

CEDAR RAPIDS COMMUNITY SCHOOL DISTRICT
Purchasing Department
2500 Edgewood Rd NW
Cedar Rapids, Iowa 52405
September 2016

**REQUEST FOR PROPOSAL – Backup and Disaster Recovery
Solutions**

Response to Vendor Questions

September 23, 2016

General Information and Points of Clarifications:

- ***The response deadline has been extended one week to October 10, 2016 at 2:00 pm CDT***
 - *Award of contract date has changed, is now anticipated November, 15, 2016*
 - *A RFP response sheet is included with this document. All vendors are to complete this sheet and return with any proposals offered.*

 - *As identified in RFP, CRCSD is primarily considering the following solution options to address backup and Disaster Recovery needs. The following is further clarification of each option:*
 - *Option 1- In-house solution (Internally Maintained and Managed):*
 - *Backup solution with a local SAN hosted within our current data center. DR would contain a server farm (2) and SAN (as identified in RFP) to be located at an alternate location (such site would have WAN fiber connectivity).*
 - *Option 2- Hybrid Solutions (On-Prem and Hosted):*
 - *Maintain an in-house backup solution for general operations, and utilizing hosted environment for remote backup and access to compute environment for DR purposes.*
 - *Option 3- Fully Hosted:*
 - *Fully hosted Cloud solution to handle backup needs as well as standby compute environment for DR purposes.*

 - *Based on questions received, CRCSD has updated Appendix 1 to provide additional details. CRCSD has also dropped some servers from the list due to recent or planned decommissioning of those servers.*
- The REVISED Appendix 1: Current Resources, Capacities and Recovery Objectives is included with document and completely replaces the Appendix 1 in the RFP.***

Questions received and responses:

1. Would it be possible to get the Operating System for each server?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
2. Could you tell me what the actual storage is on each server?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
3. The RFP references Service Level Agreements under the Fully Hosted sections of both possible solutions but does not define or specify any specific minimums. In the context of this RFP is Service Level Agreement synonymous with Recovery Time Objective (RTO) based on the Priority Level information provided in Appendix 1? Are there any other SLA requirements for these solutions?
CRCS D anticipates every vendor responding with hosting offerings will have proven ability to meet industry appropriate Service Level options for large enterprises. The Recovery Time Objectives provide general guidelines representing District needs. Specific SLAs will be determined based on final solution selected and finalized with selected vendor.
4. Under “On-Going Vendor Requirements” it states that the vendor will provide free technical support. What are the minimal and preferred support models (service tiers – level 1 through 3, resources, hours and SLAs) for each solution?
Vendors must be able to provide on-going technical support associate with the solution provided. For example, standard hardware and software warranty, maintenance support, technical support channels and escalation procedures to address technical questions and troubleshooting. Hosted solutions must provide technical support required to implement, maintain, update and troubleshoot solution.
5. One of the requirements listed is for the vendor to specify the required bandwidth for each fully hosted solution. Are vendors expected/allowed to include network pricing as part of the RFP response? If so, should network equipment also be included or will CRCS D provide the required equipment?
Vendor to provide optimal specifications for bandwidth capacity needed **to effectively utilize hosted environments** (i.e. how much bandwidth is needed between CRCS D and hosted site). The vendor should recommend option(s) for network connections to the host site (such as utilizing existing ISP connections, new connection, etc). If proposing a dedicated or new connection, the Vendor may also offer pricing for that network connection. Such pricing should be identified independent of other costs. The District may opt to contract such service independently.

The vendor is to provide any hardware needed to utilize fully hosted solutions including network equipment. The District will provide network hardware needed in District locations for network transport.

6. How many virtual host and physical servers?
5 Physical Servers (Hosts) which support the servers listed in Appendix 1
7. How many applications such as, Exchange, SQL, Oracle, etc.?
No Exchange or Oracle.
8 SQL Servers, 1 File Maker Pro DB application
8. What is the size of one full backup? i.e. Total front end TB when it comes to backups.
The *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives provides total capacity to be backed up.
9. Are there available 10Gbe ports that the backup solution can use?
Yes, in house we have 10Gb port available.
10. Are the 10Gbe ports SFP ports or RJ45?
10G SFP
11. How many mail servers need to be protected?
None
12. How many mailboxes are there?
None
13. What is the size of the mail datastores?
Zero (None)
14. How many SQL or DB servers?
8 SQL Servers, 1 File Maker Pro DB application
15. How much disk space (GBs) is used by databases?
145 Gb used by databases
16. How many physical servers need to be protected?
None
17. How many GBs are in use on the physical servers?
None
18. How many host servers?
5
19. VMware version (5.5, 6, etc)?
VMWare 6 update 2
20. VMware edition (Standard, Enterprise, Enterprise Plus)?
Enterprise Plus
21. What is the total amount of USED space in thin provisioned disks?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**

