube, SMF28 cable in the various strand counts from a known provider that GWI can verify as proven in the field.

Previously, you or Rob Fish provided the attached data sheet for OFS Fortex cable. But last night, you mentioned Corning as one of the manufacturers.

The documents you provided for our review and signature do not include a description of the cable specifications or the manufacturer(s). We will need to include such a written description in the Allocation Order or modify the Resolution documents or Allocation Order to incorporate a separate written description by reference.

Can we please get that written description by end-of-week?

The Governing Board will want me to state that GWI agrees with the purchase plan before we vote to authorize the deal. The vote will take place Monday at 5. If the written description can't be provided this week, we might make the approval contingent on confirmation by the Executive Committee that the written description is agreed upon by GWI and incorporated by reference into the documents we sign.

Many thanks,

David

David W. Jones

Project Director

DVFiber

Land: 802.368.2217

Cell: 917-538-4649

From: [Fish, Robert](#)
To: [programcoordinator](#)
Subject: Fwd: Maple FiberCounts
Date: Monday, October 4, 2021 8:49:31 AM

Fyi

Get [Outlook for iOS](#)

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 8:38 AM
To: Hallquist, Christine

Aerial cable strand count	Footage
12	176,000
24	518,000
48	332,000
72	203,000
96	122,000
144	78,000
216	11,000
288	0
Subtotal: ft	1,440,000
Subtotal: mi	273

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Steve Huffaker](#)
To: [Fish, Robert](#)
Subject: Maple Broadband 2022 fiber BOM
Date: Friday, October 22, 2021 4:58:46 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

NRTC is participating in our RFQ, so Mark Chambers already has the below details. Our RFQ specifies non-armored.

Strand count	Description	Linear footage
24	Loose tube single-mode fiber - aerial	690,000
72	Loose tube single-mode fiber - aerial	496,200
144	Loose tube single-mode fiber - aerial	183,300

Steve Huffaker
Chair - Executive Committee
Maple Broadband
chair@maplebroadband.net



Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Fish, Robert](#)
To: [Hallquist, Christine](#)
Subject: Maple FiberCounts
Date: Monday, October 4, 2021 8:38:00 AM

Told them that we will likely limit things to 2-3 fiber counts. We are also ready over 1000 – closing in on 2,000 with the other CUDs.

Rob

Aerial cable

strand count	Footage
12	176,000
24	518,000
48	332,000
72	203,000
96	122,000
144	78,000
216	11,000
288	0
Subtotal: ft	1,440,000
Subtotal: mi	273

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Mileage answers
Date: Friday, October 1, 2021 2:04:31 PM

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Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

CVFiber: 600 miles

NEKBroadband: 500 miles (highly approximate, based on projections for a five-year period)

LamoilleFiberNet: 100 miles

Southern Vermont CUD: 217 miles (Need for materials would vary based on outcome of NTIA grant application)

So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do hope this helps at least going forward for Monday.

Will

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: NRTC Available Fiber Inventory 12/13/21
Date: Monday, December 13, 2021 1:31:34 PM
Attachments: [image001.png](#)
[Available Inventory 121321.xlsx](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Here is what we currently have.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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From: [Bob Hagarman](#)
To: [F. X. Flinn](#)
Cc: [programcoordinator](#); [Fish, Robert](#); [Hallquist, Christine](#)
Subject: OFS Allocation
Date: Wednesday, December 8, 2021 8:53:55 AM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning everyone, NRTC held our weekly meeting with OFS last night. OFS gave us a deadline 12/13 as the cutoff to get our allocation PO placed with them in order to hold the beginning delivery of fiber in the April/May timeline. Any time past that we are at the mercy of anyone else that jumps in the production schedule(its filling up fast) and we are looking at a mid to late summer delivery. If you plan to move forward I will need the signed quote sent to us by noon 12/13.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
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nrtc.coop

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Pre-purchasing update?
Date: Wednesday, November 3, 2021 1:48:02 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber
200 miles of 48-count fiber
200 miles of 72-count fiber
300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

From: [Adam Bornstein](#)
To: [Bob Hagarman](#)
Cc: [Hallquist, Christine](#); [Fish, Robert](#); [Paul Giuliani](#)
Subject: price of fiber - 2022-2023 (forecast)
Date: Monday, October 25, 2021 8:35:10 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

From: Fish, Robert

Sent: Tuesday, October 19, 2021 2:19 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Bob Hagarman <bhagarman@nrtc.coop>; Adam Bornstein <abornstein@vermontcf.org>; programcoordinator <programcoordinator@vcuda.org>; Paul Giuliani <pgiuliani@primmer.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: VT Fiber Conversation

When: Wednesday, October 20, 2021 1:30 PM-2:30 PM.

Where: Microsoft Teams Meeting

If there are others that should be invited, please forward the invite. That being said, let's keep this focused. For instance, having every CUD chair would not be productive at this time. Thanks.

Rob

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

[+1 802-828-7667](tel:+1802-828-7667),522459788# United States, Montpelier

Phone Conference ID: 522 459 788#

[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

From: [Fish, Robert](#)
To: [Bob Hagarman](#)
Subject: RE:
Date: Friday, October 29, 2021 4:22:00 PM
Attachments: [image001.png](#)

So here we go. . . move a bit away from the percentages, to the actual allocations based on 1000. I would like to know if there is any left after this.

Totals:

27% - 144= 230 miles (270)

20% - 48= 180 miles (200)

21% - 72= 190 miles (210)

32% - 300 miles (320)

Total=900 miles, 100 to spare go be flexible (distribute 40 to 144, 20 to 72; 20 to 48, 20 to 24)

DV

150 miles of 144-count fiber

120 miles of 48-count

30 miles of 24-count

CVFiber:

60 miles of 144-count fiber

120 miles of 48/72 count

120 miles of 24-count

Maple Broadband:

20 miles of 144-count

130 miles of 72-count

150 miles of 24-count

144= 230 miles

48= 180 miles

72= 190 miles

24= 300 miles

Total=900 miles, 100 to spare

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 29, 2021 4:14 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE:

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So to work out the mileage would it be

144 = 50%
48 = 20%
72 = 20%
24 = 10%



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 29, 2021 3:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject:

144 count: 50%
48 or 72* count: 40% **We can certainly design for smaller strand counts and overlash multiple cables if need be
24 count: 10%

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE:
Date: Friday, October 29, 2021 4:13:43 PM
Attachments: [image001.png](#)

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So to work out the mileage would it be

144 = 50%

48 = 20%

72 = 20%

24 = 10%



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 29, 2021 3:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject:

144 count: 50%

48 or 72* count: 40% ******We can certainly design for smaller strand counts and overlash multiple cables if need be

24 count: 10%

Rob Fish
Rural Broadband Technical Assistance Specialist
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robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE:
Date: Friday, October 29, 2021 4:30:13 PM
Attachments: [image001.png](#)

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OK let me see what I can find out.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 29, 2021 4:22 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE:

So here we go. . . move a bit away from the percentages, to the actual allocations based on 1000. I would like to know if there is any left after this.

Totals:

27% - 144= 230 miles (270)
20% - 48= 180 miles (200)
21% - 72= 190 miles (210)
32% - 300 miles (320)

Total=900 miles, 100 to spare go be flexible (distribute 40 to 144, 20 to 72; 20 to 48, 20 to 24)

DV

150 miles of 144-count fiber
120 miles of 48-count
30 miles of 24-count

CVFiber:

60 miles of 144-count fiber
120 miles of 48/72 count
120 miles of 24-count

Maple Broadband:

20 miles of 144-count

130 miles of 72-count
150 miles of 24-count

144= 230 miles
48= 180 miles
72= 190 miles
24= 300 miles

Total=900 miles, 100 to spare

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 29, 2021 4:14 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE:

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So to work out the mileage would it be

144 = 50%
48 = 20%
72 = 20%
24 = 10%



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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, October 29, 2021 3:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject:

144 count: 50%

48 or 72* count: 40% **We can certainly design for smaller strand counts and overlash multiple cables if need be

24 count: 10%

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Fish, Robert](#)
To: [Val Davis](#)
Subject: RE: 48 Strand Minimum requirement
Date: Thursday, November 18, 2021 2:47:00 PM

Here you go

Vermont Community Broadband Board Outside Plant Design (OSP) Requirements a

This document covers the Construction Grant requirements. All entities applying for grants must comply with the following

- Grantee must provide before construction begins a clear constructable design with standards that cover the following:
 - Fiber sparring and reservation recommendations to assist with outside plant equipment and fiber sizing
 - Optical extents (Budgets)
 - Account for future and/or unplanned growth including public safety and mobile wireless. A minimum of 36 (3 tubes) of spare is required. The smallest size number of fibers on a route will be 48. This does not apply to post splitter fiber (end runs and driveways)
 - Power supply and back-up requirements for active locations

- Grantee design must include every demand point and include:
 - Assigned specific and accounted for PON splitter and OLT port for every identified demand point so that provisioning and activation can be done with minimal truck rolls or future design requirements.
 - Drop distance and route for every demand point should be known so that the impact to the material requirements and optical budget is understood.
 - Identification of slack budgets and loop locations.

- Grantee's design deliverables must include detailed planned optical measured loss (dB) calculations. These planned losses will be compared to actual losses during construction to ensure they fall within the Optical Extents budget.

- Grantee's detailed splice diagrams must be geospatially accurate and provide estimated measured loss at every connection point so that network performance can be assured and documented.

- Grantee must propose integration locations for:
 - Geographic redundance
 - Connections with adjacent CUD networks
 - Connections with private networks, including leased fiber routes

- Grantee must provide before construction begins all design mapping deliverables in a single GIS (ESRI Preferred) format including:
 - Online and downloadable field engineering data
 - Online and downloadable detailed construction maps
 - Bills of materials linked to location
 - As-builts reported monthly

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Val Davis <director@lamoillefiber.net>
Sent: Thursday, November 18, 2021 2:42 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: 48 Strand Minimum requirement

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Please forward that document to me. Thank you

Val Davis
Executive Director
Lamoille FiberNet
director@lamoillefiber.net
802-696-9025

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: 2022 prices
Date: Wednesday, December 8, 2021 10:00:21 AM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Let me check but I am guessing they are going to slap a 33% lift on the price but I will confirm



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:59 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: 2022 prices

Thanks for sharing. There were #'s in the spreadsheet for 2022, but not for 24 and 72 count. Do you have those?

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 9:31:17 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: 2022 prices

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See column G. This is what I would call street level pricing.

As an FYI, we are currently in negotiation to lock our 2022 pricing. Don't have that to share just yet.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:07 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: 2022 prices

Hi Bob

Can you please send me the price list for OFS for 2022? I'm attempting to put a # on the savings we are realized by acting now. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: 2022 prices
Date: Wednesday, December 8, 2021 9:31:25 AM
Attachments: [image001.png](#)
[Available Inventory 120121 OFS.xlsx](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

See column G. This is what I would call street level pricing.

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2121 Cooperative Way
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sender by reply e-mail and destroy all copies of the original message.

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: 2022 prices
Date: Wednesday, December 8, 2021 10:29:18 AM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Glad a checked, 24 strand jumps 39% for 2022.

2021 = .27 per foot

2022= .38 per foot

72 strand is not on our contract pricing, so I am giving you an average increase of 35%

2021 = .56 per foot

2022 = .75 per foot



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:59 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: 2022 prices

Thanks for sharing. There were #'s in the spreadsheet for 2022, but not for 24 and 72 count. Do you have those?

Get [Outlook for iOS](#)

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 9:31:17 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: 2022 prices

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2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, December 8, 2021 9:07 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: 2022 prices

Hi Bob

Can you please send me the price list for OFS for 2022? I'm attempting to put a # on the savings we are realized by acting now. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: additional fiber
Date: Thursday, November 18, 2021 4:11:01 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

This is unofficial just off the street pricing. If we were to look at a non-negotiated pricing with OFS in 2022. You could take the 2021 pricing I gave you and add 30%.

NRTC is currently in negotiations with several fiber vendors to see if we can bring that number down. I don't have those numbers to share at this time.

Hopefully that gives you enough to work with for now.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 18, 2021 3:51 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: additional fiber

Understood. Just trying to make sure everyone it taken care of.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 18, 2021 2:33 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: additional fiber

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sender.

That would take us beyond the 1000 mile allocation, let me check if we have 2022 number for fiber from OFS



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, November 18, 2021 1:56 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: additional fiber

Hi Bob

Something else to throw out there. We potentially have another CUD that wants to purchase additional fiber beyond the 1,000. What prices could you get on additional fiber that would not need to be delivered til later in the summer/fall? Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: additional fiber
Date: Thursday, November 18, 2021 2:32:38 PM
Attachments: [image001.png](#)

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That would take us beyond the 1000 mile allocation, let me check if we have 2022 number for fiber from OFS



Bob Hagarman
Director, Strategic Business Implementation
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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 18, 2021 1:56 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: additional fiber

Hi Bob

Something else to throw out there. We potentially have another CUD that wants to purchase additional fiber beyond the 1,000. What prices could you get on additional fiber that would not need to be delivered til later in the summer/fall? Thanks.

Rob

Rob Fish
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sender by reply e-mail and destroy all copies of the original message.

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: additional fiber
Date: Friday, November 19, 2021 12:40:42 PM
Attachments: [image001.png](#)

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Let me see what I can do, as an FYI Maple issued another RFP. How would you prefer us to proceed?

FYI, call with NRTC CEO is scheduled for Monday.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 19, 2021 12:24 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: additional fiber

Hi Bob

Could you get me the best possible quote for the following total? This would accommodate everyone.

Increase the overall purchase to accommodate Maple. This would mean we need:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

Total miles = 1080

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 18, 2021 4:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: additional fiber

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

This is unofficial just off the street pricing. If we were to look at a non-negotiated pricing with OFS in 2022. You could take the 2021 pricing I gave you and add 30%.
NRTC is currently in negotiations with several fiber vendors to see if we can bring that number down. I don't have those numbers to share at this time.

Hopefully that gives you enough to work with for now.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 18, 2021 3:51 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: additional fiber

Understood. Just trying to make sure everyone it taken care of.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
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robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 18, 2021 2:33 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: additional fiber

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That would take us beyond the 1000 mile allocation, let me check if we have 2022 number for fiber from OFS



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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 18, 2021 1:56 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: additional fiber

Hi Bob

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Rob

Rob Fish
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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: adjusted allotment for VCUDA - 30 miles of 24 count
Date: Friday, November 12, 2021 4:57:52 PM
Attachments: [image001.png](#)

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Per our conversation, let me run this by procurement but anticipate that we will need to reduce mileage from the 48 count.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 12, 2021 3:18 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: adjusted allotment for VCUDA - 30 miles of 24 count

Hi Bob

One last minute change that can be dealt with in one of two ways. A CUD needs 30 miles of 24 count. That can either be taken out of the 48 or added to the total of 1000 if there is room. Please send me a final #. If this is not possible, let me know.

You should receive the LOC draft from Adam in a few moments. I was able to include a bit more in there and provide a bit of wiggle room for some electronic purchases potentially. Their LOC covers 50% of the VCUDA purchase of fiber as agreed.

We can work this weekend to finalizing things or address this all Monday and Tuesday. VCUDA will need time to look at the final contract.

Thanks.

Rob

“DVFiber's ideal allocation would be: 150 miles of 144-count
120 miles of 48-count
30 miles of 24-count

Placing our total purchase at **30 miles of 24-count**
470 miles of 48-count

200 miles of 72-count
300 miles of 144-count

“

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: adjusted allotment for VCUDA - 30 miles of 24 count
Date: Monday, November 15, 2021 9:37:56 AM
Attachments: [image001.png](#)

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Procurement is looking at this change this morning. Should have something back today. Also have a meeting with my president at noon today and then we get with the CEO for sign off. I'll keep you posted as I push this through.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 12, 2021 3:18 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: adjusted allotment for VCUDA - 30 miles of 24 count

Hi Bob

One last minute change that can be dealt with in one of two ways. A CUD needs 30 miles of 24 count. That can either be taken out of the 48 or added to the total of 1000 if there is room. Please send me a final #. If this is not possible, let me know.

You should receive the LOC draft from Adam in a few moments. I was able to include a bit more in there and provide a bit of wiggle room for some electronic purchases potentially. Their LOC covers 50% of the VCUDA purchase of fiber as agreed.

We can work this weekend to finalizing things or address this all Monday and Tuesday. VCUDA will need time to look at the final contract.

Thanks.

Rob

"DVFiber's ideal allocation would be: 150 miles of 144-count
120 miles of 48-count
30 miles of 24-count

Placing our total purchase at **30 miles of 24-count**

470 miles of 48-count
200 miles of 72-count
300 miles of 144-count

“

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: calculating savings
Date: Wednesday, December 8, 2021 9:44:46 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Working on it. Do you have 2022 pricing for 24- and 72-count cable from OFS?

WA

On Wed, Dec 8, 2021 at 8:10 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Would you each please calculate the savings for your fiber order between the current price and the 2022 price and send it my way? Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Will Anderson](#)
To: [Fish, Robert](#)
Cc: [Paul Giuliani](#); [Hallquist, Christine](#)
Subject: Re: comment on the fiber spec sheet CONFIDENTIAL
Date: Tuesday, October 19, 2021 12:32:34 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

I am available from 1 to 2:30 tomorrow and would like to represent VCUDA if possible. Please invite me to the meeting if it is arranged.

Will

On Tue, Oct 19, 2021 at 12:17 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Paul

Would it be possible to have a call with you and the financial partner? They are available til 2 today and then 4 pm and then from 9-10 tomorrow. Also, we are setting up a call tomorrow with the supplier, the financial partners, and would love to have you and someone from VCUDA in attending. The windows looks to be between 1 and 3 tomorrow. The supplier is making sure their CFO is available.

Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Paul Giuliani <pgiuliani@primmer.com>
Sent: Sunday, October 17, 2021 8:27 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: comment on the fiber spec sheet CONFIDENTIAL

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Rob - Please feel free to share this with anyone you think would be interested.

P

On: 17 October 2021 19:30,
"Fish, Robert" <Robert.Fish@vermont.gov> wrote:

Thank you Paul. May I share this with the foundation and financial partner? I hope to know full details tomorrow or Tuesday from the company on what is required.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Paul Giuliani <pgiuliani@primmer.com>
Sent: Sunday, October 17, 2021 2:20 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; clerk <clerk@dvfiber.net>; Steve Huffaker <chair@maplebroadband.net>; David Healy <dhealy@cvfiber.net>; Jeremy Hansen <jhansen@cvfiber.net>; Executive Director <director@nekbroadband.org>; 'Kristen Fountain' <kristen@nekbroadband.org>; Val Davis <director@lamoillefiber.net>; Evan Carlson <evan@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; sean@nwcud.com; Chris Recchia <chris.recchia@valley.net>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Elijah Emerson <emerson@primmer.com>
Subject: RE: comment on the fiber spec sheet CONFIDENTIAL

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

CONFIDENTIAL

Rob –

By-Law Section IX.02(a) provides that “VCUDA shall not incur, create or assume indebtedness or other financial liability in its own name . . . “ That provision prevents VCUDA from taking out a bank loan to pay operating expenses. The line of credit being considered does not trigger a repayment obligation (i.e., debt) until it is drawn against. Once there is a draw against the line of credit, there is a “financial liability.” However, if the letter of credit provider is amenable, I believe the transaction can be structured in such a way that security for the line of credit is restricted to the assets being acquired. The lender holds a purchase money security interest in the materials. Under such a scenario, VCUDA does not incur, create, or assume a general repayment obligation. Its exposure is limited to the assets being acquired

The problem with the foregoing is that I can’t see a bank accepting a risk of default with security that probably is illiquid.

In the alternative, the line of credit could be structured as a grant anticipation borrowing. Security for the loan would be VCUDA’s interest in the grant, including its funding. Sums drawn on the line of credit are repaid dollar for dollar from grant finding paid to VCUDA. Whether the grant awarding agency would object to such an arrangement is an open question. Much depends on the frequency of grant funding payments. The anticipatory borrowing is essentially a bridge loan. In the normal course of events, VCUDA would draw against the line of credit, and immediately request reimbursement from the granting agency. Upon receipt of the grant, it is paid over to the bank. This arrangement has worked well with the State Special Environmental Revolving Loan Fund program. I think the Board would be well-served by replicating the SRF experience.

Am I correct in assuming that the letter of credit alternative is a non-starter?

P

J. Paul Giuliani | Attorney at Law

PRIMMER PIPER EGGLESTON & CRAMER PC

100 East State Street, P.O. Box 1309, Montpelier, VT 05601

Tel: 802 223 2102 | Fax: 802 223 2628

pgiuliani@primmer.com | www.primmer.com



From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Saturday, October 16, 2021 3:34 PM

To: clerk <clerk@dvfiber.net>; Steve Huffaker <chair@maplebroadband.net>; David Healy <dhealy@cvfiber.net>; Jeremy Hansen <jhansen@cvfiber.net>; Executive Director <director@nekbroadband.org>; 'Kristen Fountain' <kristen@nekbroadband.org>; Val Davis <director@lamoillefiber.net>; Evan Carlson <evan@nekbroadband.org>; programcoordinator <programcoordinator@vcuda.org>; sean@nwcud.com; Chris Recchia <chris.recchia@valley.net>

Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Paul Giuliani <pgiuliani@primmer.com>

Subject: comment on the fiber spec sheet

Good Afternoon

Attached is a spec sheet. Please comment ASAP. I'm looking "deal breakers." With the delays and the price increases, we cannot allow perfect to be the enemy of the good. We all understand there are a lot unknowns. If you aren't comfortable with that unknown, I encourage you state you will not participate, find your own way forward, and allow the conversation to continue among those who are interested.

While we are still seeking out additional information from other providers, we have yet to find anything comparable and within the timeframe of delivery early spring within 10 cents/foot (For

the 144). For 1000 miles that adds up to almost \$500k. I've included ECFiber on this note because their wealth of knowledge and experience. I'm awaiting quotes from two other providers, but do not expect them to be any more competitive. To speed the process and assist with our due diligence, if you have any price quotes with a guaranteed delivery time, please forward them to me.

We are likely to be able to get 24, 48, 144 and are considering a 25, 25, 50% breakdown. The fiber is light armored; this is not the heavy duty armor they would make it difficult to work with. I should now Monday whether because of the size of the purchase they can lock down another 1000 at the same price for delivery later in the year (if that is desirable). Payment would not be due til 30 days after delivery – likely 400 miles (march/April), 300 miles (May), 300 miles (June) so while the availability of a line of credit will be necessary to secure the purchase, it's unlikely it will ever need to be used since the construction grant program will be in full swing. The financing we are close to securing could come partial from a credit union and partial from a foundation. If a draw on the line of credit is necessary, it will come from the portion that is waiving interest. The line of credit would be revolving to provide flexibility for further prepurchasing of materials, securing labor, etc.

Since the line of credit is only to secure the product, does that require a bylaw change?
Determining this is a high-priority. We have alternatives if this is an issue, but need to know now.

I hope to be able to fully brief everyone in on the next steps Monday or Tuesday and once the path forward is clear bring VCUDA directly into the conversations with the financial partners and the suppliers.

Please do not bring this conversation onto the VCUDA listserv, but feel free to reach out to partners directly without mentioning the potential supplier or financiers.

