Information Technology Department

Mission

To provide the city with a telecommunications infrastructure that meets current and future technology needs and to provide accurate and timely information systems and technical support to all city departments and agencies and ultimately to its customers, the residents of Newton.

The responsibilities of the Information Technology Department have burst into a level of importance far beyond what anyone could have anticipated when we last restructured the department under the previous administration. Municipal security, city-wide fiber, state of the art phone systems, new financial systems, new website, remote access during the Covid crisis and an expectation of availability of all resources 24x7 as well as an IT support person availability should anything go awry have conspired to lead me to realize that there is a top tier of Newton IT that is vastly underpaid.

Investing in software and infrastructure does not guarantee a finished product. It requires key personnel with expertise, experience, patience, and dedication to complete challenging tasks. IT project failure may be the primary reason other CIO's move from job to job with relatively short stays but here we have assembled an incredible staff that continually excel above and beyond expectation.

Here in the Newton Information Technology Department, in the past year we have witnessed

- A new financial system – something that will last us a decade or more
- A new website – our past average has been 8 – 10 years for each instance
- Continued expansion and preparation for imminent replacement of our storage area network and virtual servers
- Continued protection of our network and data: In an era of software hacking and bold phishing attempts we have avoided dire consequences. This is not by accident; this success is based on a determined IT department with qualified individuals making the right decisions.
- An IT response to Covid-19 that enabled nearly 100 people (literally, everyone who requested remote access) to work full time from home with no major issues or hinderance.
- During Covid-19 while most staff went home, IT was represented in person, on site every day for the duration of the pandemic.
- During this crisis we sacrificed filling a vacant position due to the sharp downward spiral in revenues
- We have implemented an automatic inventory system.
- Our participation in finding a state-of-the-art replacement permitting system.
- We found the time to assist the school department in unpacking and inventorying large quantities of iPads and Chromebooks in spite of our full schedule.

The IT department is a team of dedicated professionals who work as well individually as they do as a team. Many on our staff are true leaders and show exemplary character traits such as motivation, resilience, perseverance, concentration while multitasking, creativity, inquisitiveness, professionalism, loyalty and dedication. These all contribute to make IT one of the most reliable departments in the City.

The telecommunications foundation for the city has been successfully installed and maintained by the **Information Technology Department.** Our accomplishments since 2013 demonstrate our ability to effectively implement major infrastructure investments as well as software and hardware project management. Our team specializes in desktop and phone support, web development, Geographic Information Systems, routing and networking, database administration, security and even social media. Even amid the Covid crisis we continue to support and innovate to help keep the City functioning.

- **Financial System Upgrade**

On Monday, January 4, 2021 our first payroll in the Munis system was run. After nearly two years of preparation and planning between all our financial departments, the era of Pentamation / FinancePlus finally came to an end. For those involved it was business as usual. Nobody will ever realize the incredible number of hours, day and night, invested by key staff not only IT's Bob Moss but others as well. We continue to polish the system and work out minor quirks relating to interpretations of how procedures should progress. The success of this project was never guaranteed; it required an extended commitment above and beyond what any of the group could have imagined.

- **Covid Response**

When Covid hit and the country shut down to a shell of its potential, IT was declared an essential department, a label of which I fully concur. Our afterhours duties skyrocketed. VPN support, phone lines, laptops and secondary machines all became critical pieces to addressing the city's response while enabling the financial machine to continue in a business-as-usual fashion. While IT may not be on the front lines like Police or Fire or Health, our responsibilities and critical involvement in so many key components of our technology infrastructure dictate the importance of a fully staffed department. Within days of the work from home order we had 100 employees connecting via our VPN, continuing their productivity and ensure our financials systems were not adversely impacted.

- Zoom and Public Meetings

In early March of 2020 when President Albright inquired about using Zoom to enable virtual City Council meetings in lieu of the pandemic, we did not anticipate the volume, the multiple licenses, the demand, the security, the support, even the equipment required. That may be a good thing because the realization of these many aspects would be quite intimidating. Our Zoom accounts enabled business as usual. We have solutions to address ADA concerns, plans to deter zoombombers and a means to share meetings with an audience that otherwise would never have entered our building. Zoom is here to stay. After the new normal, we expect all public meetings to still support Zoom in order to reach a larger audience.

