ADDENDUM No. 1

RFP No. 21-03

STORAGE AREA NETWORK (SAN) REPLACEMENT

Due: February 11, 2021 by 2:00 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum includes ten (10) pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment B - Non-Discrimination Declaration of Compliance**
- **Attachment C - Living Wage Declaration of Compliance**
- **Attachment D - Vendor Conflict of Interest Disclosure Form**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

1) Does the RFP require a replacement SAN or just professional services to implement an existing SAN?
   a. A replacement SAN (either in combination with a replacement backup solution or one that is compatible with Dell EMC Avamar and DataDomain) is needed along with professional services including hardware installation, migration, configuration and knowledge transfer.

2) Does the RFP require the replacement of production storage?
   a. Yes

3) Does the RFP require the replacement of DR storage?
   a. Yes

4) Does the RFP require a backup repository at the primary datacenter?
   a. No

5) Does the RFP require a backup repository at the DR location?
   a. No

6) Does the RFP require replacement of servers (VMware hosts)
   a. No

7) Would a hyper-converged solution be accepted?
   a. Yes

8) Is it possible to obtain an RV tool extraction from the current VMware environment?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

9) Is there a preferred fee schedule format?
   a. No

10) Can you provide the service tags/serial numbers of existing hardware for design and configuration considerations?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

11) Is a cloud repository required?
   a. No

12) Are you open to third party backup cloud repositories or do you want to leverage Azure?
   a. Both options are a possible solution however, please take note that in order for Azure to be accepted, it must be within the government cloud.

13) Is there any IOP information to be shared from the Compellent?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

14) Are you willing to run and share a LiveOptics report?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

15) Can you share a current Compellent pressure report?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

16) If Live Optics or RVTool output is not available can you share the following technical requirements: vCPU, memory, capacity and any other specific specifications?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

17) Is encryption at rest a firm requirement or an option?
   a. Encryption at rest or in transit is a firm requirement if data is transmitted outside the boundary of a physically secure location not owned by the City of Ann Arbor. This scenario occurs between our two facilities. This is per the CJIS security policy section 5.10.1.2.

18) Please further define the "unlimited connectivity" requirement.
   a. If necessary, we would like the ability to access data on the SAN outside of the Vmware environment. For example, CIFS, NFS.... and so on

19) Please further define the "multiple platforms" requirement.
   a. We would like the ability to connect to the SAN with various hardware vendors if necessary. Though we current use Dell hardware for all of our hosts, this may change in the future.

20) It states that the City will use your existing Extreme switches to support this new solution. Is that correct? Want to confirm that new switches are not required.
   a. New switches are NOT a requirement.

21) How many Vmware vSphere licenses does the City own and what versions are they? Are they current under support?
   a. The City currently has all required VMware licenses along with their valid support contracts. As stated in the RFP, the current version that we are running is 6.7 with the hope to upgrade to 7 as soon as possible. We are currently licensed for a single vCenter Server Standard instance, with 22 CPU licenses for vSphere with Operations Management Enterprise Plus.

22) How much storage is required for the Primary Datacenter? Would you like any growth factor included? If so, what amount and how should it be calculated (one time growth, or a percentage year over year).
   a. The RFP stated what our current storage consumption is. The location of this storage depends on the solution being proposed. Future growth is a must and we would work with the vendor in order to calculate the growth percentage based on what the vendor recommends and our abilities to estimate.

23) How much storage is required for the Secondary Datacenter? Would you like any growth factor included? If so, what amount and how should it be calculated (one time growth, or a percentage year over year).
   a. If the solution proposed includes taking advantage of our secondary datacenter then we would work with the vendor to calculate the growth percentage based on what the vendor recommends and our best guess estimate.

24) Do any workloads run in the Secondary Datacenter or is it only a replica of production for disaster recovery purposes?
   a. Only replica at this time.

25) Can you describe the existing or desired failover process for disaster recovery? (Manual or automatic failover).
   a. As of right now, our current DR process would include rebuilding Vmware hosts and restoration from the data copies and/or backup data.

