☞ **05hr_JC-Au_Misc_pt22i**

☞ Details: Proposed Audit: Information Technology Systems Projects in State Agencies

(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2005-06
(session year)

Joint
(Assembly, Senate or Joint)

Committee on Audit...

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Stefanie Rose (LRB) (September 2012)

Appraisal Inventory	26	2	1			X	If the educatlonal LANs (28 as noted above) are not included as mentioned, then there is only one NT domain, not two.	
Appraisal Inventory	26	5	1		X		Note in comments that the DOC hosts more than 7500 mailboxes across these four server systems (opinion, commentary)	
Appraisal Inventory	27	2	1			X	Server Management should be a total of 5. This includes 3 Argent Guardian, 1 IBM Director , and 1 MS SUS server. Network Management should be a total of 3. This includes 1 Trusted Enterprise Management, and 1 Hyena, 1 Cisco Works. Desktop Management should be a total of 2. This includes 1 LANDesk and 1 IBM Director.	
Appraisal Inventory	29	1	1		X		Support Roles – Support Role definitions were not clearly stated nor provided prior to submission of agency reports. Based on definitions now provided, the roles of many staff require adjustment Server – 3.15 FTE Operations - 2.5 FTE Applications Support – 4.35 FTE Network Support – 2.25 FTE Deskside Support – 3.5 FTE, 2.75 Contract	
Conceptual Design	3	4	1	X			The recommendation to utilize server virtualization (VMWare) does not meet with all agency requirements, nor with recent studies into virtualization. (Reference META Group Document titled 'Server Consolidation: Five Vendor Myths' dated June 2004) There are noted agency initiatives that are provided grants and other funds that would be next to impossible to document and support as these specific grants require detailed information and tracking of funds spent for the project.	
None – General Comment	-	-	-	X			Currently most state agencies maintain their own Directory Services. This is the core behind any network withln the state. The presented documents do not provide any basic technical information on how directory services will be managed. It is essential to have consensus within this area for the project to proceed.	
Network Gap Analysis	6	1	-	X			DOC runs well below the recommended number of users per T-1, with or without local file and print services. As noted in the Gap Analysis, the DOC would need to add addltional network connectivity to more than 55 of it's current sites. This would be at an additional cost of more than $70,000.00/month. *These numbers, nearly $1,000,000 annually, are not noted within the Cost/Benefit Analysis..*	

Cost/Benefit Analysis	13	1	1	X			File and Print services have an estimated annual cost (physical) of $1,667.00 according to the example. Of the 303 servers reported by the DOC for this project, 80 of them are (or will be by Oct 1st) print devices, which were calculated in the Crowe analysis at this cost. However, the true cost of these devices to DOC is less than $300.00 annually ($620/device plus the O/S at $450) as the DOC is structured in such a manner to allow high end PCs to be utilized as the print devices at remote sites. *This is a cost difference (savings) of $109,360.00 annually*	
Cost/Benefit Analysis	13	2	7	X			The example lists development environment servers at the same cost as production servers. DOC' rolls down' used equipment into this environment. In most cases this equipment falls out of the warranty period and out of the amortization schedule utilized to create the report. Therefore the report doesn't accurately reflect the true cost to DOC. So, in fact, instead of listing the development servers at an annual cost of $1,667.00, the true cost should be less than $300.00. *For the DOC alone, that is a cost difference (savings) of more than $34,000 annually.*	
Network Bandwidth Gap Analysis	15	-	-	X			The number of file and print servers reported to be at each facility is inaccurate. According to the reports, the DOC has only 63 servers (consolidated) hosted at 3099 E. Washington and many sites have multiple server systems. The fact is, the DOC hosts the majority of its server systems from 3099 E. Washington and nearly all remote sites host only one print device or server. The educational LANs at 28 institutions are the exception to this rule. DOC staff looks forward to meeting with Crowe representatives to assist in providing additional clarity to the appraisal documentation.	
Cost/Benefit Analysis	-	-	-	X			The report outlines cost savings based on virtualization of server systems. However, the report fails to document the costs for virtualization. The standard IBM hardware platform recommended for VMWare is an x445, at a cost much greater than a standard quad processor system (estimated at $30,000 with 8 or more GB of physical RAM). VMWare costs per quad processor server is approximately $6,000 - $7,000. This is a cost of $37,000.00 to virtualize approximately 12 server systems. While this does save state funds, the actual cost estimates are not included in the report. Thls also assumes that all applications are supported in a virtualized environment. This is not the case.	
Appraisal Inventory	23	6	5		X		DOC does not operate a single DB2 connect server. DB2 connect is installed as a client on servers that require connectivity to the Mainframe environments. DB2 connect is also installed on developer/user workstations that require connectivity.	
Appraisal Inventory	26			X			No mention is made of our extensive WebSphere environment both internal and external We also have other Web based applications that aren't listed.	
Appraisal Inventory	16			X			None of our Websphere Based applications are listed at all. These applications are mission critical and are used by all employees. We also host external applications that are available to the General public. In all, 11 WebSphere applications are not documented. We were specifically told that this information would be gathered at a later date. These applications are consolidated onto one application server.	

Appraisal Inventory	26					X	Ftp services WSFTP also runs as a part of our batch processing	
Appraisal Analysis Reference	12	2	1	XXXX			Directory Services – There is a conceptual non-understanding (not misunderstanding) of the use of these services within the DOC. First, the DOC's core directory service Is Active Directory of Windows 2003 with AD integrated DNS. Due to the number of users at our larger sites on the administrative network, the file and print servers at these sites are also AD domain controllers providing local authentlcation with AD integrated DNS. The comment in the document that there are 38 dedicated directory servers is false, they just do not exist! On the Educational Networks, which are Windows NT, except for the AD pilot sites, these are completely isolated networks utilized by the offenders at the institutions. They are NT PDCs providing file and print and application hosting, that will only go away once the pilot project for remote connectivity to these networks comes out of pilot phase and moves forward. Most of these sltes will then become 'consolidated' within the DOC as the administrative small sites have. From the misinformation within this paragraph, it is obvious that the DOC's structure has not been accurately reviewed. Cost and or cost savings can not be considered based on the erroneous information within this report and it is painfully obvious that those providing the evaluation need to understand real world implementations of Active Directory and not only from a book. Removal of the Directory services from 79 remote servers would not only impede service, but in a third of the systems, render them completely useless and prevent legislatively mandated access for the offenders housed within the DOC. Additionally, removal of the directory services from 79 sites would indeed require the expansive upgrade to the infrastructure to these sites that was recommended at more that a $70,000/month additional cost to the DOC. The server systems providing the directory services also provide file and print services, so removal of the directory services and, therefore removal of the 79 file and print server systems, would mean that each of these sites would be required to transverse the WAN to access user and or group folder structures.	
Appraisal Analysis Reference	12	3	1	X			Internet Web Servers – The majority of Internet traffic is provided through the WebSphere platform, hosting many highly utilized, business critical, and in some cases, legislatively mandated applications. Recent analysis only suggest expansion in this area with no virtualization or consolidation. There are two other systems providing access and each requires a high level of security consideration that would not benefit from virtualization nor consolldation.	

Appraisal Analysis Reference	12	5	1	X			Virtualization (not consolidation) as utilized in this paragraph is inaccurate. Virtualization of a Citrix environment defeats the purpose of such an environment as these systems require high processor and memory utilization that could only be virtualized on very high end, costly server systems. Maintaining lower end systems while providing a 'farm' environment is the most cost beneficial and technically prudent process. The additional misconception is a result of not understanding the DOC's Active Directory process. As of October 1st, two of the noted Terminal Services servers will be powered off and decommissioned as their processes are moved to Citrix on AD. This more than meets the objectives of the report.	
Appraisal Analysis Reference	12	6	1	X			With the understanding of the email consolidation process, it is incorrect to state that it has the potential to be virtualized. It is fair to state that the DOC's email services are to be consolidated. Virtualization of the DOC's four email servers, hosting more than 7500 mailboxes would only cause additional issues. There is a noted difference between an agency running far few mailboxes across several server systems across the state. All of DOC's email systems are already 'housed' within the Central Office data center, not in localized site offices.	
Appraisal Analysis Reference	12	8	1	X			Remote Access and VPN Servers – It is not clear within any of the documentation as to what systems actually fall into this category, therefore it is not understood what may be 'virtualized'.	
Appraisal Analysis Reference	12	7	1	X			Backup Management Servers – A conceptual misunderstanding of the DOC's structure in regards to backup practices. The DOC is finalizing its project to remove one of two of its backup management systems. Prior to this, Veritas was utilized to backup all Intel based data center systems and Omni-Back was utilized to back up all Unix based systems. After project completion (Sept 04), only the Data Protector (new version of Omni-Back) System will be providing backup management.	
Appraisal Analysis Reference	12	9	1	X			Server and Support Utility Servers – It is inaccurate to state that server support utilities exist at remote sites. Only a client exists on each of the remote server systems on the administrative network, as it does on each of our more than 5000 PCs. Several of our remote Educational Networks maintain an installation of IBM Director, but only because those systems were mandated to be separated for security reasons and as that pilot closes (as mentioned earlier) and the sites are connected over the WAN, those systems will in-deed be consolidated. Additionally, the statement (and supporting numbers on page 14) read as though there are separate and distinct Server and Support Utility servers, when in fact these processes exist on the same servers that many of the other fore-mentioned processes exist on. *This 'double dipping' process alone results in seriously inaccurate data of system that may be consolidated*!	

