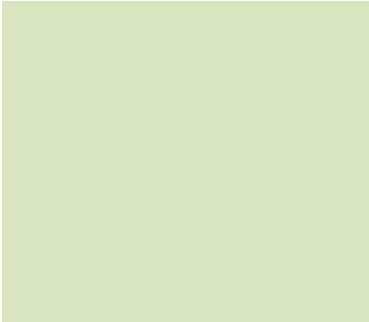WILSONVILLE

INFORMATION TECHNOLOGY STRATEGIC PLAN

FINAL REPORT

Adopted – September, 2016

Prepared for:

City of Wilsonville, Oregon

Prepared by:

Mindboard, Inc.

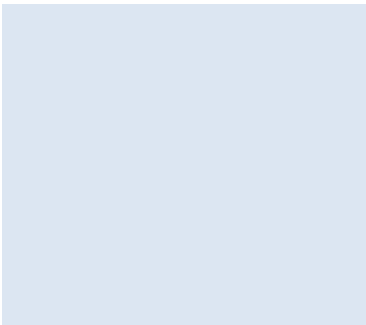43676 Trade Center Place, Suite #235, Sterling, VA 20166

Table of Contents

1   Executive Summary

With a population of approximately 20,000 people (2010 Census), the City of Wilsonville ("City") is a progressive, fast growing, medium sized city in Oregon. Located in the Portland metropolitan area, Wilsonville is bisected east-west by Interstate 5 and north-south by the Willamette River. The City is home to a variety of high-tech businesses and is one of the area's premier suburbs for professionals working in Portland to the north, or Salem, the State capital, to the South. Despite continuing rapid growth over the last ten years, the City of Wilsonville has been proactive in enhancing services delivered to its residents.

Owing to increased service levels and the evolving IT landscape, demands for IT services have multiplied as departments look to use technology to mobilize their workforce, make more efficient data-driven decisions, and communicate more effectively with their constituents. Influenced by rapid technology innovations and competing technology demands, the City decided to initiate an IT Strategic Planning project to provide prioritized recommendations for IT investment over the next 3 to 5 years.

The City's goals for developing the IT Strategic Plan included identification of innovative and "cutting edge" technologies that, when implemented, will significantly increase the quality of service delivery to its Citizens. Another objective of the IT Strategic Plan was to ensure that the City possesses the necessary operational and technical abilities, skills and resources to achieve the desired future vision. Thus, the independent assessment aimed to analyze the current state and capability of its IT infrastructure and operations. A third objective for the plan was to ensure that the City's technology investments are aligned with the business priorities and Council Goals.

As part of the analysis, Mindboard utilized a three-dimensional approach of ***People, Process, and Technology (PPT)*** to develop a high-level understanding of the current state of the City's IT environment. By considering how these three elements interact within the organization, a thorough understanding of both the City's technology demands and critical needs was developed. The following tasks were undertaken to arrive at the City's IT Strategic Plan:

- **Review of the Current IT Environment** - Review of existing documentation related to City's IT infrastructure, policies and procedures. Interviews with IT staff.

- **Internal IT Assessment Survey** - Collect pertinent information related to City's overall IT environment, IT resources, quality of IT service delivery, critical issues, main applications,

communication and training needs.

- **Public Outreach Survey and Leadership Academy Engagement** - Collect pertinent information related to the City's externally facing technologies and develop an understanding of views and opinions of City's key external stakeholders in terms of the present IT related service delivery and possible future improvements.

- **Fact Finding Meetings with Executive Team and All Department Managers** - Develop an understanding of views and opinions of City's key internal stakeholders in terms of the present role of IT and possible future improvements of the IT function at the City.

- **Review of IT Best Practices and Benchmarking Analysis** – Research industry best practices for Information Technology and enterprise systems and conduct surveys with nationally recognized technology innovators in municipal government to provide a vision of where Wilsonville needs to be in order to meet their goal of becoming a municipal technology innovator.

- **IT Gap Analysis** - Define gaps/issues associated with the current City's IS Department and Enterprise IT environment.

- **Gap Closing Workshop with Executive Team** – Review the Gap Analysis findings with key management staff and discuss project prioritization recommendations.

- **Develop Strategic Recommendations and Action Steps** - Identify, evaluate, and prioritize strategic recommendations for City's IT function.

Several high level observations were made, during this analysis, of the key challenges and opportunities associated with the City's current IT environment. The biggest challenge lies in the state of the City's enterprise applications and an overall lack of integration across these systems. For instance, the Financial and Permitting suite has reached end of life and its underlying technology platform has failed to keep up with industry changes, leaving large gaps in functionality and processes that require significant workarounds in order to complete daily processes. Additionally, arcane reporting capability has left decision makers without the dynamic data needed for quickly spotting trends and responding to issues. Modern enterprise systems offer a better view of daily activities, greater ability to integrate with other systems, enhanced functionality for staff and citizen facing portals, and reduced system maintenance.

A key opportunity noted was the overwhelmingly positive response to questions about the IS Department's customer service. Although the IS staff runs lean, and Mindboard has recommended the addition of an IT Assistant, both survey respondents and interviewees gave IS staff high marks for responsiveness and quality of customer service. It's unusual to have nearly unanimous endorsement in an assessment process. Part of this may be owing to the longevity of existing IS Department staff, which has led to well integrated and service savvy personnel. Another part is likely attributable to the IS staff's focus on customer service, as evidenced by their 13-year history of voluntary administration of annual customer service surveys. While the gap analysis calls out a number of areas for the IS Department to improve upon, their customer service and resulting relationship with other City departments is a strength to be capitalized on.

Areas for improvement were noted in the development of a comprehensive IT Gap analysis (IT Infrastructure and Enterprise Systems) which was compiled utilizing the information gathered in the previous task work, combined with Mindboard's institutional knowledge of public sector IT best practices. As part of the Gap analysis process, Mindboard applied the PPT approach to identify and prioritize gaps associated with the City's technology environment. Recommendations were developed based on key findings from the Gap analysis. For implementation purposes, Mindboard categorized the strategic recommendations into the following timelines:

Term	Timeline
Immediate	0-6 months
Short Term	6 months – 1 year
Medium Term	1 year – 3 years
Long Term	3 years – 5 years

"Immediate" term recommendations were classified as those that could be started without expending significant financial or human resources and completed within a sixth-month timeline. Short, medium and long term recommendations will need varying degrees of budgeting, planning and investment.

These recommendations were then reviewed with the Executive Team and prioritized based on business needs, budget impact and overall strategic fit to the City's overarching mission to: *"Provide quality service that ensures a safe, attractive, economically vital community while preserving the City's natural environment and heritage."*

The prioritized strategic recommendations are listed below:

Immediate Recommendations (0-6 months)

1. Streamline IT Procurement Process
2. Streamline IT Funding
3. Develop Fiber Business Plan

Short Term Recommendations (6 months – 1 year)

4. Hire One Full Time Helpdesk Support Staff (IT Assistant)
5. Implement an Enterprise-wide Event, Facility and Volunteer Management System
6. Consolidate City Web Sites
7. Consider Cloud Based Email System
8. Implement Run Cutting System for SMART
9. Develop Disaster Recovery Plan
10. Develop IT Policies and Procedures

Medium Term Recommendations (1-3 years)

11. Use Cartegraph as City-wide Asset Management System
12. Implement New Financial Enterprise Resource Planning (ERP) System, Including Human Resource Management and Utility Billing Modules
13. Implement Laserfiche as the City-wide Electronic Document Management System
14. Implement an Integrated Land Management System
15. Promote Use of Geographical Information System (GIS) as an Organizational Priority
16. Consolidate Payment Processing Systems and Merchant Accounts
17. Implement Enhanced Interactive Voice Response (IVR) System
18. Implement Email Archival and E-Discovery Solution
19. Implement Project Management System
20. Implement Integrated Time Tracking and Payroll System
21. Implement a Cloud Based Collaboration System
22. Implement Integrated Security Access System

Long Term Recommendations (3-5 years)

23. Implement Integrated Citizen Database and Portal
24. Implement a Business Intelligence Tool
25. Implement a Cloud Based Voice over Internet Protocol (VoIP) Telephone System

26.   *Implement Virtual Desktops and Enhanced Virtual Private Network (VPN) Solution*

27.   *Modernize Fare Collection System at SMART*

28.   *Consider Implementing Automated Meter Reading (AMR) Infrastructure for Utilities*

Ongoing Recommendations

29.   *Continue Standardization of IT Environment*

30.   *Establish Periodic IT Skill Gap Review Process for IS Staff*

31.   *Continue Enhancing Audio/Video and WilsonvillleTV Infrastructure*

32.   *Implement Municipal Fiber Program*

Mindboard strongly recommends that the City Council and Executive Team adopt this IT Strategic Plan as the City's definitive guide for future IT investments. It is also recommended that the City annually conduct a review and "refresh" of this plan, to ensure that recommendations remain in line with the City's vision, industry IT standards, innovations and best practices.

2 Critical Analyses and Deliverables

2.1 Internal IS Survey Results

The project team developed and administered an anonymous online questionnaire to the Executive Staff and end users from all City departments. The questions were designed to solicit feedback in a constructive way by reaffirming successes and positive attributes that have contributed to the City's growth. The survey questions were grouped into three (3) critical areas: Technology Capabilities, Operational Excellence and IT Service Delivery. Additionally, the questionnaire aimed to capture not only priorities on the existing systems, operations, policies and procedures, workload, management support, responsiveness and overall quality of services provided, but also elicited feedback on "wish lists" related to future opportunities for operational, departmental and organizational improvement. This activity provided an opportunity for the City's employees to share critical feedback, which aided the project team in identifying the current IT needs at the City. Individual results from the survey were confidential and collected as common themes among employees.

Survey Demographics
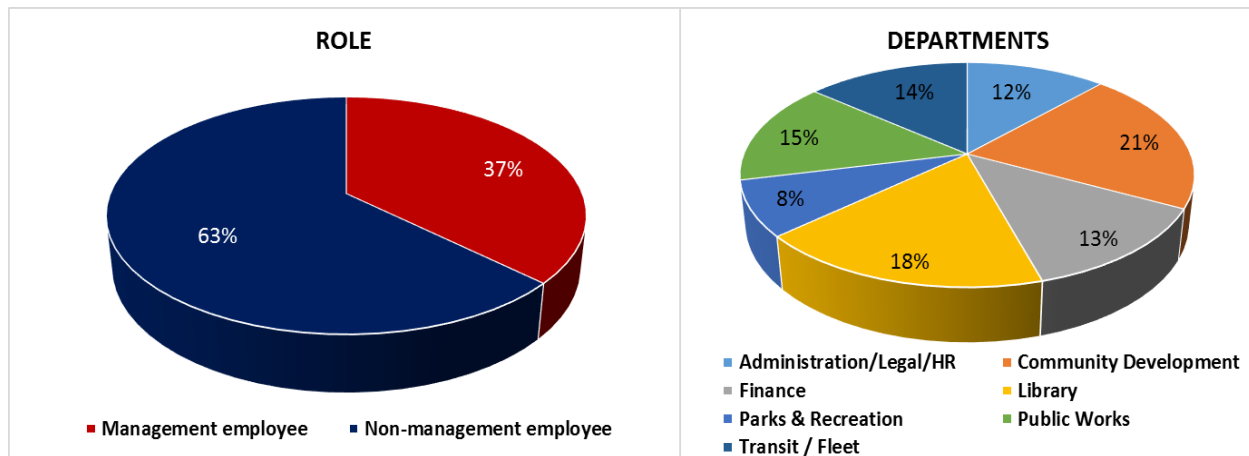
All 9 departments participated in the organization-wide survey, which was distributed to management and staff. 78 employees completed and submitted the survey of which, 37% were Management and 63% were non-supervisory employees.

IT Capability and Business Value

Common themes in response to the IT Capability and Business Value question, depicted as a "word cloud". The size of the word reflects the frequency in which it was included in responses.
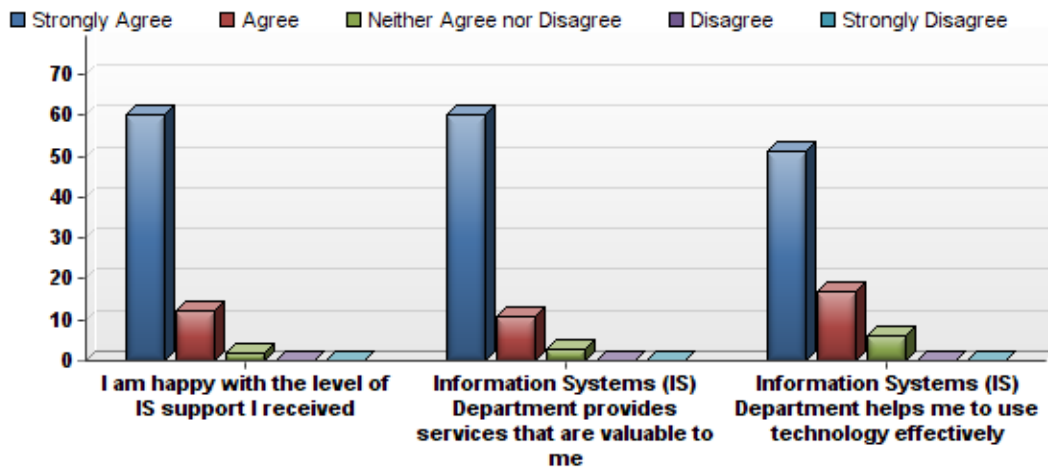
Knowledgeable IS Staff are committed to providing excellent service to all stakeholders. The City's staff believes that the services provided by the IS department are valuable for the operation of the City and the staff are very happy with the level of support received from the IS department

