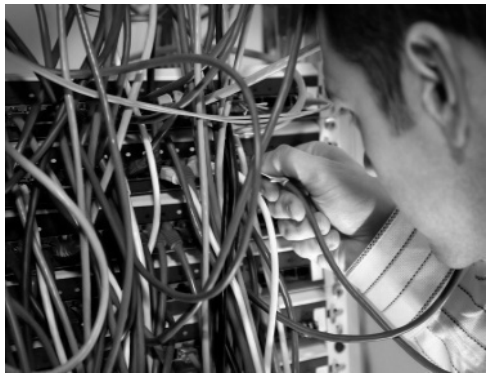


Appendix A
List of Participants

Nearly 70 city stakeholders – including city executives, department managers, IT professionals, and end users – contributed to this planning effort through interviews, focus groups, and other data collection efforts. The following table lists these participants.

Name	Position/Title	Department/Agency
Alland, Leela	Facilities Manager	Central Services
Banks, Ian	City Personal Transportation Specialist	Transportation
Bowes, John	Lieutenant, Fire Marshal's Office	Fire
Brown, Maria	Assistant Director	DNES
Bucalo, Theresa	Deputy City Clerk	Clerks Office
Bunker, Mike	Superintendent of Utilities	Public Works
Burkhardt, Thora	Civil Engineer 2	Public Works
Costello, Andy	Foreman	Parks and Recreation
Couchenour, Sr.,Robert D.	Superintendent	Public Works
Creek, James	Utilities Super	Public Works
Downes, John	Utilities Super	Public Works
Duah, Kwaku Agyemang	Acting Transportation Director	Transportation
Elliott, Tim	Finance Director	Finance
Gaines, Cyndi	Election Administrator	City Clerk
Hanna, Joe	Utilities Super	Public Works
Hart, Beth	Special Projects Director	Police
Howard, Cynthia	Captain	Police
Hyman, Paula	Marketing Specialist	Transportation

Name	Position/Title	Department/Agency
Johnson, Renee	Police Records Specialist	Police
Kimbo, Tira	Attorney	Law
Kline, Linda	Senior Accountant	Finance
Kling, Steve	City Attorney	Law
Lackey, Paul	Computer Draftsperson	Public Works
Lee, Marcelle	Administrator	Central Services
Mackell, Elvis	Public Works Maintenance Worker II	Public Works
Martin, Kelly	Captain, Public Information Officer	Fire
Martin, Lisa	IT Assistant Analyst	MIT
Matland, Danielle	Director	Transportation
McAllister, Patricia	IT Support	MIT
McMahon, Kevin	Senior Accountant	Finance
Miguez, Dave	Building Police	Police
Milburn, Kimla	Director	Human Resources
Miron, Mike	Director	Office of Economic Affairs
Morgan, Jeff	Battalion Chief	Fire
Neutzling, Eric	Captain	Police
Openshaw, Lily	Engineer	Public Works
Paquin, Brian	IT Specialist	MIT
Patrick, Marcia	Assistant to the Director	Public Works
Plumer, LeeAnn	Director	Parks and Recreation

Name	Position/Title	Department/Agency
Posey, Al	Senior Engineer	Emergency Management
Pratt, Clinton	Electrical Inspector	DNES
Pristoop, Michael	Chief	Police
Quigley, John	Plumbing Inspector	DNES
Remaley, Douglas	Deputy Chief; Emergency Services	Fire
Ridgway, Judy	Administrative Office Associate	Public Works
Schuetz, Rob	Director	Central Services
Scott, Kevin	Senior Planner	DNES
Sebastian, Matt	Engineer	Public Works
Sherlock, Ed	Director	Emergency Management
Smith, Barb	Analyst	MIT
Smith, Doug	Chief Administrative Officer	Mayor's Office
Smith, Jerome	Fire Chief	Fire
Snyder, Brian	Procurement Officer	Purchasing
Spencer, Tony	Director	Office of Youth and Community Affairs
Steele, Karen	Legal Assistant	Law
Staudinger, Nancy	Warrant Control/Records Supervisor	Police
Sturgill, Josh	Technician	GIS
Swontek, Tom	Chief Code Official	DNES
Tait, Cindy	Public Works Analyst	Public Works
Thorn, Paul	MIT Manager	MIT

Name	Position/Title	Department/Agency
Tripodi, Shirley	Assistant Finance Director	Finance
Veres, Peter	Network Engineer	MIT
Walters, Flip	Asst Harbormaster-Operations	Harbormaster
Wampler, Shawn	Coordinator	GIS
Weaver, Ray	Public Information Officer	Police
Williams, Scott	Captain	Police
Young, Inna	Webmaster	MIT

Appendix B

IT Staffing Detail

In developing the information technology service delivery findings in chapter 2, PTI evaluated Annapolis' information technology staffing levels across five IT functional areas:

- **Customer Support –** labor related to directly helping end users utilize IT systems and services (e.g., help desk, tier 2 support)
- **Infrastructure Support –** labor related to implementing and maintaining the organization's computers, systems software, and connectivity (e.g., servers, networks)
- **Application Support –** labor related to developing, installing, configuring, and otherwise maintaining the software needed to meet the operational, management, and reporting requirements of the organization
- **IT Planning –** labor related to technology planning and governance
- **IT Administration –** labor related to the oversight and administration of technology

The tables in this appendix reflect ongoing operations and maintenance (O&M) labor expressed as full time equivalent (FTE) effort. They do not include IT labor paid for by capital allocations.

City staff initially provided this data, and reviewed and validated it after PTI assembled and analyzed it.

IT Staffing Detail

The table below presents the allocation of IT O&M staffing between MIT and other departments.

IT-titled Staff Labor Distribution			
	IT FTE	% of City IT FTE	% of total City FTE
MIT	8.69	81.3%	1.47%
Other Departments	2.00	18.7%	0.34%
Total City IT FTE	**10.69**	**100.0%**	**1.81%**

The following table summarizes IT labor effort allocation across each of the five defined IT disciplines.

	IT-Titled Labor Effort by IT Function					
	MIT		Other Departments		Citywide Totals	
IT Functions	FTE	% Allocation	FTE	% Allocation	FTE	% Allocation
Customer Services	1.55	12.8%	0.39	3.2%	2.29	18.9%
Infrastructure Services	2.39	19.7%	0.11	0.9%	2.60	21.4%
Application Services	2.36	19.5%	1.50	12.4%	4.70	38.7%
IT Planning	0.34	2.8%	0.00	0.0%	0.34	2.8%
IT Administration	2.05	16.9%	0.00	0.0%	2.20	18.1%
Total:	**8.69**	**71.7%**	**2.00**	**16.5%**	**12.13**	**100.0%**

The table below details the distribution of the City's *application services* staffing across seven application areas. These numbers represent the IT labor effort devoted to supporting specific software within each business function.

	Application Area Labor Effort					
	MIT		Other Departments		Citywide Totals	
Application Area	FTE	% Allocation	FTE	% Allocation	FTE	% Allocation
Law, Safety and Justice	0.17	7.2%	1.50	100.0%	1.67	43.3%
Public Infrastructure	0.38	16.1%	0.00	0.0%	0.38	9.8%
Planning and Development	0.23	9.7%	0.00	0.0%	0.23	6.0%
Community Services	0.18	7.6%	0.00	0.0%	0.18	4.7%
Governance and Administration	0.16	6.8%	0.00	0.0%	0.16	4.1%
Support Services	0.79	33.5%	0.00	0.0%	0.79	20.5%
eGovernment (Web/Internet)	0.45	19.1%	0.00	0.0%	0.45	11.7%
Total:	**2.36**	**100.0%**	**1.50**	**100.0%**	**3.86**	**100.0%**

The tables on the following pages present summary labor data collected by PTI and validated by the City of Annapolis. Due to the nature and size of the data set, the full matrix and associated data cannot be effectively presented in this report.

Definitions for each of the IT disciplines and associated activities follow the summary tables.

