



CITY of NOVI CITY COUNCIL

**Agenda Item C
February 6, 2017**

SUBJECT: Approval to award VMware Virtual Desktop Infrastructure (VDI) and Virtual Storage Area Network (vSAN) Project to Dell Technologies in the amount of \$79,592.75 using a competitively bid contract through the Midwestern Higher Education Compact (MHEC).

SUBMITTING DEPARTMENT: Information Technology

CITY MANAGER APPROVAL:

EXPENDITURE REQUIRED	\$79,592.75
AMOUNT BUDGETED	\$80,000
LINE ITEM NUMBER	101-205.00-986.000

BACKGROUND INFORMATION:

The City of Novi's Information Technology Department leverages the benefits of a virtual server environment to provide technology solutions to individual department operations that positively impact the citizens of the City. A virtual server architecture allows the Information Technology Department the flexibility to expand and contract our server and storage environment as the City's operational requirements require. The purchase of a VMware VDI and vSAN will establish a scalable, secure, cost effective foundation for the Information Technology Department to provide user desktop connectivity to staff outside of the normal office environment. VDI will allow specific users to instantly work from an alternate location. This addresses the needs of field based staff, access requests outside of the normal work day and the need to tackle work life balance. A VDI desktop can work from any device (tablet, laptop, PC, smartphone, etc.) without any pre-planning, which is great from both a platform and client horsepower standpoint. This not only extends the life of City issued equipment but, allows staff to use their home PC/laptop should they not have access to the City issued device.

RECOMMENDED ACTION: Approval to award VMware Virtual Desktop Infrastructure (VDI) and Virtual Storage Area Network (vSAN) Project to Dell Technologies in the amount of \$79,592.75 using a competitively bid contract through the Midwestern Higher Education Compact (MHEC).

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Burke				
Council Member Casey				

	1	2	Y	N
Council Member Markham				
Council Member Mutch				
Council Member Wrobel				



VMware VDI Virtual SAN Project
MHEC Contract 09C701.02 for Dell Computers
(Please refer to the above contract # on all Purchase Orders)

Prepared by:



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October 10, 2016

Access Interactive Company Overview

Access Interactive provides technology solutions, services and support to business, educational and government organizations since 1985. Our business focus is helping our Clients make the most of technology investments. Over the last 28 years Access has experienced significant growth to establish itself as a \$35 million organization proudly retaining over 65 full-time employees. We pride ourselves on being large enough to be extremely competitive and small enough to pay personal attention to our customers. We have an unwavering commitment to providing the best solutions, service and support to our customers.

Our highly-skilled technical services group includes over 30 full-time technicians including VMware, Microsoft, Cisco and Dell certified system engineers. Our technicians are available to you for projects ranging from on-site break/fix services to full-scale WAN/LAN integration, remote access, IP telephony and more.

Access Interactive sales consultants are technically astute and have an average over 20 years of industry experience. They are ready to apply their knowledge and technical expertise to recommending the best products and solutions and to providing efficient project management.

It is our focused mission to implement the best products, service and support in the industry to our clients.

Strategic Directive

Access Interactive's initial, primary focus in City of Novi's upcoming project is an in depth review of the organizational environment. Gathering momentum from the initial meetings; we're confident Access can offer credible short term recommendations / solutions in order to create a strong long lasting relationship. Our relationships with our clients grow based on strong commitment and Access Interactive's willingness to go the extra mile. Access Interactive prides itself on communication, documentation and thirst for industry knowledge. These traits, coupled with cross trained technical aptitude, contribute greatly to our overall success. We look forward to working with an organization that has a firm grasp on their field, and knowledge of how their ever changing IT infrastructure can elevate them to new levels of achievement.

City of Novi Organizational Needs

- Risk Planning and Mitigation
- Upgrade existing Infrastructure and Applications
- Prepare New Infrastructure for Growth or New Applications
- Faster and Granular Snapshots
- Enhance Performance
- Support for Legacy product integration
- Central and Expansive I.T. Administration Management Dashboard
- Latency resistant Design
- Simplified Infrastructure
- Optimize support and integration

Solution Synopsis

The proposed application performance solution provides a scalable, secure, cost effective foundation for City of Novi. There are several components that work together to provide a network that has excellent performance, is easy to manage, provides fault tolerance and secure data backups.