I understand there may be other concerns unrelated to the specs. Please wait for further information. We are working on answers to any issues related to ARPA and procurement.

Thank you for your patience as we work our way towards a solution.

Happy to chat via phone too.

Rob

<https://fiber-optic-catalog.ofsoptics.com/documents/pdf/Fortex-DT-Light-Armor-146-web.pdf>

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: compiled fiber #'s
Date: Tuesday, October 5, 2021 1:37:26 PM

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Rob,

I'm working on it now, I've got conversations with Lamoille and Northwest today to see where they're at, as well as with Maple to address their concerns about an initial purchase that doesn't correspond exactly to their specifications.

I'm leaning increasingly towards pitching an initial purchase at the VCUDA meeting on Monday, for 700 miles of 144-strand count fiber, and 300 miles of 48-count. It's arbitrary sure, but it's based on what immediate construction needs will be and I'd like to approve this so that we can proceed with making a deal.

Let me know what you think, and I'll send you all my latest numbers before the end of the day.

Will

On Tue, Oct 5, 2021 at 12:45 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

Have you compiled the fiber #'s including the new data? Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: compiled fiber #'s
Date: Tuesday, October 5, 2021 4:47:34 PM

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Rob,

I'll work on getting the bylaws changed, I think we can push that through but depending on what the lawyers say I have a feeling the process could take longer than we like. I'm going to push it.

I have had the same concern about the way NEK is shifting the allocation, let me see what I can do to find a way to balance the equation.

It's true that Consolidated will, in theory, provide all materials for Southern Vermont. But I think we need to operate under the assumption that they won't receive the grant from the NTIA that would fund the partnership.

NEK- 420 miles of 144 count, 280 miles of 48 count

DVFiber- 378 miles in some combination of 48, 96, 144, and 288.

Lamoille- 100 miles of 144 count

Southern Vermont- 217 miles, unknown specifications at this point in time.

Maple- Maple needs 63 miles of 48 count, and 15 miles of 144 count. Maple is supportive of the purchasing proposal and believes they may be able to use far more of 48 and 144 count than projected.

CVFiber- 600 miles for first phase of construction, more information incoming from David Healy in the next few days.

Northwest and Otter Creek- no information yet

The way I calculate the ratios out, between 144 and 48 count we are looking at a ratio of 55% to 45%. So for 1000 miles, 550 miles of 144-count and 450 miles of 48-count. I'm inclined to simply present this proposal to the VCUDA meeting. Many voices are leaning more towards an initial purchase of two kinds of fiber rather than all of one count. I think we simply don't have the information needed for the second purchase yet but that will emerge as soon as pre-construction this year.

Will

On Tue, Oct 5, 2021 at 1:51 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Thanks Will

Few things

1. Please check VCUDA's bylaws and make sure now change is necessary to move this forward.
2. With Maple; if I take the 12, 24, and 48 and assign that to 48 count; and the rest to 144, it's 70% 48 and 30% 144. Quite the opposite of NEK. I'm concerned that NEK's excess mileage, low density is shifting the percentage a bit too far.
3. SoVT: I'm concerned about SoVT needs – if they are going with Consolidated and the NTIA, I assume Consolidated would be providing the materials since it would have to match their specs exactly?
4. Without SoVT, we are at about 2000 miles. Before I can get a price quote, I need a breakdown. When I find the lead time for the second batch, I may be able to make the first batch all one type (144 the more expensive and where the discount would be most helpful) and the second batch the other (48).

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Tuesday, October 5, 2021 1:37 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Re: compiled fiber #'s

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

I'm working on it now, I've got conversations with Lamoille and Northwest today to see where they're at, as well as with Maple to address their concerns about an initial purchase that doesn't correspond exactly to their specifications.

I'm leaning increasingly towards pitching an initial purchase at the VCUDA meeting on Monday, for 700 miles of 144-strand count fiber, and 300 miles of 48-count. It's arbitrary sure, but it's based on what immediate construction needs will be and I'd like to approve this so that we can proceed with making a deal.

Let me know what you think, and I'll send you all my latest numbers before the end of the day.

Will

On Tue, Oct 5, 2021 at 12:45 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

Have you compiled the fiber #'s including the new data? Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: CUD fiber commitments
Date: Thursday, November 18, 2021 9:17:37 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Not yet, but I'll check in with both them and CVFiber today.

I think I'm going to have to tell Steve Huffaker/everyone involved, about what fiber we have left. At this point it's just 48. Don't think he'll be too happy as Maple originally wanted 130 miles of 72 and 150 miles of 24.

Guess we'll find out his appetite to convert both of those requests to 48.

Will

On Thu, Nov 18, 2021 at 9:12 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Thanks Will

Anything more from EC?

Get [Outlook for iOS](#)

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Thursday, November 18, 2021 9:11:16 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: CUD fiber commitments

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

For an update, Lamoille is on board, they signed the authorizing resolution and have indicated they'll be signing for 140 to 200 miles. Final count by tomorrow.

DVFiber has indicated that they can take on additional mileage of 48-count fiber, if need be to complete the purchase. They would prefer to stick to the 300 mile commitment they've already made.

I'm meeting with Sean Kio of Northwest this afternoon.

At this point, if Northwest goes like I think they will today, we will have 250 miles of 48-count fiber left to commit.

From: [Fish, Robert](#)
To: [Bob Hagarman](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Monday, October 11, 2021 9:25:30 AM
Attachments: [image001.png](#)

Also, Bob – Could we please have the full specs on the fiber available? Thanks.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:32 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

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One clarification. It most likely won't be all 1000 miles it will be the first 300-400 miles. May another 300-400 with the remainder in June as it stands now.

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:28:30 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Thank you! You scared me for a moment.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:27:51 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Beginning of April

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:26:37 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Hi Bob
Delivery for the first 1000 would still be March or April? Thanks
Rob

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 5:05:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Happy Friday Rob and Christine,

Sorry for the late response but just got off the phone with David and team.

Here is what I know right now. For the first 1000 miles the pricing we gave for 144 and 48 is still good, but if you are considering moving forward with NRTC we will need to get a PO in place soon. OFS is putting pressure on us to make the commitment. We have a request in for 24 but I have not heard back. I am hoping early next week. For the second 1000 miles, we are anticipating that cost will increase between 30-40% based on what OFS is telling us right now.

Delivery, because of the impact of COVID, OFS is struggling to keep the production lines fully staffed. They originally told us production on cable could start as early as December, that has now slipped to March. Hence why they are pushing us to commit to get into their product schedule. Once production begins, they will produce between 300 to 400 miles per month until order is

fulfilled. It's a very fluid situation right now and I will communicate if anything should change as soon as I know.

That's what I have to share for now and will get back to you with the 24 strand pricing as soon as I get it. Let me know if you have any questions and have a great weekend!



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, October 7, 2021 3:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

I'm still working to finalize numbers, but may have figured out an easier way. Is it possible to get 3 strand counts? 50% of 144; 25% of 48; and 25% of 24. What would the cost be for the first 1000? And for an additional? When could the additional be made available? We need to work with our funders to see if it's possible to do 2000 total. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 4, 2021 12:07:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 11:48 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, September 30, 2021 2:34 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, September 30, 2021 1:53 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That may work, I'll run that thought internally and see what response I get back.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:42 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

We would have a letter of credit guaranteeing the full purchase of all the 1,000 miles. Basically, we'd have a third party float the payment – or assurance of payment - that would be paid back to them via the grants as they are awarded. As you can see, we are still working out details.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:40 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

That is correct, however, if that proves to be problematic let me know and I can setup a call to discuss in more detail. We just want to limit our liability of spools of fiber in our leased warehouse that may not get used.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:31 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

So payment would be due as soon as it arrives at NRTC?
Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board

802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:28 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them and the CUDs. For NRTC purposes, VCBB would be our customer.

2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Thank you so much for the quick turnaround. I'm working a few leads on our end to help vet this and move quickly. What would you need upfront to secure this 1000 miles capacity?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, September 29, 2021 10:05 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Just received this morning,

Below is pricing for 1000 miles of OFS 48 and 144 count Loose Tube fiber for NEK. Please note this is very good pricing considering current market conditions. This pricing is based upon our current fiber allocation set up with OFS and is only available for the amount of fiber shown below. We anticipate that future pricing for fiber will be far higher and we are working to get more details on that. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. This pricing is for 5,280,000 feet of 48 and 5,280,000 of 144 fiber. Please note, once the order is placed, it cannot be cancelled.

Part Number	Cost /Foot	Total Footage	Extended Cost
OFS-AT-3CEH2YT-048	0.36	5,280,000	\$1,900,800
OFS-AT-3CEH2YT-144	0.88	5,280,000	\$4,646,400



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:30 AM

To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:24 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.


With warm regards,

Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:30 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Got it, I just spoke to Kevin and we will get a quote over to you.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:28 PM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Cc: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Friday, September 24, 2021 2:44 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Cc: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,

Christine Hallquist

Executive Director

Vermont Community Broadband Board

Phone – 802-636-7853

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From: [Fish, Robert](#)
To: [Bob Hagarman](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Thursday, October 7, 2021 3:03:00 PM
Attachments: [image001.png](#)

Hi Bob

I'm still working to finalize numbers, but may have figured out an easier way. Is it possible to get 3 strand counts? 50% of 144; 25% of 48; and 25% of 24. What would the cost be for the first 1000? And for an additional? When could the additional be made available? We need to work with our funders to see if it's possible to do 2000 total. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 4, 2021 12:07:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 11:48 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks
Rob

Rob Fish

Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 2:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
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To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

Rob Fish
Rural Broadband Technical Assistance Specialist
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That may work, I'll run that thought internally and see what response I get back.

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I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
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Rob

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Part Number	Cost /Foot	Total Footage	Extended Cost
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



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Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:30 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:24 AM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
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Phone – 802-636-7853

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To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.



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2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Friday, September 24, 2021 2:44 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Cc: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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From: [Fish, Robert](#)
To: [Bob Hagarman](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Tuesday, October 5, 2021 11:49:00 AM
Attachments: [image001.png](#)

Hi Bob

The ratio we are playing with is 60% 144, 40% 48 for the first 1000 miles; and 40% 144 and 60% 144 for the next. Depending on when a second batch order this month would arrive, we may be able to do 100% 144 first batch and 100% 48 for the second. Things are still in flux as you know. I'm going to compile things from all the groups later today.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

Get [Outlook for iOS](#)

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Monday, October 4, 2021 12:07:11 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

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We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Monday, October 4, 2021 11:48 AM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks

Rob

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Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:24 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.



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Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



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From: [Fish, Robert](#)
To: [Bob Hagarman](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Monday, October 4, 2021 11:48:00 AM
Attachments: [image001.png](#)

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 2:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:53 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

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That may work, I'll run that thought internally and see what response I get back.



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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:42 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

We would have a letter of credit guaranteeing the full purchase of all the 1,000 miles. Basically, we'd have a third party float the payment – or assurance of payment - that would be paid back to them

via the grants as they are awarded. As you can see, we are still working out details.

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To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That is correct, however, if that proves to be problematic let me know and I can setup a call to discuss in more detail. We just want to limit our liability of spools of fiber in our leased warehouse that may not get used.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:31 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

So payment would be due as soon as it arrives at NRTC?
Thanks
Rob

Rob Fish

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robert.fish@vermont.gov

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Subject: RE: Estimate

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I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them and the CUDs. For NRTC purposes, VCBB would be our customer.

2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

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To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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To: [Fish, Robert](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Wednesday, September 29, 2021 12:56:09 PM
Attachments: [image001.png](#)

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Sure thing, let me confirm internally. I'm sure a PO will be required but want to make sure we have everything in place related to doing business directly with VCBB.

 **Bob Hagarman**
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:30 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 2:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the

cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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From: [Bob Hagarman](#)
To: [Fish, Robert](#); [Hallquist, Christine](#)
Subject: RE: Estimate
Date: Wednesday, October 13, 2021 8:59:08 AM
Attachments: [image001.png](#)

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Here is what I received this morning for the first 1000 miles.

Below is pricing for 1000 miles of Loose Tube fiber as requested. I divided it up as follows: 50% for 144 ct fiber, 25% for 48 ct fiber and 25% for 24 ct fiber. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. . Please note, once the order is placed, it cannot be cancelled.

Part Number	Member Cost /Foot	Total Footage	Extended Member Cost
OFS-AT-3CEH2YT-24	0.27	1,320,000	\$356,400
OFS-AT-3CEH2YT-48	0.36	1,320,000	\$475,200
OFS-AT-3CEH2YT-144	0.88	2,640,000	\$2,323,200

We are still working to secure the pricing for the second 1000 miles and we are hoping that we can keep the pricing as close as possible. Unfortunately we wont hear back until early next week but will let you know as soon as I hear the pricing.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, October 12, 2021 8:38 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Do you have time for a call later this afternoon? Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)

robert.fish@vermont.gov


Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 11, 2021 5:20 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Spec sheet attached.

I am still working on the contractual portion. The current contracts we have in place does not address letters of credit. Our standard MSA only has language like Net30 so waiting for clarification from my CFO.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 11, 2021 9:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Also, Bob – Could we please have the full specs on the fiber available? Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:32 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

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One clarification. It most likely won't be all 1000 miles it will be the first 300-400 miles. May another 300-400 with the remainder in June as it stands now.

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:28:30 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Thank you! You scared me for a moment.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 7:27:51 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

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Beginning of April

Sent from my Verizon, Samsung Galaxy smartphone
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:26:37 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Hi Bob
Delivery for the first 1000 would still be March or April? Thanks
Rob

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 5:05:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Happy Friday Rob and Christine,

Sorry for the late response but just got off the phone with David and team.

Here is what I know right now. For the first 1000 miles the pricing we gave for 144 and 48 is still good, but if you are considering moving forward with NRTC we will need to get a PO in place soon. OFS is putting pressure on us to make the commitment.

We have a request in for 24 but I have not heard back. I am hoping early next week. For the second 1000 miles, we are anticipating that cost will increase between 30-40% based on what OFS is telling us right now.

Delivery, because of the impact of COVID, OFS is struggling to keep the production lines fully staffed. They originally told us production on cable could start as early as December, that has now slipped to March. Hence why they are pushing us to commit to get into their product schedule. Once production begins, they will produce between 300 to 400 miles per month until order is fulfilled. It's a very fluid situation right now and I will communicate if anything should change as soon as I know.

That's what I have to share for now and will get back to you with the 24 strand pricing as soon as I get it. Let me know if you have any questions and have a great weekend!



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, October 7, 2021 3:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

I'm still working to finalize numbers, but may have figured out an easier way. Is it possible to get 3 strand counts? 50% of 144; 25% of 48; and 25% of 24. What would the cost be for the first 1000?

And for an additional? When could the additional be made available? We need to work with our funders to see if it's possible to do 2000 total. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 4, 2021 12:07:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine

<Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

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We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Monday, October 4, 2021 11:48 AM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, September 30, 2021 2:34 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine

<Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

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Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:53 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That may work, I'll run that thought internally and see what response I get back.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:42 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

We would have a letter of credit guaranteeing the full purchase of all the 1,000 miles. Basically, we'd have a third party float the payment – or assurance of payment - that would be paid back to them via the grants as they are awarded. As you can see, we are still working out details.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:40 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That is correct, however, if that proves to be problematic let me know and I can setup a call to discuss in more detail. We just want to limit our liability of spools of fiber in our leased warehouse that may not get used.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, September 30, 2021 1:31 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

So payment would be due as soon as it arrives at NRTC?

Thanks

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, September 30, 2021 1:28 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them

and the CUDs. For NRTC purposes, VCBB would be our customer.

2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Thank you so much for the quick turnaround. I'm working a few leads on our end to help vet this and move quickly. What would you need upfront to secure this 1000 miles capacity?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, September 29, 2021 10:05 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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Just received this morning,

Below is pricing for 1000 miles of OFS 48 and 144 count Loose Tube fiber for NEK. Please note this is very good pricing considering current market conditions. This pricing is based upon our current fiber allocation set up with OFS and is only available for the amount of fiber shown below. We anticipate that future pricing for fiber will be far higher and we are working to get more details on that. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. This pricing is for 5,280,000 feet of 48 and 5,280,000 of 144 fiber. Please note, once the order is placed, it cannot be cancelled.

Part Number	Cost /Foot	Total Footage	Extended Cost
OFS-AT-3CEH2YT-048	0.36	5,280,000	\$1,900,800
OFS-AT-3CEH2YT-144	0.88	5,280,000	\$4,646,400



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:30 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:24 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman

Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 3:36 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:30 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.



Bob Hagarman

Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 2:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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From: [Bob Hagarman](#)
To: [Fish, Robert](#); [Hallquist, Christine](#)
Subject: Re: Estimate
Date: Friday, October 8, 2021 7:28:03 PM
Attachments: [image001.png](#)

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Beginning of April

Sent from my Verizon, Samsung Galaxy smartphone
Get [Outlook for Android](#)

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 8, 2021 7:26:37 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Hi Bob

Delivery for the first 1000 would still be March or April? Thanks
Rob

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 8, 2021 5:05:34 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Happy Friday Rob and Christine,

Sorry for the late response but just got off the phone with David and team.

Here is what I know right now. For the first 1000 miles the pricing we gave for 144 and 48 is still good, but if you are considering moving forward with NRTC we will need to get a PO in place soon. OFS is putting pressure on us to make the commitment. We have a request in for 24 but I have not heard back. I am hoping early next week. For the second 1000 miles, we are anticipating that cost will increase between 30-40% based on what OFS is telling us right now.

Delivery, because of the impact of COVID, OFS is struggling to keep the production lines fully staffed. They originally told us production on cable could start as early as December, that has now slipped to March. Hence why they are pushing us to commit to get into their product schedule. Once production begins, they will produce between 300 to 400 miles per month until order is

fulfilled. It's a very fluid situation right now and I will communicate if anything should change as soon as I know.

That's what I have to share for now and will get back to you with the 24 strand pricing as soon as I get it. Let me know if you have any questions and have a great weekend!



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, October 7, 2021 3:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

I'm still working to finalize numbers, but may have figured out an easier way. Is it possible to get 3 strand counts? 50% of 144; 25% of 48; and 25% of 24. What would the cost be for the first 1000? And for an additional? When could the additional be made available? We need to work with our funders to see if it's possible to do 2000 total. Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, October 5, 2021 11:35 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Any update on the fiber qty split?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 12:13 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: Estimate

Still confirming but it will like be 60/40 and the next 40/60 (144/48) but need to confirm. In meeting now

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, October 4, 2021 12:07:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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We need some additional detail – how many miles of each fiber count is VCBB looking for?

Is the first 1,000 miles just 500 miles of 48 and 500 miles of 144, or some other mix of cable fiber counts?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 11:48 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine

<Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

Hi Bob

What would the pricing be and the lead time for an additional thousand miles? We are also over the 1000 mile figure and closing in on 2000.

144, 72, 48 strands

Thanks

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, September 30, 2021 2:34 PM

To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>

Subject: RE: Estimate

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Rob,

Based on what I am being told the letter of credit could be a possibility. Before I can give a definite answer we would need to see your letter of credit and I would need to obtain approval from my CFO and CEO.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, September 30, 2021 1:53 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Thank you.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That may work, I'll run that thought internally and see what response I get back.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:42 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

We would have a letter of credit guaranteeing the full purchase of all the 1,000 miles. Basically, we'd have a third party float the payment – or assurance of payment - that would be paid back to them via the grants as they are awarded. As you can see, we are still working out details.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:40 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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That is correct, however, if that proves to be problematic let me know and I can setup a call to discuss in more detail. We just want to limit our liability of spools of fiber in our leased warehouse that may not get used.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, September 30, 2021 1:31 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

So payment would be due as soon as it arrives at NRTC?
Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, September 30, 2021 1:28 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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I was able to meet with David yesterday.

To secure the 1000 mile capacity this is where we would need to start

1. In order to secure the cable for the State of Vermont, the VCBB would have to sign a formal NRTC quote for the cable.
 - a. This would commit VCBB to paying for that cable once it is shipped to the customer, and the order cannot be cancelled.
 - b. If VCBB wants NRTC to hold cable in its leased warehouse prior to shipping to final location, I suggest we invoice VCBB for cable once it is delivered to the NRTC warehouse.
 - c. VCBB could direct NRTC to ship cable to multiple CUDs (would require us to have OFS deliver cable to our leased warehouse and then deliver to Vermont per VCBB direction).
 - d. If we have already invoiced VCBB for cable upon delivery to our warehouse, then we would invoice VCBB for freight charges after delivery to final destination.
 - e. VCBB would be responsible for figuring out any internal funds transfer between them and the CUDs. For NRTC purposes, VCBB would be our customer.

2. If the board cannot commit to obligating funds toward a purchase order with NRTC, then I am not sure how we would proceed. We would need to setup a call for additional discussions.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, September 29, 2021 12:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Hi Bob

Thank you so much for the quick turnaround. I'm working a few leads on our end to help vet this and move quickly. What would you need upfront to secure this 1000 miles capacity?
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, September 29, 2021 10:05 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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Just received this morning,

Below is pricing for 1000 miles of OFS 48 and 144 count Loose Tube fiber for NEK. Please note this is very good pricing considering current market conditions. This pricing is based upon our current fiber allocation set up with OFS and is only available for the amount of fiber shown below. We anticipate that future pricing for fiber will be far higher and we are working to get more details on that. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. This pricing is for 5,280,000 feet of 48 and 5,280,000 of 144 fiber. Please note, once the order is placed, it cannot be cancelled.

Part Number	Cost /Foot	Total Footage	Extended Cost
OFS-AT-3CEH2YT-048	0.36	5,280,000	\$1,900,800
OFS-AT-3CEH2YT-144	0.88	5,280,000	\$4,646,400



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Tuesday, September 28, 2021 9:34 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, September 28, 2021 9:33 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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What we had allocated was ADSS so we are asking them to pivot that number against Strand/Lash, hence why we are trying to lock down the pricing. We are looking for an answer of allocated for this year and what that number looks like next year.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Tuesday, September 28, 2021 9:30 AM

To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

Thanks. I was under the impression that you had already locked in on the price for the exiting 1000 mile allotment based on last year's negotiations. Did I misinterpret that?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Tuesday, September 28, 2021 9:24 AM

To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate

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I wanted to send a note and let you know that I have not forgotten your request for quote. Getting simple pricing for fiber right now is not very easy task. We have a call with our supplier today to get some pricing locked in the best we can. The problem we are facing is the price we quote you today could change tomorrow or within a week. Hope to have this resolved today and will keep you posted.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>

Sent: Friday, September 24, 2021 3:36 PM

To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Estimate


Thank you for your prompt response.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, September 24, 2021 3:30 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

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Got it, I just spoke to Kevin and we will get a quote over to you.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, September 24, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Estimate

Strand & Lash. Thanks for the quick response.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Friday, September 24, 2021 3:28 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Estimate

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You are most welcome, regarding the fiber, do you know if you need ADSS or Strand & Lash or would you like me to quote both?



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Friday, September 24, 2021 2:44 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Estimate

Bob,

Thank you for pulling the meeting together today. We are reaching out to the Administration this afternoon. Our Board meetings are on Monday and our goal is to get the green light. For budgeting purposes, we want to make sure to set the appropriate amount of funds aside. What would be the cost of 1000 miles of 144 strand single-mode fiber?

