



Chapter 1 Executive Summary

Introduction

The City of Annapolis (the City, Annapolis) is known as America's sailing capital and serves as home to the United States Naval Academy and St. John's College, the third oldest institution of higher learning in the U.S. The City relies on information technology (IT) to support major components of the local economy, including government, tourism, and maritime industries. Technology facilitates outreach and communication with citizens, businesses, visitors, other governmental agencies, and city employees. No longer used simply to support back-office functions, technology is integral to the City's ability to directly serve its constituents.

Annapolis completed an IT Strategic Plan in 2002. While a valuable planning document, the intervening years brought significant change to the City. The population increased steadily each year, leading to greater demand for municipal services and increased strain on the City's financial resources. The Mayor's 2009 State of the City address noted that Annapolis' technical infrastructure is outdated and the IT department is understaffed. At the same time, citizens expect more government accountability and transparency. Expanding federal mandates and reporting requirements have become a major concern and new employees have high expectations for technology in the workplace, necessitating investment to compete for the best staff.

Technology has also evolved significantly since the original IT strategic plan. Use of the Internet as a means of delivering both service and information grew dramatically. Workforces became more mobile, the public takes a greater interest in municipal network security and information privacy, IT infrastructure is more standardized, and many peers are investing in enterprise solutions for document/content management, land information management, and business intelligence. To help its citizens and business partners prosper, Annapolis must find ways to cost-effectively enhance customer service, streamline business processes and support accountable, transparent government operations. All of these factors demand that the City successfully leverage information technology more than ever before.

As the City looks to the future, it needs an IT plan that articulates a vision for information technology at the City, defines a practical action plan for realizing the vision and supports the City's strategic priorities over the long term.

Annapolis must find cost-effective ways to enhance customer service, streamline business processes and support accountable government operations.



Strategic Priorities

- ◆ Public safety
- ◆ Community participation
- ◆ Public infrastructure
- ◆ Fiscal stewardship
- ◆ Quality of life

Project Overview and Approach

Within this context, the City once again engaged Pacific Technologies, Inc. (PTI) to develop a new IT strategic plan. Beginning in September 2009, Annapolis and PTI worked in close partnership to examine the City's current IT environment, reestablish a strategic direction for IT, and develop an implementation plan that effectively deploys IT solutions in support of the City's strategic priorities. A project steering committee comprised of senior city management provided leadership and critical guidance to this project. Additionally, nearly 70 city stakeholders¹ – including department heads, IT professionals, and end users – contributed to this planning effort through interviews, focus groups, and other data collection efforts.

These participants provided important insight that framed the study's findings and recommendations. PTI's consultants gathered and reviewed documentation related to IT planning, policies, procedures, and citywide strategic initiatives. Additionally, the consultants analyzed quantitative data related to citywide IT spending and support, and examined the City's current network architecture and application inventory. PTI also referenced its database of local government IT benchmarks to help the City understand how it compares to similar jurisdictions and industry best practices.

Note that this IT strategic plan represents a point-in-time analysis and may not reflect changes after October 2009. In particular, Annapolis' unprecedented structural budget deficit for fiscal years 2010 and 2011 led to a significant number of employee layoffs in March 2010 – subsequent to this project's quantitative assessment of IT labor, inventory and spending. As circumstances change, the City's IT priorities, and associated implementation projects, must change accordingly. *Consequently, this plan should be treated as a living document, reviewed annually, and revised as necessary.*

The remainder of this executive summary documents key assessment findings, identifies specific goals and strategic initiatives for IT, and presents an implementation plan – with attendant costs and timelines – for moving forward.

Key Findings

As previously indicated, Annapolis increasingly relies on information technology to support its budget priorities and facilitate communication with citizens, businesses, visitors, and city employees. No longer deployed simply to support back-office functions, the City's information technology infrastructure is integral to Annapolis' ability to directly serve its constituents. This section presents key strengths and opportunities for improvement surfaced through the assessment phase of the IT strategic planning process.

This plan should be treated as a living document, reviewed annually, and revised as necessary.

¹ Appendix A provides a complete list of participants.

The new mayor and city administration are committed to improving citywide information technology.

