2016 Technology Planning Guide

Budget Narrative With 2017 Preview
Exhibit 18a-b

For assisting libraries in the planning of 2017 budgets.
Drafted by Joshua Klingbeil (pending WVLS BoT approval)
March 12, 2015

Introduction:

This year, 2015, is the first "normalized" year for the WVLS Network and Enterprise Services Subscription. This comes after our "bridge" year, 2014, got us from the old WAN Composite Fee model to the more comprehensive (and accurate) Network and Enterprise Services Subscription (NESS). What's the difference? Let's review!

In 2010 WVLS worked to consolidate the multitude of invoices which were going out for various (relatively basic) Wide Area Network (WAN) services. The goal was to bundle all of the typical pass-through costs into a single invoice, to reduce complexity for the libraries, and for WVLS in in managing the financials. While we'd successfully bundled many of the "pure" networking services together, there were still several services (email and antivirus being the foremost examples) which were tracked separately for each library, and invoiced separately as well. This occurred as WVLS entered into an era of Technology Services enhancement and growth, which had an initial primary goal of helping the V-Cat project with an upgrade to the Horizon product, saving the consortium members a significant amount of money relative to a vendor-provided server and platform support services. The enhancement era also focused on helping to reduce redundancies across the libraries, meeting growing needs-driven demands for various services, and especially to increase our ability to provide direct Technical Services assistance for libraries' computers and networks.

During 2013 we worked to collect more services into the composite invoicing model. The V-Cat Council's decision to migrate away from Horizon and to Sierra for its Integrated Library System (ILS) was a significant factor in this, pressuring WVLS to improve efficiencies in both the financial management of these services, but also in the core architecture of the services management themselves. Very simply put, we did not have enough FTEs to continue our manual tracking and billing processes, and needed to be spending less time overall on managing all of it. This was a good thing, as we were able to press vendors aggressively for better pricing, garner longer term commitments, and even find opportunity in misadventure … such as the discontinuation of WiscMail pressuring us to find a new, better, lower cost solution in the Microsoft Office 365 service.

These factors and others led us to put together the comprehensive subscription model for Network and Enterprise Services. While the NESS does seem to cost more (at first glance) than the WAN Composite Fee, it is important to remember that it now includes significantly improved services. Some of the big ones (eg email and antivirus as also noted above) were being used by just about every library anyway.

We are currently in the 2015 year, looking toward 2016 as the second "real" year of NESS. One of the most interesting (and sometimes confusing) things about planning the WVLS Technology Budget and preparing this guide for libraries is that there is not a direct dollar-to-dollar correlation between the two. WVLS will invest resources into capital, software, time and into other expenditures to build up one or more services which won't be used until the following year (or sometimes even later). These resources include portions of State Aid, LSTA funding, and previous receipts from partners and libraries for use of the network and services. Any given year will see a Subscription rate for network and Enterprise Services based on a calculation which actually lags already capitalized expenditures. A major facet of our strategy is to leverage WVLS' capacity to act as a resource buffer to do just that; buffer member libraries and system partners from initial costs, relying on the subscription model to help sustain the services and the capital infrastructure once actualized.

Last year saw some significant changes to our network operations. While assessing recovery options during a critical failure of our primary Uninterrupted Power Supply (UPS), which acted as a power backup for our entire virtualization platform, we investigated the Chippewa Valley Technical College (CVTC) Regional Data Center (RDC). That story is significant in and of itself, with many facets and machinations that led to a massive migration of server infrastructure from WVLS headquarters to the RDC. A key part of that story is a new partnership which developed between Indianhead Federate Library System (IFLS) and WVLS.

WVLS considers this realized partnership with IFLS, additional partnerships with other institutions, and our own members' ever-growing needs as we refine and sometimes redevelop our Technology Strategy. We work to strike a balance between concrete growth and bi-directional scalability, to ensure we are maximizing the effectiveness of the resources we are stewarding. Part of our current strategy development includes the abilities to absorb the resource consumption of several new partners immediately, to scale up to meet additional demands of new partners and their respective members very quickly, and to scale up or down as the nature of need changes over time. This helps us to ensure that our own member libraries have access to the immediate resources they need, to grow into need over time, and for WVLS to shed capital over time if capacity needs ever begin to diminish.