Agency/Committee Name
Department of Veterans Affairs (DVA)

Today's Date
8/13/2004

Document Title	Page No.	Para. No.	Line No.	Category (check one) Critical	Subst.	Admin.	Comments

	Full Time		Part Time		Manager	Totals
Support Roles	Emp	Cont.	Emp	Cont.		
Server Support	3.00	0.00	0.00	0.00	0.00	3.00
Operations	0.25	0.00	0.00	0.00	0.00	0.25
Admin/Office	0.50	0.00	0.00	0.00	0.00	0.50
Application Support	1.00	0.00	0.00	0.00	0.00	1.00
Network Support	0.75	0.00	0.00	0.00	0.00	0.75
Administrative DBA	0.25	0.00	0.00	0.00	0.00	0.25
Security	0.25	0.00	0.00	0.00	0.00	0.25
App Dev/SDLC	7.00	0.00	0.00	0.00	0.00	7.00
Project Management	0.00	0.00	0.00	0.00	0.00	0.00
Help Desk	2.00	0.00	0.00	0.00	0.00	2.00
Deskside Support	4.00	0.00	0.00	0.00	0.00	4.00
Other	4.00	0.00	0.00	0.00	3.00	7.00
Totals	23.00	0.00	0.00	0.00	3.00	26.00

Appraisal Inventory	Gen.			New Chart: Notes: • The Admin/Office role represents 0.5 individuals for eForms and web. • The Application Support role represents 1.0 individual for web support. • The "Other" role represents 3.0 individuals for training, quality assurance, DBA and 1.0 individual that serves as a liaison to County Veterans Service Officers for LOB application support.				

Agency/Committee Name
Department of Transportation (DOT)

Today's Date
8/13/2004

Document Title	Page No.	Para. No.	Line No.	Category (check one) Critical	Subst.	Admin.	Comments	
BUDGET								
Cost/Benefit Analysis	Gen.			X			Is there a mechanism to ensure that changes will only be made if they result in identifiable cost savings? If we are to change or disrupt processes, agencies need to know the specific gains or costs savings, from an agency or enterprise perspective.	
Cost/Benefit Analysis	Gen.			X			How will the "financial transition" occur? For agencies that have used deficit spending to finance server purchases, how will these agencies be made whole for the balances of these	

							purchases? Also – what about the federal funding implications of individual agency servers – and potential reimbursements that would need to be paid?	
Cost/Benefit Analysis	Gen.			X			These documents are the public record that will be used by both the State Budget Office and the Legislature in the upcoming budget proceedings. Regardless of how the consolidation is portrayed by DOA staff in briefings with agency IT staff, legislative budget decisions will be based on what is in print. The Cost/Benefit document should be changed to reflect agency input, prior to publishing the final document.	
Cost/Benefit Analysis	Gen.			X			DOT attempts to budget and fund at best a 5 year replacement cycle for IT hardware. Even this is a challenge in today's budget reality. These documents refer to 3 year hardware replacement plans – which is not realistic. These documents do not include appropriate cost increases agencies would incur for new/larger capacity hardware, and accelerated replacement cycles.	
Cost/Benefit Analysis	Gen			X			DET may not retain all services that an agency may consider essential, although DET may have taken the staff and budget resources that supported the services. What options will agencies have to support these services? In addition, chargeback rates have not yet been established for the proposed DET services. Agencies are therefore unable to estimate and plan for their budget impact. If service changes (such as Email) result in additional charges to agencies, what options will agencies have to address the resulting budget shortcomings?	
Cost/Benefit Analysis	10-11			X			The tables indicate that staff cuts may occur just six months into the project, but there is no indication of how to successfully accomplish this goal. Agencies need a 6-12 month staff and budget transition plan to understand how staff will be reduced, how operations will be impacted and how new or changed systems become operational. The transition plan should also consider how productivity is to be maintained and existing critical systems and services are to be impacted.	
COST BENEFIT								
Conceptual Design	Gen.			X			What are the plans for parallel systems for transition? Agency business applications must be guaranteed to be available while problems/issues are worked out during transition. Where are the costs inherent in building a new environment and transitioning to it?	

Conceptual Design	16	7-8?			X		The analysis did not fully evaluate new or modified data centers, including the cost and how these costs are to be paid.	
Conceptual Design	26	2			X		Management of infrastructure for directory services (Active Directory, NDS, etc.). Does NOT include user account creation or maintenance" This leaves open the question of how user provisioning, directory schema management, tuning, application consulting and support, object backup/recovery, and other directory-related activities will be handled along with the associated support costs. **Suggestion**: Account for directory services in implementation planning.	
Cost/Benefit Analysis	Gen.			X			DET and agencies need to cooperatively identify agency systems or services that are at risk to ensure that services can continue to function properly by planning for costs needed to mitigate risks.	
Cost/Benefit Analysis	10 - 11				X		The predicted payback period of 15-28 months may be overly optimistic, especially since not all costs have been identified. What are the ramifications on agencies if the paybacks are not achieved according to the plan?	
Cost/Benefit Analysis	6			X			A) Staff cost savings are optimistic. One could argue objectively for an opposite affect. As hardware costs are reduced by reducing the number of physical servers, the number of server administrators per physical server might *increase*, if: • Such servers require increased attention for performance monitoring, tuning and security because of application conflicts. • Updates to hardware (box turnover) are more complex, because multiple workloads are affected. • Design so as to balance load, design for failover and conflicting availability requirements increase complexity • Constraints imposed upon change management based on multiple agencies sharing servers • A consolidated environment will require a fair amount of remote administration, requires additional time and skills. B)- All of this presumes a single centralized data center. If that cannot be provided, and administration must be done remotely, regardless of tools, administrator productivity may decrease, and additional support ("hands and eyes and ears") will be required at the remote site, cutting further into the savings. **Suggestion**: The cost benefit analysis should reflect a more reasonable reduction of positions that reflect the	

							server/administrator issues, and may need to reflect a longer term payback of three to five years.	
Cost/Benefit Analysis	15				X		DET needs to clarify what is meant by "more responsive service" and whether this applies only to providing capacity or whether it applies to the more general goal of how an agency's business function is improved.	
Network Bandwidth Gap Analysis	6			X			"Single T1 lines are sufficient for smaller offices only (supporting less than 20 users), depending on the actual applications in use or function of the office" "Costs to run fiber connection to remote sites are not included in this analysis. These will be considered on a case-by-case basis based on specific needs of the agency." The DOT transportation district offices currently have one T1 each, though some (particular DTD Districts 1 and 2) are showing the strain. However, under a consolidated server environment, they may very well need more bandwidth *even if the file/print servers are left in place* because of other functions which would presumably be centralized (e.g. domain/directory/DHCP/WINS services). Unfortunately, the cost for increased bandwidth does appear in the cost/benefit analysis *even when it would clearly only be required in a consolidated environment*. **Suggestion**: Model and test what will happen due to remote directory/domain services, remote support, etc., and reflect that in the cost/benefit analysis.	
Network Bandwidth Gap Analysis	8				X		"Costs to run fiber connection to a new data center is not included in this analysis. These will be considered on a case-by-case basis based on specific needs of the agency" This is confusing. Why would a data center be an agency case-by-case thing? **Suggestion**: Clarify / reword.	
Network Bandwidth Gap Analysis	8				X		Network costs assumptions omit a lot of potential costs to be considered later on a case-by-case basis. For example, DOT has 11 remote sites that should consider upgrading T1 lines for server consolidation. Also mentioned that disaster recovery costs were not fully taken into consideration. These potential costs did not appear to be included in the best case – worst case analyzes in the cost/benefit analysis.	
Conceptual Design	2	6?	4-5	X			"As each service is being established, the pricing, business processes, technology and staffing will be addressed". The cost of the services is not included in the cost benefit analysis. What assumptions are being made about these costs in the cost/benefit analysis?	
Conceptual Design	Gen			X			The document does not mention the critical need for *consulting* for agencies using the consolidated servers and	

