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November, 2013
Desktop Study

State of North Dakota – Information Technology Department

Contents:

- Executive Summary 2**
 - Project Goals & Objectives..... 2
 - Key Findings and Recommendations 2
 - High-Level Project Process Overview..... 3
 - List of Final Deliverables 4
- Current Environment Summary 5**
 - Introduction..... 5
 - Summary of Services Provided By Agencies 6
 - Current Staffing Summary (Desktop Support Services Only)..... 8
 - Resource Geographic Summary..... 9
 - Technical Environment Summary..... 10
 - Current Environment Desktop Support Cost Estimate 15
- Best Practices Analysis 17**
 - Benchmark and Best Practice Data..... 17
 - Support Staff to End User Ratio 17
 - Support Costs..... 18
 - Level of Desktop Manageability 18
 - Service Levels 20
- Recommendations 21**
 - Summary of Recommendations..... 21
 - People (e.g., Staffing) Recommendations Details..... 22
 - Process Recommendations Details..... 30
 - Technology Recommendations Details 31
 - Operational Management 32
 - Service & Support..... 34
- Appendix 39**

Executive Summary

Project Goals & Objectives

Eide Bailly has completed an analysis of the Desktop Support environment for the State of North Dakota. The review was completed to satisfy the legislative intent of SB 2021. Section nine of that bill requires the Information Technology Department (ITD) to perform a “study of all state agencies' information technology desktop support to determine the feasibility and desirability of centralization of desktop support services through the information technology department for all state agencies.”

As part of this study, the current Desktop Support staffing models, processes and tools were all evaluated to determine a recommendation for a future Desktop Support model. As part of our analysis, Eide Bailly compared the overall costs of Desktop Support within the State of North Dakota’s environment to industry benchmarks and best practices.

For the purposes of this analysis, the scope of Desktop Support includes end-user support and operations of a broad set of typical end-user devices and peripherals, such as:

- Desktop PCs
- Laptops
- Mobile Devices (Tablets & Smartphones)
- Printers
- General Application Support (Microsoft Office, Web Browsers, etc.)

Key Findings and Recommendations

A complete detailed list of Eide Bailly’s findings and recommendations can be found later in this document. The following summarizes key findings and recommendations for the Desktop Study project:

- **People Findings & Recommendations** – A portion of our recommendations are centered on where support staff for Desktop Support should be managed – within ITD and / or with the agencies. Our “people” recommendations are as follows:
 1. 32 agencies have been identified that would benefit from at least some level of Desktop Support services from ITD. For these agencies we recommend proceeding with a transition to ITD for Desktop Support services as budgeting and planning allows.
 2. Agencies where we are recommending Desktop Support be centralized through ITD are generally under 100 users, have primarily “generic” Desktop Support and operations needs or are currently receiving at least some level of Desktop Support services from ITD.
 3. To support current and planned agency transitions for Desktop Support, ITD will require approximately 8 FTEs, which is an additional four FTEs to current Help Desk and

Desktop Support staff (Note: This aligns with the recommended ratio of approximately 250 users to 1 Desktop Support FTE).

4. ITD should enhance the current Service Desk capabilities to include traditional “Tier 1” help desk capabilities as part of staffing up to support agency desktop services. Our overall staffing recommendation for ITD includes the additional staff required to satisfy the “Tier 1” support needs of agencies recommended for ITD Desktop Support.
- **Process Findings & Recommendations** – Achieving the desired benchmark measures, efficiencies and quality will also require significant process changes for Desktop Support, including the following:
 1. ITD should implement a formal process for annually evaluating service options with each agency and / or transitioning to standardized tools for Desktop Support management.
 2. Establish consistent support processes and data collection across a common set of tools for all agencies. (e.g., Collect complete and consistent data on support tickets, volume, etc. for all users and agencies, whether ITD or agency supported.)
 3. ITD should define expected Service Level Agreement(s) for their various Desktop Support related services and tools. In addition, regular reporting on ITD’s performance against these services levels should be provided to each agency receiving Desktop Support services from ITD. (Note: Other agencies should be encouraged to utilize common tools and metrics to monitor their own internal agency Desktop Support service performance.)
 - **Technology Findings & Recommendations** – Establishing broader standards for desktop support and operations tools will be a key contributor to improved desktop support efficiency.
 1. ITD should establish standards (some “Mandatory” and other “Optional”) for Desktop Support related tools for use across all agencies.

High-Level Project Process Overview

The following provides a summary of the process followed by Eide Bailly in working with the State of North Dakota to complete this project:

- *Phase I: Project Plan Development & Confirmation* - A plan for completing the project and required deliverables was developed by Eide Bailly and the designated State of North Dakota Project Manager.
- *Phase II: Current Environment Data Collection* – Data on the current environment for Desktop Support was gathered via on-site interviews with agencies that have over 100 FTEs and telephone interviews with agencies that have fewer than 100 FTEs.
- *Phase III: Analysis & Report Production* – The recommendations and report were developed by analyzing the State of North Dakota’s current Desktop Support environment and comparing it to industry best practices.
- *Phase IV: Post Deliverable Support* – As needed Eide Bailly will assist OMB and ITD with further clarification and support associated with the final deliverable.

List of Final Deliverables

Key deliverables for the project included the following:

- *Project Plan* – Our project management tools and schedule for completion of the project within the State of North Dakota’s desired timeline.
- *Deliverable Outline* – During the first month of the project, Eide Bailly worked with ITD to develop an outline of the final deliverable to be produced for the project. This outline served as the basis for the content of this final report.
- *Current Environment Summary* – An overview of the current Desktop Support environment within the State of North Dakota IT environment. This included a summary of staffing (internal agency, ITD and contract resources) and tools currently utilized to provide Desktop Support services.
- *Draft Deliverable* – A complete draft of the final analysis and recommendations for the project, including recommendations and priorities for implementation.
- *Final Deliverable* – The final work product for the project including:
 - A Microsoft Word report detailing the findings and recommendations from the project.
 - A Power Point summary of the findings and recommendations from the project.

Current Environment Summary

Introduction

During the first major phase in completing the Desktop Study project, Eide Bailly conducted on-site or phone interviews with each agency identified as in-scope for the project. In most cases, Eide Bailly conducted onsite interviews with agencies having over 100 Full-Time-Equivalent (FTE) staff and phone interviews with agencies have fewer than 100 Full-Time-Equivalent (FTE) staff. During both on-site and phone interviews, data in the following areas was collected:

- Current Support Staff
- Current Desktop Support Costs and / or Desktop Support FTEs (With internal agency staff, ITD services and / or an external provider)
- Desktop and Device Deployment Standards
- Details on Devices and Applications Supported
- Support-Related Tools Utilized (Either agency provided and / or provided by ITD)
- Current Support Statistics and Methods (If available)

Our detailed, data from the agency current environment interviews is contained in Appendix A. The “Current Environment Summary” section contains the following summary information collected as part of the Current Environment review phase of the project:

- **Summary of Services Provided By Agencies** – This section identifies current Desktop Support related services by each agency and how they are being delivered.
- **Current Staffing Summary** – This section documents each agency’s staffing in the Desktop Support area. (If available)
- **Resource Geographic Summary** – While most agency Desktop Support resources are located in the Bismarck / Mandan area, there are isolated cases where Desktop Support staff is distributed to other state locations.
- **Technical Environment Summary** – Where available, the project team utilized this Current Environment phase of the project as an opportunity to gather data about the current Desktop Support related technologies in use at each agency.
- **Current Environment Desktop Support Cost Estimate** – With the current Desktop Support environment being largely “agency-based” (e.g., Desktop Support staff are primarily agency staff); the current cost of Desktop Support is not always readily available. However, as part of this effort Eide Bailly is using some reasonable assumptions and rules to effectively estimate current costs.

Summary of Services Provided By Agencies

During the Current Environment assessment phase of the project, the project team was focused on identifying and documenting the services currently delivered by agency Desktop Support staff, ITD Desktop Support staff and by external vendors.