There are a few minor changes to the 2016 forecast, included in last year's Budgeting Guide. The core of the NESS remains the same. With a small component based on the number of staff and patron computers in use at a library, there is a potential for error. If there are any discrepancies in the actual computer count and the count used on the details sheets, please let us know so we can adjust them. The following narrative is intended to help libraries understand fixed and potential technology services costs for the 2016 fiscal year and beyond.

Network and Enterprise Services Subscription (NESS):

Previous guides, as well as the introduction, above, have described the evolution of NESS. A library subscribes to the network, and as subscriber receives network access benefits. Some of the components are variable depending on the number of computers a library supports, but the variable component has been tied nicely to a computer count for simplicity. Please help us make sure our counts are accurate in any given year.

Here is a list of NESS benefits:

- Network (BCN or IPSEC) Access - required for Sierra Desktop, Managed Antivirus, Managed Deep Freeze, Managed Firewall/Network Security, Internet access (for BCN users), as well as some other "back-end" network utility stuff like DHCP and DNS.

- Internet Transit Services – Required for Internet Access by BCN users, Required for IPSEC tunnel access by Charter and/or other 3rd party ISP users.

  Please Note: Some libraries gain access to the Internet through a BCN connection to WVLS and some libraries utilize IPSEC (VPN) tunnels over Charter Business Internet services to connect to the WVLS WAN through WiscNet Internet services. In either case, the WiscNet Internet transit service is very important for the future growth of our system's and members' network capacity. Also remember, all of the patrons who access our online catalog, our sponsored online databases and digital content such as Overdrive from their homes are either connecting to us directly, or indirectly authenticating with us through our WiscNet Internet service. Informative advocacy remains important!

- Antivirus – as many licenses as your library has computers (including servers).
- Deep Freeze – as many desktop licenses as your library has computers.
- Email accounts – unlimited, within reason. Two per staff member? Sure, why not… 2,000 for Loyal? No.
  - Libraries may also request accounts for use by seated board members.
- Innovative's Patron Authentication API support – for third party products like PC Timing software.
  - Toward the end of 2015, we will begin a new investigation of available timing software options and costs, including partnership options with IFLS and/or other library system partners.
- SIP2, Web Access Management, Z39.50 support – for third party products, online resource vendors, etc.
- TEACH/BCN/3rd Party ISP management and support facilitation.
- WVLS Microsoft Academic Select+ Volume Licensing affiliation – save money on MS products like Office even if you don't have a Tech Soup account or can't get enough licenses through it.
- Business Class Webhosting Space with lots of storage space and individual accounts for your websites.

The **NESS** covers a lot, but you'll still need to budget for other technology related services, software, and capital. WVLS recommends that each library maintains or develops a "replacement/maintenance" fund, committing approximately 1/5th (for 5 year lifecycle) of capital replacement and software licensing costs to the fund each year until the fund has at least 80% of the total replacement cost established. **100% is better.** As most of you know, it's best to plan for a five year lifecycle, and then let equipment live a little longer, than it is to deal with forced replacement costs with no supporting budget.

We especially advise that libraries consider long-term router replacement costs when developing budgets as we will likely not be able to do another comprehensive router upgrade across the system like this at the end of the new routers' lifecycles. Routers are a bit unique in that their lifecycles can be quite long, often outliving relevancy before actually failing. Replacements then, are typically for a higher capacity, more expensive model. Router maintenance costs are included in the NESS (as a breakout column in the details sheets). This covers vendor support, service licensing, and router replacement. It is unknown at this time for how long maintenance on a particular product can be renewed but typically, at least two three year periods (six years) can be utilized. It should be safe to budget approximately $2500 toward the future cost of a replacement router, considering a six-year lifecycle.