26) Are you currently using compression or deduplication technologies on the storage arrays? If so, what is the current savings multiplier?
   a. Global de-duplication is being used within our backup infrastructure In June of 2020, we were provided with a report on one of our DataDomain systems which indicated a 82.5:1 reduction.

27) Does the scope of the RFP include a new backup/recovery solution? If so, will you be providing additional details?
   a. We do not require a backup/recovery solution in response to this RFP but are willing to consider one. Our existing Avamar/Data Domain solution can be run until 2025.

28) What is your current and/or desired RPO for replication between the Primary and Secondary datacenters?
   a. As close to real time as possible.

29) Will/Should the 50TB of video CIFS data currently stored on Data Domain be stored on the new SAN? If so, will that data also be replicated to the Secondary Datacenter?
   a. This data does not need to be stored on the new SAN . It all depends on what you propose as part of your solution. Ideally, this data would be protected in some way.

30) Can you elaborate the encryption requirements?
   a. Encryption at rest or in transit is a firm requirement if data is transmitted outside the boundary of a physically secure location not owned by the City of Ann Arbor. This scenario occurs between our two facilities. This is per the CJIS security policy section 5.10.1.2.

31) Does data need to be encrypted in flight to/from hosts? For block/file?
   a. Encryption at rest or in transit is a firm requirement if data is transmitted outside the boundary of a physically secure location not owned by the City of Ann Arbor. This scenario occurs between our two facilities. This is per the CJIS security policy section 5.10.1.2.

32) Does data need to be encrypted in flight while replicating? For block/file?
   a. Encryption at rest or in transit is a firm requirement if data is transmitted outside the boundary of a physically secure location not owned by the City of Ann Arbor. This scenario occurs between our two facilities. This is per the CJIS security policy section 5.10.1.2.

33) Are there any non-virtualized servers/hosts that connect to the storage array at either the Primary or Secondary datacenters?
   a. Yes. There is one connected via 10GB iSCSI.

34) What is the type (Fiber channel or IP) and speed of connectivity between the Primary and Secondary datacenters?
   a. 10GB Fiber

35) Could you expand on the requirement for "unlimited connectivity"?
   a. If necessary, we would like the ability to access data on the SAN outside of the Vmware environment. For example, CIFS, NFS.... and so on

36) Are the following requirements related to the storage array or to a potential backup/restore solution: Global de-duplication; various retention schedules; retention management
   a. The requirements that are listed in this question pertain to potential backup/restore solution.

37) How many years of maintenance are you looking for?
   a. 5 years

38) What is the target Recovery Point Objective (RPO) and Recovery Time Objective (RTO) for SAN in the event of a data center outage?
   a. As soon as possible

39) What is the target Recovery Point Objective (RPO) and Recovery Time Objective (RTO) for applications in the event of a data center outage?
   a. As soon as possible

40) Should Datacenter A and Datacenter B act as Active/Active data centers with the ability to take over workloads from each other in a site failure?
   a. This would definitely be a possibility if proposed.

41) Is there production ready compute at the secondary location?
   a. Not at this time.

42) If "No" to question (39) – what is the performance expectation for the secondary site (exactly the same as production, degraded performance, etc)
   a. Exactly the same as production would be ideal but we understand that it isn't always feasible so degraded performance is acceptable.

43) What are the performance requirements of the workloads in each location (expressed in IOPS, throughput, latency, or any other metric available)?
   a. We would expect any solution to meet iSCSI performance standards however, we would hope that any solution proposed would exceed those expectations.

44) What rate of year over year storage growth should be accounted for in the 5 year design? (Expressed as a percentage of total storage footprint or TB Used?
   a. Future growth is a must and we would work with the vendor in order to calculate the growth percentage based on what the vendor recommends and our estimate.