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

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sender by reply e-mail and destroy all copies of the original message.

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Exact needs
Date: Wednesday, November 24, 2021 4:13:16 PM
Attachments: [image001.png](#)

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful. Thanks and have a great holiday.

Rob

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Exact needs
Date: Monday, November 29, 2021 8:37:41 AM
Attachments: [image001.png](#)

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Keep in mind, once manufacturing begins its not easily changed, it impacts the production line. I was told 45 day notice to make a change but could be longer so its best to get this as close as we can from the very beginning.

Here is the latest allocation with the addition of 24 strand.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	100	528,000	\$ 0.27	\$ 142,560.00
OFS-AT-3CEH2YT-048	360	1,900,800	\$ 0.36	\$ 684,288.00
OFS-AT-3CEH2YT-072	290	1,531,200	\$ 0.56	\$ 857,472.00
OFS-AT-3CEH2YT144	330	1,742,400	\$ 0.88	\$ 1,533,312.00
	1,080	5,702,400		\$ 3,217,632.00



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:24 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Exact needs

Thank you Bob! And What flexibility do we have after the first few shipments? And do we gain anything by keeping them in the same type of fiber? Have a great holiday

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13:06 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 24, 2021 4:03 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful. Thanks and have a great holiday.

Rob

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From: [Fish, Robert](#)
To: [Bob Hagarman](#)
Subject: Re: Exact needs
Date: Wednesday, November 24, 2021 4:23:38 PM
Attachments: [image001.png](#)

Thank you Bob! And What flexibility do we have after the first few shipments? And do we gain anything by keeping them in the same type of fiber? Have a great holiday

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13:06 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
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From: [Fish, Robert](#)
To: [Bob Hagarman](#)
Subject: RE: fiber allotments
Date: Friday, October 29, 2021 1:17:00 PM
Attachments: [image001.png](#)

Thank you Bob. What happens in NEK wants 48 vs 72? Or are we working up to 4 different strand counts?

Trying to keep this all together, but don't want to ignore another variable that could simplify things!

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, October 29, 2021 12:28 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: fiber allotments

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We got a better price on the 72 than we thought we would be.

This is how pricing would be for 1800 miles including 72 count fiber with a 50/50 split with NEK



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 29, 2021 9:46 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: fiber allotments

Hi Bob

I'm trying to lock down the allotment. Things may change w/o NEK since the other areas are slightly denser. To assist, is it safe to assume with 528000 fibers to work with spread among the different counts? Any luck on that 72, 96 cost? If, to make the deal, I need to include 24, 48, 72/96, and 144 is that possible? It's only a single CUD that is insisting b/c of their partner on the 72. While I'm in favor of the additional capacity, I also want to be sure needs are met.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: fiber allotments
Date: Friday, October 29, 2021 1:22:12 PM
Attachments: [image001.png](#)

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Got your voicemail, on a call but will call you as soon as I am off this call to walk you through it.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, October 29, 2021 1:18 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: fiber allotments

Thank you Bob. What happens in NEK wants 48 vs 72? Or are we working up to 4 different strand counts?

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Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
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robert.fish@vermont.gov

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From: [David Jones](#)
To: [programcoordinator](#)
Cc: [Fish, Robert](#); [Steve Huffaker](#); [David Healy](#); [Jeremy Hansen](#); [Magna Dodge](#); [Nancy Cornell](#); [Ann Manwaring](#); [Steven John](#)
Subject: Re: Fiber breakdown
Date: Friday, October 29, 2021 3:26:24 PM

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Hi Will and Rob,

I ran the percentages past GWI's chief engineer and got this response:

Upon first glance, it seems too heavily weighted for the lower fiber counts.

These seem like really low fiber counts in an effort to maximize the mileage of fiber being purchased. If you average 12 homes per mile for a 20km run (typical PON design goal) you will need a minimum of a 144ct fiber just to serve the premises on that path. This doesn't take into account any growth or spare capacity. I believe that we will want to use larger count fiber to support this growth and flexibility to support cell towers, municipal needs, etc. 24ct should be deployed for side streets with limited future housing growth.

144 count: 50%

48 or 72* count: 40% **We can certainly design for smaller strand counts and overlap multiple cables if need be

24 count: 10%

Many thanks,

David
David W. Jones
Project Director
[DVFiber](#) | 802.368.2217

On Fri, Oct 29, 2021 at 2:49 PM Will Anderson <programcoordinator@vcuda.org> wrote:
Excellent Rob.

In this case, based on the amount that Maple needs and the fact that CVFiber has voiced flexibility between 48 and 72, I recommend we purchase 50/50 between 72 and 48. With this setup, the final strand counts for the initial purchase will be:

400 miles of 24-count
200 miles of 48-count
200 miles of 72-count
200 miles of 144-count

Based on the most current projections, at least three CUDs will be in good shape for at least the first year of construction, with 1000 miles split across these strand counts.

Will

On Fri, Oct 29, 2021 at 2:39 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

Thank you for all the work on this. Moments ago I got approval to do it between the four counts so we can do 48 and 72 and the one 44 and 24 to make everybody happy. Please send me the final percentages and we'll see how many miles it equals. With the drop in 144 I'm pretty darn confident that will still end up at 1000 .

Rob

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, October 29, 2021 2:14:12 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Cc: Steve Huffaker <chair@maplebroadband.net>; David Jones <David.Jones@dvfiber.net>; David Healy <dhealy@cvfiber.net>; Jeremy Hansen <jhansen@cvfiber.net>; Magna Dodge <magna@maplebroadband.net>; Nancy Cornell <nancy@maplebroadband.net>; Ann Manwaring <Chair@dvfiber.net>

Subject: Re: Fiber breakdown

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Rob,

I have been discussing this issue with the CUDs that are going to be ready to start building in the coming year, and trying to ascertain the most effective miles/strand count ratio. Here are my findings and a suggested path forward.

You are correct that, with NEK going essentially their own way, we will need less 144-strand count fiber to cover the long distance network "backbones". A WEC feasibility study for the CVFiber territory places the percentage necessary at 20%, and Maple Broadband's preliminary estimate put their needs at 15%. Keeping in mind that DVFiber and Lamoille have both also cited a need for 144, I suggest we pursue **200 miles of 144-count**, or 20% of the initial purchase.

Smaller strand count fiber will be critical when it comes to reaching customers at their residences, and NEK wasn't in the market for anything smaller than 48. The needs of the CUDs that are going to be signing on for this fiber indicate that 40% or **400 miles of 24-count** fiber will be necessary for the initial stages of construction.

The question that remains for me is which strand count to pursue for the middle-size fiber. Maple Broadband has voiced a preference for 72-count based on the work of their engineers, while Deerfield Valley requires 48. I'm no engineer but my understanding is there is some interchangeability at play in this decision. CVFiber has indicated they would be amenable to either count and adjust their plans accordingly. Either way, it looks like **400 miles of 48 or 72 count** will be ideal. My suggestion would be to go with whichever middle-size fiber order will bring us the greatest net distance of fiber, but I'll look back to you, the CUDs and the provider to make that decision.

I think it's also key to understand that each CUD involved here is in the process of designing their network, and each expects to have clear numbers for mileage and strand counts before the end of the year. In response to your last question, I expect that information will be available in the coming months, but is not right now. The more flexibility the better as we try to finalize this purchase.

CUD's- please jump in with any additions or problems you have with this summary.

Will

On Fri, Oct 29, 2021 at 9:27 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Good Morning

We are working to finalize the fiber count breakdown for the 1,000. NEK is leveraging other funds to secure their 1,000 miles. This change was made to secure the deal on the 1,000 miles at same price split between the other CUDs.

1. If we go to 72 count vs 36, the total amount of fiber available decreases to 1800 miles (and the price goes up) if the breakdown is still 50/25/25. They have an allotment of total strands that can be divided among different counts. Can you each work with 36 instead of 72?
2. Since we are now facilitating a purchase for slightly denser areas, do we still want 50% of 144? If you now have a more detailed breakdown of what you would need between 144, 48, 24 OR 144, 72, 24 (OR 144,72,96 which may be cheaper!), please share ASAP.
3. Do you have any information on when the different types of fiber would be needed? We have the ability to shift the make-up in the shipments to ensure needs are met.

I think the goal is going to be to ensure enough fiber for the groups that are ready with some small amount remaining to allow other groups to get started for this first purchase.

Thank you

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Cc: [Steve Huffaker](#); [David Jones](#); [David Healy](#); [Jeremy Hansen](#); [Magna Dodge](#); [Nancy Cornell](#); [Ann Manwaring](#)
Subject: Re: Fiber breakdown
Date: Friday, October 29, 2021 2:49:42 PM

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Excellent Rob.

In this case, based on the amount that Maple needs and the fact that CVFiber has voiced flexibility between 48 and 72, I recommend we purchase 50/50 between 72 and 48. With this setup, the final strand counts for the initial purchase will be:

400 miles of 24-count
200 miles of 48-count
200 miles of 72-count
200 miles of 144-count

Based on the most current projections, at least three CUDs will be in good shape for at least the first year of construction, with 1000 miles split across these strand counts.

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To: Fish, Robert <Robert.Fish@vermont.gov>
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802-522-2617 (mobile)

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Cc: [Steve Huffaker](#); [David Jones](#); [David Healy](#); [Jeremy Hansen](#); [Magna Dodge](#); [Nancy Cornell](#); [Ann Manwaring](#)
Subject: Re: Fiber breakdown
Date: Friday, October 29, 2021 2:39:01 PM

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2. Since we are now facilitating a purchase for slightly denser areas, do we still want 50% of 144? If you now have a more detailed breakdown of what you would need between 144, 48, 24 OR 144, 72, 24 (OR 144,72,96 which may be cheaper!), please share ASAP.
3. Do you have any information on when the different types of fiber would be needed? We have the ability to shift the make-up in the shipments to ensure needs are met.

I think the goal is going to be to ensure enough fiber for the groups that are ready with some small amount remaining to allow other groups to get started for this first purchase.

Thank you

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Fish, Robert](#)
To: [David Jones](#); [programcoordinator](#)
Cc: [Steve Huffaker](#); [David Healy](#); [Jeremy Hansen](#); [Magna Dodge](#); [Nancy Cornell](#); [Ann Manwaring](#); [Steven John](#)
Subject: RE: Fiber breakdown
Date: Friday, October 29, 2021 3:58:00 PM

Hi David, et al

Please narrow this down. The price difference between the two options – a) what will posted; and b) David’s suggesting splitting 72/48 down the middle is close to a \$1M. That may change since the total # of mile available for option b will be between 900-1000 vs at least 1000 possible more for the other. I want to be sure there is enough capacity to account for growth and public use.

What about 15, 22.5,22.5,40?

Please confer and let me know. Your design people are the experts at this!

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: David Jones <David.Jones@dvfiber.net>
Sent: Friday, October 29, 2021 3:26 PM
To: [programcoordinator](#) <programcoordinator@vcuda.org>
Cc: [Fish, Robert](#) <Robert.Fish@vermont.gov>; [Steve Huffaker](#) <chair@maplebroadband.net>; [David Healy](#) <dhealy@cvfiber.net>; [Jeremy Hansen](#) <jhansen@cvfiber.net>; [Magna Dodge](#) <magna@maplebroadband.net>; [Nancy Cornell](#) <nancy@maplebroadband.net>; [Ann Manwaring](#) <Chair@dvfiber.net>; [Steven John](#) <Steven.John@dvfiber.net>
Subject: Re: Fiber breakdown

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Will and Rob,

I ran the percentages past GWI's chief engineer and got this response:

Upon first glance, it seems too heavily weighted for the lower fiber counts.

These seem like really low fiber counts in an effort to maximize the mileage of fiber being purchased. If you average 12 homes per mile for a 20km run (typical PON design goal) you will need a minimum of a 144ct fiber just to serve the premises on that path. This doesn't take into account any growth or spare capacity. I believe that we will want to use larger count fiber to support this growth and flexibility to support cell towers, municipal needs, etc. 24ct should be deployed for side streets with limited future housing growth.

144 count: 50%

48 or 72* count: 40% **We can certainly design for smaller strand counts and overlash multiple cables if need be

24 count: 10%

Many thanks,

David

David W. Jones

Project Director

[DVFiber](#) | 802.368.2217

On Fri, Oct 29, 2021 at 2:49 PM Will Anderson <programcoordinator@vcuda.org> wrote:

Excellent Rob.

In this case, based on the amount that Maple needs and the fact that CVFiber has voiced flexibility between 48 and 72, I recommend we purchase 50/50 between 72 and 48. With this setup, the final strand counts for the initial purchase will be:

400 miles of 24-count

200 miles of 48-count

200 miles of 72-count

200 miles of 144-count

Based on the most current projections, at least three CUDs will be in good shape for at least the first year of construction, with 1000 miles split across these strand counts.

Will

On Fri, Oct 29, 2021 at 2:39 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

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final percentages and we'll see how many miles it equals. With the drop in 144 I'm pretty darn confident that will still end up at 1000 .

Rob

Get [Outlook for iOS](#)

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, October 29, 2021 2:14:12 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Cc: Steve Huffaker <chair@maplebroadband.net>; David Jones <David.Jones@dvfiber.net>; David Healy <dhealy@cvfiber.net>; Jeremy Hansen <jhansen@cvfiber.net>; Magna Dodge <magna@maplebroadband.net>; Nancy Cornell <nancy@maplebroadband.net>; Ann Manwaring <Chair@dvfiber.net>

Subject: Re: Fiber breakdown

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Rob,

I have been discussing this issue with the CUDs that are going to be ready to start building in the coming year, and trying to ascertain the most effective miles/strand count ratio. Here are my findings and a suggested path forward.

You are correct that, with NEK going essentially their own way, we will need less 144-strand count fiber to cover the long distance network "backbones". A WEC feasibility study for the CVFiber territory places the percentage necessary at 20%, and Maple Broadband's preliminary estimate put their needs at 15%. Keeping in mind that DVFiber and Lamoille have both also cited a need for 144, I suggest we pursue **200 miles of 144-count**, or 20% of the initial purchase.

Smaller strand count fiber will be critical when it comes to reaching customers at their residences, and NEK wasn't in the market for anything smaller than 48. The needs of the CUDs that are going to be signing on for this fiber indicate that 40% or **400 miles of 24-count** fiber will be necessary for the initial stages of construction.

The question that remains for me is which strand count to pursue for the middle-size fiber. Maple Broadband has voiced a preference for 72-count based on the work of their engineers, while Deerfield Valley requires 48. I'm no engineer but my understanding is there is some interchangeability at play in this decision. CVFiber has indicated they would be amenable to either count and adjust their plans accordingly. Either way, it looks like **400 miles of 48 or 72 count** will be ideal. My suggestion would be to go with whichever middle-size fiber order will bring us the greatest net distance of fiber, but I'll look back to you, the CUDs and the provider to make that decision.

I think it's also key to understand that each CUD involved here is in the process of designing

their network, and each expects to have clear numbers for mileage and strand counts before the end of the year. In response to your last question, I expect that information will be available in the coming months, but is not right now. The more flexibility the better as we try to finalize this purchase.

CUD's- please jump in with any additions or problems you have with this summary.

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Rob Fish

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802-522-2617 (mobile)

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From: [Will Anderson](#)
To: [David Jones](#); [Fish, Robert](#); [Steve Huffaker](#); [Steven John](#); [Ann Manwaring](#); [Nancy Cornell](#); [Magna Dodge](#); [Jeremy Hansen](#); [David Healy](#)
Subject: Re: Fiber breakdown
Date: Friday, October 29, 2021 4:01:13 PM

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David,

In light of these new parameters, we may want to modify the strand counts. Let's assume for simplicity's sake that DVFiber, CVFiber and Maple will each pledge grant funding for 300 miles of fiber from this purchase.

I've been wary about making these kind of projections because detailed design still has to be completed. But it may be useful to get an idea of just what these three CUDs will need, and what we will have left over for a 1000 mile purchase.

DVFiber:

150 miles of 144-count fiber
120 miles of 48-count
30 miles of 24-count

CVFiber:

60 miles of 144-count fiber
120 miles of 48/72 count
120 miles of 24-count

Maple Broadband:

20 miles of 144-count
130 miles of 72-count
150 miles of 24-count

144= 230 miles

48= 180 miles

72= 190 miles

24= 300 miles

Total=900 miles, 100 to spare

So, in light of DVFiber's parameters, we may want to make the following purchase instead:

300 miles of 24-count fiber
200 miles of 48-count fiber
200 miles of 72-count fiber
300 miles of 144-count fiber

Will

On Fri, Oct 29, 2021 at 3:26 PM David Jones <David.Jones@dvfiber.net> wrote:

Hi Will and Rob,

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Thank you

Rob

Rob Fish

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Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: Fiber commitments update
Date: Wednesday, November 10, 2021 9:39:00 AM

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My thoughts exactly.
WA

On Wed, Nov 10, 2021 at 9:36 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Thanks for the update. Before we share that the LOC amount may be more than expected, let's await clarification. It very well may be a mistake.

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 10, 2021 9:34 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Fiber commitments update

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Hope you are doing well. Looks like to some extent we are in the hands of the lawyers now but honestly I like the way this is progressing.

Last night, CVFiber Board authorized their Executive Committee to fill in the details and sign a commitment to VCUDA at their meeting this Thursday. I'll be in attendance.

I am going to proceed with the same idea with DVFiber tonight, with the documents Primmer provided us. If modifications are necessary per the VCF lawyer, we will adjust accordingly.

If the Letter of Credit is indeed for 100%+ of the purchase price, we may have more resources than we know what to do with. I don't know to what extent CUD's know their need for other hardware, in terms of specs or quantity. We will know that with detailed design in the next two months, though. My thinking is wait for clarification and documents on the Letter of Credit from VCF and proceed accordingly.

It would be great if we could go ahead with a second purchase in December or so when more detailed design has been conducted. Maybe that means waiting to leverage the entire LOC.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

From: [Bob Hagarman](#)
To: [programcoordinator](#); [Fish, Robert](#)
Subject: RE: Fiber count per month
Date: Tuesday, November 30, 2021 10:18:03 AM
Attachments: [image001.png](#)

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Will,

Couple things,

- We are preparing the quote that is part of the contractual agreement. I don't need the monthly allocation for that so end of day is fine. I am assuming we will be shipping the monthly allocation directly to the CUD's? If that is the case I need a main point of contact and a shipping address for each CUD. I know some still may be working on their warehousing lease agreements. If they don't have this fully in place that is ok, we can use their main office address and change the shipping address early next year. I would say that they would need to have their warehousing in place by beginning of March. If not we will need to reroute.
- Will, I am assuming the quote will come to VCUDA? Are you the main POC and what address would you like us to use?
- Once the PO is placed we cannot change the full allocation, cable type/specification and fiber count are fixed at time of order placement. We are locked into the 144, 72, 48 and 24 strand mileage for the 1000 miles. We can shift the monthly delivery with notice to the factory, we need at least 60 days notice but it will be dependent on that OFS can make the change once manufacturing begins. So NRTC can make the request but it will be dependent on what OFS tells us what they can do and impact on delivery. Its important to get this as close to needed delivery as possible.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Will Anderson <programcoordinator@vcuda.org>
Sent: Tuesday, November 30, 2021 9:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Fiber count per month

Rob,

I am going to do some revisions to this distribution over the course of the morning. Depending on when I hear back from the interested CUDs, I will hopefully have a final request by the end of the day.

Bob,

Can you go into a bit more detail on what kind of flexibility we have here? For example, am I correct that the orders to the factory can be shifted around with 60 days notice? Also, what kind of flexibility is there in terms of shipping, i.e., could I simply tell you which strand counts we need in each given month, then sort out which CUD will receive the shipment at a date in the future? Any context along these lines that you can provide will be helpful to me.

Thank you both and I can't affirm the sentiment enough that we should finish this off!

Will

On Tue, Nov 30, 2021 at 8:46 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

I looked at your numbers below and the count for 24 was 30 off. Where would you like that redistributed? Feel free to respond directly to Bob. The LOC has been executed. Once we set the allocations per month, you will have paperwork for the lawyers to review. Let's finish this up!

Thanks for your assistance.

Rob

Delivery month	24-count	48-count	72-count	144-count	Total
March				150(DVFiber)	150
April			70(CVFiber)	80(CVFiber)	150
May	40 (Maple)		80(Maple)	30 (Maple)	150
June		30 (DVFiber)	120 (DVFiber)		150
July		130 (CVFiber)	20(CVFiber)		150
August	15(Maple)	75(Lamoille)		60 (Lamoille)	150
September	15(Maple)	125(Northwest)		10(Northwest)	150
TOTAL	70	360	290	330	1050
	Should be 100				Should be 1080

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Bob Hagarman](#)
Cc: [Fish, Robert](#)
Subject: Re: Fiber count per month
Date: Tuesday, November 30, 2021 12:43:28 PM
Attachments: [image001.png](#)

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Bob,

I think I can answer all of your questions at least part way at this point.

I am assuming we will be shipping the monthly allocation directly to the CUD's?

This is correct. I can send you a separate email with the current mailing addresses and contact information for each CUD. Each CUD is developing their plan for storage, almost exclusively through the warehousing capabilities of their operating partners. Having an ultimatum for warehousing actually may end up being helpful.

I am assuming the quote will come to VCUDA? Are you the main POC and what address would you like us to use?

The quote ought to come to VCUDA, and the main point of contact ought to be our chairman, F.X. Flinn. His email address is chair@vcuda.org. That being said, please keep me copied on official correspondence related to the quote and agreement.

Our mailing address is P.O. Box 1305, Quechee, Vermont, 05059

Once the PO is placed we cannot change the full allocation, cable type/specification and fiber count are fixed at time of order placement.

This is fine, we are good to go with the strand counts. My concern is only related to delivery, as CUDs complete their design and construction plans for the coming year. I think we can get you a very accurate production schedule, and then make revisions very early in the new year if necessary for a course correction.

WA

On Tue, Nov 30, 2021 at 10:17 AM Bob Hagarman <bhagarman@nrtc.coop> wrote:

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Couple things,

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Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Tuesday, November 30, 2021 9:10 AM

To: Fish, Robert <Robert.Fish@vermont.gov>; Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: Fiber count per month

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From: [Will Anderson](#)
To: [Fish, Robert](#); bhagarman@nrtc.coop
Subject: Re: Fiber count per month
Date: Tuesday, November 30, 2021 9:09:46 AM

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April			70(CVFiber)	80(CVFiber)	150
May	40 (Maple)		80(Maple)	30 (Maple)	150
June		30 (DVFiber)	120 (DVFiber)		150
July		130 (CVFiber)	20(CVFiber)		150
August	15(Maple)	75(Lamoille)		60 (Lamoille)	150
September	15(Maple)	125(Northwest)		10(Northwest)	150
TOTAL	70	360	290	330	1050
	Should be 100				Should be 1080

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Will Anderson](#)
To: [Bob Hagarman](#)
Cc: [Fish, Robert](#)
Subject: Re: Fiber count per month
Date: Tuesday, November 30, 2021 5:31:46 PM
Attachments: [image001.png](#)
[image.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Bob,

There are five CUDs that will be taking part in this purchase:

CVFiber

Address: 29 Main Street, Suite 4, Montpelier VT 05602
Contact: Jeremy Hansen, Chairman jhansen@cvfiber.net

DVFiber

Address: 139 Main St, Brattleboro, VT 05301
Contact: David Jones, Project Manager david.jones@dvfiber.net

Maple Broadband

Address: 14 Seminary Street, Middlebury VT 05753
Contact: Steve Huffaker, Chairman chair@maplebroadband.net

Northwest CUD

Address: 75 Fairfield Street, St. Albans, VT 05478
Contact: Sean Kio, Executive Director director@nwcud.com

Lamoille FiberNet

Address: PO Box 1637, Morrisville, VT 05661
Contact: Val Davis, Executive Director director@lamoillefiber.net


As for the delivery schedule, although I haven't had a definitive answer from everyone, I believe my initial plan may be satisfactory for all involved and we should proceed with that in mind. Here's a question: would it be possible to have 165 miles delivered in the final two months, rather than 150? 24-count fiber would be in play if that makes a difference.