Areas of Strength

Planning engagements of this nature necessarily focus on weaknesses – but it is important to recognize the following IT strengths that the City can leverage and build upon:

- ◆ **The new mayor and city administration are committed to improving citywide information technology.** New city leadership has expressed a desire to leverage technology for meeting current and future service demands – with the overarching goal of making government services more efficient and customer-focused. Implementation of this IT strategic plan can help realize this strategic city imperative – particularly in a difficult budget climate.
- ◆ **The City participates in regional IT initiatives.** Annapolis partners with the City of Baltimore and a number of area counties in the Baltimore Urban Area Homeland Security Work Group (UAWG), which engages in sustained regional planning to coordinate emergency response and recovery. Key IT-related UAWG subcommittees include information technology, backup 911 and dispatch, closed circuit television, radio communications and network interoperability. In addition, the Annapolis Fire Department contracts with Anne Arundel County for computer-aided dispatch (CAD) and records management system (RMS). As a result of these partnerships and others,² citizens benefit from streamlined, coordinated government services. Annapolis and partner governments benefit from lower operating costs through economies of scale.
- ◆ **Annapolis purchases IT equipment centrally and utilizes defined standards for core IT equipment – a best practice.** The Management Information Technology division (MIT) handles procurement for IT assets (e.g., PCs, servers, enterprise software). This streamlines IT procurement efforts, increases purchasing power and leverages potential economies of scale. MIT also updates citywide workstation and server standards every six months, simplifying IT support.
- ◆ **The City has improved business automation since 2001.** In particular, Annapolis made significant progress in its geographic information systems (GIS) and web presence, both based on clear and detailed plans. The City utilizes an active, interdepartmental team to guide GIS goals and initiatives and successfully outsourced implementation of the website plan. Among other accomplishments, Annapolis has implemented applications supporting parks and recreation management (CLASS), permit management (TraKit) and emergency management (WebEOC, Dialogic)³. These improvements enhance city services, streamline specific business processes, increase productivity, reduce data errors, and improve government transparency and accessibility.

² Annapolis also participates in county, regional and state GIS data sharing agreements, state GIS governance (MSGIC - Maryland GIS Coordination), the Maryland Municipal Information Technology Association (MMITA), and is a member of the One Maryland broadband stimulus ARRA grant funding and wire line initiative.

³ The City has also implemented fire management, work order management, and quartermaster systems; upgraded the police records management system (RMS); and replaced computer-aided dispatch (CAD) and mobile data terminal (MDT) systems.

- ◆ **In addition, the City has made significant infrastructure improvements.** Annapolis has expanded its fiber network and implemented voice over Internet protocol (VoIP) telephones.⁴ The City's network backbone is reliable and appears to employ sufficient network security and spam control for external threats.⁵ Annapolis experiences little to no unplanned network outages and no significant security breaches have occurred at the City in recent years. This reduces and/or eliminates disruptions in business operations, increases end users' confidence and protects the City's information assets.

Opportunities for Improvement

Although the above strengths provide a foundation for the City's technology environment, PTI's assessment surfaced a variety of areas in which Annapolis' technology position can further improve. This section highlights the most significant challenges. Chapter 2 describes these opportunities for improvement in more detail.

- ◆ **IT spending and staffing remain significantly under-resourced.** Both citywide IT operations and maintenance (O&M) spending and citywide IT staffing levels *still fall below PTI's target range for local government*.⁶ Annapolis spends 2.22% of total O&M spending on IT O&M and employs 2.05% of total staff to provide IT support. This is not a new phenomenon – the City has lagged IT investment benchmarks for more than a decade. Despite notable increases since 2001, IT spending and staffing levels have not kept pace with the growth of city services and the automation expected of modern municipalities. In the absence of sufficient IT support, the efficiency and effectiveness of critical business functions suffer, including provision of eGovernment services, coordination of essential public safety services, maintenance of essential infrastructure, and proactive growth management.
- ◆ **Annapolis lacks a citywide IT governance forum and processes.** The City lacks structured processes and tools – as well as a chartered governance body – to support informed, citywide IT investment decision making. As a result, the City may not be realizing the greatest return on IT investments – in terms of both service improvements and operational efficiencies.
- ◆ **The City does not fund major IT investments with capital dollars.** Contrary to best practices, Annapolis relies heavily on operating and maintenance funding for major IT investments. Large IT

⁴ More specifically, Annapolis has completed 3 (out of 4) phases of a 2 Gbps east/west fiber ring backbone, deployed a wireless network and video surveillance system for critical downtown infrastructure locations, installed IP telephones and voice mail for 85% of telephone users, and implemented Ethernet topology and TCP/IP protocols citywide.