22. Do any VMs have direct attached NAS or ISCSI volumes? If so, how many? ISCSI
ISCSI – all VM’s are attached to SAN via ISCSI
23. Do any VMs have Raw Device Mappings? If so, how many?
No (none)
24. How many VMs require file level exclusions?
None
25. How many servers with more than 2 million files?
4 file servers
26. What type of files are on servers 12, 14, 37, and 47? (*Note these are now numbered 11, 12, 30 and 31 in the Revised Appendix 1*) Are they documents, images, video, CAD, DB, etc.? Please specify file type for each.
The servers mostly contain standard file server documents (Microsoft Office applications user files, basic images/pictures, video, and sound files). We also have basic programming and drafting classes so students may have some basic CAD and/or compiled and stored executable files.
27. Around connectivity. Do you have local dark fiber that is no charge to the CR Schools and extends to [REDACTED]? (*Provider address redacted*) If so, is that a solution Cedar Rapids Schools will implement and is not the responsibility of the backup provider?
The District has access to fiber jointly owned by the City of Cedar Rapids, Linn County and CRCSD. The District is willing to leverage that fiber as appropriate to reach a hosted facility. In that event, the vendor would need to have on premise equipment to accept the fiber connection.
28. For High Availability. Is Cedar Rapids Schools looking for a single tool for HA, or are multiple tools acceptable?
Multiple tools are acceptable.
29. For the 45-day retention. In response to the RFP, if a vendor is able to give “best estimate” to meet 45 days of retention (as there has been no onsite analysis) and give a per GB charge for backup storage cost, is that acceptable? Knowing that the storage may increase or decrease.
Yes
30. Does Cedar Rapids schools have any problem with a vendor responding to multiple options of this RFP? Could a vendor respond to both the “dedicated cloud” and “hybrid cloud” solution?
Yes, vendors may respond with multiple solutions. Please clearly differentiate offerings.
31. Does the existing Avamar solution work well but is approaching tech refresh?
It works but has capacity limitations relative to our needs. Hardware is aging and reporting is limited.

32. How much legal hold data typically exists annually and how is it currently handled?
Legal hold data needs vary greatly. If there is little impact on backup system and/or existing capacity, it is held in place; if length of storage or capacity limitations dictate, it may be shifted to external media.
33. For a hybrid solution, what data types must stay on premise and what ones can be handled by a hosted cloud solution?
No restrictions on current data types that would require they stay on-premise.
34. Is there a separate backup LAN?
No
35. Would network upgrades be needed for replication and/or hybrid backup/DR solution?
Internally no. CRCSO current network is sufficient.
36. Is staffing considered sufficiently capable to optimally utilize the backup/DR solution?
Yes
37. Are the Dell R710 Servers, Tegile T3200/ESH35, and the Veeam 10 Socket Licenses currently in production or are you looking to purchase them?
We do not currently have these, they would be purchased in conjunction implementing that solution if awarded.
38. Would you like to consider other alternatives, i.e. CommVault or Microsoft System Center?
For in house solution (internally maintained/ managed) backup we have reviewed solutions and prefer Veeam. We are willing to consider other alternatives for hosted solutions.
39. Is Cedar Rapids Schools willing to accept a proposal for the In-house solution that only includes Dell Servers, Veeam software, and VMware software? We are not a Tegile reseller.
Yes
40. Can we provide a proposal for the Fully Hosted option only?
Yes
41. Please confirm the model numbers of the SAN hardware. RFP document states production is Tegile T3400 and Backup/DR SAN is Tegile T3200.
Current Production is Tegile T3400
Tegile T3200 specs meet needs for an internally maintained/managed DR and Backup
42. Does the production VMware environment utilize a vCenter server?
Yes
43. On how many sites are your production servers located?
1 (One) site
44. If more than one, how are they interconnected and at what speeds?
Not applicable