FTE Totals	IT-Titled Staff Only: Central Org IT Staff	IT-Titled Staff Only: Business Unit IT Staff	IT-Titled Staff Only: FTE TOTAL	IT-Titled Staff Only: FTE TOTAL w/Overtime	Inclusive of Shadow Staff: Shadow Staff	Inclusive of Shadow Staff: FTE TOTAL	Inclusive of Shadow Staff: FTE TOTAL w/Overtime
Customer Services	***1.55***	***0.39***	***1.94***	1.94	***0.35***	***2.29***	2.29
Help Desk (Tier 1)	0.53	0.10	0.63		0.05	0.68	
Tier 2 support:	***0.51***	***0.23***	***0.74***		***0.25***	***0.99***	
Personal Computer Support	0.34	*0.02*	0.36		0.00	0.36	
Portable Device/Specialized Device Support	0.07	*0.20*	0.27		0.05	0.32	
Personal Productivity Tool Support	0.10	*0.01*	0.11		0.20	0.31	
Business Application Support	0.31	*0.02*	0.33		0.00	0.33	
Training	0.20	*0.04*	0.24		0.05	0.29	
Infrastructure Services	***2.39***	***0.11***	***2.50***	2.50	***0.10***	***2.60***	2.60
Personal Computer Administration	0.49	0.01	0.50		0.00	0.50	
Database Administration	0.15	0.02	0.17		0.04	0.21	
Security Administration	0.10	0.02	0.12		0.00	0.12	
Data Center/Server Room Operations	0.07	0.00	0.07		0.00	0.07	
Project Management	0.43	0.01	0.44		0.00	0.44	
Server Administration:	***0.89***	***0.00***	***0.89***		***0.00***	***0.89***	
Email/Calendaring Administration	0.15	0.00	0.15		0.00	0.15	
File/Print Administration	0.20	0.00	0.20		0.00	0.20	
Application Server Administration	0.16	0.00	0.16		0.00	0.16	
Database Server Administration	0.13	0.00	0.13		0.00	0.13	
Storage Administration	0.08	0.00	0.08		0.00	0.08	
Other Server Administration	0.17	0.00	0.17		0.00	0.17	
Communication Services:	***0.26***	***0.05***	***0.31***		***0.06***	***0.37***	
Network Administration (WAN/LAN/Wireless)	0.20	0.00	0.20		0.00	0.20	
Radio Support	0.00	0.05	0.05		0.05	0.10	
Telephone Systems Support	0.06	0.00	0.06		0.01	0.07	
Business Application Services	***2.36***	***1.50***	***3.86***	3.86	***0.84***	***4.70***	4.70
Law, Safety and Justice	***0.17***	***1.50***	***1.67***		***0.10***	***1.77***	
Packaged application support	0.02	1.30	1.32		0.10	1.42	
Custom application support	0.01	0.20	0.21		0.00	0.21	
GIS support	0.14	0.00	0.14		0.00	0.14	
Public Infrastructure	***0.38***	***0.00***	***0.38***		***0.13***	***0.51***	
Packaged application support	0.02	0.00	0.02		0.07	0.09	
Custom application support	0.01	0.00	0.01		0.05	0.06	
GIS support	0.35	0.00	0.35		0.01	0.36	
Planning and Development	***0.23***	***0.00***	***0.23***		***0.00***	***0.23***	
Packaged application support	0.02	0.00	0.02		0.00	0.02	
Custom application support	0.01	0.00	0.01		0.00	0.01	
GIS support	0.20	0.00	0.20		0.00	0.20	
Community Services	***0.18***	***0.00***	***0.18***		***0.61***	***0.79***	
Packaged application support	0.03	0.00	0.03		0.60	0.63	
Custom application support	0.00	0.00	0.00		0.00	0.00	
GIS support	0.15	0.00	0.15		0.01	0.16	
Governance and Administration	***0.16***	***0.00***	***0.16***		***0.00***	***0.16***	
Packaged application support	0.05	0.00	0.05		0.00	0.05	
Custom application support	0.01	0.00	0.01		0.00	0.01	
GIS support	0.10	0.00	0.10		0.00	0.10	
Support Services	***0.79***	***0.00***	***0.79***		***0.00***	***0.79***	
Packaged application support	0.23	0.00	0.23		0.00	0.23	
Custom application support	0.50	0.00	0.50		0.00	0.50	
GIS support	0.06	0.00	0.06		0.00	0.06	
eGovernment (Web/Internet)	***0.45***	***0.00***	***0.45***		***0.00***	***0.45***	
Packaged application support	0.03	0.00	0.03		0.00	0.03	
Custom application support	0.27	0.00	0.27		0.00	0.27	
GIS support	0.15	0.00	0.15		0.00	0.15	
IT Planning	***0.34***	***0.00***	***0.34***	0.34	***0.00***	***0.34***	0.34
Strategic planning & governance	0.16	0.00	0.16		0.00	0.16	
Research and development	0.16	0.00	0.16		0.00	0.16	
Disaster recovery/planning	0.02	0.00	0.02		0.00	0.02	
IT Administration	***2.05***	***0.00***	***2.05***	2.05	***0.15***	***2.20***	2.20
Asset management	0.14	0.00	0.14		0.00	0.14	
IT procurement	0.71	0.00	0.71		0.10	0.81	
Standards and policies development	0.11	0.00	0.11		0.00	0.11	
Customer Account Management	0.17	0.00	0.17		0.00	0.17	
Administrative support	0.52	0.00	0.52		0.00	0.52	
Departmental management	0.40	0.00	0.40		0.05	0.45	
Geographic Information Systems	***0.50***	***0.00***	***0.50***	0.50	***0.00***	***0.50***	0.50
GIS Data Maintenance	0.50	0.00	0.50		0.00	0.50	
Capital IT Projects	***0.06***	***0.00***	***0.06***	0.06	***0.00***	***0.06***	0.00
Capital IT Project Labor	0.06	0.00	0.06		0.00	0.06	
Totals (excluding capital projects):	**8.69**	**2.00**	**10.69**	**10.69**	**1.44**	**12.13**	**12.13**

Cost Totals	IT-Titled Staff Only: Central Org IT Staff	IT-Titled Staff Only: Business Unit IT Staff	IT-Titled Staff Only: Cost TOTAL	IT-Titled Staff Only: Cost TOTAL w/Overtime	Inclusive of Shadow Staff: Shadow Staff	Inclusive of Shadow Staff: Cost TOTAL	Inclusive of Shadow Staff: Cost TOTAL w/Overtime
Customer Services	**$ 109,677**	**$ 30,900**	**$ 140,578**	$ 140,578	**$ 23,692**	**$ 164,270**	$ 164,270
Help Desk (Tier 1)	$ 35,362	$ 7,923	$ 43,285		$ 4,487	$ 47,772	
Tier 2 support:	**$ 31,803**	**$ 18,223**	**$ 50,026**		**$ 14,718**	**$ 64,744**	
Personal Computer Support	$ 18,666	$ 1,585	$ 20,251		$ -	$ 20,251	
Portable Device/Specialized Device Support	$ 5,788	$ 15,846	$ 21,635		$ 3,385	$ 25,019	
Personal Productivity Tool Support	$ 7,348	$ 792	$ 8,140		$ 11,334	$ 19,474	
Business Application Support	$ 27,502	$ 1,585	$ 29,087		$ -	$ 29,087	
Training	$ 15,010	$ 3,169	$ 18,180		$ 4,487	$ 22,667	
Infrastructure Services	**$ 174,440**	**$ 8,716**	**$ 183,156**	$ 183,156	**$ 3,590**	**$ 186,745**	$ 186,745
Personal Computer Administration	$ 25,323	$ 792	$ 26,116		$ -	$ 26,116	
Database Administration	$ 13,332	$ 1,585	$ 14,917		$ 3,590	$ 18,506	
Security Administration	$ 7,679	$ 1,585	$ 9,263		$ -	$ 9,263	
Data Center/Server Room Operations	$ 6,343	$ -	$ 6,343		$ -	$ 6,343	
Project Management	$ 34,670	$ 792	$ 35,462		$ -	$ 35,462	
Server Administration:	**$ 68,398**	**$ -**	**$ 68,398**		**$ -**	**$ 68,398**	
Email/Calendaring Administration	$ 12,227	$ -	$ 12,227		$ -	$ 12,227	
File/Print Administration	$ 16,714	$ -	$ 16,714		$ -	$ 16,714	
Application Server Administration	$ 14,972	$ -	$ 14,972		$ -	$ 14,972	
Database Server Administration	$ 8,855	$ -	$ 8,855		$ -	$ 8,855	
Storage Administration	$ 5,946	$ -	$ 5,946		$ -	$ 5,946	
Other Server Administration	$ 9,684	$ -	$ 9,684		$ -	$ 9,684	
Communication Services:	**$ 18,696**	**$ 3,962**	**$ 22,658**		**$ -**	**$ 22,658**	
Network Administration (WAN/LAN/Wireless)	$ 14,545	$ -	$ 14,545		$ -	$ 14,545	
Radio Support	$ -	$ 3,962	$ 3,962		$ -	$ 3,962	
Telephone Systems Support	$ 4,151	$ -	$ 4,151		$ -	$ 4,151	
Business Application Services	**$ 140,980**	**$ 137,941**	**$ 278,921**	$ 278,921	**$ 72,298**	**$ 351,219**	$ 351,219
Law, Safety and Justice	**$ 10,114**	**$ 137,941**	**$ 148,055**		**$ 3,385**	**$ 151,439**	
Packaged application support	$ 1,301	$ 120,185	$ 121,487		$ 3,385	$ 124,871	
Custom application support	$ 897	$ 17,756	$ 18,653		$ -	$ 18,653	
GIS support	$ 7,915	$ -	$ 7,915		$ -	$ 7,915	
Public Infrastructure	**$ 19,313**	**$ -**	**$ 19,313**		**$ 11,666**	**$ 30,979**	
Packaged application support	$ 1,301	$ -	$ 1,301		$ 6,282	$ 7,583	
Custom application support	$ 897	$ -	$ 897		$ 4,487	$ 5,384	
GIS support	$ 17,114	$ -	$ 17,114		$ 897	$ 18,012	
Planning and Development	**$ 12,742**	**$ -**	**$ 12,742**		**$ -**	**$ 12,742**	
Packaged application support	$ 1,301	$ -	$ 1,301		$ -	$ 1,301	
Custom application support	$ 897	$ -	$ 897		$ -	$ 897	
GIS support	$ 10,543	$ -	$ 10,543		$ -	$ 10,543	
Community Services	**$ 9,661**	**$ -**	**$ 9,661**		**$ 57,248**	**$ 66,909**	
Packaged application support	$ 2,199	$ -	$ 2,199		$ 56,302	$ 58,501	
Custom application support	$ -	$ -	$ -		$ -	$ -	
GIS support	$ 7,462	$ -	$ 7,462		$ 945	$ 8,407	
Governance and Administration	**$ 9,700**	**$ -**	**$ 9,700**		**$ -**	**$ 9,700**	
Packaged application support	$ 3,254	$ -	$ 3,254		$ -	$ 3,254	
Custom application support	$ 1,175	$ -	$ 1,175		$ -	$ 1,175	
GIS support	$ 5,272	$ -	$ 5,272		$ -	$ 5,272	
Support Services	**$ 60,593**	**$ -**	**$ 60,593**		**$ -**	**$ 60,593**	
Packaged application support	$ 16,939	$ -	$ 16,939		$ -	$ 16,939	
Custom application support	$ 39,835	$ -	$ 39,835		$ -	$ 39,835	
GIS support	$ 3,818	$ -	$ 3,818		$ -	$ 3,818	
eGovernment (Web/Internet)	**$ 18,858**	**$ -**	**$ 18,858**		**$ -**	**$ 18,858**	
Packaged application support	$ 1,664	$ -	$ 1,664		$ -	$ 1,664	
Custom application support	$ 9,732	$ -	$ 9,732		$ -	$ 9,732	
GIS support	$ 7,462	$ -	$ 7,462		$ -	$ 7,462	
IT Planning	**$ 33,832**	**$ -**	**$ 33,832**	$ 33,832	**$ -**	**$ 33,832**	$ 33,832
Strategic planning & governance	$ 17,467	$ -	$ 17,467		$ -	$ 17,467	
Research and development	$ 14,293	$ -	$ 14,293		$ -	$ 14,293	
Disaster recovery/planning	$ 2,072	$ -	$ 2,072		$ -	$ 2,072	
IT Administration	**$ 164,824**	**$ -**	**$ 164,824**	$ 164,824	**$ 14,248**	**$ 179,072**	$ 179,072
Asset management	$ 10,365	$ -	$ 10,365		$ -	$ 10,365	
IT procurement	$ 49,321	$ -	$ 49,321		$ 9,499	$ 58,819	
Standards and policies development	$ 11,433	$ -	$ 11,433		$ -	$ 11,433	
Customer Account Management	$ 17,871	$ -	$ 17,871		$ -	$ 17,871	
Administrative support	$ 29,900	$ -	$ 29,900		$ -	$ 29,900	
Departmental management	$ 45,934	$ -	$ 45,934		$ 4,749	$ 50,683	
Geographic Information Systems	**$ 24,576**	**$ -**	**$ 24,576**	$ 24,576	**$ -**	**$ -**	
GIS Data Maintenance	$ 24,576	$ -	$ 24,576		$ -		
Capital IT Projects							
Capital IT Project Labor	$ 3,904	$ -	$ 3,904		$ -	$ 3,904	
Totals (excluding capital projects):	**$ 623,753**	**$ 177,557**	**$ 801,310**	$ 801,310	**$ 113,827**	**$ 915,138**	$ 915,138

Customer Services

Customer Services includes those activities related to directly supporting users of IT systems and services (e.g., help desk).