These components are:

- Dell Virtual SAN Servers for VDI
- Dell Fabric Switches
- VMware Horizons Licensing
- Microsoft VDA Licensing
- TrendMicro Licensing
- Professional Services and Knowledge Transfer



Dell PowerEdge R630 – all SSD, ~1.8TB Usable and 256Gb RAM per server	
Description	Quantity
PowerEdge R630 Server (210-ACXS)	3
PowerEdge R630 Motherboard MLK (329-BCZI)	3
Thank you for choosing Dell ProSupport Plus. For tech support, visit http://www.dell.com/contactdell (951-2015)	3
Dell Hardware Limited Warranty Plus On Site Service (976-7728)	3
ProSupport Plus: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch, 3 Year (976-7782)	3
ProSupport Plus: 7x24 HW/SW Tech Support and Assistance, 3 Year (976-7794)	3
PowerEdge R630 Shipping- 8 Drive Chassis (340-AKPS)	3
QLogic 57810 Dual Port 10Gb Direct Attach/SFP+ Low Profile Network Adapter (540-BBBJ)	3
QLogic 57800 2x10Gb DA/SFP+ + 2x1Gb BT Network Daughter Card (540-BBBY)	3
iDRAC8 Enterprise, integrated Dell Remote Access Controller, Enterprise (385-BBHO)	3
OpenManage Essentials, Server Configuration Management (634-BBWU)	3
Chassis with up to 8, 2.5" Hard Drives, 3 PCIe Slots (321-BBKL)	3
Bezel up to 8 Drive Chassis (325-BBII)	3
Performance BIOS Settings (384-BBBL)	3
Unconfigured RAID for H330/H730/H730P (1-24 HDDs or SSDs) (780-BBJD)	3
PERC H730 Integrated RAID Controller, 1GB Cache (405-AAEG)	3
Intel Xeon E5-2683 v4 2.1GHz,40M Cache,9.60GT/s QPI,Turbo,HT,16C/32T (120W) Max Mem 2400MHz (338-BJDF)	3
Intel Xeon E5-2683 v4 2.1GHz,40M Cache,9.60GT/s QPI,Turbo,HT,16C/32T (120W) Max Mem 2400MHz (338-BJDD)	3
32GB RDIMM, 2400MT/s, Dual Rank, x4 Data Width (370-ACNS)	24

2400MT/s RDIMMs (370-ACPH)	3
Performance Optimized (370-AAIP)	3
480GB Solid State Drive SAS Read Intensive MLC 12Gbps 2.5in Hot-plug Drive, PX04SR (400-AMBW)	12
200GB Solid State Drive SAS Write Intensive MLC 12Gbps 2.5in Hot-plug Drive, PX04SH (400-AMEY)	6
No Trusted Platform Module (461-AADZ)	3
Electronic System Documentation and OpenManage DVD Kit, PowerEdge R630 (343-BBDK)	3
DVD ROM SATA Internal (429-AAQM)	3
ReadyRails Sliding Rails With Cable Management Arm (770-BBBL)	3
Dual, Hot-plug, Redundant Power Supply (1+1), 750W (450-ADWS)	3
C13 to C14, PDU Style, 12 AMP, 6.5 Feet (2m) Power Cord, North America (492-BBDI)	6
Internal Dual SD Module (330-BBCL)	3
Redundant SD Cards Enabled (385-BBCF)	3
16GB SD Card For IDSDM (385-BBJL)	3
16GB SD Card For IDSDM (385-BBJL)	3
No Operating System (619-ABVR)	3
No Media Required (421-5736)	3
VMware ESXi 6.0 U2 Embedded Image on Flash Media (634-BDXD)	3
DIMM Blanks for System with 2 Processors (370-ABWE)	3
120W Heatsink for PowerEdge R630 (412-AAEE)	3
120W Heatsink for PowerEdge R630 (412-AAEE)	3

Dell PowerEdge R630 with 3-Year Support

Qty. 3 @ \$ 16,351.91 each \$ 49,055.73

Dell Networking N4032F

N-Series is a family of energy-efficient and cost-effective 1GbE and 10GbE switches designed for modernizing and scaling network infrastructure. The Dell Networking N4000 Series offers high-availability GbE switches for Layer 3 access or aggregation, providing easy-to-manage solutions that: Use MLAG for multipath loop-free redundancy without spanning tree to enable full-bandwidth utilization and high availability