Importance of IS Department

Importance to Business – *Managers' Perception*

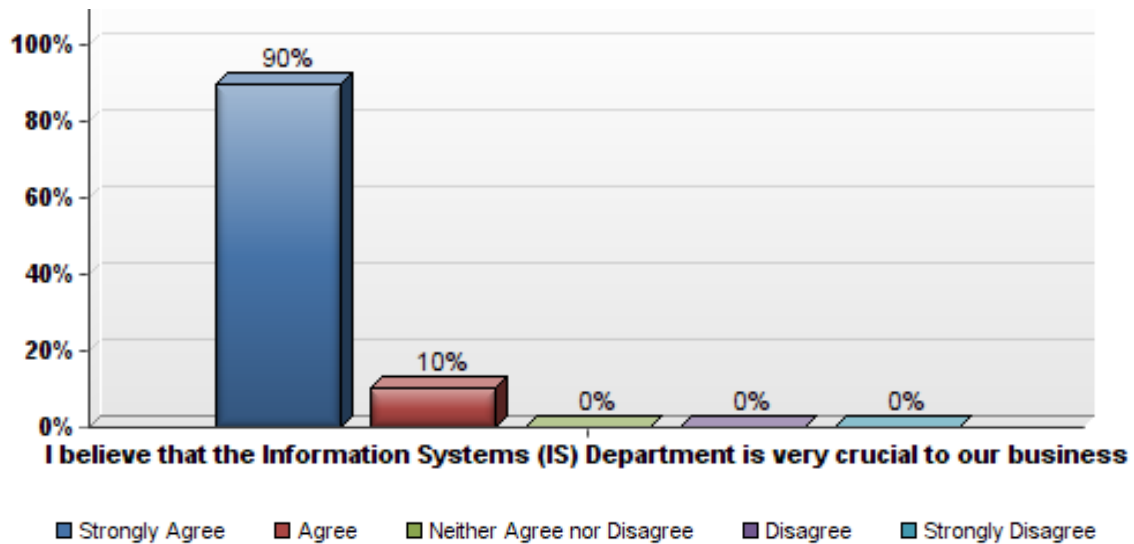Strongly Agree ■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Strongly Disagree

Non-Management Perception

Strongly Agree ■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Strongly Disagree
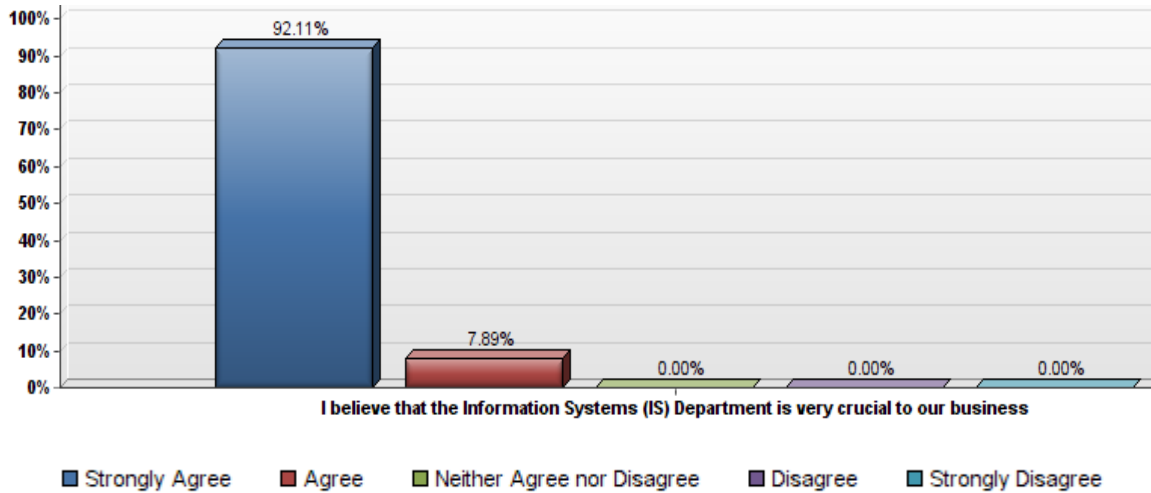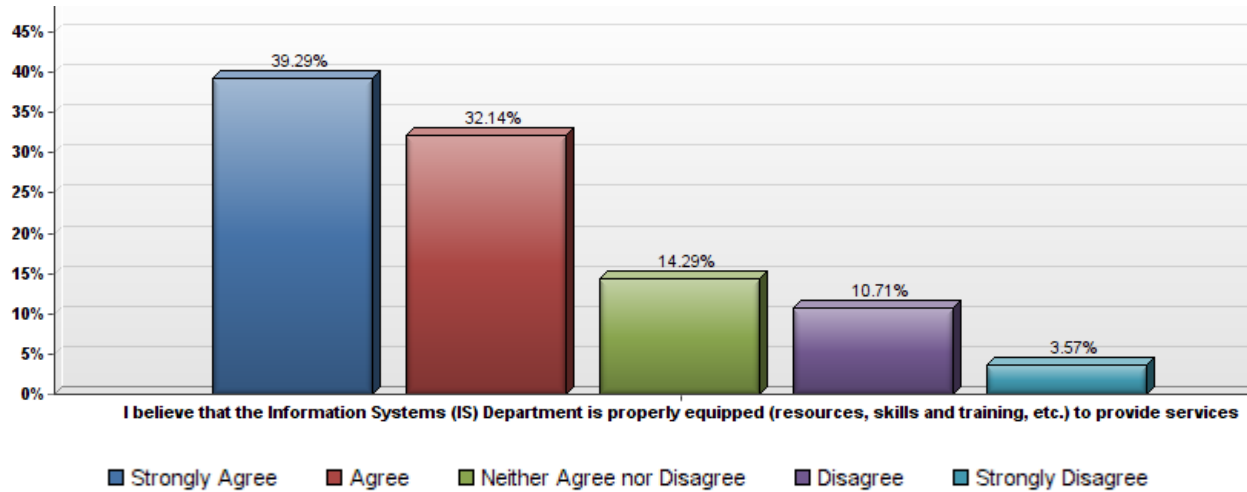
Everybody believes the Information Systems department plays an important role in providing excellent services to the constituents. The IS department is perceived to be crucial both for supporting public facing interfaces, as well as for supporting the daily business operations of the City.

Available Resources- *Managers' Perception*

Non-Management Perception
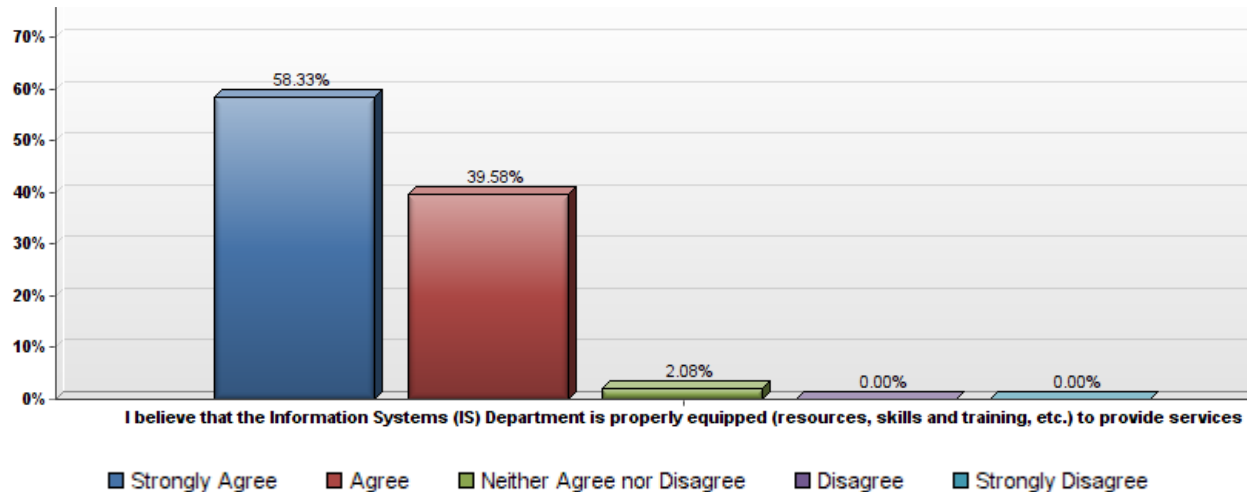
About 13% of Managers believe that the IS department is not equipped adequately to continue to provide the same level of service to all departments. Specifically, some of the managers are concerned that as the City has grown over the years, the number of staff in the IS department has not grown proportionally, which might lead to poor service levels in the future.

IT Hardware - *Managers' Perception*
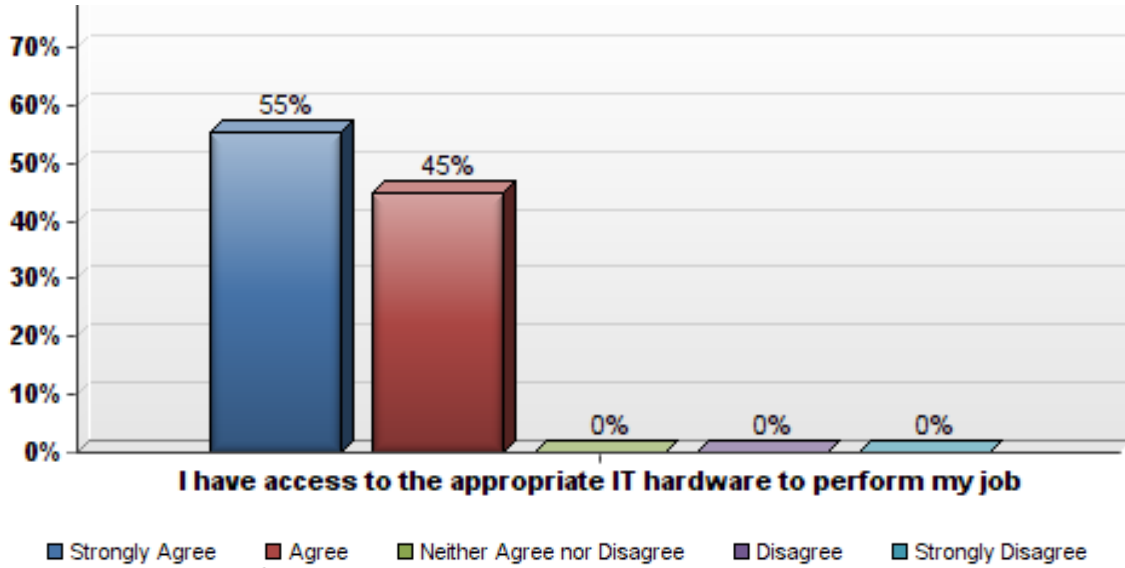
Non-Management Perception
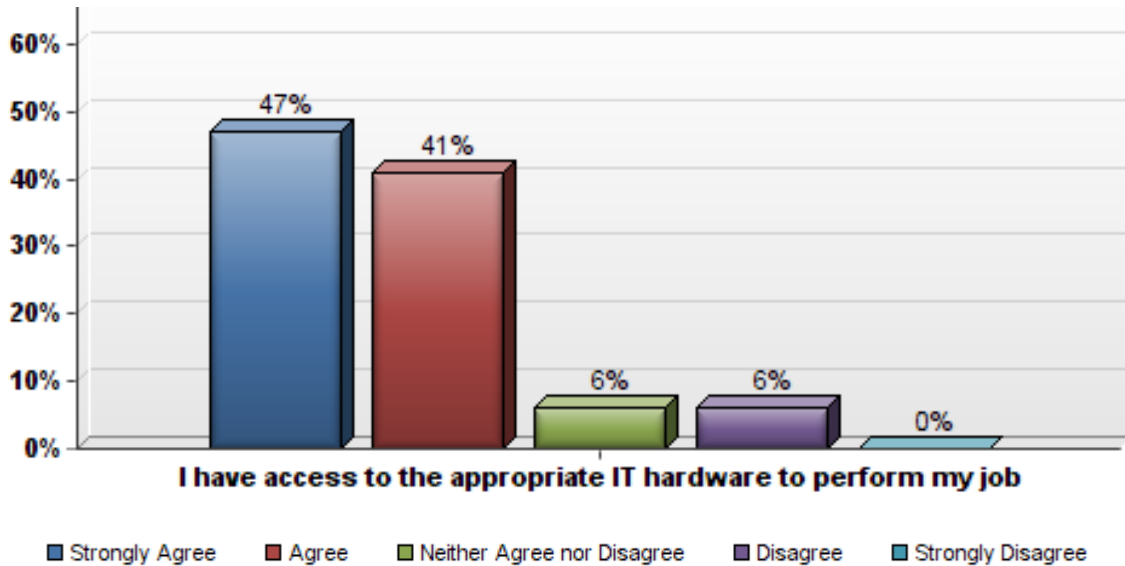
While the managers are generally satisfied with both hardware and software available to them, non-management staff are relatively less satisfied with their IT systems.