Delivery month	24-count	48-count	72-count	144-count	Total	
March				150(DVFiber)	150	
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June		30 (DVFiber)	120 (DVFiber)		150	
July		130 (CVFiber)	20(CVFiber)		150	
August	30(Maple)	125(Northwest)		10 (Northwest)	165	
September	30(Maple)	75(Lamoille)		60(Lamoille)	165	
TOTAL		100	360	290	330	1080

Best
Will Anderson, VCUDA

On Tue, Nov 30, 2021 at 1:58 PM Bob Hagarman <bhagarman@nrtc.coop> wrote:

If you can send me the CUDs main POC and address that would be great. I figured they didn't have all the warehousing in place. We can update that early next year as we get closer to shipping reels.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Will Anderson <programcoordinator@vcuda.org>
Sent: Tuesday, November 30, 2021 12:43 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Fiber count per month

Bob,

I think I can answer all of your questions at least part way at this point.

I am assuming we will be shipping the monthly allocation directly to the CUD's?

This is correct. I can send you a separate email with the current mailing addresses and contact information for each CUD. Each CUD is developing their plan for storage, almost exclusively through the warehousing capabilities of their operating partners. Having an ultimatum for warehousing actually may end up being helpful.

I am assuming the quote will come to VCUDA? Are you the main POC and what address would you like us to use?

The quote ought to come to VCUDA, and the main point of contact ought to be our chairman, F.X. Flinn. His email address is chair@vcuda.org. That being said, please keep me copied on official correspondence related to the quote and agreement.

Our mailing address is P.O. Box 1305, Quechee, Vermont, 05059

Once the PO is placed we cannot change the full allocation, cable type/specification and fiber count are fixed at time of order placement.

This is fine, we are good to go with the strand counts. My concern is only related to delivery, as CUDs complete their design and construction plans for the coming year. I think we can get you a very accurate production schedule, and then make revisions very early in the new year if necessary for a course correction.

WA

On Tue, Nov 30, 2021 at 10:17 AM Bob Hagarman <bhagarman@nrtc.coop> wrote:

Will,

Couple things,

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To: Fish, Robert <Robert.Fish@vermont.gov>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Fiber count per month

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Bob,

Can you go into a bit more detail on what kind of flexibility we have here? For example, am I correct that the orders to the factory can be shifted around with 60 days notice? Also, what kind of flexibility is there in terms of shipping, i.e., could I simply tell you which strand counts we need in each given month, then sort out which CUD will receive the shipment at a date in the future? Any context along these lines that you can provide will be helpful to me.

Thank you both and I can't affirm the sentiment enough that we should finish this off!

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Cc: [Fish, Robert](#)
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Date: Tuesday, November 30, 2021 1:58:37 PM
Attachments: [image001.png](#)

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From: [Hallquist, Christine](#)
To: [Fish, Robert](#); [Christine Hallquist](#)
Subject: Re: Fiber share based on road miles
Date: Saturday, October 23, 2021 12:50:55 PM
Attachments: [image001.png](#)

That is why we don't wanna get too far ahead of ourselves in terms of getting pre-stocked with the fiber. 2000 miles is probably safe, 3000 you start getting risky because do you need the detailed design

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:48:45 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: Re: Fiber share based on road miles

That would be practically impossible at this point. That would probably take about 24 hours of work. Even then, it would not be much value. We are better off assuming that the cable percentages are about even for now. That is an analysis that requires detail design. This is the best we're gonna do right now.

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Saturday, October 23, 2021 12:46:46 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: RE: Fiber share based on road miles

Is it possible to remove cabled areas from the analysis?

Rob Fish
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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:44:22 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: Re: Fiber share based on road miles



Done

Photo



Robert >

them all moving along finally

Nice

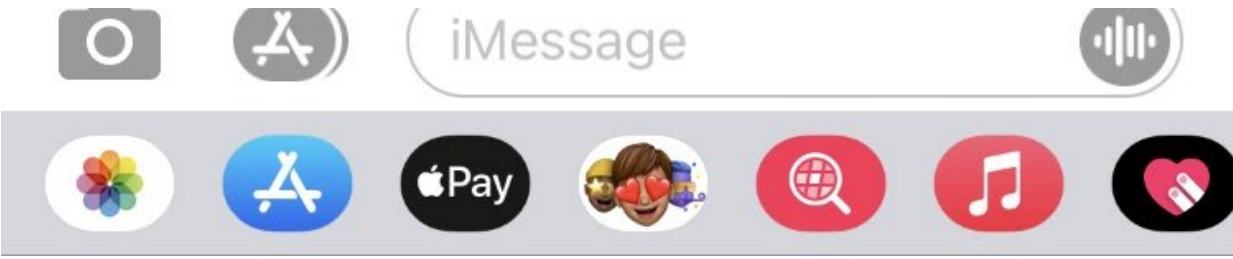
Read 11:30 AM

Today 12:39 PM

OK. You have this year's analysis by road miles. Well the road miles look like a lot, this includes cable areas. Well we should do an analysis removing cabled areas, that would take far too long. Overall, that should equal out in the end. I did update to include the towns you mentioned. I also removed the

Sorry. I removed the roads that EC fiber currently serves

That was about a five hour project



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Saturday, October 23, 2021 12:40:19 PM
To: Christine Hallquist <christinehallquist@gmail.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Fiber share based on road miles

Also, my phone is being used as a sound machine at the moment. Get me on chat if you need me for the next hour or so.

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To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Fish, Robert <Robert.Fish@vermont.gov>
Subject: Fwd: Fiber share based on road miles

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----- Forwarded Message -----
Subject:Fiber share based on road miles
Date:Sat, 23 Oct 2021 12:29:48 -0400
From:Christine Hallquist <christinehallquist@gmail.com>
To:christine.hallquist@vermont.gov

EC fiber has the served areas removed

CUD	Road Miles Share	
NEK Community Broadband	3011	26%
Lamoille FiberNet	655	6%
CVFiber	1443	12%
EC Fiber	706	6%
Addison	1055	9%
Otter Creek	998	9%
Southern Vermont	842	7%

Deerfield Valley	1543	13%
Northwest	<u>1318</u>	11%
Total Miles	11573	

From: [Fish, Robert](#)
To: [Hallquist, Christine](#); [Christine Hallquist](#)
Subject: RE: Fiber share based on road miles
Date: Saturday, October 23, 2021 12:46:00 PM
Attachments: [image001.png](#)

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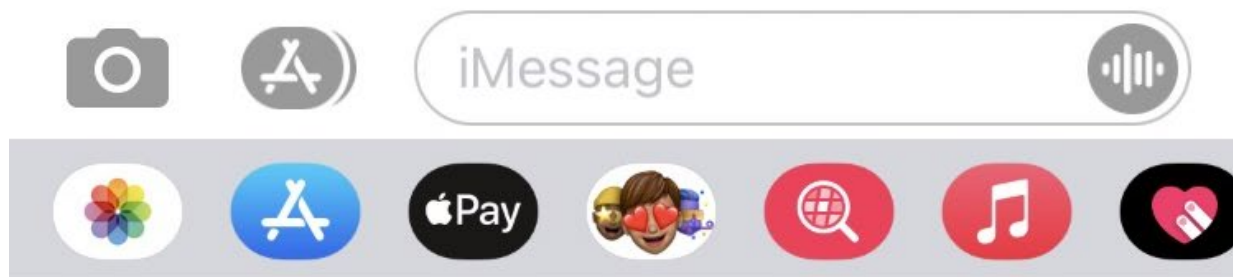
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Attachments: [image001.png](#)

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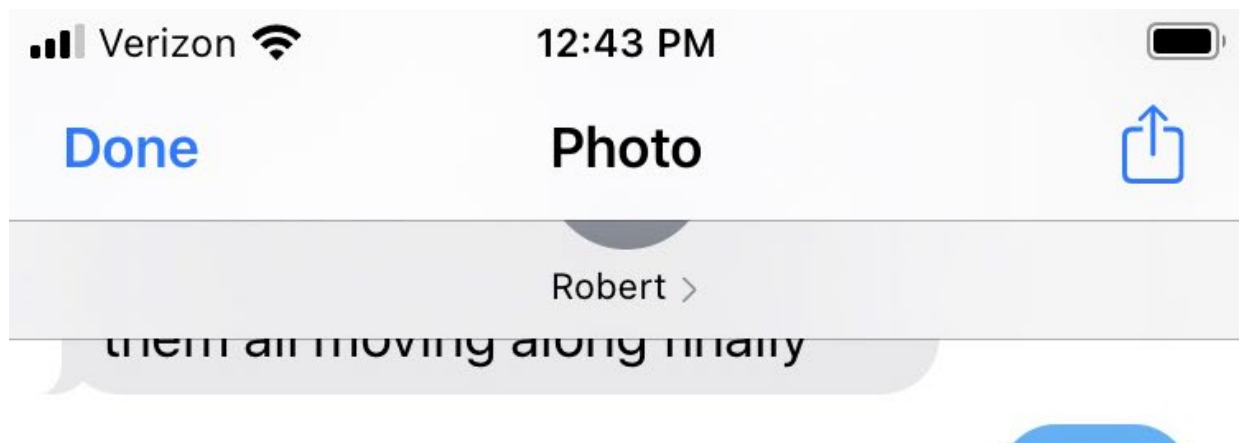
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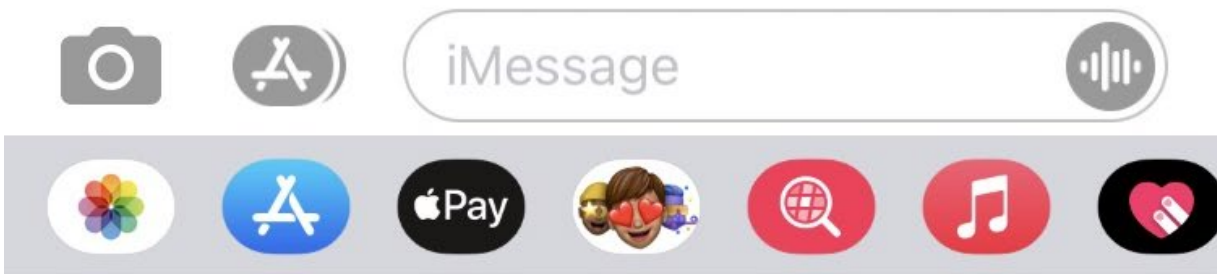
From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:44:22 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: Re: Fiber share based on road miles



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Sorry. I removed the roads that EC fiber currently serves

That was about a five hour project



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To: Christine Hallquist <christinehallquist@gmail.com>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: Fiber share based on road miles

Also, my phone is being used as a sound machine at the moment. Get me on chat if you need me for the next hour or so.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Subject: Fwd: Fiber share based on road miles

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----- Forwarded Message -----

Subject:Fiber share based on road miles
Date:Sat, 23 Oct 2021 12:29:48 -0400
From:Christine Hallquist <christinehallquist@gmail.com>
To:christine.hallquist@vermont.gov

EC fiber has the served areas removed

CUD	Road Miles Share	
NEK Community Broadband	3011	26%
Lamoille FiberNet	655	6%
CVFiber	1443	12%
EC Fiber	706	6%
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Deerfield Valley	1543	13%
Northwest	<u>1318</u>	11%
Total Miles	11573	

From: [Hallquist, Christine](#)
To: [Fish, Robert](#); [Christine Hallquist](#)
Subject: Re: Fiber share based on road miles
Date: Saturday, October 23, 2021 12:51:49 PM
Attachments: [image001.png](#)

The overall share should be relatively accurate

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From: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Sent: Saturday, October 23, 2021 12:48:45 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: Re: Fiber share based on road miles

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Sent: Saturday, October 23, 2021 12:46:46 PM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Christine Hallquist <christinehallquist@gmail.com>
Subject: RE: Fiber share based on road miles

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Robert >

them all moving along finally

Nice

Read 11:30 AM

Today 12:39 PM

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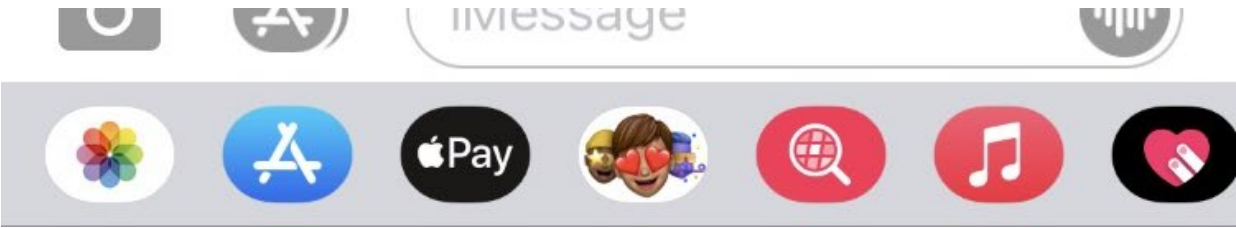
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Total Miles	11573	

From: [Fish, Robert](#)
To: [Hallquist, Christine](#); [Christine Hallquist](#)
Subject: RE: Fiber share based on road miles
Date: Saturday, October 23, 2021 12:54:00 PM
Attachments: [image001.png](#)

Ok – Then let’s forward you analysis on to Doug Farnham and ask for a letter approving that amount for Fiber and Electronics Purchases. We still don’t have a quote for substituting the 72 for the 47, but here are the quotes at the moment.

Part Number	Member Cost /Foot	Total Footage	Extended Member Cost
OFS-AT-3CEH2YT-24	0.27	1,320,000	\$356,400
OFS-AT-3CEH2YT-48	0.36	1,320,000	\$475,200
OFS-AT-3CEH2YT-144	0.88	2,640,000	\$2,323,200

The goal is for him to issue a letter approving spending \$X for materials via the construction program.

Also, we need him to up the amount available to the preconstruction program to address the Make-Ready issue.

Thanks

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
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robert.fish@vermont.gov

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Subject: Re: Fiber share based on road miles

That is why we don’t wanna get too far ahead of ourselves in terms of getting pre-stocked with the fiber. 2000 miles is probably safe, 3000 you start getting risky because do you need the detailed design

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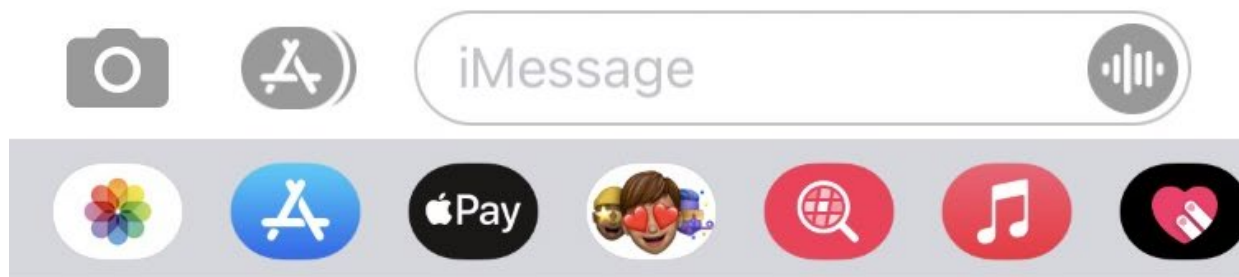
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Total Miles	11573	

From: [David Jones](#)
To: [programcoordinator](#)
Cc: [Fish, Robert](#)
Subject: Re: Fiber Specs
Date: Friday, November 12, 2021 3:30:22 PM

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Hi Will,

Thanks for the update. To be clear, I have asked GWI whether the allocation that includes 72-count would be acceptable and am waiting to hear back. I asked you about the 24 count in case GWI felt it was key to include it. We will be clear on this before we vote on Monday.

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Fri, Nov 12, 2021 at 3:09 PM Will Anderson <programcoordinator@vcuda.org> wrote:

David,

I'm including Rob on this email to clue him into what our purchase would look like assuming we purchase some 24-count fiber for the use of DVFiber.

Please keep in mind that we have been proceeding with the Letter of Credit and purchase without an allocation of 24, so there's no guarantee that we will be able to acquire it in this purchase. We are certainly going to make another purchase in which 24 is included, and I think the mileage of 24 you are looking for will not be as difficult to acquire as the whole 1000.

DVFiber's ideal allocation would be: 150 miles of 144-count
120 miles of 48-count
30 miles of 24-count

Placing our total purchase at **30 miles of 24-count**
470 miles of 48-count
200 miles of 72-count
300 miles of 144-count

Will

On Thu, Nov 11, 2021 at 5:42 PM Will Anderson <programcoordinator@vcuda.org> wrote:

David,

It may still be possible, I will have to inquire to Rob Fish and the people at NRTC tomorrow. Admittedly I don't fully understand the way their factory works, that prevents them from producing different combinations of fiber at a given time.

I can give you the part number, OFS-AT-3CEH2YT-024

Our thinking was that 24 would be purchased in our next tranche, but it can't hurt to pursue the idea of picking up some now. After all, the backbone mileage for the three CUDs that are proceeding with construction next year comes out to around 900, so there may be room in the extra 100 to shift down for some to-the-premises fiber now.

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DVFiber

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Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Thursday, November 11, 2021 9:40 AM

To: David Jones <David.Jones@dvfiber.net>

Cc: Chris Whelan <cwhelan@staff.gwi.net>; Kerem Durdag <kdurdag@staff.gwi.net>; Steven John <Steven.John@dvfiber.net>;

keith.thompson@dvfiber.net; Elijah Emerson <eemerson@primmer.com>; Fish,

Robert <Robert.Fish@vermont.gov>; Ann Manwaring

<Ann.Manwaring@dvfiber.net>

Subject: Re: Fiber Specs

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Cell: 917-538-4649

From: [Will Anderson](#)
To: [David Jones](#); [Fish, Robert](#)
Subject: Re: Fiber Specs
Date: Friday, November 12, 2021 3:09:43 PM

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To: David Jones <David.Jones@dvfiber.net>

Cc: Chris Whelan <cwhelan@staff.gwi.net>; Kerem Durdag <kdurdag@staff.gwi.net>; Steven John <Steven.John@dvfiber.net>; keith.thompson@dvfiber.net; Elijah Emerson <eemerson@primmer.com>; Fish, Robert <Robert.Fish@vermont.gov>; Ann Manwaring <Ann.Manwaring@dvfiber.net>

Subject: Re: Fiber Specs

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To: [David Jones](#)
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From: [Chris Recchia](#)
To: [Fish, Robert](#)
Subject: RE: fiber specs
Date: Thursday, October 14, 2021 9:21:12 AM
Attachments: [FiberSpecs_Superior DriLite-LT-SJ-ser11D.pdf](#)

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Hi Rob. Sorry for the delay – although 3 years in the job, in the last three days I’ve learned more about fiber than I did in the previous period! So, this was a good exercise for me, and hope it’s still timely for you.

Attached is what we use, loose tube put up with strand. It is dielectric, but not ADSS like what the state acquired in past (which is not good for middle mile/distribution and repeated splicing, as we’ve discussed).

Armored, I’ve learned, is generally used for underground – too heavy and difficult to splice for aerial – and we’ve never ordered it because we don’t use that much underground relative to our overall fiber mileage, and never really know where it’s going to be needed until we have a final design. It’s easier to use the same fiber in conduit.

Good luck, and let me know if you need anything else.

Thanks,

- Chris

From: Fish, Robert [mailto:Robert.Fish@vermont.gov]
Sent: Monday, October 11, 2021 9:58 AM
To: Chris Recchia <chris.recchia@valley.net>
Subject: fiber specs

Hi Chris

Would you please send me the full specs for the fiber you would recommend for purchase by the CUDs? I want to be sure the quotes I’m getting are comparable and I’m not missing anything.

Dielectric (adss), gel-free, loose tube. 144/48

What about armored if that’s the only option? I believe you recommended against it, but want to confirm.

Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [David Jones](#)
To: [Fish, Robert](#)
Cc: [programcoordinator](#); [Steven John](#); [keith.thompson@dvfiber.net](#)
Subject: Re: Fiber Specs
Date: Monday, November 15, 2021 11:08:39 AM

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Hi Rob,

Not in this order.

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Mon, Nov 15, 2021 at 11:06 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

So please confirm that you don't need 24?

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From: David Jones <David.Jones@dvfiber.net>
Sent: Monday, November 15, 2021 11:05:34 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; [programcoordinator](mailto:programcoordinator@vcuda.org) <programcoordinator@vcuda.org>
Cc: Steven John <Steven.John@dvfiber.net>; keith.thompson@dvfiber.net <keith.thompson@dvfiber.net>
Subject: Fwd: Fiber Specs

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Rob and Will,

We agree with the quantities of 144, 72, and 48 count cables as proposed.

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

----- Forwarded message -----

From: Chris Whelan <cwhelan@staff.gwi.net>
Date: Mon, Nov 15, 2021 at 10:59 AM
Subject: Re: Fiber Specs
To: David Jones <David.Jones@dvfiber.net>
Cc: Kerem Durdag <kdurdag@staff.gwi.net>, Steven John <Steven.John@dvfiber.net>, Keith Thompson <keith.thompson@dvfiber.net>

Yes, the pricing and strand count adjustments make sense to proceed with.

Christopher Whelan

Director of Network Engineering
GWI

office 207-602-1115
cell 207-751-5013
www.gwi.net

On Mon, Nov 15, 2021 at 10:23 AM David Jones <David.Jones@dvfiber.net> wrote:
Hi Chris and Kerem,

I need confirmation that we should sign up for these quantities and prices:

Details	Unit	Quantity	Unit Price
48-strand count fiber cable	Miles	30	1900.80
72-strand count fiber cable	Miles	120	2956.80
144-strand count fiber cable	Miles	150	4646.40

The idea that NEK dropped out was a miscommunication.

Many thanks,

David
David W. Jones
Project Director

Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 8:53 PM David Jones <David.Jones@dvfiber.net> wrote:
Hi Chris and Kerem,

I noted that the draft VCUDA order form listed 144, 72, and 48 count fiber but no 24 count.

I asked if it would be possible to purchase 24 count and got the response below, including a part number.

I have no opinion about the proportions of the different strand counts are right and will rely on your input.

There is also the possibility that we could get more than 300 miles because at least one CUD, NEK, will pursue an RFP process rather than participate in the advance purchase now.