Help Desk (Tier 1)

The activities related to providing a first point of contact for users to report problems and seek answers to questions related to their personal computers, network access, email, personal productivity software, and business application software. Includes initial problem resolution, triage, and problem escalation.

Tier 2 Support

The activities related to providing in-person assistance with the software and hardware that support user work functions, including PCs, handhelds and other mobile devices, peripherals, and specialized computing environments such as public kiosks.

Personal Computer Support (Tier 2)

The activities related to onsite support of the organization's network applications (e.g., calendar, email, etc.), desktop computers, laptop computers, terminals, and attendant operating systems and peripherals.

Portable Device/Specialized Device Support (Tier 2)

The processes related to onsite support of personal digital assistants (PDAs), including troubleshooting syncing to desktop PCs, network connectivity, and their business-specific applications. The processes related to onsite support of the special purpose devices (beyond portable devices), such as kiosks, mobile data terminals (MDTs), etc., along with attendant peripherals.

Personal Productivity Tool Support (Tier 2)

The processes related to providing onsite end-user support concerning the use of desktop applications such as word processing, spreadsheets, presentation tools, and other organizational office productivity tools.

Business Application Support (Tier 2)

The processes related to providing end-user support (answering questions, etc.) regarding the use of business-specific software (e.g., financial management, permit management, etc.) beyond that which is provided by the first point of contact.

Customer Account Management

Staff work in conjunction with departments or divisions guaranteeing that service level agreements are adhered to and customer needs are being met. Includes tracking and reporting service levels, business need assessments and service gap determination, and the collection and reporting of service measures (e.g., tier 1 and tier 2 response and resolution rates, customer satisfaction surveys). May also include directly managing vendor service contracts or assisting with vendor relationship management.

Training

The processes related to providing technology-related instruction to staff aimed at enhancing their skills, knowledge, and performance. Includes training requirement analysis, course design and development, and training delivery.

Infrastructure Services

Infrastructure Services include those activities related to implementing and maintaining the organization's computers, systems software, and connectivity (servers, networks, etc.).

Personal Computer Administration

The activities related to the setup, configuration, original installation, and scheduled maintenance of end users' desktop and laptop computers, end-user terminals, and related peripherals. Includes installation and configuration of PC operating systems and software, such as personal productivity tools and anti-virus applications. Includes the creation and maintenance of disk images, application of patches and updates, and all scheduled maintenance.

Database Administration

The processes related to planning, implementing, and administering the data structures required to support the organization's applications portfolio, and to maintaining the data contained within the organization's defined data structures. Includes performance management and recovery.

Security Administration

The processes related to developing, maintaining, and administering the security plan for the organization's host processors, servers, personal computers, communication devices and networks. Does not include installation of desktop security tools nor server account management – does include managing centrally managed server based security solutions.

Data Center/Server Room Operations

The processes related to the planning, administration, and operation of the facility that houses all centralized computing equipment, including backup/restore operations and storage management. It also includes operation and maintenance of the attendant systems, including fire suppression, backup electrical power, air conditioning, etc.

Project Management

Those processes related to the oversight and coordination of major systems-related technology initiatives.

Server Administration

The activities related to implementing and maintaining servers, including both Intel-based and mid-range devices (such as AS/400). These activities also include administration, account management, and operation of file, print and application servers and other logical network devices; performance management; tuning; applying operating system patches and upgrades; and administering configuration data.

Email/Calendaring Administration

Administration of email and calendaring servers, including account set-up, backup administration, account restoration, etc.

File/Print Administration

Administration of file and print servers including account administration, print queue monitoring, back-up and optimization, etc.

Application Server Administration

Administration of servers used to house or deliver application software to end-users. Includes account administration, optimization of network connectivity, data backup, database restoration, etc. Covers ERP and departmental application hosting, as well as GIS, websites for eGovernment and/or Intranet, etc.

Database Server Administration

Labor concerned with maintaining the hardware and network capabilities associated with the organization's database servers. Examples include assessing and increasing storage capacity, improving data throughout, overseeing server access security, etc.

Storage Administration

Labor associated with the administration of SANS/NAS data storage, centralized archival storage systems and/or off site data storage. Activities would include performing scheduled backups, assessing

storage capacity and growth demands, setting end-user storage quotas, monitoring data storage security and integrity, assisting with emergency planning and data recovery efforts, etc.

Other Server Administration

Administration of any other servers not accounted for in the prior categories. Examples may be dedicated proprietary SCADA servers, servers used for administration of MDTs or other secure communications services, video and webcasting servers, etc. NOTE: Web server administration is NOT in this category -- labor related to these should go under "Application Server Administration", above.

Communication Services

Administration of the devices, services and vendors responsible for voice and data communication within and external to the organization. May include infrastructure device installation and maintenance (phones, routers, etc.), and managing service agreements and relationships with vendors and/or contractors.

Network Administration (LAN/WAN/Wireless)

The activities related to implementing and maintaining the operational integrity of the organization's local and wide-area networks, both wired and wireless, and video technology. Technologies include building wiring, fiber optic data circuits, and point-to-point technologies such as laser and microwave. These activities include responding to user requests for assistance, performance monitoring, coordinating with external network service providers, and taking appropriate corrective actions as needed.

Radio Support

The activities related to maintaining a radio communication infrastructure inclusive of end-user radio support for both public safety and other government needs. May include direct infrastructure technical support or oversight of independent contractors, and managing vendor relationships. Staff in this role may be involved in developing radio maintenance procedures and operational policies, communications protocols, and/or emergency response planning efforts.

Telephone Systems Support

Implementation, administration and management of analog and/or Voice over IP telephone services, including number assignment, phone moves, voice mail system management, connectivity, switch or gateway maintenance, etc.

Application Services

Application Services includes those activities related to developing, installing, configuring, and otherwise maintaining the software needed to meet the operational, management, and reporting requirements of the organization.

Financial Management

Management and maintenance of the applications related to risk management, treasury management, water accounting, and contract management.

Planning

Management and maintenance of the applications related to the administration of the organization's planning and development automation, such as supply/demand modeling, and business resumption planning, etc.

Infrastructure Development and Maintenance

Management and maintenance of the applications related to supporting the organization's utilities, fleet, and other major physical assets, including: project management, work management, drawing management, real property management, and computer aided drafting and design.

Water Delivery

Management and maintenance of the applications related to meter reading, water supply scheduling, and power coordination.

Core Support Services

Management and maintenance of the applications that are used to support internal administrative needs including help desk, legal support, board support, human resources/payroll, timekeeping, and management reporting.

Quality Assurance and Compliance

Management and maintenance of the applications related to water quality monitoring and environmental health and safety.

Web/Internet

Management and maintenance of applications related to the Internet and intranet including the design, maintenance, and development of web pages.

IT Planning

IT planning includes those activities related to planning for the technology function at the organization.

Strategic Planning and Governance

The processes related to identifying and evaluating the future directions for IT application, networks, and hardware for the organization. Includes strategic planning, evaluating and prioritizing IT investments, technology research, participating in committees and task forces, and feasibility studies.

Research and Development

The processes related to evaluation and testing of current and future IT products and services, and to the deployment of pilot projects to test the viability of these technologies for the organization. Includes dissemination of relevant information to appropriate parties.

Disaster Recovery/Planning

The processes related to developing, maintaining, updating, and testing the organization's IT disaster recovery/business resumption plan, and to activating and managing the plan in the event of a disaster.

IT Administration

IT Administration includes those activities related to the oversight and administration of the technology function at the organization.

Asset Management

The processes related to managing the IT properties of the organization, include tracking serial number, warranty, and inventory.

IT Procurement

The processes related to acquisition of goods and services in support of all IT functions; including the development of Requests for Proposals (RFP's), evaluation and selection of vendors, management of purchasing activities, receipt and inventory of goods, and tracking of warranty information and performance guarantees.

Standards and Policies Development

Those processes related to the creation and updating of IT standards and policies related to hardware, software, procurement, security, and staffing.

Administrative Support

The processes related to the provision of clerical, administrative, and related services required for the ongoing operation of the IT division.

Departmental Management

The processes related to management and oversight of the organization's technology functions: including staff evaluation, quality assurance, and budgeting.

Geographic Information Systems (GIS)

GIS includes the integrated hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

GIS Data Maintenance

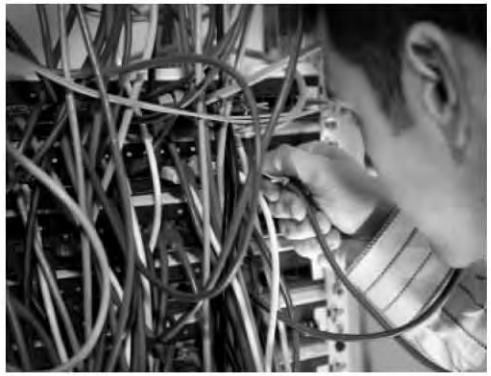
The processes related to entering and maintaining GIS data (e.g., updating assets or infrastructure with as-builts), making maps based on existing GIS structures, and performing analysis on existing GIS structures. **This labor effort is not included in the analysis as it is not considered a specialized IT discipline or function.**

Capital IT Projects

Capital IT projects consists of the expenditures for a physical improvement to an existing capital asset such as additions and major alterations that are intended to improve performance or increase useful life.

Capital IT Project Labor

The labor associated with physical improvements to existing capital assets (i.e., additions and major alterations) that are intended to improve performance or increase useful life. **This labor effort is not included in the analysis as it is not operations and maintenance.**



Appendix C

Business Function Model

What is a Business Function Model?

A business function model identifies, in a structured format, the activities an organization performs to meet its business objectives. Each of the activities shown in a business function model becomes a potential candidate for automation. The model, therefore, serves as a template for driving an organization's overall approach to automating its business functions.

It is important to distinguish between a function model and an organization model. An organization model depicts an enterprise's structure, typically, in a hierarchical fashion. A business function model depicts what an organization does, independent of organizational structure.

Business functions tend to be much more stable than organizational units. Organizations typically change over time to accommodate changes in how an enterprise does its work. The business functions themselves remain relatively unchanged, unless the business significantly alters its mix of services and/or products.

