



Introduction

The Center for Technology in Government at the University at Albany (CTG UAlbany) plays a leadership role with NYS Local Government Information Technology Directors Association (NYSLGITDA) in that CTG UAlbany serves as an Advisor to the organization. NYSLGITDA is a statewide organization dedicated to assisting local governments in the use of information technology. Counties, towns, villages, and educational institutions across New York State engage to promote education, communication, research, and cooperative projects. CTG UAlbany fosters information sharing and capability development through facilitation, connection among state and local networks, and curation of applied research to areas of modernization, cybersecurity, digital transformation, disaster recovery, records management, citizen services, data sharing, intergovernmental information sharing, workforce development, and innovation. As part of this role, CTG UAlbany also collects and summarizes data from NYSLGITDA members for the purposes of assisting the association in communicating their collective challenges and priorities to wider audiences.

Document Purpose

This document summarizes the data gathered at the NYSLGITDA Fall Conference in Syracuse, NY on October 6, 2021. It is meant to serve as a snapshot of challenges and priorities from the members that attended the conference and participated in the data collection. It is not meant be a comprehensive account of all efforts carried out by local government IT leaders in NYS.

Methodology and Participation

The data for this document was designed, collected, and summarized by CTG UAlbany's Meghan Cook, program director. A paper survey was handed out to individual NYSLGITDA members for Questions 1-6. For Question 7 (see questions below) NYSLGITDA members discussed collectively as small groups and then reported out their collective responses.

Local Governments at the Fall 2021 Conference That Participated in the Data Collection

Albany County, Allegany County, City of Auburn, Broome County, Cattaraugus County, Cayuga County, Chautauqua County, Chenango County, Cortland County, City of Cortland, Chemung County, Digital Towpath Cooperative, Dutchess County, Erie County, Fulton County, Genesee County, Town of Guilderland, Herkimer County, Town Of Ithaca, Livingston County, Lewis County, Madison County, Monroe County, Montgomery County, Orange County, Town of Orchard Park, Orleans County, Schenectady County, Tompkins County, Town of Tonawanda, Wayne County, Westchester County, Town of Wheatfield, Wyoming County, Suffolk County, Sullivan County, Steuben County, City of Syracuse, Tioga County, Ulster County, Town of Vestal, Yates County.





Questions

- 1. Please describe what has been the most challenging to the County IT Department over the last 18 months?
- 2. Do you think leaders' and employees' understanding of IT has changed over the past 18 months and; if so how?
- 3. How do you think cybersecurity in your county has changed since pre-COVID?
- 4. What will be your department's biggest area of attention over the next year?
- 5. What single IT investment do you think would bring the most value to the county?
- 6. How much ARPA money is your county getting? How much is earmarked for IT and/or Cybersecurity? What will you spend it on?
- 7. What are the positive and negative effects of the pandemic on County IT departments?

Summary of Responses

QUESTION # 1: Please describe what has been most challenging to your County IT Department over the last 18 months (essentially from lockdown to now)?

Remote Work. The majority of respondents agreed that one of the main challenges to their county's IT department has been the transition to working remotely. The following presents some of the challenges associated with remote work:

- General Transition. This includes the overall decision making and working across the
 departments to collectively make decisions (who, what, where, and when) about remote
 working. Not all employees were identified as essential but then classifications changed.
- Funding. Identifying funds to support the acquisition of hardware. Obtaining equipment for remote working became difficult due to budgetary constraints. Procurement delays and resource allocation to support employees was also challenging for county IT departments.
- Support. Determining how to support 20+ different departments across the government in carrying out their work with access to specific applications. There were a range of connectivity and working scenarios so there had to be staff there to trouble shoot almost 24/7.
- Technology Setup and Tracking. Identification, procurement, imaging, set up of all hardware (ie. Laptop, phone), software and network needed to support all county work. Once deployed all technology needed to be tracked for inventory purposes.





- End user education. With remote working and the shift to virtual meetings and engagements, many employees needed more support in the form of education. Education and awareness in how to use the tools and how to set up workstations was required with some employees needing more information help than others.
- Cybersecurity. Cybersecurity measures were increased and the need for secure VPNs and MFA's
 became greater to ensure the county's workforce worked with secure connectivity. Remote
 working requires additional training for employees when it comes to cybersecurity.