Some other things which you may still need to budget for:

- Desktop/Tower computers ($900ea or $180ea/yr)
- Virtual Circ Desk Station Subscription ($250-$600/yr – depending on equipment needs)
- Chromebox/Chromebook for WebPAC or other use ($200-$400ea)
- Raspberry PI for Online Catalog or other use ($50-$80ea)
- Android Mini PC for Online Catalog or other use ($60-$150ea)
- Laptops ($1250ea or $250ea/yr)
- Servers ($4500 or $900/yr)
- Routers ($2400 or $400/yr)
- Switches ($800 - $1400 or $160-$240/yr)
- Wireless access points ($100ea or $20ea/yr).
- Supporting equipment such as Uninterrupted Power Supplies (UPS), surge strips, network cables, etc.
- PC Timing Software (plan for at least $150 per seat initial cost with 20% maintenance annually).
- Microsoft Office, PDF Editors, Marketing/Promotional Media apps, financial apps, and other software.
- PC and Network Support services (from $40/hr via WVLS up to $100+/hr for various local vendors).

Optional Technology Services:

Virtual Circulation Desk Station:

WVLS has developed the Virtual Circ Desk package. This is a virtual computer which operates directly on the WVLS virtualization platform, and has direct 1Gbps network speed access to the Sierra ILS servers. There are several benefits to the Virtual Circ Desk station over the use of a traditional PC for a similar purpose.

Lower cost is one factor. These cost about $250 per year to operate (including electricity) and require no large, up-front capital expenditure from the library. Management overhead is much less than with a typical PC so your valuable staff time is available for other functions. They are fast. Operating at network speeds allows for Sierra usage experience similar to that of WVLS staff operating on-network in our offices. They are easy to fix. Sierra or Windows stops working? We can have the virtual machine reset or even rebuilt from scratch, often in less time than it takes to go through a single round of troubleshooting for a PC.

They are not absolutely ideal. We are currently focusing on a specific use, Circulation desk and/or Cataloging station. They do support Internet access and web browsing so any web based application should be available, but we do not yet have a support or licensing model for adding other tools like Microsoft Office (yet). They are remote. While the virtual machine being on the WVLS network allows for a faster Sierra usage experience, you still have to be able to connect to the WVLS network to get access to the virtual computer. If your Internet is down, there is no desktop on which to bring up Notepad and scan in barcodes for manual entry later.

There are many cases where these make sense, and some libraries are already using them effectively. As aging circulation desk computers fail, and replacement strageties are being investigated, we encourage you to discuss the viability of a Virtual Circ Desk Station with us.

Low Cost, Narrow Purpose Computing:

We have worked with Raspberry PIs to develop an effective Online Catalog Station. The experiences from the libraries which experimented with these devices in a cataloging station scenario early on was mixed. There are some libraries currently using Raspberry PIs and finding success. WVLS can refer libraries to vendor sites so they may purchase Raspberry PIs directly, and we have several devices which libraries may use for experimentation or programming.

We have also developed an Android Mini PC as cataloging station solution. As of this writing, configuration procedures are being finalized, and a publication including several purchasing options along with those configuration instructions will go out soon.

Librarians can purchase any of these or similar devices at their prerogative. They typically cost between $50 and $100 dollars, and operate on about $1/10^{th}$ the electricity as a standard PC. WVLS can offer Technical Support services, to help libraries configure and/or maintain Raspberry PIs or Android Mini PCs.

WVLS Technology Support Services:

WVLS offers PC and Network support services at $40 per hour. This is an optional service that stands alone. We do encourage libraries to leverage our services as a primary option we possible. We do not have enough human resources for every library to use WVLS support services exclusively though, so we continue to encourage cordial relationships with your local vendors, and think of ourselves as supplemental, not as a replacement.

To make it easier for libraries to budget, and easier for us to schedule and prioritize support time we support the advanced purchase of blocks of forty (or more) discounted service hours open for consumption. These will be available at a discounted rate of $35/hr so one forty hour block is $1400. That can understandably still be a lot to chew off for any one small library, so we also encourage libraries to team up and apply for a block.

While the block concept is helpful, this year we will be putting forth significant effort to communicate with the member libraries, and explore alternatives. One such alternative may be to build in a small amount of service hours to the NESS for libraries to "just use" without worrying about additional invoicing each year. We want to be sure we continue to adapt to the needs and the demands expressed by the membership.