IT Software - *Managers' Perception*
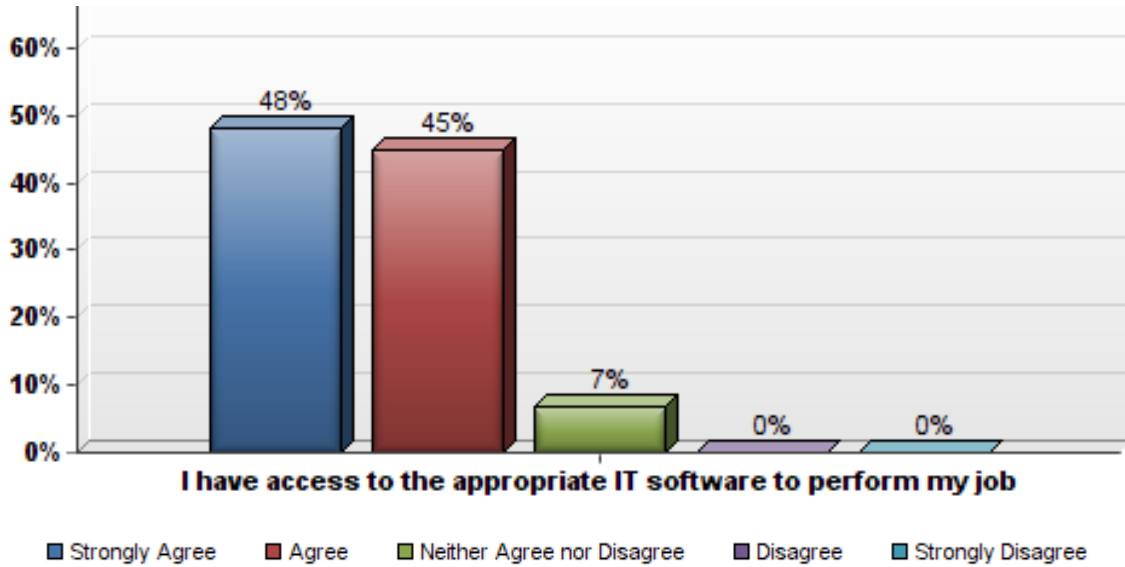
Non-Management Perception
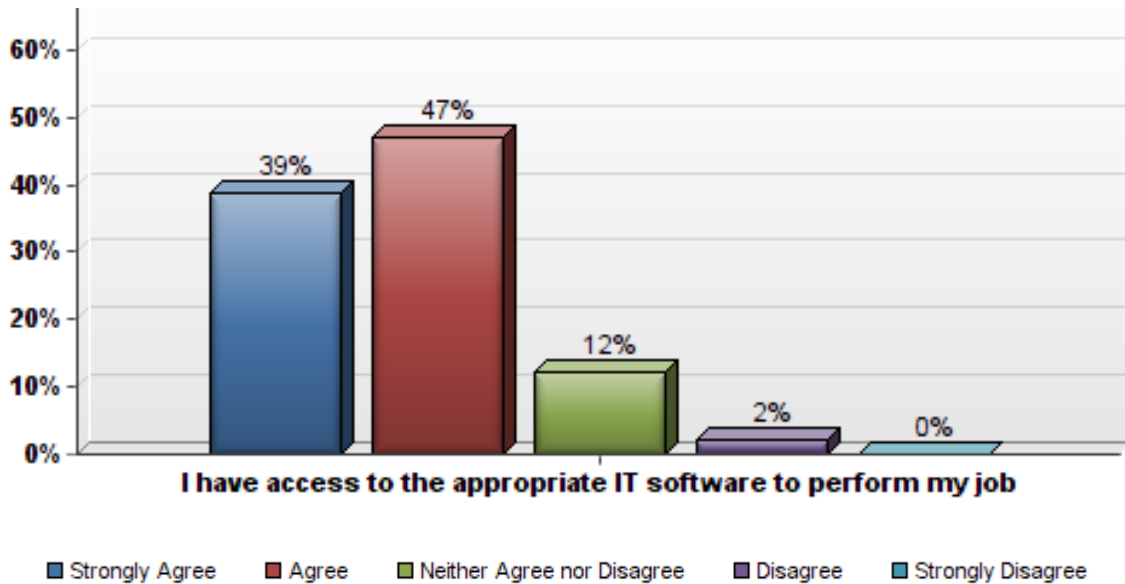
About 12% of the non-management staff are not happy with their hardware – mostly because of issues related to printers, and 14% are not happy with their software – mostly because of issues related to Outlook and EDEN.

Typical IT Related Problems

The most common IT related problems (or perceived problems) reported are with the email system and some network printers.

Email Storage: It appears that limitations on mailbox sizes and restrictions on email attachment sizes have created frustration for staff.

Printer: It also appears that one of the common printers frequently fails, requiring some amount of troubleshooting. Also, some of the high volume users would like to have dedicated printers.

Other major problems reported are related to concerns about data integrity in GIS and the complexity of using the Eden permitting system.

WILSONVILLE

Frequency of Problem - *Managers' Perception*

Non-management Perception

Mindboard
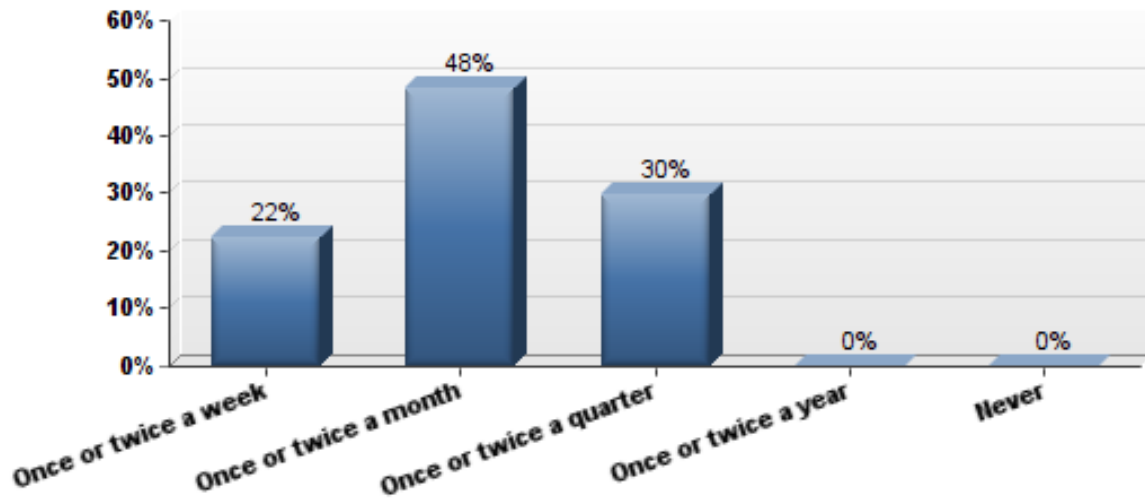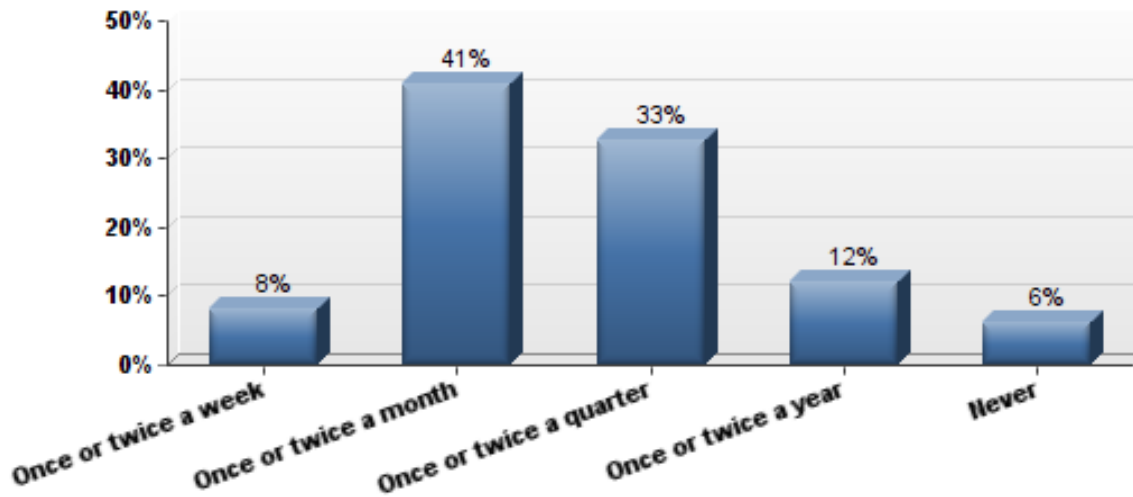
Reporting Channel - *Managers' Perception*

Non-management Perception
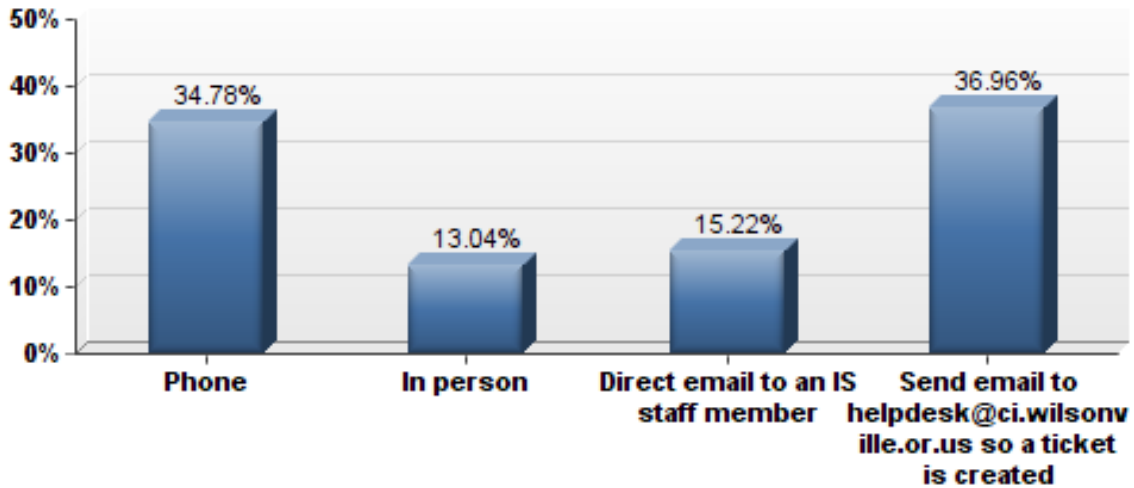
About 70% of respondents indicated that they work with the IS staff every month to resolve IT related problems. The important metric to look for here is that only about 25% of this interaction happens through the "Helpdesk", while the rest of the support is handled through disparate channels, which are difficult to measure.

IT Skills Availability - *Managers' Perception*
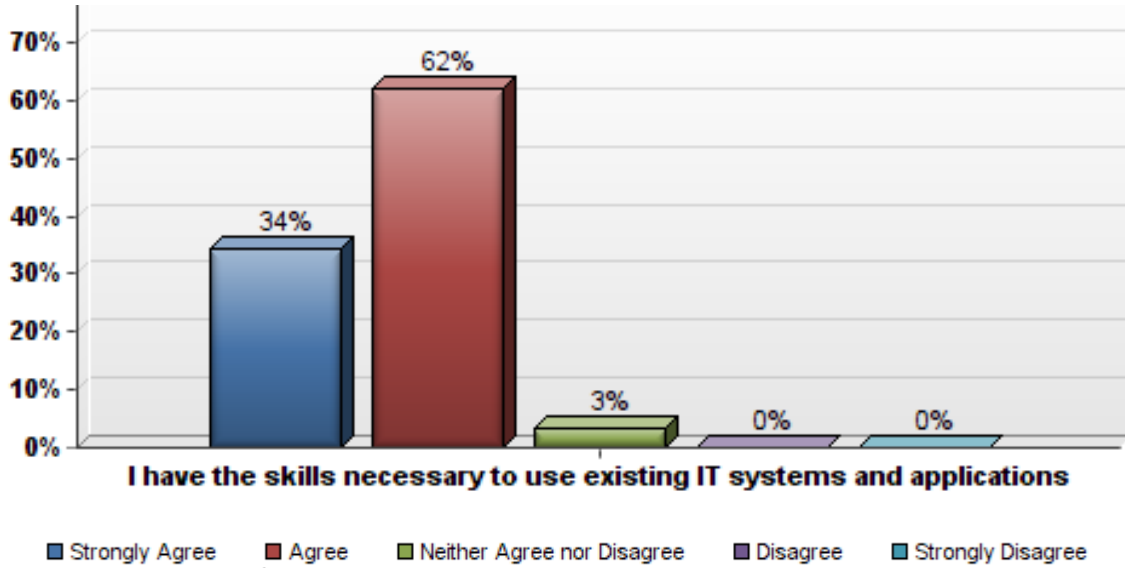
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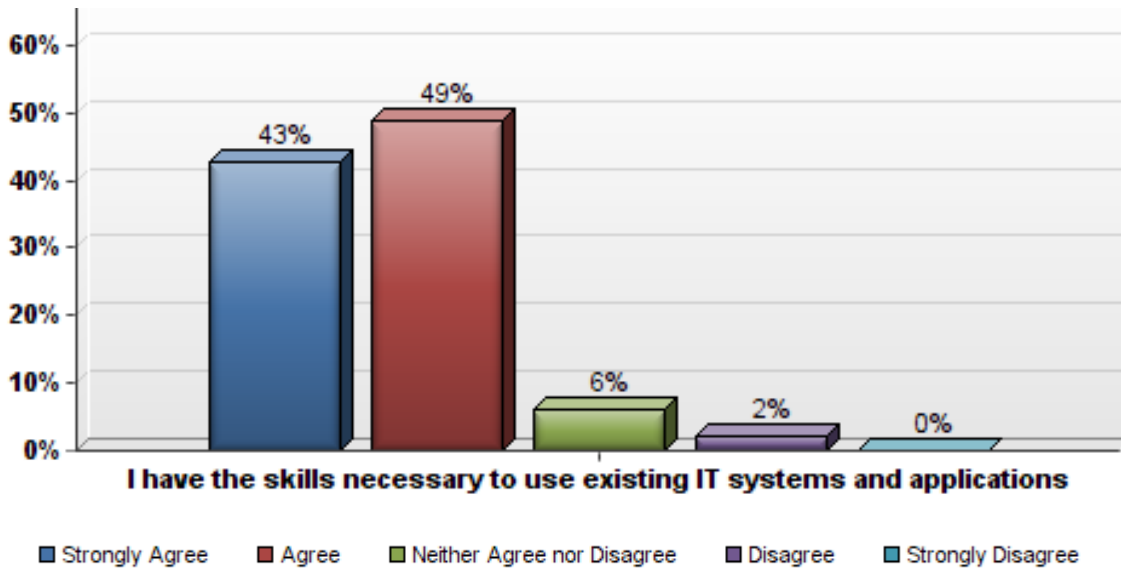
IT Training Needs - *Managers' Perception*
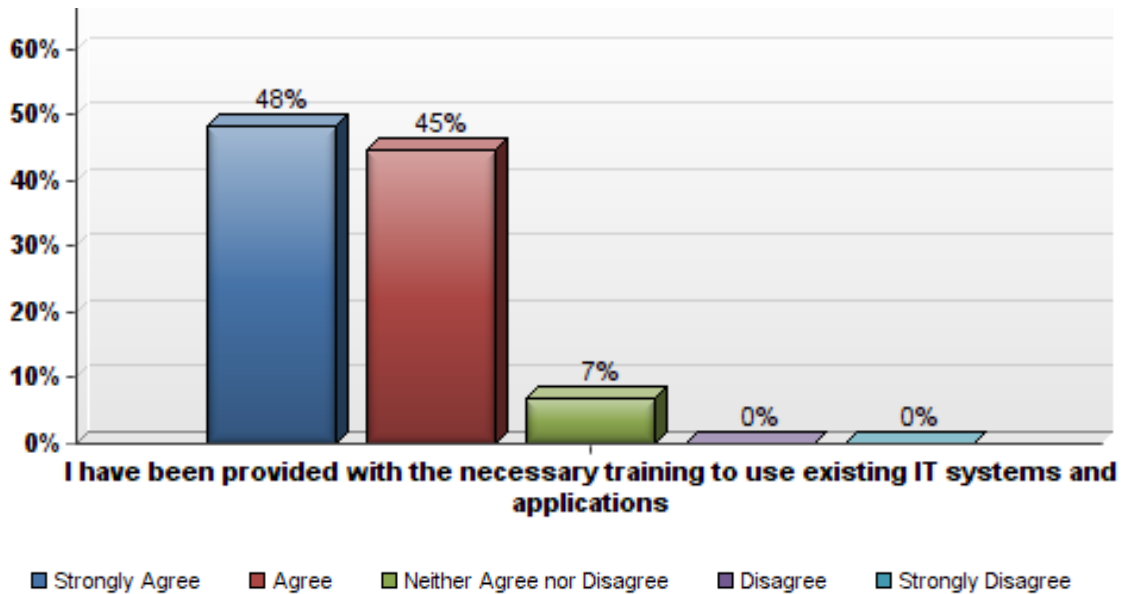
Non-management Perception
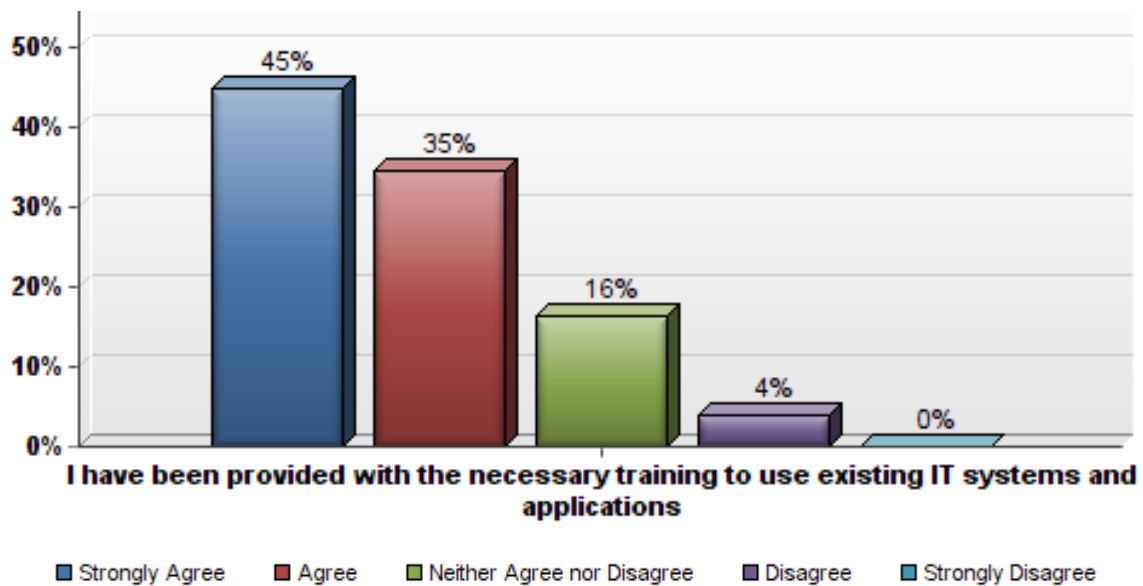
Overall, 3% of managers and 8% of non-management staff are not confident that they have the required skills to use the available IT systems. The reasons can be traced back to their training needs – 7% of managers and 20% of workers believe they need more IT related training.