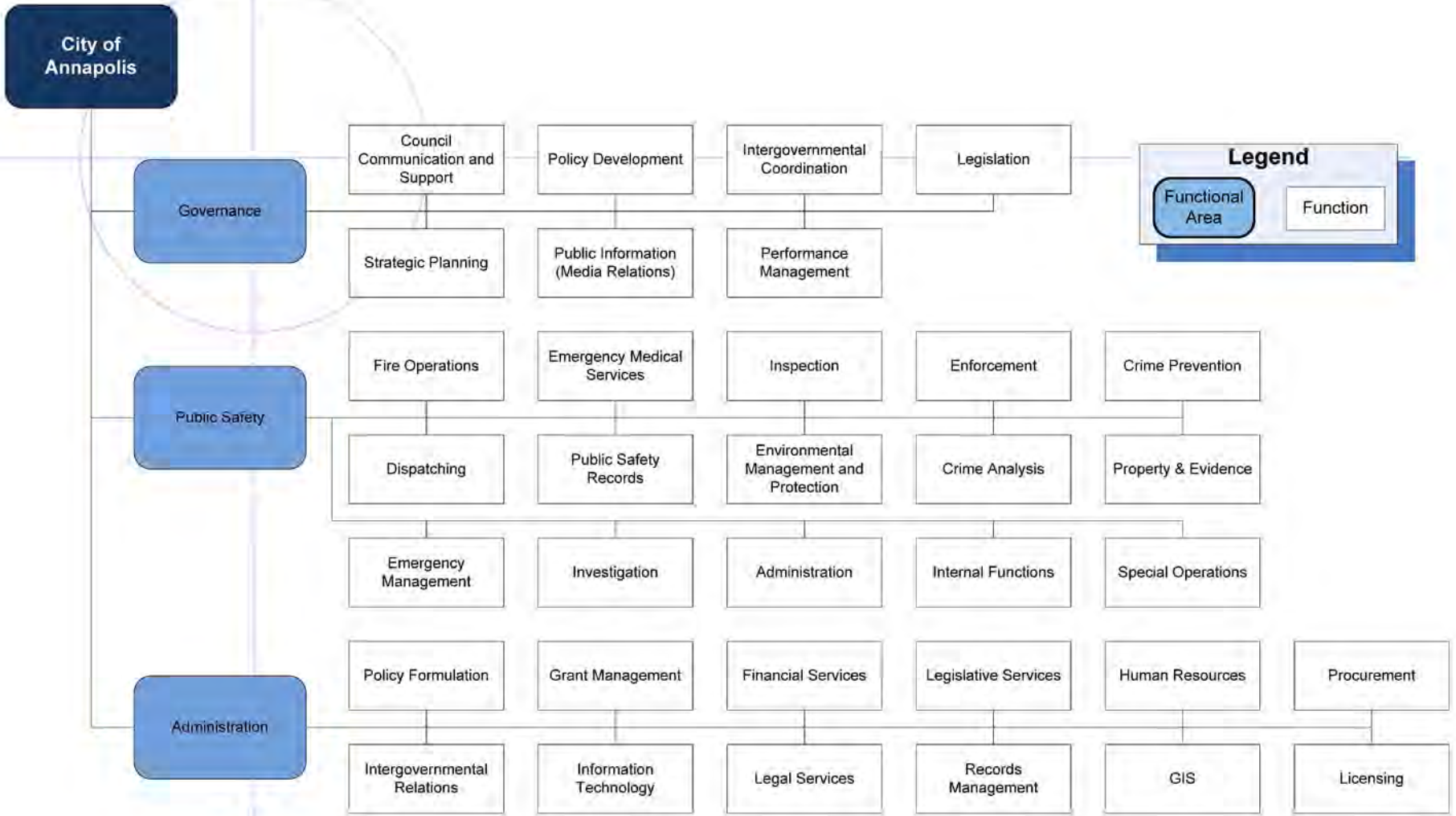
Diagramming Conventions

Business function models contain two primary components:

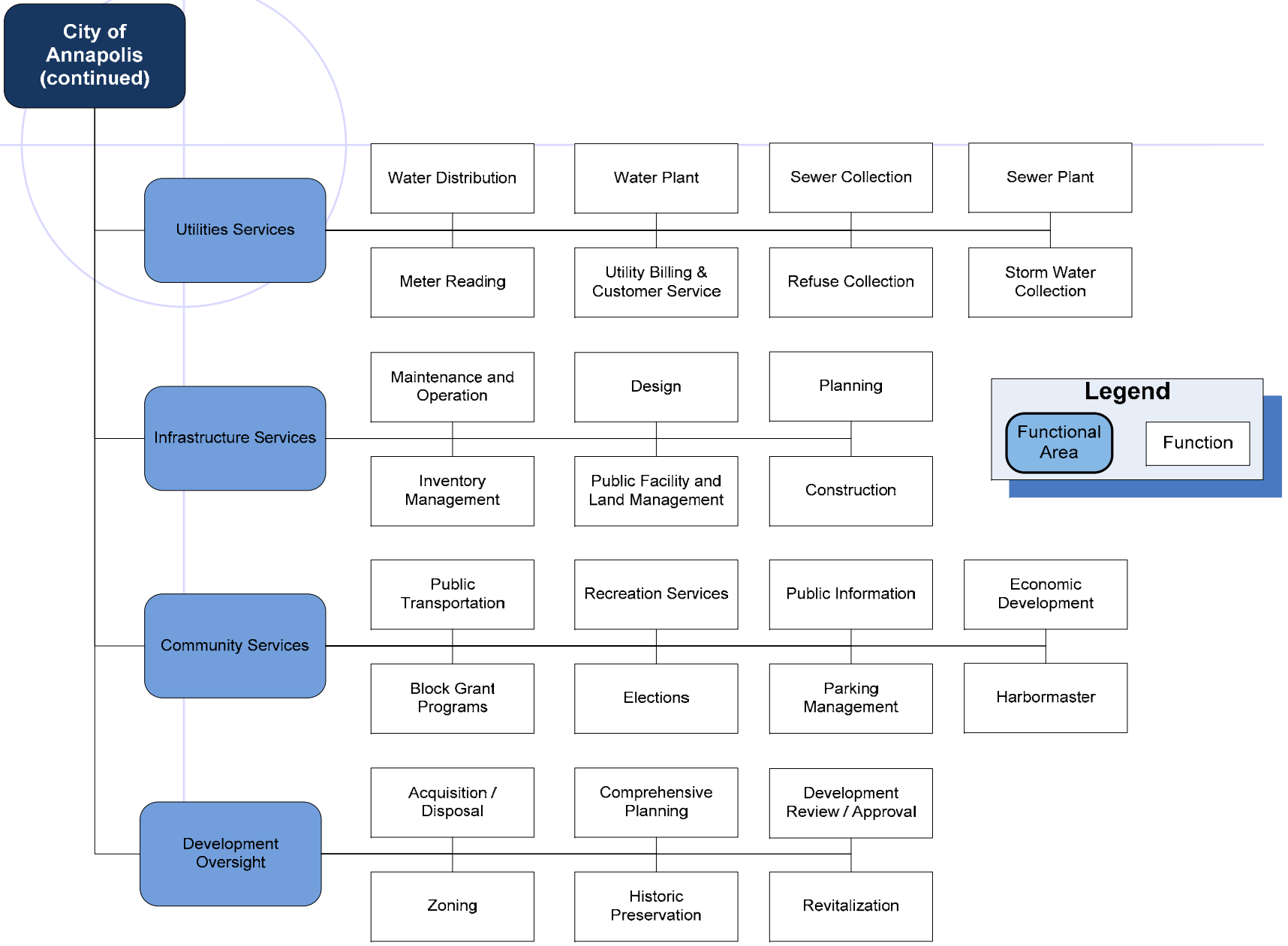
- **Functional Areas –** the major categorization of all tasks required to conduct business (e.g., "Public Safety" is a functional area)
- **Functions –** a group of ongoing activities which, together, completely support one functional area (e.g., "Emergency Management" is a subordinate function within the "Public Safety" functional area)

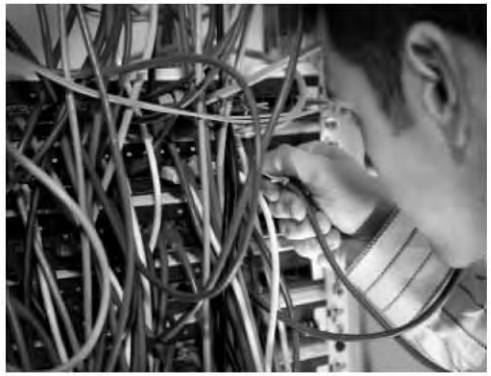
The diagram on the following pages depicts a function model of Annapolis' business. The "roundtangles" represent functional areas. The rectangles connected to the right of the "roundtangles" represent subordinate business functions.

Please note that the order in which the functional areas, functions, and sub-functions are listed does not imply any precedence of dependence.


City of Annapolis
Governance
Council Communication and Support
Policy Development
Intergovernmental Coordination
Legislation
Strategic Planning
Public Information (Media Relations)
Performance Management
Legend
Functional Area
Function
Public Safety
Fire Operations
Emergency Medical Services
Inspection
Enforcement
Crime Prevention
Dispatching
Public Safety Records
Environmental Management and Protection
Crime Analysis
Property & Evidence
Emergency Management
Investigation
Administration
Internal Functions
Special Operations
Administration
Policy Formulation
Grant Management
Financial Services
Legislative Services
Human Resources
Procurement
Intergovernmental Relations
Information Technology
Legal Services
Records Management
GIS
Licensing

C


City of Annapolis (continued)
Utilities Services
Water Distribution
Water Plant
Sewer Collection
Sewer Plant
Meter Reading
Utility Billing & Customer Service
Refuse Collection
Storm Water Collection
Infrastructure Services
Maintenance and Operation
Design
Planning
Inventory Management
Public Facility and Land Management
Construction
Legend
Functional Area
Function
Community Services
Public Transportation
Recreation Services
Public Information
Economic Development
Block Grant Programs
Elections
Parking Management
Harbormaster
Development Oversight
Acquisition / Disposal
Comprehensive Planning
Development Review / Approval
Zoning
Historic Preservation
Revitalization



