

## MEMORANDUM

**TO:** Board of Trustees

**THROUGH:** Steven J. Pinkerton  
General Manager

**FROM:** Gerald W. Eick, CPA CGMA  
Director of Finance

**SUBJECT:** Review, discuss, and possibly authorize Purchase Order to CDW-G to acquire NuTanix Virtual Cluster Server Hardware and Operating System Licenses and 5 years of manufacturer support to replace current end of life systems. – 2019/2020 Capital Improvement Project; Fund: General Division: Administration; Project # 1213CO1505; Vendor: CDW-G in the amount of \$192,836.60

**Strategic Plan:** Long Range Principle #4 – Service  
Long Range Principle #5 – Assets and Infrastructure

**DATE:** July 10, 2019

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### **I. RECOMMENDATION**

Staff is requesting authorization of a Purchase Order to CDW-G in the amount of \$192,836.60 to acquire and install two NuTanix Hyper Converged Virtual Cluster Host and Host Operating System Licenses for the replacement of the current end of life server hardware and Host Operating Systems under Capital Improvement Project # 1213CO1505.

### **II. BACKGROUND**

The District's Virtual Server infrastructure operates 67 Virtual Servers that provide digital services to the District. The Virtual servers are divided between two data centers, one at the Administration Building and one at the Public Works Building. The current server hardware otherwise known as the Virtual Machine Cluster for the Administration and Public Works data centers will reach the end of their 5-year usable life expectancy in October. Staff has determined through industry research and peer reviews that a NuTanix Hyper Converged system is the best hardware to obtain as a replacement system for the current split Host and Storage Area Network setup. Hyper-Convergence technology allows for the consolidation of

server hardware reducing the risk of failure, increasing overall performance, and simplifying the management and maintenance. The systems that are proposed will have a usable life expectancy of 5 years with the manufacturer's software support and hardware warranty for the full 5-year life paid for at the time of purchase. The proposed systems will also continue with the District's standard of redundancy allowing hardware to be immediately available for either data center. The proposed systems are designed to allow the District's digital services to expand as needed with enough performance and storage capacity to meet the 5-year usable life.

In September 2014 the District made a substantial investment in a new server and IT infrastructure configuration. The redundant data centers and the use of split hosts and storage units were a key feature. We also began a plan of replacement over cycles of 3 to 7 years, knowing both technology and needs would change.

### **III. BID RESULTS**

This item is not subject to competitive bidding within the meaning of Nevada Revised Statute (NRS) 332.115 as described in subsections (g) Hardware and associated peripheral equipment and devices for computers and (h) software for computers. The District did seek two quotes from vendors who offer government pricing. Both vendors offer the same equipment and support services as a reseller. The support service comes directly from the manufacturer, and is a critical part of the purchase, to assure support through the intended life of the equipment. The two quotes were for \$192,836,60 by CDW-G and \$197,221.76 by SHI.

### **IV. FINANCIAL IMPACT AND BUDGET**

This purchase affects multiple elements of the District's Budget and Capital Plan. After Budget adoption in May 2019, the IT Staff efforts identified that technology and configuration changes since 2014 opened the opportunity for the server project, planned for the fall of 2019, to be more integrated as a system and more efficient for hardware management. That shift largely relates to the storage units which we expected to be a separate project in 2022.

By making the purchase of this configuration of server data centers we can move forward with best practices and eliminate the need for the separate Net App Storage. There is a real possibility these units would reach capacity before 2022 at our current rate of utilization.

The Budget and Capital Plans projects for these items included 2019-2020 Project 1213CO1505 IT Infrastructure which has \$132,800 for the server replacement and the same project in 2021-2020 has \$92,000 for the Net App replacement. (The Data Sheet for those years of this project is attached.). Also under the former configuration there was an annual support service of \$18,000 per year. It is eliminated for all five years because it is a component of the purchase of the new system. Obviously there is both an operational advantage for a more efficient system, and over several years a considerable financial savings to the consolidated system. The District staff believes we can find ways to absorb the additional costs. This will be a capital outlay of the General Fund. Staff will find a way to remain under the total budgeted expenditures through timing or other savings, but allow this project to proceed. During the process of obtaining the quotes we found the pricing to be driven by placing the order by July 31. A delay in this project is not expected to make it better.

## **V. ALTERNATIVES**

The District could choose not to make these improvements at this time. To do so would leave the District dependent on equipment that is past its expected usable life. Further actions to obtain new generation software would be limited in either implementation or functionality by lack of available resources of the current system. The current system was the standard implementation five years ago, with the rate that technology evolves and the districts ever-evolving digital footprint the current system is struggling to maintain the operational expectations of the services they provide.

## **VI. BUSINESS IMPACT**

This is not a “rule” within the meaning of Nevada Revised Statutes, Chapter 237, and does not require a Business Impact Statement.

## **VII. COMMENTS**

District IT Staff may purchase assistance with training or the migration of the current servers to the new system. This would not be with CDW-G if this choice is made. IT staff are capable, but the migration may require a concentration of action that does not fit their schedule. The potential cost for the purchased training and migration is \$10,000 to \$15,000.



## Project Summary

<b>Project Number:</b>	1213CO1505
<b>Title:</b>	IT Infrastructure
<b>Project Type:</b>	G - Equipment & Software
<b>Division:</b>	13 - Information Services
<b>Budget Year:</b>	2020
<b>Finance Option:</b>	
<b>Asset Type:</b>	CO - Computer Equipment
<b>Active:</b>	Yes

<b>Project Description</b>			
During 2014-15 the District replaced substantially all of its networks servers, switches and ancillary support equipment. Various service lives will be experienced that are likely to extend beyond the technological useful life of this equipment. Only time will tell which will dictate a replacement, based on end of life or technological incompatibility. For the purposes of this project, timing will be set by expected service life.			
<b>Project Internal Staff</b>			
IT staff will conduct annual evaluations of the condition of equipment and the relationship of operating software and platforms to compatibility and effectiveness for how the systems are used and operated.			
<b>Project Justification</b>			
The District has committed to building and maintaining a redundant private cloud operation. Reliable equipment utilizing current technology and operating systems is a key feature to having IT networks that supports all operations 24/7/365.			
<b>Forecast</b>			
<b>Budget Year</b>	<b>Total Expense</b>	<b>Total Revenue</b>	<b>Difference</b>
2020			
Admin (2) Support Sever for the Cluster	29,900	0	29,900
Admin Host Server for the Cluster	17,250	0	17,250
License SQL Server and Related CALS	50,000	0	50,000
PW (2) Support Server for the CLuster	18,400	0	18,400
PW Host Server for the Cluster	17,250	0	17,250
Year Total	132,800	0	132,800
2021			
21 POE Swtiches	70,500	0	70,500
Admin Backbone Switch	14,600	0	14,600
PW Backbone Switch	6,700	0	6,700
Year Total	91,800	0	91,800
2022			
Admin Storage Net App	46,000	0	46,000
PW Storage Net App	46,000	0	46,000
Year Total	92,000	0	92,000