Throughout the interviews and data collection efforts, it became apparent that a key factor in our analysis would be establishing a consistent definition of what is included in “Desktop Support”. In some agencies the current view of Desktop Support is primarily a “Help Desk” (including application support). In other agencies the current view of Desktop Support is broader and would include several additional services, such as: deployment of new PCs, advanced support of agency applications, procurement, license management, etc.

For this phase of the project no effort was made to standardize a complete definition of Desktop Support. However, for many of the most common services that are viewed as part of agency, ITD or vendor Desktop Support activities, data was gathered on who is providing these services. This data was utilized to develop our recommendations and service definition for Desktop Support (see “Technology Recommendation Detail”).

The table below provides a summary of the service delivery information gathered during our interviews with agency staff:

Service & Definition	Agency Staff Delivered (Qty.)	ITD Delivered (Qty.)	External Vendor Delivered (Qty.)	Unknown / None (Qty.)
End-User Help Desk Services – Telephone or email based user support services. These services are either delivered via direct calls or email to agency IT staff and / or to a centralized agency help desk number.	36	17	14	0
Device (Desktop, Laptop, Mobile, etc.) Deployment & Lifecycle Management – Management of devices from installation through disposal.	36	10	12	0
Procurement – The purchasing of new hardware based on pricing from the WSCA (Western States Contracting Alliance) contract.	47	5	0	0
Ticketing System – System used to track, manage and respond to support requests.	8	10	1	32

Service & Definition	Agency Staff Delivered (Qty.)	ITD Delivered (Qty.)	External Vendor Delivered (Qty.)	Unknown / None (Qty.)
Desktop Patch Management – WSUS (Windows Server Update Services) and SCCM (System Center Configuration Manager) are available for agencies to leverage for Microsoft and third party software updates. Some agencies utilize their own configured WSUS or patch management system such as Altiris or LAN Guard.	17	28	2	6
Mobile Device Management –Agencies appeared to be waiting for a solution or had already deployed a solution specific to their platform of choice. A mobile device management system monitors, secures, manages and supports mobile devices.	4	20	1	25
Desktop / Laptop System Imaging – Utilizing a system imaging tool helps standardize and expedite the desktop deployment process. Agencies have leveraged this technology through ITD’s SCCM or by purchasing their own solution.	4	7	0	39
Asset Management & Inventory – System utilized for tracking all local agency technology assets.	26	6	0	18
Remote Device Control –Tools utilized to provide remote support and management of devices.	17	6	1	16
Anti-Virus Software – Software used to prevent, detect and remove malware.	2	22	1	25
License Management – Purchasing and compliance management for all software licensing.	19	6	0	25

Note: In several cases, services are jointly delivered by agency staff and ITD or were unknown by agency staff; therefore, not all quantity numbers add up to the total number of agencies interviewed.

Current Staffing Summary (Desktop Support Services Only)

With the current highly distributed model of support, analyzing the current staffing levels for Desktop Support is a difficult effort. However, during our Current Environment data collection phase, information was gathered on key metrics related to Desktop Support staffing. The following information was gathered on each agency to assist in documenting current Desktop Support staffing levels:

- Source of Desktop Support Services (Agency, ITD or External Vendor)
- FTEs Dedicated to Desktop Support (Follows the agency’s definition of “Desktop Support” and frequently estimated to include only a portion of internal agency staff time e.g., Agency Desktop Support staff frequently have other duties, so agencies were asked to estimate the percentage of time these staff were dedicating to Desktop Support.)
- Vendors Utilized for Desktop Support
- Total Agency FTEs Supported by the Current Desktop Support Resources

The following table summarizes current Desktop Support staffing at each agency:

	Small Agency (0-49 FTEs)	Medium Agency (50-99 FTEs)	Large Agency (100+ FTEs)
Total # of Agencies	24	9	15
Total FTEs	524	662	6685
Total Desktop Support Staff	3.25	9.75	43.5
Support Staff Ratio (FTEs Supported Per Desktop Support FTE)	171:1	68:1	151:1

Notes:

1. Several agencies support public use of their technology as well, indicating that support often extends beyond just state of North Dakota FTEs. (Examples of public user support include: Web-sites and Driver’s License Testing public use kiosks)
2. In addition to agency FTE staff, several agencies identified that there are additional permanent or periodic contractor staff that are supported by their Desktop Support staff. Specific examples of this include the following:
 - Adjutant General’s Office – Temporary staff are hired to run emergency operations centers. In addition, Desktop Support staff frequently provide support to FEMA users when they are on-site in North Dakota for disaster recovery.
 - Agriculture Department – Seasonal inspectors are employed, beyond the year-round staff.
 - Bank of North Dakota – Selected non-agency staff working on-site at the Bank of North Dakota are supported by Bank of North Dakota IT staff.
 - Game & Fish Department – The Game & Fish Department provides public support for licensing websites / applications. In addition, the game & Fish Department has a significant seasonal staff, above and beyond their FTE count.

3. Estimated Desktop Support FTEs is determined using the following data points:
 - Estimated time split (as stated in agency interviews) for staff with additional duties outside of Desktop Support.
 - Outside companies providing Desktop Support services are not included. (Unless full-time contract resources are being provided)
4. ITD has an additional 4 FTEs dedicated to Desktop Support; however, they are not included in the above staffing analysis statistics. ITD Desktop Support FTEs are not included because of the following:
 - ITD’s current Desktop Support team provides services to both ITD users, as well as provides varying levels of Desktop Support services to several additional agencies.
 - ITD’s current help desk provides some additional Desktop Support and customer service support related services. Because the help desk team’s scope of service is well beyond Desktop Support, they are not included in our analysis or FTE counts.

Resource Geographic Summary

While the majority of agency staff requiring desktop support are located in the Bismarck / Mandan area, there are a significant number of staff located either remotely or in offices located throughout North Dakota. Most non-Bismarck / Mandan area staff requiring desktop support services are part of the Department of Human Services or they are remote / mobile users.

Outside of Bismarck / Mandan, the following locations have significant offices with concentrations of users requiring Desktop Support:

- | | |
|------------------|------------------|
| ○ Williston(*) | ○ Valley City |
| ○ Dickinson(*) | ○ Wahpeton(*) |
| ○ Minot(*) | ○ Fargo(*) |
| ○ Rolla(*) | ○ Grand Forks(*) |
| ○ Devils Lake(*) | ○ Grafton(*) |
| ○ Jamestown(*) | |

Note: Locations note with a (*) are primarily Department of Human Services locations – Regional Human Service Centers, Development Center and State Hospital - with existing local Desktop Support resources within the agency.

To support their large distributed staff, the Department of Human Services has IT staff located at their Regional Human Service Centers, The Development Center and The State Hospital. Job Service is the only other agency within the scope of this project that has non-Bismarck / Mandan area IT staff. (Qty. 2 – located at regional locations.) In addition, several agencies have designated “super users” that assist with occasional on-site support needs for staff that are distributed throughout the state.