Frequency of GIS Usage - *Managers' Perception*
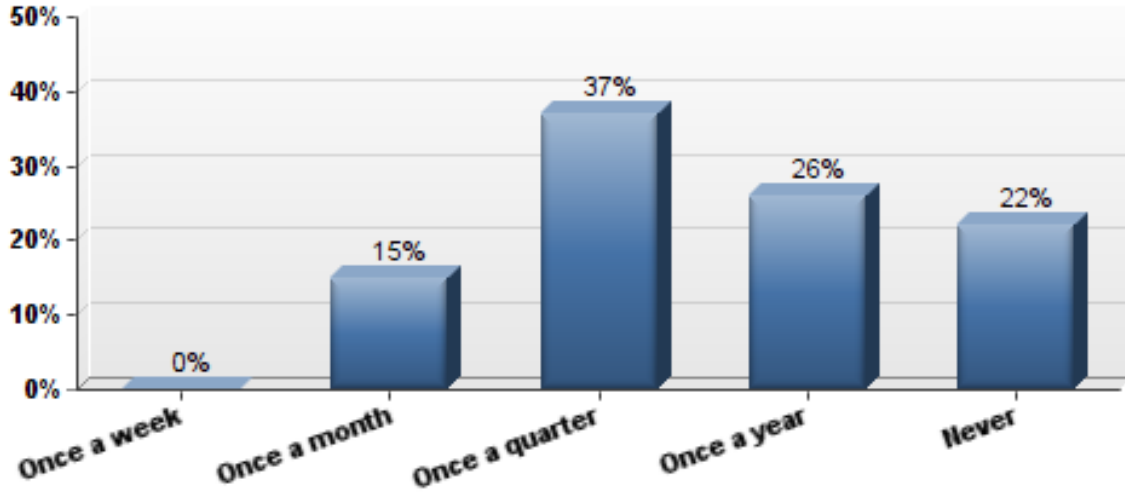
Non-management Perception
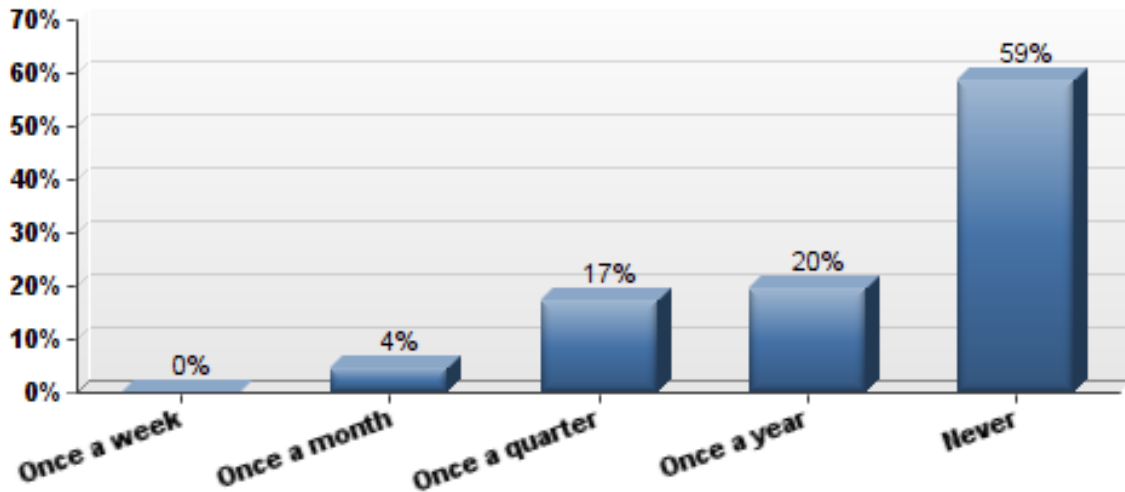
GIS Related Training - *Managers' Perception*
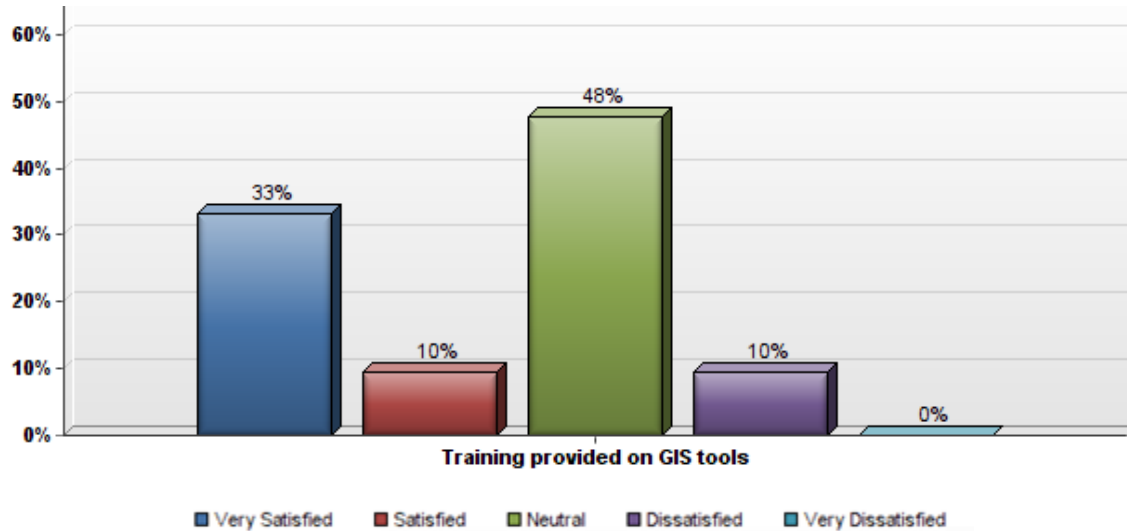
Non-management Perception
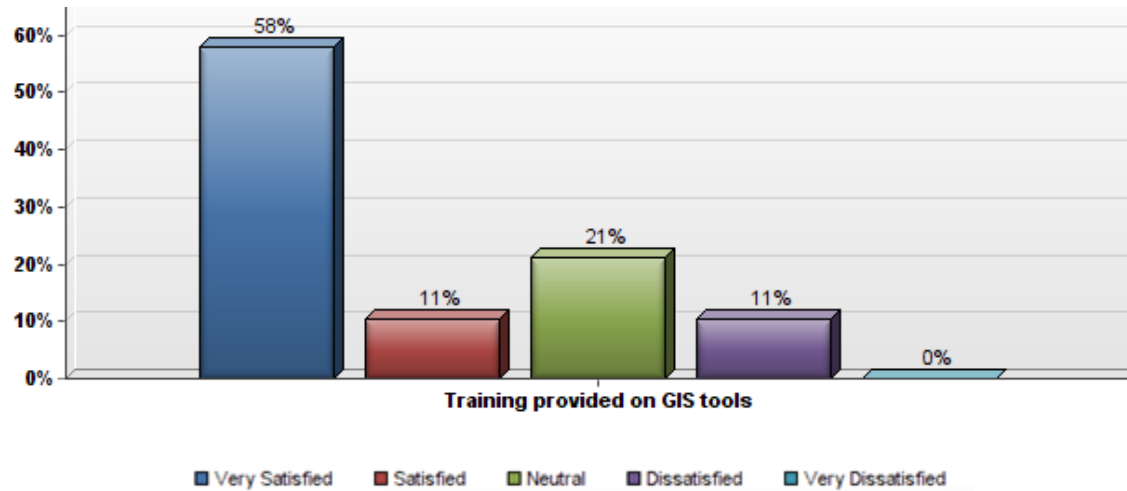
Very few city staff reportedly use GIS regularly to perform their job. In fact, 22% of the managers never use GIS, and only about 20% of non-management staff use GIS tools in any given quarter.

However, for the staff that actually utilize GIS regularly, training on effective use of GIS tools can be improved. Almost 58% of managers and over 30% of non-management are not satisfied with the training provided.

Range of GIS Services - *Managers' Perception*
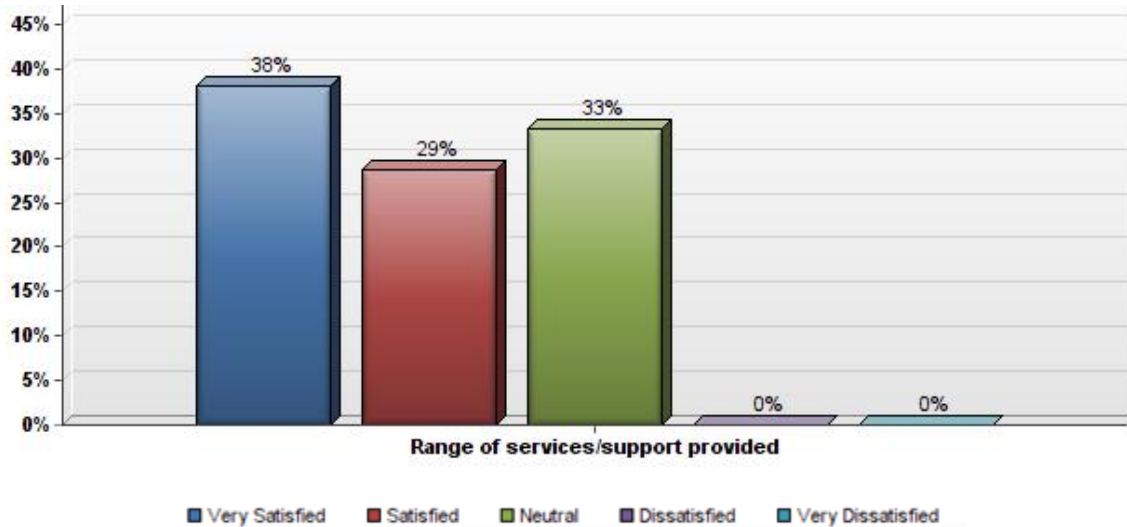
Non-management Perception
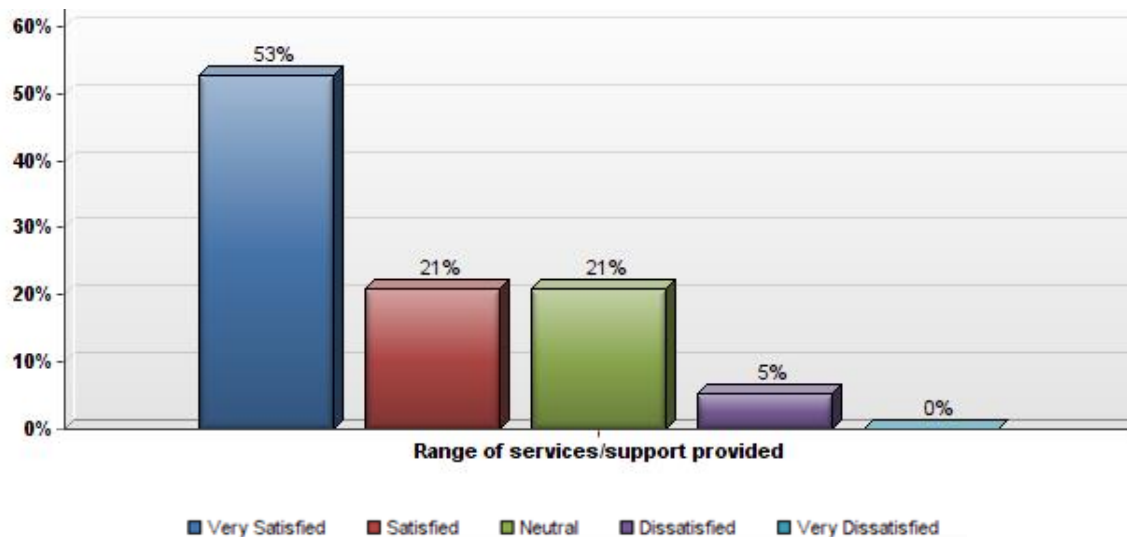
Of the staff who use GIS tools, 33% of the managers and 26% of the non-management staff believe the range of GIS services offered is not sufficient. Common problems are related to map printing capability, availability of accurate and current data and a more responsive website (CowMaps).