- **Website**

For many, the first interaction with the City is our website. It needs to be many things to many different people with a huge disparity of expectations and needs. Our upgrade to the new Vision system required dedication, attention and constant review by every municipal department. The subject matter experts for each department are the front lines of web updates; IT oversees the training, support and functional structure of the site as well as providing innovative ideas for using the pages in new ad creative formats. The update was challenging and was hindered by the lack of onsite presence due to the pandemic. Greg Ansaldi still shined in communication, implementation and scheduling of this massive project.

- **Web Development**

In addition to our standard website the city hosts an application server in the cloud. With systems designed internally by our skilled web developer Rufen Liao, of the past years we have seen mobile apps for alarm management that bypasses non-emergency calls to dispatch, online confirmation for no changes in census information, online applications and workflow-based approval for noise ordinance waivers as well as movie filming permits, automation of Covid reporting for the Health Department, specific event scheduling options that can be catered to our exact requirements. Rufen has also migrated other apps to a more secure environment.

- **Security**

We are proud of our track record in protecting the city network, its data, our residents and our employees. We know that to rest on our laurels is to invite catastrophe. In 2021 we will be updating our firewalls, load balancers and enhancing the subscriptions on them. We Microsoft Advanced Threat Protection to protect our cloud-based email before it reaches us. We have a

contact at the Department of Homeland Security and regularly trade emails and receive input on new addresses to block. We have begun working with the Commonwealth under a grant for additional phishing awareness and training in addition to our subscription to KnowBe4. We continue to stay current in our anti-virus. We schedule annual vulnerability tests both internally and externally. We have built a VLAN specifically to contain IOT and SCADA devices and keep them away from our data network.

- **Geographic Information Systems**

From tax mapping to permitting including hundreds of layers of data overlaying the City, our GIS system provides key data to many other systems in departments such as Assessing, Public Works, Schools, Engineering, and Planning. This data contributes critical information for decision making in projects related to Zoning, Traffic, Building, Redistricting, Health and more. We provide staff and public alike with data anywhere the internet is available with quick, easy access.

- **Inventory Management**

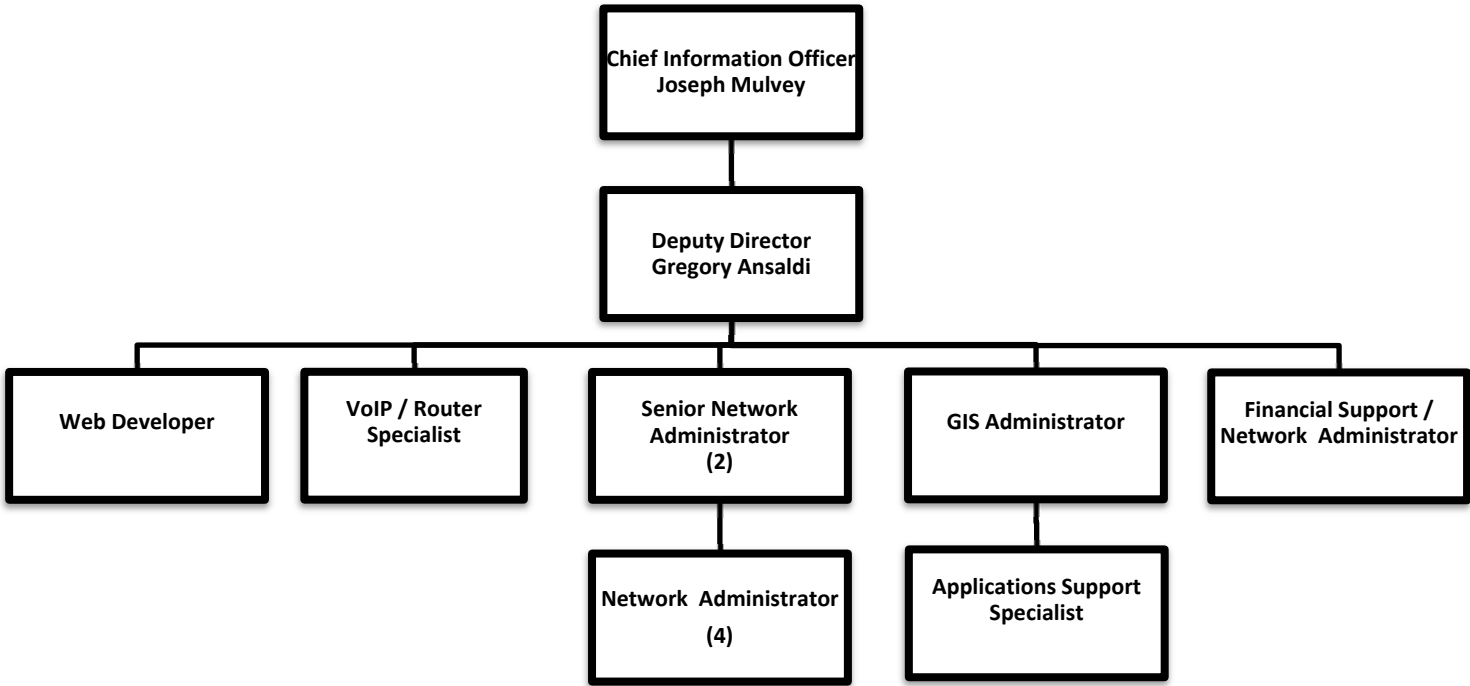After years of manually maintaining a database of computers, monitors and peripherals we finally invested in a system that maintains itself by automatically reporting all system details to a data collector. The reports we run are always up to the minute and give us a much better picture in prioritizing upgrades, PC replacements and potential hardware failure.