For Your Budgeting Purposes:

$1,400.00   40 hours discounted, prioritized service block (divisible among one or more interested libraries). 30 minute minimum consumption with additional usage consumed in 15 minute increments.

$40.00   WVLS hourly rate for PC and Network Services. 30 minute minimum charge with billing invoiced in 15 minute increments beyond the first 30 minutes.

If your library or group of libraries is interested in more than one block of hours, please contact us before accounting for them in your budget. We'd like to ensure that as many libraries as possible have some prioritized level of access to supplement and/or replace existing support services costs. If your library is interested in budgeting for more than 40 hours at the standard rate, please contact us first to best ensure availability. Standard service is available on a first-come-first-served prioritized basis.

Looking forward:

This narrative, and the budget planning details offer a forecast of the 2017 budget. It is our goal to have the 2017 IT Services Budgeting Guide published by the end of first quarter 2016. We plan to meet that goal in subsequent years. As well, we plan to continue presenting a forecast of the second year out when feasible. This empowers libraries to begin multi-year planning about 18 months in advance, with about 6 months to plan for the IT Services portion of their upcoming annual budgets.

Our accelerated efforts to develop compute and data storage capacity should help us dilute the core lifecycle maintenance overhead by sharing costs with partners, such as other library systems. We are also positioning to meet the fast growing needs for locally digitized content storage and ever increasing backup storage needs. As new partnerships form, usage increases, and services grow to meet demand, we will continue providing every member library in this system access to enterprise grade technology platforms and services at a significant savings over what any one (or even small group) of our members would be able to achieve on their own.

We hope that your libraries might then be in a better position to plan for short and long term technology projects, leveraging access to services otherwise unobtainable.

WVLS IT Services Budgeting Guide for 2016
Quick Reference Sheet

BCN (TEACH) Data Line Connectivity		
Tier 1 Services (up to 10Mbps)	**$1,200.00**	annually
Tier 2 Services (up to 100Mbps)	**$3,000.00**	annually
Charter (60Mbps down by 4Mbps up)	**$900.00**	annually

Optional Services	Per Unit	
Email Accounts (as needed)	**$0.00**	
Antivirus (as needed)	**$0.00**	
Deep Freeze (as needed)	**$0.00**	
SIP2 License[1] (per connection)	**$1,500.00**	once
Static IP and Forwarding (1 per library)	**$0.00**	
Virtual Circulation Workstation[2]	**$230.00**	annually
Virtual Server[2]	**$600.00**	annually
PC\Network Support Services[3]	**$40.00**	hourly
80 Hour Block - Support Services[3]	**$2,800.00**	block

1 V-Cat may charge additional annual maintenance
2 Service cost - does not include equipment.
3 First come first serve subject to total available hours.

Library	NESS	BCN	Total
Abbotsford	1165	1200	$ 2,365.00
Antigo	3730	3600	$ 7,330.00
Colby	1075	1200	$ 2,275.00
Crandon	1060	1200	$ 2,260.00
Dorchester	1030	1200	$ 2,230.00
Gilman	1045	1200	$ 2,245.00
Granton	1000		$ 1,000.00
Greenwood	1030	1200	$ 2,230.00
Laona	1045	1200	$ 2,245.00
Loyal	1045	1200	$ 2,245.00
Marathon Co.	6500		$ 6,500.00
Medford	1405		$ 1,405.00
Merrill	1570	3000	$ 4,570.00
Minocqua	1555		$ 1,555.00
Neillsville	1255	1200	$ 2,455.00
Owen	985	1200	$ 2,185.00
Rhinelander	1705		$ 1,705.00
Rib Lake	1090	1200	$ 2,290.00
Stetsonville	1075	1200	$ 2,275.00
Thorp	1045	1200	$ 2,245.00
Three Lakes	1120	1200	$ 2,320.00
Tomahawk	1405		$ 1,405.00
Wabeno			$ -
Westboro	1030	1200	$ 2,230.00
Withee	1015	1200	$ 2,215.00

Note: Services which are billed annually will be measured from January 1 to December 31 and will be typically be billed during the second quarter. Annual services may be pro-rated at the discression of WVLS.