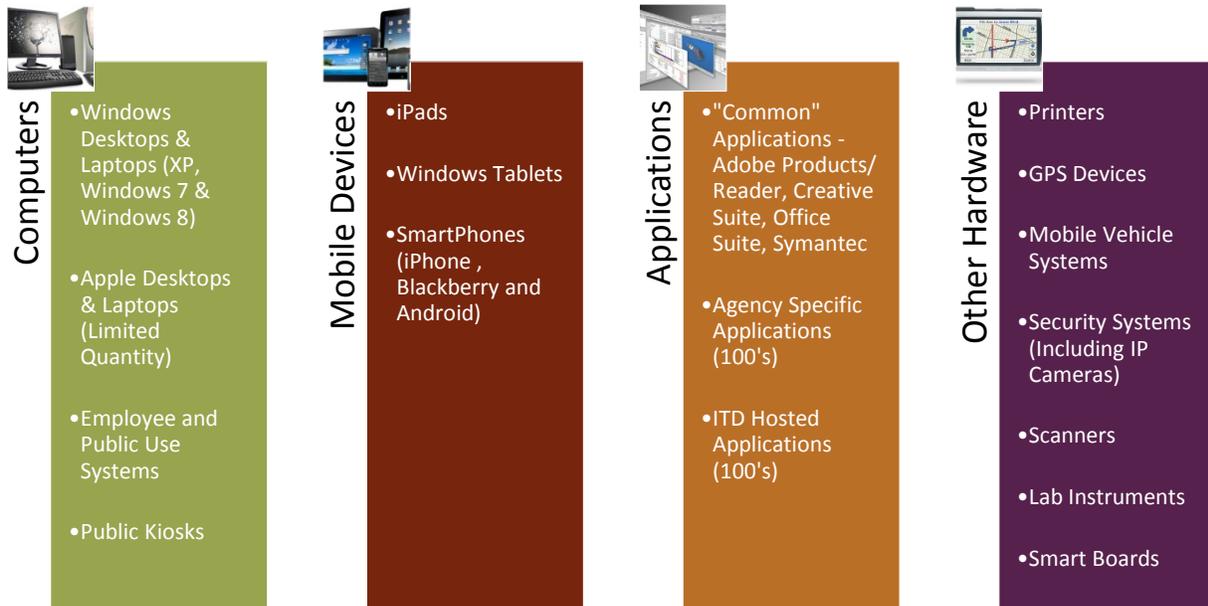
Technical Environment Summary

In gathering information about the current Desktop Support environment, it was critical to also gather several key pieces of technical information about the devices and applications being supported by the current largely agency-based model of Desktop Support. This data will be used to support our analysis and recommendations efforts for the project.

During our Current Environment data collection efforts the project team focused on collecting selected technical environmental information in the following areas:

- Devices Supported
- Management and Monitoring Tools Utilized
 - Patch Management
 - System Imaging
 - Monitoring
 - Ticketing System(s)
 - Anti-Virus Management
 - Remote Control
 - Mobile Device Management
- Hardware & Device Standards
- Use of Laptop Hard Drive Encryption
- Applications Supported
- Desktop Operating Systems

The following are some key highlights of the current technical environment being supported:



Additional details on each of the technical areas gathered are provided in the table below. As part of the Current Environment analysis, “consistency” and “adoption” ratings have been assigned to each area. The consistency rating provides insight as to how consistent / similar each technical area is from agency to agency. The adoption rating provides insight into how widely deployed each technical area is across all agencies.

Understanding the current level of technical consistency in these areas provided the project team with a key data point to understanding any potential efficiency gains or barriers with particular Desktop Support models.

Consistency Rating Key:

High Consistency = Very consistent across agencies

Medium Consistency = Some consistency across agencies

Low Consistency = Little consistency across agencies

Adoption Rating Key:

High Adoption Consistency = Majority of agencies utilizing the technology

Medium Adoption Consistency = Some agencies utilizing the technology

Low Adoption Consistency = Few agencies utilizing the technology

Technical Area	Consistency Rating	Adoption Rating	Comments
Anti-Virus Management	High	High	<ul style="list-style-type: none">ITD's current Symantec anti-virus solution is one of the most consistently and widely deployed Desktop Support services utilized by agencies.
Laptop Hardware Drive Encryption	High	Low	<ul style="list-style-type: none">A limited number of agencies are utilizing hard drive encryption for their laptops. Those that are were migrating towards ITD's standard Wave self-encrypting drive solution.
Mobile Device Management	High	Low	<ul style="list-style-type: none">Most agencies that indicated use of a Mobile Device Management (MDM) solution indicated that they are utilizing ITD's provided solution. However, many agencies were not fully aware of the current solution's capabilities and were relying on ITD for any policy deployment or configuration.One agency indicated they were utilizing their own MDM – Cisco / Meraki.
Desktop Operating Systems	High	High	<ul style="list-style-type: none">Nearly all agencies reported having standardized on Windows 7 for a desktop operating system.There are limited deployments of Mac OS installed at a few agencies.Most agencies reported having a "few" Windows XP machines still in production; however, most are planned for replacement within the next 6 months.

Technical Area	Consistency Rating	Adoption Rating	Comments
Hardware & Device Standards	Medium	High	<ul style="list-style-type: none"> Nearly all agencies indicated that they purchase desktop and laptop hardware off of the state of North Dakota's participation in the WSCA contract. A majority of agencies "try to follow" pre-configured desktop and laptop hardware standards on the WSCA contract; however, there were specific exceptions noted for nearly all large agencies. A majority of agencies have internal IT staff with specific hardware procurement responsibilities.
Patch Management	Medium	High	<ul style="list-style-type: none"> While a majority of agencies utilize ITD's Windows Update Server Service (WSUS) for "critical" and "security" patches; there are several additional patch management solutions currently deployed at various agencies. In addition to the widely utilized ITD WSUS solution, the following patch management solutions are also in use: <ul style="list-style-type: none"> Direct Windows Updates to Microsoft LAN Guard
Remote Control	Medium	High	<ul style="list-style-type: none"> To facilitate Desktop Support, many agencies utilize remote PC control tools. Remote control tools currently in use at agencies include the following: <ul style="list-style-type: none"> Bomgar TightVNC Windows Remote Desktop Dameware
Monitoring	Medium	Low	<ul style="list-style-type: none"> Most agencies are not widely utilizing "monitoring" tools. Agencies that are utilizing monitoring tools are frequently utilizing ITD's SCCN and / or Altiris tools.
System Imaging	Low	Low	<ul style="list-style-type: none"> System imaging solutions are not widely deployed throughout the agencies. This is, in part, due to the diversity of systems being deployed and supported. Imaging solutions currently utilized at agencies include the following: <ul style="list-style-type: none"> Microsoft System Center Configuration Manager (SCCM) CloneZilla

Technical Area	Consistency Rating	Adoption Rating	Comments
Ticketing System(s)	Low	Low	<ul style="list-style-type: none"> The majority of agencies do not use any ticketing systems for management of Desktop Support requests. For agencies that utilize a ticketing system, there are several disparate systems in use, including: <ul style="list-style-type: none"> ITSM WMS (This system is not typically used for support tickets, but several agencies indicated it was utilized for support tickets.) Heat
Applications Supported	Low	N/A	<ul style="list-style-type: none"> Common Applications – Nearly all agencies utilize some common applications. Examples: Microsoft Office, Adobe Acrobat, etc. Agency Specific Applications – In addition to the applications that most agencies have in common, hundreds of agency specific applications are supported almost exclusively by agency IT staff.
Devices Supported	Low	N/A	<ul style="list-style-type: none"> Common Devices – All agencies have common / standard devices that are supported by their desktop support staff. These typically include: PCs, Laptops, Tablets, SmartPhones and Printers Agency Specific Devices – All large agencies have at least some unique devices supported by their current desktop support staff. Significant examples of agency specific devices being supported include the following: <ul style="list-style-type: none"> <i>Department of Transportation</i> – GPS, public use computers, kiosks, field data collection hardware <i>Department of Human Services</i> – County users, hospital systems, photo and video editing software <i>Highway Patrol</i> – Digital video hardware, GPS, security systems, dispatch hardware <i>Department of Correction and Rehabilitation</i> – IP security cameras, security systems, video surveillance systems <i>Adjutant General</i> – 911 system hardware, state radio hardware, mobile command centers <i>State Library</i> – Microfiche hardware, book scanners, public use labs

As the above table indicates there is a great deal of diversity in the desktop support related environment across agencies. This high level of inconsistency is not just with the hardware and software being supported, but also extends to the tools, processes and resources deployed to provide the current desktop support services.

Current Environment Desktop Support Cost Estimate

In the current (largely agency distributed) Desktop Support environment specific costs for providing Desktop Support services is difficult to ascertain. Specific current environment characteristics that make determining agency-level costs for desktop support difficult include the following:

- For agencies with current full-time IT staff (generally agencies with 50+ FTEs to support), “Desktop Support” is frequently not identified as a specific full-time position. Agency IT staff that are providing desktop support are generally also performing other duties for the agencies. In several agencies desktop support staff are also performing other non-IT related duties.
- At smaller agencies (generally agencies with fewer than 50 FTEs), Desktop Support is generally provided via one of two models:
 - *External Vendors* – With this model, desktop support is generally provided via an external vendor as part of a broader set of IT services that includes more than just desktop support.
 - *Internal “very part-time” Staff* – With this model someone on the agency staff that does not have primarily an IT role is providing desktop support on a very limited and highly variable basis.
- In many agency environments, desktop support duties are split between multiple resources or organizations.

