**FAQ**

**Anticipated Questions and Answers from Our Owners about the Fiber Project**

**Below we’ve assimilated a list of general questions with answers that we anticipate from our Owners about the project details. We’ll add to these as we get more FAQs so everyone has the benefit of the answers.**

**Additionally, we have developed a list of more technical questions that some Owners may have about how the Internet works and the importance fiber’s role. We have included these with the hopes that they may enhance your understanding and support of this momentous opportunity. Much of the information in the answers came from** [**https://broadbandnow.com/guides/dsl-vs-cable-vs-fiber**](https://broadbandnow.com/guides/dsl-vs-cable-vs-fiber)

**General Fiber FAQs**

1. **What will I get for my $1100?**

Brainstorm will install a fiber cable on our power poles creating our network “backbone” of fiber capability. From the power poles they will trench fiber to each home that wants the connection and install a modem to provide an Internet connection to your home router. You start your service by paying the monthly fee of $50 for 100Mbps or $70 for 300Mbps service. Each vacant lot will have a power pole designated and prepared for future connection.

1. **What if the project goes over budget or comes in under budget?**

Our contract with Brainstorm will ensure that 25% of any savings for coming in under budget will remain with Deer Valley. Any under budget advantage to Deer Valley will be credited to all lot owners equally. If the project goes over budget, Brainstorm will pay for the overage. We will audit the financial outcome for our protection.

1. **What other costs or fees may be exist with my Brainstorm service?**

You may wish to port your existing land line phone number to come over the Internet and not pay CenturyLink. You keep your existing physical phones, you just get the call over the Internet. Brainstorm charges $20/month for this service.

You may also rent, for $10/month, a router from Brainstorm that includes replacement, management and maintenance.

1. **Will I have any say on where the fiber trenching goes to my home?**

Yes, while preliminary distances were measured to each home, within reason, you will have a say where the line will be buried. Brainstorm will likely use their own vibrating plow that cuts a very narrow slit in the ground so most of the “trench” will be very minimal.

1. **What is the anticipated timing of the project?**

The timeline submitted to the State by Brainstorm shows tune up and testing of fiber by August 1st! Equipment could be ordered by the end of February. Work could begin as soon as weather and ground conditions are suitable. Please keep in mind that COVID, equipment availability, weather and a host of other variables may impact the schedule. It is encouraging that Brainstorm does not like to stretch out its projects, so once they get going, it should be completed quickly. Expect a reasonable completion target by end of summer.

1. **How will Deer Valley handle my money?**

Brainstorm may seek reimbursement, for expenditures incurred to date, from the State on a quarterly schedule beginning April 1st. They will bill the State 75% of those incurred costs and Deer Valley the remaining 25%. Brainstorm has agreed to provide Deer Valley a “line of credit” to allow us time to collect our share. Any special assessment money collected from Owners will be accounted for on our monthly financial statements, like we do for trash service, showing money collected as fiber income and payments to Brainstorm as fiber payments. All fiber money held by Deer Valley for any period of time will be escrowed in our savings account.

1. **How do we know Brainstorm will deliver what they say they will?**

The Fiber Committee has received positive references from other Brainstorm projects including a detailed interview with the on-site manager at Cascade Village north of Purgatory.

Brainstorm has completed several projects funded by the State Broadband Board and they are continuing to apply for, and receive, grants for more projects. This ongoing relationship confirms that Brainstorm performs in compliance with their contracts.

Finally, while our past history with Brainstorm resulted in a less than a satisfactory solution, the relationship that was created has caused Sid Arnold, Western Slope Operations Manager, to double down to solve the Internet issue once and for all for Deer Valley. In this case the past has strengthened our confidence in the future. Finally, Brainstorm was acquired by Forethought out of Denver in, 2013, and since our initial relationship, so we are in effect dealing with a whole new company.

1. **How will Brainstorm bring an Internet connection into Deer Valley since they don’t have access to fiber at the highway?**

Initially, as a short term solution, Brainstorm will secure an FCC licensed, 1 Gigabit point to point link to Deer Valley from the tower to our south at Spring Creek. This is a more than adequate short term solution for our Internet. This signal will be received in Deer Valley, at a site to be determined, consisting of a 30 foot tall power pole with a small antenna atop. It will most likely be located in the road right-of-way near the top of Elk Valley Road and will include a connection to power and have a battery backup capability.

 It is anticipated that in mid-2022 a new major fiber cable will be completed from the top of Wolf Creek Pass, where fiber already exists from Denver, along Highway 160 all the way to Flagstaff, AZ. Brainstorm will buy into that major trunk line thus completing a total fiber link for us. There will be no additional costs to Deer Valley when this occurs. You can learn more about this fiber line at <https://arcadianinfra.com>

1. **Why should I have to pay for this project when I am perfectly happy with my Internet service?**

Perhaps the most simplistic answer is that 74% of our Owners are still underserved. This will be a major upgrade to the infrastructure of Deer Valley, the benefits of which will immediately accrue to all lots by virtue of its very existence. For this reason alone, all Owners will be asked to pay their proportional share.