Promote greater interoperability through interfaces with Cisco's Rapid Per VLAN Spanning Tree (RPVST+)² and devices using Cisco Discovery Protocol (CDP)
Offer a more flexible choice in your network by uniting products with the latest open standard protocols



Include advanced IPv4 and IPv6 Layer 3 routing, security and scalability features

Plug-and-play configuration with Dell EqualLogic iSCSI storage arrays with one-command iSCSI setup that alleviates multiple-step configuration and potential configuration errors

GROUP: 1 QUANTITY: 1	
Description	Quantity
Dell Networking N4032F, 24x 10GbE SFP+ Ports, 1x Modular bay, 2x AC PSU, IO to PSU Airflow (210-ABVT)	1
Thank you for choosing Dell ProSupport Plus. For tech support, visit http://www.dell.com/contactdell (951-2015)	1
Dell Hardware Limited Warranty Initial Year (966-6411)	1
Dell Hardware Limited Warranty Extended Year(s) (966-6413)	1
Lifetime Limited Hardware Warranty with Basic Hardware Service Next Business Day Parts Only on Your Network Switch (966-6417)	1
Software Support,NW,90 Day (966-6423)	1
ProSupport Plus: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch, Initial Year (966-6606)	1
ProSupport Plus: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch, 2 Year Extended (966-6610)	1
ProSupport Plus: 7x24 HW/SW Tech Support and Assistance, 3Year (966-6664)	1
Documentation Kit, N4000 Series Switch (340-AGNR)	1
Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US (450-AASX)	1
Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US (450-AASX)	1
Dell Networking, Cable, SFP+ to SFP+, 10GbE, Copper Twinax Direct Attach Cable, 3 Meter (470-AAGP)	6

Dell N4032F with 3-Year Support

\$ 11,188.42

Miscellaneous

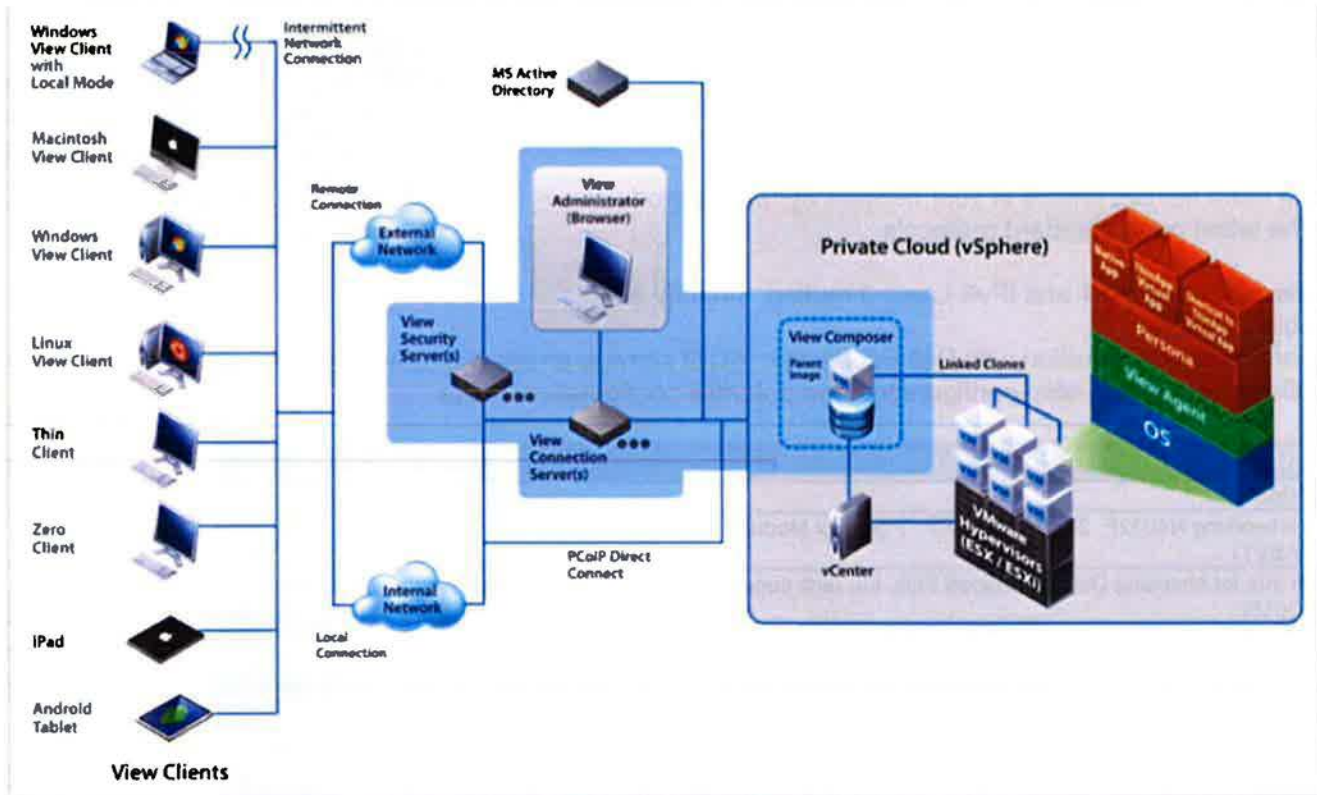
4xSFP+ Transceivers, 2x45ft MM patch cables, 35ft corrugated conduit