Appendix D

Ideal Application Architecture and Gap Analysis Summary

Overview

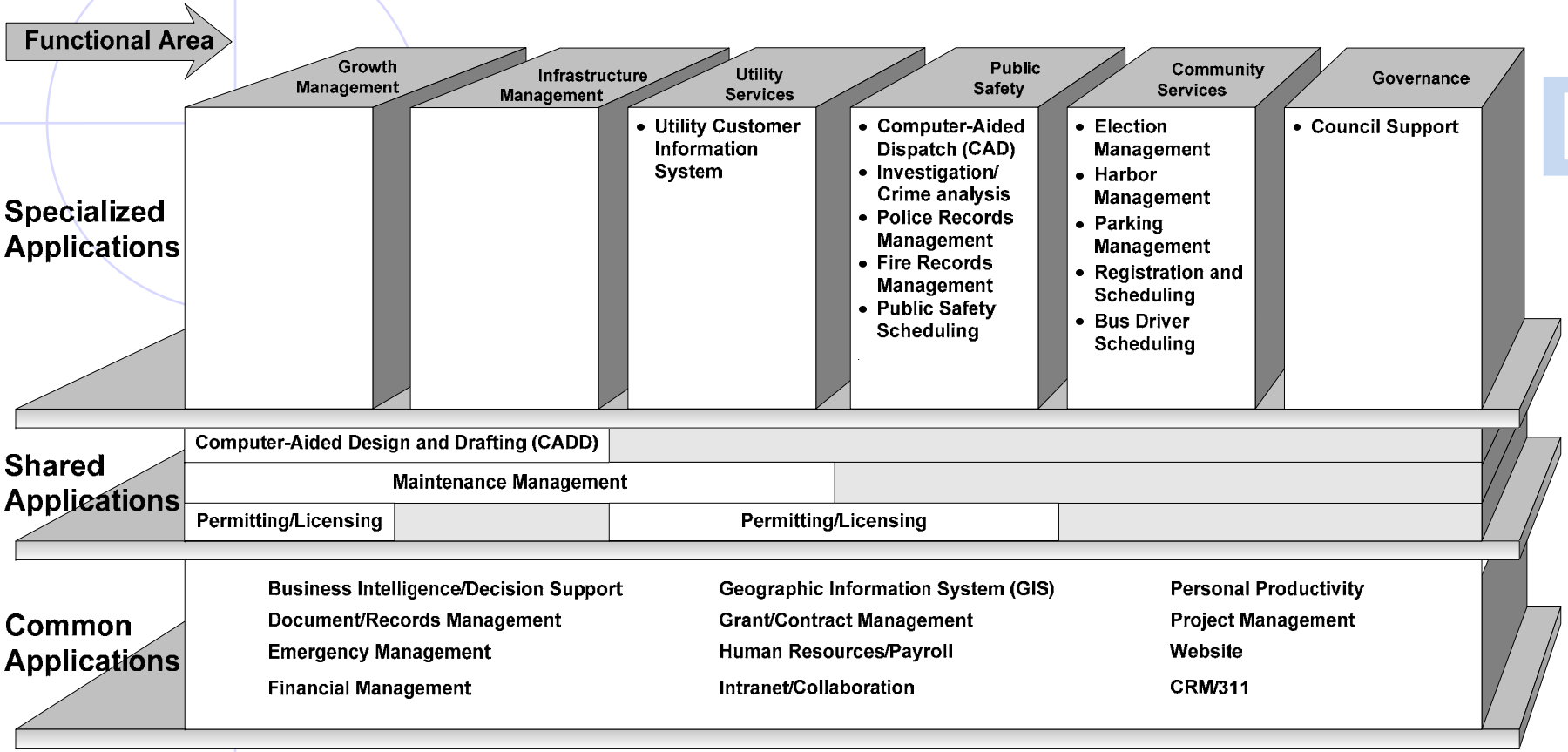
This appendix presents an ideal application architecture for the City of Annapolis, driven by the City's business function model. The diagram builds on the functional areas outlined in that model, and highlights a strategic software approach to help automate them along the following lines:

- **Specialized Applications –** supporting one functional area
- **Shared Applications –** supporting more than one, but not all, functional areas
- **Common Applications –** supporting all functional areas across the enterprise

The ideal application architecture on the following page illustrates those specialized applications that – in an ideal environment – would support each of the City's business functional areas (listed across the top of the diagram), as well as shared and citywide applications that would support multiple functional areas.

We utilize this schematic to graphically depict PTI's "gap" analysis – a comparison of the City's current applications to the ideal architecture. Where the gap is large, opportunities for investment exist.

City of Annapolis Ideal Application Architecture



Methodology

PTI worked with the City to conduct a gap analysis of existing business applications. PTI first documented application strengths and weaknesses during interviews and focus groups with city staff. PTI then conducted desk-side application reviews, during which experienced users of each application were asked to evaluate the software on a scale of 1 (severe gap) to 5 (no gap) for six separate criteria:

- **Functionality –** the ability of the application to support necessary business processes
- **Ease of use –** the degree of user friendliness of the application's interface, screen layout, navigation, etc.
- **Integration –** the degree to which the application shares data with other applications, to minimize duplicate data entry
- **Implementation –** the degree to which the purchased application has been deployed
- **Reporting –** the appropriateness of canned reports and the degree/ease of report customization
- **Supporting systems –** the reliability, responsiveness, and/or "newness" of the support operating system, databases, etc.

Finally, PTI revised and validated these gap assignments during a workshop with the City's project steering committee.

Application Gap Analysis Summary

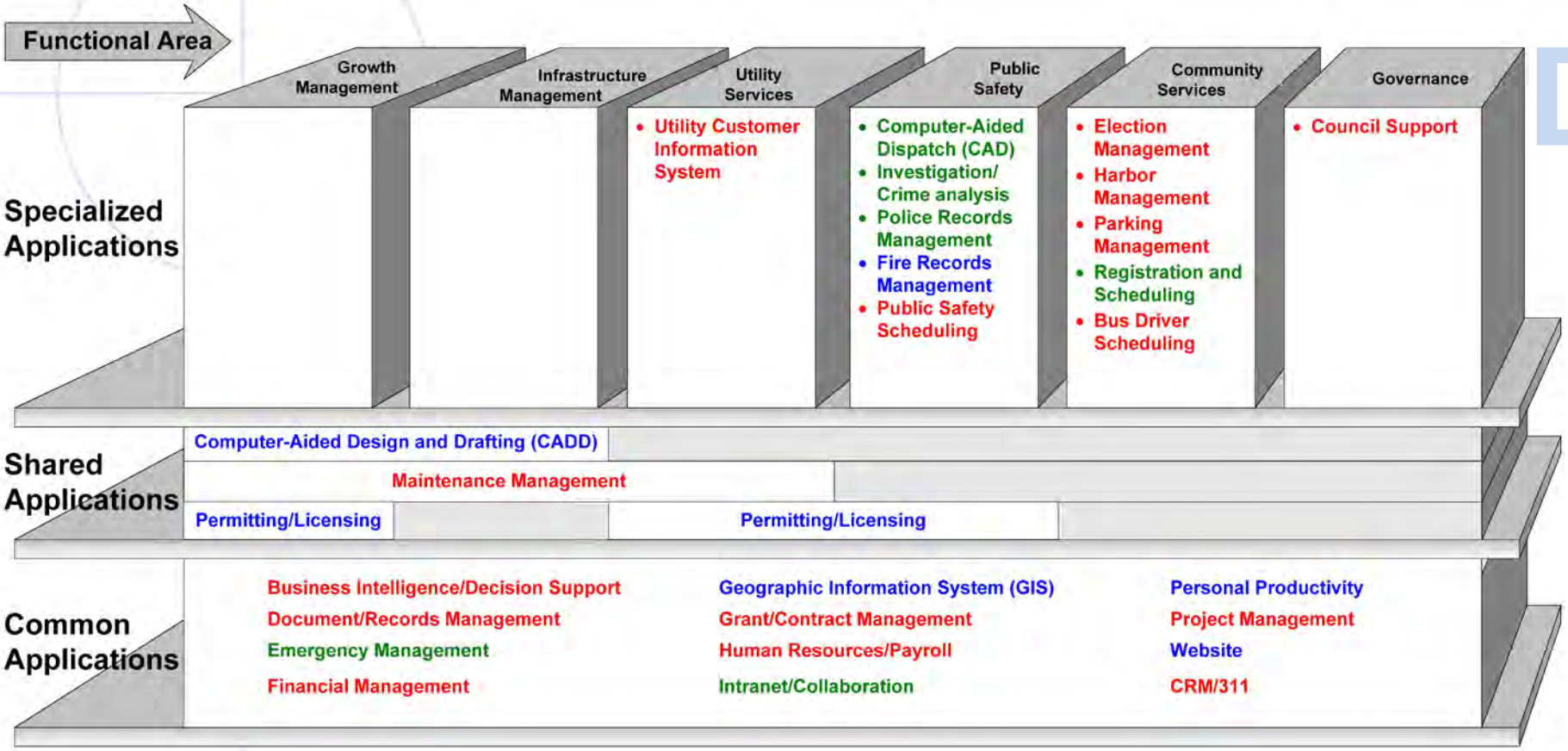
The assigned gaps (minimal, moderate, and severe) represent the gap between the functionality of existing applications and the target or ideal application environment, based on the analysis described above.

- **Minimal gap –** the City's application is technically current, easy to use, integrated with other key city applications and offers sufficient functionality
- **Moderate gap –** the City's application is aging, moderately difficult to use, integrated with some key applications, and meets most needs but requires more investment to offer desired functionality
- **Severe gap –** the City's application is at or beyond end-of-life, meets very few needs, is difficult to use, or integrated with few or no other key city applications – these applications require significant investment or replacement to meet required functionality

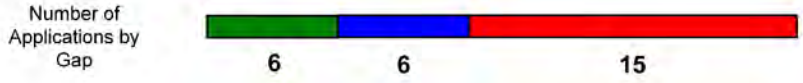
In some cases, no current application corresponds to the ideal state. In these cases, the severe gap results from the absence of ideal functionality. Where the gap is severe, opportunities exist for significant return on investment.

As illustrated in the gap analysis diagram below, fifteen (44%) applications in the City's portfolio were assigned severe gaps, six (22%) received moderate gaps and only six (22%) had minimal gaps.