“A 2015 study found that the addition of fiber-optic Internet can increase a home’s value by 3.1%. That’s equal to an additional $9000 on a $300,000 home.” (Source: Otelco.com) This statistic has certainly not diminished in the last five years and likely increased, if for no other reason than the epidemic has further exposed the inadequacy of Internet service in many homes. We are aware that several home sales were lost in recent years due to the lack of high-speed Internet.

The history of Deer Valley supports the cooperative nature of a Development where all prior infrastructure projects - roads, electricity, telephones and re-survey - were paid for equally by each lot Owner. Further, operationally we all pay the same for the basics - road maintenance, snow plowing, security fencing, etc. whether or not lots have homes, or use only short distances of the roads or have a boundary on the Forest. This project has been engineered to provide connections to all existing homes and vacant lots and will be installed to the home of everyone that wants it.

1. **How do I watch TV or stream movies over the Internet?**

Below is a link to a “Beginners Guide to TV Streaming” that may help you get started. Keep in mind it is imbedded in the site of a provider so you’ll see some advertising as well. <https://www.allconnect.com/blog/beginners-guide-to-tv-streaming>

Another suggestion is to do some research on some of the Internet TV sites and evaluate what is available. There are several to choose from depending on what you like to watch. One that is popular for example: <https://tv.youtube.com> you put in our Zip code and you’ll get a choice of Denver or Albuquerque local channels and then a listing of all the channels available.

1. **What if I do not wish to subscribe to Brainstorm? Can I still get fiber run to my home?** The Grant will provide access to fiber Internet to every Lot from the backbone on the power poles throughout the Subdivision. Technically, the Grant does not provide funds for running fiber from designated power poles to those 17 homes that were receiving better than 25Mbps (high-speed) when the speed tests were done for the Grant submission. However, while the work is being performed for the project, Brainstorm has agreed to bury a conduit from the designated pole to the home, whether or not the Owner chooses to buy their monthly service. Brainstorm will not run the fiber in that conduit or obviously install a modem and the conduit will be capped at both ends for potential future use. Alternatively, any Owner may choose not to have any infrastructure installed to their home. If such Owner wishes to switch to Brainstorm’s monthly service at a future date, there would then be a nominal connect fee to complete the install. If you were in the “high-speed” group and wish to subscribe to the new Brainstorm service, Brainstorm will fund the entire install to your home at no additional cost. (If you wish to confirm whether your home was included in the 17 homes referenced above, reach out to one of the Fiber Committee members.)
2. **Will I reduce my safety in the event of an emergency (power outage, evacuation) by giving up my landline and using the Internet instead?**

This question has been asked when considering the wisdom of using the Internet to make your cell phone useful at home using WIFI calling and/or replacing your landline with voice-over-IP or VOIP calling. Unfortunately, the answer is more complicated than a simple yes or no. After researching this issue with Brainstorm and the Director of Durango/La Plata Emergency Communications Center, along with input from two residents, the simple answer today is NO. The answer should at least be ‘maybe.’ The fact is that our CenturyLink landlines rely on power to operate and, presently, they do not have functional battery back up! We have two residents who have observed that our landlines (phone and Internet) go dead with power failures. One was told by a CenturyLink repairman that the batteries that should be powering the phones when the power is out are obsolete and not functioning. Concerned customers should demand this be corrected by CenturyLink for emergency preparedness.

Alternatively, if you have reliable cell phone service at your home and you have registered your cell number with the County’s CodeRED program <https://public.coderedweb.com/CNE/en-US/BFEA18547A8D>, you should be able to receive a Reverse 9-1-1 call at your home (or anywhere else you have a signal) in the event of an evacuation order or other emergency notice. If your home cell service relies on a booster to get a signal, that booster is likely powered by electricity so it would not work without power.

The Brainstorm Internet system in Deer Valley will also be powered by electricity, but will have one-half to one full day battery backup capacity. A portable or automatic standby generator could power your home and hence your modem and router temporarily giving you Internet access.

Please keep in mind that cell towers and landlines can also be burned or otherwise damaged in an emergency so there is no fail safe protection. That’s why Emergency Management Services recommend redundant systems for protection when feasible. We are happy to answer further questions, but the bottom line is that your emergency preparedness is your responsibility regardless of how you ultimately use the Internet.

1. **Where will the electronic equipment and receiver dish be located in Deer Valley?**

Brainstorm has determined the best location for the temporary receiver dish, in order to have an unobstructed view of the Spring Creek tower to our south, is on the east side of the road near the top of the hill on Elk Valley Road. The receiver dish will be placed on a pole about 15 feet tall and will have to encroach slightly on vacant Lot 46, owned by Kay Walsh, in order to “see” around the trees. Kay supports the project and has graciously agreed to grant permission to place the receiver dish on her Lot without consideration. Thank you, Kay!