While these current environment characteristics make it difficult to estimate the costs associated with the current desktop support environment, there is enough data available to provide a solid working estimate for desktop support costs across all agencies. Based on data gathered during our agency interviews, our estimate of current desktop support costs is based on the following key data points and assumptions:

- Average Agency Desktop Support FTE Cost
 - Average Salary: \$49,000 (Source: Agency interviews)
 - Average Benefit Cost: 35.5% of Salary (Source: Bureau of Labor Statistics – State & Local Government Employees)
 - Average Total Cost per Desktop Support FTE: $\$49,000 + 35.5\% \text{ (Benefits)} = \$66,395$
- Ratio of Agency Desktop Support Staff to FTEs Supported
 - Small Agencies (0 - 49 FTEs): 171:1
 - Medium Agencies (50 – 99 FTEs): 40:1
 - Large Agencies (100+ FTEs): 151:1

The following table illustrates the current staff desktop support calculation across all agencies:

	Small Agency (0-49 FTEs)	Medium Agency (50-99 FTEs)	Large Agency (100+ FTEs)	Agency Shared ITD Desktop Support Staff	Totals
Total Desktop Support Staff	3.25	9.75	43.5	4	60.5
Cost per FTE (Including benefits)	\$66,395	\$66,395	\$66,395	\$66,395	\$66,395
Total Agency Desktop Support FTE Cost	\$215,784	\$647,351	\$2,888,183	\$265,580	\$4,016,898

In addition to the direct desktop support staff costs identified above, there are several additional added costs with the current largely agency-based support model.

Specific areas where the current support structure is driving up support costs include the following:

- Ticketing Systems
- Remote Desktop Control Tools
- Imaging Solutions
- Procurement
- License Management
- Lifecycle Management
- Hardware Consistency
- Software Consistency

Best Practices Analysis

Benchmark and Best Practice Data

There are four main benchmarks and best practice criteria that were used for comparison and in development of our recommendations:

- Ratio of support technicians to end users
- Technician salary and cost per desktop
- Level of desktop manageability
- Service level metrics

Support Staff to End User Ratio

While it is a fact that larger organizations will generally have higher support staff to end-user ratios (e.g., more users supported per Desktop Support FTE), it is also important to consider the highly diverse nature of support requirements across the State of North Dakota government agencies when comparing to industry standard metrics. While as a whole, State of North Dakota agency users collectively are the size of a “larger” organization (2,000 – 10,000 users in our benchmark comparison), it is also important to consider that the complexities associated with Desktop Support within each agency result in comparisons to “smaller” organization (under 2,000 users in our benchmark comparison) being more appropriate.

Based on these facts and characteristics of the information technology environments at state agencies, our conclusion is that the proper comparison for Desktop Support staffing and cost ratio is to consider appropriate benchmark metrics as being somewhere between the “small” and “medium” organizations included in the graphic below:

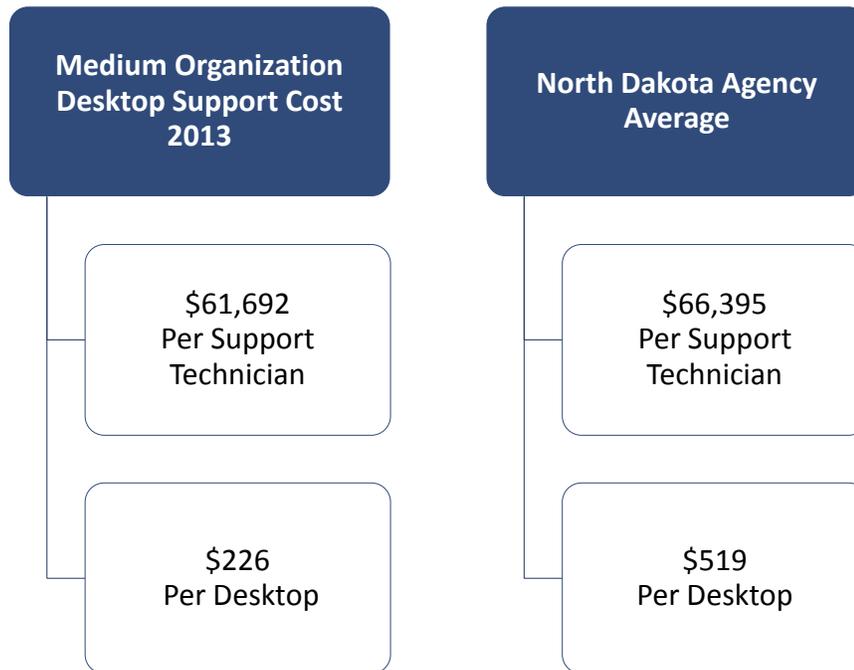
Number of End Users per Support Technician (Agency)		
Small Sized Organizations (Less than 2,000 Users)	Medium Sized Organization (2,000 - 10,000 Users)	North Dakota Agency
Median Ratio	Median Ratio	Average Ratio
150:1	375:1	128:1

(Source: HDI – Staffing Desktop Support – March 2013)

As indicated in the above graphic, the current Desktop Support environment within the State of North Dakota does utilize higher staffing levels than should be required in a typical similar organization.

Support Costs

The costs of technician salaries and per desktop support are based on 2,500 users which is slightly higher than the user base per agency at the State of North Dakota. These benchmarks indicate that North Dakota can achieve lower costs per desktop by providing support to a larger user base.



(Source: Gartner – Desktop Total Cost of Ownership: 2013 Update)

Level of Desktop Manageability

In their “Desktop Total Cost of Ownership: 2013 Update” report, Gartner utilizes the concept of assigning a “level of manageability” to desktops and estimating costs for ownership based on this categorization. In the report, Gartner identifies the following categories for level of manageability:

- Unmanaged - Users can install applications and change settings; limited to no management tools are being used for desktop operations and support
- Somewhat Managed - Limited management tools are in place; however, processes and policies are not fully established.
- Moderately Managed - Tools and processes are widely established; however, user can still install software and change limited settings.
- Locked and Well Managed - Tools and processes are widely established; and users cannot install software or change important settings.

(Source: Gartner – Desktop Total Cost of Ownership: 2013 Update)

Gartner’s report estimates the “End-User Cost” associated with managing and supporting desktops for each level of manageability. The following diagram summarizes the differences in only the “Tier 1” (e.g., First Call) & “Tier 2” (e.g., Escalated) end-user support costs identified in this report:

Tier 1 & Tier 2 User Support Costs – By Level of Manageability



(Source: Gartner – Desktop Total Cost of Ownership: 2013 Update)

Based on our review of the Desktop Support environment within the State of North Dakota, Eide Bailly has observed a wide range of manageability within the agencies. However, in most cases the level of manageability would be categorized as “Somewhat Managed” or “Moderately Managed”.

This data suggests that by improving the management practices for desktops from “Somewhat Managed” to “Locked and Well Managed”, end-user support costs can be reduced to approximately 35% from \$256 per year to \$165 per year. This data highlights the important role desktop management tools and configurations can play in reducing overall desktop management costs.

Based on our analysis of the State of North Dakota’s Desktop Support requirements and of industry benchmark data, we recommend a targeted staffing level of approximately 250 users supported by one ITD FTE providing Desktop Support services (250:1). Achieving this ratio of user to Desktop Support staff would result in the State of North Dakota Desktop Support costs (for staff) being roughly consistent with industry benchmarks.