City of Annapolis Application Gap Analysis



Overall Gap Assessment	Minimal
	Moderate
	Severe
	Not Reviewed



Appendix E

Project Descriptions and Cost Detail

This appendix details the implementation projects, grouped by the City's IT goals:

- IT investments align with city strategic priorities
- Technology supports accessible and accountable government
- Information systems streamline city operations and improve service
- Technical infrastructure is secure, reliable, and cost effective
- IT services are customer-oriented and responsive
- City workforce is computer-literate and technology-enabled

Global Cost and Labor Assumptions

PTI developed cost estimates for the recommended IT projects identified in Chapters 3 and 4. Costing assumptions for these projects include:

- All costs are incremental to current city budgets (i.e., the figures do not include amounts already budgeted) with the exception of $350,000 already budgeted for a new utility customer information system and $350,000 already budgeted for a new human resources/payroll system (projects 3.1 & 3.2)
- All internal labor effort estimates are in full-time equivalents (FTEs)
- An FTE work year comprises 1,820 hours
- Costs are applied to internal labor at the fully-burdened (30%) average hourly labor rates of $39.00 for IT Services staff and $52.00 for business unit staff
- One-time internal labor estimates are calculated based on the total required labor effort over the duration of the project – backfill is not included
- Costs are applied to external labor at the following rates:
  - Procurement – $150.00
  - Implementation – $175.00
  - Project Management – $175.00
  - Quality Assurance – $175.00
  - Training – $150.00
  - Miscellaneous – $150.00
- Recurring software costs are estimated at 20% of one-time license costs
- Recurring hardware costs (e.g., maintenance, support, replacement) are estimated at 20% of one-time purchase costs, except where otherwise noted

- Recurring internal IT labor for supporting new and upgraded applications (projects 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, and 5.2) is incorporated as part of the recommended IT staffing increases within project 5.1

The following pages detail the costs and assumptions associated with the implementation projects presented in chapters 3 and 4. Each page presents the estimated costs and labor effort utilizing the framework below.

PTI estimated city implementation labor effort in FTEs.

Cost projections were calculated using an average hourly rate for internal labor.

	One-time				Recurring			
	Time (Hours)		Costs		Time (Hours)		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	8,805	14,088	$ 411,176	$ 666,679	2,201	4,403	$ 119,290	$ 238,580
Business Unit SME	7,044	10,566	$ 311,345	$ 467,017	440	881	$	$
Central IT	1,761	3,522	$ 99,831	$ 199,662	1,761	3,522	$	$
Professional Services Labor	9,313	14,386	$ 1,396,950	$ 2,157,900	80	120	$	$
Procurement	400	600	$ 60,000	$ 90,000				
Implementation and Training	6,625	10,250	$ 993,750				$	
Project Management	2,080	3,120	$ 312,					
Quality Assurance	208	416	$ 31,200					
Hardware			$ -				$ -	$ 7,500
Software			$ 40,000				$ 84,000	$ 150,000
Total Time and Costs	18,118	28,474	$ 28,126	$ 3,649,579	2,281	4,523	$ 5,290	$ 414,080

When included, independent, third-party, quality assurance is estimated at the high-end at **10%** of implementation costs for hardware and software implementation projects.

One-time external labor costs are calculated based on total required labor hours over the duration of the project.

Recurring hardware costs are estimated at **20%** of one-time purchase costs, except where otherwise noted.

Software and hardware cost estimates, where applicable, are informed by market research.

Recurring software costs are estimated at **20%** of one-time purchase costs, except where otherwise noted.

1.1 Develop and implement a formal citywide IT decision making process

This project establishes a citywide IT governance model for information technology at the City (detailed in chapter 3). It charters an executive technology committee and defines membership, scope of authority, roles, responsibilities, and relationships between MIT and other city departments. This project also creates the governance processes and associated tools to support IT project oversight.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.09	0.14	$ 7,592	$ 11,388	0.06	0.10	$ 5,928	$ 8,892
Business Unit SME	0.06	0.09	$ 5,408	$ 8,112	0.05	0.08	$ 4,992	$ 7,488
Central IT	0.03	0.05	$ 2,184	$ 3,276	0.01	0.02	$ 936	$ 1,404
Professional Services Labor (Total)			$ -	$ -			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services		100	$ -	$ 15,000			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 7,592**	**$ 26,388**			**$ 5,928**	**$ 8,892**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Four two-hour meetings with eight department representatives and two MIT staff to:
  - Establish an executive technology committee charter
  - Define membership, scope of authority, roles, responsibilities, and relationships for IT decision making at the city
  - Review and finalize the executive technology committee charter
  - Review and finalize attendant processes and tools
- Eighty hours of central IT and business unit staff (40 hours each) support for the development and finalization of materials
- On the high end, the City utilizes professional implementation/change management services
- On a recurring basis, the same group of business unit and MIT representatives meet six times per year

1.2 Create an IT-specific capital improvement fund

This project develops an IT CIP funding model/approach and moves this approach through the City's governance process for approval.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.15	0.21	$ 13,208	$ 19,032			$ -	$ -
Business Unit SME	0.11	0.16	$ 10,400	$ 15,600			$ -	$ -
Central IT	0.04	0.05	$ 2,808	$ 3,432			$ -	$ -
Professional Services Labor (Total)			$ -	$ -			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services		125	$ -	$ 18,750			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 13,208**	**$ 37,782**			**$ -**	**$ -**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Eight two-hour meetings with 10 key city stakeholders to:
  - Create the CIP fund
  - Develop funding model
  - Acquire appropriate approvals
  - Implement new fund
- Forty hours of business unit staff support for the development and finalization of materials
- High-end estimates also include costs and labor associated with procuring and utilizing professional consulting services as well as 50% more internal labor hours

1.3 Conduct an IT Sourcing Feasibility Study

This project conducts a feasibility study to quantify and evaluate the costs and benefits of potential IT outsourcing options which may offer viable alternatives to enterprise-owned applications, local infrastructure hosting and internal IT support. This study will define IT sourcing alternatives and assumptions (e.g., complete outsourcing, tier 1/help desk services only, network services only, completely internal IT services and support), develop a long-term cost analysis for each of the options (including total cost of ownership and return on investment), and evaluate IT sourcing alternatives (including both quantitative and qualitative options, such as technical skill availability, long-term strategic fit, cost, staff buy-in, organizational change). Ultimately, this study will result in an informed, recommended IT sourcing direction for the City of Annapolis.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.11	0.14	$ 8,736	$ 12,168			$ -	$ -
Business Unit SME	0.07	0.09	$ 6,240	$ 8,736			$ -	$ -
Central IT	0.04	0.05	$ 2,496	$ 3,432			$ -	$ -
Professional Services Labor (Total)			$ -	$ -			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services	400	700	$ 60,000	$ 105,000			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 68,736**	**$ 117,168**			**$ -**	**$ -**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- The City utilizes professional services to conduct the feasibility study
- MIT and business unit staff support the study
- Three workshops with the consulting team
- Review the draft study and providing feedback
- Attending the final presentation
- MIT staff administers the project
- High-end estimate increases the size of the project steering team, the scope of study (e.g., more alternatives, additional financial analysis), and the cost of the professional consulting services

2.1 Define IT performance measures

This project defines specific IT performance level targets, and establishes mechanisms to regularly monitor and report on targets.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.10	0.19	$ 8,892	$ 15,834	0.02	0.05	$ 2,028	$ 4,056
Business Unit SME	0.05	0.11	$ 4,992	$ 9,984	0.01	0.03	$ 1,248	$ 2,496
Central IT	0.05	0.08	$ 3,900	$ 5,850	0.01	0.02	$ 780	$ 1,560
Professional Services Labor (Total)			$ -	$ -			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services	60	120	$ 9,000	$ 18,000			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 17,892**	**$ 33,834**			**$ 2,028**	**$ 4,056**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Six to twelve two-hour meetings with department representatives to:
  - Establish objectives for reporting
  - Review and finalize performance targets
  - Review and finalize reporting mechanisms
- Additional central IT staff support for developing and finalizing materials
- City utilizes professional services to identify/review performance targets – amount of external services varies between low- and high-cost scenarios
- Recurring internal FTE perform ongoing measurement, analysis and reporting, as well as participation in quarterly meetings with MIT and department staff to review/update measures

2.2 Evaluate potential CRM/311 solutions

This project conducts a feasibility study to evaluate various alternatives for potential citizen relationship management and/or 311 call center systems. This includes strategic alignment, cost estimation and implementation planning (scheduling, key milestones, and resource assignments). The alternatives evaluated will range from low-cost leveraging of existing systems to full-featured call center solutions.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.29	0.16	$ 27,456	$ 14,976			$ -	$ -
Business Unit SME	0.29	0.16	$ 27,456	$ 14,976			$ -	$ -
Central IT			$ -	$ -			$ -	$ -
Professional Services Labor (Total)		500	$ -	$ 75,000			$ -	$ -
Procurement		500	$ -	$ 75,000				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 27,456**	**$ 89,976**			**$ -**	**$ -**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- On the low end, business unit FTE and central IT FTE develop the plan
- On the high end, the City utilizes professional consulting services in place of internal labor

2.3 Implement the preferred CRM/311 solution

Based on the recommendation from project 2.2, this project implements a customer relationship management system. At the low end, this simply extends the system(s) already in use by Public Works and/or other departments to a citywide basis. It also includes some business process improvement to align customer service practices across the organization. At the high end, it implements a full-featured CRM package, setting up a call center to provide "one-stop" convenience for resident and visitor enquiries.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.43	0.36	$ 32,864	$ 31,460			$ -	$ -
Business Unit SME	0.10	0.25	$ 9,464	$ 23,660			$ -	$ -
Central IT	0.33	0.11	$ 23,400	$ 7,800			$ -	$ -
Professional Services Labor (Total)	264	1,080	$ 45,600	$ 177,000			$ -	$ -
Procurement		400	$ -	$ 60,000				
Implementation and Training	264	680	$ 45,600	$ 117,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 5,000	$ 40,000			$ 1,000	$ 8,000
Software			$ -	$ 80,000			$ -	$ 16,000
Total Costs			**$ 83,464**	**$ 328,460**			**$ 1,000**	**$ 24,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Low end is primarily MIT-driven, with some involvement by business units
- High end based on as-bid costs for a slightly larger municipality
- Implementation largely done by vendor, coordinating with MIT
- Additional input by business units
- Excludes costs for call center facilities and associated staff
- Ongoing IT support will range between 0.5 and 0.75 FTEs

3.1 Implement a new utility customer information system

This project implements a new customer information/utility billing system.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	2.25	3.50	$ 183,365	$ 283,920			$ -	$ -
Business Unit SME	1.00	1.50	$ 94,640	$ 141,960			$ -	$ -
Central IT	1.25	2.00	$ 88,725	$ 141,960			$ -	$ -
Professional Services Labor (Total)	600	1,700	$ 103,000	$ 290,500			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	480	1,280	$ 82,000	$ 217,000			$ -	$ -
Project Management	80	280	$ 14,000	$ 49,000				
Quality Assurance	40	140	$ 7,000	$ 24,500				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 25,000	$ 35,000			$ 5,000	$ 7,000
Software			$ 50,000	$ 200,000			$ 10,000	$ 40,000
Total Costs			**$ 361,365**	**$ 809,420**			**$ 15,000**	**$ 47,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- High- and low-end estimates are based on bids already received by the City
- Ongoing IT support for this application will range between 0.75 and 1.0 FTEs

3.2 Implement a new human resources and payroll system

This project replaces the payroll function of the existing financial management system and extends it to include timekeeping. It also implements new functionality to support position tracking, job applications, benefits enrollment, training management, and other human resources (HR) functions.