Emerging and Shifting Priorities. Many comments were associated with the challenge of their IT department in keeping up with changing requirements and initiatives.

- Meeting Needs on Last Minute Requests. During COVID, the needs were constantly changing and
 many times leaders didn't know what the new need would be and from what department. So
 there were last minute requests placed that required IT leaders to jump in and address those.
 Some examples of this type of work includes setting up all hardware and software for contract
 tracing, food banks, COVID pods, virtual meetings, call centers, etc.
- Getting Back to Existing Projects. When COVID hit, IT departments were at the beginning and in
 the middle of some pretty big projects that had to be put in the back burner. Those projects
 were not less important than the new ones but because of the COVID related efforts, there were
 not enough resources to get everything done.

Staffing. There were comments on the nature of how it was very hard to get everything done due to the staffing challenges.

- Not Enough Staff. Many local government IT leaders described the quick increase and rate of
 work compared to the number of staff they had to carry out this work. For many local
 governments, there were vacancies before the pandemic and this gap became more pronounced
 as the work continued.
- Too Much Work for the Available Staff. With remote work, the types of tasks carried out by the IT department was increased, this included but not limited to identity and access management (keeping track of people/accounts and their access), asset inventorying and management (imaging and configuration of new and loaned devices) and setting up new network infrastructure for COVID related activities.

Culture and Teamwork. There were comments about how remote work is changing the overall culture:

Diminishing Sense of Teamwork. Even though some sectors have worked with a remote working
format for several years and have mastered a way to establish and maintain teamwork, many of
the local governments in NYS were new to this way of working. In moving to remote, people
acted less as a team and more as individuals. It took time for everyone to learn how to work in
this new way and do it together.





Higher Levels of Stress. Levels of stress permeated throughout the governments for those trying
to learn how to set up and work with new technologies and those who were trying to help them.
With the new and changing priorities, in addition to the already large set of responsibilities, local
government IT staff had to deal with extremely high levels of stress from everyone – including
leaders to front line employees and members of their own department.

QUESTION # 2. Do you think leaders' and employees' understanding of IT has changed over the last 18 months and what actions show that it has changed?

YES. Over two thirds of the comments were "Yes" related and fell into the following categories:

- General Recognition and Appreciation. With the move to carry out many of the government
 operations and services in a remote way, this required everyone to rely heavily on their IT staff
 and vendors. For the non-technical leaders this meant that they had to completely rely on the
 direction, guidance, and support of IT staff. Through this process, many realized how much IT is
 embedded into every function and how a few IT staff serve an entire local government. This
 insight prompted them to be more patient and appreciative of the role IT leaders play in local
 government.
- Appreciation Translates into Budget Support. With the increased recognition and support this
 resulted in the leadership spending more money for IT to support employees and government
 functions. It also resulted in some local governments allocating more money in their IT
 department budgets for the following couple of years. For those who were just not able to
 increase their IT budgets, they were able to at least keep it consistent, when other departments
 were experiencing cuts.
- IT Included in Decision Making. It is historically the case that IT is not always brought into the early stages of modernization efforts because the early discussions are thought to be just focused on business of government and not needing IT input. With the quick shift of moving some employees to working remotely and setting up others to appointment-only engagements, IT leaders were involved in early and cross-departmental discussions where others could see that they had both a birds eye view of functions across the government and in depth knowledge how processes are carried out within each department. It became clearer to both leaders and employees that the IT department should be involved in all early conversations as they are a critical player in carrying out government operations and services.





NO. About one third of the comments were "No" related and fell into the following categories:

- IT Staff Continue to Be Overworked with Little Recognition. While there may be an understanding of IT, there is no realization of how much is on their plate. With all the new responsibilities in remote work and virtual legislative and public meetings the IT staff must still continue the regular IT and cybersecurity responsibilities in order to the keep the government running. The IT staff is overworked and their list just keeps getting longer. If there was a real appreciation, then there would be a budget allocation for more staff.
- After Remote Work Things Went Back Without Change. While there was some change in understanding the role that IT departments and staff play in carrying out government operations and services, it quickly went away after staff returned to the office. It is as if the shift never happened and everything returned to the way it was before.

