Cyberinfrastructure in Nevada: Current Status and Future Developments

February 2, 2010

Frederick C Harris, Jr.

EPSCoR NEVADA

UNLV UNIVERSITY OF NEVADA LAS VEGAS

DRI Desert Research Institute

University of Nevada, Reno

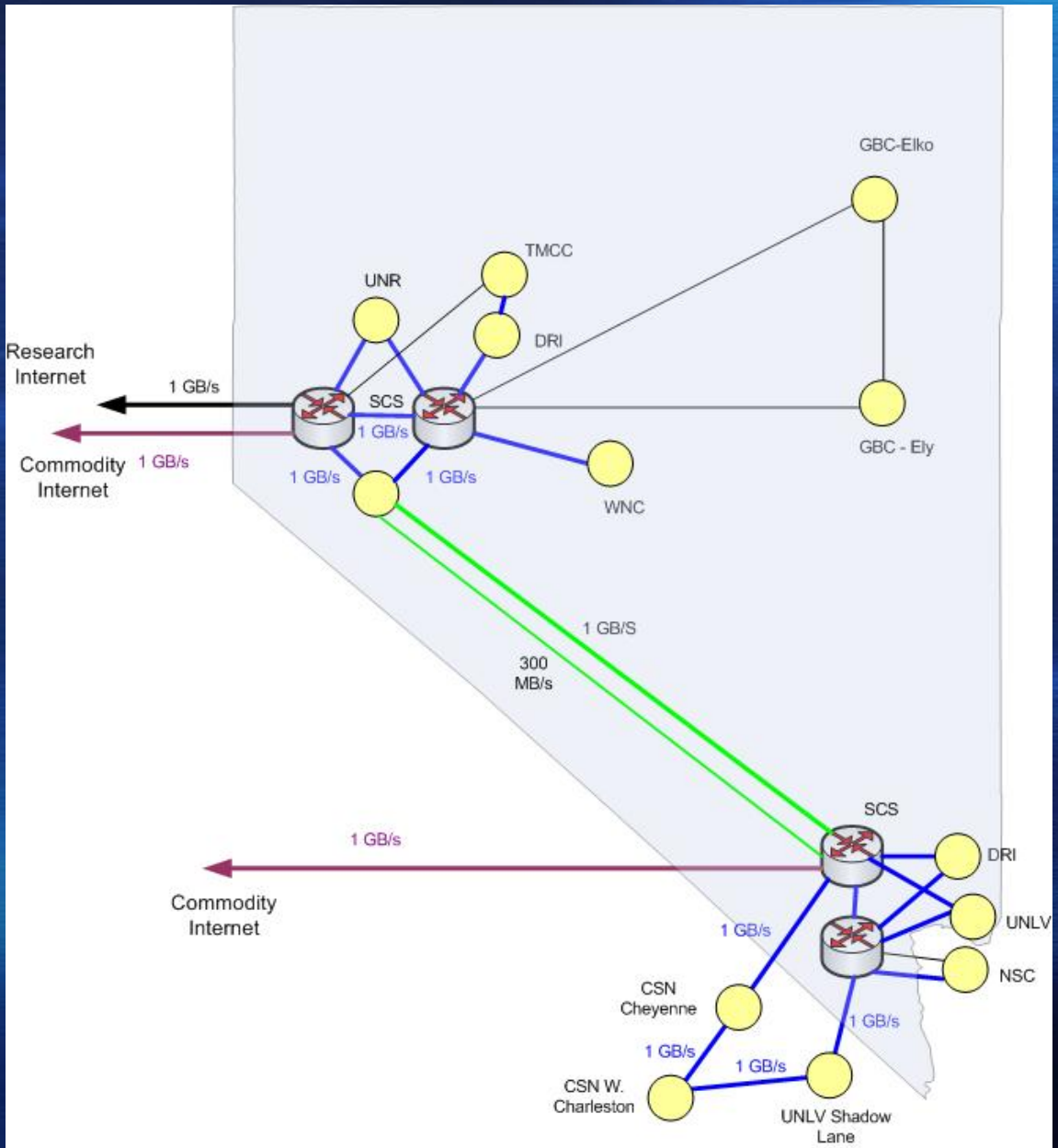
Nevada State College

Nevada System of Higher Education 1865