Many thanks,

David
David W. Jones
Project Director

Land: 802.368.2217
Cell: 917-538-4649

----- Forwarded message -----

From: **Will Anderson** <programcoordinator@vcuda.org>
Date: Thu, Nov 11, 2021 at 5:43 PM
Subject: Re: Fiber Specs
To: David Jones <David.Jones@dvfiber.net>

David,

It may still be possible, I will have to inquire to Rob Fish and the people at NRTC tomorrow. Admittedly I don't fully understand the way their factory works, that prevents them from producing different combinations of fiber at a given time.

I can give you the part number, OFS-AT-3CEH2YT-024

Our thinking was that 24 would be purchased in our next tranche, but it can't hurt to pursue the idea of picking up some now. After all, the backbone mileage for the three CUDs that are proceeding with construction next year comes out to around 900, so there may be room in the extra 100 to shift down for some to-the-premises fiber now.

WA

On Thu, Nov 11, 2021 at 5:28 PM David Jones <David.Jones@dvfiber.net> wrote:

Hi Will,

When we started we had specified 10% 24 count, figuring we would use this between splitters and premises. Now the smallest count is 48. Is there an opportunity to get 24 count and, if so, what is the OFS part number?

Many thanks,

David
David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 3:40 PM Will Anderson <programcoordinator@vcuda.org> wrote:

David,

I've attached an updated VCUDA Allocation Order with further specifications. Let me know if this is suitable or if further changes and/or additions are necessary. There are also some minor changes to the other documents to reflect the participation in the Letter of Credit from VSECU. Once I am sure that it is all in order, I will send them over to you.

Will

On Thu, Nov 11, 2021 at 9:48 AM David Jones <David.Jones@dvfiber.net> wrote:

Hi Rob and Will,

OFS will be fine. When you have determined the best way to clarify the description of the goods in the purchase documentation, please provide a draft so we can run it past GWI.

Many thanks,

David

David W. Jones
Project Director
DVFiber
Land: 802.368.2217
Cell: 917-538-4649

On Thu, Nov 11, 2021 at 9:42 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

That makes sense. Yes, the supplier purchases from a variety of different suppliers on behalf of

their members. The fiber available at earlier prices is OFS.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Thursday, November 11, 2021 9:40 AM

To: David Jones <David.Jones@dvfiber.net>

Cc: Chris Whelan <cwhelan@staff.gwi.net>; Kerem Durdag <kdurdag@staff.gwi.net>; Steven John <Steven.John@dvfiber.net>; keith.thompson@dvfiber.net; Elijah Emerson <eemerson@primmer.com>; Fish, Robert <Robert.Fish@vermont.gov>; Ann Manwaring <Ann.Manwaring@dvfiber.net>

Subject: Re: Fiber Specs

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David,

Thanks for your email, I expect we will be able to provide you with the specifications, and I there's no reason why they can't be incorporated into the Allocation Order.

I will check the information with Rob Fish who has been leading the negotiations with the supplier. I only mentioned Corning to give context to the manufacturers they work with and am not sure to what extent they will be involved in the manufacture of the fiber we are purchasing. But I understand your concerns and will have you the information as soon as possible.

Will

On Thu, Nov 11, 2021 at 9:34 AM David Jones <David.Jones@dvfiber.net> wrote:

Hi Will,

Thanks for joining the Governing Board meeting last night to speak about the fiber purchase plan. The Board is generally in agreement with the plan but will want to iron down key details regarding the actual fiber to be delivered.

As previously indicated, we will need dielectric, gel-free, loose tube, SMF28 cable in the various strand counts from a known provider that GWI can verify as proven in the field.

Previously, you or Rob Fish provided the attached data sheet for OFS Fortex cable. But last night, you mentioned Corning as one of the manufacturers.

The documents you provided for our review and signature do not include a description of the cable specifications or the manufacturer(s). We will need to include such a written description in the Allocation Order or modify the Resolution documents or Allocation Order to incorporate a separate written description by reference.

Can we please get that written description by end-of-week?

The Governing Board will want me to state that GWI agrees with the purchase plan before we vote to authorize the deal. The vote will take place Monday at 5. If the written description can't be provided this week, we might make the approval contingent on confirmation by the Executive Committee that the written description is agreed upon by GWI and incorporated by reference into the documents we sign.

Many thanks,

David

David W. Jones

Project Director

DVFiber

Land: 802.368.2217

Cell: 917-538-4649

From: [Steve Huffaker](#)
To: [Fish, Robert](#); [programcoordinator](#)
Subject: Re: fiber
Date: Friday, November 19, 2021 1:45:30 PM

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Rob,

24 fiber cable will be used for distribution from splitters to neighborhoods, and not used for drops. In most cases, 1-strand drops will be extended from the 24 fiber cables.

I have a bad feeling that CUDs were so shocked by Christine's announcement regarding backbone sizing that they didn't read her final statement, "This does not apply to "end-run fiber" that runs beyond the splitter, fiber down driveways or to the premise itself." If my guess is correct, those CUDs will be in a spot when it comes time to cost-effectively extend connections from splitters to neighborhoods.

If it will improve prospects for the effort, you are approved to reduce 24s from 100 to 50 miles. We will begin to look for the remaining 50 miles on our own.

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Friday, November 19, 2021 at 1:03 PM
To: programcoordinator <programcoordinator@vcuda.org>, Steve Huffaker <chair@maplebroadband.net>
Subject: fiber

Hi Will and Steve

I'm working to get a final price based on the Maple's proposed needs combined with everyone else bring us to a total of 1080 miles. This is beyond the 1000 miles available so the pricing will be different. I'm attempting to leverage our large purchase to make reduce the 30% increase we'd expect to pay between the original and the current. I likely will not have an answer to til Monday. I'm stick with the final allotment you sent over, but I have to ask the following question:

100 miles of 24 count? I assume that is for drops, but does it need to be 24? Could it be lower? I'm all for additional capacity, but is that necessary at the drop?

Thanks

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [NEK Executive Director](#)
To: [Fish, Robert](#)
Subject: Re: FW: 2022 prices
Date: Wednesday, December 8, 2021 5:41:15 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you.

C

On Wed, Dec 8, 2021 at 11:55 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Here you go

Rob Fish

Deputy Director

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, December 8, 2021 10:29 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: 2022 prices

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Glad a checked, 24 strand jumps 39% for 2022.

2021 = .27 per foot

2022= .38 per foot

72 strand is not on our contract pricing, so I am giving you an average increase of 35%

2021 = .56 per foot

2022 = .75 per foot



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, December 8, 2021 9:59 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: 2022 prices

Thanks for sharing. There were #'s in the spreadsheet for 2022, but not for 24 and 72 count.
Do you have those?

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Wednesday, December 8, 2021 9:31:17 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: 2022 prices

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See column G. This is what I would call street level pricing.

As an FYI, we are currently in negotiation to lock our 2022 pricing. Don't have that to share just yet.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, December 8, 2021 9:07 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: 2022 prices

Hi Bob

Can you please send me the price list for OFS for 2022? I'm attempting to put a # on the savings we are realized by acting now. Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: FW: adjusted allotment for VCUDA - 30 miles of 24 count
Date: Monday, November 15, 2021 9:54:01 AM
Attachments: [image001.png](#)

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Brilliant, thanks Rob.

DVFiber is meeting tonight and I will update you on the outcome.

WA

On Mon, Nov 15, 2021 at 9:45 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 15, 2021 9:38 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: adjusted allotment for VCUDA - 30 miles of 24 count

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Procurement is looking at this change this morning. Should have something back today. Also have a meeting with my president at noon today and then we get with the CEO for sign

off. I'll keep you posted as I push this through.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 12, 2021 3:18 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: adjusted allotment for VCUDA - 30 miles of 24 count

Hi Bob

One last minute change that can be dealt with in one of two ways. A CUD needs 30 miles of 24 count. That can either be taken out of the 48 or added to the total of 1000 if there is room. Please send me a final #. If this is not possible, let me know.

You should receive the LOC draft from Adam in a few moments. I was able to include a bit more in there and provide a bit of wiggle room for some electronic purchases potentially. Their LOC covers 50% of the VCUDA purchase of fiber as agreed.

We can work this weekend to finalizing things or address this all Monday and Tuesday. VCUDA will need time to look at the final contract.

Thanks.

Rob

“DVFiber's ideal allocation would be: 150 miles of 144-count

120 miles of 48-count

30 miles of 24-count

Placing our total purchase at **30 miles of 24-count**

470 miles of 48-count

200 miles of 72-count

300 miles of 144-count

“

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Cc: [Hallquist, Christine](#)
Subject: Re: FW: Estimated Shipping Charges State of VT
Date: Thursday, November 11, 2021 3:25:33 PM
Attachments: [image001.png](#)
[image002.png](#)

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Rob,

The CUDs are aware that VCUDA is going to need to invoice for overhead and incidental costs, including shipping.

Considering NRTC only needs the Letter of Credit for the purchase of the fiber itself, is it safe to say we can proceed with the pledges and Letter of Credit as discussed, then inform CUD's of their individual shipping costs ahead of their construction grant applications?

Will

On Thu, Nov 11, 2021 at 2:59 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Well, that's another expense. . . .see below

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 11, 2021 2:57 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: FW: Estimated Shipping Charges State of VT

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See below, one note, freight will be charged at cost, without any markup. Freight cost is fluctuating right now but this is what it is looking like.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Bill Cole <bcole@nrtc.coop>

Sent: Thursday, November 11, 2021 1:22 PM

To: David Primmer <dprimer@nrtc.coop>; Bob Hagarman <bhagarman@nrtc.coop>

Cc: Jim DaBramo <jdabramo@nrtc.coop>; Tom Whitaker <twhitaker@nrtc.coop>; Alana Pilkington <APilkington@nrtc.coop>

Subject: RE: Estimated Shipping Charges State of VT

Bob,

The 150 miles of 48 fiber will require 40 reels and 144 fiber will require 40 reels. (20,000 foot reels)

So you are looking at:

48 Fiber can do 10 reels per truckload so you will need 4 truckloads of the 48 fiber for the 150 miles

144 reels you can do 6 reels per truckload so you will need 7 truckloads of the 144 fiber for the 150 miles

I was able to get some freight estimates online that vary greatly from \$5500 per truckload to \$7500 per truckload. It is a 950 mile trip from Greenfield to Vermont. You may want to

figure on the higher side.

48 fiber/ 4 truckloads pricing is \$22,000 at the low end to \$30,000 on the higher end

144 Fiber/7 truck loads pricing is \$38,500 on the low end and \$52,500 on the higher end

Any questions please let me know.

Thanks



Bill Cole

Vendor Manager

2121 Cooperative Way, Suite 600, Herndon, VA 20171

M 717-688-4864 E bcole@nrtc.coop

nrtc.coop

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: FW: Exact needs
Date: Monday, November 29, 2021 9:16:02 AM
Attachments: [image001.png](#)

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Rob,

I have put it to the CUDs that have signed on to request shipment dates for their fiber, but so far no one has expressed a willingness to provide even rough dates. DVFiber has indicated they will do so depending on how the make-ready situation is resolved today, and Lamoille and Northwest will want the fiber only come the summer. To some extent, I am going to have to put together a proposal and see what the response is. I have started a spreadsheet with which to do so, but haven't shared this with the CUDs yet.

https://docs.google.com/spreadsheets/d/1EeP1InkbH9npv6r77WD4c5IAITbcWICIWJa0I_0xxVo/edit#gid=0

Going to try and get more information today.

Will

On Mon, Nov 29, 2021 at 8:55 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 29, 2021 8:36 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Keep in mind, once manufacturing begins its not easily changed, it impacts the production line. I was told 45 day notice to make a change but could be longer so its best to get this as close as we can from the very beginning.

Here is the latest allocation with the addition of 24 strand.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	100	528,000	\$ 0.27	\$ 142,560.00
OFS-AT-3CEH2YT-048	360	1,900,800	\$ 0.36	\$ 684,288.00
OFS-AT-3CEH2YT-072	290	1,531,200	\$ 0.56	\$ 857,472.00
OFS-AT-3CEH2YT144	330	1,742,400	\$ 0.88	\$ 1,533,312.00
	1,080	5,702,400		\$ 3,217,632.00



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:24 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Exact needs

Thank you Bob! And What flexibility do we have after the first few shipments? And do we gain anything by keeping them in the same type of fiber? Have a great holiday

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 24, 2021 4:13:06 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Exact needs

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Sure, I think the easiest way to do this is make the assumption that OFS will be able to produce 150 miles per month (splitting the other 150 miles with NEK). We are hoping they can do more but targeting 150 miles makes it easier to back into it.

Leveraging this allocation

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

If each CUD could tell me how they would like their allocation to come in each month, I can combine that with NEK and we can produce the production schedule.

Here is what NEK did as an example based on 150 miles.

NEK 150 Miles	Miles	% Allocation	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	54	36%	285,120	\$ 0.36	\$ 102,643.20
AT-3CEH2YT-096	40.5	27%	213,840	\$ 0.62	\$ 132,580.80
AT-3CE17NT-096-CLGA	15	10%	79,200	\$ 0.81	\$ 64,152.00
OFS-AT-3CEH2YT-144	40.5	27%	213,840	\$ 0.88	\$ 188,179.20
Total	150	1	792,000		\$ 487,555.20

They chose a blended average but we can front load other strand counts if a CUD wants to do that.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 24, 2021 4:03 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Exact needs

Hi Bob

Anything more you can tell me regarding exactly what you need next week per cud would be helpful.
Thanks and have a great holiday.

Rob

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From: [Will Anderson](#)
To: [David Healy](#)
Cc: [Fish, Robert](#); [Jerry Diamantides](#); [Jeremy Hansen](#); pcecchini@cvfiber.net
Subject: Re: FW: Fiber Purchase Documents
Date: Friday, November 12, 2021 2:32:29 PM

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Hi David,

Everything looks good, and thanks for such a quick turnaround following last night's approval. However, my thinking is that we will need to have the signature of Treasurer Cecchini on the Resolution-Pledge of Interest in Grant-in-Aid Revenue.

Once we have that, I can compile the documents and get them on to VCF, VSECU and NRTC.

Will

On Fri, Nov 12, 2021 at 2:06 PM David Healy <dhealy@cvfiber.net> wrote:

Will/Rob,

Here are CVFiber's signed documents.

Daivd

From: Jeremy Hansen <jhansen@cvfiber.net>
Sent: Friday, November 12, 2021 2:04 PM
To: David Healy <dhealy@cvfiber.net>; Phil Cecchini <pcecchini@cvfiber.net>
Cc: Jerry Diamantides <jdiamantides@cvfiber.net>
Subject: Re: Fiber Purchase Documents

Here are signed versions of the documents. The one document didn't seem to have a place for me to sign.

Jeremy

From: David Healy <dhealy@cvfiber.net>
Sent: Friday, November 12, 2021 8:41 AM
To: Jeremy Hansen <jhansen@cvfiber.net>; Phil Cecchini <pcecchini@cvfiber.net>
Cc: Jerry Diamantides <jdiamantides@cvfiber.net>
Subject: Fiber Purchase Documents

I have completed the three documents for your signature(s). One is incomplete.

Phil needs to sign the VSECU document only.

Thankyou.

David

david j. healy

chair, cvfiber planning and development committee

town of calais delegate
770 robinson cemetery rd
calais vt 05648

<https://cvfiber.net>

david.j.healy (skype name)
978 761 8409 (m)

From: [David Jones](#)
To: [Fish, Robert](#)
Cc: [Ann Manwaring](#); [Steven John](#); WAnderson@vcuda.org
Subject: Re: FW: Mileage answers
Date: Monday, October 4, 2021 10:08:22 AM

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Hi Rob,

We hope the statewide fiber purchase will extend beyond the CUDs that are working with NRTC.

Our goal is to complete our Phase One next year, which will cover an estimated 378 road miles.

We provided to Will a few weeks back a loose specification: Corning or Commscope dielectric, gel-free, loose tube, SMF28 of various strand counts (288, 144, 96, 48.).

We will not have a more detailed spec, e.g., how many miles of what fiber counts until 3 weeks after we get preconstruction grant approval and can complete a high level design.

Many thanks,

David

David W. Jones
Operations Committee Chair
[DVFiber](#) | 802.368.2217

On Mon, Oct 4, 2021 at 8:37 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Ann and David

I requested from Will the fiber count needs of each CUD. DVFiber wasn't included. Based on the HLD design, do you know how many miles you will need next year. An estimate is fine. Also, a breakdown between 1) 144, 72 count and 2) 144, 74, and 48 would be helpful. At this time, it looks to be more economically to focus on 2-3 counts in bulk vs 6-8 where the factory needs to be reconfigured for small amounts of other fiber.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:20 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Mileage answers

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I have tried to get an answer on that question as well, as I mentioned yesterday there hasn't been anyone with a hard answer as to what they will need yet. A couple such as Lamoille are planning on reporting back to me about it.

The general impression I have gathered is that the majority of what will be needed early on is 144-count. For the longer-distance "backbone" of the networks. As for the ratio of what will be needed with that and 72- and 48-count, I really can't say but will keep trying to press for an answer.

Will

On Fri, Oct 1, 2021 at 2:16 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Yeah easy fiber is sat with their fiber for the year from what I've been told. I don't believe auto Creek is gonna be doing anything on their own. I also don't know how Southern Vermont is going to use it but ...

Any chance you could try to reach back out to these groups and see if they have suggestions on how to a lot of between 144 and 72 or potentially 144 73 and 48

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:04:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Mileage answers

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

CVFiber: 600 miles

NEKBroadband: 500 miles (highly approximate, based on projections for a five-year period)

LamoilleFiberNet: 100 miles

Southern Vermont CUD: 217 miles (Need for materials would vary based on outcome of NTIA grant application)

So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do

hope this helps at least going forward for Monday.

Will

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: FW: Pre-purchasing update?
Date: Monday, November 8, 2021 9:27:45 AM
Attachments: [image001.png](#)
[image002.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ok, Primmer was finalizing the documents this past week, I have already written to them today to get them in front of me. Once I have them I will circulate to CUDs and VCF. We can discuss the process at this morning's meeting.

WA

On Mon, Nov 8, 2021 at 9:19 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

But they need the agreement with the CUDS via the GAN.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Monday, November 8, 2021 8:59 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: FW: Pre-purchasing update?

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Rob,

I was operating under the impression that our agreement with VCF would be facilitated by the Letter of Credit they are providing. I will try to check in with Adam about the order of operations here, sounds like the Letter of Credit is in the works through the VCF's lawyers. Since Adam is on vacation I might try to get their information from him.

Our lawyers have produced the documents for the Grant Anticipation Notes for CUDs to pledge grant funding to VCUDA and VCF. I am supposed to be receiving those documents this morning.

Will

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Does VCUDA have a draft of what will be signed with VCF?

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Monday, November 8, 2021 8:44 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Pre-purchasing update?

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Hi Rob,

I didn't get anything from VCUDA. I got your invite but I am on a flight. I've sent a note to our legal counsel to see where we are. Let's chat over email or whatsapp (+1-617-416-0095).

Thanks,

Adam

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, November 8, 2021 7:46 AM
To: Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: Pre-purchasing update?

Hi Adam

Has VCUDA provided you with everything you need? Did Bob write back to your email from Friday? Want to make sure this stays on the tracks. NRTC would like to close asap. Safe travels (and much jealousy!)

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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robert.fish@vermont.gov

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Friday, November 5, 2021 6:04 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I'm in Glasgow...but I can skype or whatsapp, if you want tomorrow. I'm 5 hrs ahead of you until Monday, and then off to Geneva until the 10th where I'm 6 hrs.

Hit me up if you want to talk. I'll do my best to help/get free...

A

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 12:52 PM
To: Adam Bornstein <abornstein@vermontcf.org>
Subject: FW: Pre-purchasing update?

FYI – Best to provide an update. Also, I have no idea about #2

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 12:50 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So that's tough to answer because right now the allocation request between VCUDA and NEK are shifting almost on a daily basis so as soon as I get it stable and the mileage worked it changes the next day. The delicate balance is working the numbers so that one party doesn't take from the other and trying to keep this to an even split.

This is causing pushback from OFS and my procurement team so I would like to suggest the following:

1. Where are we with the LOCs? I have not received anything from anyone and my leadership is asking where they are? I sent a note to Christa asking for update on her side.
2. If VCUDA and NEK are combining the LOCs how does that work, are they combining the efforts into 1 LOC? If not what happens in the event VCUDA defaults, how is NEK responsible for picking up the default of VCUDA in the event that would happen?
3. By Tuesday, I need final allocation request so we can lock this in with OFS, I am asking the same from NEK. Lets not worry about the miles we can squeeze out, lets get the need down and we can then back into the numbers. It's the only way we can do it and it stabilizes the request coming from both parties.
4. I would really encourage the CUDs to stick to standard counts like 144, 48 and 24. 72 and 36 are not standard and messes with the allocation counts on both sides. We are saying the same to NEK.
5. OFS is now pressing for PO's we need those LOCs no later than Monday so we can lock all of this in. I still need to get this approved by my CEO but I got some prep work to do on my side.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, November 5, 2021 11:45 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

Ok – then it will be 48 ; but how does that impact the amount of fiber available. This will be an issue for NEK as well. – i.e. any 24 should 48 now.

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Friday, November 5, 2021 11:44 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Pre-purchasing update?

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That's not a standard fiber count so I placed the request into procurement and we will need to check with OFS, not sure how quickly they will get back to us.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, November 5, 2021 10:26 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

Hi Bob

What is the cost of 36 vs 24? This is an urgent question.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 4, 2021 9:03 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUDA?

See point 10. I believe that answers 2 and 3.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 4, 2021 8:17 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Thanks Bob

The final allocation and amount will be important for the letter of credit. I'll check on the status of the LOC. Below are a few questions I'm hearing.

1. If NEK is finalized, how much fiber remains via this allocation – about the 1000?
I.e. which fiber counts could be increased? I'm think we'd do the increase in the 48

or the 144.

24	300	1584000
48	200	1056000
72	200	1056000
144	300	1584000

2. Are there other costs not included in the estimate? I assume shipping, temporary storage are included, but want to confirm

3. Insurance – I assume the items are insured until they arrive?

4. Adjusting allotments – Will the # be set in stone or could it adjust some to be more exacting as the different groups get their detailed designs (with the fiber counts)? I'm not sure this will happen, but it's a question that I've been asked.
 - a. For instance, if the detailed designs come in and it's 325, 300, 175, 200, can that change the order and price if it's at least 45 days out (note those #'s are arbitrary)
 - b. When do you need the allotment to each CUD? – i.e. where it will be shipped

Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Got it,

Have not received the letter of credit from anyone so we can move this forward. I believe what will happen once that is agreed upon is a version of the terms and conditions will be made official for signatures. We need the LOC language to add in and most likely the final fiber count may be required for the allocation.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 4:08 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Pre-purchasing update?

VCUDA is made up of the CUDs...that's what I was referring too

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:04:00 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

The miles may be a little higher once we get the allocation solidified with NEK and VCUDA. I am juggling two sets of numbers in trying to balance this out. What's tricky is NEK threw in a 96 count ADSS cable request.

The only thing I think we will be able to share is once everything is locked in would be the terms and conditions. The terms are between NRTC to VCUDA, not to the CUDs.

So the way we see it is we are selling 1000 miles to VCUDA, how they disperse from that point would be up to them.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 3:57 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles? I.e. go higher than 1,000?