The RFP for this project has already been issued, and the City was evaluating responses as of February 2010. Funds are budgeted in the current fiscal year for the purchase of this system and accurate costs will soon be known. **Estimates assume separate vendors for this system and financial management (project 3.3). The City may realize cost savings even beyond the low-end estimates by selecting a vendor that offers integrated finance/HR system functionality.**

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	2.00	2.00	$ 165,620	$ 165,620			$ -	$ -
Business Unit SME	1.00	1.00	$ 94,640	$ 94,640			$ -	$ -
Central IT	1.00	1.00	$ 70,980	$ 70,980			$ -	$ -
Professional Services Labor (Total)	875	4,000	$ 153,125	$ 700,000			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	875	4,000	$ 153,125	$ 700,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 15,000	$ 25,000			$ 3,000	$ 5,000
Software			$ 125,000	$ 425,000			$ 25,000	$ 85,000
Total Costs			**$ 458,745**	**$ 1,315,620**			**$ 28,000**	**$ 90,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- High-end estimates represent a Tier 1 solution[29] and low-end estimates represent a Tier 2 solution[30]
- Both estimates require similar involvement of MIT and business unit labor for implementation
- Business unit staff participate in determining and testing software configuration
- MIT staff assists the vendor in deploying modules and integrating the application with other software packages and data repositories at the City
- Ongoing IT support for this application will range between 0.75 and 1.25 FTEs
- The City utilizes professional implementation assistance to train end users, ensuring application proficiency

[29] A comprehensive, flexible software package targeted toward large accounts.
[30] Products not as functionally rich as Tier 1 solutions, which have limited tailoring capabilities and are targeted toward smaller and mid-sized accounts.

3.3 Implement a financial management system

This project replaces the existing financial management system with a more modern and easily integrated solution. It also implements new functionality to support budgeting, grant management, e-payments, and management reporting.

Estimates assume separate vendors for this system and HR/Payroll (project 3.2). The City may realize cost savings even beyond the low-end estimates by selecting a vendor that offers integrated finance/HR/payroll system functionality.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	4.00	4.00	$ 331,240	$ 331,240			$ -	$ -
Business Unit SME	2.00	2.00	$ 189,280	$ 189,280			$ -	$ -
Central IT	2.00	2.00	$ 141,960	$ 141,960			$ -	$ -
Professional Services Labor (Total)	2,625	12,750	$ 459,375	$ 2,212,500			$ -	$ -
Procurement		750	$ -	$ 112,500				
Implementation and Training	2,625	12,000	$ 459,375	$ 2,100,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 30,000	$ 50,000			$ 6,000	$ 10,000
Software			$ 300,000	$ 600,000			$ 60,000	$ 120,000
Total Costs			**$ 1,120,615**	**$ 3,193,740**			**$ 66,000**	**$ 130,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- High-end estimates represent a Tier 1 solution
- Low-end estimates represent a Tier 2 solution
- Both estimates require similar involvement of MIT and business unit labor for implementation
- Business unit staff participate in determining and testing software configuration
- MIT staff assists the vendor in deploying modules and integrating the application with other software packages and data repositories at the City
- Ongoing IT support for this application will range between 1 and 1.75 FTEs
- The City utilizes professional implementation assistance to train end users, ensuring application proficiency

3.4 Implement an electronic document management system

This project installs an enterprise document scanner with software supporting document archiving, indexing, and retrieval. The software also supports e-discovery, public information requests, and Internet viewing functions.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	1.75	1.75	$ 147,875	$ 147,875			$ -	$ -
Business Unit SME	1.00	1.00	$ 94,640	$ 94,640			$ -	$ -
Central IT	0.75	0.75	$ 53,235	$ 53,235			$ -	$ -
Professional Services Labor (Total)	1,000	1,000	$ 165,000	$ 165,000			$ -	$ -
Procurement	400	400	$ 60,000	$ 60,000				
Implementation and Training	600	600	$ 105,000	$ 105,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services		4,000	$ -	$ 600,000			$ -	$ -
Hardware			$ 90,000	$ 90,000			$ 18,000	$ 18,000
Software			$ 200,000	$ 200,000			$ 40,000	$ 40,000
Total Costs			**$ 602,875**	**$ 1,202,875**			**$ 58,000**	**$ 58,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Business unit staff participate in:
  - Workflow design
  - Process engineering
  - Training
  - System testing
- MIT staff:
  - Support system implementation
  - Train users
  - Test the system
- Recurring business unit labor effort provides input to MIT for ongoing system tailoring
- Recurring IT FTE effort performs ongoing system maintenance and administration
- Ongoing IT support for this application will range between 0.5 and 1.0 FTEs
- Hardware, software, and implementation are similar for high- and low-end estimates
- Low-end approach has City staff scan the backlog of paper documents
- High-end approach utilizes vendor staff to scan backlog of paper documents

3.5 Implement a citywide maintenance management system

This project implements a single maintenance management solution at the City. It replaces point solutions currently in use by Public Works, Central Services and other departments.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	4.50	5.00	$ 384,475	$ 425,880			$ -	$ -
Business Unit SME	2.75	3.00	$ 260,260	$ 283,920			$ -	$ -
Central IT	1.75	2.00	$ 124,215	$ 141,960			$ -	$ -
Professional Services Labor (Total)	1,520	2,190	$ 247,500	$ 358,750			$ -	$ -
Procurement	500	700	$ 75,000	$ 105,000				
Implementation and Training	840	1,280	$ 141,000	$ 217,000			$ -	$ -
Project Management	120	140	$ 21,000	$ 24,500				
Quality Assurance	60	70	$ 10,500	$ 12,250				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 10,000	$ 35,000			$ 2,000	$ 7,000
Software			$ 40,500	$ 137,500			$ 8,100	$ 27,500
Total Costs			**$ 682,475**	**$ 957,130**			**$ 10,100**	**$ 34,500**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Business unit staff:
  - Inform functional requirements
  - Participate in developing an RFP, as well as evaluating vendor responses
  - Determine business process impacts and changes
  - Inform workflow design
  - Test the system
- MIT staff:
  - Inform technical requirements
  - Participate in developing an RFP, as well as evaluating vendor responses
  - Assist the vendor with installing and integrating the software package
  - Perform data conversion
  - Test the system
- Both estimates include professional procurement assistance, project management, and quality assurance
- The low-end estimate requires a single web server
- The high-end estimate requires one server each for production, test, and database functions
- Ongoing IT support for this application will range between 0.5 and 1.0 FTEs

3.6 Pilot decision support/business intelligence software

This project implements a decision support/business intelligence tool in a single business area (e.g., Finance). Limiting the initial deployment of this automation ensures the City does not overextend its available IT resources, provides a test case for product capabilities, and minimizes the City's investment and associated risks.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.50	1.00	$ 41,405	$ 82,810			$ -	$ -
Business Unit SME	0.25	0.50	$ 23,660	$ 47,320			$ -	$ -
Central IT	0.25	0.50	$ 17,745	$ 35,490			$ -	$ -
Professional Services Labor (Total)	175	350	$ 28,125	$ 57,500			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	175	350	$ 28,125	$ 57,500			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 10,000	$ 20,000			$ 2,000	$ 4,000
Software			$ 975	$ 20,000			$ 195	$ 4,000
Total Costs			**$ 80,505**	**$ 180,310**			**$ 2,195**	**$ 8,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Business unit SME FTEs:
  - Identify critical decision support areas
  - Review and adjust business processes
  - Test the system
- MIT FTEs:
  - Implement, integrate and configure the software
  - Perform data conversion
  - Test the system
- The City purchases a new server and database for hosting the application
- Recurring business unit SME FTEs inform ongoing system tailoring
- Recurring central IT FTEs conduct ongoing system maintenance and administration
- Ongoing IT support for this application will range between 0 and 0.25 FTEs

4.1 Utilize a professionally-designed data center to host core infrastructure

This project moves the City's mission-critical servers and related equipment to a more secure and reliable facility. The City will most likely choose the services of a vendor specializing in infrastructure hosting, unless a data center shared with other local jurisdictions is shown to be more cost-effective. Implementation will be staged in phases to coincide with major application replacements, avoiding the expense and risk of moving old and non-standard equipment to the new data center. This project will also include completion of the City's fiber network ring (phase 4), which will be externally funded (either through a government partner or federal grants). Thus, the associated one-time costs are not included here and the recurring costs fall beyond this plan's time horizon.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.04	0.09	$ 3,120	$ 6,240			$ -	$ -
Business Unit SME			$ -	$ -			$ -	$ -
Central IT	0.04	0.09	$ 3,120	$ 6,240			$ -	$ -
Professional Services Labor (Total)	10	25	$ 1,750	$ 4,375			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	10	25	$ 1,750	$ 4,375			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 12,000	$ 24,000			$ 12,000	$ 24,000
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 16,870**	**$ 34,615**			**$ 12,000**	**$ 24,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Implementation costs are minimal, since most server installation costs are associated with specific application projects
- Recurring costs reflect a range of quoted prices for rental of two standard racks
- Server consolidation/virtualization may decrease rack space required, with commensurate cost savings

4.2 Revise disaster recovery plan

This project updates and expands the existing disaster recovery plan to provide same-day recovery of mission-critical computing services in the event of an emergency. The plan is tested on an annual basis by MIT staff. Details of the plan will be contingent on the capabilities of the data center utilized in project 4.1.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.12	0.22	$ 9,672	$ 17,680	0.02	0.04	$ 1,560	$ 3,120
Business Unit SME	0.05	0.09	$ 4,992	$ 8,320			$ -	$ -
Central IT	0.07	0.13	$ 4,680	$ 9,360	0.02	0.04	$ 1,560	$ 3,120
Professional Services Labor (Total)	40	240	$ 7,000	$ 42,000			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	40	240	$ 7,000	$ 42,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 16,672**	**$ 59,680**			**$ 1,560**	**$ 3,120**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Business unit staff involved in initial plan update
- At the low end, the City utilizes an advisory level of consulting service for the initial plan update – then continues to update and test its disaster recovery plan using internal IT labor
- At the high end the City utilizes professional consulting to fully develop the revised plan and support initial testing – subsequent updates and tests will be conducted using internal IT labor