45) In the requirements section (page 10) a reference is made to "L. Unlimited Connectivity" – can you please clarify what functionality is desired by this?
   a. If necessary, we would like the ability to access data on the SAN outside of the Vmware environment. For example, CIFS, NFS.... and so on

46) In the requirements section (page 10) a reference is made to "B. Microsoft Azure for Government Compatibility" – can you please clarify what functionality is desired by this?
   a. If solution proposed is going to interact with the Azure cloud in any way, it must be able to do so via Azure for Government.

47) In the requirements section (page 11) a reference is made to "N.b 50TB CIFS share on DataDomain" – is this 50TB to be migrated to the new storage platform? Is this 50TB of data in addition to the data already present on the Compellent array? Does the 50TB number represent any form of deduplication or compression already, or is this figure before any data reduction technology?
   a. This data does not need to be stored on the new SAN if your solution recommends an alternative. This data is not currently on the Compellent nor does it utilize any form of de-duplication or compression. If the proposal is replacing our Avamar/Data Domain with a new backup/recovery environment, the 50TB CIFS share must have a place to be stored on our SAN or backup environment proposed.

48) In the requirements section (page 11) a reference is made to "AA. Retention Management" – can you please clarify what functionality is desired by this?
   a. Any data protection solution being proposed must allow for various retention schedules. We currently do daily backups with retention for 30 days, 42 days, 1 year, 3 years, and 15 years.

49) In the requirements section (page 11) a reference is made to "DD. Multi-vendor support (Dell and other major manufacturers)" – can you please clarify what is desired by this?
   a. We would like the ability to connect to the SAN with various hardware vendors if necessary. Though we current use Dell hardware for all of our hosts, this may change in the future.

50) Are there any systems that will need to be migrated that are not virtualized (i.e. bare metal Windows / Linux hosts) or is all data migration in scope virtualized on VMware - (with the exception of the 50TB of data on the data domain)?
   a. Yes, for a single host mentioned in the answer to question 33.

51) Can you please provide a set of backup (not primary storage) data retention requirements (i.e. 14 daily recovery points, 4 weekly recovery points, etc.)?
   a. 30 days, 42 days, 1 year, 3 year and 15 year. Each of these are daily recovery points.

52) Can you please provide a RVTools output from the VMware infrastructure to provide details about the current environment along with Dell Storage Manager output as described below to enable accurate scoping of primary storage, data migration and of a backup solution?
   a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

53) What are the current tiering Profiles?
   a. Tier1 = Raid 10, Tier2 = Raid 5-9, Tier3 = Raid 6-10

54) How much of each media currently in the tiers?
   a. Tier1 = 24 SSD, Tier2 = 24 SSD and Tier3 = 84 7.2K SAS Drives

55) What is the required/aniticipated performance from the tiers in terms of:
   o   IOPS
   o   Latency
   o   Throughput
   a. We would expect any solution to meet industry standards however, we would hope that any solution proposed would exceed those expectations.

56) How much replacement capacity is required? Is the existing capacity number just to hit SAN performance?
   a. We are looking for a proposal to provide us capacity for our current environment and provide room for growth. We will work further with the vendor in finalizing the proposal.

57) What is the annual growth rate?
   a. Future growth is a must and we would work with the vendor in order to calculate the growth percentage based on what the vendor recommends and our best guess estimate

58) How is data currently being encrypted? Is there encryption over the wire now?
   a. Our Avamar protected backups are replicated to the secondary datacenter via the built-in encryption that Avamar offers.

59) What is the latency between sites?
   a. Average 4ms.

60) Do you want an identical solution at both sites?
   a. Not necessary. It all depends on the solution being purposed.

61) What is meant by "retention Management"
   a. Any data protection solution being proposed must allow for various retention schedules.

62) What are the expected features for vRealize Operations?
   a. The ability to interact and report on both the SAN and the data protection environment.

63) Can you provide more detail as to the CJIS and FIPS compliance?
   a. Please reference FBI CJIS Security Policy section 5.10.1.2.

64) How much capacity currently on DD 9300 and how much actual data
   a. This is not easily answered as the backup environment is shared with another agency at the moment. All of this data is de-duplicated on a global scale.