⁵ PTI's scope of work did not include a detailed security audit/assessment, but neither business users nor City IT staff reported significant security incidents/concerns.

⁶ PTI's target benchmarks are based upon IT spending, staffing, and inventory data collected from surveys and local government clients since 1993 as well as industry best practices. These target benchmarks are updated annually. The current local government target range for IT O&M spending is 2.5 – 4.5% and for IT O&M staffing is 3 – 5%, both relative to total organization O&M spending and O&M staffing.

Citywide IT spending and staffing remain significantly under-resourced.

expenditures currently follow the standard budget process and lack access to capital funding sources. This obscures the true cost of annual IT operations and maintenance, as isolated annual budget and/or fund increases pay for the one-time purchase of IT hardware and services. It also limits funding opportunities for IT capital projects and can encourage investments that are, in plain terms, “penny-wise and pound foolish.”

- ◆ **The City lacks structured IT help desk services.** Annapolis has not implemented a formal process for managing IT service requests, incidents, and communication with business users. MIT personnel respond to the City’s help line on an “as available” basis and do not provide 24/7 support. In addition, Annapolis lacks IT service performance measures and has not fully leveraged the capabilities of its IT help desk software, HelpBox. This leads to reactive, rather than proactive, IT customer support.
- ◆ **Major gaps exist in core business automation.** Several business functions still rely on shadow applications⁷ and manual, labor-intensive, paper-based processes to compensate for inadequate automation, including document management, maintenance management, citizen relationship management (CRM/311), project management, contract/grant management, and decision support/business intelligence. As a result, information remains siloed – increasing data duplication, decreasing data integrity, and delaying operations.
- ◆ **Core finance automation is beyond end-of-life.** The City’s financial management software (i.e., Therefore) is more than 16 years old, built on out-of-date technology, and no longer commercially supported. It is heavily customized, and its lack of security features prevents decentralization of numerous functions, including time entry, budget development, and requisitions. This system lacks management/performance reporting capabilities, greatly impedes city staff productivity and could potentially lead to a major, unplanned replacement expense.
- ◆ **City data centers (MIT and Police) do not fully align with modern design standards.** Both data centers lack electronic access control (e.g., RFID cards), tracking, advanced surveillance, and long-term backup power capabilities. Neither data center utilizes modern environmental controls – such as individual server temperature tracking and particle filtering. In addition, both facilities employ water-based fire suppression systems, which would damage critical IT equipment.
- ◆ **The City’s technical architecture is aging and not aligned with best practices.** More than 61% of Annapolis’ PCs are out-of-date (greater than three years old) and more than 59% of the City’s servers also are out-of-date (greater than four years old). This technical environment increases the risk of hardware failure and the loss of key operational data. Older equipment also requires

*Core finance
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additional maintenance and support and may inhibit the City's ability to support newer applications which require faster hardware.

Strategic Direction

City leaders, senior management, and other city stakeholders came together in a series of focus groups and workshops to develop a clear citywide IT strategic direction – driven by Annapolis' strategic priorities. This roadmap includes specific IT goals, strategies, and implementation projects (as indicated by the graphic below). Chapters 3 and 4 describe each of these components in more detail.



Executive and senior management at Annapolis and other city stakeholders came together in a series of focus groups and workshops to create the following vision for IT:

City of Annapolis IT Vision



Annapolis leverages IT to enhance quality, increase availability, improve reliability, and lower cost of city services

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This plan outlines a set of IT goals and strategies to optimize the use of technology in delivering city services.

In support of this vision – and driven by Annapolis’ strategic priorities – the City’s project steering committee developed the following six IT goals:

City of Annapolis IT Goals

1	Informed IT Decisions	Technology investments align with city strategic priorities.
2	Accessibility and Accountability	Technology improves access to city information and services and promotes responsible municipal government.
3	Streamlined City Services	Information systems streamline city operations and improve service.
4	Reliable Technical Infrastructure	Technical infrastructure is secure, reliable, and cost effective.
5	Responsive IT Support	IT services are customer-oriented and responsive.
6	IT Enabled Workforce	City workforce is computer-literate and technology-enabled.

The following pages describe each of these goals, highlight associated IT initiatives, and outline attendant benefits. Chapter 3 offers further detail.

Goal 1: Informed IT Decisions

Technology investments align with city strategic priorities.



Effective IT governance ensures that the City has the right technology, in the right place, and the right cost – in support of Annapolis' business needs and imperatives.