							services. This is critical for business applications. **Suggestion**: Establish consulting services in appropriate MOU's and SLA's, and include these costs in the cost/benefit analysis. Agencies already do this internally, so DET will have to provide these services (and charge for them) in a consolidated environment. Thus these costs must be included in the cost/benefit analysis.	
STAFFING								
Conceptual Design	25	1		X			"Once the project is completed, the implementation team dissolves and the service manager takes over the ongoing operation and support of the service." It is critical to include those who will end up supporting something in its planning and implementation. Staff need to know where they stand, and agencies need to continue services during the transition.	
TECHNICAL VIABLILITY								
Conceptual Design	Gen			X			Neither this document nor the cost/benefit analysis addresses the potential impact and costs or even the tradeoff of additional risks that are being assumed in a central environment and how to impact them. • Consolidating servers into one location increases the risk of catastrophic state executive branch-wide failures due to environmental problems or disasters. As servers are consolidated into fewer locations, the business requirement for a disaster recovery site and procedures (and associated costs) increases. We might get by with agencies sharing each other's sites for disaster recovery under the status quo. That will not be possible under a consolidated environment. • Consolidating administration with fewer administrators increases the risk and extent of damage that could be done by a "maverick" administrator. This in turn increases the need for auditing and more stringent procedures (and the associated costs). • Consolidating servers into fewer locations, in the absence of a sound security perimeter design, increases the risk of cross-server malware infections and interactions (e.g. should a server become affected and start consuming large amounts of bandwidth, it will affect more servers in a consolidated environment) • Consolidating servers, (or consolidating some, and not others) and then accessing them over a physically long network segment (e.g. fiber) increases the likelihood that there could be network related outages, and increases the magnitude of	

							the impact of such outages. **Suggestion**: This is not to argue against consolidation. Instead, the point is that these risks, and the associated costs relating to mitigating those risks, have not been addressed in the design. Those risks should be clearly identified in formal documents, not just in informal spreadsheets, with associated probabilities, costs and mitigation strategies.	
Conceptual Design	Gen			X			In attempting to assess the potential line of business impact resulting from the server consolidation project, it's instructive to look at the last major statewide IT consolidation effort. The State embarked on a mainframe consolidation effort in 1991, which was also undertaken in the interest of reducing the cost of delivering IT services. The goal was to consolidate the workloads of the states mainframe data centers into a single facility that was to be managed and operated by the DOA. Key characteristics of the pre-consolidation environment included: • 4 mainframes • 3 locations (all in Madison) • Same Operating Systems • Similar software suites and operating environments Although DOA had overall responsibility for the consolidation effort, the three agencies whose center operations were to be consolidated handled most of the detail planning, and work necessary to move the workloads. Agency line of business staff were heavily involved throughout the entire process. The fact that the agencies owned the planning and cutover responsibilities was instrumental in ensuring a successful transition to a consolidated mainframe environment. Compare the above experience to the proposed server consolidation effort. The goals and objectives are virtually identical. Reduce the cost of providing IT services by centralizing multiple server machines located throughout the state into a single location managed and operated by the DOA. The pre-consolidation environment is vastly different, however. • Approximately 2400 servers • More than 500 locations (statewide) • Multiple Operating Systems • Dissimilar technical environments across agencies This consolidation is much more complex in that it involves dissimilar operating environments, and major network upgrades throughout the state. Expecting to get this done in a one-year timeframe, while maintaining stable business service delivery system environments is unrealistic. Suggestion: Extend the implementation timeline	

Conceptual Design	8	2			X		The section on rationalization does not take into account interdependencies amongst different kinds of servers and applications. Larger agencies, especially, already leverage existing servers across many boundaries. For example, at DOT the web extranet gateway leverages extranet web application servers, database servers, internal web servers, internal web application servers and internal file servers. **Suggestion**: The conceptual design needs to be properly understood and the design reflects those business needs.	
Conceptual Design	11	6		X			There are several things about this paragraph which make it problematic: • R&D is very resource intensive. If we cannot consolidate lab testing for infrastructure, middleware, etc., we will have missed one possible real savings. (e.g. why have 8 shops all test the latest release of IIS to identify its shortcomings when 2 or 3 would do). • All modern application servers (web application servers or otherwise) require more agility and coordination between developers and infrastructure support personnel. They also tend to have significant server to server and server to database dependencies. This makes the consolidation of application servers for which developers write applications (web, middleware, etc.) problematic. • The same can be said for database servers. • Existing operations of distributed environments, *especially those at DET*, sometimes suffer from a certain lack of discipline with respect to change management; a case where the distributed environment could benefit from the mainframe experience. These are among the most significant risks to agencies, especially to the largest ones who need to optimize developer time. Currently, its all in one agency "bottom line", so agency technical and development support staff are motivated to be of as much help as possible to development teams. Suggestion: Include discussions of the consulting role during implementation planning.	
Conceptual Design	12	4		X			The paragraph goes on to list the advantages, but leaves off the *disadvantages* thus resulting in a very unbalanced view. In particular, virtual machine technology is not appropriate for applications or application servers that tend to be resource constrained. This includes: • GIS • Web application servers (especially those using Java/J2EE, due to CPU and memory use) –	

							especially web application servers already supporting multiple applications or JVMs. (In essence, J2EE web application servers are already virtualized owing to the possibility of running multiple JVMs, and at lower overhead than having full virtual machines). • Test systems used to do heavy load testing of applications • Test systems used to do shared testing of applications (DOT's web test environment is a shared environment, for example) • Busy file/print servers (or other servers with large network use) • License costs where those license costs are calculated by the vendor based on the size of the hardware or physical CPU's upon which the application runs Virtual machine technology *is* good for consolidating things with light workloads, including: • R&D • Light testing • Small applications that are on multiple servers only because they cannot coexist from a software configuration standpoint (most often a malady under Windows). But the savings from doing this are relatively smaller hardware savings (and sometimes license savings) and not so much staff savings.	
Conceptual Design	12	4		X			The project talks about re-allocating server resources to meet changing demands; the report doesn't address the changes in Oracle (and other) licensing charges, which are going to per CPU *of server capacity*. So running a one CPU's worth of VMWare /Oracle instance on a 32 CPU box will be fine, but we will still need to pay for licenses at the 32 CPU level. Suggestion: Include discussions of licensing costs.	
Conceptual Design	14				X		Directory services is fundamental to how file/print, even applications will be structured for security, performance, management and support. This service and the design and support of this service have the potential to make or break the consolidated server environments ability to work successfully. It is not listed as a separate service and is included in Server Administration and Support. Suggestions: Include directory services in implementation planning	
Conceptual Design	14	1		X			Supporting File/Print services is qualitatively different than supporting application servers, yet they are not identified as a separate service. Database servers *have* been identified	

							as being substantially different – so much so that there is a separate role identified in the document for DBA's. The structure of the partitions of services offering needs some work. **Suggestion**: Rather than creating unwarranted special cases in the design, define a structure based on the overall environment, then identify these current exceptions as early projects, rather than warping the architecture around them. Identify early on which common services these current special cases need (hardware & OS, for example).	
Conceptual Design	18	4			X		Since desktops still need access to the Internet, it is not clear how providing internet hosting will save agencies time or effort. Indeed, in a sense, internet access is already consolidated, since all agency traffic flows thru a common set of internet access routers at DET. With respect to web hosting, while web page hosting is relatively easy to do, we have concerns about delegation of the web publishing process back to the agency business areas, and at a reasonable cost. Our experience with web application has to lead us to believe that it requires considerable familiarity with the business operations of the agency. **Suggestion**: Properly incorporate internet access and web hosting into the design, separating them as appropriate in the design. Incorporate web caching into internet access to provide better response to staff, improve security and protect privacy.	
Conceptual Design	18	5			X		Applications and databases can be hosted within the DOA/DET data center and provided to users at agencies. This can include widely used applications such as GIS or..." This statement causes concern with respect to GIS. While GIS environments (e.g. ESRI ArcView) can be used as standalone applications in themselves, relying on a GIS application server (e.g. running ESRI Arc/SDE), there are also many other applications which are not "shrink wrap" which have GIS as one part, or an *aspect* of that application. Hosting a GIS application server is not an easy task. Also, in examining the Appraisal Analysis Reference, the difference between GIS application servers and GIS license server desktops (not servers) appears to have been mis-communicated. Furthermore, the physical location of the GIS application servers seems to be undecided. **Suggestion**: GIS is a sophisticated client/server tool, which will have significant network ramifications, with considerable dependencies upon file servers and database	