Enterprise Applications - *Managers' Perception*
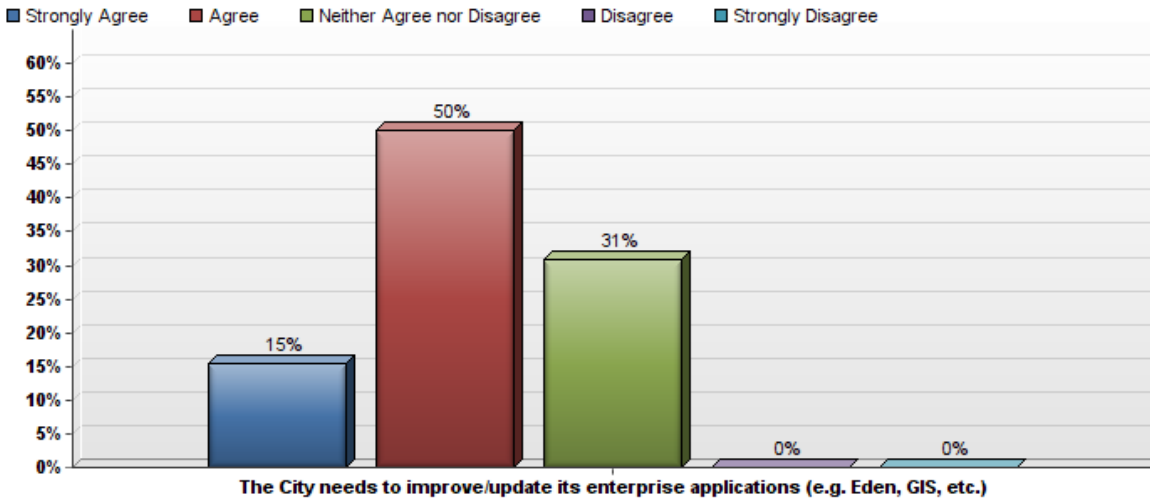
Non-management Perception
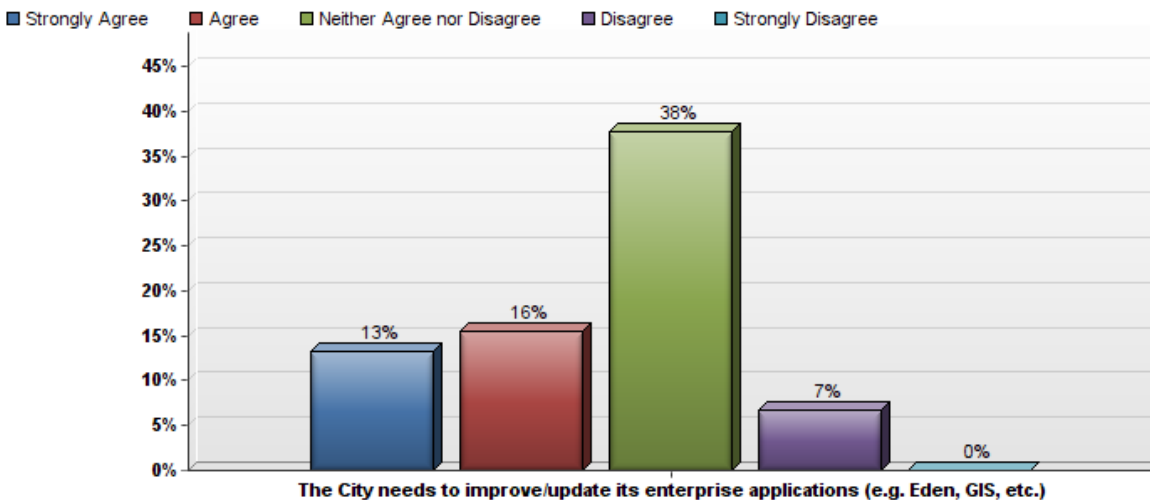
A large number of managerial staff, over 63%, believe the current enterprise systems (mainly Eden) should be upgraded. Non-managerial workers are rather indifferent, probably because of the prevalence of paper based manual processes or non-exposure to alternative, more functional applications.

Awareness of Common IT Resources

Staff Zone
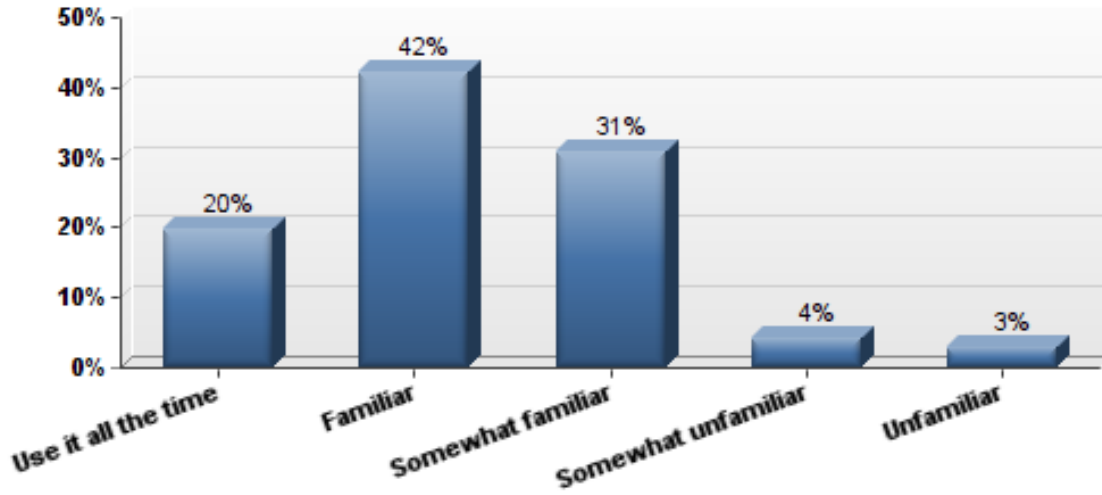
Mostly everyone is familiar with the Staff Zone, and the staff generally like the new look and feel of the intranet site. However, a major complaint on the intranet is the content – a number of staff have reported that they perceive the content as stale. Another frequent issue reported is difficulty in navigating the new website and the new login requirement.

Ask the City App
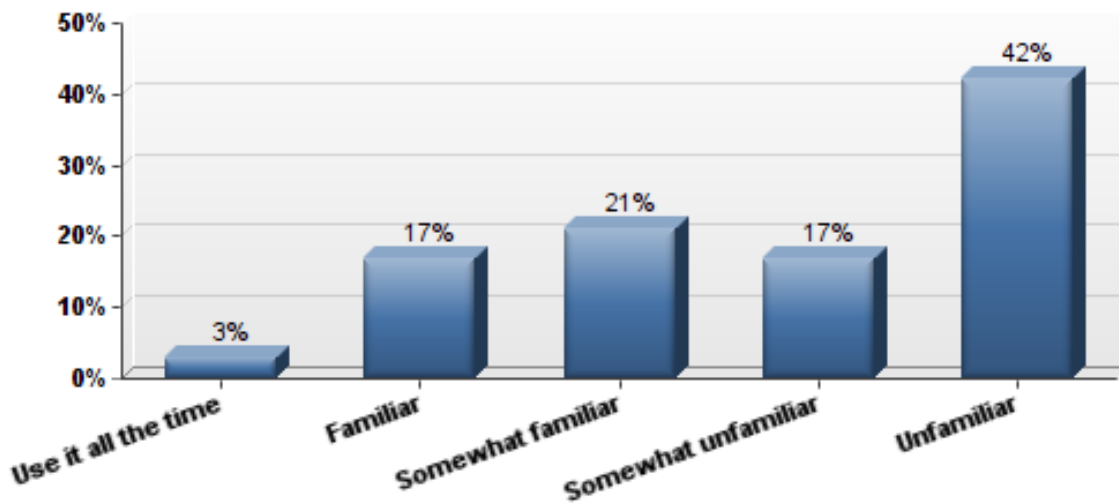
Most staff are not familiar with the tool for reporting problems. To improve usage of the tool, awareness needs to be fostered – both internally and externally.

Satisfaction with Communication
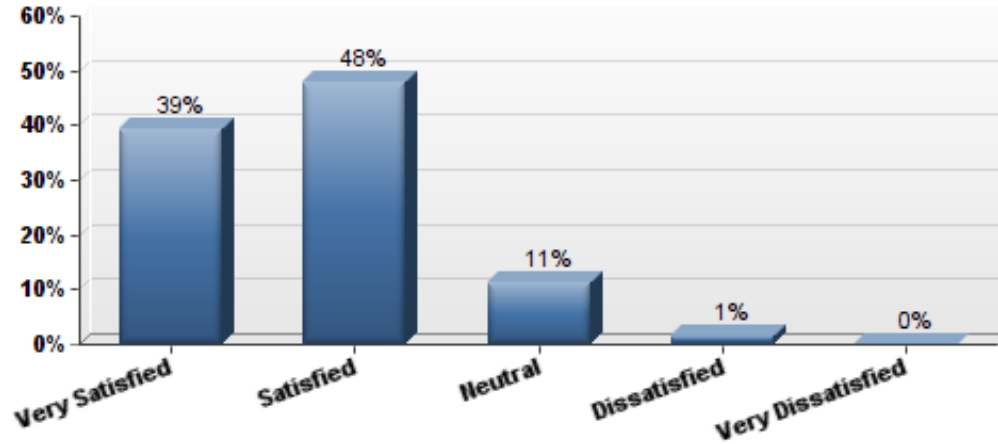
All staff are satisfied with the level of communication they receive from the IS department regarding new IT projects, or the status of existing IT projects.

The majority of the managers would find it helpful to have regular meetings with IS staff to discuss their IT needs. For non-management employees, most would prefer to receive updates via the Staff Zone and occasional emails.

2.2 Public IS Survey Results

In addition to the internal IT Needs Assessment Survey, the project team developed and administered a public online questionnaire (via the City's website) to elicit feedback on community needs, priorities, expectations and perceptions from a technology and service delivery standpoint. The external stakeholder survey was organized in a way that encouraged open, honest and anonymous responses, thus giving the citizens of Wilsonville an opportunity to voice their technology expectations. This survey was made available to the public for the duration of the IT Strategic Plan project.

Demographics
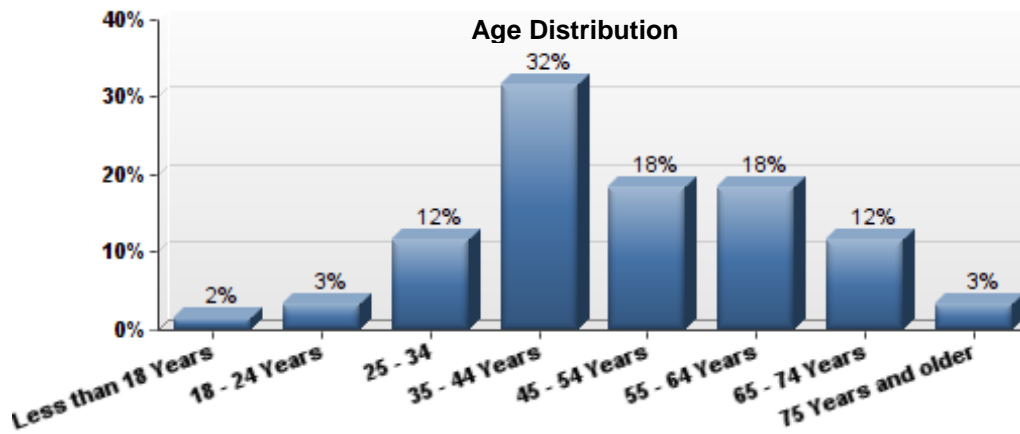
The Public IS Survey was advertised in the Boones Ferry Messenger and the City hosted a "Virtual Open House" on its web site to provide information on the IT Strategic Plan project and to elicit feedback from Citizens on public facing IT initiatives. 60 residents completed the survey and the results are presented in the following sections.