Adjacent to an existing power pole, and the projected nearby receiving dish, will be two equipment cabinets placed on a 3’x6’ concrete pad. This pad will be located in the road right-of-way and will be a permanent part of the fiber network even after the fiber is connected at the highway and the dish is removed. This equipment will include backup batteries, an electric meter paid for by Brainstorm, and electronic equipment to run the fiber network. (Approval for the location of this equipment on the road right-of-way is subject to Board approval.)

1. **When do I have to decide whether or not to connect to Brainstorm and still get the free install?**

Just to recap, everyone who chooses to connect to the Brainstorm fiber network will be entitled to connect free of charge from Brainstorm while they are in Deer Valley installing the project. If for some reason you are on the fence whether or not to connect to Brainstorm, you will have until Brainstorm is finished with the project install to decide. It is currently estimated to be completed by early fall. As long as they still have the equipment on site and you decide you want their service, they will be happy to complete your install free of charge.

1. **What will the cost be for someone who does not wish to connect to Brainstorm during the project install or for new homes that may be built in the future?**

In the contract with Deer Valley, Brainstorm will commit to a one-time cost of $99 for any install, over any distance, for the next five years. This includes burying conduit, running the fiber, connections at the power pole and the home, and installing the modem and connecting it to your in-home network. While Brainstorm has offered to bury conduit to all homes during the project install, this $99 cost will apply in all cases for new subscribers once the install is complete.

**Technical Fiber FAQs**

1. **What does all this terminology mean?**

**Bandwidth** - measures volume of information or the maximum amount of data transmitted over an Internet connection in a given amount of time. Bandwidth is actually the **volume of information** that can be sent over a connection in a measured amount of time.

**Mbps** – Internet speeds are measured in **megabits per second** often shortened to Mbps. Bits are tiny units of data, with a megabit representing a **million** of them. The higher the number of Mbps you have the speedier your online activity will be. It is the maximum speed at which you can download from or upload to your computer or devices.

**Gbps – gigabits per second** – One **billion** bits of information transferred in one second.

1. **What is the difference between a modem and a router?**

Your **modem** is a box that connects your home network to the Internet connection coming into your home. It converts the signal coming to your home (in our case over the fiber) into a form compatible with your router.

A **router** is a box that lets all your wired and wireless devices use that Internet connection at once and also talk to one another without having to do so over the Internet. The router facilitates your home WIFI as well as any direct wired connections.

1. **How do Internet service connections work?**

It’s difficult to visualize the Internet. To understand where the Internet is coming from, you can imagine it as a tree. Your neighborhood is a twig, and the core of the tree is the “backbone.” The backbone of the Internet (the part that transmits data between cities, countries, and continents) is mostly made of fiber-optic cables. These networks are sprawling and complex. The main thing to understand is that they’re basically bundles of fiber-optic cables that carry data over huge distances between them.

1. **What is an ISP or Internet Service Provider and what do they do?**

DSL, cable, and fiber connections all have one thing in common: connecting consumers to the “backbone.” For this reason, Internet services sold from ISPs (Brainstorm will be our ISP) to consumers are called “last mile” technologies. Even with a lowly dial-up connection, most of the journey data travels between your computer and servers happens over fiber on the Internet backbone or carrier fiber networks. However, those last couple miles between your house and the ISP can slow things down considerably, because in most cases the data switches over to older copper cables. With a robust signal from Spring Creek to Deer Valley (1 gigabit capacity) and fiber to deliver it to our homes, we will have the best “last mile” possible!

1. **Why is fiber so much better than DSL?**

Fiber Internet download speeds are fast and unlike cable and DSL, fiber providers usually offer “symmetrical” service, meaning the upload speeds are the same high speed (ours will be!). Fiber Internet is a relative newcomer to the home broadband market. While the price is commonly a bit higher than cable or DSL, (it won’t be with Brainstorm) it’s almost always worth choosing fiber if you can get it. The high speeds make streaming high definition video to multiple devices easy on a fiber connection. Another interesting thing about fiber Internet compared to DSL or cable is that it won’t slow down no matter how far you are from your ISP. If the fiber reaches you, you will most likely get something extremely close to your advertised speeds, unlike cable or DSL. Fiber is still uncommon in the US. Even major cities like Los Angeles or San Diego often only have 20–50% coverage at the block level.

Advantages: Delivers Internet via fiber-optic cable

25% coverage nationwide

Reliable and future-proof technology

Speeds not affected by distance from ISP

1. **Why isn’t fiber more widely used throughout the Country?**

While fiber has yet to become readily available to consumers on the same scale as cable and DSL, it’s already the dominant Internet infrastructure from a “big picture” perspective. It handles the majority of data traffic outside the “last mile” familiar to broadband customers. The Internet is a “network of networks,” and the mix of types of Internet connections will likely be a part of our society for years to come. We can expect that fiber will continue to grow to the point that it will, one day, be as available as cable Internet. As our society increasingly relies on high-speed Internet, the thirst for faster Internet will likewise grow.

1. **How much Internet speed do I need?**

Try this calculator to give you more insights into your needs: [**https://broadbandnow.com/bandwidth-calculator**](https://broadbandnow.com/bandwidth-calculator)