45. What is your current Internet bandwidth?
We have two ISPs, each providing a 1 GB connection. (2GB total across both ISPs)
46. Does each site have its own Internet bandwidth, or is there a single egress?
Single egress
47. Are there any components in the current backup or DR solution that must be kept? Are there any that can be reused?
No, nothing must be kept; we are not planning to reuse the existing solution at this time.
48. There are four servers in the Priority 1 recovery group.
- Are they currently in a High Availability cluster in VMware?
These are ADFS and NPS servers. They are not in a High Availability cluster, but are currently Network Load Balanced.
 - How are these servers currently replicated to the DR environment?
Currently these servers are not being replicated.
49. What are the roles of the Priority 1 servers?
These are ADFS and NPS servers.
50. What is the type, speed, and stability of your internet circuit(s)?
We have two ISPs, each providing a 1 GB connection. (2GB total across both ISPs)
Both have at least 3-9's reliability
51. How many virtual and physical machines are in your environment?
All Virtual- See REVISED Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. NOTE this replaces Appendix 1 in the RFP.
52. Do you currently use Systems Center or Operations Management Suite?
System Center Configuration Manager but not Systems Center Operations Manager.
53. How many of each of the following Operating systems are in place?
- Windows Server 2008 R2 or newer –
See REVISED Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. NOTE this replaces Appendix 1 in the RFP.
 - Older than server 2008 R2 –
Yes, 2 that are 2003
Upgrade plan?
In process
 - Linux systems –
1 CentOS 7
54. Are you using on-prem Exchange or O365?
Office 365
55. What deficiencies in Veeam or VMware Essentials do you see?
At this time, we do not see any deficiencies for our environment.

56. Do you require encryption at rest?
We currently do not have encryption at rest, but want that ability in any solution proposed.
57. What are the roles of the Priority 2 servers?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
58. What are the roles of the Priority 3 servers?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
59. What are the roles of the Priority 4 servers?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
60. Do you use Veeam to do the replication now?
No
61. What is your backup scheme?
- 45 day retention
 - Nightly fulls?
45 day retention with nightly incremental
 - If yes do these get kept for 45 days?
Yes
 - Weekly fulls?
Currently only doing incremental
 - If yes do these get kept for 45 days?
Not applicable
62. What is the bandwidth in/out of the building (internet pipe)?
2- 1G ISP connections (2 providers, 1G each)
- What is the bandwidth between primary/secondary locations?
District facilities (schools) are connected to core site at 10G
 - What kind of connection is it?
Fiber
 - When is the required fully onboard date?
Target is to be fully operational by end of calendar year
63. Will the backup solution be backing up CRCSD's financial systems?
No, CRCSD's financials systems are hosted elsewhere
64. Is there a complete server listing including:?
- Server OS
 - Hardware (Physical or Virtual) – Note – All Servers are Virtual
 - Server Function or Primary Applications
 - Disk Space Usage (Including Total, Free, Used Space, and system vs data)
 - Database storage info (such as Exchange, SQL, etc.)