							servers. Follow up during implementation planning.	
Conceptual Design	19	1		X			The section on Server Administration and Support does not describe how the delegation of the many functions that must necessarily be delegated back to agency IT or business organizations (must especially in remote locations) will be accomplished. DOT has had considerable experience with design of such delegation in our NT environment and in our planning for Active Directory and has recognized the business requirements for such delegation in an environment where business operations are geographically dispersed. Some of the items we have found necessary to delegate include: • Management of printer resources and queues • Restarting of servers located at geographically distant locations • Provisioning users in an efficient manner, with tracking between local directory ID's and mainframe ID's. • Creation and management of security "local groups" • Resetting passwords for users at geographically distant locations • Resetting passwords for users across organizational boundaries, especially where different remote organizations share a remote facility. • Sufficient access to support specialized applications (sometimes including server administration rights) • Manage department resources (e.g. similar to what agency DB2 DBAs do now for agency databases on the mainframe – allocate tables, do backups, assign security, etc.) The same has been true of the mainframe environment, where these kinds or tasks have been delegated to business area staff. Routine operational tasks and maintenance of security (for example, population of security roles) must necessarily remain in the hands of the agencies and agency business units. **Suggestion**: Incoprorate during implementation planning how agency operational needs for delegated administration will be handled,	
Conceptual Design	19	6		X			The section on consolidation of network services does not include benefits identified with respect to network consolidation. It is not at all clear why consolidation would lead to increased "operability and opportunity for scalability" other than in a minimal operational sense. While it may be worth *considering* the consolidation of network services, the report *recommends* consolidation, with insufficient	

							information upon which to base such a recommendation. **Suggestion**: Remove consolidation of the network as a direct recommendation, and leave network consolidation as "something to consider" after further analysis.	
Conceptual Design	22	All		X			The chart has underestimated the level of business knowledge required to support security and applications. Security is application dependent, and therefore requires business knowledge. DOT has delegated such security into our business areas Similarly, support for applications other than "infrastructure applications" requires significant business knowledge, and could not be effectively accomplished by a centralized group. **Suggestion**: Include in discussions for implementation. If a function is not performed well, it will impact agency operations, citizens and business partners. Properly estimate costs for security and application support functions before considering consolidation.	
Conceptual Design	26	2					There is no adequate addressing of disaster recovery needs (unless DBAs are being considerably re-scoped from the industry-standard interpretation).	
Cost/Benefit Analysis	Gen			X			The cost side of the cost/benefit equation does not include the upgrade and increased ongoing operational costs associated with the network. Annual network operating costs increase by $2,000,000, based on current service offerings and pricing. Assuming a minimum upgrade of moving from one T1 connection to two for these locations, annual network operating costs increase by $2,000,000, based on current t service offerings and pricing. For locations such as the eight DOT Transportation districts, annual network operating cost increases would be much higher. Capacity upgrades at the eight Districts would result in annual operating cost increases of approximately $500,000, since upgrades to DS3 capacity links would be required for all of them.	
Cost/Benefit Analysis	3	2-6		X			Lo Costs seem to have been omitted from the cost/benefit analysis, but no explanation is given of why they were omitted (e.g. would have occurred for other reasons, etc.). Some examples are costs of one or more data centers, cost of implementing the various services (email, web and internet housing, application hosting, storage hosting, server admin ad support), costs of T1 upgrades to a variety of remote sites, staff time in agencies required to migrate to new services beyond the 25 FTEs equivalents assumed for year 1, lost benefits to agencies because staff time is taken from agency initiatives, etc.	
Cost/Benefit Analysis	9	Cost Category Table	4		X		A missing cost category is establishing a shared 2003 Active Directory environment. In order to have minimal impact on our users, DOT has internally planned for a "greenfield" approach to a 2003 Active Directory migration, i.e. the DOT	

							would migrate to a parallel, prepared infrastructure, rather than upgrading servers in place. While this approach impacts users the least, it **does** require personnel time in up-front planning and some additional expense in terms of hardware. Not knowing how and where consolidated servers would go, it is impossible to understand if all costs have been accounted. DOA did work with agencies on establishing a tactical solution for PTAWeb, by building the servers and establishing user ID and password policies for a 2003 Enterprise Active Directory. However, it is important to note that the architectural scope for this particular instance of AD has only seriously considered the needs of the PTAWeb application. The notion of an AD that could/might replace an Agency's NOS was strictly out of scope. Bottom line, the planning work for a consolidated AD that replaces an Agency's NOS has not yet been done (despite the fact that DOA intends to migrate their NOS to this AD.)	
NETWORK								
Network Bandwidth Gap Analysis	5			X			""Power user" with high email usage with attachments, large files such as word processing documents and spreadsheets, high printing volumes, application usage, and Web use" DOT has classes of users that would be to this kind of "Heavy user" as this "Heavy user" would be to a "Light user" (and likely even more so). While this kind if "Heavy user" might be consistent with a developer, we have a significant population of users whose bandwidth requirements go far, far beyond this, for things such as: • Image applications (DBM/BFS running Content Manager and DMV running ImagePlus and Content Manager) (I do not include the DMV DL/ID imaging here, as those images are relatively small) • Scanning from multi-function office/copier machines to file servers • GIS use of ArcView Significant client server applications (e.g. Trns*Port, PhotoLog and so forth) It appears that the techniques that were used, while perhaps appropriate for generally characterizing WAN traffic, do not adequately characterize LAN traffic within agencies which have a significant population of "non office" workers. **Suggestion**: Complete a LAN network analysis with hard data on workstation to server and server-to-server communication in representative agencies, large and small, so that you have hard data to plug into models and estimates.	
Network Bandwidth Gap	5	2nd			X		This table identifies a prototypical agency to have a mix of	

Analysis		table					20% heavy users, 60% moderate and 20% light users. I believe a 50% heavy, 25% moderate and 25% light user designation would be more accurate of WisDOT - DTD	
Network Bandwidth Gap Analysis					X		"Point-to-point wireless and other technologies should be investigated as alternatives to running fiber to specific locations" While this may be true on the surface, there are significant issues of support, availability and security with wireless techniques. From a bandwidth perspective, while wireless may be an alternative to wired (e.g. T1 or less access) or as a supplement to such access, the bandwidth limitations of wireless access are such that it would never be a likely alternative to running fiber. **Suggestion**: Do not depend on wireless or "exotic" network connections to make up for insufficient WAN bandwidth.	
Network Bandwidth Gap Analysis	14-36			X			There are significant problems with the data used for the analysis. • LAN data was apparently never collected. For example, for HFSTB (4802 Sheboygan) the primary load is listed as 1,485 users (page 19) with 1.544 Mbits. In fact, those users currently have access to 100Mbit ports on their switches that hence connect to the servers. Thus the "Current percent utilization" is completely misleading. (To say nothing of server-to-server traffic that they generate). • If we were just consolidating outlying sites, then this would be exactly the needed data. However, the general thrust of the document is just the opposite – that we intend to consolidate the central LAN sites in the agencies, and there has been no data collected on that traffic. • Internet access data (for both access to Internet resources by State staff and access to Internet web/application services in agencies by partners and the public) was not collected (as mentioned earlier in the document).	
Network Bandwidth Gap Analysis	2			X			"Based on industry standard bandwidth requirements, estimates were made of the network bandwidth required at each site to support its user base. Estimates were made regarding the core network bandwidth required to support a fully consolidated data center to support all 35,000 users from all agencies." One significant problem with this is that it completely ignores server-to-server requirements. Secondly, this kind of broad-brush analysis that there are not such things as industry standard *users* across different industry / lines of business. This means that there has been	

							insufficient measurement and analysis (especially for an engineering organization) and calls the conceptual design and cost/benefit analysis into question, and will lead to problems during implementation. DOT has recommended measuring the traffic on a server-by-server basis (or at least a sample, taking into account different functions) in order to understand the actual client to server and server-to-server network load of our applications. By doing that you can estimate the impact of moving those servers (or moving some, but not others). Without that these numbers are little more than guesses, and, being based on some kind of "broad brush" characterization of usage, are bound to be underestimated for DOT, given the significant amount of load generated by engineering applications, GIS and several major client/server applications within DOT. In addition, the analysis appears to have been very much focused on the existing WAN, rather than agency LANs. The trouble with that is that the traffic that will be most affected isn't the WAN traffic, it is the LAN traffic. While analyzing the WAN is useful in that it can tell you how much bandwidth might be available at a given existing remote site, it tells one absolutely nothing about the impact of moving a server, which, after all, is what this is all about. **Suggestion**: Complete a LAN network analysis with hard data on workstation to server and server-to-server communication on a representative sample of servers in representative agencies, large and small, so that you have hard data to plug into models and estimates.	
Network Bandwidth Gap Analysis	2				X		"The State should also consider a third alternative as a detailed analysis is performed. This alternative should include the evaluation of contracting with one of the carriers that currently operate in the city of Madison. The cost of this alternative was not be performed within the timeframe of this analysis" There has been some discussion of this idea within the TLC Network Domain Subcommittee. There are several issues that appear to be important: • It is not at all clear that there would be any real cost savings. • While one might contemplate eliminating the technical staff at DET who would support such a network, that would leave the State without anyone with a good technical background to oversee the vendor, leading to higher costs in the long run. • There are situations where state traffic over a contractor provided network would require	

