SWCP Portal
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Round and round it goes

Filling the need for speed

Speed thrills, on the Internet also. Videos, games, fancy interactive features and all the real-time activities offered by the Web these days depend on high-speed connections. Good old-fashioned **dial-up** is barely adequate for email. And it's only going to be more so in the future. So why does it seem to take so long? How can you really get the speed you need?

The promise of universal high-speed or **broadband** connections has been around for years, but the federal initiative appears to have stalled. It's up to the big telecom and cable companies, ISPs, and a few ambitious corporations like Google with the vision, freedom, and funds to make up the difference. The result is a nationwide patchwork quilt of widely differing terms, availability, and prices with little chance that things will get better. It could even get worse.

Complicated connections

Internet connections are not unbroken streams of data. On both ends, all those ones and zeroes are combined into **packets** and sent out over the network willy-nilly, each seeking the quickest way to the destination. This complex system means that Internet connections are different from all other kinds.

The Net is *not* like broadcast mediums even if the same content is going to millions of homes, nor is it much like the unbroken circuit of a telephone, even if the data flows over the same copper wires. The closest models to the Internet are the old **post office** and the antique **telegraph**. It's *postal* because those *individually-addressed* packets are sent in different directions by each server, and it's *telegraphic* in that those packets are transmitted *one single bit* at a time.

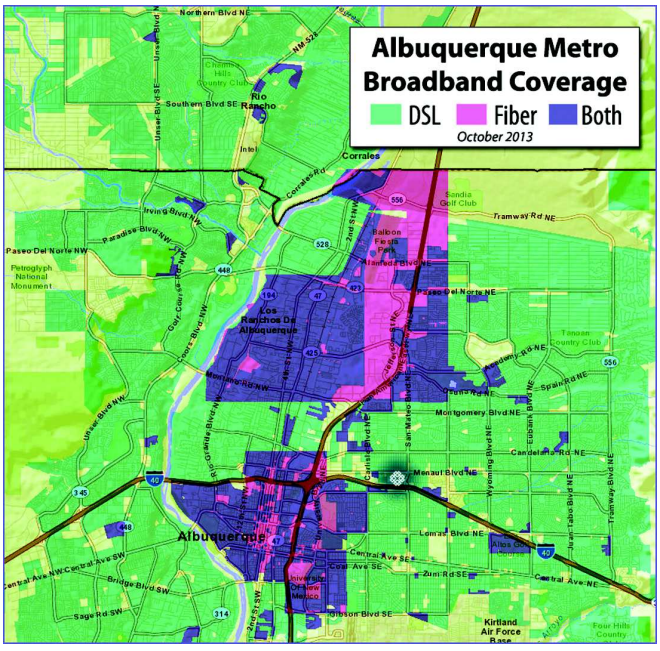
An Internet connection constantly shoots bursts of bundled bits. Faster connections are like fatter pipes, and the only other way to get more data is to increase the number of channels. But the **quality** of the connection is absolutely crucial because of the way the Net works. If a packet is not received completely by the end application, a request for it to be resent is automatically relayed back to the source. This inevitably slows everything way down.

Reasons for packet loss can be many. The burden on the servers could simply be too high. Downed transmission lines mean detours and resulting losses. Taos, for instance, was knocked off-line for a time last summer by a beaver biting into the line. Storms and frayed wiring can also raise havoc. But at this point, long distance is not where most delays occur.

Cross-country connections are generally fat, fast, and robust, and with projects like **Internet 2**, are getting very fast indeed. Where slowdowns develop is often close to home, in the final stretch. For DSL, various conditions on the copper line to the building can interfere, and indeed, the maximum speeds available are determined chiefly by the *distance* from the user to the nearest phone company central office.

Connections can be affected by everything from solar activity to software. With so many possible causes, slowdowns are sometimes just inexplicable.