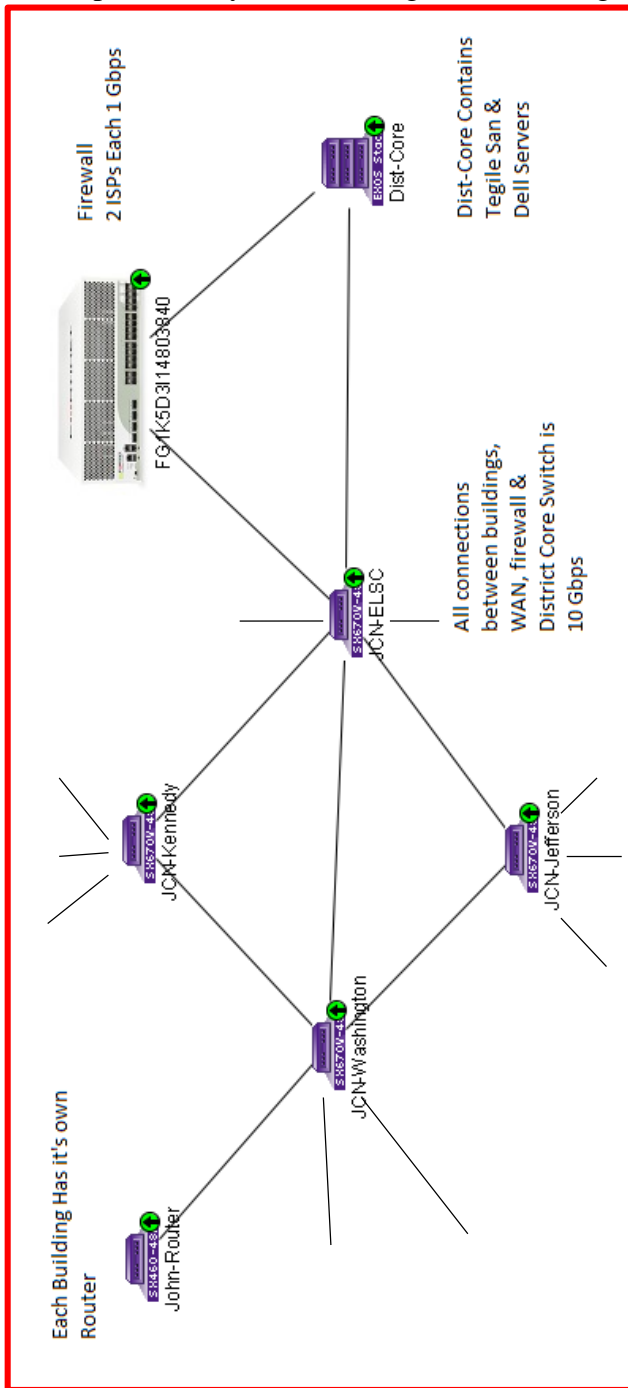
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**

65. Will you allow for an onsite visit for further information?

If an onsite is needed, it will be schedule with selected vendors after reviewing proposals.

Infrastructure

66. Please provide any network diagrams including switching, servers, and storage networks.



67. Please provide any storage infrastructure specifications. Number and type of disks, etc.
Current production SAN Tegile T3400 with ESH25 shelf with 32T RAW that has 100,000 IOPS capacity. Combination of Flash (24) and spinning (32) disks.
68. How is production environment connecting to storage? Fiber or iSCSI? Copper? Fiber?
iSCSi
69. What is the configuration of the production environment to be protected? Number of ESX hosts? Memory + CPU of each host? ESX version? Version of ESX?
Our current production environment consists of:
- 5 Dell Servers R710 VMWare Enterprise Plus 6
 - o 2 Intel Zeon E5-2630 2.4 gig 20m Cache
 - o 256 G Memory

Application

70. What applications do we need to be concerned about? Exchange, SQL, etc.?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
71. What operating systems are involved and require support?
See *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. **NOTE this replaces Appendix 1 in the RFP.**
72. Any OS level clustering?
The following servers are in a Windows cluster for ADFS and WAP
- servers 1 and 5
 - servers 4 and 22
- Server numbers are from the REVISED Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document. NOTE this replaces Appendix 1 in the RFP.*

Support/Monitoring

73. Do you expect or desire any level of managed backup, where day to day monitoring and adds/move/changes is included?
CRCSD anticipates CRCSD Technical staff to have access and daily reporting of system health and activity. We anticipate CRCSD Technical staff to handle most day to day operations and would contact support for advance functionalities or system configuration changes for managed backup solution.
74. How do you anticipate the relationship to work? Reach out to us as necessary or more proactive alerting response?
We anticipate automated alerting of system health and activity, and ability to contact support for advance functionalities or system configuration changes or troubleshooting.
We anticipate 24/7 support availability.

75. Virtual backups can be very invasive. Do you require VMware monitoring? Will there be access to address issues possibly caused by backup/replication processes (vCenter and other infrastructure access)?

We are not sure what is referenced here. We currently have System Monitoring in place.

We have not had issues related to backing up Virtual Center, VMWare data and systems.

76. How would the environment expect to be managed – by customer only or in conjunction with us?

For in-house components, we anticipate CRCSD technical staff will fully manage day to day and general maintenance updates. For hosted solutions, we anticipate CRCSD Technical staff to have ability to handle day to day operations and would contact support for advance functionalities or major system configuration changes. For DR testing or implementation we anticipate close collaboration with vendor.

77. Who would be responsible for the hardware/software vendor support access?

For on premise equipment/solutions, CRCSD technical staff will handle physical access for support. For hosted solution, we anticipate the vendor has proper protocols for handling access to systems.