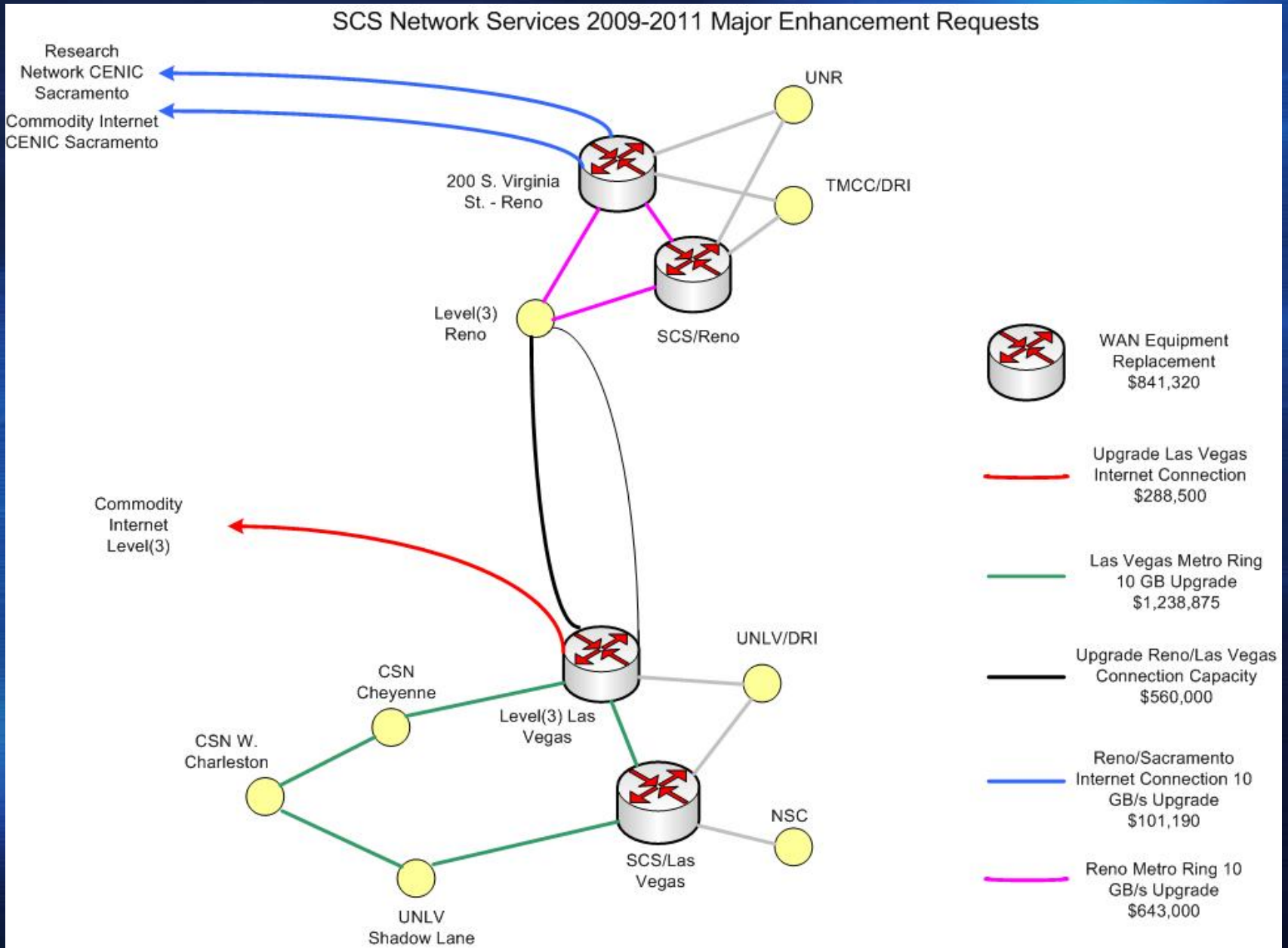
Major Equipment

- Computing cluster
  - 33 - Sun Fire x4140 Server
    - 2x AMD Opteron quad-core processors
    - 16GB RAM
- Storage servers
  - 3 – Sun Fire x4540 Server
    - 2x AMD Opteron quad-core processors
    - 24TB (48 x 500 GB SATA drives)
    - 32GB memory
- Gigabit network switches