Strategies

- ❖ **Establish a citywide IT governance structure**
- ❖ **Improve the City's IT funding approach and associated mechanisms**
- ❖ **Enhance IT strategic planning efforts**
- ❖ **Continue pursuing regional IT partnerships**

Implementation Projects

- 1.1 Develop and implement a formal citywide IT decision-making process
- 1.2 Create an IT-specific capital improvement fund
- 1.3 Conduct an IT outsourcing feasibility study

Benefits

- Ensures reliable and consistent IT decision making
- Expands funding for major IT investments
- Aligns IT investments with city strategic priorities and IT vision
- Improves allocation of limited resources
- Encourages cross-departmental information sharing

Goal 2: Accessibility and Accountability

Technology improves access to city information and services and promotes responsible municipal government.



IT serves as a critical foundation for Annapolis' ability to interact with citizens, manage key data and generate performance reports. This goal positions the City to better leverage technology in these areas.

Strategies

- ❖ Measure IT performance
- ❖ Improve interaction with citizens

Implementation Projects

- 2.1 Define IT performance measures
- 2.2 Evaluate potential CRM/311 solutions⁸
- 2.3 Implement the preferred CRM/311 solution⁸

Benefits

- Makes government more accessible and accountable
- Provides “anywhere, anytime” online access to city services and information
- Enhances citizens' sense of community and connection
- Increases service efficiency

Goal 3: Streamlined City Services

Information systems streamline city operations and improve service.



Perhaps more than any other IT investment area, business software directly and visibly supports the City's daily operations. This IT goal leverages the built-in best practices and capabilities of municipal software – emphasizing application integration and data sharing – to enhance operational efficiency and effectiveness.

Strategies

- ❖ **Improve business automation**
- ❖ **Emphasize use of commercial software**
- ❖ **Leverage the inherent web and GIS capabilities of new software**

Implementation Projects

- 3.1 Implement a new customer information/utility billing system
- 3.2 Implement a new human resources/payroll system
- 3.3 Implement a financial management system
- 3.4 Implement an electronic document management system
- 3.5 Implement a citywide maintenance management system
- 3.6 Pilot decision support/business intelligence software

Benefits

- Increases worker productivity
- Streamlines business processes
- Informs decision making
- Enhances asset maintenance and infrastructure
- Expands software and data integration
- Improves service quality

Goal 4: Reliable Technical Infrastructure

Technical infrastructure is secure, reliable, and cost-effective.



Annapolis' technical infrastructure provides a foundation for the software that automates and streamlines critical business functions. This strategic IT goal provides ongoing investment in IT equipment, maintains appropriate IT security, and plans for disaster recovery.

Strategies

- ❖ **Maintain a modern IT environment and architecture**
- ❖ **Position IT to support business continuity**
- ❖ **Ensure appropriate security for IT systems and data**

Implementation Projects

- 4.1 Utilize a professionally-designed data center to host core infrastructure
- 4.2 Revise disaster recovery plan
- 4.3 Define, fund, and implement a formal technology replacement cycle
- 4.4 Conduct annual IT security audits and assessments

Benefits

- Extends IT productivity enhancements to all city locations
- Simplifies IT support
- Allows continuing operations in the event of a disaster
- Protects the City's IT and information assets
- Supports future technological advancements

Goal 5: Responsive IT Support

IT services are customer-oriented and responsive.



This strategic IT goal equips Annapolis with the necessary IT skills and staff to cost-effectively support the City's technology investments.

Strategies

- ❖ Increase IT O&M staffing levels
- ❖ Organize MIT department along functional lines
- ❖ Enhance and modernize IT skill sets
- ❖ Formalize IT service desk processes and procedures
- ❖ Contract for specialized IT skills as needed
- ❖ Provide sufficient space for IT staff and equipment

Implementation Projects

- 5.1 Adopt new MIT organizational structure and increase staff⁹
- 5.2 Establish a professional IT service desk
- 5.3 Train IT staff
- 5.4 Upgrade MIT workspace
- 5.5 Contract professional IT project management services

Benefits

- Improves internal customer satisfaction and confidence
- Enhances IT staff ability to efficiently support and maintain City technology
- Maintains the cost-effectiveness of IT services
- Helps the City realize the full business value of IT investments

Goal 6: IT Enabled Workforce

City workforce is computer-literate and technology-enabled.



City personnel must demonstrate appropriate technology skills and have sufficient information access for Annapolis to experience the full value of its IT investments. This strategic IT goal expands both staff technology training opportunities and network connectivity.