\$ 825.00

VMware Licensing - Horizon Advanced Edition - Includes all VMware Virtual SAN Licenses

Deliver virtual or hosted desktops and applications through a single platform with VMware Horizon 7

Provide end users access to all of their virtual desktops, applications and online services through a single digital workspace in a few simple clicks.



What Horizon Does

Delivers Desktops and Applications through a Single Platform

Transform static desktops into secure, digital workspaces that can be delivered on demand. Provision virtual or remote desktops and applications through a single VDI and app virtualization platform to streamline management and easily entitle end users.

Secures Data and Simplifies Compliance

Consolidate control, delivery and protection of end user compute resources with policies that dynamically adapt to the end user's computing environment. Leverage virtual networking to simply and dynamically protect data center infrastructure and workloads.

Supports a Rich, Adaptive User Experience

Provide a consistently great end user experience for knowledge workers, mobile workers and even 3D developers across devices, locations, media and connections.

Simplifies Desktop and Application Management

Take advantage of a modern desktop and application delivery architecture that delivers desktops in seconds, reduces storage and operational costs with truly stateless desktops and ensure painless application packaging and installation.

Dramatically Improves ROI

Dynamically allocate resources with virtual storage, virtual compute and virtual networking to simplify management and drive down costs. Reduce day-to-day operations costs with a single platform that allows you to extend virtualization from the data center to your devices.

VMware Virtual SAN

VMware Virtual SAN is a radically simple, enterprise-class shared storage solution for hyper-converged infrastructure optimized for today's all-flash performance.

What Virtual SAN Delivers

Radically Simple Storage

Make your job easier by simplifying storage provisioning and management for vSphere. Deploy storage with just a few mouse clicks from the vSphere Web Client and enjoy native integration with the VMware stack. Virtual machine-centric storage policies automate storage services levels on a per-VM basis.