Disaster Recovery

78. Is there a current Disaster Recovery system in place? If so, please explain.

Not at this time.

79. Disaster Recovery – Do you want an entire disaster recovery plan (services, business requirements, application recovery, networking, etc.?)

Not at this time.

80. Is DR proposed to be an offsite solution or onsite?

Physically offsite from current Data Center. This may be in a hosted facility or a facility of District choosing.

81. Or are you looking for just a DR infrastructure that would allow machines to be brought back online on a as needed basis? Business Continuance? Basically is it an all or nothing failover scenario that needs to be built?

We want DR infrastructure available for both periodic testing of in-development DR plan and procedure, as well as in the event as an actual disaster.

82. How far back do you wish to recover in your DR environment? (which can be different than your retention requirements)

We anticipate using the then-most current replicated environment for DR purposes.

83. What is the network bandwidth available for replication? Is it dedicated to replication traffic only or shared with production?

Currently external bandwidth is 2- 1GB ISP connections. Internally fiber connectivity is available up to 10G.

Bandwidth currently shared with Production.

84. What kind of performance expectations do you have from your DR environment?
For short term DR, we do not need 100% compute capabilities, but more than 70%. For longer term disaster, we would anticipate working with vendors to get system up to 100% of pre-disaster capabilities.
85. Entire site simultaneously?
a. If not entire site, please specify
Each level of requirements is defined by server, see Priority in *REVISED* Appendix 1: Current Resources, Capacities and Recovery Objectives included in this document.
NOTE this replaces Appendix 1 in the RFP.
86. What is the definition of “HA” as used in the RFP? Cold or Hot spare? CDP? Replicated local server?
We have updated the appendix to indicate Priority 1 rather than HA since HA has alternate meanings. For Priority 1 servers, we need services functioning with 15 minutes.

Backups

87. You specify Avamar as the backup, but the appendix lists Veeam. Can you clarify the current environment?
Avamar is the current backup solution. Veeam is the target solution for an in-house backup solution.
88. Is Veeam already installed and running or is the goal to install Veeam for use? Appendix specifications and other parts of document list Veeam as if it is already in-place.
Avamar is the current backup solution. Veeam is the target solution for an in-house backup solution.
89. Is encryption required? At rest? In transit?
We currently do not have encryption, but want that ability in any solution proposed for both at rest and in transit.
90. What is the 50% data reduction estimate based off of? Is the presumption that production storage is deduplicating and compressing LUNs by a factor that translated to around 50% reduction using Veeam/Tegile compression/deduplication? What formula is being used to determine this?
Current production SAN compression/deduplication levels exist at 35%. Changes to configurations will allow more compression but slower response time which for a Backup and DR Systems a higher level of compression is acceptable.
91. Do you have reported backup deltas from daily jobs on current backup solution? Any reports from current backup solution could show what the daily change deltas are for protected systems and help in gauging what backup and replication will be feasible.
No – We currently do not backup everything and the current solution does not provide that reporting specificity.

92. Is the requirement to purchase backup storage now to cover current and annual anticipated growth over the next 5 years or significantly less/more time initially with plans to purchase additional later?

For hosted solutions, we anticipate addressing capacity growth as needed. For in-house solution we anticipate starting with additional capacity built-in to accommodate growth.

93. There is a requirement of proxy servers for use with Veeam backup solution; is there a preference of using virtual server resources for proxy servers over physical?

Virtual

94. If going for physical Veeam proxy server(s), are there enough ports to attach physical Veeam server(s) directly to storage?

Yes, but we prefer virtual servers only

95. What are the specs of physical servers requiring backup? Will they have local attached storage that needs backup or SAN hosted LUNs?

No physical servers need to be backed up. We backup the VMs. No local attached storage.

96. Are there any clusters requiring backup either physical or virtual? i.e. SQL Clusters, Windows Failover Clustering clusters, Oracle Clusters?

Not at this time.

97. Are there any limitations on service account rights for purposes of running backup of systems? i.e. domain admin account to complete application-aware backup of Domain Controllers for item level restores; exchange enterprise admin role account for backup of Exchange Servers for item level restore functionality.

All necessary rights or service accounts to conduct backups will be provided following security best practices.

98. Will backups be required to be encrypted within the backup solution and outside of any SAN-based Encryption?

We currently do not have encryption within the backup solution, but want that ability for limited situations in any solution proposed.