Strategies

- ❖ **Ensure adequate technology training for city personnel**
- ❖ **Expand access to the city network**

Implementation Projects

- 6.1 Implement a technology training program for business users
- 6.2 Install indoor wireless access points at city facilities

Benefits

- Enhances business operations and improves city worker productivity
- Increases business units' confidence in technology
- Creates a more attractive work environment
- Increases the return on technology investments

Implementation Timeline

The Gantt chart below presents a projected timeline for the plan's defined implementation projects, developed in partnership with the City's project steering committee. Annapolis will need to periodically review and adjust this implementation timeline – based on resource constraints, changing business needs, and strategic priorities.

Projected Implementation Timeline



Implementation Project Costs

This section examines total expenditures by IT goal and presents one-time, recurring, and annualized project costs. The cost estimates provide Annapolis with budget guidance for the plan's implementation projects. PTI developed these cost estimates based on industry knowledge, best practices, market research, and information provided by the City. Costs are in 2010 dollars and not adjusted for inflation.

One-time and Recurring Costs

The table on the following page illustrates one-time and recurring cost estimates for each recommended implementation project. The subsequent page presents average annualized costs over the next six years.¹⁰ In some instances, significant differences exist between the low-end and high-end estimates. In general, low-end estimates tend to reflect reduced scope, lower-cost technologies, and a greater reliance on internal labor. High-end estimates reflect a broader scope, higher-cost components and software, larger labor requirements, and generally include external consulting services for all or some of a project's implementation.

Costs do not include current city expenditures or already budgeted dollars, with the exception of \$350,000 the City has already budgeted for a new utility customer information system and \$350,000 for a new human resources/payroll system. These budgeted dollars are also footnoted under the subsequent tables. Project estimates *do include* costs associated with internal labor, based on fully-burdened hourly labor rates of \$39 for basic IT support and \$52 for business unit staff provided by the City. 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. In addition, cost estimates for project 4.1 assume that the City will partner with a nearby public sector organization or contract with a third party for data center operations. Building a new city facility to replace both the MIT data center and the APD data center for this project would cost between \$1M and \$2M.

¹⁰ Appendix E provides descriptions and costing assumptions for each of the projects.