Advanced Availability and Management

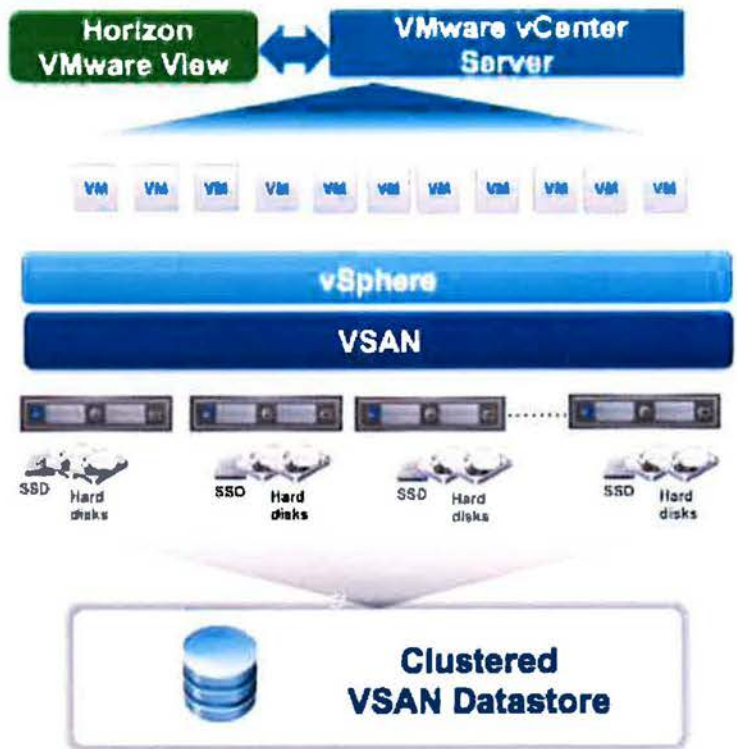
Customers of all industries and sizes trust Virtual SAN to run their business-critical workloads, from key business applications to thousands of virtual desktops. Virtual SAN ensures that data is never lost if a disk, host, network or rack fails and can even tolerate entire site failures with synchronous replication and stretched clusters.

50% Lower TCO

Deploy on inexpensive industry-standard server components to remove large, upfront investments. Eliminate siloed, purpose-built hardware and automate management of storage service levels through VM-centric policies. Further improve TCO with storage efficiency features like deduplication and enhanced automation capabilities.

Exceptional Performance

Built on an optimized I/O data path in the hypervisor and designed for flash speeds, Virtual SAN delivers much better performance than a virtual appliance or external device. Experience up to 100,000 IOPs per host with all-flash and scale up to 64 hosts per cluster—a perfect match for virtual desktops, remote IT and business critical applications.



VMware Horizons Licensing

VMWARE HORIZON 7 ADV EDITION 10PK CCU	Qty. 3 @ \$ 3,858.83	\$ 11,576.48
VMWARE PROD SUP HORIZON 7 ADV 10PK CCU 1YR	Qty. 3 @ \$ 1,058.83	\$ 3,176.48

Microsoft VDA Licensing

Microsoft requires a Virtual Desktop Access (VDA) license for each device that will be using a Windows virtual desktop. This is an annual fee in order to use Windows in a virtual environment. A license is needed per device (thin client, ipad, etc.)

Microsoft Windows Virtual Desktop Access - Subscription license (1 Year) - 1 device - MOLP: Open Value	Qty. 30 @ \$ 88.46	\$ 2,653.74
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TrendMicro Licensing

Deep Security - Network Security - per Non-Server System (Kiosk/POS/VDI)	Qty. 30 @ \$ 37.23	\$ 1,116.77
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Design points for discussion

- City of Novi provides Battery Backup that can accommodate this solution
- We assume Rack Space is available. Racks quoted upon request.
- Patch cords provided by customer
- Requires low end server to house logs and vSAN witness, isolating this is a best practice. Typically use a legacy server.

PROFESSIONAL SERVICES:

Scope assumes someone from City of Novi assists with the project. Hours subject to change depending on exact project scope. The following is an estimate based on similar projects.

- Project plan and scheduling
- Equipment prep/software firmware updates
- Physical deployment of equipment
- Equipment integration/Virtual SAN integration
- Fabric switch integration
- Virtual SAN and volume provisioning
- VMware Horizons configuration
- System documentation and visio's
- Performance tuning
- Knowledge transfer and optimization
- Project management

TOTAL: 80 hours

Senior LAN Technician – Hours 80 (INCLUDED)

PROJECT COSTS:

EQUIPMENT: \$ 79,592.75
MI SALES TAX: \$ EXEMPT
SUBTOTAL: \$ 79,592.75
SERVICES: \$ (included)
SHIPPING: \$ NA

TOTAL: \$ 79,592.75

Quote Valid for 30-Days. Prices Subject to Change with Notice Depending on Current Market Conditions. Shipping charges not included.
Terms: 50% Upon Acceptance, 25% Upon Delivery, Remainder Net 30. 25% Restocking Fee Applied to Project Costs for Returned Merchandise. UPS not included.

Authorized Signature: _____ Date: _____

Printed Name: _____ Purchase Order No: _____