							encryption whereas the same traffic over a State owned and operated network would not require encryption. Increased encryption would lead to higher costs and diminished performance. **Suggestion**: First of all, this decision should be made in the Network Domain subcommittee, not in the server consolidation project. The analysis needs to include all these factors, not just obvious costs, when considering whether or not to outsource MadMAN. Consider that it takes considerable expertise to properly oversee vendors and contracts.	
Network Bandwidth Gap Analysis	4				X		"Bandwidth requirements were estimated by calculating the number of users for particular types of applications. Network bandwidth requirements per application were calculated using industry standard values used for analyses of this type Values used are: • File and Print 30 Kbps/user • Email 10 Kbps/user • Database 15 Kbps/user • Web 50 Kbps/user" These values are highly suspect. • It ignores server-to-server traffic in an environment where some servers are physically centralized and others may not be. (For example, what happens when an e-mail user saves a document from a central e-mail server to a local file/print server)? • You cannot magically move the database servers and the application servers in one fell swoop unless you do a "fork lift" upgrade, which the team maintains is not being done. • There isn't such a thing as an industry standard *user*. • Experience at DOT has been that web users, except those accessing certain kinds of Internet sites, use *less* bandwidth than file/print users. In addition, file/print protocol (CIFS aka NBT) is extremely "chatty" and has real problems as bandwidth utilization increases. • Developers comprise a significant population that has been left out. Our experience with the DOT developers that were located at the PSC building have taught us that it doesn't take too many developers to saturate a T1. • Database traffic is *highly* application dependent. The kind of number in this document might characterize a desktop application accessing a small Access database or a very simple Oracle	

							based application. It doesn't come anywhere near the bandwidth required for GIS client/server applications, image applications or major client/server applications or server to server database access. • Expected response times are not characterized, which will lead to difficulties in developing SLA's. **Suggestion**: Complete a LAN network analysis with hard data on workstation to server and server-to-server communication in representative agencies, large and small, so that you have hard data to plug into models and estimates.	
Network Bandwidth Gap Analysis	9				X		"In many cases, inexpensive bandwidth compression and caching technology can be used to enhance throughput to remote locations" Inexpensive to *purchase* maybe. Support is quite another matter. **Suggestion**: Reconsider this language.	
Network Bandwidth Gap Analysis	10			X			"Disaster Recovery (DR) requirements were not fully taken into consideration in this analysis. Neither, apparently, were the bandwidth requirements for storage virtualization and backup. Therefore we must assume that in cases where servers are left at remote locations *their storage and backup must also remain at remote locations*. **Suggestion**: Make sure that the hardware costs account for having adequate backup for servers at remote locations, even if those servers are managed by centralized staff. Also, recognize that such servers would be difficult to account for in a Statewide DR/COOP/COG plan.	
Network Bandwidth Gap Analysis	10				X		"This analysis does not cover additional network bandwidth required to support inbound Internet traffic from the Web, FTP or any type of Internet services which are used for the general public access to state agencies." This is a significant omission. To give you an idea of its significance, for July, 2004, here are some numbers for DOT: • Internet access and anonymous FTP access by DOT employees resulted in about 255 GB of traffic (NOT including that part which was cached on the DOT proxy). This amounts to about 2.5Mbits/s during prime shift, assuming that most of this access occurred during 10-hour workdays. We see	

							continuous traffic on the order of 800 packets/second inbound, which would be 800 Kbps *steady state* (Also note that some percentage of this traffic then went out to remote DOT locations over the WAN.) • Internet access TO DOT facilities (internet server, extranet servers) from the outside resulted in traffic outbound of about 219 GB, or, assuming longer 16-hour days, about 1.3 Mbits/s. We see continuous traffic on the order of 500 packets/second outbound, which would be on the order of 500 Kbps steady. **Suggestion**: Gather real data from the agencies on inbound and outbound Internet traffic. Indeed, DET should already have statistics on inbound internet traffic, since they use it to determine the Internet billing assessment each year.	
Network Bandwidth Gap Analysis	10				X		"Network logon and authentication response time are expected to increase substantially if domain controllers are consolidated. Because these transactions are usually performed only a few times per day, it is not likely to affect system usability" Experience at DOT, has usually proved otherwise. • With consolidated domain controllers, a network outage to a site means that nobody at that site can do anything, because credentials cannot be validated. • This presumes a very simplistic situation where the user authenticates once, in a totally Microsoft file/print/IIS environment. However, it isn't that simple. When a user accesses a web service or a client/server application, additional authentication may be required. Also, file/print or application servers have to enumerate membership in domain roles, which may entail additional trips to the domain controller, which will generate additional traffic. The upshot of this is that this kind of change, more often than not, does affect system usability in terms of responsiveness and availability. **Suggestion**: Research how and where domain controllers are accessed and reconsider where they should be placed.	
Network Bandwidth Gap Analysis	11			X			"Bandwidth Analysis Basics" This appears to be an attempt to apply techniques that might arguably be suitable for analyzing WAN traffic requirements/peaks/averages to a LAN environment.	

							Unfortunately, such an analysis is flawed. "Studies have shown that over a five-minute period, actual peak utilization can be 40% higher than the reported average result." This is questionable, even for a WAN environment. Peak utilization can be multiples *times* the average, even in a WAN environment. In a LAN environment, that kind of relationship is *likely*. Because of "collision" (collisions are not literally what goes on in a switched environment, but the effects are the same) and queuing effects, communication channel which runs over 30% utilization is likely to have significant periods where utilization is near 100%. (This can even happen in a WAN environment, though it is less likely). Furthermore, as this happens, latency increases by multiples, which significantly impacts application performance. This is even more critical if storage is to be rationalized. Network congestion on a network with SAN storage can be disastrous. (This is why SAN environments typically have a dedicated network). **Suggestion**: Re-do the analysis based on an assessment of LAN requirements (especially considering the effects of SAN storage, if the intent is to separate SAN storage units from the devices which depend upon it).	

DATA ERRORS

The appraisal analysis has a host of errors listed below

Suggestion: Delete all agency data. It causes one to doubt the cost benefit analysis.

Appraisal Analysis Reference	25				X		The table does not reflect the data supplied on the surveys. DOT reported 238 servers in its data. Only 172 servers are included in this table and in addition, the categorization of servers is wrong. There are additional inconsistencies between this document and the Appraisal Inventory. The Appraisal Analysis Reference lists 28 GIS servers but the applications inventory included in the Appraisal Inventory doesn't list GIS applications that DOT uses. The Appraisal documents are not an accurate representation of DOT and lead to flawed consolidation analysis.	
Appraisal Analysis Reference	25				X		Database Servers - Not sure how 17 databases servers was computed. DOT has 4 non-mainframe Oracle databases servers. Two of these servers are located in Traffic Operation Centers (one in Milwaukee and one in Madison) and support production traffic operations applications at those sites. The other 2 Oracle database servers are located in Hill Farms. The 2 Oracle database servers in Hill Farms support test and production databases for approximately 30 DOT applications. They have 4 VPARs	

							and multiple Oracle instances defined to them. DOT also has a small R&D Oracle server. It wasn't clear how it was decided DOT's database servers would be moved when database servers at other large agencies (DOC, DHFS, DWD) were described as remaining at the agency after consolidation (pgs. 14, 20, 30).	
Appraisal Analysis Reference and Appraisal Inventory	Gen			X			There are numerous problems caused by misinterpretation of the data provided. Incorrect assumptions are being made regarding DOT, its application portfolio, and its infrastructure. These incorrect assumptions have been published in the Appraisal Documents and will need to be corrected. Some of the problems could have been avoided prior to publishing by having a closer working relationship between the Crowe Design Team and the agency. As this project moves into the next phase, it is critical that correct data be gathered. In addition, Crowe needs to recognize that it is trying to hit a moving target. Agency business needs will cause continual changes in DOT's server environment. Application development and system implementations are continuing because of business need. Server counts and infrastructure data will change, and Crowe needs to account for this in its implementation planning.	
Appraisal Inventory	44-45				X		There are problems with the data that are apt to lead to incorrect conclusions and a flawed design. To correct a few: • DOT's smaller sites use bandwidth more in keeping with what the analysis terms a "large site" because engineers and GIS users consume much more bandwidth than ordinary office users. • The number of Non-BadgerNet Circuits (excluding VPN and DIAL) says 23 – but then the comments say "These are all VPN connections". • The server data doesn't split out Production/Testing/Development because this information was not requested. • The Tape Libraries are not listed because this information was never requested. • The text indicates that DOT has 4 firewalls, but the chart lists 6.	
Appraisal Inventory	40				X		"DOT's customer base includes the citizens of the State of Wisconsin" True, as far as it goes. But it implies that is our only customer base, which would not be true. Other customers for Wisconsin DOT include: • Our business partners: including those that we regulate, those that operate under contract for us, and those that act as agents on behalf of WisDOT	

