Synopsis: High-speed broadband access is critical to link South Dakota researchers to the national grid of research networks. The Great Plains Education Foundation has pledged $8 million to cover one-time costs of connecting South Dakota into a national high-speed communications network (sometimes referred to as Internet-3). The state would agree to pay an estimated $1.7 million annually for continuing operation and maintenance of the system. South Dakota needs access to this high-speed network to connect university researchers, research laboratories such as the Homestake Deep Underground Lab project, and federal research centers.

A national high-speed broadband communications network crisscrosses the nation, but currently bypasses South Dakota and several states in the Upper Midwest region. The closest hubs to access the network are located at Chicago, Kansas City, and Denver. Tapping into this network is critical in order to connect South Dakota researchers to the national grid of research networks. In today’s world, our researchers must be able to quickly manage enormous amounts of data, so they can access and share these data sets with other researchers and government agencies.

This map shows the national 10-Gbps dedicated research network. On this map, the black lines indicate the national network. The other colored lines are regional networks that connect to the national backbone.

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As the Homestake Deep Underground Science and Engineering Laboratory project comes on line, researchers will expect South Dakota to have the high-speed communications infrastructure in place to support their efforts. This is a project of the highest priority to ensure the success of Homestake and other research efforts under way at our public universities.

The next step is to prepare a “request for information (RFI)” to better define the exact costs for acquiring the dedicated research network, to develop plans from the public university campuses for interfacing with the broadband network, and to expand competitive grant activity that will use the network.

Why is it so important that South Dakota be a part of this high-speed communications network?

1. In recent years, South Dakota has concentrated on building its research infrastructure to offer new educational and economic development opportunities. A strong research infrastructure demands access to a high-speed broadband communications network (10 gigabits per second transmission capacity) so that South Dakota researchers are directly connected to researchers throughout the nation and the world.

2. Access to the high-speed network will support research activity at the Homestake Deep Underground Science and Engineering Laboratory. It will permit researchers at Homestake to transmit data to and from the site at the speeds they have come to expect within the current research environment.

3. As more federal agencies, such as the National Science Foundation, demand collaboration in their grant activities among researchers at multiple sites, South Dakota must have access to a national high-speed broadband research network. This makes our researchers competitive in a national and international market, and it’s the only way South Dakota can attract more top-notch research faculty and graduate students. This is the kind of infrastructure that contributes to economic development by enhancing the research sector within South Dakota’s economy.

4. The rest of the country and much of the world are already connected to the high-speed research grid now missing in South Dakota. In fact, South Dakota might be viewed today as a digital desert in the High Plains.

On this map, the red line indicates the proposed dedicated research network that will connect South Dakota to the national network.