Joseph P. Mulvey
Chief Information Officer

INFORMATION TECHNOLOGY

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                    │ Chief Information Officer│
                    │      Joseph Mulvey       │
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                    │     Deputy Director      │
                    │    Gregory Ansaldi       │
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| Web Developer | VoIP / Router Specialist | Senior Network Administrator (2) | GIS Administrator | Financial Support / Network Administrator |

| | | Network Administrator (4) | Applications Support Specialist | |

Financial and Operating Highlights

Financial Highlights

	<--Actual-----------------------				Original	Proposed
	FY2017	FY2018	FY2019	FY2020	FY2021	**FY2022**
Expenditure by Department						
Administration	$ 315,979	$ 305,701	$ 311,761	$ 313,523	$ 323,078	**$ 333,669**
Micro/Network	$ 774,556	$ 822,753	$ 1,006,969	$ 1,023,653	$ 1,005,666	**$ 1,127,266**
Systems Program	$ 228,191	$ 276,616	$ 299,954	$ 330,067	$ 607,883	**$ 628,403**
GIS	$ 140,917	$ 139,810	$ 147,479	$ 150,665	$ 157,846	**$ 165,145**
Total	$ 1,459,643	$ 1,544,880	$ 1,766,164	$ 1,817,909	$ 2,094,474	**$ 2,254,483**
% Incr		22.33%	5.84%	14.32%	2.93%	**15.21%**
Personnel						
Full-Time Employees	9	11	12	12	13	**13**
Part-Time Employees	0	0	1	1	0	**0**
Total	9	11	13	13	13	**13**

Total IT Expenditures

$1,459,643	$1,544,880	$1,766,164	$1,817,909	$2,094,474	$2,254,483
FY17	FY18	FY19	FY20	FY21	FY22
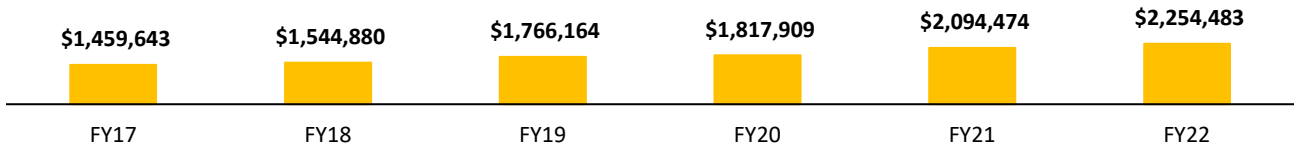
Operating Highlights

Municipal Email Accts	833
Email Rec.Last 6 mos	1,939,311
Storage Area Network	
Total Space	31.4 TB
Available Space	5.3 TB
Reduce Non-Emergency 911 Calls	
Fire Box Alarm App	7438
Number of GIS Layers	220
TimeMatters All Cases	15543
Buildings on City Fiber	63
Security	
Phishing Test Emails	15907
Website	
Pageviews last year	3,244,457
Homepage Visits	451,141
Online Census Receipts	10,036