	Miles	Feet	\$ per ft	Total	
	24	300	1584000	0.27	\$427,680.00
	48	200	1056000	0.36	\$380,160.00
	72	200	1056000	0.56	\$591,360.00
	144	300	1584000	0.88	\$1,393,920.00
		288	1000		\$2,793,120.00

Also, the CUDs are looking for paperwork to review – i.e. contract language. Anything I can share.

Thanks

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 3:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

So I am close to getting the NEK allocation settled in. Based upon last week request. Here is where it stands.

The numbers don't match what you have below but its close.

Once we get everything locked down on the contract side then we can do a best and final for the allocation and place the PO.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	325	1,716,000	\$ 0.27	\$ 463,320.00
OFS-AT-3CEH2YT-048	205	1,082,400	\$ 0.36	\$ 389,664.00
OFS-AT-3CEH2YT-072	215	1,135,200	\$ 0.56	\$ 635,712.00
OFS-AT-3CEH2YT144	255	1,346,400	\$ 0.88	\$ 1,184,832.00
	1,000			\$ 2,673,528.00

I still have not received the LOC's from either party so still waiting to move this forward.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 3, 2021 2:02 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: FW: Pre-purchasing update?

And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b)

if the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Wednesday, November 3, 2021 1:48 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber

200 miles of 48-count fiber

200 miles of 72-count fiber

300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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To: [Fish, Robert](#)
Subject: Re: FW: Pre-purchasing update?
Date: Monday, November 8, 2021 8:59:01 AM
Attachments: [image001.png](#)
[image002.png](#)

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Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, November 5, 2021 11:45 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

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Rob Fish

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robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Friday, November 5, 2021 11:44 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Pre-purchasing update?

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That's not a standard fiber count so I placed the request into procurement and we will need to check with OFS, not sure how quickly they will get back to us.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, November 5, 2021 10:26 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

Hi Bob

What is the cost of 36 vs 24? This is an urgent question.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUDA?

See point 10. I believe that answers 2 and 3.



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144.

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 - a. For instance, if the detailed designs come in and it's 325, 300, 175, 200, can that change the order and price if it's at least 45 days out (note those #'s are arbitrary)
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VCUDA is made up of the CUDs...that's what I was referring too

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So the way we see it is we are selling 1000 miles to VCUDA, how they disperse from that point would be up to them.



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M 717-676-9083 E bhagarman@nrtc.coop
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 3:57 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles? I.e. go higher than 1,000?

	Miles	Feet	\$ per ft	Total
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Also, the CUDs are looking for paperwork to review – i.e. contract language. Anything I can share.

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I still have not received the LOC's from either party so still waiting to move this forward.



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Sent: Wednesday, November 3, 2021 2:02 PM
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And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b) if

the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Wednesday, November 3, 2021 1:48 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber

200 miles of 48-count fiber

200 miles of 72-count fiber

300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: FW: Pre-purchasing update?
Date: Monday, November 8, 2021 9:51:57 AM
Attachments: [image001.png](#)
[image002.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Assuming the only change we are going to make is pushing the 24-count fiber up to 48, the final count stands at:

500 miles of 48-count fiber
200 miles of 72-count fiber
300 miles of 144-count fiber
Total= 1000 miles

As for Maple, we will discuss this on the meeting today, and then I will go to Steve, Nancy and Magna after to evaluate exactly where they stand. They will want to know more about the terms and conditions and I can walk them through this.

The attorneys from Primmer suggested that at this point, we would only need to have Grant Anticipation Notes for 50% of the fiber, considering the Letter of Credit from VCF only covers 50% of the purchase price. Do you agree with this assessment?

Will

On Mon, Nov 8, 2021 at 9:30 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Thanks Will

Do we have a final fiber county? I know everyone is fine with the mandate. The problem I'm not having is Maple being wishy-washy on whether they are fully in. We need to lock this down. If they are not, we need to find someone else to commit to taking their fiber.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Monday, November 8, 2021 9:27 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: FW: Pre-purchasing update?

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Ok, Primmer was finalizing the documents this past week, I have already written to them today to get them in front of me. Once I have them I will circulate to CUDs and VCF. We can discuss the process at this morning's meeting.

WA

On Mon, Nov 8, 2021 at 9:19 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

But they need the agreement with the CUDS via the GAN.

Rob

Rob Fish

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Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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Sent: Monday, November 8, 2021 8:59 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: FW: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

I was operating under the impression that our agreement with VCF would be facilitated by the Letter of Credit they are providing. I will try to check in with Adam about the order of operations here, sounds like the Letter of Credit is in the works through the VCF's lawyers. Since Adam is on vacation I might try to get their information from him.

Our lawyers have produced the documents for the Grant Anticipation Notes for CUDs to pledge grant funding to VCUDA and VCF. I am supposed to be receiving those documents this morning.

Will

On Mon, Nov 8, 2021 at 8:47 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Does VCUDA have a draft of what will be signed with VCF?

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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robert.fish@vermont.gov

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Monday, November 8, 2021 8:44 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Rob,

I didn't get anything from VCUDA. I got your invite but I am on a flight. I've sent a note to our legal counsel to see where we are. Let's chat over email or whatsapp (+1-617-416-0095).

Thanks,

Adam

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, November 8, 2021 7:46 AM
To: Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: Pre-purchasing update?

Hi Adam

Has VCUDA provided you with everything you need? Did Bob write back to your email from Friday? Want to make sure this stays on the tracks. NRTC would like to close asap. Safe travels (and much jealousy!)

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Friday, November 5, 2021 6:04 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I'm in Glasgow...but I can skype or whatsapp, if you want tomorrow. I'm 5 hrs ahead of you until Monday, and then off to Geneva until the 10th where I'm 6 hrs.

Hit me up if you want to talk. I'll do my best to help/get free...

A

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Friday, November 5, 2021 12:52 PM
To: Adam Bornstein <abornstein@vermontcf.org>
Subject: FW: Pre-purchasing update?

FYI – Best to provide an update. Also, I have no idea about #2

Rob Fish

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Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 12:50 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So that's tough to answer because right now the allocation request between VCUDA and NEK are shifting almost on a daily basis so as soon as I get it stable and the mileage worked it changes the next day. The delicate balance is working the numbers so that one party doesn't take from the other and trying to keep this to an even split.

This is causing pushback from OFS and my procurement team so I would like to suggest the following:

1. Where are we with the LOCs? I have not received anything from anyone and my

leadership is asking where they are? I sent a note to Christa asking for update on her side.

2. If VCUDA and NEK are combining the LOCs how does that work, are they combining the efforts into 1 LOC? If not what happens in the event VCUDA defaults, how is NEK responsible for picking up the default of VCUDA in the event that would happen?
3. By Tuesday, I need final allocation request so we can lock this in with OFS, I am asking the same from NEK. Lets not worry about the miles we can squeeze out, lets get the need down and we can then back into the numbers. It's the only way we can do it and it stabilizes the request coming from both parties.
4. I would really encourage the CUDs to stick to standard counts like 144, 48 and 24. 72 and 36 are not standard and messes with the allocation counts on both sides. We are saying the same to NEK.
5. OFS is now pressing for PO's we need those LOCs no later than Monday so we can lock all of this in. I still need to get this approved by my CEO but I got some prep work to do on my side.



Bob Hagarman

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2121 Cooperative Way
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M 717-676-9083 E bhagarman@nrtc.coop
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 11:45 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Ok – then it will be 48 ; but how does that impact the amount of fiber available. This will be an issue for NEK as well. – i.e. any 24 should 48 now.

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802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber

200 miles of 48-count fiber

200 miles of 72-count fiber

300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Cc: [Hallquist, Christine](#); [Adam Bornstein](#)
Subject: Re: FW: VCUDA Allocation and Pricing
Date: Tuesday, November 9, 2021 1:08:39 PM
Attachments: [image001.png](#)

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Great, thanks Rob.

It's in line with the previous numbers. We can use these to facilitate CUD pledge calculations. I will keep you posted on the progress of CUDs as they approve the grant pledge. It is possible we will have 600 miles of this fiber committed by tomorrow night.

Will

On Tue, Nov 9, 2021 at 12:50 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 9, 2021 12:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: VCUDA Allocation and Pricing

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Per your request, we were able to do the 2000 mile split with an equal 50/50 split based on allocation request from NEK and VCUDA.

Below is the breakdown as it applies to VCUDA.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT-144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

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From: [Hallquist, Christine](#)
To: [Fish, Robert](#)
Subject: RE: Maple FiberCounts
Date: Monday, October 4, 2021 8:47:34 AM

Thanks. 48 and 144 counts make sense.

With warm regards,
Christine Hallquist
Executive Director
Vermont Community Broadband Board
Phone – 802-636-7853

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, October 4, 2021 8:39 AM
To: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Maple FiberCounts

Told them that we will likely limit things to 2-3 fiber counts. We are also ready over 1000 – closing in on 2,000 with the other CUDs.

Rob

Aerial cable

strand count	Footage
12	176,000
24	518,000
48	332,000
72	203,000
96	122,000
144	78,000
216	11,000
288	0
Subtotal: ft	1,440,000
Subtotal: mi	273

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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be subject to disclosure under the Vermont Public Records Act.

From: [Steve Huffaker](#)
To: [Fish, Robert](#)
Subject: Re: Mileage answers
Date: Monday, October 4, 2021 8:26:03 AM
Attachments: [Phase 1 cable footage.xlsx](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Rob,

As discussed.

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Monday, October 4, 2021 at 8:07 AM
To: Nancy Cornell <nancy@maplebroadband.net>, Magna Dodge <magna@maplebroadband.net>, Steve Huffaker <chair@maplebroadband.net>
Subject: FW: Mileage answers

Did not see you all on this list. How many miles of fiber will you need (estimated) next year? Do you have any thoughts on a breakdown between 144 & 72 and/or 144, 72, and 48? Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:04 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Mileage answers

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Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

CVFiber: 600 miles

NEKBroadband: 500 miles (highly approximate, based on projections for a five-year period)

LamoilleFiberNet: 100 miles

Southern Vermont CUD: 217 miles (Need for materials would vary based on outcome of NTIA grant application)

So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do hope this helps at least going forward for Monday.

Will

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: Mileage answers
Date: Friday, October 1, 2021 2:20:00 PM

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I have tried to get an answer on that question as well, as I mentioned yesterday there hasn't been anyone with a hard answer as to what they will need yet. A couple such as Lamoille are planning on reporting back to me about it.

The general impression I have gathered is that the majority of what will be needed early on is 144-count. For the longer-distance "backbone" of the networks. As for the ratio of what will be needed with that and 72- and 48-count, I really can't say but will keep trying to press for an answer.

Will

On Fri, Oct 1, 2021 at 2:16 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Yeah easy fiber is sat with their fiber for the year from what I've been told. I don't believe auto Creek is gonna be doing anything on their own. I also don't know how Southern Vermont is going to use it but ...

Any chance you could try to reach back out to these groups and see if they have suggestions on how to a lot of between 144 and 72 or potentially 144 73 and 48

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:04:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Mileage answers

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Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

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So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do hope this helps at least going forward for Monday.

Will

From: [Fish, Robert](#)
To: [clerk](#)
Subject: Re: Mileage answers
Date: Monday, October 4, 2021 10:11:16 AM

Plan is for it to include every CUD who wants to be included.

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From: David Jones <clerk@dvfiber.net>
Sent: Monday, October 4, 2021 10:06:30 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Ann Manwaring <Chair@dvfiber.net>; Steven John <vice.chair@dvfiber.net>; WAnderson@vcuda.org <WAnderson@vcuda.org>
Subject: Re: FW: Mileage answers

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Hi Rob,

We hope the statewide fiber purchase will extend beyond the CUDs that are working with NRTC.

Our goal is to complete our Phase One next year, which will cover an estimated 378 road miles.

We provided to Will a few weeks back a loose specification: Corning or Commscope dielectric, gel-free, loose tube, SMF28 of various strand counts (288, 144, 96, 48.).

We will not have a more detailed spec, e.g., how many miles of what fiber counts until 3 weeks after we get preconstruction grant approval and can complete a high level design.

Many thanks,

David

David W. Jones
Operations Committee Chair
[DVFiber](#) | 802.368.2217

On Mon, Oct 4, 2021 at 8:37 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Ann and David

I requested from Will the fiber count needs of each CUD. DVFiber wasn't included. Based on the HLD design, do you know how many miles you will need next year. An estimate is fine. Also, a breakdown between 1) 144, 72 count and 2) 144, 74, and 48 would be helpful. At this time, it looks to be more economically to focus on 2-3 counts in bulk vs 6-8 where the factory needs to be reconfigured for small amounts of other fiber.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:20 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Re: Mileage answers

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I have tried to get an answer on that question as well, as I mentioned yesterday there hasn't been anyone with a hard answer as to what they will need yet. A couple such as Lamoille are planning on reporting back to me about it.

The general impression I have gathered is that the majority of what will be needed early on is 144-count. For the longer-distance "backbone" of the networks. As for the ratio of what will be needed with that and 72- and 48-count, I really can't say but will keep trying to press for an answer.

Will

On Fri, Oct 1, 2021 at 2:16 PM Fish, Robert <Robert.Fish@vermont.gov> wrote:

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Any chance you could try to reach back out to these groups and see if they have suggestions on how to a lot of between 144 and 72 or potentially 144 73 and 48

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Friday, October 1, 2021 2:04:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Mileage answers

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Rob,

I wasn't able to receive even a rough number for first-stage mileage from every CUD, but even the ones I was able to put us at a figure for next year above 1,100. As follows:

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So the total for those that provided estimates would be 1,417 miles of fiber, just for next year. Additionally, Otter Creek and ECFiber have explicitly voiced a desire to have these resources available, even though an estimate for their immediate needs is not at this point in time.

Obviously a more clear picture will emerge with pre-construction engineering work. I do hope this helps at least going forward for Monday.

Will

From: [Bob Hagarman](#)
To: [F. X. Flinn](#)
Cc: [programcoordinator](#); [Fish, Robert](#); [Hallquist, Christine](#)
Subject: RE: OFS Allocation
Date: Wednesday, December 8, 2021 9:17:13 AM
Attachments: [image001.png](#)

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Thank you, sorry for the short notice. OFS drew the line in the sand and wanted to let you know asap.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: F. X. Flinn <chair@vcuda.org>
Sent: Wednesday, December 8, 2021 9:13 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: programcoordinator@vcuda.org; Fish, Robert <Robert.Fish@vermont.gov>; Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: OFS Allocation

Bob,

Meant to shoot you an email first thing this morning to say we are waiting on DVFiber's Executive Committee meeting this evening for our last OK and that I expect to execute the document tomorrow morning.

F. X.

On Wed, Dec 8, 2021 at 8:53 AM Bob Hagarman <bhagarman@nrtc.coop> wrote:

Good morning everyone, NRTC held our weekly meeting with OFS last night. OFS gave us a deadline 12/13 as the cutoff to get our allocation PO placed with them in order to hold the beginning delivery of fiber in the April/May timeline. Any time past that we are at the mercy of anyone else that jumps in the production schedule(its filling up fast) and we are looking at a mid to late summer delivery. If you plan to move forward I will need the signed quote sent to us by noon 12/13.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Friday, November 5, 2021 1:24:56 PM
Attachments: [image001.png](#)
[image002.png](#)

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We are ok for the 72 for the allocation we have been discussing related to the 2000 miles. OFS agreed to support that. 36, not sure what they are going to say. Here is what I would let people know. Once the 2000 miles are burned through and in the event we would agree for another 2000 miles sometime next year. There is a chance that 72 count fiber could spike higher than the standard counts I quoted. Not that they wont make it but the pricing may come in that looks a lot different than what they are seeing in this first 2000 miles. That could be the case whether they buy from NRTC or someone else. Just don't want anyone caught off guard once this first 2000 is consumed.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 12:56 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Everyone – I hope – is standardizing on 48, 72, 144. For VCUDA that's likely means bumping the 500 miles that were to be 24 up to 48. I'm trying to lose the 72, but that may be quite difficult. Is there a standard count between 72 and 144? I now you mention NEK wanting 96?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 12:50 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So that's tough to answer because right now the allocation request between VCUDA and NEK are shifting almost on a daily basis so as soon as I get it stable and the mileage worked it changes the next day. The delicate balance is working the numbers so that one party doesn't take from the other and trying to keep this to an even split.

This is causing pushback from OFS and my procurement team so I would like to suggest the following:

1. Where are we with the LOCs? I have not received anything from anyone and my leadership is asking where they are? I sent a note to Christa asking for update on her side.
2. If VCUDA and NEK are combining the LOCs how does that work, are they combining the efforts into 1 LOC? If not what happens in the event VCUDA defaults, how is NEK responsible for picking up the default of VCUDA in the event that would happen?
3. By Tuesday, I need final allocation request so we can lock this in with OFS, I am asking the same from NEK. Lets not worry about the miles we can squeeze out, lets get the need down and we can then back into the numbers. It's the only way we can do it and it stabilizes the request coming from both parties.
4. I would really encourage the CUDs to stick to standard counts like 144, 48 and 24. 72 and 36 are not standard and messes with the allocation counts on both sides. We are saying the same to NEK.
5. OFS is now pressing for PO's we need those LOCs no later than Monday so we can lock all of this in. I still need to get this approved by my CEO but I got some prep work to do on my side.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 11:45 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Ok – then it will be 48 ; but how does that impact the amount of fiber available. This will be an issue for NEK as well. – i.e. any 24 should 48 now.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 11:44 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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That's not a standard fiber count so I placed the request into procurement and we will need to check with OFS, not sure how quickly they will get back to us.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 10:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob
What is the cost of 36 vs 24? This is an urgent question.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Thursday, November 4, 2021 9:03 AM


To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Pre-purchasing update?

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I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUDA?

See point 10. I believe that answers 2 and 3.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Thursday, November 4, 2021 8:17 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: RE: Pre-purchasing update?

Thanks Bob

The final allocation and amount will be important for the letter of credit. I'll check on the status of the LOC. Below are a few questions I'm hearing.

1. If NEK is finalized, how much fiber remains via this allocation – about the 1000? I.e. which fiber counts could be increased? I'm think we'd do the increase in the 48 or the 144.

24	300	1584000
48	200	1056000
72	200	1056000
144	300	1584000

2. Are there other costs not included in the estimate? I assume shipping, temporary storage are

included, but want to confirm

3. Insurance – I assume the items are insured until they arrive?
4. Adjusting allotments – Will the # be set in stone or could it adjust some to be more exacting as the different groups get their detailed designs (with the fiber counts)? I'm not sure this will happen, but it's a question that I've been asked.
 - a. For instance, if the detailed designs come in and it's 325, 300, 175, 200, can that change the order and price if it's at least 45 days out (note those #'s are arbitrary)
 - b. When do you need the allotment to each CUD? – i.e. where it will be shipped

Thanks.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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Got it,

Have not received the letter of credit from anyone so we can move this forward. I believe what will happen once that is agreed upon is a version of the terms and conditions will be made official for signatures. We need the LOC language to add in and most likely the final fiber count may be required for the allocation.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 4:08 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: Pre-purchasing update?

VCUDA is made up of the CUDs...that's what I was referring too

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:04:00 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

The miles may be a little higher once we get the allocation solidified with NEK and VCUDA. I am juggling two sets of numbers in trying to balance this out. What's tricky is NEK threw in a 96 count ADSS cable request.

The only thing I think we will be able to share is once everything is locked in would be the terms and conditions. The terms are between NRTC to VCUDA, not to the CUDs.

So the way we see it is we are selling 1000 miles to VCUDA, how they disperse from that point would be up to them.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 3:57 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles? I.e. go higher than 1,000?

	Miles	Feet	\$ per ft	Total
24	300	1584000	0.27	\$427,680.00
48	200	1056000	0.36	\$380,160.00
72	200	1056000	0.56	\$591,360.00
144	300	1584000	0.88	\$1,393,920.00
	288	1000		\$2,793,120.00

Also, the CUDs are looking for paperwork to review – i.e. contract language. Anything I can share.

Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 3:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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I still have not received the LOC's from either party so still waiting to move this forward.



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 Director, Strategic Business Implementation
 2121 Cooperative Way
 Herndon, VA 20171
 M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 2:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: FW: Pre-purchasing update?

And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b) if the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

 Rob Fish
 Rural Broadband Technical Assistance Specialist
 Vermont Community Broadband Board
 802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Pre-purchasing update?

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Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber

200 miles of 48-count fiber

200 miles of 72-count fiber

300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

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Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Friday, November 5, 2021 12:50:33 PM
Attachments: [image001.png](#)
[image002.png](#)

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So that's tough to answer because right now the allocation request between VCUDA and NEK are shifting almost on a daily basis so as soon as I get it stable and the mileage worked it changes the next day. The delicate balance is working the numbers so that one party doesn't take from the other and trying to keep this to an even split.

This is causing pushback from OFS and my procurement team so I would like to suggest the following:

1. Where are we with the LOCs? I have not received anything from anyone and my leadership is asking where they are? I sent a note to Christa asking for update on her side.
2. If VCUDA and NEK are combining the LOCs how does that work, are they combining the efforts into 1 LOC? If not what happens in the event VCUDA defaults, how is NEK responsible for picking up the default of VCUDA in the event that would happen?
3. By Tuesday, I need final allocation request so we can lock this in with OFS, I am asking the same from NEK. Lets not worry about the miles we can squeeze out, lets get the need down and we can then back into the numbers. It's the only way we can do it and it stabilizes the request coming from both parties.
4. I would really encourage the CUDs to stick to standard counts like 144, 48 and 24. 72 and 36 are not standard and messes with the allocation counts on both sides. We are saying the same to NEK.
5. OFS is now pressing for PO's we need those LOCs no later than Monday so we can lock all of this in. I still need to get this approved by my CEO but I got some prep work to do on my side.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 11:45 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Ok – then it will be 48 ; but how does that impact the amount of fiber available. This will be an issue for NEK as well. – i.e. any 24 should 48 now.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 11:44 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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Sent: Friday, November 5, 2021 10:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob
What is the cost of 36 vs 24? This is an urgent question.
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Sent: Thursday, November 4, 2021 9:03 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUDA?

See point 10. I believe that answers 2 and 3.



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VCUDA is made up of the CUDs...that's what I was referring too

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Subject: RE: Pre-purchasing update?

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VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Friday, November 5, 2021 11:43:52 AM
Attachments: [image001.png](#)
[image002.png](#)

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VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Thursday, November 4, 2021 9:03:20 AM
Attachments: [image001.png](#)
[image002.png](#)
[NRTC Broadband standard terms and conditions 14OCT2021.docx](#)

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I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUA?

See point 10. I believe that answers 2 and 3.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
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VCUDA

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Attachments: [image001.png](#)
[image002.png](#)

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I spoke to Christa late yesterday and she had to make some language changes on her side for her LOC and working to finalize her allocation. Once I know that I can answer question 1. I'll get with David for questions 2-4.

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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 3:57 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles? I.e. go higher than 1,000?

	Miles	Feet	\$ per ft	Total	
	24	300	1584000	0.27	\$427,680.00
	48	200	1056000	0.36	\$380,160.00
	72	200	1056000	0.56	\$591,360.00
	144	300	1584000	0.88	\$1,393,920.00
		288	1000		\$2,793,120.00

Also, the CUDs are looking for paperwork to review – i.e. contract language. Anything I can share.

Thanks
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 3:17 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So I am close to getting the NEK allocation settled in. Based upon last week request. Here is where it stands.