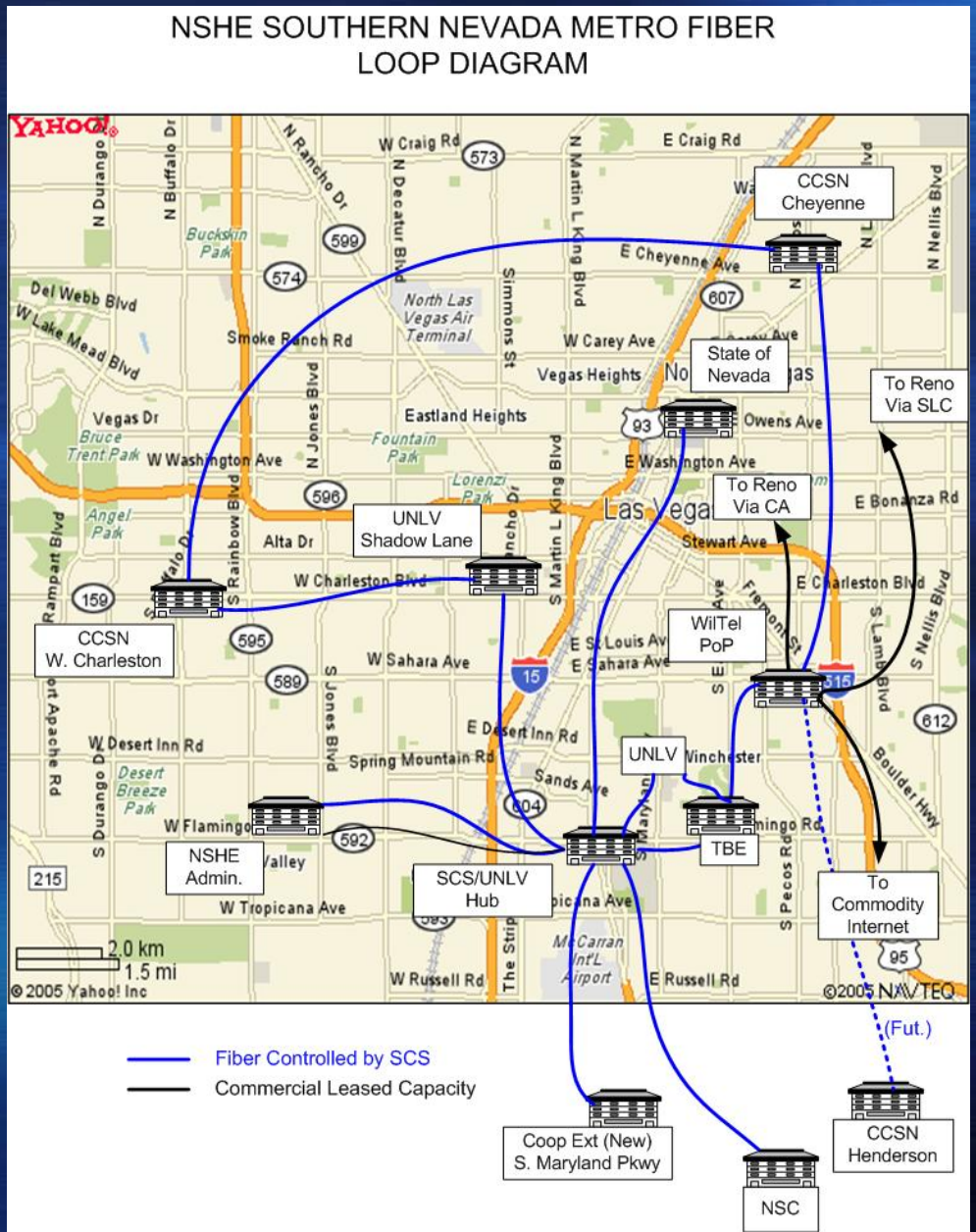
Network Infrastructure: 11/2008



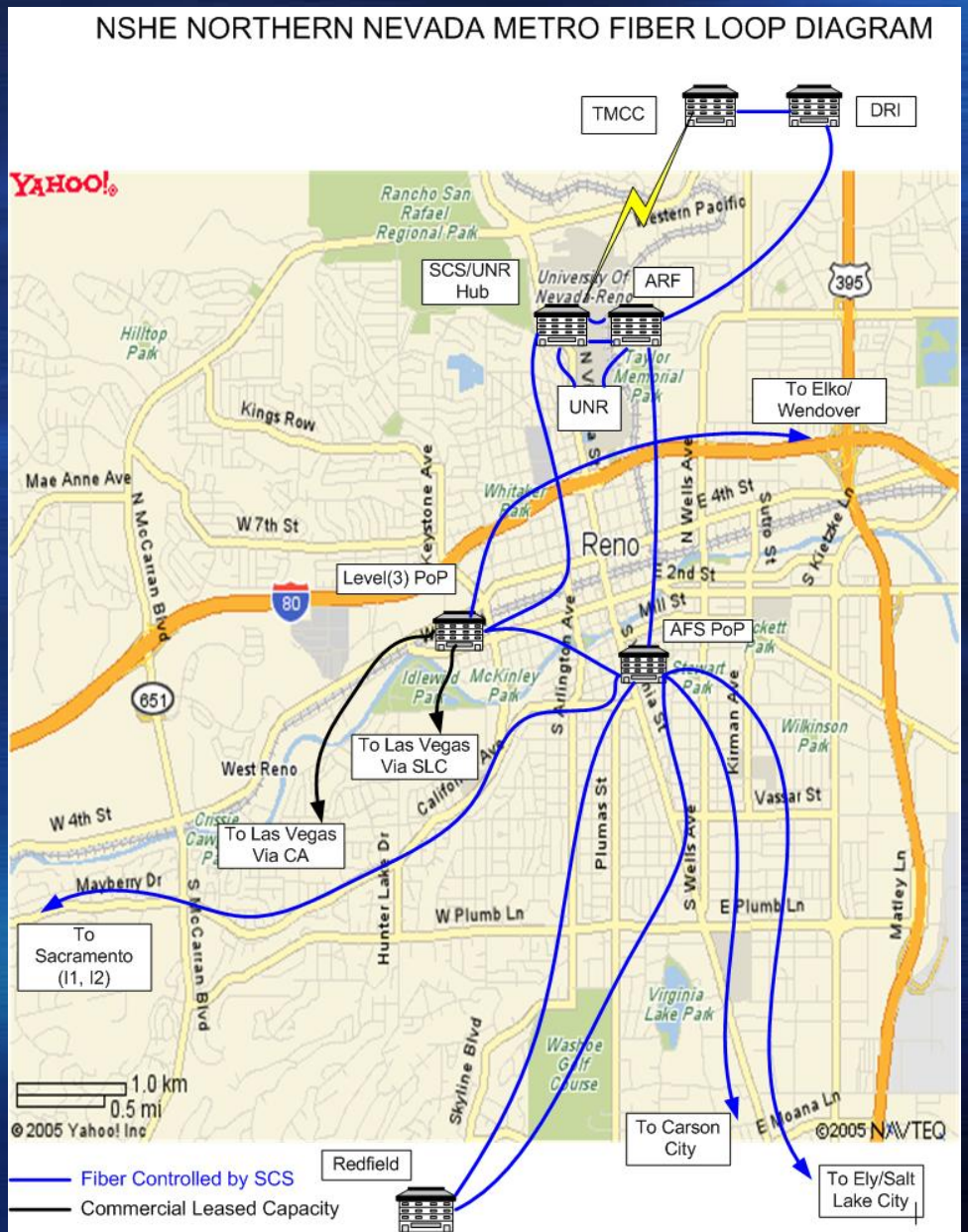
Nevada Net Upgrade Requests