65) What is the data reduction rate?
   a. In June of 2020, we were provided with a report on one of our DataDomain systems which indicated a 82.5:1 reduction.

66) Do you want to continue to use Avamar, replace it or eliminate it?
   a. All options will be considered.

67) Can the backup data run on the same storage array or do you want it on a separate array?
   a. Though it doesn't logically make sense to store the data on the same array, we will review any proposed solution that may propose this configuration.

68) What are the RTO and RPO requirements for the workload in the Primary Datacenter?
   a. Though there is no written requirements, we strive to recover as fast and as real time as possible.

69) Do you require synchronous or asynchronous mirroring of the data between data centers?
    a. Not required but may be part of any solution proposed.

70) How much bandwidth is available between data centers?
    a. 10GB Fiber

71) Do the datacenters use the same subnets (stretched Layer 2)?
    a. Yes

72) Would it be possible to get a copy of an RVTools report from each vCenter?
    a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.

73) Do you know how much of the 150TB that's currently allocated is actually being consumed?
    a. Out of 340TB available, 150TB is being used.

74) How much growth should be factored in on top of the 150TB currently allocated?
    a. We would work with the vendor in order to calculate the growth percentage based on what the vendor recommends and our best guess estimate

75) Do any of your VMs use RDMs?
    a. No

76) Are any of your VMs part of a Microsoft Failover Cluster?
    a. No

77) Would you consider using VMware VVols with the new storage array?
    a. Yes, it can be considered.

78) What version of VMware vSphere are you currently using (Standard or Enterprise Plus)?
    a. Standard

79) Are you currently using or have licenses for VMware Site Recovery Manager or Zerto? If so please provide details.
    a. Neither product currently.

80) Are all servers virtualized or do you have any standalone Windows/Linux servers that utilize the SAN?
    a. Yes. There is one connected via 10GB iSCSI

81) Can you provide a breakdown of storage consumption per VM (if we can't get an RVTools report) along with the backup retention policy for each VM or cluster?
    a. We will provide this to a vendor once we determine that the solution being proposed warrants further details as this information should not be necessary in order to provide an initial proposal.
    b. 30 days, 42 days, 1 year, 3 year and 15 year. Each of these are daily recovery points

82) Do you have any information on the data change rates for Production clusters?
    a. No

83) How much bandwidth do you have available to Azure?
    a. Primary Internet connection is 500Mbps burstable, shared with another government agency. It will likely be increased to 1Gbps burstable shortly.

84) Besides the 50TB CIFS share with video files, do you have any other data that does not dedupe or compress well (pre-encrypted data, large image files, other media files, etc.)
    a. Yes. Additional videos, photos and GIS imagery.

85) How much downtime can be incurred during the migration of the 50TB CIFS share from the Data Domain?
    a. This data does not have a high uptime requirement. We can negotiate a downtime with the end users.

86) Do your 10Gb switches uses SFP+ or 10GBase-T ports?
    a. SFP+

87) Please clarify what "Unlimited Connectivity" means under Section L. of the Requirements on page 10.
    a. If necessary, we would like the ability to access data on the SAN outside of the Vmware environment. For example, CIFS, NFS.... and so on

88) Do you need two copies of your backups? One in production and one in DR?
    a. Though 2 copies are not necessary, it's best practices to have multiple copies.

89) Are the two datacenters linked in a way that shares layer 2 networking (client and SAN networks) across the two sites?
    a. Yes

90) How much data are you backing up and what retention policies do you have?
    a. There are only a few test VM servers that are not being backed up so its safe to assume that we backup everything using the following retention schedules: 30 days, 42 days, 1 year, 3 year and 15 year. Each of these are daily recovery points.

91) What is your growth rate for backup data?
    a. This is not easily answered as the backup environment is shared with another agency at the moment. All of this data is de-duplicated on a global scale.

92) What is the change rate of your backup data?
    a. This is not easily answered as the backup environment is shared with another agency at the moment. All of this data is de-duplicated on a global scale.