The following scenario illustrates that a targeted user to Desktop Support staff ratio of approximately 250:1 is required to achieve the benchmark cost per desktop financial results:

- 2000 Users (Agency Staff)
- 250:1 Desktop Support Staff Ratio = 8 FTEs required
- $2000 \text{ Users} / (8 \text{ Staff} * \$66,395) = \$299 / \text{Per User} / \text{Desktop}$

Service Levels

The level of service provided by a Desktop Support team has a significant impact on the cost of service delivery. Unlike many other standardized ITD services, the current service levels for Desktop Support within the state agencies are generally not published or tracked. Without this data, it is difficult (if not impossible) to fully evaluate the effectiveness of the current agency Desktop Support staff. However, as the State of North Dakota moves forward with the implementation of the recommended Desktop Support model, it will become critical to establish expected services levels to measure the success of the effort. These new Desktop Support Service Level Agreements (“SLAs”) should be documented as extensions to the current SLAs published and monitored for other ITD services. Establishing these Desktop Support SLAs will provide a mechanism for ITD (and other agencies) to manage and monitor the quality and volume of Desktop Support services being provided.

The following table provides selected industry benchmarks for measuring Desktop Support performance. At a minimum, ITD will need to measure their performance against these metrics for all agencies they provide Desktop Support services to.

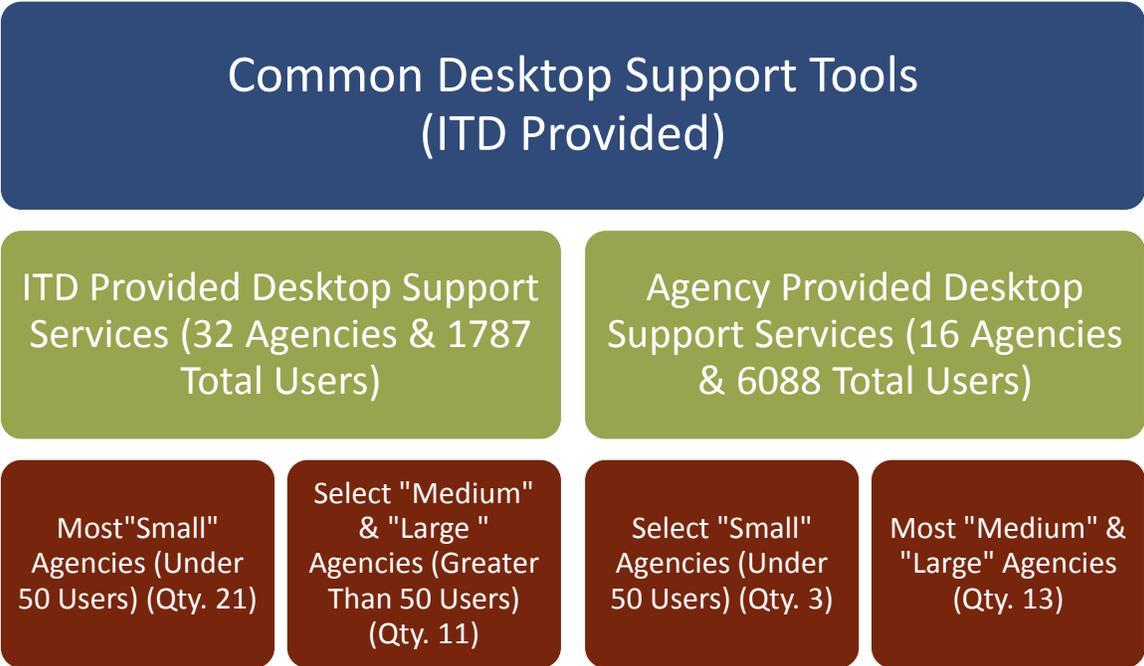
Desktop Support Service Levels		
	Break/Fix	Request for a Service
Average number of tickets resolved by one desktop support technician per month	101-125	
Average time to respond to a typical desktop support ticket	1-2 hours	2-4 hours
Average time to resolve a desktop support ticket	8-24 hours	8-24 hours
Average time worked on a ticket	1-2 hours	1-2 hours
Percentage of tickets resolved on first attempt	70-80%	70-80%

(Source: HDI – Desktop Support Metrics – September 2013)

Recommendations

Summary of Recommendations

Based on our analysis of the current Desktop Support environment, agency Desktop Support requirements, cost-benefit data and industry Desktop Support benchmarks, Eide Bailly is recommending a “Hybrid” model of desktop support. With this model, agencies will be supported by either ITD or with local agency Desktop Support staff, based on their unique requirements and attributes. The following diagram illustrates a high-level profile of the Desktop Support environment when the recommended hybrid Desktop Support model has been fully implemented:

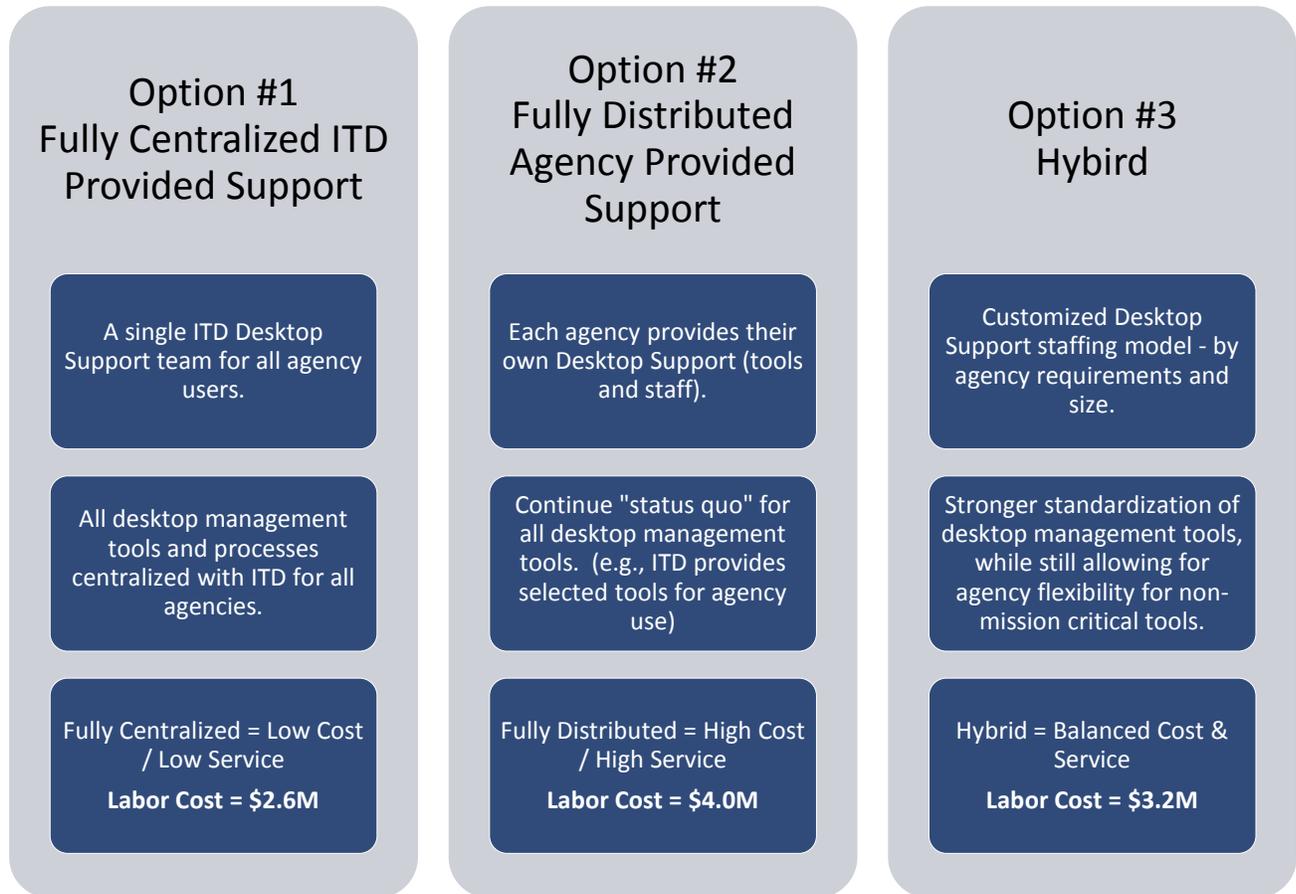


Our analysis for the assignment of agencies to either ITD or agency Desktop Support staffing is included below. This analysis includes people, process and technology perspectives. Each of these areas will play a critical role in determining the ultimate success of implementing the recommendations.