Communication Devices Used
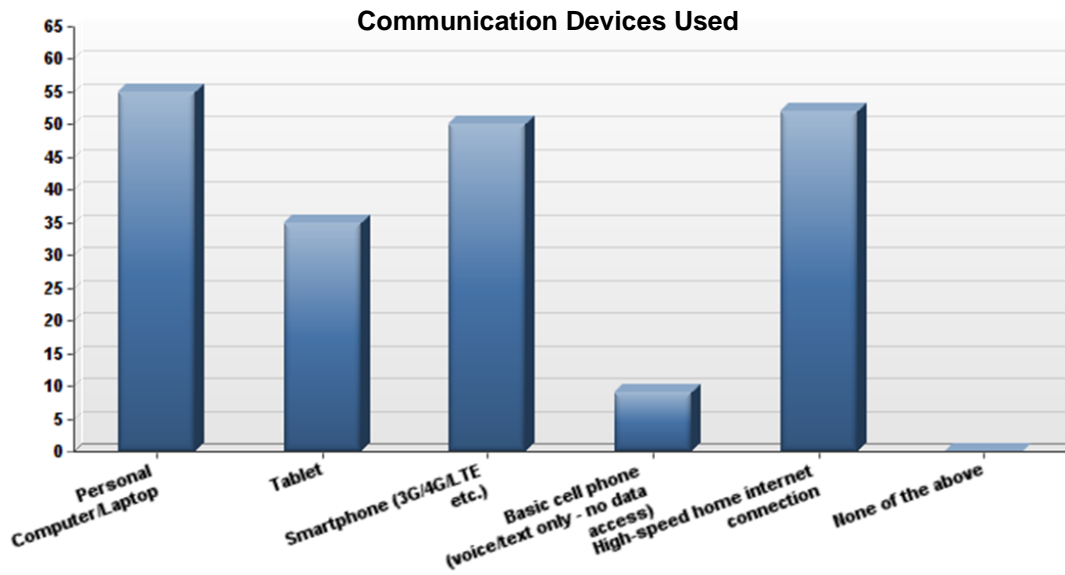
Over 90% of the respondents have access to high speed Internet at home and/or a smartphone.

Citizen Engagement
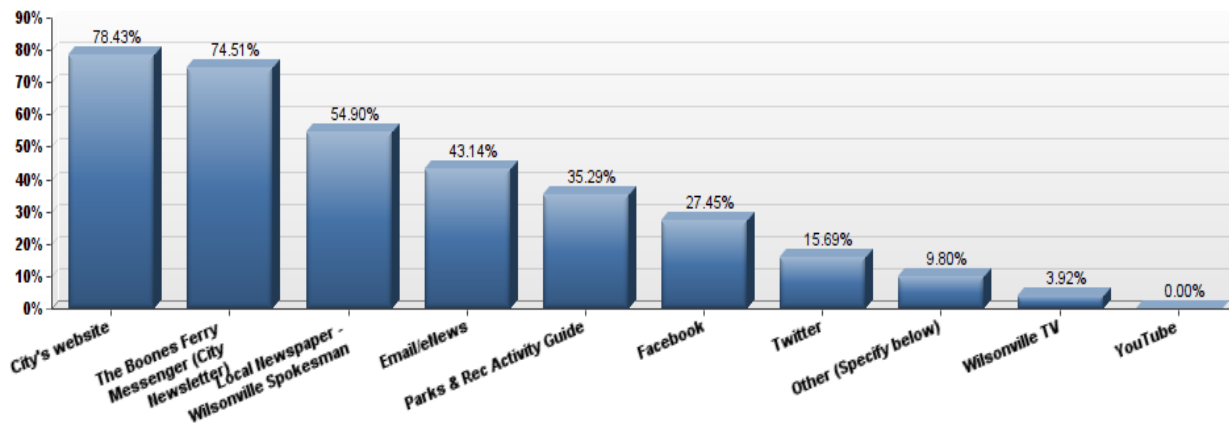
The top three channels through which Citizens currently receive information from the City:
- City's website
- Boones Ferry Messenger
- Wilsonville Spokesman

The top three channels Citizens would like to receive information through in the future:
- City's website
- Email/newsletter from the City
- Boones Ferry Messenger

Citizen Engagement – Opinion Sharing

Current Engagement Method

Current Engagement Level
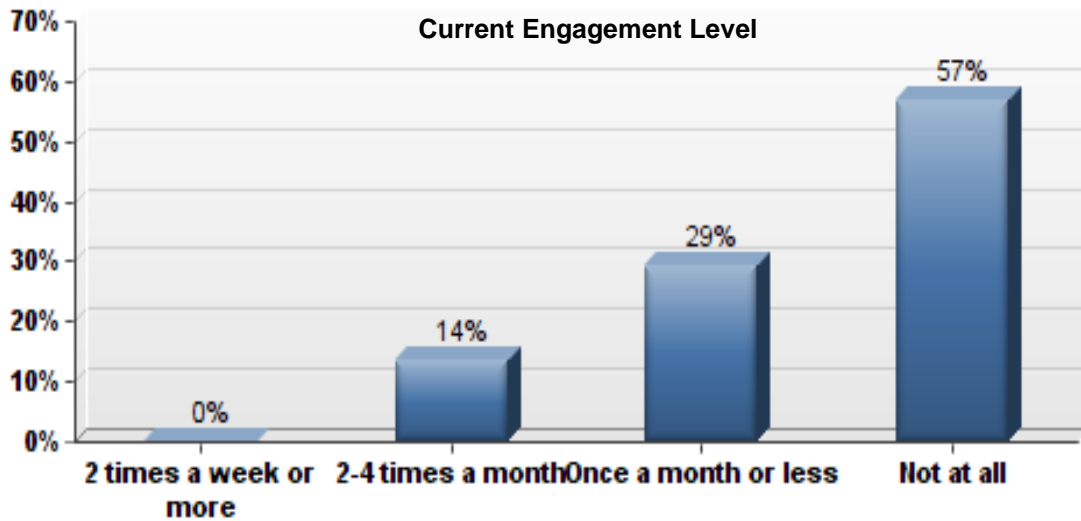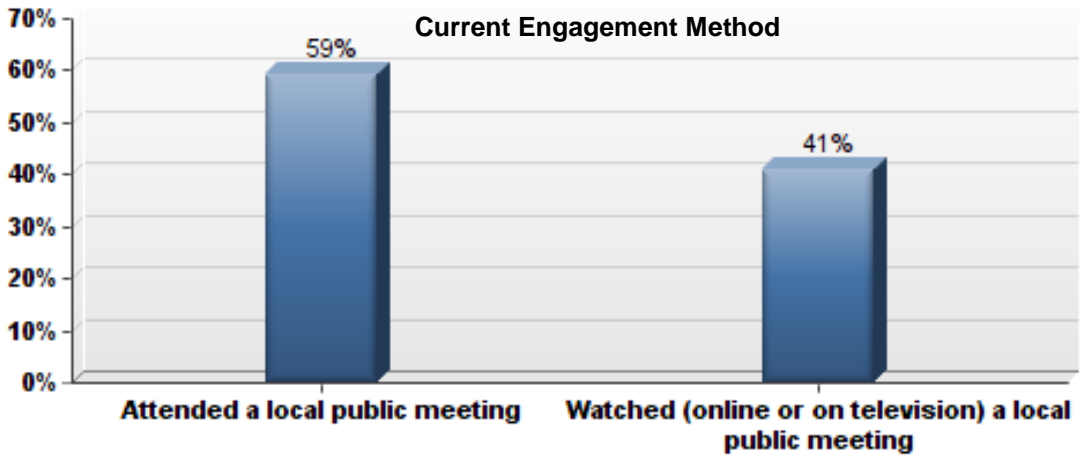
Expected Future Engagement Level
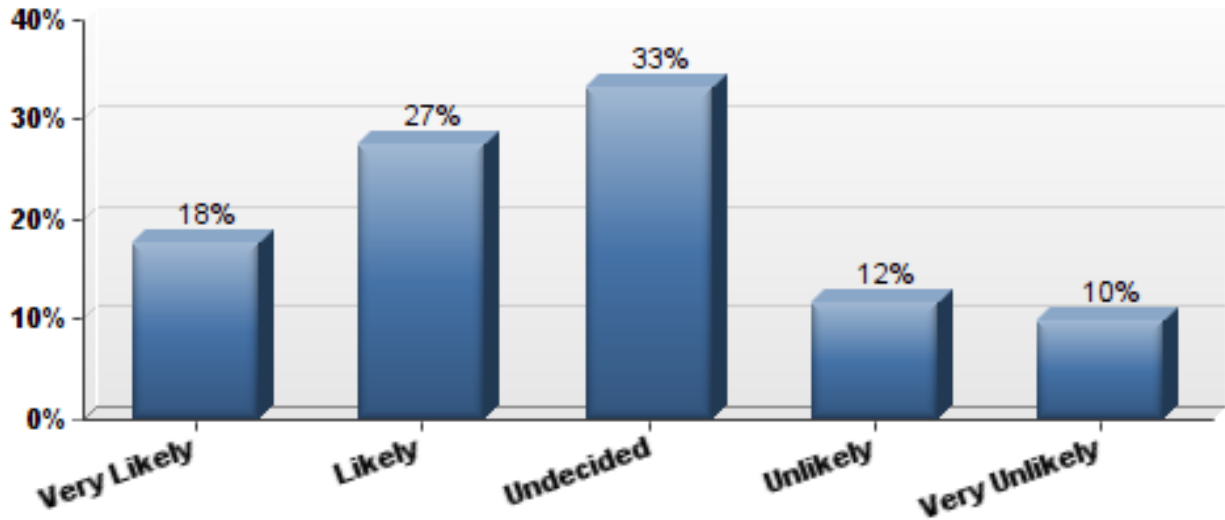
Currently, 43% of respondents have attended or watched (online or on WilsonvilleTV) a public meeting; the level of engagement is expected to remain consistent in the near future. Of the people who attended or watched a public meeting, most of them attended in person; however, over 41% watched the proceedings online or on WilsonvilleTV.

Citizen Engagement – Web Sites

Satisfaction with City Website

Satisfaction with Content of City Website

How satisfied are you with the timeliness of the information provided on the City's website?

- Very Satisfied: 27%
- Satisfied: 37%
- Neutral: 33%
- Dissatisfied: 2%
- Very Dissatisfied: 0%

Legend: ■ Very Satisfied ■ Satisfied ■ Neutral ■ Dissatisfied ■ Very Dissatisfied

Satisfaction with Ease of Finding Information

How satisfied are you with the ease of finding information on the City's website?

- Very Satisfied: 10%
- Satisfied: 59%
- Neutral: 25%
- Dissatisfied: 4%
- Very Dissatisfied: 2%

Legend: ■ Very Satisfied ■ Satisfied ■ Neutral ■ Dissatisfied ■ Very Dissatisfied

City Web Sites

Over 70% of respondents are happy with the main website of the City. However, most would like improvements in the following aspects:

- Ease of finding information
- Consistency of location of information across different websites
- Relevance and timeliness of information

In addition to the main website, the city maintains a number of websites for its departments; however, a large number of those websites are not visited by respondents.

Citizen Engagement – Online Payments

Current Online Payment Methods
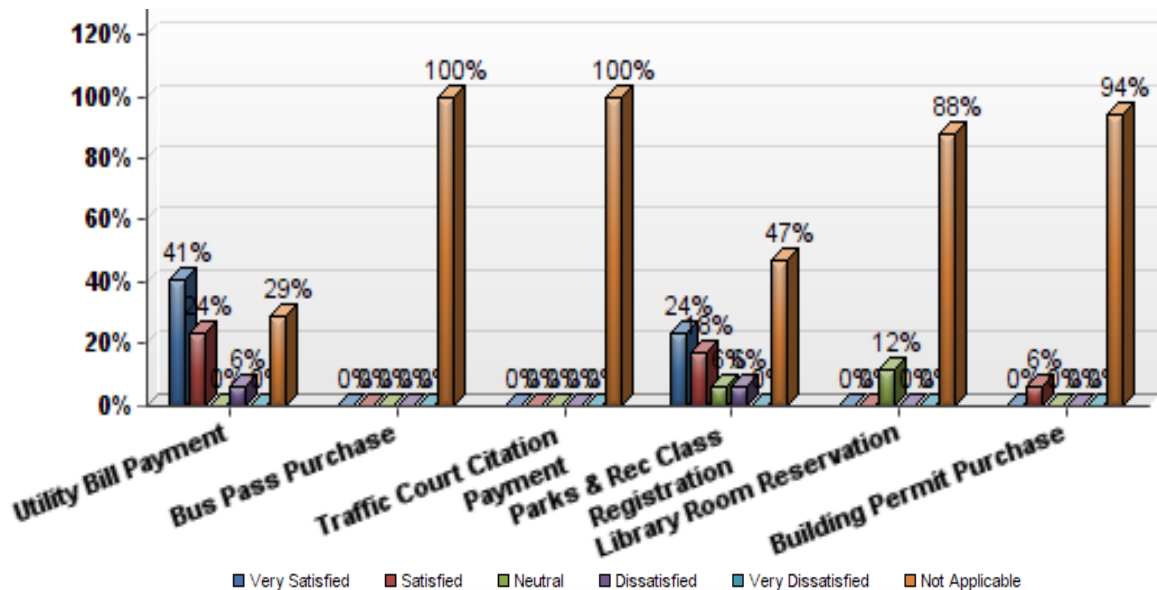
Current Online Payment Adoption
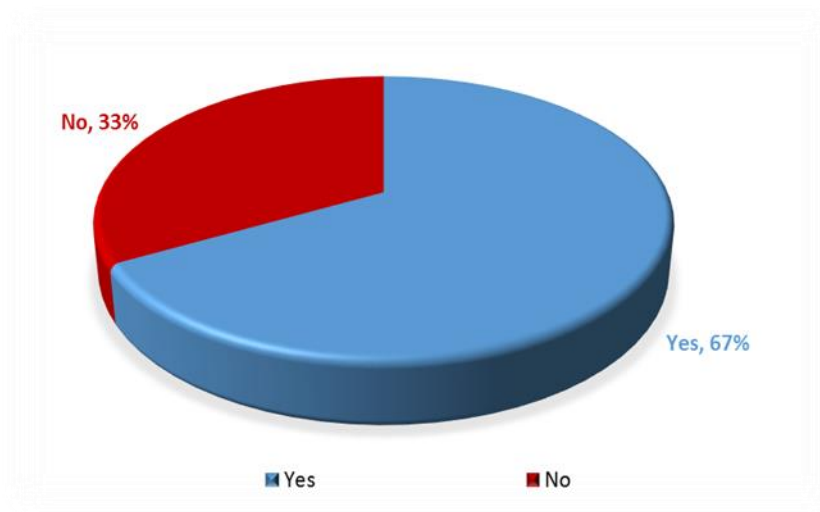
Expected Future Online Payment Adoption
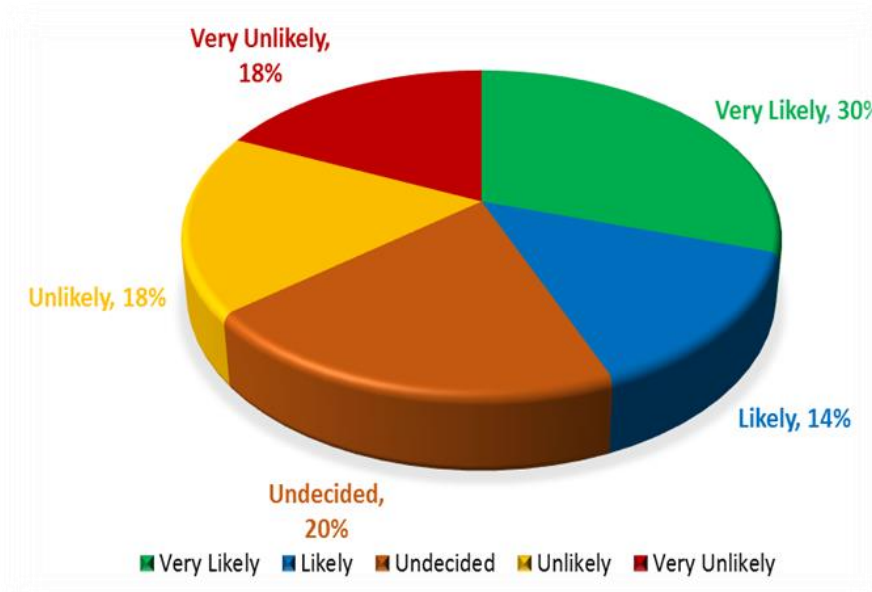
The City currently provides online payment mechanisms for a range of services; however, respondents primarily only use the facility for paying utility bills and registering for Parks & Rec classes. Most of the respondents are enrolled in the autopay feature to pay utility bills through their respective banks.