Southern Metro Ring

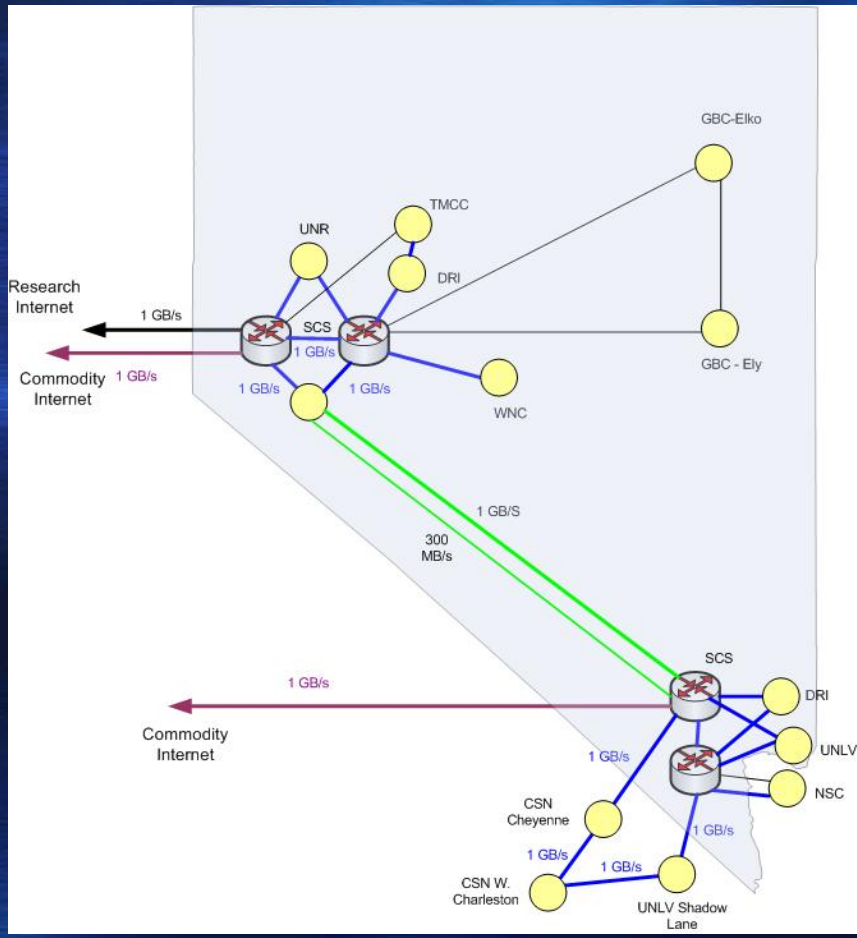


Northern Metro Ring



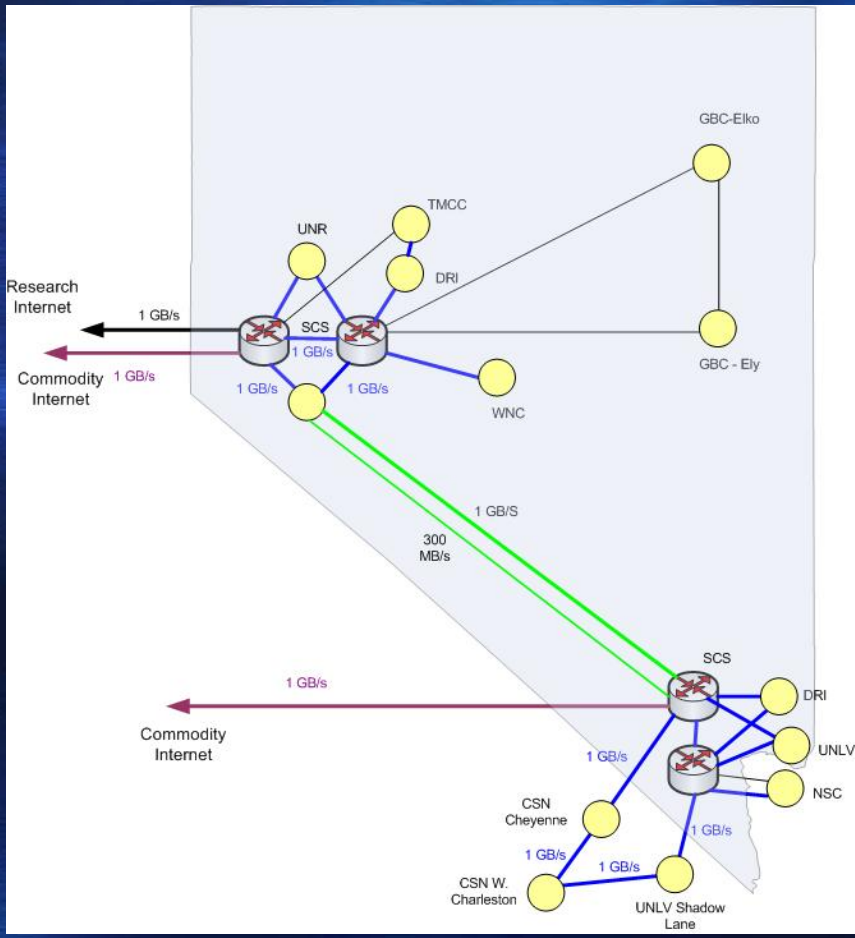
Network Infrastructure: Current

- I1 Connectivity out of Las Vegas is now 10 GB/s
- I1 and I2 Connectivity out of Reno will be 10 GB/s soon
  - [NEVADA NET and CENIC hope to finish this month]