People (e.g., Staffing) Recommendations Details

Support Model Options

In our evaluation of Desktop Support models for the State of North Dakota, there were three primary models of Desktop Support staffing that were considered:



Based on our analysis of the desktop environment currently deployed within the state of North Dakota government agencies, Eide Bailly recommends a hybrid model of support for implementation across all agencies. While not the lowest cost option, this model will provide the State of North Dakota users and agencies the best balance of quality customer service, value for their Desktop Support investment and efficient use of Desktop Support staff. In addition, the recommended hybrid model preserves agency flexibility for allocating Desktop Support duties as part of an overall FTE’s responsibilities.

Recommended Hybrid Support Model

Hybrid Model Key Statistics		
Estimated Desktop Support FTEs: 48 Total (8 ITD & 40 Agency)	Estimated Annual Labor Cost: \$3.2M	Targeted User to Desktop Support FTE Ratio: 250:1

Our recommended support model for future Desktop Support services includes the following key attributes:

- A targeted user to Desktop Support FTE ratio of 250:1 for all Desktop Support Resources (e.g., 250 Users supported by 1 Desktop Support FTE).
- Expand ITD’s service offerings in the Desktop Support area to include more standardization of support and operations tools throughout agencies. (Note: Some tools and services are already available – with varying levels of adoption.) (See “Technology Recommendations” for details)
- Our analysis included identifying specific agencies that would be the best served by ITD provided Desktop Support services. We have defined the following criteria for selection of agencies that we recommend receiving Desktop Support services through ITD (e.g., Agencies where any or all of the following key criteria are met.):
 - Agencies that have indicated a desire for receiving Desktop Support services from ITD.
 - Agencies that currently receive some level of Desktop Support services from ITD.
 - Agencies that are under 100 users.
 - Agencies where Desktop Support needs would be categorized as “common” applications and tools. (e.g., There are not highly specialized / unique applications to support.)

- Based on the above criteria, the following agencies would be best served by a centralized model of Desktop Support services delivered through ITD:

Agency	User Count	Agency	User Count
Information Technology Dept.	340	Financial Institutions	29
Job Service *	251	State Library	30
Bank of North Dakota *	180	Protection & Advocacy	28
Office of Management & Budget	131	Career and Technical Education	27
Public Instruction	100	Retirement & Invest Office	19
Agriculture Department	77	University System (System Office Staff in Bismarck Only)	20
Commerce Department	69	Governor's Office	18
Historical Society ND State	69	Department of Labor	13
Parks & Recreation Department	55	Securities Commissioner	9
Auditors Office, ND State	54	Center for Tobacco Prevention and Control Policy	8
Insurance Department	50	Veterans Affairs Dept.	8
School for the Deaf	45	Treasurer's Office	8
Legal Counsel for Indigents	33	Aeronautics Commission	6
Public Employees Retire System	33	ND Council on the Arts	5
Secretary of State	31	Indian Affairs Commission	5
Department of Trust Lands	31	Administrative Hearings	5
Agency Count: 32 / Total Users: 1,787			

*Notes: * Job Service and Bank of North Dakota are currently receiving "Tier 1" (e.g., First call) support services from ITD. Our recommendation includes continuing with this level of service.*

- In addition to added efficiency, the recommended centralization of Desktop Support for the above agencies provides the following key benefits for the State of North Dakota:
 - Through implementation of common tools and processes for Desktop Support, it is anticipated that a higher level of overall desktop security will be achieved than many agencies are currently achieving via their current Desktop Support model.

- By having dedicated Desktop Support staff (through ITD), users will experience improved support response and system uptime. This provides a significant benefit in terms of user productivity and reduced desktop downtime.
- In some cases, agencies are nearing the point where they are considering requests for additional Desktop Support staff (or increasing the FTE status of existing staff's Desktop Support responsibilities). Centralizing Desktop Support through ITD for these agencies will provide the additional efficiencies to avoid future FTE hires within agencies. (Note: The Department of Agriculture's agreement with ITD for Desktop Support services is a recent example of this benefit.)
- We have identified the following criteria for identification of agencies that we recommend continue receiving Desktop Support services their current agency-based staffing model. (e.g., Agencies where any or all of the following key criteria are met.):
 - Agencies that currently have an efficient Desktop Support staffing model that is within our referenced industry benchmarks for users supported per Desktop Support FTE.
 - Agencies that have a highly unique application and / or hardware infrastructure to support.
 - Agencies that are substantially exempt from hosting their server infrastructure with ITD.
 - Agencies with a current Desktop Support environment that is substantially different from ITD standards.
 - Agencies that have unique regulator and / or security requirements that would more difficult to achieve with ITD providing expanded Desktop Support services.
- Based on the above criteria, our recommendation is that the following agencies continue with their current agency-based staffing model for Desktop Support services:

Agency	User Count	Agency	User Count
Human Services (Includes all service centers & Dev. Ctr & State Hospital)	2201	Game & Fish Department	158
Transportation, Department of	1080	Tax Commissioner	134
Department of Corrections	814	Veterans' Home	121
Health Department	354	Industrial Commission	99
Workforce Safety and Insurance	250	Water Commission	90
Adjutant General	246	Public Service Commission	44
Attorney General's Office	214	ND Public Finance Authority	40
Highway Patrol	213	School for the Blind	30
Agency Count: 16 / Total Users: 6,088			

Summary of Recommended Hybrid Support Model & Benefits

When fully transitioned to the recommended Desktop Support model, the following key environmental statistics will apply:

- **Users Receiving Desktop Support From ITD: 1,787**
- **Agencies Receiving Desktop Support Services From ITD: 32**
- **Required ITD Desktop Support FTEs: 8** (This represents an increase of 4 FTEs over current ITD Desktop Support FTEs. Assumes achievement of the targeted 250:1 ratio for users to Desktop Support staff.)
- **Reduction of Agency-Based Desktop Support FTEs: 16.75**
- **Net Reduction of Total Desktop Support FTEs: 12.75** (All FTEs would be currently agency staff. However, in many cases agency plans are to reallocate staff to their primary job function and not to reduce actual FTE counts.)
- **Reduced Outside Contractor Costs:** While very limited data was available from agencies on specific outside contractor costs, there is clearly some savings to be realized with the recommended Desktop Support model.

Transitioning to the recommended Desktop Support model also provides the State of North Dakota agencies with several non-economic benefits, including the following:

- A more tightly controlled, monitored and managed desktop environment for ITD supported agencies. This will reduce the overall IT security risk, particularly at the smaller agencies.
- With dedicated ITD Desktop Support staff, users would experience improved support response and system downtime.
- For agencies that would transition to ITD for Desktop Support services, a higher-level of service than currently being received should be expected.
- Agencies that currently have an adequate agency-based Desktop Support staff that meets their needs and are well within industry benchmark guidelines for support would be allowed to continue with their preferred Desktop Support model.
- ITD would be providing all agencies with consistent tools and services that will help reduce the overall staffing burden on agencies for Desktop Support services.
- Many of the Medium and Large agencies would be allowed to continue with their preferred model of staff being shared between IT / Desktop Support duties and other agency-specific “functional” roles.