Note: These estimates reflect BCN data line expenses as well as network expenses. They do not reflect non-BCN ISP expenses. It is the responsibility of each library to plan and budget appropriately.

2016 Estimated Network and Enterprise Services Expense

Summary

WVLS Member Libraries	2015 NESS	2015 BCN / TEACH[2]	2015 Network Expenses
Abbotsford Public Library	$ 1,165.00	$ 1,200.00	$ 2,365.00
Antigo Public Library	$ 3,730.00	$ 3,600.00	$ 7,330.00
Colby Public Library	$ 1,075.00	$ 1,200.00	$ 2,275.00
Crandon Public Library	$ 1,060.00	$ 1,200.00	$ 2,260.00
Dorchester Public Library	$ 1,030.00	$ 1,200.00	$ 2,230.00
Edith Evans Memorial Library (Laona)	$ 1,045.00	$ 1,200.00	$ 2,245.00
Edward U. Demmer Memorial Library (Three Lakes)	$ 1,120.00	$ 1,200.00	$ 2,320.00
Frances L. Simek Memorial Library (Medford)	$ 1,405.00	$ -	$ 1,405.00
Granton Community Library	$ 1,000.00	$ -	$ 1,000.00
Greenwood Public Library	$ 1,030.00	$ 1,200.00	$ 2,230.00
Jean M. Thomsen Memorial Library (Stetsonville)	$ 1,075.00	$ 1,200.00	$ 2,275.00
Loyal Public Library	$ 1,045.00	$ 1,200.00	$ 2,245.00
Marathon County Public Library	$ 6,500.00	$ -	$ 6,500.00
Minocqua Public Library	$ 1,555.00	$ -	$ 1,555.00
Neillsville Public Library	$ 1,255.00	$ 1,200.00	$ 2,455.00
Owen Public Library	$ 985.00	$ 1,200.00	$ 2,185.00
Rhinelander District Library	$ 1,705.00	$ -	$ 1,705.00
Rib Lake Public Library	$ 1,090.00	$ 1,200.00	$ 2,290.00
T.B. Scott Free Library (Merrill)	$ 1,570.00	$ 3,000.00	$ 4,570.00
Thorp Public Library	$ 1,045.00	$ 1,200.00	$ 2,245.00
Tomahawk Public Library	$ 1,405.00	$ -	$ 1,405.00
Wabeno[1]	$ 1,015.00	$ -	$ 1,015.00
Westboro Public Library	$ 1,030.00	$ 1,200.00	$ 2,230.00
Western Taylor County Public Library	$ 1,045.00	$ 1,200.00	$ 2,245.00
Withee Public Library	$ 1,015.00	$ 1,200.00	$ 2,215.00
SubTotal	$ 35,980.00	$ 25,800.00	$ 61,780.00

[1] Wabeno does not currently have network access and does not currently receive NESS benefits so is not considered in the totals.

[2] Based on current usage status. BCN / TEACH lines are billed to WVLS and passed through to the library. If your library is no longer using a BCN data line (ie. Migrated to Charter) then please remember to budget appropriately for your data line.

NOTE: It is recommended that libraries budget for approximately 1/5th of the replacement cost of capital equipment (PCs, routers, switches, etc.) each year until a fund has been established which can cover the cost of at least 80% of all equipment. To help save money, replacements can be pushed beyond five years. $2500 as the 5 year replacement cost for your library's router; $800 for each 48 port switch; $600 for each 24 port switch; and $100 per Wireless Access Point (typically 2-4 per library ... 5-7 for larger libraries); $900 per desktop computer; $1300 per laptop; and $4500 per server. Though we will continue to strategically assist in the acquisition and funding of network infrastructure equipment with the use of LSTA Technology grant funds, we cannot guarantee their continued availability.

