Enterprise Data Network Aggregation

Briefing Date: Mar 24 2020
Funding Source: 195.1090.08630.1003
Originating Department: Information Technology
Prepared by: Alice Sweet,
Recommended by: Stanley Victrum, Chief Information Officer (CIO)

BACKGROUND INFORMATION:
As part of the County IT plan to increase the resiliency of the County Data Network and as briefed to the County IT Executive Governance Committee on March 3, 2020, the County Information Technology (IT) Office is requesting to purchase four (4) Cisco 9500 IP Transit switches and four Cisco (4) Aggregation Services Router (ASR) firewalls to best support the increase in network traffic between Dallas County facilities, data centers and the Internet. If approved, the rollout of this equipment will enable consolidation of WAN circuits at the County facilities, thereby improving network performance and eliminating single points of failure. It will also permit the segmentation of the County Elections data network from the rest of the County enterprise network, which is expected to enhance the cybersecurity for the Elections IT infrastructure and enhance the County IT Office's ability to have a separate maintenance schedule for the County Elections data network than that for the rest of the County enterprise Data Network.

The increase in network traffic and workloads has caused significant slowdowns during times of heavy use (i.e., high-profile court cases, live-streaming of the Commissioners Court Meetings, etc.). This increased network traffic has also accentuated the need for a re-design of the original data network architecture. The aggregation links that carry most Dallas County traffic to the data centers are located in the George Allen Courts and the County HHS buildings. This current data network design creates points of failure when data network traffic volume is high. It also makes the County data network connections in these buildings vulnerable to power outages and other environmental factors at these locations.

OPERATIONAL IMPACT:
By replacing the older equipment with newer equipment capable of higher speeds, the County can redesign the data network circuits between buildings, eliminating choke points that occur due to the original network design. In light of this, it is becoming increasing difficult to support the current and projected data network traffic patterns by just two aggregation circuits at the George Allen Courts and the County HHS buildings. Instead of simply upgrading those circuits in place, the County IT Office, if approved by the Commissioners Court, will add circuits at other facilities with direct ties into the County data center. This is expected to relieve the burden on the current data network current design while providing for a more robust and resilient data network infrastructure. Once the new design is in place, if a single building circuit does fail, only that building would be affected while other buildings could bypass the failure based on the new data network design.
FINANCIAL IMPACT:
The total cost to obtain the aforementioned systems is $317,906.48. The solution includes hardware, software subscription, licensing and support. The initial software subscription is for a 3-year term.

The Cisco switches and routers can be obtained from Presidio Networked Solutions Group, LLC using the State of Texas DIR Contract # DIR-TSO-4167. Funding for the equipment is available in the Major Technology Fund - "Computer Hardware <5K" Account (195.1090.08293.1003).

PROJECT SCHEDULE:
Pending the Commissioners Court approval of these additional assets and their delivery for the County IT Office's deployment, the County IT Office plans to have these assets installed with the new design by July 31, 2020.

ADMINISTRATIVE PLAN COMPLIANCE:
This request is consistent with the County Administrative Plan Vision #1 – "Dallas County is operationally a model governmental entity" as well as being in line with the County IT FY2020-2024 Strategic Plan Emphasis Area Section #2-E.

RECOMMENDATION:
That the Commissioners Court approve the purchase of four (4) Cisco 9500 IP Transit switches and four (4) Cisco Aggregation Services Router (ASR) firewalls from Presidio Networked Solutions Group, LLC using the State of Texas DIR Contract # DIR-TSO-4167 at a cost of $317,906.48 with funding from the Major Technology Fund - "Computer Hardware <5K" Account (195.1090.08293.1003).

MOTION:
On a motion made by TBD, and seconded by TBD, the following order will be voted on by the Commissioners Court of Dallas County, State of Texas:

Be it resolved and ordered that the Dallas County Commissioners Court does hereby approve the purchase of four (4) Cisco 9500 IP Transit switches and four (4) Cisco Aggregation Services Router (ASR) firewalls from Presidio Networked Solutions Group, LLC using the State of Texas DIR Contract # DIR-TSO-4167 at a cost of $317,906.48 with funding from the Major Technology Fund - "Computer Hardware <5K" Account (195.1090.08293.1003).

ATTACHMENTS:
None