One-Time and Recurring Project Cost Estimates^{11,12}

Cost Summary		One-Time		Recurring		Total Six-Year Cost	
		Low	High	Low	High	Low	High
Goal 1: IT investments align with city strategic priorities							
1.1	Develop and implement a formal citywide IT decision making process	\$ 8,000	\$ 26,000	\$ 6,000	\$ 9,000	\$ 42,000	\$ 78,000
1.2	Create an IT-specific capital improvement fund	\$ 13,000	\$ 38,000	\$ -	\$ -	\$ 13,000	\$ 38,000
1.3	Conduct an IT sourcing feasibility study	\$ 69,000	\$ 117,000	\$ -	\$ -	\$ 69,000	\$ 117,000
Subtotal - Goal 1		\$ 90,000	\$ 181,000	\$ 6,000	\$ 9,000	\$ 124,000	\$ 233,000
Goal 2: Technology supports accessible and accountable government							
2.1	Define IT performance measures	\$ 18,000	\$ 34,000	\$ 2,000	\$ 4,000	\$ 28,000	\$ 54,000
2.2	Evaluate potential CRM/311 solutions	\$ 27,000	\$ 90,000	\$ -	\$ -	\$ 27,000	\$ 90,000
2.3	Implement the preferred CRM/311 solution	\$ 83,000	\$ 328,000	\$ 1,000	\$ 24,000	\$ 87,000	\$ 406,000
Subtotal - Goal 2		\$ 128,000	\$ 452,000	\$ 3,000	\$ 28,000	\$ 142,000	\$ 550,000
Goal 3: Information systems streamline city operations and improve service							
3.1	Implement a new utility customer information management system	\$ 361,000	\$ 809,000	\$ 15,000	\$ 47,000	\$ 433,000	\$ 1,033,000
3.2	Implement a new human resources and payroll system	\$ 459,000	\$ 1,316,000	\$ 28,000	\$ 90,000	\$ 592,000	\$ 1,743,000
3.3	Implement a financial management system	\$ 1,121,000	\$ 3,194,000	\$ 66,000	\$ 130,000	\$ 1,319,000	\$ 3,584,000
3.4	Implement an electronic document management system	\$ 603,000	\$ 1,203,000	\$ 58,000	\$ 58,000	\$ 733,000	\$ 1,333,000
3.5	Implement a citywide maintenance management system	\$ 682,000	\$ 957,000	\$ 10,000	\$ 35,000	\$ 692,000	\$ 992,000
3.6	Pilot decision support/business intelligence software	\$ 81,000	\$ 180,000	\$ 2,000	\$ 8,000	\$ 82,000	\$ 186,000
Subtotal - Goal 3		\$ 3,307,000	\$ 7,659,000	\$ 179,000	\$ 368,000	\$ 3,851,000	\$ 8,871,000
Goal 4: Technical infrastructure is secure, reliable, and cost effective							
4.1	Utilize a professionally-designed data center to host core infrastructure	\$ 17,000	\$ 35,000	\$ 12,000	\$ 24,000	\$ 47,000	\$ 94,000
4.2	Revise disaster recovery plan	\$ 17,000	\$ 60,000	\$ 2,000	\$ 3,000	\$ 25,000	\$ 73,000
4.3	Define, fund and implement a formal technology replacement cycle	\$ 7,000	\$ 12,000	\$ 173,000	\$ 269,000	\$ 830,000	\$ 1,290,000
4.4	Conduct annual IT security audits and triennial assessments	\$ 21,000	\$ 61,000	\$ 16,000	\$ 33,000	\$ 101,000	\$ 226,000
Subtotal - Goal 4		\$ 62,000	\$ 168,000	\$ 203,000	\$ 329,000	\$ 1,003,000	\$ 1,683,000
Goal 5: IT services are customer-oriented and responsive							
5.1	Adopt new MIT organizational structure and increase staff	\$ 12,000	\$ 63,000	\$ 415,000	\$ 737,000	\$ 1,286,000	\$ 2,285,000
5.2	Establish a professional IT service desk	\$ 77,000	\$ 176,000	\$ 15,000	\$ 30,000	\$ 149,000	\$ 319,000
5.3	Train IT staff	\$ -	\$ -	\$ 38,000	\$ 76,000	\$ 218,000	\$ 437,000
5.4	Upgrade MIT workspace	\$ 50,000	\$ 93,000	\$ -	\$ -	\$ 49,000	\$ 93,000
5.5	Contract professional IT project management services	\$ 100,000	\$ 195,000	\$ 100,000	\$ 150,000	\$ 550,000	\$ 870,000
Subtotal - Goal 5		\$ 239,000	\$ 527,000	\$ 568,000	\$ 993,000	\$ 2,252,000	\$ 4,004,000
Goal 6: City workforce is computer-literate and technology-enabled							
6.1	Implement a technology training program for business users	\$ -	\$ -	\$ 180,000	\$ 360,000	\$ 720,000	\$ 1,440,000
6.2	Install indoor wireless access points at city facilities	\$ 160,000	\$ 354,000	\$ 26,000	\$ 53,000	\$ 271,000	\$ 579,000
Subtotal - Goal 6		\$ 160,000	\$ 354,000	\$ 206,000	\$ 413,000	\$ 991,000	\$ 2,019,000
Total Cost		\$ 3,986,000	\$ 9,341,000	\$ 1,165,000	\$ 2,140,000	\$ 8,363,000	\$ 17,360,000

Note: Costs are rounded to nearest thousand dollars



¹¹ The City of Annapolis has already budgeted \$350,000 for project 3.1 and \$350,000 for project 3.2.

¹² Project 4.1 assumes the City will partner with a nearby public sector organization or contract with a third party for data center operations. PTI estimates that building an entirely new city facility for project 4.1 would cost between \$1M and \$2M.