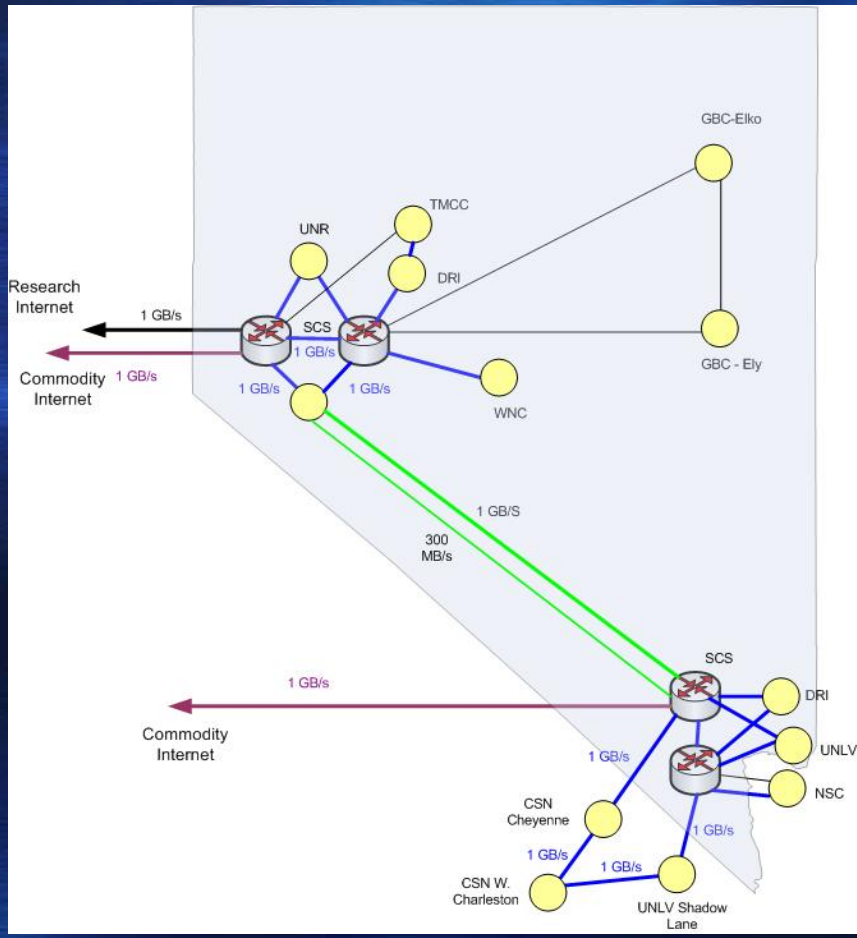
Network Infrastructure: Under Review

- NSF RII C2
  - Gayle Dana PI
  - Upgrade of both Reno and Las Vegas Metro Rings to 10 GB/s



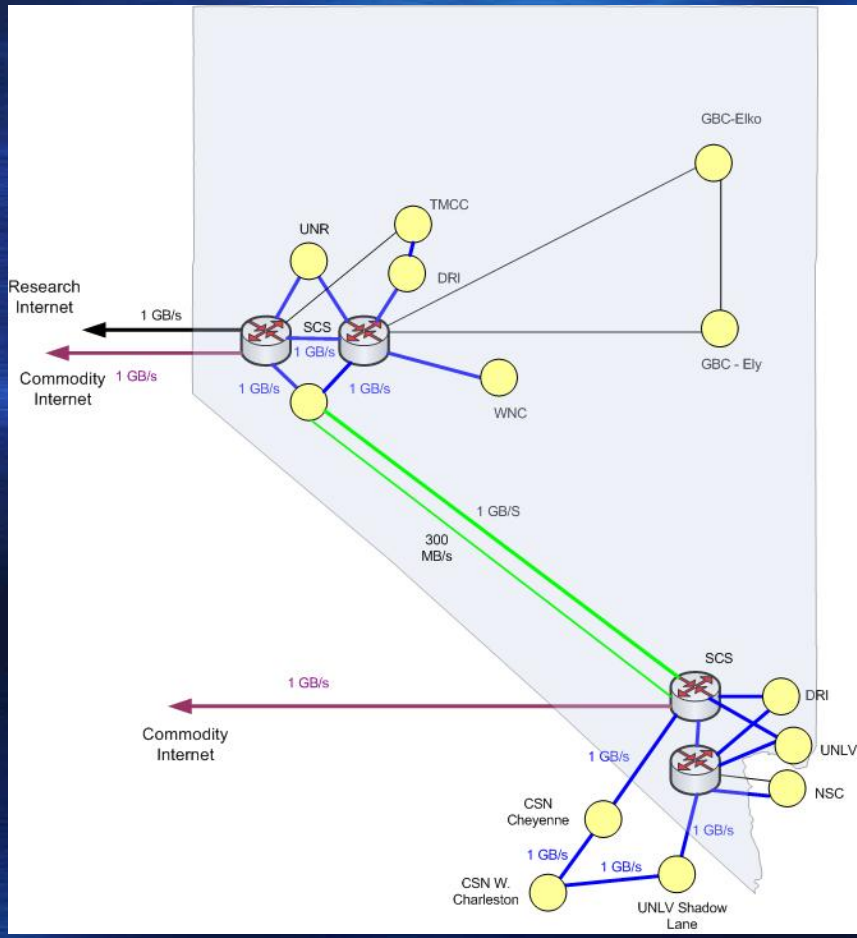
Network Infrastructure: What's Left?

- North South Connectivity
  - Option 1: use CENIC to create a 10 GB/s pipe
    - Cost: almost $600K
    - Uses capacity on the links we just upgraded out of the state
  - Option 2: use fiber on new power line from Ely to Las Vegas
    - Cost: ???



Network Infrastructure: What's Left?

- DRI North Connectivity
  - Currently a 1GB/s link
  - NDOT is placing fiber on US 395 from Carson City north to DRI Exit (also links Redfield Campus) and will "give some" to NEVADA NET
  - Probably 2 years out.
  - Also upgrades Carson City Metro Ring (NSHE, NDOT, DoIT)



Questions and Comments