Justification For Not Utilizing a Fully Centralized Desktop Support Model

Fully Centralized Model Key Statistics

Estimated Desktop
Support FTEs:
38.5 Total (All ITD)

Estimated Annual Labor
Cost: **\$2.6M**

Targeted User to Desktop
Support FTE Ratio: **200:1**

Our analysis and experience indicates that a fully centralized support model (Option #1) is not the most efficient and effective solution for the State of North Dakota Desktop Support environment for the following reasons:

- Many of the larger agencies have very complex desktop environments to support (hundreds of applications, highly specialized users, desktops that are utilized by the public for various purposes, etc.). A single centralized Desktop Support team would not be able to effectively support such a diverse environment without a significant impact to the quality and speed of service.
- The added complexity associated with a fully centralized model of support would likely make it more difficult to achieve industry benchmark standards than with the recommended hybrid model.
- Many of the largest agencies are currently operating at a user to Desktop Support resource ratio that is consistent with industry benchmarks; therefore, additional efficiencies would not be gained by centralizing Desktop Support with ITD.
- At most mid-sized and large agencies, the primary support needs are not for “generic” support (Microsoft Office, Printing, etc.), they are for agency specific applications.
- Nearly all agency Desktop Support staff serve in other capacities, in many cases these additional job duties are outside of Desktop Support or even outside of IT altogether. Centralizing Desktop Support would require that these staff be reduced to something less than full-time status, in most cases this is not practical and would result in higher costs to the agencies.
- Establishing an effective centralized support model requires willing and supportive partnerships to be successful. This may not be the case with several agencies that currently provide their own internal Desktop Support.

Justification For Not Utilizing a Fully Distributed Desktop Support Model

Fully Distributed Model Key Statistics

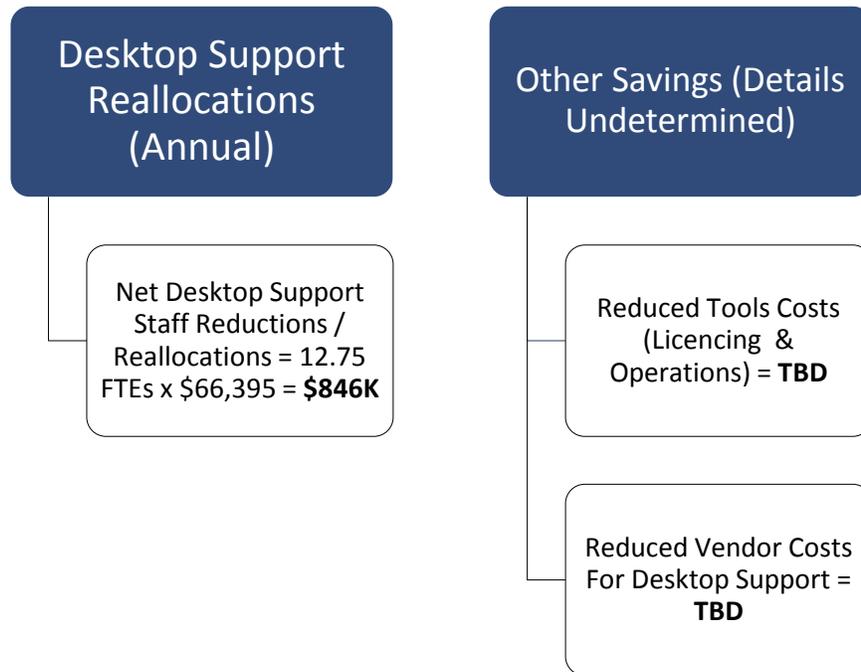
Estimated Desktop Support FTEs: 60 Total (4 ITD & 56.5 Agency)	Current Annual Labor Cost: \$4M	Current Average User to Desktop Support FTE Ratio: 128:1
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Similarly, our analysis and experience indicates that a fully distributed agency support model (Option #2) of Desktop Support where all Desktop Support services reside in the agencies would not be the most efficient and effective solution for the State of North Dakota Desktop Support environment for the following reasons:

- When deployed across all agencies (particularly at small and mid-sized agencies) this model has proven to be inefficient and costly, as illustrated in the current desktop support staff ratio and cost data.
- Where the State of North Dakota's Desktop Support costs are higher than industry standards / benchmarks, it appears that a significant contributor is the limited standardization of tools and processes across agencies. (e.g., The State of North Dakota is paying to purchase, manage and support multiple desktop management tools where a single standardized tool set is more appropriate.)
- A fully distributed Desktop Support model provides the least amount of control around desktop security, therefore increasing the risk of data loss and / or privacy breaches.

Return on Investment Analysis

With a successful transition to the recommended hybrid Desktop Support model the State of North Dakota will achieve significant savings in their overall Desktop Support costs. Specifically, if the targeted ratio of user to Desktop Support staff (250:1) is achieved, the following savings to overall desktop support can be realized:



Notes: 1) Reduced Desktop Support tools costs will clearly be achieved through the recommended further standardization. However, specific cost analysis for the current tools was not within the scope of this project.

2) Agencies that currently utilize vendors for Desktop Support (generally smaller agencies) were unable to provide sufficient details on specific annual spending. There are clear savings to be gained through the consolidations of Desktop Support in this area; however, without detailed current cost information, the specific savings are not currently determined.

There are several key assumptions that will ultimately determine the ability of the State of North Dakota to achieve the savings available through migration to the recommended hybrid Desktop Support model, these assumptions include:

- ITD is able to achieve the targeted 250:1 ratio of users to Desktop Support staff.
- Agencies can either reduce Desktop Support FTEs and / or reallocate existing Desktop Support FTEs to other required positions within their agencies.
- Tools will be further standardized to support more efficient Desktop Support staffing. (This is particularly important for ITD to accomplish for all desktop / agency environment that they will be providing Desktop Support services for.)
- Clear Desktop Support SLAs will be established for all agencies that ITD will provide Desktop Support services to.

Process Recommendations Details

Current Desktop Support processes and the availability of service level metrics across agencies are highly variable with the current Desktop Support model. In nearly all cases, the current Desktop Support environment does not include any standardization of the following key processes:

- **ITD Service Management** – Most agencies do not appear to have any formal knowledge or understanding of “optional ITD services”. An example of this in the current environment includes: Mobile Device Management, Hard Drive Encryption and Patch Management. There is no formal method of determining which agencies should be using which ITD services.
- **Metrics Reporting** – This includes data collection and monitoring of current Desktop Support performance. While there are limited cases where such metrics are tracked and monitored, there are no standards for performance within the State of North Dakota technical environment to evaluate performance against.
- **Service Level Agreements (SLAs)** – In most environment’s the size of the State of North Dakota’s, standards for performance (hours of operation, response times, resolution times, etc.) have been defined for Desktop Support personnel. Most agencies do not have these types of SLAs formally defined.
- **Support Processes** – Each agency generally has an “informal” process for users to request support. This frequently includes emailing or directly calling the agency IT staff for most support needs. Users are, at times, directed to contact the ITD Help Desk for specific needs. As a result current support processes appear to be confusing for users.

In addition to establishing more formal, well defined and managed services offerings from ITD (See “Technology Recommendations” for details), Eide Bailly also recommends that ITD establish an annual “Service Planning” process with each agency . While this process can (and should) extend beyond Desktop Support services, from a Desktop Support service perspective we envision this process including the following key communications between the agencies and ITD:

Current ITD Services Review	Planned Services Review	Agency Planning and Guidance
<ul style="list-style-type: none"> • Service Quality • SLA Achievement • Scope of Services Provided 	<ul style="list-style-type: none"> • What additional services can / should ITD be providing? • Review new / planned service offerings for the upcoming year 	<ul style="list-style-type: none"> • Review agency goals for the upcoming year(s) • Identify opportunities for technology to improve agency operations / results

Technology Recommendations Details

As noted in our metrics and best practices analysis, the state of North Dakota agency Desktop Support currently requires more resources than industry best practices / benchmarks. Based on our agency interviews and analysis, Eide Bailly believes that in addition to the staffing inefficiencies already discussed, the lack of wide-spread adoption of Desktop Support tool standards throughout the State of North Dakota environment is a contributing factor to higher Desktop Support staffing requirements. Without standards for key Desktop Support related tools, it is difficult to achieve the potential efficiency gains available with such tools.

Eide Bailly's recommendations for improving the efficiency and effectiveness of Desktop Support with the state of North Dakota government IT environment centers largely around stronger standardization of many of the technical tools utilized to provide operations and support services. Specifically, our recommendations include further deployment and standardization of the tools identified in the following tables.

