

## NTNC Exec -UW Madison

2016-02-17/18

=====

Present: Marc Wallman, Matt Riley, John Krogman, Dave Lois, Bob Stovall, Rob Vietzke, CeCe Rohwedder, Mike Ruhrdance, Jonah Keogh, Kim Owen, Roberta Ambur.

The executive meeting of the Northern Tier Network Consortium (NTNC) convened at 1 p.m. in the Fluno Center on the campus of the University of Wisconsin-Madison. President Marc Wallman convened the meeting and welcomed everyone.

Upon motion by Bob Stovall and seconded by Matt Riley the meeting minutes from 2015 NTNC annual meeting and 2015 NTNC executive meeting were approved as read.

Upon motion by Roberta Ambur and seconded by Dave Lois, the financial report as of December 31, 2015 was approved as read.

A brief discussion on updates needed to the NTNC membership roster of state representatives noted retirements of two founding members of the NTNC. Claude Garelik of South Dakota and Ray Ford of Montana both served integral roles in the vision and deployment of the NTNC. Discussion on honoring their retirements will be determined based on their availability to attend the annual meeting.

### Member updates

- Montana
  - The University of MT (U-MT) is completing connection to Internet2 and will participate in connector meetings going forward. Part of the vision for this connection is to extend membership benefits to other entities around the state.
  - U-MT has been able to increase connection capacity to connecting sites and is looking to collaborate with other entities to extend connection west to Idaho Falls.
  - Developing a proposal with FCC for U-MT to be conduit to support the tribal colleges in their communities.
  - Montana State University (MSU) has been working on upgrading their links to the PNWGP 100G partner (Science DMZ).
- Wisconsin
  - University of Wisconsin system and WiscNet continue to operate separately.
  - University of Wisconsin-Madison (UW-Madison) is exploring upgrade to campus data center to improve security and redundancy, both of which will increase data capacity requirements.
  - Services models must continue to adjust to customer needs. At UW-Madison the average number of wireless devices per person on the college campus is eight.
- WiscNet
  - Internet2 held network connectors workshop recently in Tempe. All connectors submitted white papers resulting in a collection of information on short and long-term issues that will be critical to connectors across the U.S. Compiled document will be available later in 2016. Contact Dave Lois to obtain a copy.
  - Local connectivity remains a critical factor for WiscNet. While WiscNet has no plans on serving private entities in any community, they want to be a part of the solution to activities that serve

anchor institutions.

- Part of WiscNet's global strategy is to focus on supporting local communities by ensuring there is broadband capacity available and providing evidence of that support as new CIO's come into the picture. Organizations like WiscNet will need to be aware of the value proposition of supporting data storage locally.
- Michigan
  - Merit has applied to the FCC for the whole UP for wireless spectrum of education. If approved, the commitment will be for a long-term lease on spectrum to be used for education only and cannot be re-sold.
  - The state education network is connecting all 56 school districts at 10G; also getting a dedicated connection to a testing site based in Mpls to better serve K12 student testing needs.
  - Merit is increasing support for cyber defense due to distributed denial of service (DDoS) attacks becoming more frequent, more intense, longer in duration. Merit is being asked to create a 'd-dos' detection plan for the whole state. (ex: high level of attacks on Flint and the surrounding county).
- Internet2
  - Net+ division has been split in half since January 1, 2016. Now comprised of Net+ and Trust & Identity
  - Internet2 member classifications and fees will adopt a new fee structure anticipated to occur in phases with partial changes set to occur in 2017 and the remainder in 2019. New structure will move away from being based on Carnegie classifications and instead align to iPeds data. The reason is that there are many institutions that are just barely considered an R-1 institution and yet they are paying the same rates as other much larger R-1's. The new structure will serve to increase rates for larger institutions and make membership more affordable for smaller institutions.
  - Planning for future of NTN segments is dependent on decisions by MT and ND. Discussions and negotiations with various vendors will be needed, along with engagement by PNWGP and Internet2. Current Zayo contract expires in 2019, with current AT&T agreements ending later. The critical issue in this challenge is that there are 2000-3000 miles of fiber to support with very few users along that path, making the return on investment too big of a challenge. Vendors may be willing to serve this area but their costs may be as large or larger than serving the rest of the nation. There is also too little competition for vendors in this region.
  - For NTNC and the asset holders involved, the challenge is whether we can be content with institutions and states acting on their own and disregarding the original 'vision' of the NTNC and it's path from Chicago to Seattle.
- Nebraska
  - The state is looking to develop a 'one system - four campuses' structure. Mike is now at central administration and is responsible for the UNL campus as well as the statewide network and other responsibilities. Merging of various IT teams from across the campuses into singular statewide teams is occurring and expected to continue.
  - Equipment statewide is in process of being updated/upgraded. NE K12's are migrating to 1:1 tablet initiatives pretty quickly which will result in thousands of additional devices going onto the network.
  - Exploring the options for an additional link back up to BOREASnet; NE is interested in interconnecting in as many ways as possible. NE is also interested in building an Internet exchange point in Omaha so traffic can go through Omaha rather than up to Chicago.
  - Allo Communications is currently working on gig to the home in Lincoln; collaboration between city

and Allo to complete.

