Mapping Broadband Connectivity

ECorridors is proud to announce the release of a new application that takes an alternative approach to the mapping of broadband connectivity. The "Community Broadband Map" can be found at **http://www.ecorridors.vt.edu/maps/broadbandmap.php**

The site consists of a speed testing application, the open-source "NDT" tool developed for Internet2, and a Google Map, tied together by a form through which users can measure their speed, mark their location, add optional descriptive information about their connection, and add themselves to the map.

The objective of this interactive map is to get an assessment of residential and small business broadband trends throughout the state of Virginia. Those who contribute data to the map by doing the speed test and adding a marker are encouraged to do so from a home or small business Internet connection.

This represents a "bottom-up" approach to broadband mapping, insofar as it is driven by the voluntary contribution of connectivity information by users, rather than by providers. There are numerous potential uses of this map as it becomes populated with a sufficient amount of data. Some examples:

- Broadband availability versus demand is an issue that concerns economic development agencies, education institutions, citizens and private sector businesses. Information about both of these concerns is readily available in geographic areas having significant participation in documenting access and other information included on the mapping tool.

- In areas where the map reveals an abundance of high-speed connectivity, communities could use the map to illustrate this fact, as a means to attract technology workers and their employers.

- In areas where the map reveals a lack of high-speed connectivity, communities could use the map as a means to attract new ISPs, or as justification for developing their own infrastructure, where permitted by law.

- Individuals could use the map as an input to personal location decisions.

All these uses of the map, of course, must proceed with the awareness that the data behind it may contain errors and that it is self-reported data. No individual data point should be treated as authoritative, but the aggregate trends across a given geographic area are more robust. More information on the research methodology involved in utilizing the data can be obtained by contacting the eCorridors office.

The amount of useful information the map can convey will increase with the number of users that contribute data. eCorridors invites any and all to participate in building a map of the current state of broadband availability by adding a marker for your residence or small business connection.
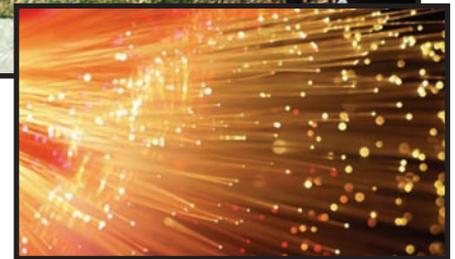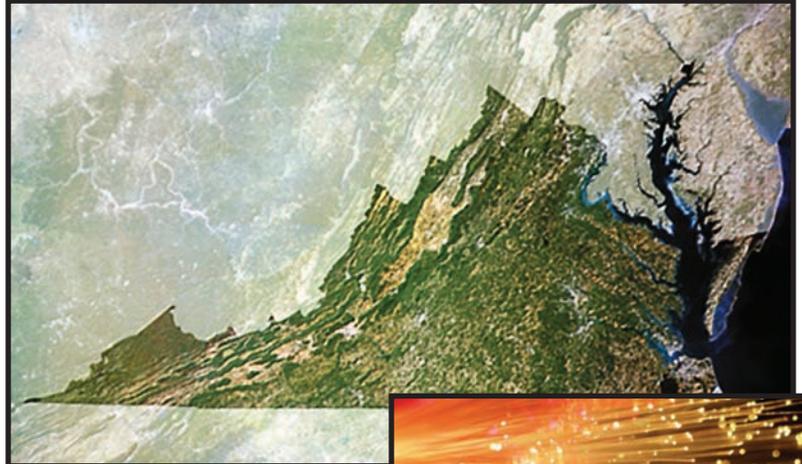
Our Mission

To create competitive advantage by facilitating the deployment of advanced technology infrastructure and applications leveraging inter-regional connectivity for, and collaboration among, communities.

Instructions

Zoom to ZIP or "City, ST" [ ] Go!

1. Connection Speed (?)

Run Internet Speed Test

Run Test | Run Test
Download (Kbps) | Upload (Kbps)

2. Geographic Location (?)

Click on map | Click on map
Latitude | Longitude

[ ] | [ ]
Location Name | ZIP code

3. Service Details (?)

[ ] | [ ]
Provider | $/Month

Unknown ▾
Access Technology

Unknown ▾ | No Answer ▾
Service Type | Rate Connection

Yellow = Required Field

Clear Form | Add to Map

Map | Satellite | Hybrid

P Dial-up
I ISDN
C Cable Modem
D DSL
L Leased Line
E Ethernet
S Satellite
W Wireless
O Other
? Unknown

POWERED BY Google
100 mi
200 km
Map data ©2006 TeleAtlas - Terms of Use

| 0-56 Kbps | 57-256 Kbps | 257-1000 Kbps | 1001-5000 Kbps | 5001 Kbps and up |

http://www.ecorridors.vt.edu/maps/broadbandmap.php

Project Description: Community Broadband Map

The development of the Community Broadband Map was a team effort, with contributions from all members of the eCorridors staff.

Brenda van Gelder, eCorridors Program Director, came up with the original idea for the project. The initial scope of the project was to be an interactive map targeted towards the residents of the Town of Blacksburg to allow them to report on their home broadband connectivity. However, the manner in which the project was implemented provided the opportunity to expand the original vision to a state and even national level.

Seth Peery assumed the principal lead on the project, and is the primary architect of the underlying functionality of the application. He took Brenda's vision and implemented it as a "mashup" using the Google Maps API. This allows the application to overlay user-contributed data on top of Google's basemaps (roads, images, etc), and enabled rapid development of the

application since not everything had to be built from scratch. Seth chose the open-source Network Diagnostic Tool (NDT) as the testing engine for the application, and customized its client source code to seamlessly integrate it with the web form and map that make up the main application interface. Seth designed the database that stores the user-contributed data, and wrote programs to process new user input, insert it into the database, and generate custom map makers from information stored in the database.

Brandon Morrison took Seth's application and gave it a major facelift, integrating it into the unified look and feel of the eCorridors website. He changed the layout of the interface to provide an intuitive user experience, designed the legends for ease of interpretation of the map, and developed a novel help system enabling users to easily learn how to use the application. He also identified several ways in which the efficiency of the site's database interaction could be improved.

Jean Plymale assisted Seth in the development of a local NDT server to interface with the open-source client application that had been integrated into the website, allowing tests to be performed from the client to Virginia Tech. Jean has been very active in configuring, troubleshooting, and performance tuning the NDT servers that sit behind the testing engine.

Usage Instructions:

1. Connection Speed: Click "Run Internet Speed Test".
2. Geographic Location:
   a. Place a marker on your approximate location by clicking on the map.
   b. Provide a name for your location (please do not provide any personally identifiable information).
   c. Enter your zip code, if known.

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