QUESTION # 3. How do you think cybersecurity (attention, funding policies, etc.) has changed in your local government since pre-COVID? Are things the same? Are things different and how?

The responses are categorized with the most comments in the first category and then descending in order:

- Technical Footprint Expanded Requiring More Cyber Attention. With a remote workforce, virtual public meetings, and new projects (to support COVID related activities), IT professionals spent a considerable amount of time standing up and configuring hardware, software, and expanding their overall technical infrastructure. But the increase in devices connected to the network also increased the perimeter of what needs protection. Therefore, each government's scale and scope of cybersecurity needs (technical, organizational, management, policy) increased and as such, detection and training had to increase as well. The technical environment is now more diverse and expansive.
- Leadership Attention and Funding for Cybersecurity. When funding is increased (or at least stays the same and is not cut) for cybersecurity, it can mean that the local leadership is paying more attention and understands the growing need. This could have been due to the shift to remote work but several counties stated it is also due to the new cyber regulation from the NYS Board of Elections. The regulation requires technical, management, and policy measures in place which prompted countywide discussions and actions. In response to the increased attention, a very small number of governments were able to hire staff, some were able to invest in more robust training, others increased services in endpoint protection. For those that do not have available





resources for additional funding, it meant, at least, their budgets were not cut like other departments.

- Increased Awareness and Compliance (mostly) of Cyber Hygiene Protocols. It may have been that because there was a public health crisis that forced many employees to work remotely, there was a burst of attention and compliance around cyber protocols. Possibly the use of new hardware or the use of existing hardware in a new location prompted the focus on more employees asking about how to make sure they have a secure connection and are also adhering to password policies. In addition, the phishing training was met with less resistance than any other time in the past.
- Cybersecurity is Still a Challenge, Like It Was Before. While a large amount of comments pointed
 to cybersecurity getting more attention by local leaders, there were also some local
 governments that stated that the shift to remote work just revealed the holes that already
 existed and that their leaders didn't understand the criticality of continued cyber investments.
- Creation and Enforcement of Polices. Many local governments realized they did not have critical
 policies in place when the pandemic hit and even when most pivoted to carry out government
 operations in this new way, some also worked to begin to draft those policies. Some policies
 include but are not limited to work from home, email, password, and access control. Attention
 to the need for cyber policies has increased.

QUESTION # 4. What will be the IT department's biggest area of attention over the next year?

The following presents the responses grouped into categories. It is important to note that many responses could be placed in multiple categories but one was selected for this summary document.

Cybersecurity Initiatives. Cybersecurity efforts made up the largest number of responses. Specific efforts include:

- Assessing overall local government cyber risk and identifying what risk mitigation is achievable (and fundable) over the next year.
- Installation of multi factor authentication (MFA) and overall network access controls.
- Increased user education and awareness.
- Development and adoption of more stringent policies.
- Meeting NYS BOE cyber regulations and beginning network segmentation.
- Maintaining current cyber controls.





- Assessing cyber insurance options.
- Identity management solution implementation.
- Investments in disaster recovery measures.

Modernization and Upgrades. Modernization responses made up second largest number of responses. Specific efforts include:

- Equipment refresh.
- Migration to new financial software.
- Implementation of 0365.
- Refresh of technical infrastructure including but not limited to switches and firewalls.
- DSS Transition.

Cloud Specific Projects. While many of the responses on cloud specific efforts could have been placed with the modernization category, it seemed important to break them out due to the number of responses that named cloud specific initiatives. Those responses include:

- Migrating to cloud based services and solutions.
- Moving existing applications to cloud.
- Investigating cloud based storage solutions.
- Moving to cloud security.

Remote Work Reinforcement. While some of the responses could have fallen into other categories, reinforcing the remote work infrastructure came through as important because of the responses that specifically mentioned those efforts. Those include:

- Creating flexibility within the technical environment to work from anywhere (remote work is not going away).
- Exploration into workflow automation that can support a fully remote workforce.
- Continued inventory of hardware, software, access management to prepare for the next remote working shift.

Staffing. There were several responses that focus on staffing, those include:

- Rebuilding department after retirements.
- Developing justification for cyber staff.
- Revisiting job requirements for open positions that cannot be filled.