2016 Estimated Network and Enterprise Services Expense Detail (subject to change)

WVLS Member Libraries	Computers[2]	Base	+ PC[2]	+ Router Maint[3]	2016 NESS	2016 BCN / TEACH[4]	2016 Network Expenses	Change from 2015
Abbotsford Public Library	17	$ 750.00	$ 255.00	$ 160.00	$ 1,165.00	$ 1,200.00	$ 2,365.00	$ 40.00
Antigo Public Library	45	$ 2,250.00	$ 675.00	$ 805.00	$ 3,730.00	$ 3,600.00	$ 7,330.00	$ 375.00
Colby Public Library	11	$ 750.00	$ 165.00	$ 160.00	$ 1,075.00	$ 1,200.00	$ 2,275.00	$ 40.00
Crandon Public Library	10	$ 750.00	$ 150.00	$ 160.00	$ 1,060.00	$ 1,200.00	$ 2,260.00	$ 40.00
Dorchester Public Library	8	$ 750.00	$ 120.00	$ 160.00	$ 1,030.00	$ 1,200.00	$ 2,230.00	$ 40.00
Edith Evans Memorial Library (Laona)	9	$ 750.00	$ 135.00	$ 160.00	$ 1,045.00	$ 1,200.00	$ 2,245.00	$ 40.00
Edward U. Demmer Memorial Library (Three Lakes)	14	$ 750.00	$ 210.00	$ 160.00	$ 1,120.00	$ 1,200.00	$ 2,320.00	$ 40.00
Frances L. Simek Memorial Library (Medford)	22	$ 750.00	$ 330.00	$ 325.00	$ 1,405.00	$ -	$ 1,405.00	$ 205.00
Granton Community Library	6	$ 750.00	$ 90.00	$ 160.00	$ 1,000.00	$ -	$ 1,000.00	$ 40.00
Greenwood Public Library	8	$ 750.00	$ 120.00	$ 160.00	$ 1,030.00	$ 1,200.00	$ 2,230.00	$ 40.00
Jean M. Thomsen Memorial Library (Stetsonville)	11	$ 750.00	$ 165.00	$ 160.00	$ 1,075.00	$ 1,200.00	$ 2,275.00	$ 40.00
Loyal Public Library	9	$ 750.00	$ 135.00	$ 160.00	$ 1,045.00	$ 1,200.00	$ 2,245.00	$ 40.00
Minocqua Public Library	32	$ 750.00	$ 480.00	$ 325.00	$ 1,555.00	$ -	$ 1,555.00	$ 205.00
Neillsville Public Library	12	$ 750.00	$ 180.00	$ 325.00	$ 1,255.00	$ 1,200.00	$ 2,455.00	$ 205.00
Owen Public Library	5	$ 750.00	$ 75.00	$ 160.00	$ 985.00	$ 1,200.00	$ 2,185.00	$ 40.00
Rhinelander District Library	42	$ 750.00	$ 630.00	$ 325.00	$ 1,705.00	$ -	$ 1,705.00	$ 205.00
Rib Lake Public Library	12	$ 750.00	$ 180.00	$ 160.00	$ 1,090.00	$ 1,200.00	$ 2,290.00	$ 40.00
T.B. Scott Free Library (Merrill)	44	$ 750.00	$ 660.00	$ 160.00	$ 1,570.00	$ 3,000.00	$ 4,570.00	$ 40.00
Thorp Public Library	9	$ 750.00	$ 135.00	$ 160.00	$ 1,045.00	$ 1,200.00	$ 2,245.00	$ 40.00
Tomahawk Public Library	22	$ 750.00	$ 330.00	$ 325.00	$ 1,405.00	$ -	$ 1,405.00	$ 205.00
Wabeno[1]	7	$ 750.00	$ 105.00	$ 160.00	$ 1,015.00	$ -	$ 1,015.00	$ 40.00
Westboro Public Library	8	$ 750.00	$ 120.00	$ 160.00	$ 1,030.00	$ 1,200.00	$ 2,230.00	$ 40.00
Western Taylor County Public Library	9	$ 750.00	$ 135.00	$ 160.00	$ 1,045.00	$ 1,200.00	$ 2,245.00	$ 40.00
Withee Public Library	7	$ 750.00	$ 105.00	$ 160.00	$ 1,015.00	$ 1,200.00	$ 2,215.00	$ 40.00
WVLS (Laptops, Servers, VMs)	25	$ 850.00	$ 300.00	N/A	$ 1,150.00			
SubTotal	397	$ 19,600.00	$ 5,880.00	$ 5,150.00	$ 30,630.00			
Marathon County Public Library[5]	125 (est)				$ 6,500.00	(port rate)		$ (60.00)
Total	522	$ 19,600.00	$ 5,880.00	$ 5,150.00	$ 37,130.00			