Vaulting/Archiving

99. Please clarify your vaulting expectations. Are you specifying online vaulting – pull back files that are made offline to optimize storage - or are you illustrating the need to be able to archive to second line media? (tape, cloud, etc.).

Vendor may suggest options relative to legal holds depending on offered solutions.

Currently, if there is little impact on backup system and/or existing capacity, we hold in place; if length of storage or capacity limitations dictate, it may be shifted to external media.

100. How often are legal and other backup retention holds needed currently?

Legal hold requests are sporadic and vary greatly.

101. Is the desire for longer retention holds to go to tape, disk, or cloud? If no preference and retention holds are infrequent and unpredictable, a cloud repository might be ideal to keep cost on an as-needed basis.

If there is little impact on backup system and/or existing capacity, it is held in place; if length of storage or capacity limitations dictate, it may be shifted to external media.

Reporting

102. Any reporting or audit requirements?

Standard backup reporting anticipated, including notifications of failures, usages, growth rate.

Currently no legal audit or reporting requirements for systems in this RFP.

103. Any regulation requirements? SOX/HIPA/PCI/etc.?

Currently data and systems covered under this RFP do not fall under these requirements.

We anticipate such needs may occur in the future and want options to add necessary capability.

104. Based on the options listed (In-house, Hybrid, Fully hosted) who would own the equipment?

For in-house components, District would own; for hosted components, vendor to own.

105. Is there a preference as to hosted shared services or dedicated?

Vendor may propose either. Vendor should clearly indicate if proposed hosted solution is shared or dedicated, and also share why that solution is best for the District.

RESPONSE SHEET- Request for Proposal- Backup and Disaster Recovery Solutions

Return this sheet with your response. *If needed due to offering two or more proposals for same item, complete an additional response sheet for alternate option(s).*

Company NAME _____

Provide initial and total 5-year costing information.

Option 1- In house solution as specified	Initial Cost	Total 5 year cost
Backup Environment - Tegile SAN		
Veeam Enterprise Plus for 10 Sockets		
DR Environment – Qty 2 Dell Servers		
DR Environment – Tegile SAN		
DR Environment - 1 VMWare Essentials License		
Option 2- Hybrid Solution	Initial or Per month Cost	Total 5 year cost
Solution Hosting costs		
Recommended Bandwidth Needed to DR Host site		
District-housed components providing as part of proposal:		
List other items required and associated costs to District (if applicable):		
Charge to increase storage capacity at DR Host site (if applicable)	Per GB	
Option 3- Fully Hosted Solution	Initial or Per month Cost	Total 5 year cost
Backup Solution		
DR Solution		
Recommended Bandwidth Needed to Host site		
Charge to increase storage capacity at DR Host site (if applicable)	Per GB	