Broadband and Fiber Initiatives. There were several responses that focus on broadband, those include:

- Exploration of dark fiber.
- Support broadband expansion for law enforcement.





QUESTION # 5. What single IT investment do you think would bring the most value to your local government? Don't consider if it is do-able, just what investment would have the most value to your government if it were carried out?

The following presents the responses grouped into categories. It is important to note that many responses could be placed in multiple categories but one was selected for the purpose of this document.

Cybersecurity Investments to Manage Cyber Risk

- Implementation of multi factor authentication with zero trust permissions as a template.
- Explore and secure a 24/7 managed security service provider.
- Reinforce all secure access measures for remote workforce.
- Cybersecurity detection for all endpoints.
- Improved and dedicated user education.
- Establishing more strict IT governance so security is considered before all procurements.
- Cybersecurity tops everything.
- New everything designed from the start for security.
- Implementing MFA.
- Top-down identity management tool with built in automation.

Building In House Cybersecurity Expertise and a Team

- Hiring a cybersecurity team.
- Hiring a CISO.
- Building cybersecurity expertise in current IT staff.

Modernization, Upgrades, and Migration from Legacy Systems

- Modernization of legacy systems (including AS 400) and aging infrastructure.
- Modernize communication systems (telephone).
- Networking upgrades.
- Infrastructure upgrades.
- Migration to new retirement system.

Disaster Recovery and Redundancy Initiatives

- Establishing and implementing all DR site functions.
- Stand up offsite redundant servers.
- Migrate all storage to data center or to the cloud.
- Set up an additional offsite data backup that is only connected to the internet for a very short period each day.





Increase Staff, Pay, and Education in Information Technology Department

- Increase the staff to support the current and growing work this includes but not limited to network engineers, help desk, developer, business analyst, and policy staff.
- Require that all new funding for technology also come with funding for IT staff.
- Increase pay so that current vacancies can be competitive.
- Provide paid education for IT staff for cross training.

Digitization and Records Management

- Review, purge and organize dated and current records.
- Scan all paper records into enterprise content management system.
- Establish digital records management requirements and policies.

Build Data Capabilities

- Build data collection and management capabilities in the IT department.
- Build general data collection, use and sharing understanding throughout local government.
- Champion 1-2 projects where we use our own data to inform investments.

Broadband and Fiber

- Explore and plan for fiber throughout the jurisdiction.
- Explore options to increase our bandwidth within the jurisdiction.

Community focus

• Explore efforts that support the community and resident needs (i.e. public assistance, child health and wellbeing, economic development).

QUESTION # 6. How much ARPA money is your local government getting? How much is earmarked for IT and/or Cybersecurity? What will you spend it on?

Twenty nine governments responded to this question. It was noted by several IT leaders, that all amounts are approximations and should not be considered official. Also, that in many cases, final decisions had not been made so some of these are estimations. It is also important to note that not all IT leaders were invited to participate in the decision making for the use of these funds within their local government and therefore did not have information to share.





Identifier	Approximate Total ARPA for Local Governments	Approximate IT/Cyber Funding	What Will the IT/Cyber Portion Be Spent On?
Local Gov 1	85,000,000	250,000- 500,000	End point protection, vendor management solutions, and PC refresh
Local Gov 2	9,200,000	500,000	Server updates and switch replacements
Local Gov 3	18,000,000	1,200,000	Backup solutions, infrastructure upgrades(switches, hardware), MFA, and Office 365
Local Gov 4	12,800,000	1,075,000	New SAN, core switches, closet switches
Local Gov 5	11,000,000	900,000	Switch refresh, VM refresh, and financial software
Local Gov 6	9,247,000	500,000	IT infrastructure, server refresh, and DR/redundant services
Local Gov 7	8,000,000	250,000	Switches, wifi and programs
Local Gov 8	87,000,000	1,600,000	Nothing identified
Local Gov 9	50,000,000	1,500,000	Cloud PBT, 10GB infrastructure, wireless infrastructure, immutable backups, airgaps for cybersecurity, new positions, and digitizing records management
Local Gov 10	75,000,000	3,7000,000 - 8,000,000	Technology modernization and additional projects TBD
Local Gov 11	9,200,000	300,000 - 500,000	Server refresh, backup tech, security remediation
Local Gov 12	9,000,000	700,000	Network equipment, policy development, and backup solutions
Local Gov 13	20,000,000	100,000	MFA
Local Gov 14	1,900,000	43,000	Security cameras
Local Gov 15	1,800,000	80,000	Board room technology for hybrid meetings, firewall upgrades
Local Gov 16	123,000,000	750,00	MS 0365 and cybersecurity investments