Citizen Engagement – Service Provisioning

Citizen Service Requests
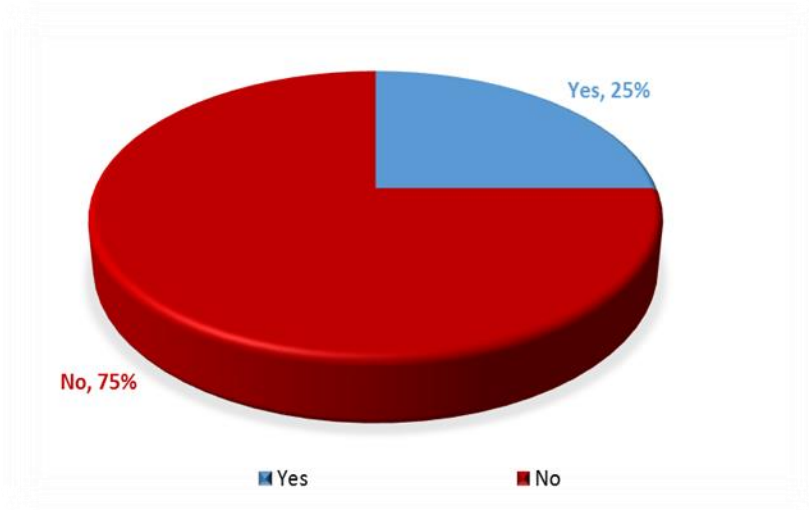
Service Request Channels
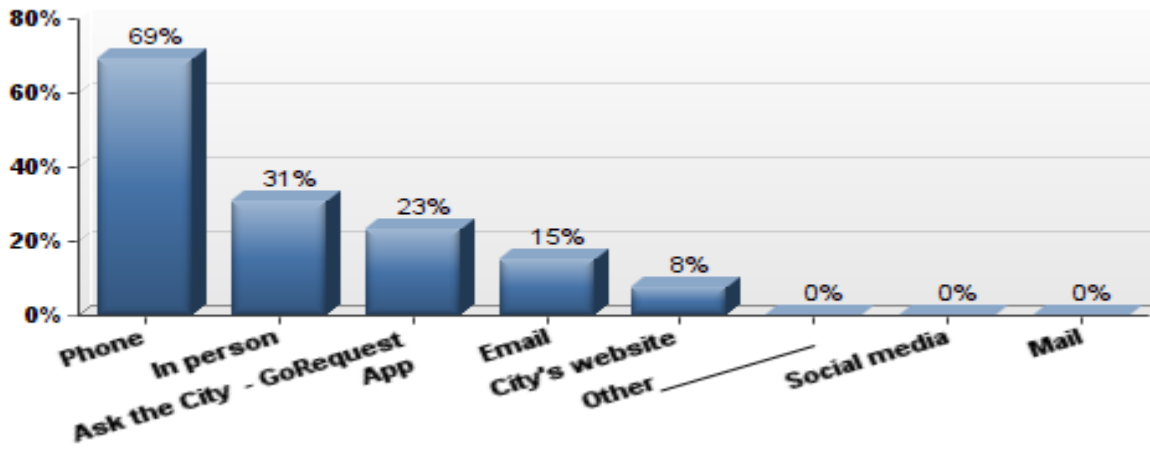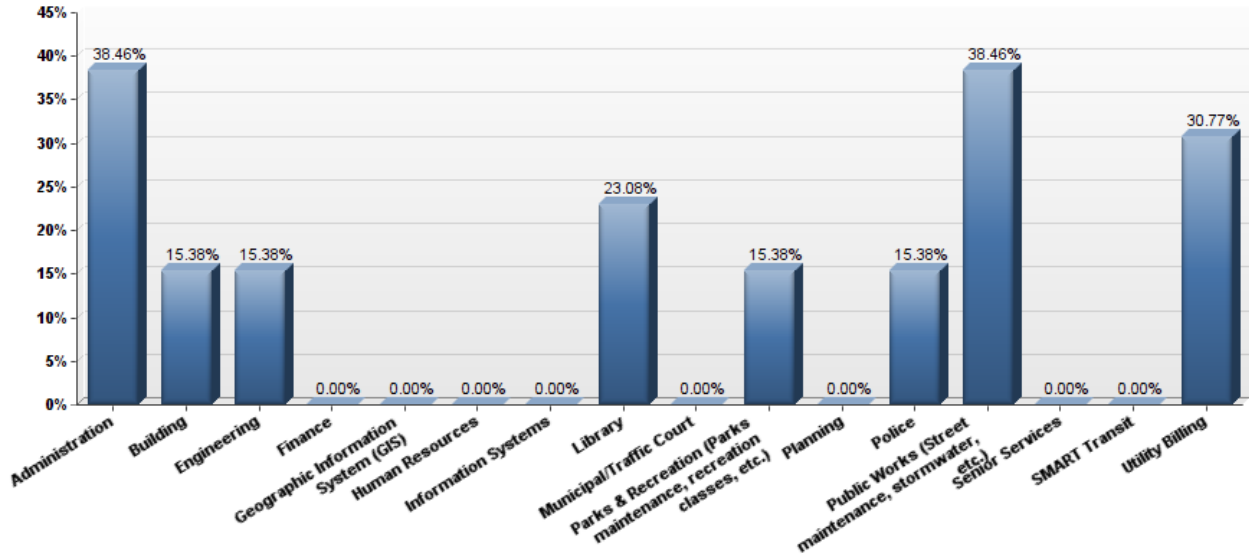
25% of the respondents requested service or reported a problem to the City, and most of them interacted via telephone. The top three types of requests were related to Administration, Public Works and Utility billing departments.

Citizen Engagement – Social Networking
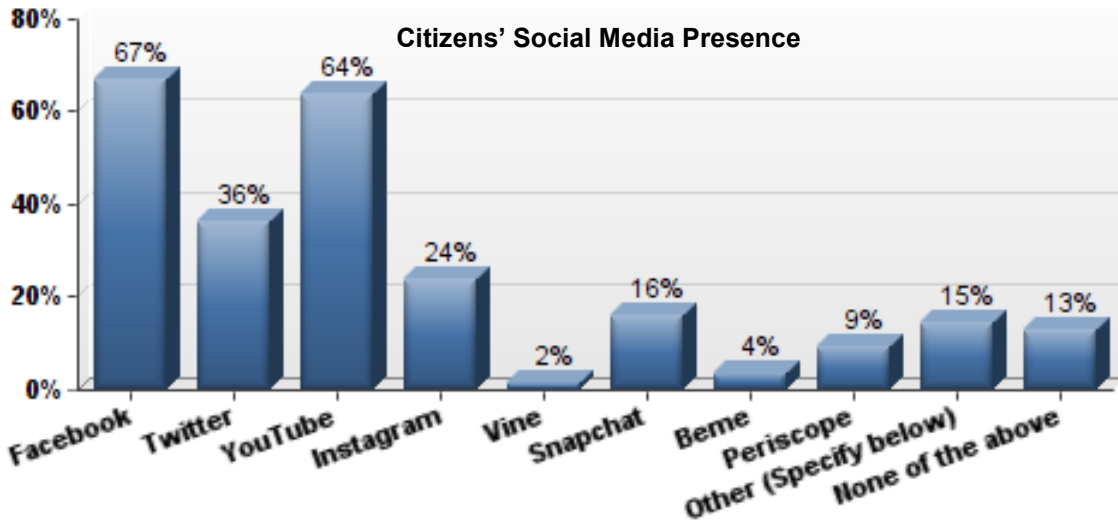
Citizens' Engagement with City's Social Media
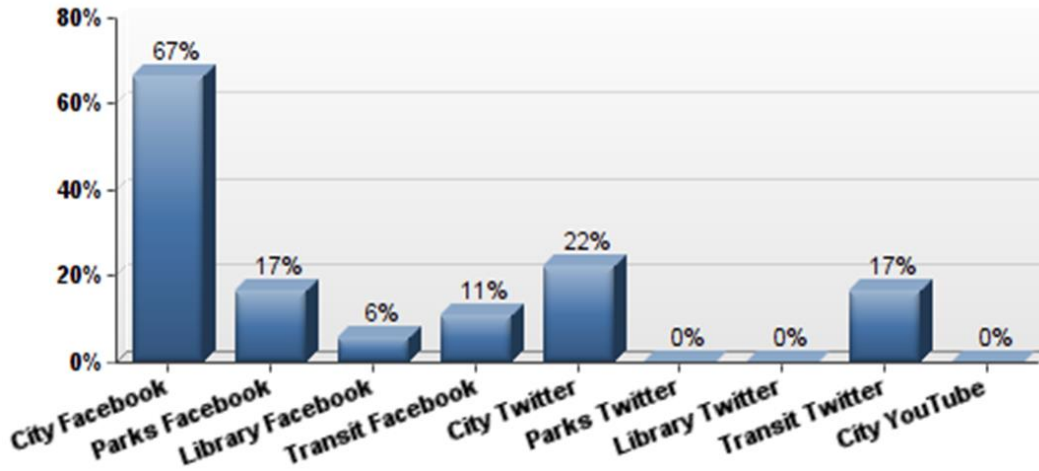
The citizens actively participate in a number of social media platforms, with the highest engagement in Facebook and YouTube. The City manages a number of Facebook pages for different departments; however, citizens focus primarily on the main Facebook page of the City.

Citizen Engagement – Video
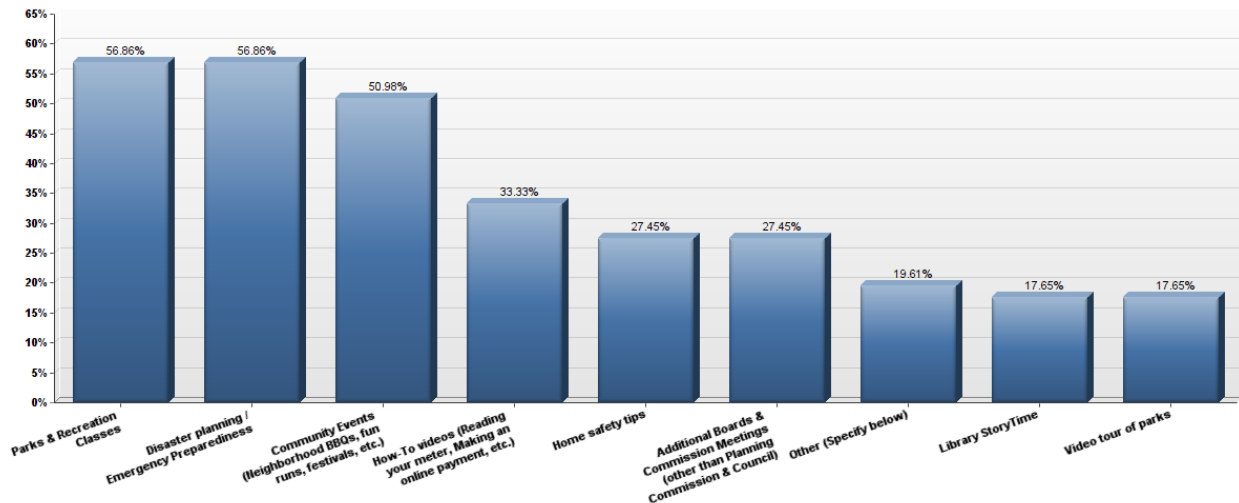
Of the categories provided, the top three categories of videos that the residents would be interested in the city providing through the City Web site or YouTube include:
- Parks & Recreation Classes
- Disaster planning / Emergency Preparedness
- Community Events (Neighborhood BBQs, fun runs, festivals, etc.)