For ease of analysis, we have categorized our recommended Desktop Support related tools into two broad categories:

- Service & Support
- Operational Management

Service Support



- Remote Management
- Monitoring Solution
- Help Desk Ticketing System
- Anti-Virus
- System Imaging
- Remote Desktop Services (VDI/RDS)
- 24x7 On Call Support

Operational Management

- Procurement
- Asset and Inventory Management
- Managed Print Services



In our recommended environment, ITD would work with each agency to implement a set of services that is customized to meet the needs of each agency. These customized solutions would, at a minimum include all services / tools that have been identified as “mandatory”; however, for several agencies the scope of ITD services could include complete ITD management and support of their desktop environment and support.

For each of the recommended tools, the tables below provide a summary of:

- **Required / Optional** – A recommendation as to whether or not the use of the tool should be required for all agencies or if use of the tool should be optional and at the agency’s discretion.
 - **Required** – Our recommendation is that these tools be standardized throughout all devices and agencies on the State of North Dakota government network. These tools are being recommended as “mandatory” because requirements for all agencies are common and they support the use of a single standardized tool set.
 - **Optional** – Our recommendation is that ITD and agencies work together to standardize the use of these tools where practical. These tools are not being recommended as “mandatory” for all agencies because there may be functional and / or technical requirements that do not allow for the use of a single standardized tool set.
- **Expected Benefits** – Key benefits that the State of North Dakota should expect to see through further implementation of the recommended tool.

Operational Management

Service Offering: Procurement	Mandatory
<p>Service Definition:</p> <p>Centralize all Desktop related purchasing within ITD. Centralized purchasing of desktop related hardware will provide improved standardization within the Desktop Support environment. Providing a procurement service is key to developing an internal asset and management system as well as developing hardware lifecycle and planning for future replacement costs.</p> <p>Key Benefits:</p> <ul style="list-style-type: none"> • Buy more efficiently and reduce duplication of common purchasing activities. • Establish better control of asset and inventory. • Limits signing or purchasing authority of individual agencies. • License compliance can also be achieved throughout all agencies by centralizing the location for all purchases. 	

Tool: Asset & Inventory Management	Mandatory
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Service Definition:

A system utilized for tracking all local agency technology assets.

Key Benefits:

- Improved lifecycle management.
- More accurate planning for future needs.
- Improved record keeping for regulation, standards, or law.
- Increased accountability and reduction of loss.

Tool: Managed Print Services	Optional
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Service Definition:

A system to gain visibility and control costs for printing. This service may be delivered via a consolidated state contract for such a service.

Key Benefits:

- Reduces cost by standardizing on appropriately sized devices.
- Increases operational effectiveness while reducing warehousing costs.
- Reduce help desk time by providing proactive alerts to toner low or device malfunction.
- Improve accountability through access control solutions.
- Simplifies print driver management.

Service & Support

Tool: Remote Management	Optional
<p>Service Definition:</p> <p>Tools utilized to provide remote support and management of devices.</p> <p>Key Benefits:</p> <ul style="list-style-type: none">• Quickly deliver a more unified support experience to end users.• Reduces support costs by solving more problems in less time.• Service computers even when workers are away.• Improves end user satisfaction.• Ability to provide ad-hoc training via screen sharing.• Ability to support any device regardless of operating system.	

Tool: Monitoring Solution	Optional
<p>Service Definition:</p> <p>A system that constantly monitors a computer network to identify possible bottlenecks or failing devices that may result in down time.</p> <p>Key Benefits:</p> <ul style="list-style-type: none">• Allow support staff to be more proactive.• Warns about potential issues before they result in work loss for employees.• Optimize resource utilization by measuring key metrics to prevent from over or under utilizing resources.• Assists with providing a more reliable network infrastructure to ensure quality delivery of voice, data and video conferencing.• By utilizing a monitoring system preconfigured alerts can be sent to notify ITD or individual agency staff for events such as device down, low drive space, or toner low. This will warn ITD or agency staff and allow them to become more proactive to a potential network, system, or device problem.	

Tool: Help Desk Ticketing System**Mandatory****Service Definition:**

Issue tracking system designed to allow end users to create and update tickets based on their support needs and track each item to closure with the technical support team.

Key Benefits:

- Single point of contact for end user ticket submission.
- Ability to respond and track ongoing support issues.
- Improve service by reducing time to resolve support issues utilizing helpdesk history information provided by previous tickets.
- End user access to knowledgebase for 'self-help' information.
- Provides visibility into Service Level Agreement attainment and reporting capabilities.

Tool: Anti-virus Software**Mandatory****Service Definition:**

Software used to prevent, detect and remove malware.

Key Benefits:

- Protection from viruses and malware.
- Protection valuable information on the PC and network.
- Reduces potential support need from removing viruses and restoring information.

Tool: Mobile Device Management**Mandatory****Service Definition:**

A mobile device management system monitors, secures, manages and supports mobile devices.

Key Benefits:

- Reduces loss of sensitive information due to lost or stolen devices.
- Locate or remotely wipe lost or stolen devices.
- Uniform configuration of client applications.
- Remote configuration and monitoring.
- Backup and restoration of data.
- Standard set of security controls regardless of device or operating system.
- Encryption of mobile devices.

Tool: PC Imaging and Deployment**Optional****Service Definition:**

A system imaging tool helps standardize and expedite the desktop deployment process.

Key Benefits:

- Provides a reliable and repeatable PC deployment process.
- Reduces troubleshooting time.
- Reduces time to deploy new computers.
- Hardware and software inventory to efficiently manage deployments.

Tool: Remote Desktop Technology (VDI, Terminal Services)**Optional****Service Definition:**

A method of consolidating the users' desktop experience to a central location.

Key Benefits:

- Provides a cost effective solution as an alternative to deploying dedicated PCs to all users.
- Reduces costs associated with hardware failures.
- Enhanced security and easier management.
- Increased performance, scalability and redundancy.
- Reduces the time it takes to deploy a client device.
- Protection valuable information on the PC and network.
- Rapid Application management.
- Non platform specific, can be used from any device regardless of operating system.

Tool: 24x7 On Call Support	Optional
Service Definition: IT support services provided for agency employees that do not work regular business hours.	
Key Benefits: <ul style="list-style-type: none">• Maximize uptime by resolving support issues before regular business hours.• Improved support turnaround time for staff that works irregular work hours.	

Tool: Tier 1 Help Desk Services	Optional
Service Definition: First line of support available to agencies for initial troubleshooting process.	
Key Benefits: <ul style="list-style-type: none">• Increases productivity of other IT resources to perform their duties.• Single point of contact for trouble ticket reporting.• Staff augmentation during personal leave and vacations.	

High-Level Implementation Plan

An effective implementation strategy to transition towards the recommended Desktop Support model will be a key step towards realizing the benefits identified in this analysis. Eide Bailly recommends the following high-level implementation plan be followed:

- **Phase I – Scoping and Planning**
 - Formalize service definitions and service levels standards
 - Confirm the scope of services to be delivered for each ITD supported agency (Note: In several cases there will be a need to somewhat customize the Desktop Support process to meet agency requirements.)
 - Establish formal / written Service Level Agreements (SLAs) for each agency's Desktop Support services. SLAs should include items such as:
 - Hours of Support
 - Support Response Time Commitments
 - Definition of ITD and Agency Responsibilities

- Escalation Processes and Timelines
- Define SLA Reporting Requirements
- Establish on-boarding timelines for each agency

- **Phase II – Tools & Process Standardization**

- Product evaluation and selection (where required)
- Confirm each agency's participation with the each newly established Desktop Support tool.
- Tool implementation (where required)
- Migration of the desktop environment to the selected tools

Note: At a minimum ITD should have completed the migration to standard Desktop Support tools prior to on-boarding agencies with ITD for Desktop Support.

- **Phase III – Agency Desktop Support On-Boarding**

- Migrate selected agencies to ITD centralized support. (Eide Bailly recommends migrating no more than 10 agencies per quarter.)



Appendix

- Appendix A – Current Environment Desktop Support Data