



Volo Broadband  
822 Pioneer St  
Champaign, IL 61820

To:

Donald Owen, Ed.D.  
Superintendent, Urbana School District 116  
205 North Race Street  
Urbana, IL 61801

November 14<sup>th</sup>, 2014

Superintendent Owen,

As you may know, Volo Broadband is in the process of rolling out low cost, socially responsible fiber-optic internet access in Urbana. The first neighborhood we are installing service in is directly south of the Urbana Middle School, High School, and Athletic complex, which presents a unique opportunity for a win/win partnership.

The benefits this would bring to USD116 are substantial:

1. The current USD116 network design leaves the District exposed to the potential for a protracted Internet access outage due to the fact that your Internet access comes via a single path from USD116 to the ICN.

The risk of an outage is heightened by the fact that this connection involves many parties (USD116, the City of Urbana, UC2B, iTV-3, the University of Illinois, and the ICN):

- a. With iTV-3's proposed buildout of fiber infrastructure along your critical Internet uplink path, the chances of a fiber cut in the next 1-4 years are greater than average
- b. There appears to be significant "telephone effect" resulting in a lack of clear understanding by many of those parties regarding what infrastructure exists where and how it all interconnects
- c. Any fiber cut, misunderstanding about the infrastructure layout, contractual issue, or mistake by any of those parties could result in an outage
- d. It would likely take a substantial amount of time (and possibly involve a lot of finger pointing!) to identify the cause of an outage and fix it

Working with Volo would completely eliminate this risk for USD116:

- a. Volo's connection would be completely independent of the existing infrastructure, using independent fiber paths with wireless backup
  - b. Volo's connection is entirely Volo-controlled so you have a single point of contact for any issues or concerns
  - c. The connection installed would be capable of supporting the entire capacity of USD116, or of augmenting the existing connection.
  - d. Volo will assist USD116 in configuring the connection to be "multi-homed," resulting in completely automatic failover and load balancing of the two connections
2. Volo will donate sufficient bandwidth equal to any other sources of Internet bandwidth that USD116 has, which we currently understand to be 200mbps. Due to the "multi-homed" nature of the connection configuration, that will effectively **double USD116's usable Internet bandwidth**, at no cost to the District.

3. Volo will work with USD116 to establish a second Internet connection setup, for use offloading high bandwidth usage from the existing USD116 router and in emergency cases as an independent path not subject to Denial of Service attack as discussed with Denise Pelafas.
4. Volo will work with USD116 as needed to resolve any problems with their internal network, regardless of cause, on an as-needed basis. That includes:
  - a. Switch configuration updates
  - b. Training and documentation
  - c. Locating underground infrastructure that is insufficiently documented
  - d. Identifying and eliminating bottlenecks and single failure points
  - e. Response to and planning for emergencies, including hardware failures and network attacks
  - f. Troubleshooting any issues with internal fiber optic infrastructure unsupported by UC2B/iTV-3

The costs to USD116 would be minimal:

- A small amount of staff time during winter 2014 and spring 2015 supervising Volo's installation of the connections
- A small amount of space in existing duct and closets (all of which currently appear to have ample space) at Urbana Middle School and the Athletic Complex
- If the Agreement continues beyond Q2 2015, a small amount of otherwise-unusable exterior wall space on other USD116 facilities as requested by Volo and approved by USD116 on a case-by-case basis

Volo would reimburse USD116 for 50% of any other, unforeseen costs that arise as a result of the partnership.

## Proposed Partnership details

*We are open to suggestions regarding any of the below, if anything presents a problem or concern for USD116.*

Volo will:

### Winter 2014

- 1) Install one Ubiquiti AirFiber point-to-point wireless link on the central light pole in the UMS/UHS Athletic Complex
- 2) Install cabling from that light pole using existing duct to the nearby networking closet (providing a handoff of bandwidth to the UMS/UHS network at that location, per discussions with Denise Pelafas)
- 3) Install duct inside the Athletic Complex ticket building from the SW corner to the NW corner
- 4) Install a building penetration and low-profile "elbow" joint near the ground on the NW corner of Athletic Complex ticket building, just west of the fence.
- 5) Install duct using underground directional boring from the Athletic Complex ticket building NW corner to Volo's infrastructure at Michigan Ave (exact path TBD based on results of a JULIE request)
- 6) Install fiber optic cable from Volo's neighborhood infrastructure to the networking closet in item 2
- 7) Provision an Internet connection for USD116 use capable of at least 100mbps. (The connection is 100mbps at this stage because USD116's current ICN usable bandwidth—per Denise Pelafas—is only 100mbps. It is bad networking practice to have unbalanced upstream connections.)
- 8) During Winter Break, work with Illinois Century Network representatives to configure the USD116 router to utilize both connections in a multi-homed setup

Spring 2015

- 1) Install a fiber optic connection from Volo's core network directly to the USD116 network core at UMS, working with USD116 staff to determine the preferred method for routing that connection to USD116.
- 2) Work with USD116 and Illinois Century Network staff to transition the connection to USD116's proposed new Cisco 3925 or similar router, using fiber as the primary connection (with wireless backup), and supporting the full 200mbps that would then be available over the ICN network.

Future

- 1) As needed by Volo but subject to approval by USD116 on a case-by-case basis, Volo may request space for 36"x24" "neighborhood fiber node" boxes on the back wall of elementary schools and other District facilities, and access to power at those facilities, for use distributing Volo fiber services to the neighborhood surrounding the facility. If approved, Volo will monitor and reimburse USD116 for power usage at a rate 10% greater than that paid by USD116.
- 2) As needed by USD116 and to the extent Volo is able, Volo will supply support services to USD116 technical staff. In general Volo staff will be available 24x7 for immediate remote support, and within 1-2 hours for on-site service.

USD116 will:

- 1) Permit Volo to install items as discussed
- 2) Consider future requests as described

Volo would propose an initial term for the Partnership of one year, with automatic 10-year renewal terms thereafter, and 120 days' notice of non-renewal. We believe that would provide the parties with enough time to ensure that the Partnership works for them, but also enough stability to count on the Partnership to provide critical services to each party.

Please let me know your thoughts on this matter, and when appropriate provide a description of the next steps, as soon as practical.

Sincerely,



Peter Folk  
CEO, Volo Broadband  
[peter@volo.net](mailto:peter@volo.net)