							in providing services to citizens and business partners. • The federal government, FHWA in particular • State and local units of government • Local law enforcement organizations • Other state agencies **Suggestion**: Modify the appraisal inventory to account for these customers, and account for the risks that would ensue to them as a result of the consolidation process.	
Appraisal Inventory	41			X			The application list does not accurately reflect DOT's application portfolio. The application inventory for DOT is inconsistent. They give a misleading impression of the number, depth and diversity of applications at DOT. It is not an inclusive listing of major DOT applications. A long list of applications that use Oracle as a database are missing. These include Control-M, Civil Rights Compliance (DBE), Integrated Billing (DIBS), Flood Damage Aids, DTID Acronym, Local Roads Improvement Program, OIS SIMS/Signview, OIS Adopt-A-Highway, OIS Electrical Inventory, OIS Maintenance Level of Service, OIS Outdoor Advertising Sign and Inventory System, OIS CHEMS, OIS Electronic Inventory, OIS Maintenance Store Site Management, MICE Correspondence system, DTID View, Pontis, Public Transit, Safetynet, Consolidated Structures, File Cabinet, Business Objects, Informatica PowerCenter ETL, MIIP Data Warehouse, Overtime/Activity Data Warehouse, IFTA/IRP/Covers/Coversnet, LANDesk, HAMS, Project Management, OSOW Routing Restrictions. There is no reference to our CADD software, Microstation. This is no reference to GIS-based applications or the important DOT applications with reliance on that platform such as DTDView and the FIIPS Project Locator systems. **Suggestion**: It is recommended that the vendor meet with DOT to get a better understanding of its application portfolio and the ways in which consolidation will affect DOT.	
Appraisal Inventory	41	6	3		X		The reference to FieldManager should be deleted. FIIPS has NO dependency on FieldManager.	
Appraisal Inventory	41	7	1		X		The information included in the inventory regarding the Trns.port application is wrong. Paragraph 7 on page 41 should be deleted completely. FieldManager is a stand alone PC product and is not a server. As such it has no relevance for this project. Rather this paragraph should be replaced with the following information to accurately reflect this application suite. There are two types of servers that support this application: Trns.port servers and FieldNet servers.	

							Trns.port (AASHTO Trns.port) - This Client Server application has several modules for administering let contracts from the design thru construction phase. Trns.port uses Oracle. This application has a dependency on FIIPS (DOT application) and FieldNet (DOT application). FieldNet - This application serves as a message and file routing system between Trns.port (DOT application) and FieldManager (DOT application), an external client application used for construction administration. This application has a dependency on Trns.port and FieldManager. All AASHTO products are commercially developed. This system resides on five application servers. All information should be presented as one item in order to accurately represent the system. • AASHTO Trns*Port (FieldManager, FieldBook and FieldPad) Field entry for contractor quantity usage and submission of payment estimates • AASHTO Trns*Port (FieldNet) This application supports highway & bridge construction project payment, materials testing & project tracking information. • AASHTO Trns*port Estimator PC based estimation system for highway construction. Data passed over network to Trns*port • AASHTO Trns*port Expedite Electronic Bidding system • AASHTO Trns*port FieldManager PC-based construction management system for managing and tracking construction projects, documenting construction progress, initiating contractor payments and communicating with Trns*port (uses Sybase). Dials into FieldNet. • AASHTO Trns*port BERC Console PC-based Internet Bid letting data entry application • AASHTO Trns*port DSS Supports highway & bridge construction project analysis of historical bidding data. • AASHTO Trns*port PES/LAS/CAS (PLC) - Client Server Construction contract management system: Proposal and Estimates, Construction Administration, & Letting and Award Server names/Application names MAD04AP1 AASHTO Trns*port PES/LAS/CAS (PLC) Production - Client/Server	

							MAD04AP2 AASHTO Trns*port PES/LAS/CAS (PLC) Production - Client/Server MAD04AP3 AASHTO Trns*port PES/LAS/CAS (PLC) Test - Client/Server MAD04AP4 AASHTO Trns*port FieldNet - Test MAD04AP5 AASHTO Trns*port FieldNet – Production	
Appraisal Inventory	42				X		File Handler is missing as a mainframe application. It is a home-grown database, transaction processing system that supports several major DMV applications.	
Appraisal Inventory	43				X		The description of internet/intranet/extranet web services for DOT is incorrect. The Appraisal Analysis Reference and the Appraisal Inventory are inconsistent. • There are two Internet web servers that provide support for static pages *only*. (There is some dynamic staging of those static pages, e.g. for camera images). There is a third server which provides testing / development of web pages. • There is one web application server supporting Internet and Extranet applications. (We may soon add a second web application server to support Internet applications.) • There are 3 additional web application servers supporting Extranet applications • There are other web and application servers not listed at the time of the inventory to be used for automated routing for oversize/overweight vehicle permits – they had not been installed at the time of the survey. • System test platforms are not even mentioned under web platforms.	
Appraisal Inventory	43				X		The description of the DOT firewall and network environment is incomplete and incorrect. DOT operates the following systems that could conceivably be considered to be firewalls: • A (pair) of Cisco units for dial-up services • A pair of Cisco units for VPN client (including DMV "site to site") VPNs • Two Internet firewalls which also include IPSec VPN support used to support connections to business partners (i.e. 4 DOT firewalls have VPN capability, not two) • A Cisco PIX which supports Extranet and connection to AAMVANet • A Cisco PIX separating the main DOT network from the DSP Mobile Data Computer Network • Two Cisco PIX units separating the main DOT network from each of the ITS Traffic Operation Center networks in DTD District 1 and District 2 • Also, DOT has at least four ATM connections: o BadgerNet from DOT core routers 1 and 2	

							o Internet connectivity from a pair of DOT Internet edge routers	
Appraisal Inventory	43	3	18		X		RE: Server, Database, Messaging, Web Platforms. Applications servers are not included as a key server type for DOT. Application servers support specific business applications such as Trns*port and GIS.	
Appraisal Inventory	43	3			X		RE: Server, Database, Messaging, Web Platforms. No database platforms are listed. DOT uses DB2, IMS and File Handler on the mainframe and Oracle in the non-mainframe environment.	
Appraisal Inventory	44			X			For DOT, the Server Consolidation Factors / Constraints states "None noted or documented". Our Business Divisions did express many concerns regarding server consolidation and the impact on business continuity. Specifically: • DOT has many concerns that revolve around network bandwidth, legal requirements, physical access, data security, and quality of service provided. • Network bandwidth is a concern for Division of Transportation Districts (DTD) and the Division of State Patrol (DSP) Academy. These remote offices currently have servers on site because of their unique local processing needs and the insufficient wide area network connectivity to those sites. DOT has considered the costs of further centralization to be too high for the results/savings that could be gained. The cost of necessary network bandwidth increases is a significant cost/benefit hurdle that does not support further efficiencies through centralization. • If DOA plans to turn the Hill Farms complex into another major remote site, the demands placed on the current network connection between Hill Farms and DET would increase dramatically. It has not been proven that the current network connection could handle this increased load without a severe degradation in service. • The characteristics of network traffic for our distributed servers are very different from the mainframe network traffic. Consolidation of these servers will have a greater impact on the network than the consolidation of the mainframes and which will increase the costs of associated data transactions. • The Division of State Patrol has stated that they have federal legal requirements that govern who must have responsibility and control of network components in order to retain a 'secure' status	

							with FBI for the sensitive information transferred over that network. • Support staff for a variety of business applications have expressed concerns that the new environment might not allow them to continue to administer their applications efficiently. The Bureau of Automation Services (BAS) and the DOT Business Divisions have partnered to implement multiple arrangements that allow business area staff appropriate access to administer their applications. These capabilities will undoubtedly be limited in a statewide server consolidation. • There are both specific and general concerns about the ability to continue to deliver DOT business services effectively. For example, one special case is the DTD Traffic Operations Centers in DTD Districts 1 and 2. The general concern is that performance and service levels must at least be maintained at current levels. Current service levels are 7x24 support with a 15-minute initial response to any problem report.	
Appraisal Inventory	44				X		The references to Future IT initiatives makes no reference at all to those initiatives which are intended to serve the business needs of DOT. For example, DOT has no business driver to replace directory services at the State level, though it does plan a migration from NT to Active Directory (or did, pending the outcome of this effort). Nor does DOT have a strong business drive to have "a mechanism for connecting screened 3270 applications to the web by pursuing host on-demand solutions". (Indeed, a couple of years ago, when we piloted 3270 screen scraping there was very little interest – no applications came forward). Missing are business driven requirements, such as: • Replacing Registration and Titling system • The need to replace the aging DL/ID image collection / customer service system. • Increasing the automation of tasks surrounding engineering designs and plans • Making significant efforts to increase self-service for DOT's DMV customers • Increasing access to our systems and data by our business partners thru DTD's plans for use of the Extranet A significant problem with these technically / budget driven initiatives is that they may end up distracting agencies from efforts to increase value to our customer base.	