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Once we get everything locked down on the contract side then we can do a best and final for the allocation and place the PO.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-024	325	1,716,000	\$ 0.27	\$ 463,320.00
OFS-AT-3CEH2YT-048	205	1,082,400	\$ 0.36	\$ 389,664.00
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OFS-AT-3CEH2YT144	255	1,346,400	\$ 0.88	\$ 1,184,832.00
	1,000			\$ 2,673,528.00

I still have not received the LOC's from either party so still waiting to move this forward.



Bob Hagarman
Director, Strategic Business Implementation
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 2:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: FW: Pre-purchasing update?

And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b) if the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

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Rural Broadband Technical Assistance Specialist
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802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Pre-purchasing update?

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Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

Just to reiterate, the optimal order I've calculated for 1000 miles is:

300 miles of 24-count fiber
200 miles of 48-count fiber
200 miles of 72-count fiber
300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

--

Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Fish, Robert](#)
To: [Bob Hagarman](#)
Subject: RE: Pre-purchasing update?
Date: Wednesday, November 3, 2021 3:56:00 PM
Attachments: [image003.png](#)
[image001.png](#)

Hi Bob

Here's what I calculated based on 1000 miles. With that strand count is it possible to up the miles?
I.e. go higher than 1,000?

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Subject: RE: Pre-purchasing update?

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Wednesday, November 3, 2021 1:48 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Pre-purchasing update?

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Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

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200 miles of 72-count fiber

300 miles of 144-count fiber

Anything I can do to assist you or move the process along, let me know.

Will

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Will Anderson

Program Coordinator, Vermont Communications Union Districts Association

WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Wednesday, November 3, 2021 3:17:04 PM
Attachments: [image001.png](#)

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Director, Strategic Business Implementation
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 3, 2021 2:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: FW: Pre-purchasing update?

And here again is the breakdown of fiber counts. So I need a) Price for this breakdown; b) if the breakdown allows additional miles beyond 1,000.

Thanks.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>
Sent: Wednesday, November 3, 2021 1:48 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Pre-purchasing update?

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Rob,

Checking in about our fiber purchasing arrangement.

Do you have any updates on the negotiations with the supplier that you have been leading? I am especially interested in how cost-effective you think our current proposal for strand counts is, and what you think the timeline for finalizing the transaction looks like.

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VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: Pre-purchasing update?
Date: Monday, November 8, 2021 12:55:41 PM
Attachments: [image001.png](#)
[image002.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Perfect, I received the same from Christa on Saturday. I also received her letter of intent but should be getting her LOC tomorrow.

I did hear from Adam late Friday and he told me he should have the VCF over by tomorrow as well. This really helps me pull together all the pieces I need to submit to my leadership team for approval. Almost there and fingers crossed.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Monday, November 8, 2021 12:01 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Here is VCUDAs final count – pending any information on additional/less being available based on NEK's 1000. Is the cost correct? Is this inclusive of everything

VCF says you will have a draft today. VCUDA is finalizing the GAN and arrangement with VCF.

	Miles	Feet	\$ per ft	Total	
	48	500	2640000	0.36	\$950,400.00
	72	200	1056000	0.56	\$591,360.00
	144	300	1584000	0.88	\$1,393,920.00
TOTALS	264	1000			\$2,935,680.00

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 1:25 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

We are ok for the 72 for the allocation we have been discussing related to the 2000 miles. OFS agreed to support that. 36, not sure what they are going to say. Here is what I would let people know. Once the 2000 miles are burned through and in the event we would agree for another 2000 miles sometime next year. There is a chance that 72 count fiber could spike higher than the standard counts I quoted. Not that they wont make it but the pricing may come in that looks a lot different than what they are seeing in this first 2000 miles. That could be the case whether they buy from NRTC or someone else. Just don't want anyone caught off guard once this first 2000 is consumed.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 12:56 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob

Everyone – I hope – is standardizing on 48, 72, 144. For VCUDA that's likely means bumping the 500 miles that were to be 24 up to 48. I'm trying to lose the 72, but that may be quite difficult. Is there a standard count between 72 and 144? I now you mention NEK wanting 96?

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 12:50 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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So that's tough to answer because right now the allocation request between VCUDA and NEK are shifting almost on a daily basis so as soon as I get it stable and the mileage worked it changes the next day. The delicate balance is working the numbers so that one party doesn't take from the other and trying to keep this to an even split.

This is causing pushback from OFS and my procurement team so I would like to suggest the following:

1. Where are we with the LOCs? I have not received anything from anyone and my leadership is asking where they are? I sent a note to Christa asking for update on her side.
2. If VCUDA and NEK are combining the LOCs how does that work, are they combining the efforts into 1 LOC? If not what happens in the event VCUDA defaults, how is NEK responsible for picking up the default of VCUDA in the event that would happen?
3. By Tuesday, I need final allocation request so we can lock this in with OFS, I am asking the same from NEK. Lets not worry about the miles we can squeeze out, lets get the need down and we can then back into the numbers. It's the only way we can do it and it stabilizes the request coming from both parties.
4. I would really encourage the CUDs to stick to standard counts like 144, 48 and 24. 72 and 36 are not standard and messes with the allocation counts on both sides. We are saying the same to NEK.
5. OFS is now pressing for PO's we need those LOCs no later than Monday so we can lock all of this in. I still need to get this approved by my CEO but I got some prep work to do on my side.



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Director, Strategic Business Implementation
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 11:45 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Ok – then it will be 48 ; but how does that impact the amount of fiber available. This will be an issue for NEK as well. – i.e. any 24 should 48 now.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Friday, November 5, 2021 11:44 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

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That's not a standard fiber count so I placed the request into procurement and we will need to check with OFS, not sure how quickly they will get back to us.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Friday, November 5, 2021 10:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Hi Bob
What is the cost of 36 vs 24? This is an urgent question.
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, November 4, 2021 9:03 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I just remembered we sent a draft copy of our terms. I don't think that will change much. Did you share this with VCUDA?
See point 10. I believe that answers 2 and 3.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, November 4, 2021 8:17 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: Pre-purchasing update?

Thanks Bob

The final allocation and amount will be important for the letter of credit. I'll check on the status of the LOC. Below are a few questions I'm hearing.

1. If NEK is finalized, how much fiber remains via this allocation – about the 1000? I.e. which fiber counts could be increased? I'm think we'd do the increase in the 48 or the 144.

24	300	1584000
48	200	1056000
72	200	1056000
144	300	1584000

2. Are there other costs not included in the estimate? I assume shipping, temporary storage are included, but want to confirm
3. Insurance – I assume the items are insured until they arrive?
4. Adjusting allotments – Will the # be set in stone or could it adjust some to be more exacting as the different groups get their detailed designs (with the fiber counts)? I'm not sure this will happen, but it's a question that I've been asked.
 - a. For instance, if the detailed designs come in and it's 325, 300, 175, 200, can that change the order and price if it's at least 45 days out (note those #'s are arbitrary)
 - b. When do you need the allotment to each CUD? – i.e. where it will be shipped

Thanks.
Rob

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Vermont Community Broadband Board
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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 3, 2021 4:11 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: Pre-purchasing update?

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Got it,

Have not received the letter of credit from anyone so we can move this forward. I believe what will happen once that is agreed upon is a version of the terms and conditions will be made official for signatures. We need the LOC language to add in and most likely the final fiber count may be required for the allocation.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 3, 2021 4:08 PM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: Pre-purchasing update?

VCUDA is made up of the CUDs...that's what I was referring too

Get [Outlook for iOS](#)

From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Wednesday, November 3, 2021 4:04:00 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: Pre-purchasing update?

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The miles may be a little higher once we get the allocation solidified with NEK and VCUDA. I am juggling two sets of numbers in trying to balance this out. What's tricky is NEK threw in a 96 count ADSS cable request.

The only thing I think we will be able to share is once everything is locked in would be the terms and conditions. The terms are between NRTC to VCUDA, not to the CUDs.

So the way we see it is we are selling 1000 miles to VCUDA, how they disperse from that point would be up to them.



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Director, Strategic Business Implementation

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	1,000			\$ 2,673,528.00

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From: Fish, Robert <Robert.Fish@vermont.gov>
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To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: FW: Pre-purchasing update?

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Wednesday, November 3, 2021 1:48 PM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Pre-purchasing update?

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300 miles of 24-count fiber

200 miles of 48-count fiber

200 miles of 72-count fiber

300 miles of 144-count fiber

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WAnderson@vcuda.org

802-552-0273

VCUDA

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 12:03:37 PM
Attachments: [image001.png](#)

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That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:58:41 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

To this:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count



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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 11:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)


No no no.
that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?

 **Bob Hagarman**
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:42:26 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber
100 miles of 24-count fiber

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

The additional that exceed the 1000.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:19 AM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.



Bob Hagarman

Director, Strategic Business Implementation

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:18 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Do we have the total for those extra miles?


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:17:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.

 **Bob Hagarman**
Director, Strategic Business Implementation
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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:12 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Thought we had more time and were able to change this.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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That is correct, how each CUD would like to fiber to flow into them on a monthly basis. Enjoy the holiday and we can knock this out next week. I am on PTO on Monday but will be checking emails

periodically.



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2121 Cooperative Way
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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 8:58 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: price of fiber - 2022-2023 (forecast)

Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 22, 2021 4:56 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have

done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.



Bob Hagarman
Director, Strategic Business Implementation
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nrtc.coop

From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Thursday, November 18, 2021 9:06 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 11:05 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given

the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



Bob Hagarman
Director, Strategic Business Implementation
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 9:25 AM

To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 17, 2021 8:13 AM

To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

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Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

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From: [Steve Huffaker](#)
To: [Fish, Robert](#); [programcoordinator](#)
Cc: [Elie de Villiers](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 24, 2021 3:49:57 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please provide 100% by the beginning of Q3.

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 2:38 PM
To: Steve Huffaker <chair@maplebroadband.net>, programcoordinator <programcoordinator@vcuda.org>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes, this is correct. I didn't send over your reduced amount; only the 100. Now the question for everyone is when you will need what

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Wednesday, November 24, 2021 2:36:39 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Subject: Re: price of fiber - 2022-2023 (forecast)

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Does this mean we can expect the following?

144 30 miles
72 80 miles
24 100 miles
Total: 210 miles

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 9:09 AM
To: programcoordinator <programcoordinator@vcuda.org>, Steve Huffaker <chair@maplebroadband.net>
Subject: Fwd: price of fiber - 2022-2023 (forecast)

We are good within the current allotment and price for maples needs. Hoping for a PO today or Monday

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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 2:48 PM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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Nothing you need to do, just letting you know we are able to make the 1080 mileage work against the current allocation holding the same pricing.

We are one step closer. Sorry again for the confusion.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 12:03 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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So you want to shift your allocation from this

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100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count

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To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.

that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?



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nrtc.coop

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Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
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	1,000			\$ 2,935,680.00


If you are referring to the additional miles requested by Maple per Fridays email:

- 330 miles of 144-count fiber**
- 290 miles of 72-count fiber**
- 360 miles of 48-count fiber**
- 100 miles of 24-count fiber**

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.

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Do we have the total for those extra miles?

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I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

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Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

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To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



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nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

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To: Fish, Robert <Robert.Fish@vermont.gov>
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Checking with David



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 8:13 AM
To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

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Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 11:58:49 AM
Attachments: [image001.png](#)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
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	1,000			\$ 2,935,680.00

To this:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count



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To: Fish, Robert <Robert.Fish@vermont.gov>
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Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.

that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?



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robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 9:25 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Here you go, let me know if this works.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Checking with David



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 8:13 AM
To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

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Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish

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Vermont Community Broadband Board

802-522-2617 (mobile)

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From: [Fish, Robert](#)
To: [Steve Huffaker](#); [programcoordinator](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 24, 2021 2:38:07 PM
Attachments: [image001.png](#)

Yes, this is correct. I didn't send over your reduced amount; only the 100. Now the question for everyone is when you will need what

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Wednesday, November 24, 2021 2:36:39 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; [programcoordinator](#) <programcoordinator@vcuda.org>
Subject: Re: price of fiber - 2022-2023 (forecast)

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Does this mean we can expect the following?

144	30 miles
72	80 miles
24	<u>100 miles</u>
Total:	210 miles

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 9:09 AM
To: [programcoordinator](#) <programcoordinator@vcuda.org>, Steve Huffaker <chair@maplebroadband.net>
Subject: Fwd: price of fiber - 2022-2023 (forecast)

We are good within the current allotment and price for maples needs. Hoping for a PO today or Monday

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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 2:48 PM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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Nothing you need to do, just letting you know we are able to make the 1080 mileage work against the current allocation holding the same pricing.

We are one step closer. Sorry again for the confusion.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 12:03 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:58:41 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
-------	-------	---------------	-----------	-------

OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

To this:


330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber


Essentially taking some miles from 48 count and moving some to 24 count

 **Bob Hagarman**
 Director, Strategic Business Implementation
 2121 Cooperative Way
 Herndon, VA 20171
 M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 11:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.

 **Bob Hagarman**
 Director, Strategic Business Implementation
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 M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.


that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?

 **Bob Hagarman**
Director, Strategic Business Implementation
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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:42:26 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00

	1,000		\$ 2,935,680.00
--	-------	--	-----------------

If you are referring to the additional miles requested by Maple per Fridays email:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Tuesday, November 23, 2021 11:26 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

The additional that exceed the 1000.

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Tuesday, November 23, 2021 11:19 AM

To: Fish, Robert

Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:18 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Do we have the total for those extra miles?

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:17:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:12 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Thought we had more time and were able to change this.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM

To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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That is correct, how each CUD would like to fiber to flow into them on a monthly basis. Enjoy the holiday and we can knock this out next week. I am on PTO on Monday but will be checking emails periodically.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 8:58 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: price of fiber - 2022-2023 (forecast)

Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 22, 2021 4:56 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Thursday, November 18, 2021 9:06 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 11:05 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)

robert.fish@vermont.gov

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Bob Hagarman
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To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman

Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 17, 2021 8:13 AM

To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

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Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 11:54:38 AM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.

that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?



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 M 717-676-9083 E bhagarman@nrtc.coop
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How does that take down? The amount they approved was more than what was needed to have a 50%.

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
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	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

- 330 miles of 144-count fiber**
- 290 miles of 72-count fiber**
- 360 miles of 48-count fiber**
- 100 miles of 24-count fiber**

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to

append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



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Do we have the total for those extra miles?

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Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

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Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we

will need to have in place next week.



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Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
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Clarification from David,

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We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



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Herndon, VA 20171

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



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nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

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Vermont Community Broadband Board
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To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



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From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 17, 2021 8:13 AM

To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

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This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, copy, use, disclosure,

From: [Steve Huffaker](#)
To: [Fish, Robert](#); [programcoordinator](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 24, 2021 2:36:47 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Does this mean we can expect the following?

144 30 miles
72 80 miles
24 100 miles
Total: 210 miles

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 9:09 AM
To: programcoordinator <programcoordinator@vcuda.org>, Steve Huffaker <chair@maplebroadband.net>
Subject: Fwd: price of fiber - 2022-2023 (forecast)

We are good within the current allotment and price for maples needs. Hoping for a PO today or Monday


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Sent: Tuesday, November 23, 2021 2:48 PM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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Nothing you need to do, just letting you know we are able to make the 1080 mileage work against the current allocation holding the same pricing.

We are one step closer. Sorry again for the confusion.

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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 12:03 PM

To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:58:41 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
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OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

To this:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber

100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count



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To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

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We need some clarification on the following – ie that it does not apply to our order:

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- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

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Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 11:49:57 AM
Attachments: [image001.png](#)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:42:26 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber
100 miles of 24-count fiber

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



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To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

The additional that exceed the 1000.

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To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.



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Director, Strategic Business Implementation

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M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:18 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Do we have the total for those extra miles?


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:17:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.

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Herndon, VA 20171
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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:12 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Thought we had more time and were able to change this.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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That is correct, how each CUD would like to fiber to flow into them on a monthly basis. Enjoy the holiday and we can knock this out next week. I am on PTO on Monday but will be checking emails

periodically.



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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 8:58 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: price of fiber - 2022-2023 (forecast)

Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 22, 2021 4:56 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have

done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.



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M 717-676-9083 E bhagarman@nrtc.coop
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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Thursday, November 18, 2021 9:06 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

From: Bob Hagarman <bhagarman@nrtc.coop>
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To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given

the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



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To: [Bob Hagarman](#); [Fish, Robert](#)
Cc: [Hallquist, Christine](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Thursday, November 18, 2021 9:06:07 AM
Attachments: [image001.png](#)

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 11:42:37 AM
Attachments: [image001.png](#)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:26 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

The additional that exceed the 1000.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:19 AM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.



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Sent: Tuesday, November 23, 2021 11:18 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
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Do we have the total for those extra miles?

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.



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Thought we had more time and were able to change this.

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Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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Sent: Monday, November 22, 2021 4:56 PM
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Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.

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Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,


Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

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Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on

existing purchase orders

- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

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Here you go, let me know if this works.



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To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

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Checking with David



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From: Fish, Robert <Robert.Fish@vermont.gov>
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To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

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Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.
For every point increase on the PPI for fiber what does that translate into pricing for the 144
48, and 24 that we're looking to purchase.
If you have any information that is accepted by the industry to help me on the forecasting that
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Many thanks,
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From: [Adam Bornstein](#)
To: [Fish, Robert](#); [Hallquist, Christine](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 17, 2021 9:49:07 AM
Attachments: [image001.png](#)

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Thanks, Rob.

What is this all about? Can they do that? You might not want to give yourself some head room in case this happens...

From the last slide...

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

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Do we have the total for those extra miles?


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Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

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Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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Sent: Wednesday, November 17, 2021 8:13 AM
To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

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To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 11:17:20 AM
Attachments: [image001.png](#)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:12 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Thought we had more time and were able to change this.

Get [Outlook for iOS](#)

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Date: Tuesday, November 23, 2021 11:11:00 AM
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Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Monday, November 22, 2021 4:56:31 PM
Attachments: [image001.png](#)
[#24978604v2_AFDOCS - VCUDA CMB Revised Draft letter of credit.DOC](#)
[Compare_24978604v1_VCUDA CMB Revised Draft Dual Issuer letter of credit - 24978604v2_VCUDA CMB Revised Draft letter of credit.pdf](#)

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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)
Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

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- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders –

placing their project budgets at risk
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 9:25 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



Bob Hagarman
Director, Strategic Business Implementation
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Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 8:13 AM
To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

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Rob

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Hi Bob,

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48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Cc: [Hallquist, Christine](#); [Adam Bornstein](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 17, 2021 11:06:03 AM
Attachments: [image001.png](#)

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Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 17, 2021 9:24:37 AM
Attachments: [image001.png](#)
[Cable pricing trends 2021 to 2022 17NOV2021.pdf](#)

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Wednesday, November 17, 2021 8:20:03 AM
Attachments: [image001.png](#)

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: price of fiber - 2022-2023 (forecast)
Date: Tuesday, November 23, 2021 2:48:25 PM
Attachments: [image001.png](#)

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Nothing you need to do, just letting you know we are able to make the 1080 mileage work against the current allocation holding the same pricing.


We are one step closer. Sorry again for the confusion.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 12:03 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.

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M 717-676-9083 E bhagarman@nrtc.coop
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:58:41 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

To this:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count



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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 11:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.

that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I thought it was an additional 1080 over the 1000?



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:42:26 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase in price.
- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



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From: Fish, Robert <Robert.Fish@vermont.gov>
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To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)


The additional that exceed the 1000.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:19 AM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:18 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Do we have the total for those extra miles?

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:17:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.



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From: Fish, Robert <Robert.Fish@vermont.gov>
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Thought we had more time and were able to change this.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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That is correct, how each CUD would like to fiber to flow into them on a monthly basis. Enjoy the holiday and we can knock this out next week. I am on PTO on Monday but will be checking emails periodically.



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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 8:58 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: price of fiber - 2022-2023 (forecast)

Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
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Vermont Community Broadband Board
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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 22, 2021 4:56 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Adam Bornstein <abornstein@vermontcf.org>

Sent: Thursday, November 18, 2021 9:06 AM
To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: price of fiber - 2022-2023 (forecast)


Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 11:05 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.

 **Bob Hagarman**
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2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 10:09 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 9:25 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Wednesday, November 17, 2021 8:13 AM
To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Fish, Robert](#)
To: [Steve Huffaker](#); [programcoordinator](#)
Cc: [Ellie de Villiers](#)
Subject: Re: price of fiber - 2022-2023 (forecast)
Date: Thursday, November 25, 2021 8:16:38 AM
Attachments: [image001.png](#)

The ones the need things on earlier side are CV, DV, and Maple. Lamoille and NW are looking at the end of the year. NEK has a separate 1k.

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Thursday, November 25, 2021 7:13:22 AM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Cc: Ellie de Villiers <Ellie@maplebroadband.net>
Subject: Re: price of fiber - 2022-2023 (forecast)

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Which CUDs are participating?

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 5:02 PM
To: Steve Huffaker <chair@maplebroadband.net>, programcoordinator <programcoordinator@vcuda.org>
Cc: Ellie de Villiers <Ellie@maplebroadband.net>
Subject: Re: price of fiber - 2022-2023 (forecast)

Let's say April. May be March, but to play it safe.

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Wednesday, November 24, 2021 5:01:32 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Cc: Ellie de Villiers <Ellie@maplebroadband.net>
Subject: Re: price of fiber - 2022-2023 (forecast)

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150 miles per month starting when?

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 3:51 PM
To: Steve Huffaker <chair@maplebroadband.net>, programcoordinator <programcoordinator@vcuda.org>
Cc: Ellie de Villiers <Ellie@maplebroadband.net>
Subject: Re: price of fiber - 2022-2023 (forecast)

This will be something you and the involved cuds work out, but knowing you can wait til then helps.

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Wednesday, November 24, 2021 3:49:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Cc: Ellie de Villiers <Ellie@maplebroadband.net>
Subject: Re: price of fiber - 2022-2023 (forecast)

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Please provide 100% by the beginning of Q3.

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 2:38 PM
To: Steve Huffaker <chair@maplebroadband.net>, programcoordinator <programcoordinator@vcuda.org>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes, this is correct. I didn't send over your reduced amount; only the 100. Now the question for everyone is when you will need what

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From: Steve Huffaker <chair@maplebroadband.net>
Sent: Wednesday, November 24, 2021 2:36:39 PM
To: Fish, Robert <Robert.Fish@vermont.gov>; programcoordinator <programcoordinator@vcuda.org>
Subject: Re: price of fiber - 2022-2023 (forecast)

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Does this mean we can expect the following?

144 30 miles
72 80 miles
24 100 miles
Total: 210 miles

Steve

From: Fish, Robert <Robert.Fish@vermont.gov>
Date: Wednesday, November 24, 2021 at 9:09 AM
To: programcoordinator <programcoordinator@vcuda.org>, Steve Huffaker <chair@maplebroadband.net>
Subject: Fwd: price of fiber - 2022-2023 (forecast)

We are good within the current allotment and price for maples needs. Hoping for a PO today or Monday


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From: Bob Hagarman
Sent: Tuesday, November 23, 2021 2:48 PM
To: Fish, Robert
Subject: RE: price of fiber - 2022-2023 (forecast)

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Nothing you need to do, just letting you know we are able to make the 1080 mileage work against the current allocation holding the same pricing.