Identifier	Approximate Total ARPA for Local Gov	Approximate IT/Cyber Funding	What Will the Funds Be Spent On?
Local Gov 17	10,000,000	0	Sewer infrastructure
Local Gov 18	Do not know	0	No response
Local Gov 19	3,500,000	0	911 dispatch center, EMS expansion, HVAC system, county project and surveillance cameras
Local Gov 20	16,000,000	0	Broadband Project
Local Gov 21	14,400,000	0	Road pavement and County College investments
Local Gov 22	12,200,000	0	EOC projects, remote work support, and new positions
Local Gov 23	57,000,000	0	No response
Local Gov 24	9,000,000	0	No response
Local Gov 25	35,000,000	0	Constituent needs and mental health projects





Identifier	Approximate Total ARPA for Local Gov	Approximate IT/Cyber Funding	What Will the Funds Be Spent On?
Local Gov 26	7,200,000	\$0	Broadband-fiber ring completion, new physical infrastructure, and county development
Local Gov 27	20,000,000	Request for IT/Cyber funds is not yet approved	IT/Cyber funds use – no responseAll other funds - public improvement- social/community projects, and economic development
Local Gov 28	5,500,000	0	Community projects (focus on county residents) and broadband expansion (1 million)
Local Gov 29	59,200,000	Request for IT/Cyber funds is not yet approved (43 K)	If IT/Cyber funded it would be secure cloud applications

QUESTION # 7. What do you think are the long term positive and negative effects of the pandemic on local government IT Departments?

Positive Effects

Appreciation and Understanding of the Role IT Plays in Local Government

- Elevated focus and attention of IT.
- Instilled more confidence in IT.
- Strengthening of IT-department relationships (and empathy).
- Appreciation for IT services.
- Learned more about IT and IT staff.
- Enhanced understanding of what IT does and how it supports the entire local government.
- Higher visibility for IT staff.
- Increase in developed relationships with IT staff from all employees across local government.

Potential and Actual Funding Increases for IT and Cyber

- A higher potential for increased funding for IT since there is a greater understanding.
- Actual emergency funding for IT initiatives to support local government through the pandemic.
- Funding for efforts through the CARES Act.
- Because local government leaders were involved in the budgeting for the short term investments during COVID, they now have a better understanding of what it costs both in terms of technology but also staff, to carry out IT initiatives.
- COVID funding covered several IT efforts to support pandemic related activities.

Accelerated Technology Adoption Among Local Government Employees

• Remote work pushed the use of unused technology.





- Remote work pushed employees to understand more holistically the technology environment and how to operate within it.
- Moved to a more cutting edge communication platform.
- Stood up and trained many non-technical employees and legislators on video conference and virtual meeting technologies.

Greater Collaboration Among Departments

- Crisis required more frequent communication among leaders and department heads which has continued.
- More cooperation between all departments, relationships at every level were established and strengthened.
- Greater understanding of what each department does, therefore increased appreciation and cooperation.
- Loosening of restraints because of increased trusted relationships and greater understanding.

Relaxed Laws and Regulations

- When the NYS Office of Mental Health relaxed HIPPA regulations (telehealth) and the Governor's Office relaxed the open meeting laws, it allowed local governments to shift to virtual and remote and still be able to carry out the functions of government. Without these changes it would have been too difficult.
- Informally, within many local governments, required procedures for procurement were relaxed because of the crisis.
- The laws, regulations, and rules may change in the future to be more agile for the changing nature of how and when local government operations and services are carried out.

Remote Work as a Model That Works

- Remote work is now accepted and recognized as a model that works throughout the local government.
- Showed that remote work is possible and for some positions, are more productive working in this way.
- A more mobile workforce is a more agile local government that can meet the needs of the constituents.