Averaged Annualized Project Cost Estimates

Average Annualized Cost Summary						
Project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Goal 1: IT investments align with city strategic priorities						
1.1 Develop and implement a formal citywide IT decision making process	\$ 23,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000
1.2 Create an IT-specific capital improvement fund	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
1.3 Conduct an IT sourcing feasibility study	\$ -	\$ 93,000	\$ -	\$ -	\$ -	\$ -
Annual Subtotal - Goal 1	\$ 48,000	\$ 100,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000
Goal 2: Technology supports accessible and accountable government						
2.1 Define IT performance measures	\$ 26,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000
2.2 Evaluate potential CRM/311 solutions	\$ -	\$ 59,000	\$ -	\$ -	\$ -	\$ -
2.3 Implement the preferred CRM/311 solution	\$ -	\$ -	\$ 209,000	\$ 13,000	\$ 13,000	\$ 13,000
Annual Subtotal - Goal 2	\$ 26,000	\$ 62,000	\$ 212,000	\$ 16,000	\$ 16,000	\$ 16,000
Goal 3: Information systems streamline city operations and improve service						
3.1 Implement a new utility customer information management system	\$ 439,000	\$ 170,000	\$ 31,000	\$ 31,000	\$ 31,000	\$ 31,000
3.2 Implement a new human resources and payroll system	\$ 665,000	\$ 266,000	\$ 59,000	\$ 59,000	\$ 59,000	\$ 59,000
3.3 Implement a financial management system	\$ -	\$ 712,000	\$ 1,445,000	\$ 98,000	\$ 98,000	\$ 98,000
3.4 Implement an electronic document management system	\$ -	\$ -	\$ 361,000	\$ 556,000	\$ 58,000	\$ 58,000
3.5 Implement a citywide maintenance management system	\$ -	\$ -	\$ -	\$ 271,000	\$ 549,000	\$ 22,000
3.6 Pilot decision support/business intelligence software	\$ -	\$ -	\$ -	\$ -	\$ 98,000	\$ 36,000
Annual Subtotal - Goal 3	\$ 1,104,000	\$ 1,148,000	\$ 1,896,000	\$ 1,015,000	\$ 893,000	\$ 304,000
Goal 4: Technical infrastructure is secure, reliable, and cost effective						
4.1 Utilize a professionally-designed data center to host core infrastructure	\$ -	\$ -	\$ 17,000	\$ 17,000	\$ 18,000	\$ 18,000
4.2 Revise disaster recovery plan	\$ 38,000	\$ 1,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
4.3 Define, fund and implement a formal technology replacement cycle	\$ 5,000	\$ 171,000	\$ 221,000	\$ 221,000	\$ 221,000	\$ 221,000
4.4 Conduct annual IT security audits and triennial assessments	\$ 41,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
Annual Subtotal - Goal 4	\$ 84,000	\$ 197,000	\$ 265,000	\$ 265,000	\$ 266,000	\$ 266,000
Goal 5: IT services are customer-oriented and responsive						
5.1 Adopt new MIT organizational structure and increase staff	\$ 58,000	\$ 115,000	\$ 230,000	\$ 346,000	\$ 461,000	\$ 576,000
5.2 Establish a professional IT service desk	\$ 85,000	\$ 59,000	\$ 23,000	\$ 23,000	\$ 23,000	\$ 23,000
5.3 Train IT staff	\$ 43,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000	\$ 57,000
5.4 Upgrade MIT workspace	\$ -	\$ 54,000	\$ 18,000	\$ -	\$ -	\$ -
5.5 Contract professional IT project management services	\$ 148,000	\$ 63,000	\$ 125,000	\$ 125,000	\$ 125,000	\$ 125,000
Annual Subtotal - Goal 5	\$ 334,000	\$ 348,000	\$ 453,000	\$ 551,000	\$ 666,000	\$ 781,000
Goal 6: City workforce is computer-literate and technology-enabled						
6.1 Implement a technology training program for business users	\$ -	\$ -	\$ 270,000	\$ 270,000	\$ 270,000	\$ 270,000
6.2 Install indoor wireless access points at city facilities	\$ -	\$ 267,000	\$ 39,000	\$ 39,000	\$ 39,000	\$ 39,000
Annual Subtotal - Goal 6	\$ -	\$ 267,000	\$ 309,000	\$ 309,000	\$ 309,000	\$ 309,000
Projected Net New Funding Required	\$ 1,596,000	\$ 2,122,000	\$ 3,142,000	\$ 2,163,000	\$ 2,157,000	\$ 1,683,000