93) Is there anything outside your VMware environment you backup?
    a. Yes, we have a variety of physical Windows servers.

94) Does the 50 TB CIFS's share on Data Domain need to be backed up?
    a. No but a second copy would be appreciated.

95) What is the growth rate of this CIFS share?
    a. Roughly 1GB daily

96) Does the City of Ann Arbor have a preference on the pricing model (Capex vs Opex)?
    a. No

97) Would the City entertain a variable usage model?
    a. Yes

98) Data Center connections: Does the city plan to increase above 10 gig interfaces?
    a. Not currently.

99) Please confirm if the City is looking to replace their Dell Network Switches as part of this RFP
    a. New switches are NOT a requirement.

100)   Please confirm the term of the contract. We are reading 60 mth.
    a. 5 years

101)   Is the second datacenter a replica of the first site or does it also contain any additional unique systems or data?
   a.   The primary purpose for both the secondary SAN and DataDomain is for replica purposes. These systems were built slightly smaller as we do not replicate all data.

102)   Are there servers at the second datacenter, and if so are they active or used mainly for failover?
   a.   There are no servers at the secondary datacenter that are part of this project.

103)   In the Requirements section O. "Global de-duplication". What are its specific technical features that you plan to use, and what are the operational or business outcomes of using this feature? Is it a mandatory or optional capability?
   a.   Though this can be considered optional, we benefit greatly from this functionality because without it, our storage footprint would significantly higher.

104)   In the Requirements section M. "Multiple platforms", what does the term "Multiple platforms" refer to?
   a.   We would like the ability to connect to the SAN with various hardware vendors if necessary. Though we current use Dell hardware for all of our hosts, this may change in the future.

105)   Will the city require part time or full time hands-on support on site at the data centers, or is the expectation that the solution provider's support team be available 7x24x365 for questions and hands-on support using remote access with the ability to come on site when required?
   a.   Support shall be 7x24x365 for questions and hands-on support using remote access with the ability to come on site when required

106)   Can you explain what you mean by multi-vendor support under the requirements section (DD.)?
   a.   We would like the ability to connect to the SAN with various hardware vendors if necessary. Though we current use Dell hardware for all of our hosts, this may change in the future.

107)   Do you provide file services from this storage array? If so are they native CIFS Shares?
   a.   No

108)   Regarding Appendix A: Sample Professional Services Agreement
   •   Is this the final agreement that will be used once this RFP is awarded
   •   If so, Can we add terms related to the procurement of the SAN equipment?
   For example:
   •   Warranty T&Cs
   •   Transfer of Title and Risk of Loss, when does that occur?
   •   Point of contact for issue resolution
   a.   The provisions provided in Appendix A are general principals which apply to all contractors/service providers to the City of Ann Arbor. Offerors are welcome to suggest additional terms and conditions for consideration.

109)   Will questions submitted by all potential bidders be shared with the rest of the potential bidders?
   a.   Yes

110)   Based on todays' environment will it be acceptable to submit only electronic copies of this RFP vs having to hand deliver them?
   a.   No, the requirements specified in the RFP must be adhered to.

111)   Do you want the storage proposal and backup proposal to be separate from each other?
   a.   No

112)   Do you want the services scoped as fixed price and fixed deliverable or hourly?
   a.   Fixed price.

113)   Is there a specific contract vehicle you are going to utilize for this engagement?
   a. See Appendix A – Sample Professional Services Agreement but offerors are welcome to suggest additional terms and conditions for consideration.

114)   Is there a minimum number of past project and client references?
   a. No

115)   In light of COVID-19 restrictions, will the City accept electronic submission of the proposal?
   a. No

116)   In light of COVID-19 restrictions, will the City accept digital signatures?
   a. Yes

117)   Is the Fee Proposal included in the 30 sheet (60 page) count?
   a. No

118)   Would the City be willing to accept electronic submissions in leu of the required hard copies asked in the RFP due to the Covid-19 Pandemic?
   a. No