Now that **Net Neutrality**, the principle that *all* packets should be handled the same way regardless of content or origin, has been overturned by the courts, delays can be deliberately introduced by providers to



This map has been adapted from the **New Mexico Broadband Map**, *a navigable Google Maps-based tool available at the* **New Mexico Department of Information Technology** *website:*
http://nmbbmapping.org/mapping/

Continued on back

Continued from front

slow down rival content. Comcast, for instance, for months braked Netflix' streaming videos by 30% until they reached a deal. Details are still secret, but probably many more such arrangements are on their way, and the ultimate costs to consumers are yet to be seen.

Adding fiber

Broadband can be delivered in a variety of methods. Most homes and small businesses rely on **DSL** (*Digital Subscriber Lines*). Like dial-up, DSL uses the same circuitry as a landline telephone connection.

Because of this, DSL works by *audio tones* just like dial-up, only these are pitched much higher. For most kinds of DSL, this allows the telephone line to be used for calls with special filters in place. But there is another alternative that can deliver faster and more reliable Internet speeds for a competitive price: *fiber*.

Fiber means "**fiber optic**" as it uses laser light sent over a hair-thin glass fiber to make the connection. Thousands of these can be bundled together, and each fiber can carry a number of different signals simultaneously. Long distance links are very fast and very reliable as there is also far less chance of interference or degradation of the signal. In other words, fiber is generally faster than DSL can ever be.

Often times, both home fiber and DSL use different speeds for downloading and uploading, which fits most people's usage patterns and is less expensive. However, fiber connections are *dedicated*. They use the same walljacks as phones and DSL, but unlike DSL, fiber does *not* allow the phone line to be used for conversations or anything else. For many people who depend on their cells this is not a problem, and many modern homes have an extra line anyway.

Broadband roll-out is as patchy on the local level as it is nationally. There are many "DSL deserts" in town where either one or the other form of broadband is not available. In some regions, like an area next to Coronado Mall, all the available bandwidth has been sucked up by businesses. DSL or fiber hasn't reached many other vicinities, like the "Jefferson Corridor" along I-25 North. These and other areas may be served by other means – by dedicated lines and ***SWCP DIRECT*** **point-to-point radio** for businesses along the freeway, and SWCP also provides radio links for Expo NM. Unfortunately, these kind of links are too expensive to be cost-effective for residences.

Because fiber is a new technology, it requires new infrastructure. It is slowly being rolled out neighborhood by neighborhood, but as can be seen from the map on the previous page, there are far bigger unconnected swaths of the city for fiber than DSL.

Seeing the light

Getting fiber in the 'hood may not be an unqualified blessing: ordinary DSL connection speeds in the area are often seriously degraded afterward. If this happens to you, paying for a faster DSL connection will not help. You then have only one option: *upgrade to fiber*. If you want to, you can check your real-time actual speeds at **SpeedOf.me** (**http://speedof.me/**).

Fortunately, Southwest Cyberport provides our own fiber-based connection: ***LightSpeed***. Like other systems, *LightSpeed* needs the sole use of a telephone landline, but the good news is that like our DSL, SWCP will intercede for our customers with CenturyLink. You will only get one bill each month and it will be from Southwest Cyberport for the next month's service.

LightSpeed comes in a wide range of speeds and prices. With a yearly contract for a home connection, it only costs $43/month for the slowest speed: 1.5Mb downloading and 896Kb uploading. Top speeds of 20Mb up and 5Mb down are just $34/month more.

While maps can be helpful, the only sure way you can find out what, if anything, is available in your neighborhood is by **prequalification** of your address. You can call or email our Help Desk, or submit the information yourself on our **Prequalification Page** at **http://www.swcp.com/prequal-for-dsl-or-wireless/** It is free and there is no obligation. Installation can be done in as little as 2-3 days after a contract is received.

Call today and see if we can get you to the speed you need.

Reminder: Windows XP support ending

After **April 8**, there will be no more new security patches for XP coming from Microsoft and the bad guys have been waiting. If you haven't upgraded to Windows 7 or 8, you'll need to take special steps to stay safe: *Read your email online at SWCP's website with a supported browser like Google Chrome with plug-ins turned off*. That should help prevent any browser or email attacks until you upgrade.

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