

## LGFCU Excellence in Innovation Award Project Evaluation

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| <b>Project ID</b>           | GG-9   |
| <b>Title of Program</b>     | Data Center Upgrade Phase One  |
| <b>Program Category</b>     | General Government   |
| <b>Submission Date</b>      | 5/31/2017 10:26:05 AM  |
| <b>County</b>               | Durham   |
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| <b>Supervisor</b>           | Les Hamashima  |
| <b>Implementation Date</b>  | 11/29/2016   |
| <b>FLSA Designation</b>     | Exempt   |
| <b>Project Team Members</b> | John Myatt, Assistant Director of Information Technology<br>Joel Bonestell, Information Technology Manager - Network<br>Seth Price, Senior Network Engineer<br>Keith Clark, Network Engineer<br>Bob Malik, Network Administrator |

### **Description of Productivity Improvement**

Durham County Information Services & Technology has upgraded its data center network with Cisco's Application Centric Infrastructure (ACI). This is the first step in a long-range plan to create an automated and efficient application-centric data center. The completion of phase one included the migration of all data center services to the new ACI network. The ACI network is designed to provide greater visibility into the network fabric and the applications that run on it. This ensures all applications and services run at peak performance, improving security and scalability, while decreasing employee time on maintenance and support and lowering energy consumption.

### **Description of why this project was initiated**

Prior to the upgrade, 80% of the infrastructure team's time was spent on maintaining the network and only 20% on new projects, or improving services and innovation. Durham County had also implemented a strategic plan across the organization with a focus on a subprogram called, "Managing

for Results"②. Goals for the Information Services & Technology department include, improved data security, business continuity and disaster recovery to ensure the availability of services, applications and data, enhanced development and implementation of new services and applications, continue to replace older technology with "green technology" to decrease environmental impact, lower energy costs, and reduce operational costs.

This upgrade allows administrators to deploy complex applications and security policies in a fully automated manner. It also provides detailed information about latency, packet drops, and traffic paths that is extremely useful for a wide range of troubleshooting and debugging tasks, allowing staff to quickly identify the source of a problem for quicker resolution. It also brings together our physical and virtual networking for an end-to-end solution and an environment that does not need to be configured device by device; the result is very simple administration without the need to compromise performance, scalability, or flexibility. The new environment gives increased overall security with granular control over application and device communications across the network.

**Quantifiable results (sustainability, cost savings, cost avoidance and/or a higher level of service).**

**Indication of what resources were used and what was done with any accrued time savings**

Our new environment is allowing application developer requirements to be transparently mapped to network hardware, accelerating our application deployment and allowing a more efficient, higher level of service. Also, automating previously time-consuming daily tasks has enabled Durham County's new data center to support a "DevOps"② environment and reverse staff's workload, reducing network and data center maintenance from 80%, to only around 20% of their days. The energy savings recognized by phase one of this upgrade has reduced data center energy consumption by 33%. Overall, this improvement has increased security, performance, and scalability, while providing savings in employee hours and energy consumption.

**Other descriptive information**

Durham County has been recognized nationally for this initiative by several technical publications including, Government Technology, TechTarget, and Infotech Lead. In addition, Network Manager, Joel Bonestell and Senior Network Engineer Seth Price, were invited and presented at two keynote sessions during the 2016 Gartner Data Center, Infrastructure & Operations Management Conference. Durham County is one of the first organizations in the world to have utilized Cisco's ACI technology to this extent. Cisco has promoted Durham County and this initiative through a video called Durham County - A Connected Digital County, [https://youtu.be/a\\_MVvXxMhlo](https://youtu.be/a_MVvXxMhlo)