- Washington / Pacific Northwest GigaPop (PNWGP)
  - Major projects include working on lighting dark fiber that has resulted in 100g circuit from Seattle to Tokyo. This will also connect in to the Pacific Wave exchange. The Korean R&E network is ramping up to connect; Japanese R&E network connects in to LA and to the Pacific Wave network.
  - PNWGP continues working with MT State University for long term connectivity. PNWGP wants to collaborate with NTNC for long term feature/upgrade options if we can address the challenge of costs for in-place upgrades compared to other vendors.
- South Dakota
  - The state backbone is being upgraded from 10G to 100G with anticipated completion date in 2018. When completed, the next phase will be to connect to campuses as affordable. The state legislature will be passing a bill to support the purchase of routers and ongoing depreciation costs. Up to 80% of current Netflix cache is going to GPN.
  - Anticipate turnover in administration at state and institution levels in coming years which will bring fresh perspective and at the same time some loss of historical background on needs of the state and relationships to state/regional networks.
  - Current enrollment numbers for higher education are flat, driving internal movement to streamline in an effort to control costs. IT has been key to successful grant initiatives.
- North Dakota
  - Capital refresh funds are being set aside in anticipation of increased connections to South Dakota and Canada. Exploring the potential move to become an Internet2 100G connector site. Ultimately plans will be impacted by any decisions made by MT. -

=====

## Day 2...

- Planning for 2016 annual meeting July 14-15
  - Location: Big Sky MT
  - Schedule: Thursday 3-5 pm executive committee meeting followed by dinner; Friday full day meeting followed by dinner.
  - Options for outdoor activities to be added as options in the registration form.
  - Meeting agenda and content to be determined based on use cases highlighting research initiatives at U-MT and MT State U.
  - Other discussion items:
    - Revert back to including both technical and regular meeting tracks.
    - Explore other types of membership options for NTNC
  - Plan to extend invites to other institutions and regional networks in the area: Colorado, Oregon, CANARIE/BCNet/Manitoba.
  - Request updates for member representatives
- Reminder to attend the Internet2 Global Summit - May 15-18, Chicago, IL
- NTNC Map – was updated in 2015. No change needed at this time.
- Key points/concerns for renewing current fiber lease:
  - Initial expense is high, but in the long run the return on investment that will result from connecting underserved anchor institutions will be of high value.
  - Internet2 agrees there is unfinished business along the NTN path. We can't say we have a national footprint until this gets finished. UCAN \$\$ forced the issue of open-interconnect. Now with UCAN \$\$ off the table, it might be OK to revisit/refine the original vision and consider whether migrating to

owned infrastructure will generate the income necessary to justify paying for it.

- More conversation about status of fiber is needed.
  - Currently the financial burden of the path from Spokane to Mpls is held by three contributors with all equipment (assets) owned by the individual states. PNWGP is exploring ways to make it sustainable in the long run.
  - Concerns regarding AUP contracts for each of the asset holders. It may be useful to ask for another review of agreements by legal counsel.
  - Internet2 feels there are lots of options and believes there is a compelling argument to take this request for assistance to Internet2. They will want to see dedicated work by the regional group and evidence that merges local drivers with the national drivers
- What's the issue we're trying to solve?
  - Need to dedicate infrastructure refresh (PNWGP has alternative 300G path from Seattle to Chicago with vendors).
  - Current Zayo contract does not allot for redundancy.
  - the value of what we want to do is reliant on an owned infrastructure. Economy of scale has been proven time and again by other R&E networks and connectors. Right now NTNC isn't at that level where economies of scale justify owned infrastructure – what is needed to move to that level?
- How to move forward...
  - Suggest Internet2 and PNWGP discuss together and report back during the summer annual meeting on best options for fiber going forward. To be viable and useful both MT and ND will need to renew their agreements and there needs to be a plan for equipment replacement. PNWGP does not have the business case to pay for the fiber if there are no customers. NTNC will need to provide business plan and some suggested options. Old equipment needs to be upgraded/replaced; currently only have 10G waves from Mpls to Seattle.
  - UW Madison, Boreas and Merit still want a path to Seattle - what are the options if MT does not renew the operating agreement?
  - Possibly develop a white paper doc that records where the conversation left off. It will be helpful to identify goals based on lessons learned and catalogue them so we can choose from them as we move forward.
  - Action –
    - plan to convene via conference call in 3 weeks (review history) and what are the key elements of the old doc that will be kept for strategic planning going forward
    - Marc to draft second document for call
    - US UCAN concerns can be dropped from this conversation
    - make sure invite is open to all
    - Motion to approve upcoming action items and move forward.
- Meeting adjourned at 12:00 p.m.