Infrastructure Investments Will Also Serve Long Term Needs

- Funding for infrastructure investments were necessary but now are in place for long term.
- All IT investments in short term provide long term value.
- Upgrade for internet services throughout local government.

Greater Citizen Adoption of eGovernment Services

• Less onsite traffic and increased digital interaction.





- Service portals utilized.
- Enhanced citizen services.

Appreciation for Planning and Practicing Continuity of Operations

- Emphasis of continuity of operations.
- Ability to enforce COOP plans and procedures.

Increased Awareness of Cybersecurity

- Heightened cybersecurity awareness among everyone (even those who have not previously engaged).
- Enforcement of security policy by leadership and compliance (mostly) by staff

Uncovered Gaps in Skills and Capabilities Across Local Government

- Identification of the gaps that existed within the local government and efforts to fill those gaps were made including project management skills needed in a range of roles throughout the local government.
- Communication skills were needed in addition to the staff in place, -those capabilities were identified and addressed and now it can meet long term goals.

Cooperation Across Entities and Jurisdictions

Increased in both informal and formal shared services between towns, schools, and cities.

Relationship and Support from Vendors

• Relationships with vendors were tested and most were strengthened, coming together to address critical needs – this will serve well in the long term.

Negative Effects

Short Term IT Responsibilities Will Become Long Term Without Adequate Resources To Support

- Oversight of COVID pods were stood up quickly and now are considered easily done.
- Remote work requires additional work for IT leaders and an uptick in normal work.
- IT needed to pivot quickly and address needs and now short term (and unplanned) projects continue.
- Sudden need for out of norm systems with no lead time.
- Proving that remote access works just creates more work for IT staff because some employees
 want to continue working in this way even when there is no public health crisis. If one employee
 does it, then others do and this can be an unnecessary burden on IT staff.
- Developing processes/SOP with minimal time notice.
- All planned and scheduled projects deferred until later time.
- End users will need continued training in new and emerging technologies, this will mean IT staff will have to continue the level of support.





- IT staff will have to continue to educate all non-technical leaders on items such as public records implications of having virtual meetings.
- Many virtual public meetings are still requiring IT leaders be present, this is in addition to the regular workload. Many COVID related responsibilities are continuing.

Long Term Effects of IT Staff Exhaustion and Turnover

- Loss of staff due to burnout.
- Inability to hire during the pandemic and inability to back fill positions newly vacant.
- Clearly understaffed for all the work that must be completed.
- Shorthanded IT departments and growing list of needs across local government.
- Restricted against recruiting new staff.
- Inability to increase salaries to retain new staff even with new responsibilities.
- Inconsistent levels of capability among staff led to uneven workloads and resentment.
- Little recognition of increased work by local government leadership led to widespread dissatisfaction.
- High rate of turnover in almost all IT positions.
- Little time for training and development.

General Budget and Funding Constraints

- Reduced budgets throughout local government means more difficult investment choices in IT.
- Unanticipated costs associated with working remotely and COVID related activities.
- Mobility and agility in work locations has associated expenditures that no one planned on.
- Not enough resources to adequately support work from home.
- Reduction in staff and loss of revenue will have long term budget effects within the jurisdiction.

Continued and New Cybersecurity Challenges

- New cybersecurity concerns resulting from new technology and end users connecting to the network in new ways and locations.
- A rise in cybersecurity incidents across the state just because of COVID.
- Continued vulnerabilities from remote working environment sometimes personal devices and home networks.

Overall Culture and Morale Has Changed

- Morale shifted when there was a clear distinction between those identified as being able to work from home and those who could not. This caused a rift between employees as well as departments
- Remote work can make collegiality among employees more difficult and some remote work can reduce the overall interaction an employee has with other people. This makes it challenging to maintain a teamwork culture.





Lack of Broadband and Little Funding to Close the Divide

• The pandemic exposed the areas of the jurisdiction that had little to weak broadband access. This has not yet been remedied and there must be funding to fix this or we will encounter the same challenges again.

Supply Chain Implications

• Some projects stalled because of supply chain problems that do not seem to be remedied

FOR MORE INFORMATION

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