Appraisal Inventory	44	2	2		X		Under Support. The following bullet should be added: • DOT also supplies local mainframe support because DOA/DET is not able to due to its remote geographic location and support structure. We cannot get the type of support we need without having better access to the individual, and therefore absolutely require on-site support staff. Those support staff also have to know our business in more detail than DOA/DET does in order to provide the effective support we need.	
Appraisal Inventory	47				X		Number of servers at DOT is overstated by inclusion of workstations acting as servers and servers that are managed by business divisions for very specific business purposes at remote locations Due to the nature of the service they provide they would not be candidates for consolidation to DET.	
Appraisal Inventory	48	1	1		X		For the "Mainframe Applications" category, the comment "Developed in Cobol" should be deleted. The Application Inventory spreadsheet only allowed one choice and Cobol is only one of the languages used on the applications.	

Appraisal Inventory	49				X		The table does not reflect the data supplied on the surveys. The information provided by DOT was combined into the OTHER support role, mis-representing the agency roles. Below is the correct information as it was originally submitted to Crowe: *Full Time* ***Totals*** ***Support Roles*** *Emp* *Contract* Server Support 5.25 4.50 9.75 Operations - Admin/Office - Application Support 3.50 0.50 4.00 Network Support 1.20 1.20 Administrative DBA 1.65 1.65 Security 0.20 0.20 App Dev/SDLC 60.50 31.00 91.50 Project Management Help Desk 2.00	

Appraisal Inventory	49	Chart			X		Based upon information published in the Appraisal documents, there are further changes that should be made to the DOT staffing numbers. The following adjustments should also be noted: • The DOT Application Support staff number is overstated and should be decreased by 3. Both desktop and mainframe application development tool and environment support staff was included in the original number submitted. • The DOT Administration DBA staff number is overstated according to the definition used by DOA on page 15 of the document. For the DOA staff number it is noted that "server and administrative DBA totals do not include mainframe operations and support'. The DOT Admin DBA total of 1.65 FTE included 1.15 FTE of admin DBA activity occurring on the mainframe for DB2 and File Handler. Only .5 FTE was for non-mainframe admin DBA activity. The DOT Admin DBA number should be reduced to .5 staff.	
Conceptual Design	Gen			X			The document has placed network consolidation out of scope. However, one side effect of that is that the design does not address, the issues associated with agency security perimeters. The fact that some servers will likely remain at many agency locations compounds these issues. While there are several ways that might be dealt with, none of them is discussed nor was an alternative chosen. This is a critical gap in the conceptual design. Alternatives might include: • Keeping existing perimeters, and extending them via the LAN/WAN/MadMAN around the hosted servers. While this precludes having multiple agency workloads under the same IP address without explicitly identifying each such case (and some agencies could not tolerate any such cases), such a design would have the advantage of retaining existing, proven, designs without a lot of additional firewall administration. • Keeping existing perimeters, and creating a new perimeter for the servers. This then requires firewalls on both ends to accept the appropriate traffic to/from the other perimeters. This is what I suspect the "Default" might be, but there are issues with this design. It would place a heavy burden on firewall processors, and would require continual rule maintenance as agencies are provided service on new servers, workload was shuffled, etc. • Destroy existing perimeters in favor of a single State perimeter. While this would reduce some costs, it would be ill advised, as it would create	

							significant risk of spread of viruses and worms. **Suggestion**: For now, keep the existing security perimeters, and agency IP addresses for their servers. Next, over time (as servers are replaced, virtualized or functions further consolidated), develop a new perimeter for "rationalized" servers recognizing, however, that this may require some agencies to invest in updated firewall platforms in order to handle the increased load of their LAN traffic.	
Conceptual Design	8	1	1	X			"Distributed. This is the current architecture for many agencies, and it represents an unconsolidated system. No economies of scale are realized through this model ..." This statement unduly disregards the considerable gains larger agencies have already made due to business driven consolidation. This has resulted in an overstatement of the benefits to large agencies of additional consolidation in these documents. **Suggestion**: Properly identify the fact that larger agencies have already developed considerable economies of scale, and acknowledge that sometimes, when you grow, it costs money to do so – because before you could do without certain kinds of facilities, but now, with a larger environment, you must have them. Consider a plan where services are first offered to those agencies that desire consolidation, with the rest to follow after the design and team has proven its worth.	
Conceptual Design	26	3	1-7		X		Definition of administrative DBA. Is the desired model the same one currently used for agency DBAs that support mainframe usage of DB2 in their agencies? If so, some of the "administrative" DBA tasks listed (e.g. security, backup schemes, recovery planning, etc.) are done by what I assume would be considered "development" DBAs in this document.	
Cost/Benefit Analysis	6-7				X		There are inconsistencies and wrong numbers in a variety of tables. One example is on page 7 under server support, model 3 savings are calculated using 50 FTE. However, on page 6 under model 3, the number of FTEs required is stated as 56. 110-56 = 54 eliminated positions. However, in the table on page 6, it says 60 positions are eliminated.	
Cost/Benefit Analysis	4			X			The document quotes several wildly divergent ratios of servers per administrator. Without a consistent definition of what an administrator is, and data gathered according to that definition, the existing level of efficiency in state operations cannot be measured. Without that measurement, the gains cannot be estimated. In addition, the larger agencies presumably already have higher server to administrator ratios. Those ratios probably	

							cannot be improved all that much. But that is also where the majority of administrators are. **Suggestion**: Have agencies provide clear, concise definitions of the various services that will be needed and then re-collect the data on those services in order to properly estimate likely benefits.	
Cost/Benefit Analysis	9					X	In table, the bottom right box says Total: $5.4 million It appears it should be Total: $8.85	
Cost/Benefit Analysis	7,13				X	X	People administrative DBAs. Inconsistencies between pages 7 and 13. On page 7, the estimated reduction in administrative DBAs was between 3.5 and 10.5. On page 13, the estimated reduction is 13. No explanation given for differences.	
Cost/Benefit Analysis	9, 10, 11					X	Inconsistencies between page 9 and page 10, 11 on organization and transition costs in the tables. On page 8, costs add up to 8.85 million. On page 9, costs add up to 9.15 million.	
E-Mail Consolidation Cost Worksheet							Email storage costing does not appear to include both storage and new product necessary for at least some agencies to achieve similar email function to today. Entire storage, retrieval, and archival of mail documents costs are missing.	
Network Bandwidth Gap Analysis	10				X		"The application, network and server surveys were completed accurately and to the best of the respective agencies knowledge" As far as this statement goes, it is presumably correct. The problem is that the survey did not measure *server* traffic. Also, because the terminology in the assessment requests was so vague, different individuals interpreted it differently; many were not sure what was what, resulting in inconsistent answers. **Suggestion**: The data upon which all of these analyses are based is suspect. Address during implementation.	
Network Bandwidth Gap Analysis	19				X		5th row from the bottom (4802 Sheboygan Ave – Hill Farms). No servers are listed for DOT's main site. This is an error. Not sure how it might have affected the analysis.	