Annual Costs, Cell & Landline
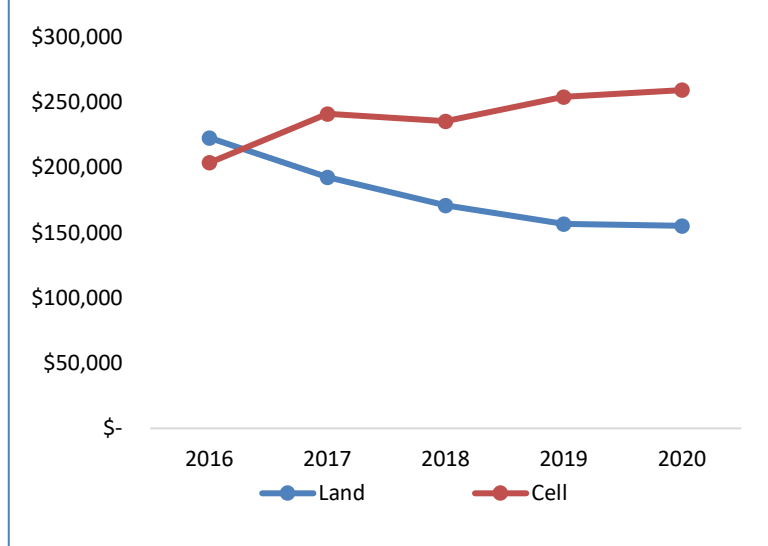
Information Technology Department
Fiscal Year 2022 Outcomes and Strategies

Especially in trying times like a pandemic where everyone is preoccupied, attention to security measures must never be an afterthought. There are many facets to this threat: remote access, mobile devices, email, perimeter devices, vendor equipment, viruses, bots, ransomware and phishing.

Outcome 1
Protect Our Data and Networks using Hardware, Software, Awareness Training and Employee Education

The first line of defense is an educated staff.
For the next year in addition to our standard phishing awareness campaigns we have partnered with the state and dozens of other cities and towns to create a baseline, evaluate, examine, train, and improve our skills in identifying threats.

Our critical hardware is duplicated for redundancy. Our firewalls and load balancers are in the process of being replaced. Our data center is duplicated off site. We are implementing a mobile device solution, creating a mobile device policy and SOPs, and training IT staff on best practices. We see the bad guys knocking on the firewall doors probing for access each Monday in our weekly report. We work with the Department of Homeland Security and regularly add the IP addresses of bad actors to our blacklist. We are working on eliminating older servers and ensuring our in-house applications do not leave openings for the undesirable element.

We rely more and more on our Active Directory system to protect our data. We are preparing to implement a more sophisticated password system comparable to requirements set forth in the financial industry. We continue to invest additional funds each subsequent fiscal year towards protecting ourselves and continually review current solutions, new trends and future concerns.

Outcome 2
Complete the Financial System Upgrade

Over the years the Information Technology Department has accomplished some very challenging tasks. The completion of the consolidation of the Financial Systems into a single system is probably far and away our biggest endeavor.

 Since 1995 we have maintained two financial systems: Tyler Technology's Munis for receivables and Central Square's Finance Plus for accounting, payroll, benefits and procurement. By consolidating with one system, we eliminate the maintenance of software bridges, dual entry, mounting customizations and a wonderful opportunity to rebuild our data to achieve better efficiency and security. Accounting and Procurement modules went live on July 1, 2019. Personnel and payroll went live as of January 1, 2021. Even with these critical milestones now in our rear-view mirror there is still much work to be done. We continue to meet weekly discussing progress, red flags and next steps.

Yes, we have found issues both in the new system as well as how the old system worked. These problems are addressed as we become aware. Was it a perfect cut-over? Absolutely not! Was it a successful transition? Absolutely yes!

We continue to enhance the system as we begin to add on the Employee Self Service Center, the online Job Application module, enhanced contract management with workflow, a smooth employment opportunity system including Munis, LinkedIn, and Hyrell. In addition, customizing the budget, report writing, ongoing training, stepping staff up to expert level in day-to-day operations all demand time, patience, and dedication.