2016 Estimated Network and Enterprise Services Expense
Detail (subject to change)

[1] Wabeno does not currently have network access and does not currently receive NESS benefits so is not considered in the totals.

[2] Traditional staff or patron computers only. Does not include thin clients, lightweight computing devices (eg Chromebox or Android Mini PC).

[3] Reflects current Sonicwall licensing pricing. Libraries attaching to supplimental or alternative Internet (eg Charter) subscribe to the Comprehensive Gateway Security Suite license with added security protections for direct exposure to the Internet.

[4] Based on current usage status. BCN / TEACH lines are billed to WVLS and passed through to the library. If your library is no longer using a BCN data line (ie. Migrated to Charter) then please remember to budget appropriately for your data line.

[5] MCPL receives a single, discounted port rate for all

NOTE: It is recommended that libraries budget for approximately 1/5th of the replacement cost of capital equpiment (PCs, routers, switches, etc.) each year until a fund has been established which can cover the cost of at least 80% of all equipment. To help save money, replacements can be pushed beyond five years. $2500 as the 5 year replacement cost for your library's router; $800 for each 48 port switch; $600 for each 24 port switch; and $100 per Wireless Access Point (typically 2-4 per library ... 5-7 for larger libraries); $900 per desktop computer; $1300 per laptop; and $4500 per server. Though we will continue to strategically assist in the acquisition and funding of network infrastructure equipment with the use of LSTA Technology grant funds, we cannot guarantee their continued availability.