FORWARD
E PLURIBUS UNUM

State of Wisconsin

Information Technology Directors' Council

Oskar Anderson, Chairpers
Gail Zaucha, Vice-Chairpers
Ray Anderson, Secret

AGENCY	IT Director	Phone #	Applications Chief	Phone	Technical Support	Phone#
Administration	Jim Schmolesky	266-1952	Bill Nash	267-0439	Joe Rueden Tim Herbert	261-5041 261-8550
Ag, Trade & Consumer Protection	Ray Anderson	224-4777	Dave Shaw	224-4354	Dave Sarbacker (TS) Gary LInd - (Help Desk)	224-4765 224-4785
Commerce	Jim Wilson	266-7404	Jim Wilson	266-7404	Greg Beach (TS & Help Desk)	266-8648
Corrections	Earl Fischer - Div. of Management Services	240-5400	Bob Stanley	240-3480		
Educational Communications Board	Jim Klas	264-9612	Mark Silbaugh	264-9716		
Elections Board	Barbara Hansen – IT Director William Barnett-Lewis – IT Manager	267-0714 266-0359				
Employee Trust Funds	Joanne Cullen	266-3960	Jon Forde	267-9033	Mark Robinson	266-0785
Financial Institutions	John Amundson	267-1714	Donna Holzhueter	266-8869	Joe Farmer	261-2317
Health & Family Services	Denise Webb	266-0123	Vacant		Tom Haukhol	261-6864
Historical Society	Paul Hedges	264-6451			Jeff Richie	264-6416
Insurance	John Montgomery	264-8113	Steve Nickell	266-2461	Jim Angus	266-5379
Investment Board	David Wong	261-2409	Aaron Stakston	267-0879	Eric Huemoeller – (Tech Architect) Stacy Otterholt – (Network Manager)	261-9348 267-5096
Justice	Frank Ace	266-7076	Dave Wolfe	266-5529	Matt Rains	266-3226
Legislative Audit Bureau	Beth Johnson	259-9884				
Military Affairs	Col. Mark Mathwig	242-3650			Don Hillsman	242-3624
Natural Resources	Art Przybyl	266-7547	Rich Hamann	266-5851	Mike Bohn	264-8557
Office of Employment	Susan Crawford	266-9820				

Relations						
Public Instruction	Brian Wilmot	266-7049				
Public Service Commission	Paul Newman	267-5112	Paul Newman	267-5112	Ed Greenman	266-0173
Department of Regulation and Licensing	Diane Miller	267-9883			Tu Van Le	266-5431
Revenue	Oskar Anderson	266-0218	Larry Lowden Jim Pahl-Washa Peter Eisch Gordon Thompson	267-8951 267-3337 261-5183 267-5192	Rick Offenbecker	261-2276
State Public Defender	Gail Zaucha	261-0621				
Tourism	Renea Dettman	267-7176			Scott Gletty Syoen	266-5356
Transportation	Joyce Gelderman	266-0033	Diana Longfield	266-3422	Brigid Stark	267-3648
UW Madison	Jack Duwe	262-5381				
UW System Administration	Nancy Crabb	265-5042			David Alarie	262-6665
Veterans Affairs	Tony Cappozzo	267-7207	Chris Apfelbeck	267-1794	Chris Apfelbeck	267-1794
WHEDA	Jim Siebers	266-3183	Kevin Breese	267-1465	Joyce Rogers	267-2816
Wisconsin Technical College System (WTCS)	Nancy Alar	266-7962	Nancy Alar	266-7962	Terry Fields	266-9858
Workforce Development	Ellen Vogel –CIO Vinnie Thousand – IT Director	266-5683 266-5588			Steve Mueller	264-8800

return to WITDC homepage

Updated February 6 , 2006


FORWARD
E PLURIBUS UNUM

JSOnline
MILWAUKEE JOURNAL SENTINEL
www.jsonline.com | Return to regular view

Original Story URL:
http://www.jsonline.com/story/index.aspx?id=409418

Contractor paid to cut contracts

But state agency questions savings found by firm

By PATRICK MARLEY
pmarley@journalsentinel.com

Posted: Mar. 19, 2006

Madison - The state is paying nearly $265,000 a month to a consulting firm to tell officials how to cut contracting costs, but at least one state agency doubts the program will save it much money.

The Department of Administration says the $7.7 million deal with Silver Oak Solutions will produce up to $127 million in savings through mid-2009 by identifying contracts that can be consolidated and products that can be purchased in bulk.

But a Department of Transportation review of the program found the projected savings for computer contracts at the DOT are dramatically inflated. The administration says the DOT will save $2.25 million through mid-2007, but the DOT says the savings will be just 5.7% of that, or $127,130, according to a DOT memo obtained through the state's open records law.

Deputy Administration Secretary Gina Frank-Reece said her agency and the Transportation Department arrived at competing figures because they used different methodologies. She said the DOT was expected to go along with the administration's projections.

"It's all about changing the way the state does business," she said. "As you know, some people don't embrace change as much as others."

The University of Wisconsin System and some other agencies have also raised concerns about the program. Still others praise it.

The state is paying the company $263,262 a month plus expenses. Under an earlier contract, the state paid $354,767 a month for work performed by as few as 16 employees, or an average of $22,173 per employee.

An early contract with the company included a fee of nearly $66,000 a month for one Silver Oak employee, but Department of Administration spokesman Scott Larrivee said that payment schedule was simply an "accounting mechanism" and that no single employee received that much money.

Sean Dilweg, the top aide to Administration Secretary Steve Bablitch, said the state signed the contract with Silver Oak in May 2004 after realizing the state did not have a handle on its procurement costs.

"Prior to the administration coming into office (in January 2003), we had no understanding of what our (spending) was across state government on Post-it notes, but 3M did," he said. "The vendors knew what we spent, but we didn't. That's a horrible situation to be in."

Now, instead of having departments negotiate contracts on their own for supplies and services, the administration is signing master contracts with vendors to provide them for all agencies.

As a result, the state is imposing new, lower rates on almost all computer contractors after reports showed the state spent as much as $215 an hour for some work. Most rates will now be capped at $85 an hour.

Applying those savings to the Department of Transportation should yield the $2.25 million in savings, according to the administration. But the DOT memo says a detailed review of all computer contractors shows the lower rates would save just $127,130.

The memo said the overstatement of savings in part is due to Silver Oak double-counting some savings and assuming federal aid could be used for other purposes. If the federal money goes unspent, it must be returned to the federal government, the DOT points out.

The DOT memo also questions $1.1 million in projected savings for janitorial supplies, office supplies, software, vehicles and office equipment.

"Without additional supporting information it is difficult to identify where/if actual savings are being realized throughout the department," it says.

The administration is not backing off on its projections.

"Our expertise is back-office functions," Dilweg said. "Their expertise is building roads."

The state has no way to track its past spending on such items, he said. The administration asked vendors how much state agencies spent on their products in 2004, and used those figures to calculate future savings.

Questions called premature

Casey Newman, the DOT's budget director, said he met late last year with Frank-Reece and Patrick Farley, the state's enterprise operations administrator. Farley told Newman at the meeting that he was raising questions prematurely because the program had not had a chance to get under way.

Farley "was not happy we brought it forward," Newman said. "He said . . . you came to us early with this and it's not ready and now you've created a public document."

Newman said he did not know what to make of Farley's comment about public documents. Frank-Reece agreed that Farley was upset by the DOT memo but that his comment about public records "was not a big issue of the meeting."

Farley, who is in charge of procurement for the state, is overseeing the project. He was out of the office

Thursday and Friday and unavailable for comment, an aide said.

Farley's division was responsible for a $750,000 contract that went to Milwaukee-based Adelman Travel. Georgia Thompson, a state employee who worked on the contract, was indicted in federal court last year on allegations of steering business to the firm. Firm owner Craig Adelman donated $10,000 to Democratic Gov. Jim Doyle around the time the contract was awarded.

The indictment alleges Thompson pressured others on a committee reviewing bids to inflate Adelman's scores to "cause political advantage for her supervisors." It does not name Farley or any of her other bosses by name, and Farley has not been accused of any wrongdoing in the matter.

Doyle canceled that contract after Thompson was charged, but did not return $10,000 donations each from Adelman and Mitchell Fromstein, who sits on the firm's board of directors.

Dilweg said some agencies raised concerns about the procurement program when it was introduced, but many of them are now on board with it.

Joseph Polasek Jr., the budget director for the Department of Natural Resources, said the deal "makes sense to us." Spokespeople for the Department of Health and Family Services and the Department of Workforce Development said their agencies also believed the projections are accurate.

After the contract commenced, Silver Oak embarked on a 45-day "diagnostic assessment" to calculate potential savings. Once it was complete in July 2004, Michael Pohlman, the state purchasing chief, invoked a contract provision allowing the state to drop the contract at no fee. The plan at the time was to have state workers implement the new contracting practices, records show.

But that November, then-Administration Secretary Marc Marotta determined that the company should be rehired. The firm was paid $500,000 for work it had already performed.

"As we learned more about other states (using Silver Oak) and every state was realizing great savings, we took a second look at it," Frank-Reece said.

The company has not been a political player in Wisconsin. None of its employees has donated money to Doyle or his Republican opponents, U.S. Rep. Mark Green of Green Bay and Milwaukee County Executive Scott Walker.

A review of state records and other documents also shows:

• Three of the five people on the committee that selected Silver Oak Solutions were political appointees. The three were Frank-Reece; Karen Timberlake, the state employment relations director; and Jan Hamik, who was then the administrative services administrator.

Doyle has said contracting decisions are made by career state employees rather than political appointees. When he canceled the Adelman Travel contract, he barred political appointees from sitting on review committees in the future.

• Silver Oak was purchased by CGI-AMS in September 2005. That firm is responsible for a $27.6 million state computer system to track sales tax collections. Reports have shown the system has never worked properly, leading to counties and other taxing authorities not getting their fair share of the taxes.