We are one step closer. Sorry again for the confusion.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 12:03 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

That will work, I think we can back into those numbers. Sorry for the heart attack! HA

I thought on Friday we were adding another 1080 on top of the 1000 mile allocation, that is what had me confused.



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Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 12:02 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

Yes. Sorry for the miscommunication. And I'm texting as I go today on the road and technically not working

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:58:41 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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So you want to shift your allocation from this

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

To this:

330 miles of 144-count fiber
290 miles of 72-count fiber
360 miles of 48-count fiber
100 miles of 24-count fiber

Essentially taking some miles from 48 count and moving some to 24 count



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nrtc.coop

From: Bob Hagarman
Sent: Tuesday, November 23, 2021 11:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

Got ya, yeah the request from Friday put you at the 1080 mark, so 80 miles over the 1000 mile threshold. That was my complete misunderstanding.

Let me talk to procurement and see if we can squeeze an additional 80 miles. I thought you wanted to bump the total miles up to 2080. That's when things would fall apart.



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M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:52 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

No no no.
that last bit that put us over. I'm not in front of my computer right now but it was that additional request from last week that maple had in order to keep all the cuds together. I think it brought us to 1080 or 1180 total for the kids not including NEK

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:49:49 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Maybe I am misunderstanding, so you are looing at a possible 80 miles over the 1000 mile mark? I

thought it was an additional 1080 over the 1000?



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nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:47 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)

How does that take down? The amount they approved was more than what was needed to have a 50%.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:42:26 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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This is the VCUDA 1000 mile allocation, this is what was approved by my management team.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00

If you are referring to the additional miles requested by Maple per Fridays email:

- 330 miles of 144-count fiber**
- 290 miles of 72-count fiber**
- 360 miles of 48-count fiber**
- 100 miles of 24-count fiber**

Total miles = 1080

Couple things:

- I wont be getting pricing back from OFS until next week
- It wont be at the same price points as stated above, I would anticipate at least a 30% increase

in price.

- And like NEK, Maple will have to find a way to secure the funding. They will not be allowed to append to the 1000 miles listed above. That would essentially take the VCUDA LoC down to 25% coverage and I cannot get that to pass my management team.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Tuesday, November 23, 2021 11:26 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

The additional that exceed the 1000.

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Tuesday, November 23, 2021 11:19 AM

To: Fish, Robert

Subject: RE: price of fiber - 2022-2023 (forecast)

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The extra miles in the initial 1000 requested? I think it was something like 100 miles not spoken for.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Tuesday, November 23, 2021 11:18 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

Do we have the total for those extra miles?


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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:17:10 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Once PO's are placed at the factory we need to give them a monthly allocation for shipment. We will combine the preference with everyone, including NEK and the factory will then building that on a monthly basis.

If we could start communicating to the CUDs under VCUDA on Monday that would be great.

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From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 11:12 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: Re: price of fiber - 2022-2023 (forecast)


Thought we had more time and were able to change this.

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 23, 2021 11:10:54 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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That is correct, how each CUD would like to fiber to flow into them on a monthly basis. Enjoy the holiday and we can knock this out next week. I am on PTO on Monday but will be checking emails periodically.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 23, 2021 8:58 AM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: price of fiber - 2022-2023 (forecast)

Hi Bob

I'm out for the week. What will you need next week from the CUDs? You mentioned allocations – per CUD – per order? This initial or final? Thanks and have a great holiday.

Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Monday, November 22, 2021 4:56 PM
To: Adam Bornstein <abornstein@vermontcf.org>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Comments from my legal team. I don't think anything major but please review and let me know. We revised to be a single L/C from the Credit Union with VCF as a co-applicant. We left the expiry date blank so that needs to be provided. My CEO prefers if it would expire 12/31/2022 if you can do that.

Adam, one more request from my CFO, are you able to send financial information for the credit union backing VCF or an SEC number. It's a standard business practice for us since we never have done business before.

I am happy to say if we can come to an agreement on this we have a deal.

I know many people are on PTO this week, let me know and we can do final signatures next week and thank you for your patience to get to this point.

Robert, Christine.....next step for the 1000 miles how do you want is the strand count you need to

ship per month, we can front load 144 as an example or we can do a mix and match. Something we will need to have in place next week.



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To: Bob Hagarman <bhagarman@nrtc.coop>; Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>
Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob,
Good morning.
Any feedback for us on the LOC?
Do you think we can sign off on it this week?
Thanks,
Adam

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Sent: Wednesday, November 17, 2021 11:05 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>
Subject: RE: price of fiber - 2022-2023 (forecast)

Clarification from David,

Yes – pricing we have offered Vermont is based on the fixed pricing we have received from manufacturers willing to provide it – not from the manufacturers stating that their pricing may increase after the placement of a purchase order. If Vermont insisted on cable from a manufacturer who is not offering us fixed pricing, we would disclose it to them – and recommend against it, given the uncertainty involved.

We need all of our Members and customers to be aware that the price they are offered on cable today may or may not change after placement of a purchase order, and that they should confirm with the entity offering the cable what pricing changes could occur.



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 17, 2021 10:09 AM

To: Bob Hagarman <bhagarman@nrtc.coop>

Cc: Hallquist, Christine <Christine.Hallquist@vermont.gov>; Adam Bornstein <abornstein@vermontcf.org>

Subject: RE: price of fiber - 2022-2023 (forecast)

Importance: High

Bob

We need some clarification on the following – ie that it does not apply to our order:

- Manufacturer appearing to have lowest price today may increase price on items on existing purchase orders
- NRTC Members considering cable purchase decisions, must also consider the confidence they have those prices will not increase after they place purchase orders – placing their project budgets at risk

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

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From: Bob Hagarman <bhagarman@nrtc.coop>

Sent: Wednesday, November 17, 2021 9:25 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: RE: price of fiber - 2022-2023 (forecast)

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Here you go, let me know if this works.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert Robert.Fish@vermont.gov
Sent: Wednesday, November 17, 2021 8:23 AM
To: Bob Hagarman bhagarman@nrtc.coop
Subject: RE: price of fiber - 2022-2023 (forecast)

Thank you. Just dotting the I's and crossing the T's. Understandably the VCF wants data beyond the data we collected by reaching out to other companies.

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Wednesday, November 17, 2021 8:20 AM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: price of fiber - 2022-2023 (forecast)

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Checking with David



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>

Sent: Wednesday, November 17, 2021 8:13 AM

To: Adam Bornstein <abornstein@vermontcf.org>; Bob Hagarman <bhagarman@nrtc.coop>

Subject: Re: price of fiber - 2022-2023 (forecast)

Hi Bob

We still have not received the price change documentation as requested by VCF. Thanks.

Rob

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Bob,

Hope you had a nice weekend.

I wanted to follow-up on the price forecasts for fiber.

I found this index for producer price index which is from Sept 2021.

<https://tradingeconomics.com/united-states/producer-price-index-by-industry-fiber-optic-cable-manufacturing-fed-data.html>

If I use this data, I don't really have a strong case for the cost of fiber skyrocketing.

For every point increase on the PPI for fiber what does that translate into pricing for the 144 48, and 24 that we're looking to purchase.

If you have any information that is accepted by the industry to help me on the forecasting that would be great.

Many thanks,

Adam

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: shipping
Date: Thursday, November 11, 2021 1:29:50 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

No CUD has finalized their allocation/pledge request. I expect CVFiber will do so tonight, but here are the expected allocations:

CVFiber:

60 miles of 144-count

70 miles of 72-count

170 miles of 48-count

Maple Broadband:

20 miles of 144-count

130 miles of 72-count

150 miles of 48-count

DVFiber:

150 miles of 144-count

150 miles of 48-count

This comes out to 230 miles of 144, 200 miles of 72, and 470 miles of 48.

Meaning that we will have 70 miles of 144-count and 30 miles of 48-count to spare. DVFiber has indicated they may request this remainder, and ECFiber has indicated they may want to take the remainder if there is one, potentially as a temporary arrangement.

Please let me know when you receive numbers for potential shipping invoice costs. I think we will need to include that in our pledge request.

Will

On Thu, Nov 11, 2021 at 11:52 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

Hi Will

I have a bit more information, but am waiting for estimated costs.

The fiber will be shipped to VT – to each CUD (unless preference is for a central location). The freight cost will be added onto the invoice, but that's not an issue at this point. I have asked them to figure out a worse case scenario cost. This would involve 150 miles of 144 shipped to 3 different Vermont locations.

On a related note, would you please send me the final allocations for each CUD.

Thanks.

Rob

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: [Fish, Robert](#)
To: [Adam Bornstein](#)
Subject: RE: type of fiber and about
Date: Friday, October 22, 2021 9:20:00 PM
Attachments: [Fortex-DT-Light-Armor-146-web.pdf](#)

Hi Adam

Attached are the specs. Below is the breakdown. Same for breakdown for 1,000 or 2,000 and then the quote for the first 1000 with the 48 – not the 72.

Option 1

144 count – 50%
48 count – 25%
24 count – 25%

Option 2

144 count – 50%
72 count – 25%
24 count 25%

Below is pricing for 1000 miles of Loose Tube fiber as requested. I divided it up as follows: 50% for 144 ct fiber, 25% for 48 ct fiber and 25% for 24 ct fiber. In order to take advantage of this special pricing we will need to place our order with OFS within the next 30 days – both to secure pricing and to ensure that production can commence soon enough to deliver substantial quantities by the April time frame. . Please note, once the order is placed, it cannot be cancelled.

Part Number	Member Cost /Foot	Total Footage	Extended Member Cost
OFS-AT-3CEH2YT-24	0.27	1,320,000	\$356,400
OFS-AT-3CEH2YT-48	0.36	1,320,000	\$475,200
OFS-AT-3CEH2YT-144	0.88	2,640,000	\$2,323,200

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Adam Bornstein <abornstein@vermontcf.org>
Sent: Friday, October 22, 2021 9:13 PM
To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: type of fiber and about

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Rob,

can you remind how much of each type of fiber you think you need.

<https://www.discount-low-voltage.com/Cable/Aerial-Duct-Fiber-Cable/144EU4-T4101D20>

I just want to do a forecast on price, etc so I can create a memo for my team - basically, what we are going to backstop.

thanks,

Adam

Adam Bornstein
Mission Investments
Vermont Community Foundation
abornstein@vermontcf.org

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Re: Update on CUD commitments
Date: Friday, November 19, 2021 9:32:28 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

That makes sense. If we go with the model that includes Maple's request to the letter, we are sitting at 1080 miles total.

I guess the question is which strand-counts will be marked up for that surplus 80 miles, but I think in any case we should go for it.

WA

On Fri, Nov 19, 2021 at 9:27 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

There is only 2000 miles total of fiber count at the original price. The The price for additional fiber beyond that is going to be at the 2022 prices not the 2020 or 2021 prices which I've been told is 30% higher.

Get [Outlook for iOS](#)

From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, November 19, 2021 9:23:08 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Re: Update on CUD commitments

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

The CUDs are just as concerned about lead times as they are about price. No one is going to back out if the price has to marginally go up.

That being said, why do you think we will have to pay the average of the previous and new prices?

WA

On Fri, Nov 19, 2021 at 9:20 AM Fish, Robert <Robert.Fish@vermont.gov> wrote:

How do think the CUDS would be with paying the avg between the great price and the newer price – possible a 30% difference

I'll see what I can do w NRTC

Rob Fish

Rural Broadband Technical Assistance Specialist

Vermont Community Broadband Board

802-522-2617 (mobile)

robert.fish@vermont.gov

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From: Will Anderson <programcoordinator@vcuda.org>

Sent: Friday, November 19, 2021 9:16 AM

To: Fish, Robert <Robert.Fish@vermont.gov>

Subject: Update on CUD commitments

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Rob,

The good news is, I've got a clear indication from Steve that Maple will participate in VCUDA's arrangement rather than going it's own way. Additionally, I have his numbers for what they need in terms of fiber.

Unfortunately, he is looking for fiber we don't have:

100 miles of 24-count fiber (I was on the phone with Steve and he assured me that his engineers know they will need this much for reaching premises. A bit surprising for me but he was very clear that they would not violate the minimum count mandate.)

80 miles of 72-count fiber

30 miles of 144-count fiber

When all we have left is 120 miles of 48-count fiber.

The way I see it, we are left with three options:

1. Increase the overall purchase to accommodate Maple. This would mean we need:

330 miles of 144-count fiber

290 miles of 72-count fiber

360 miles of 48-count fiber

100 miles of 24-count fiber

For a total price of \$3,217,632.

2. Find a way to keep our purchase price the same but accommodate Maple for part of what they need. I.E. find the best way to get them the fiber they need out of the \$228,096 we have left to commit of our current purchase. I don't see this as ideal since both NRTC and Maple will have to change their parameters.

3. Tell Maple that they can take what's left of the original supply or leave it. I do not see this as an ideal option since I want Maple to be able to build with quality materials as soon as possible.

Let me know how feasible you think the first option would be, in terms of both the NRTC and our funding partners. If NRTC is able to bump our numbers up like that, and the Letter of Credit will hold, then we are 100% committed.


Will

From: [Bob Hagarman](#)
To: [programcoordinator](#)
Cc: [Fish, Robert](#)
Subject: RE: Update on purchase and delivery
Date: Thursday, December 2, 2021 3:53:51 PM
Attachments: [image001.png](#)
[image002.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you for the update.

Here is what we can do, once we have your signed quote we will place the PO with OFS with this delivery schedule request. OFS will load this into their production schedule. Once we hear back from them on what they can deliver (it may be more that 150 miles per month) I will let you know and we can adjust accordingly.

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Will Anderson <programcoordinator@vcuda.org>
Sent: Thursday, December 2, 2021 3:29 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Cc: Fish, Robert <Robert.Fish@vermont.gov>
Subject: Update on purchase and delivery

Bob,

We are prepared to sign, pending a final review by our lawyers.

Our delivery schedule has been finalized. As you can see, there have been some changes as to what will be delivered when. I wanted to check with you that this will be feasible, in terms of delivering 195 miles in the month of August. Let me know if we will need to make changes based on your factory parameters.

I also had a discussion with Rob and agreed it would be wise to convert this to reels rather than miles, I plan on doing so once I have some available time.

Delivery month	24-count	48-count	72-count	144-count	Total
March				150(DVFiber)	150
April		30 (DVFiber)	120 (DVFiber)		150
May	40 (Maple)		80(Maple)	30 (Maple)	150
June		65(CVFiber)	45(CVFiber)	40(CVFiber)	150
July		75 (Lamoille)		60 (Lamoille)	135
August	60(Maple)	125(Northwest)		10 (Northwest)	195
September		65(CVFiber)	45(CVFiber)	40 (CVFiber)	150
TOTAL		100	360	290	330
					1080

Will

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: Re: VCUDA Allocation and Pricing
Date: Tuesday, November 9, 2021 8:22:58 PM
Attachments: [image001.png](#)

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No, nothing yet from VCF

Sent from my Verizon, Samsung Galaxy smartphone
Get [Outlook for Android](#)

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Tuesday, November 9, 2021 8:21:37 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: VCUDA Allocation and Pricing

Thank you Bob. I've passed this along. Several CUDs are voting tonight to formally adopt the GAN. Have you received anything from VCF?
Rob

Rob Fish
Rural Broadband Technical Assistance Specialist
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Tuesday, November 9, 2021 12:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: VCUDA Allocation and Pricing

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Per your request, we were able to do the 2000 mile split with an equal 50/50 split based on allocation request from NEK and VCUDA.

Below is the breakdown as it applies to VCUDA.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
			\$	

OFS-AT-3CEH2YT-048	500	2,640,000	0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT-144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00



Bob Hagarman
 Director, Strategic Business Implementation
 2121 Cooperative Way
 Herndon, VA 20171
 M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: VCUDA
Date: Thursday, December 9, 2021 1:47:22 PM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Yes, I saw about the press conference, we are talking with our President Jim to see if he can do it. Christa took the additional 288 as you know.

After the first of the year, let me the remaining stock is going pretty fast. A point of discussion after the new year is if VCUDA would want to jump into another allocation. I would need to think how that would work but I think it's a conversation we could have. Wasn't sure what your thoughts were on that.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Thursday, December 9, 2021 1:39 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: VCUDA

Yes, thanks for letting me know. Christa was seeing if anyone from NRTC would like to attend the press conference Monday.

Unfortunately, although there is interest, unless NRTC is willing to allow for a purchase not backed by the Letter of Credit, other than NEK (which I believe plans to take some), no other CUD is in the position to make a purchase of the remaining fiber at this time. That may change after Monday, but that's the current status.

Many thanks.

Rob


Rob Fish
Deputy Director
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, December 9, 2021 1:37 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: VCUDA

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Just letting you know (your probably already do) that VCUDA signed their quote. Thanks for hanging in there with me!

 **Bob Hagarman**
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
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From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: RE: VCUDA
Date: Monday, December 13, 2021 8:26:32 AM
Attachments: [image001.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I don't think we are, we were short on time.



Bob Hagarman
Director, Strategic Business Implementation
2121 Cooperative Way
Herndon, VA 20171
M 717-676-9083 E bhagarman@nrtc.coop
nrtc.coop

From: Fish, Robert <Robert.Fish@vermont.gov>
Sent: Sunday, December 12, 2021 12:24 PM
To: Bob Hagarman <bhagarman@nrtc.coop>
Subject: RE: VCUDA

Any word on this? I never heard from Christa whether NRTC was sending anyone

Rob Fish
Deputy Director
Vermont Community Broadband Board
802-522-2617 (mobile)
robert.fish@vermont.gov

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From: Bob Hagarman <bhagarman@nrtc.coop>
Sent: Thursday, December 9, 2021 1:47 PM
To: Fish, Robert <Robert.Fish@vermont.gov>
Subject: RE: VCUDA

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Yes, I saw about the press conference, we are talking with our President Jim to see if he can do it. Christa took the additional 288 as you know.

After the first of the year, let me the remaining stock is going pretty fast. A point of discussion after the new year is if VCUDA would want to jump into another allocation. I would need to think how that would work but I think it's a conversation we could have. Wasn't sure what your thoughts were on

that.



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2121 Cooperative Way
Herndon, VA 20171
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nrtc.coop

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Many thanks.

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Just letting you know (you probably already do) that VCUDA signed their quote. Thanks for hanging

in there with me!



Bob Hagarman

Director, Strategic Business Implementation

2121 Cooperative Way

Herndon, VA 20171

M 717-676-9083 E bhagarman@nrtc.coop

nrtc.coop

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From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Two things as requested
Date: Wednesday, December 8, 2021 5:11:23 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

CVFiber	\$302,016
DVFiber	\$370,656
Lamoille	\$143,352
NWCUD	\$101,112
Maple	\$184,272
VCUDA	\$1,101,408

Rob,

The above table represents our savings on 2021 prices versus those of 2022.

Here is a proposal for a matching funds policy to be added to the revised RFP. Please note this is not an official recommendation of VCUDA or of any CUD.

The VCBB will provide matching funds for the investment of local relief funding from the American Rescue Plan in CUDs. Each CUD will be designated with a maximum match amount, devised based on the percentage of the state's underserved addresses that lie within its territory.

Maple: \$1,450,000
CVFiber: \$1,545,000
DVFiber: \$1,700,000
ECFiber: \$900,000
Lamoille: \$1,100,000
NEK: \$3,800,000
Northwest: \$1,500,000
Otter Creek: \$660,000
SouthernVT: \$630,000

Additionally, there will be matching funds reserved for towns that are not in a CUD. The VCBB will match local ARPA funds invested with an eligible provider that will be serving a town along the lines of a universal service plan, up to an amount that reflects the percentage of underserved addresses in non-CUD towns statewide.

Non-CUD Towns: \$1,715,000

As such, the fund for ARPA matches will total \$15,000,000.

CUDs and other eligible providers may provide details of ARPA investments that they have received to the VCBB, at which point the Board may approve or deny the request based on the amount of remaining match funds.

Hope this helps.
Will

From: [Will Anderson](#)
To: [Fish, Robert](#)
Subject: Update on CUD commitments
Date: Friday, November 19, 2021 9:16:14 AM

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Rob,

The good news is, I've got a clear indication from Steve that Maple will participate in VCUDA's arrangement rather than going it's own way. Additionally, I have his numbers for what they need in terms of fiber.

Unfortunately, he is looking for fiber we don't have:

100 miles of 24-count fiber (I was on the phone with Steve and he assured me that his engineers know they will need this much for reaching premises. A bit surprising for me but he was very clear that they would not violate the minimum count mandate.)

80 miles of 72-count fiber

30 miles of 144-count fiber

When all we have left is 120 miles of 48-count fiber.

The way I see it, we are left with three options:

1. Increase the overall purchase to accommodate Maple. This would mean we need:

330 miles of 144-count fiber

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360 miles of 48-count fiber

100 miles of 24-count fiber

For a total price of \$3,217,632.

2. Find a way to keep our purchase price the same but accommodate Maple for part of what they need. I.E. find the best way to get them the fiber they need out of the \$228,096 we have left to commit of our current purchase. I don't see this as ideal since both NRTC and Maple will have to change their parameters.

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Let me know how feasible you think the first option would be, in terms of both the NRTC and our funding partners. If NRTC is able to bump our numbers up like that, and the Letter of Credit will hold, then we are 100% committed.

Will

From: [Will Anderson](#)
To: [Bob Hagarman](#)
Cc: [Fish, Robert](#)
Subject: Update on purchase and delivery
Date: Thursday, December 2, 2021 3:29:33 PM
Attachments: [image.png](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Bob,

We are prepared to sign, pending a final review by our lawyers.

Our delivery schedule has been finalized. As you can see, there have been some changes as to what will be delivered when. I wanted to check with you that this will be feasible, in terms of delivering 195 miles in the month of August. Let me know if we will need to make changes based on your factory parameters.

I also had a discussion with Rob and agreed it would be wise to convert this to reels rather than miles, I plan on doing so once I have some available time.

Delivery month	24-count	48-count	72-count	144-count	Total
March				150(DVFiber)	150
April		30 (DVFiber)	120 (DVFiber)		150
May	40 (Maple)		80(Maple)	30 (Maple)	150
June		65(CVFiber)	45(CVFiber)	40(CVFiber)	150
July		75 (Lamoille)		60 (Lamoille)	135
August	60(Maple)	125(Northwest)		10 (Northwest)	195
September		65(CVFiber)	45(CVFiber)	40 (CVFiber)	150
TOTAL		100	360	290	330
					1080

Will

From: [Bob Hagarman](#)
To: [Fish, Robert](#)
Subject: VCUDA Allocation and Pricing
Date: Tuesday, November 9, 2021 12:37:18 PM
Attachments: [image001.png](#)

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Per your request, we were able to do the 2000 mile split with an equal 50/50 split based on allocation request from NEK and VCUDA.

Below is the breakdown as it applies to VCUDA.

VCUDA	Miles	Feet of Cable	\$ per ft	Total
OFS-AT-3CEH2YT-048	500	2,640,000	\$ 0.36	\$ 950,400.00
OFS-AT-3CEH2YT-072	200	1,056,000	\$ 0.56	\$ 591,360.00
OFS-AT-3CEH2YT-144	300	1,584,000	\$ 0.88	\$ 1,393,920.00
	1,000			\$ 2,935,680.00



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