4.3 Define, fund, and implement a formal technology replacement cycle

This project determines the replacement life cycle for PCs, servers, and critical network equipment and appropriates the annual amount needed for replacement. The City has historically allocated approximately $100,000 for PC and server replacement each year. The figures shown here represent average annual expenditures – actual costs will vary from year to year depending on the exact amount of equipment reaching the end of its life cycle.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.08	0.16	$ 7,280	$ 12,480	0.20	0.35	$ 13,884	$ 24,960
Business Unit SME	0.04	0.07	$ 4,160	$ 6,240			$ -	$ -
Central IT	0.04	0.09	$ 3,120	$ 6,240	0.20	0.35	$ 13,884	$ 24,960
Professional Services Labor (Total)			$ -	$ -			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ 159,500	$ 243,750
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 7,280**	**$ 12,480**			**$ 173,384**	**$ 268,710**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- The City replaces 45 servers on a five-year cycle at a cost between $3,000 and $5,000
- The City replaces 530 PCs on a four-year cycle at a cost between $1,000 and $1,500 – includes costs associated with Microsoft Office and anti-virus software
- On both the low- and high-end, internal labor will be used to acquire and install PCs and servers
- Does not include eventual replacement of fiber network equipment, as this will occur beyond the six-year time horizon of this plan

4.4 Conduct annual IT security audits and triennial assessments

This project implements enterprise IT security software and utilizes an outside consultant to perform an initial audit. MIT is responsible for ongoing security reviews and revisions as needed, with an annual review by an outside consultant. On a triennial basis, the project accounts for an outside consultant to conduct a more thorough and detailed assessment.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.02	0.04	$ 1,560	$ 3,120	0.07	0.13	$ 4,680	$ 9,360
Business Unit SME			$ -	$ -			$ -	$ -
Central IT	0.02	0.04	$ 1,560	$ 3,120	0.07	0.13	$ 4,680	$ 9,360
Professional Services Labor (Total)	80	160	$ 14,000	$ 28,000			$ -	$ -
Procurement			$ -	$ -				
Implementation and Training	80	160	$ 14,000	$ 28,000			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -	70	120	$ 10,500	$ 18,000
Hardware			$ -	$ -			$ -	$ -
Software			$ 5,000	$ 30,000			$ 1,000	$ 6,000
Total Costs			**$ 20,560**	**$ 61,120**			**$ 16,180**	**$ 33,360**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Cost range reflects variation in audit software capability and level of professional services required
- Costs averaged per year – actual costs will vary depending on amount of consulting assistance needed

5.1 Adopt new MIT organizational structure and increase staff

This project adds up to a total of eight IT FTEs over the course of this IT strategic plan: 5 additional FTEs of application support staff, 1-2 additional FTEs of infrastructure support staff and 1 additional FTE focused on IT training and customer account management. It also reorganizes MIT staff around four primary IT disciplines (application services, infrastructure services, customer support services, and administrative services) and changes the MIT Manager's reporting relationship as described in chapter 3. This project is contingent upon the outcome of the IT sourcing feasibility study.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.13	0.20	$ 12,168	$ 19,136	0.10	0.16	$ 414,992	$ 737,488
Business Unit SME	0.05	0.08	$ 4,992	$ 7,488	0.05	0.08	$ 4,992	$ 7,488
Central IT	0.08	0.12	$ 7,176	$ 11,648	0.05	0.08	$ 410,000	$ 730,000
Professional Services Labor (Total)		292	$ -	$ 43,800			$ -	$ -
Procurement		292	$ -	$ 43,800				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 12,168**	**$ 62,936**			**$ 414,992**	**$ 737,488**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- MIT plans and manages personnel moves, new reporting structures, and modification of job descriptions, as needed
- Business unit staff supports the hiring process
- Low-end estimate increases MIT staff by six FTEs throughout the life of this IT strategic plan
- High-end estimate increases MIT staff by nine FTEs over the life of this IT strategic plan
- High-end also includes costs for professional recruitment assistance
- The recurring costs in the table above are for the final year of the plan once all new hires are in place

5.2 Establish a professional IT service desk

This project defines and implements a process-based set of best practices to manage an IT service desk, including support (e.g., configuration management, incident management, problem resolution) and service delivery (e.g., service continuity, capacity management, service level management). It develops a phased transition plan; implements the plan; and monitors outcomes and integrates enhancements as needed.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
Internal Labor (Total)	0.35	0.71	$ 29,432	$ 60,268	0.05	0.09	$ 5,200	$ 8,320
Business Unit SME	0.19	0.40	$ 18,200	$ 38,116	0.05	0.09	$ 5,200	$ 8,320
Central IT	0.16	0.31	$ 11,232	$ 22,152			$ -	$ -
Professional Services Labor (Total)	130	360	$ 20,500	$ 58,000	30	67	$ 4,500	$ 10,050
Procurement			$ -	$ -				
Implementation and Training	130	360	$ 20,500	$ 58,000	30	67	$ 4,500	$ 10,050
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ 10,000	$ 30,000			$ 2,000	$ 6,000
Software			$ 17,500	$ 28,000			$ 3,500	$ 5,600
Total Costs			**$ 77,432**	**$ 176,268**			**$ 15,200**	**$ 29,970**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Business unit hours consist of participation in interviews and focus groups as well as steering committee time necessary to help define specific service level needs
- The high-end estimate also includes costs for professional consulting assistance
- The low-end includes three days of training for three IT staff at $1,500 per day
- The high-end estimates three days of training for three IT staff at $2,000 per day
- Additional consulting time for translating a service methodology (e.g., ITSM, ITIL) into actual work practices and tools
- Refresh training provided on a three-year cycle and some internal labor allocated for annual improvements to IT service desk processes

5.3 Train IT staff

This project provides biannual training for 100% of the City's IT staff (assumes increase to approximately 19 FTEs) in topics to support this IT strategic plan. Courses may include specific application training, tier 2 PC support processes, business analysis, database administration, or other topics to improve related technical skills.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)			$ -	$ -	0.24	0.48	$ 17,784	$ 35,568
Business Unit SME			$ -	$ -	0.03	0.07	$ 3,120	$ 6,240
Central IT			$ -	$ -	0.21	0.41	$ 14,664	$ 29,328
Professional Services Labor (Total)			$ -	$ -	134	267	$ 20,100	$ 40,050
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -	134	267	$ 20,100	$ 40,050
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ -**	**$ -**			**$ 37,884**	**$ 75,618**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- MIT staff support scheduling and coordination of training
- Business unit (HR) and IT staff develop and annually update individual training plans
- Low-end training cost: $2,000 for three days of training
- High-end training cost: $4,000 for six days of training

5.4 Upgrade MIT workspace

This project identifies and acquires (if necessary) additional workspace to support increased MIT staff and an expanded role for technology at the City.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.70	1.10	$ 49,725	$ 78,000			$ -	$ -
Business Unit SME			$ -	$ -			$ -	$ -
Central IT	0.70	1.10	$ 49,725	$ 78,000			$ -	$ -
Professional Services Labor (Total)		100	$ -	$ 15,000			$ -	$ -
Procurement		100	$ -	$ 15,000				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 49,725**	**$ 93,000**			**$ -**	**$ -**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- MIT staff provides move planning and oversight
- Low-end estimates utilize MIT labor to complete the move
- High-end estimates include professional property location assistance as well as professional moving assistance

5.5 Contract professional IT project management services

This project hires a skilled, qualified individual to manage and oversee major IT projects throughout the life of the IT strategic plan. Depending on specific project management skills needed, the City may change contractors to suit the major implementation underway at the time.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
Internal Labor (Total)			$ -	$ -			$ -	$ -
Business Unit SME			$ -	$ -			$ -	$ -
Central IT			$ -	$ -			$ -	$ -
Professional Services Labor (Total)		300	$ -	$ 45,000			$ -	$ -
Procurement		300	$ -	$ 45,000				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services	667	1,000	$ 100,050	$ 150,000	667	1,000	$ 100,050	$ 150,000
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 100,050**	**$ 195,000**			**$ 100,050**	**$ 150,000**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- High-end and low-end estimates provide a salary range for 1 FTE
- High-end estimates also include costs for recruitment assistance

6.1 Implement a technology training program for business users

This project establishes an IT training and assessment program for 70% of the City's business unit staff/end users (assumes 600 employees) – including outside training courses, train-the-trainer programs, and internal training initiatives. This project will initially focus on enterprise-wide systems and progress to training in specific departmental or functional applications. The project also offers "refresh training" to employees every three years.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)			$ -	$ -	0.79	1.58	$ 74,880	$ 149,760
Business Unit SME			$ -	$ -	0.79	1.58	$ 74,880	$ 149,760
Central IT			$ -	$ -			$ -	$ -
Professional Services Labor (Total)			$ -	$ -	700	1,400	$ 105,000	$ 210,000
Procurement			$ -	$ -				
Implementation and Training			$ -	$ -	700	1,400	$ 105,000	$ 210,000
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services			$ -	$ -			$ -	$ -
Hardware			$ -	$ -			$ -	$ -
Software			$ -	$ -			$ -	$ -
Total Costs			**$ -**	**$ -**			**$ 179,880**	**$ 359,760**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Both low- and high-end estimates assume external training
- Low-end training cost: $250 for one day of training
- High-end training cost: $500 for two days of training
- Business unit staff (HR) manage and update the training program

6.2 Install indoor wireless access points at city facilities

This project implements indoor wireless access points in major facilities for city staff and contractors in support of city operations.

	One-time				Recurring			
	Time*		Costs		Time*		Costs	
Cost Category	Low	High	Low	High	Low	High	Low	High
Internal Labor (Total)	0.33	0.50	$ 23,712	$ 35,568	0.07	0.10	$ 4,742	$ 7,114
Business Unit SME			$ -	$ -			$ -	$ -
Central IT	0.33	0.50	$ 23,712	$ 35,568	0.07	0.10	$ 4,742	$ 7,114
Professional Services Labor (Total)		300	$ -	$ 45,000			$ -	$ -
Procurement		300	$ -	$ 45,000				
Implementation and Training			$ -	$ -			$ -	$ -
Project Management			$ -	$ -				
Quality Assurance			$ -	$ -				
Contract Services	200	300	$ 30,000	$ 45,000			$ -	$ -
Hardware			$ 106,400	$ 228,000			$ 21,280	$ 45,600
Software			$ -	$ -			$ -	$ -
Total Costs			**$ 160,112**	**$ 353,568**			**$ 26,022**	**$ 52,714**

*PTI estimates internal labor in FTE and external labor in hours

Cost assumptions:

- Low-end estimate consists of eight wireless access points in each of 19 buildings at $700 each
- High-end estimate consists of twelve wireless access points in each of 19 buildings at $1,000 each
- MIT installs and tests each wireless device