REVISED Appendix 1: Current Resources, Capacities, and Recovery Objectives

* Priority Levels (Recovery Time Obejctives):								
1 - 15 minutes								
2 - 12 hours								
3 - 24 hours								
4 - recoverable as needed normally 24 - 48 hours								
<i>Usage</i>	<i>Server Number</i>	<i>Type</i>	<i>Priority Level *</i>	<i>CPU</i>	<i>Memory</i>	<i>Total Alllocated Space (GB)</i>	<i>Total USED Drive space(GB)</i>	<i>OS version</i>
ADFS	1	system application	1	2	4	45	20	Win2012
Wireless Authentication	2	system application	1	1	4	95	30	Win2012
Vsphere	3	VM with DB	1	6	12	155	35	Win2012
ADFS	4	system application	1	1	4	45	20	Win2012
ADFS	5	system application	2	2	4	45	23	Win2012
Dirsync Svr	6	system application	2	1	4	94	12	Win2012
Purchasing	7	application	2	2	4	149	95	Win2012
Purchasing	8	application	2	2	4	90	16	Win2012
Purchasing	9	application	2	2	4	245	66	Win2012
Purchasing	10	application	2	2	4	90	12	Win2012
Files and Documents	11	File storage	2	2	4	5,160	4,096	Win2012
Files and Documents	12	File storage	2	1	2	1,792	700	Win2012
Files and Documents	13	File storage	2	2	4	5,765	5,120	Win2012
Door System	14	application DB	2	2	4	100	32	Win2012
Wireless Authentication	15	system application	2	1	4	95	30	Win2012
Print Accounting	16	application	2	2	4	95	30	Win2012
Point of Sale	17	application	2	4	8	85	32	Win2008
SCCM	18	application DB	2	4	12	905	500	Win2012
SQL	19	DB	2	4	10	940	325	Win2008
SQL	20	DB	2	2	4	575	115	Win2003
Time Clock	21	application	2	1	2	45	15	Win2012
ADFS	22	system application	2	1	4	45	35	Win2012
Web Server	23	system application	2	2	4	290	23	Win2012
Web Server	24	system application	2	2	4	90	14	Win2012
Web Server	25	web	2	2	2	180	105	Win2003
GP manager	26	system application	3	1	4	40	12	Win2012
Library Automation	27	system application	3	4	12	355	130	Win2012
Buildings and Grounds	28	applications	3	2	4	100	5	CentOS 7
Variety of Applications	29	applications	3	2	4	435	325	Win2008
Applications and App backup	30	applications and application backup	3	4	8	2,484	1,740	Win2008
Test server for Backup Apps	31	test server for backup	3	2	12	50	27	Win2012
Buildings and Grounds	32	application	3	1	2	85	23	Win2008
Buildings and Grounds	33	application	3	1	2	85	26	Win2008
Buildings and Grounds	34	application	3	1	2	85	18	Win2008
Buildings and Grounds	35	application	3	1	4	95	18	Win2008
Buildings and Grounds	36	application	3	1	4	95	18	Win2008
Buildings and Grounds	37	application	3	1	4	95	20	Win2008
Call Accounting Server	38	application	3	2	4	100	65	Win2008
Technology	39	application	3	4	8	90	28	Win2012
Technology	40	application	3	2	4	90	18	Win2012
Files and Documents	41	File storage	3	1	2	3,072	3,072	Win2012
FileMaker	42	application DB	3	1	4	140	18	Win2012
Buildings and Grounds	43	application	3	2	8		33	Win2012
Technology	44	application	3	2	6	40	14	Win2012
Project Lead the Way	45	application	3	1	2	135	26	Win2008
Networking	46	application	3	1	4	100	32	Win2012
Wireless Analyzer	47	application	3	2	8	500	50	Win2012
Curriculum	48	application	3	4	8	190	110	Win2008

REVISED Appendix 1: Current Resources, Capacities, and Recovery Objectives

<i>Usage</i>	<i>Server Number</i>	<i>Type</i>	<i>Priority Level *</i>	<i>CPU</i>	<i>Memory</i>	<i>Total Allocated Space (GB)</i>	<i>Total USED Drive space(GB)</i>	<i>OS version</i>
Scheduled Task Server	49	application	3	1	4	90	15	Win2012
Transportation	50	application DB	3	1	4	150	90	Win2012
Terminal Server Published Apps	51	application	3	2	4	114	35	Win2012
Software Packaging	52	application DB	3	1	2	90	20	Win2012
Virtual Desktop	53	virtual desktop	3	1	2	50	35	Win8.1
List Serv	54	application	3	2	4	90	14	Win2012
Curriculum web server	55	web	3	4	3	245	190	Win2008
Technology	56	application	4	4	8	90	20	Win2012
DHCP	57	system application	4	1	4	40	12	Win2012
DNS	58	system application	4	1	4	40	13	Win2012
MS Licensing Server	59	system application	4	1	4		14	Win2012
NTP server	60	system application	4	1	4	40	15	Win2012
NTP server	61	system application	4	1	4	40	15	Win2012
Open Manage	62	application	4	2	4	90	18	Win2012
Print Server	63	system application	4	1	4	40	16	Win2012
Document Management	64	application	4	1	4	140	18	Win2012
Application Testing server	65	application	4	1	4	144	14	Win2012
Room Calendars	66	application	4	1	2	60	13	Win2012
Purchasing App Test Server	67	application	4	2	4	145	110	Win2012
Purchasing App Test Server	68	application	4	2	4	100	15	Win2012
Purchasing App SQL Test Server	69	DB	4	2	4	145	28	Win2012
Domain controller	70	system application	NA				12	Win2012
		Total		129	321	27,619	18,061	
* Priority Levels (Recovery Time Oobejctives):								
1 - 15 minutes								
2 - 12 hours								
3 - 24 hours								
4 - recoverable as needed normally 24 - 48 hours								