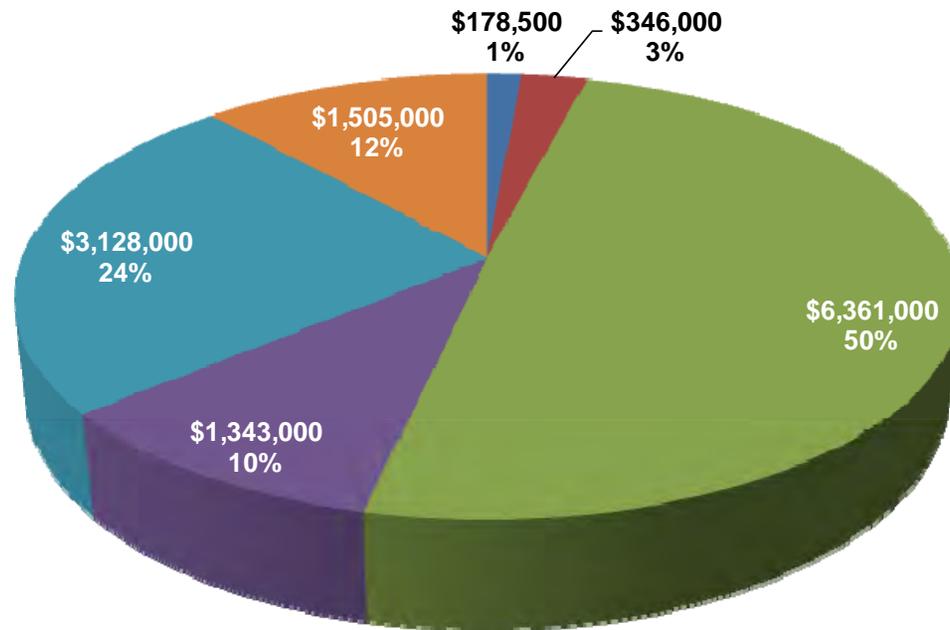
Note: Costs are rounded to nearest thousand dollars



Expenditures by IT Goal

It can be helpful to look at total project expenditures by IT goal to ensure that planned implementation efforts align with overall strategic direction. The following chart – portraying average six-year total cost estimates – makes clear that recommended projects align with the City’s IT goals. Note that goal 3 (*information systems streamline city operations and improve service*) receives a majority of the investment.

Six-Year Total Project Expenditures by IT Goal (average)



- Goal 1: IT investments align with city strategic priorities
- Goal 2: Technology supports accessible and accountable government
- Goal 3: Information systems streamline city operations and improve service
- Goal 4: Technical infrastructure is secure, reliable, and cost effective
- Goal 5: IT services are customer-oriented and responsive
- Goal 6: City workforce is computer-literate and technology-enabled

IT investments must be aligned with business needs.

Alignment with City Strategic Priorities

To ensure the best use of limited resources, IT investments must be aligned with business needs. The table below presents the major benefits of this study's recommendations, aligned with the City's strategic priorities.

IT Project Alignment with City Strategic Priorities

	Strategic Priorities				
	Public Safety	Community Participation	Public Infrastructure	Fiscal Stewardship	Quality of Life
Goal 1: IT investments align with city strategic priorities					
1.1 Develop and implement a formal citywide IT decision making process			✓	✓	
1.2 Create an IT-specific capital improvement fund			✓	✓	
1.3 Conduct an IT outsourcing feasibility study			✓	✓	
Goal 2: Technology supports accessible and accountable government					
2.1 Define IT performance measures		✓		✓	
2.2 Evaluate potential CRM/311 solutions		✓	✓	✓	✓
2.3 Implement the preferred CRM/311 solution		✓	✓		✓
Goal 3: Information systems streamline city operations and improve service					
3.1 Implement a new utility customer information management system		✓		✓	
3.2 Implement a new human resources and payroll system				✓	✓
3.3 Implement a financial management system			✓	✓	
3.4 Implement an electronic document management system	✓	✓	✓	✓	
3.5 Implement a citywide maintenance management system		✓	✓	✓	✓
3.6 Pilot decision support/business intelligence software	✓			✓	✓
Goal 4: Technical infrastructure is secure, reliable, and cost effective					
4.1 Utilize a professionally-designed data center to host core infrastructure	✓		✓	✓	✓
4.2 Revise disaster recovery plan	✓		✓		
4.3 Define, fund and implement a formal technology replacement cycle	✓		✓	✓	
4.4 Conduct annual IT security audits and triennial assessments	✓				
Goal 5: IT services are customer-oriented and responsive					
5.1 Adopt new MIT organizational structure and increase staff				✓	
5.2 Establish a professional IT service desk				✓	
5.3 Train IT staff				✓	
5.4 Upgrade MIT workspace				✓	
5.5 Contract professional IT project management services			✓	✓	
Goal 6: City workforce is computer-literate and technology-enabled					
6.1 Implement a technology training program for business users	✓		✓	✓	
6.2 Install indoor wireless access points at city facilities		✓	✓		