Special thanks to Robert Moss for his untiring determination, patience and perseverance.

After 15 years we are replacing CommunityPlus as our permitting system with a cloud-based, scalable, tailor-able solution that accommodates any workflow, unlimited storage, online application and payments and an ease of use that residents and contractors have never before experienced with Newton permits.

Outcome 3
Assist in the Implementation of OpenGov

This will be a multi-phased, multi-department approach. We expect many departments working throughout the rest of 2021 to populate the system with everything from historic records, property info, mapping, an interface to the State contractor's database and much more.

The IT department will assume the lead on all things database oriented, assist in tying in other systems from Assessing, GIS, Engineering and DPW, and ensure hardware systems are setup with optimal productivity for field work as well as in the office.

Outcome 4

Research an In-house, Online Document Tracking System for the City Council

Over years of working in conjunction with the City Clerk, we have researched and invested in numerous solutions to enable a sophisticated document and docket tracking system. It would need to conform to the processes employed by the City Council as stated in our Charter, Council rules and sometimes City Ordinance. The system would need to keep document versions, show paths through committees, show how Councilors voted, be intimately searchable and be up to date.

Every vendor we have discussed this challenge with has fallen far short of the mark. We are now looking at the feasibility of developing a custom application in house. This is a challenging project but the results would be extremely beneficial. We are exploring the feasibility of this project and how to break the deliverables into phases.

	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	ORIGINAL 2021	RECOMMENDED 2022	CHANGE 2021 to 2022
INFORMATION TECHNOLOGY SUMMARY						
51 - PERSONNEL SERVICES	943,875	1,083,449	1,092,071	1,101,586	1,239,168	137,582
52 - EXPENSES	303,463	366,243	388,389	660,303	684,008	23,705
58 - CAPITAL EXPENSES	121,989	116,242	119,105	106,000	106,000	0
57 - FRINGE BENEFITS	156,136	200,229	218,344	226,585	225,307	-1,278
TOTAL DEPARTMENT	**1,525,463**	**1,766,164**	**1,817,909**	**2,094,474**	**2,254,483**	**160,009**
IT ADMINISTRATION						
51 - PERSONNEL SERVICES	250,812	250,360	256,417	258,358	269,954	11,596
52 - EXPENSES	13,603	17,064	11,133	16,820	13,990	-2,830
58 - CAPITAL EXPENSES	0	27	0	0	0	0
57 - FRINGE BENEFITS	41,264	44,311	45,973	47,900	49,725	1,825
TOTAL IT ADMINISTRATION	**305,679**	**311,761**	**313,523**	**323,078**	**333,669**	**10,591**
MICRO/NETWORK SVS						
51 - PERSONNEL SERVICES	588,489	726,386	723,879	727,565	848,360	120,795
52 - EXPENSES	13,500	28,796	29,458	15,500	20,300	4,800
58 - CAPITAL EXPENSES	121,989	116,215	119,105	106,000	106,000	0
57 - FRINGE BENEFITS	95,975	135,572	151,211	156,601	152,606	-3,995
TOTAL MICRO/NETWORK SVS	**819,953**	**1,006,969**	**1,023,653**	**1,005,666**	**1,127,266**	**121,600**
SYSTEMS PROGRAMMING						
52 - EXPENSES	260,620	299,954	330,067	607,883	628,403	20,520
TOTAL SYSTEMS PROGRAMMING	**260,620**	**299,954**	**330,067**	**607,883**	**628,403**	**20,520**
GIS ADMINISTRATION						
51 - PERSONNEL SERVICES	104,573	106,704	111,775	115,662	120,854	5,192
52 - EXPENSES	15,739	20,428	17,731	20,100	21,315	1,215
57 - FRINGE BENEFITS	18,897	20,347	21,160	22,084	22,976	892
TOTAL GIS ADMINISTRATION	**139,210**	**147,479**	**150,665**	**157,846**	**165,145**	**7,299**

		ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	ORIGINAL 2021	RECOMMENDED 2022	CHANGE 2021 to 2022
111 - INFORMATION TECHNOLOGY							
0111153 - IT ADMINISTRATION							
PERSONNEL SERVICES							
511001	FULL TIME SALARIES	231,898	238,326	247,408	253,858	265,454	11,596
511101	PART TIME < 20 HRS/WK	15,414	6,534	4,509	0	0	0
514001	LONGEVITY	3,500	5,500	4,500	4,500	4,500	0
	TOTAL PERSONNEL SERVICES	**250,812**	**250,360**	**256,417**	**258,358**	**269,954**	**11,596**
EXPENSES							
527400	RENTAL - EQUIPMENT	1,522	1,268	1,685	1,830	1,900	70
531900	TRAINING EXPENSES	5,000	7,710	0	5,000	5,000	0
534010	TELEPHONE	109	141	88	150	150	0
534020	CELLULAR TELEPHONES	3,153	3,185	4,624	5,000	3,000	-2,000
534100	POSTAGE	0	8	7	20	20	0
534200	PRINTING	0	0	2	20	20	0
542000	OFFICE SUPPLIES	2,525	4,170	3,696	3,000	3,000	0
548000	GASOLINE	0	29	0	500	0	-500
559200	BOOKS/MANUALS/PERIODI	422	0	48	400	0	-400
571001	PERSONAL EQUIP REIMBU	0	0	400	0	0	0
571100	IN-STATE CONFERENCES	536	271	0	300	300	0
572000	OUT-OF-STATE TRAVEL	466	0	0	0	0	0
573000	DUES & SUBSCRIPTIONS	335	281	583	600	600	0
	TOTAL EXPENSES	**14,068**	**17,064**	**11,133**	**16,820**	**13,990**	**-2,830**
FRINGE BENEFITS							
57DENT	DENTAL INSURANCE	538	560	561	582	501	-81
57HLTH	HEALTH INSURANCE	37,147	40,178	41,785	43,458	45,195	1,737
57LIFE	BASIC LIFE INSURANCE	113	113	113	114	114	0
57MEDA	MEDICARE PAYROLL TAX	3,466	3,460	3,514	3,746	3,914	168
	TOTAL FRINGE BENEFITS	**41,264**	**44,311**	**45,973**	**47,900**	**49,725**	**1,825**
CAPITAL EXPENSES							
585010	AUTOMOBILES/LIGHT TRU	30,000	0	0	0	0	0
585111	PC HARDWARE-ADMIN	0	27	0	0	0	0
	TOTAL CAPITAL EXPENSES	**30,000**	**27**	**0**	**0**	**0**	**0**
	TOTAL IT ADMINISTRATION	**336,145**	**311,761**	**313,523**	**323,078**	**333,669**	**10,591**

		ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	ORIGINAL 2021	RECOMMENDED 2022	CHANGE 2021 to 2022
0111154 - MICRO/NETWORK SVS							
PERSONNEL SERVICES							
511001	FULL TIME SALARIES	583,089	710,086	708,264	720,915	810,960	90,045
514001	LONGEVITY	4,550	5,500	5,400	6,150	6,900	750
514309	OTHER STIPENDS	0	0	0	0	10,000	10,000
515005	BONUSES	350	10,300	0	0	20,000	20,000
515006	VACATION BUY BACK	0	0	9,715	0	0	0
515102	CLEANING ALLOWANCE	500	500	500	500	500	0
	TOTAL PERSONNEL SERVICES	**588,489**	**726,386**	**723,879**	**727,565**	**848,360**	**120,795**
EXPENSES							
524010	OFFICE EQUIPMENT R-M	13,500	13,500	11,169	3,500	3,500	0
524100	SOFTWARE MAINTENANC	0	14,765	16,489	12,000	15,000	3,000
532100	TUITION ASSISTANCE	0	500	0	0	0	0
548000	GASOLINE	0	31	0	0	0	0
571001	PERSONAL EQUIP REIMBU	0	0	1,800	0	1,800	1,800
	TOTAL EXPENSES	**13,500**	**28,796**	**29,458**	**15,500**	**20,300**	**4,800**
FRINGE BENEFITS							
57DENT	DENTAL INSURANCE	2,585	3,538	3,787	3,726	3,612	-114
57HLTH	HEALTH INSURANCE	78,825	111,633	124,991	129,084	122,880	-6,204
57LIFE	BASIC LIFE INSURANCE	113	203	241	228	285	57
57MEDA	MEDICARE PAYROLL TAX	8,018	9,776	9,554	10,550	11,866	1,317
57OPEB	OPEB CONTRIBUTION	6,434	10,421	12,638	13,013	13,963	950
	TOTAL FRINGE BENEFITS	**95,975**	**135,572**	**151,211**	**156,601**	**152,606**	**-3,995**
CAPITAL EXPENSES							
585110	COMPUTER SERVER HAR	10,072	9,997	6,219	8,000	8,000	0
585111	PC HARDWARE-ADMIN	49,795	49,969	46,029	45,000	45,000	0
585120	COMPUTER SERVER SOF	49,983	38,649	55,414	45,000	45,000	0
585121	PC SOFTWARE-ADMIN	12,139	17,601	11,444	8,000	8,000	0
	TOTAL CAPITAL EXPENSES	**121,989**	**116,215**	**119,105**	**106,000**	**106,000**	**0**
	TOTAL MICRO/NETWORK SVS	**819,953**	**1,006,969**	**1,023,653**	**1,005,666**	**1,127,266**	**121,600**

		ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	ORIGINAL 2021	RECOMMENDED 2022	CHANGE 2021 to 2022
0111156 - SYSTEMS PROGRAMMING							
EXPENSES							
524011	GRANICUS/CIVIC R&M	27,849	29,700	29,700	29,700	30,591	891
524012	SAN HARDWARE M&S	12,180	7,820	6,388	20,000	0	-20,000
524013	SAN SOFTWARE M&&S	0	12,000	23,666	12,000	0	-12,000
524100	SOFTWARE MAINTENANC	35,379	60,856	60,300	60,300	62,109	1,809
524101	REVERSE 911 SOFTWARE	50,500	50,500	50,500	50,500	52,015	1,515
524102	FINANCIAL SOFTWARE MA	0	0	0	260,000	301,050	41,050
524106	MS OUTLOOK SOFTWARE	81,856	79,180	89,801	115,000	118,450	3,450
524107	FOIA SOFTWARE SUB & M	6,000	10,446	10,000	10,000	10,300	300
524108	HYRELL SOFTWARE SUB&	6,600	6,600	9,600	9,600	9,888	288
534040	INTERNET ACCESS CHAR	30,633	28,783	26,724	28,783	32,000	3,217
534200	PRINTING	41	4	0	0	0	0
558500	COMPUTER SUPPLIES	9,583	14,066	23,388	12,000	12,000	0
	TOTAL EXPENSES	**260,620**	**299,954**	**330,067**	**607,883**	**628,403**	**20,520**
	TOTAL SYSTEMS PROGRAMMING	**260,620**	**299,954**	**330,067**	**607,883**	**628,403**	**20,520**
0111157 - GIS ADMINISTRATION							
PERSONNEL SERVICES							
511001	FULL TIME SALARIES	103,573	106,704	110,775	113,662	118,854	5,192
514001	LONGEVITY	1,000	0	1,000	2,000	2,000	0
	TOTAL PERSONNEL SERVICES	**104,573**	**106,704**	**111,775**	**115,662**	**120,854**	**5,192**
EXPENSES							
524100	SOFTWARE MAINTENANC	12,300	15,963	13,908	16,000	17,215	1,215
531900	TRAINING EXPENSES	65	594	0	100	100	0
558500	COMPUTER SUPPLIES	3,374	3,871	3,623	4,000	4,000	0
571000	VEHICLE USE REIMBURSE	49	0	0	0	0	0
571001	PERSONAL EQUIP REIMBU	0	0	200	0	0	0
	TOTAL EXPENSES	**15,788**	**20,428**	**17,731**	**20,100**	**21,315**	**1,215**
FRINGE BENEFITS							
57HLTH	HEALTH INSURANCE	17,444	18,868	19,622	20,407	21,224	817
57MEDA	MEDICARE PAYROLL TAX	1,453	1,479	1,538	1,677	1,752	75
	TOTAL FRINGE BENEFITS	**18,897**	**20,347**	**21,160**	**22,084**	**22,976**	**892**
	TOTAL GIS ADMINISTRATION	**139,259**	**147,479**	**150,665**	**157,846**	**165,145**	**7,299**
	TOTAL INFORMATION TECHNOLOGY	**1,555,977**	**1,766,164**	**1,817,909**	**2,094,474**	**2,254,483**	**160,009**