2017 Estimated Network and Enterprise Services Expense
Detail Forecast (subject to change)

WVLS Member Libraries	Computers[2]	Base	+ PC[2]	+ Router Maint[3]	2016 NESS	2017 BCN / TEACH[4]	2017 Network Expenses	Change from 2016
Abbotsford Public Library	17	$ 850.00	$ 255.00	$ 160.00	$ 1,265.00	$ 1,200.00	$ 2,465.00	$ 100.00
Antigo Public Library	45	$ 2,650.00	$ 675.00	$ 805.00	$ 4,130.00	$ 3,600.00	$ 7,730.00	$ 400.00
Colby Public Library	11	$ 850.00	$ 165.00	$ 160.00	$ 1,175.00	$ 1,200.00	$ 2,375.00	$ 100.00
Crandon Public Library	10	$ 850.00	$ 150.00	$ 160.00	$ 1,160.00	$ 1,200.00	$ 2,360.00	$ 100.00
Dorchester Public Library	8	$ 850.00	$ 120.00	$ 160.00	$ 1,130.00	$ 1,200.00	$ 2,330.00	$ 100.00
Edith Evans Memorial Library (Laona)	9	$ 850.00	$ 135.00	$ 160.00	$ 1,145.00	$ 1,200.00	$ 2,345.00	$ 100.00
Edward U. Demmer Memorial Library (Three Lakes)	14	$ 850.00	$ 210.00	$ 160.00	$ 1,220.00	$ 1,200.00	$ 2,420.00	$ 100.00
Frances L. Simek Memorial Library (Medford)	22	$ 850.00	$ 330.00	$ 325.00	$ 1,505.00	$ -	$ 1,505.00	$ 100.00
Granton Community Library	6	$ 850.00	$ 90.00	$ 160.00	$ 1,100.00	$ -	$ 1,100.00	$ 100.00
Greenwood Public Library	8	$ 850.00	$ 120.00	$ 160.00	$ 1,130.00	$ 1,200.00	$ 2,330.00	$ 100.00
Jean M. Thomsen Memorial Library (Stetsonville)	11	$ 850.00	$ 165.00	$ 160.00	$ 1,175.00	$ 1,200.00	$ 2,375.00	$ 100.00
Loyal Public Library	9	$ 850.00	$ 135.00	$ 160.00	$ 1,145.00	$ 1,200.00	$ 2,345.00	$ 100.00
Minocqua Public Library	32	$ 850.00	$ 480.00	$ 325.00	$ 1,655.00	$ -	$ 1,655.00	$ 100.00
Neillsville Public Library	12	$ 850.00	$ 180.00	$ 325.00	$ 1,355.00	$ 1,200.00	$ 2,555.00	$ 100.00
Owen Public Library	5	$ 850.00	$ 75.00	$ 160.00	$ 1,085.00	$ 1,200.00	$ 2,285.00	$ 100.00
Rhinelander District Library	42	$ 850.00	$ 630.00	$ 325.00	$ 1,805.00	$ -	$ 1,805.00	$ 100.00
Rib Lake Public Library	12	$ 850.00	$ 180.00	$ 160.00	$ 1,190.00	$ 1,200.00	$ 2,390.00	$ 100.00
T.B. Scott Free Library (Merrill)	44	$ 850.00	$ 660.00	$ 160.00	$ 1,670.00	$ 3,000.00	$ 4,670.00	$ 100.00
Thorp Public Library	9	$ 850.00	$ 135.00	$ 160.00	$ 1,145.00	$ 1,200.00	$ 2,345.00	$ 100.00
Tomahawk Public Library	22	$ 850.00	$ 330.00	$ 325.00	$ 1,505.00	$ -	$ 1,505.00	$ 100.00
Wabeno[1]	7	$ 850.00	$ 105.00	$ 160.00	$ 1,115.00	$ -	$ 1,115.00	$ 100.00
Westboro Public Library	8	$ 850.00	$ 120.00	$ 160.00	$ 1,130.00	$ 1,200.00	$ 2,330.00	$ 100.00
Western Taylor County Public Library	9	$ 850.00	$ 135.00	$ 160.00	$ 1,145.00	$ 1,200.00	$ 2,345.00	$ 100.00
Withee Public Library	7	$ 850.00	$ 105.00	$ 160.00	$ 1,115.00	$ 1,200.00	$ 2,315.00	$ 100.00
WVLS (Laptops, Servers, VMs)	25	$ 850.00	$ 300.00	N/A	$ 1,150.00			
SubTotal	397	$ 22,200.00	$ 5,880.00	$ 5,150.00	$ 33,230.00			
Marathon County Public Library[5]	125 (est)				$ 6,500.00	(port rate)		$ (60.00)
Total	522	$ 22,200.00	$ 5,880.00	$ 5,150.00	$ 39,730.00			

2017 Estimated Network and Enterprise Services Expense
Detail Forecast (subject to change)

[1] Wabeno does not currently have network access and does not currently receive NESS benefits so is not considered in the totals.

[2] Traditional staff or patron computers only. Does not include thin clients, lightweight computing devices (eg Chromebox or Android Mini PC).

[3] Reflects current Sonicwall licensing pricing. Libraries attaching to supplimental or alternative Internet (eg Charter) subscribe to the Comprehensive Gateway Security Suite license with added security protections for direct exposure to the Internet.

[4] Based on current usage status. BCN / TEACH lines are billed to WVLS and passed through to the library. If your library is no longer using a BCN data line (ie. Migrated to Charter) then please remember to budget appropriately for your data line.

[5] MCPL receives a single, discounted port rate for all

NOTE: It is recommended that libraries budget for approximately 1/5th of the replacement cost of capital equipment (PCs, routers, switches, etc.) each year until a fund has been established which can cover the cost of at least 80% of all equipment. To help save money, replacements can be pushed beyond five years. $2500 as the 5 year replacement cost for your library's router; $800 for each 48 port switch; $600 for each 24 port switch; and $100 per Wireless Access Point (typically 2-4 per library ... 5-7 for larger libraries); $900 per desktop computer; $1300 per laptop; and $4500 per server. Though we will continue to strategically assist in the acquisition and funding of network infrastructure equipment with the use of LSTA Technology grant funds, we cannot guarantee their continued availability.