Citizens' Likelihood of Producing Community Video Content
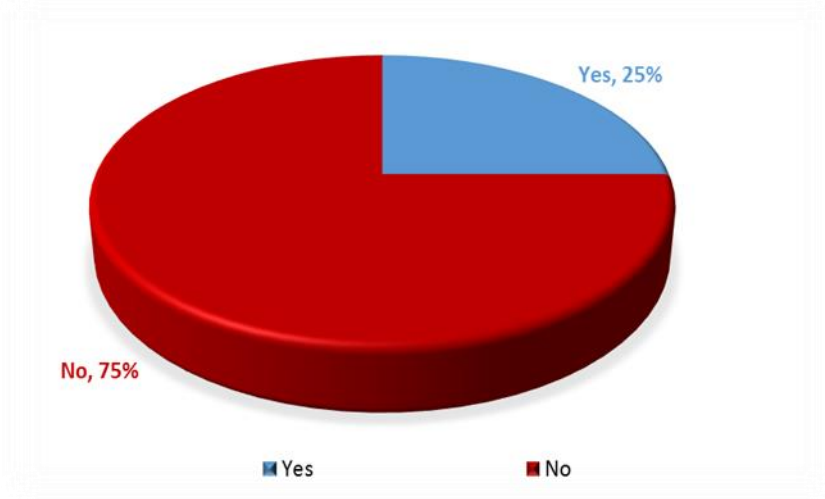
While an overwhelming majority of the residents do not want to participate in producing video using City provided equipment, 25% indicated that they would be interested.

Citizen Engagement – Mobile App

Likelihood of using Mobile Apps
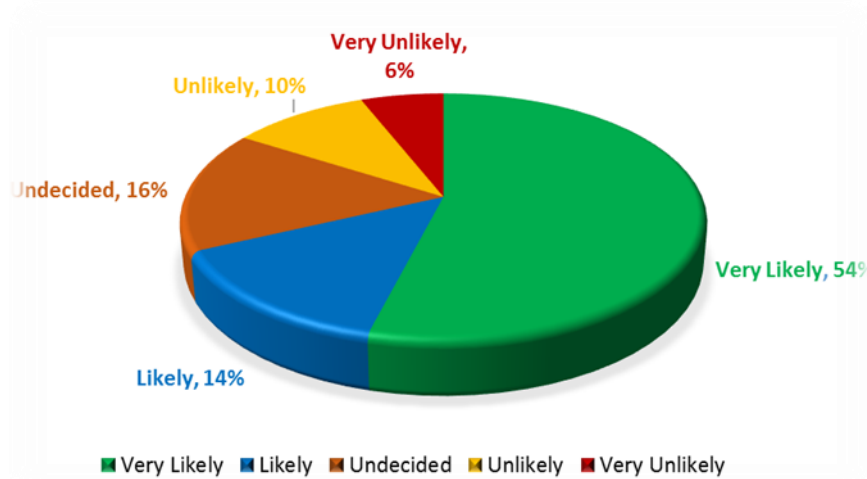
Awareness about City's Mobile App
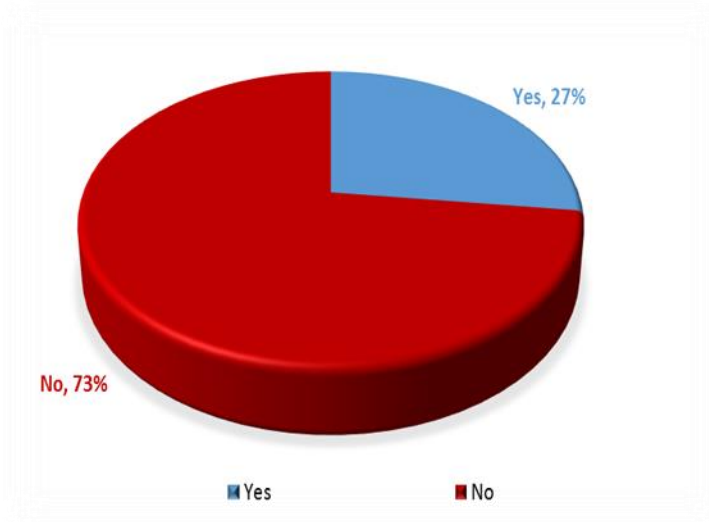
Smartphone Platforms Used
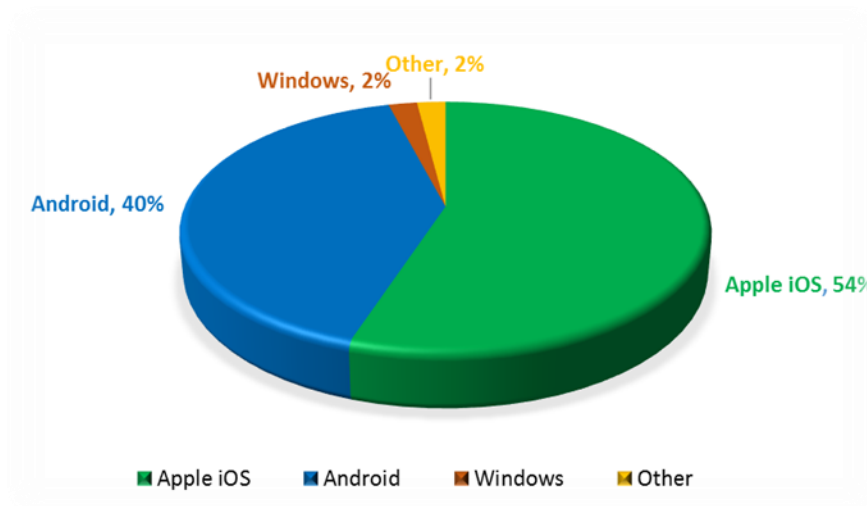
68% of respondents said they were likely to use a smartphone app to interact with the City. However, 73% of the respondents were not aware of the current app provided by the City. Apple iOS and Android devices account for 96% of the smartphone platforms used by the residents.

Citizen Engagement – Future IT Systems
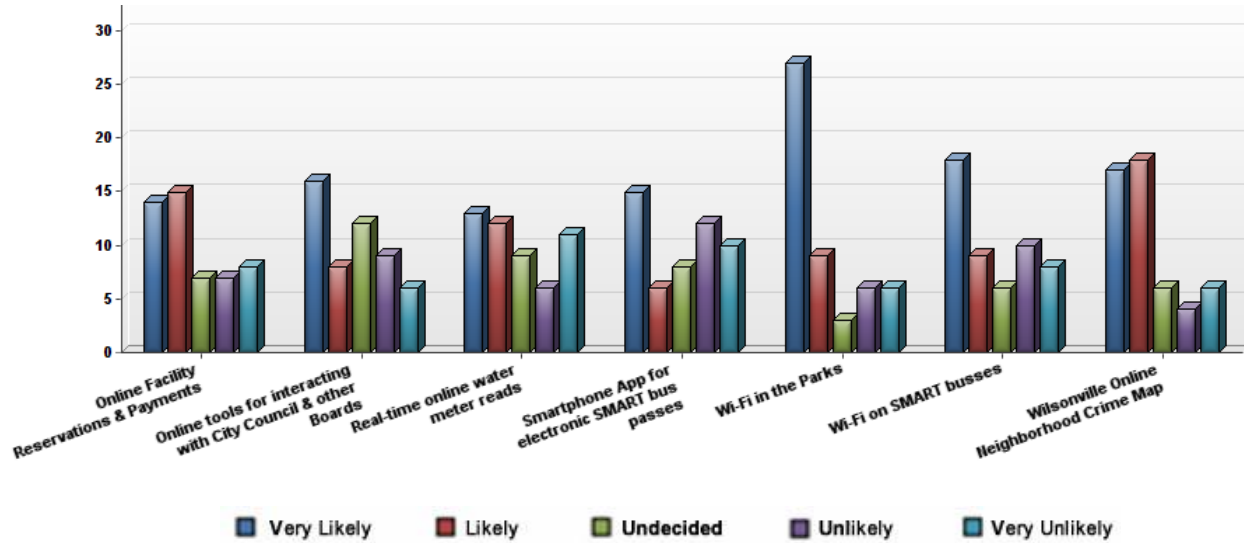
Of the options provided, the top three IT projects that Citizens would like the City to implement include:

- Wi-Fi in parks
- Online facility reservation and payments
- Online Neighborhood Crime Map

2.3 IT Best Practices Review

"Best practices" is a term used to describe generally agreed upon processes and policies that should be undertaken when purchasing and deploying IT projects in order to decrease operational and financial risk. They are strategies for design, development, and operation of computer systems, which increase the chances of success and decrease risk. Best Practice analysis is a framework to help organizations more effectively manage IT investments. The Project Team analyzed best practices within other cities as well as standard industry practices. This document discusses the best practices for managing both IT Demand and IT Supply within the City.

The Project Team used its prior experience from work at other cities and an analysis of standard industry practices to identify the best practices used in governing the IT demand and IT supply for City governments. The project team also performed extensive secondary research of the best practices used by innovative cities, especially to understand the IT policies, rules and governance used to manage IT demands in a city government environment.

In the following section, we have detailed the best practices, their descriptions and their benefits. We have organized the best practices into two (2) broad categories: IT Demand Management and IT Supply Management, which are further categorized as detailed below:

- IT Demand Management
  - o IT Governance
  - o IT Financial Management
- IT Supply Management
  - o IT Organization
  - o IT Talent Management
  - o IT Capabilities
  - o IT Infrastructure

2.3.1   IT Demand Management

IT Governance

IT projects can significantly improve a City's performance, but they can also become costly, risky, and unproductive. Cities can maximize the value of IT investments and minimize the risks of IT acquisitions when they have an effective and efficient IT investment management process. IT Governance establishes a decision-making framework for managing both the demand and supply of IT services. The goal is to create transparency and long-term City-wide commitment to technology best practices supporting business needs.

Observed industry best practices for medium to large city IT organizations depict a "stand alone" IT department led by an executive level Director that reports directly to the City Manager or Mayor. In some cases, once an organization has reached certain levels of technological sophistication or size, the practice is to create an IT Steering Committee comprised of the Finance Director, IT Manager and Directors of major departments. The steering committee manages demand by documenting and prioritizing business needs for IT investments and resolving conflicts among competing priorities.

With the focus on common enterprise wide business needs, any new IT projects are evaluated based on:

- Business needs
- Standards for security and integration with existing technologies and
- Conformance with Enterprise Architecture and long-term strategy

Benefits: Establishing strong and effective IT governance ensures the long-term success of IT investments. Below are some of the benefits of establishing a formal IT Governance structure:

- It ensures that IT capital projects are correctly prioritized to meet the needs of the City.
- It ensures smooth change management by generating buy-in from the department heads.
- Placing Directors of major departments in the IT steering committee helps to streamline any conflicting business processes.
- Having the Finance Director on the committee ensures that every IT demand has to meet stringent investment criteria.
- Lastly, the IT Manager ensures that the proposed projects adhere to the enterprise architecture requirement; thereby reducing a fragmented technology architecture across the organization.

2.3.2 IT Financial Management

For any organization, having appropriate mechanisms for financial control of capital investments and operating spends is key to success. This also includes developing incentives for different departments for effective financial management.

2.3.2.1 IT Funding

Financing for IT services are typically a mix of centralized and decentralized activities. City-wide initiatives such as essential standard IT capability development are typically financed from a centralized fund, where as "retail" IT services, such as regular IT maintenance and user support, or niche technology needs from specific departments are charged to individual departments.

The annual IT operating budget for providing "retail" services are typically allocated to individual departments based on underlying cost drivers such as number of PCs in a department. Costs for providing support for niche technology can be charged to departments on "at cost" basis.

2.3.2.2 IT Service Catalog

However, to develop an effective and robust charge back system, the IT department typically develops and publishes a catalog of standard services that are provided, such as fixing printer issues, fixing common desktop related issues, creating and administering user accounts etc. The service catalog also provides the unit cost of providing each service, which includes hardware costs, software costs, allocated network and storage cost as well as time spent on fixing the problems. The cost sheets of the services are usually revisited at least annually as the organization matures to reflect a correct allocation.

This approach not only makes departments accountable for their costs, but also helps manage demand for IT services.

Benefits: Some of the benefits of the charge back model of IT financial management include:

- Establishing a formal customer-provider relationship between IT and individual departments that will help the IT department measure its effectiveness.
- Giving control of managing IT demand to individual departments helps ensure better demand management by the individual departments and better knowledge management and retention "in-house" rather than calling the IT department to resolve trivial matters.
- Running IT as a self-sustaining department enables the department manager to focus on identifying opportunities to improve efficiency to deliver services.

2.3.3 IT Supply Management

2.3.3.1 IT Organization

The IT Department is typically organized as a "stand-alone" department reporting to the City Manager or Chief Operating Officer and provides the following types of services to a City. It is possible that multiple services are provided by a single role or the services are outsourced to an external vendor.

1. A **Central Service Desk** operates as the single point of contact to make it easier for users and citizens to report incidents and requests related to technology. The technicians coordinate and resolve reported incidents as quickly as possible over the telephone and through e-mail or remote desktop assistance. The Service Desk also provides assistance for other activities such as user account passwords and change requests. The technicians create a tracking ticket based on the type of service required and assign the ticket to the next level of support if they are unable to resolve the issue.
   Benefit:
   - The central Service Desk reduces operational costs and improves usage of available IT resources.
   - A central service desk also streamlines the process of service delivery by ensuring a single repository to track all pending service requests

2. **Desktop Technicians** diagnose and resolve incidents as well as provide support based on tickets escalated by the Service Desk. They are also responsible for completing special projects such as major upgrades to operating system and desktop applications.
   Benefits:
   - Segmenting service requests based on type of service and level of resource usage enables appropriate cost allocation.
   - Routing service tickets to the right role automatically based on the type of service request enables quicker resolution and improves process capacity.

3. **Network Services** includes all services to provide and maintain the City's network infrastructure. The network engineers are responsible for the City's wireless support, network security, and firewall configuration including intrusion prevention and detection through monitoring of the City's network traffic. Network Service is also responsible for the administration of secure remote access for employees and vendors and employee network and e-mail accounts as well as an e-mail filtering system. Network service is a commodity IT service provided to all users in the city, and cost is typically allocated to departments based on "retail service" provisioning.

4. **Special Projects Management** includes budgeting for and managing projects such as City-wide fiber optics program roll out, Cable Franchise management, large scale, enterprise wide application implementation, and training on various technologies used by the City.

5. **System and Storage Administration Services** includes server administration and management, testing, patch management, anti-virus monitoring, and operating system upgrades. Storage administration includes configuration and management of the storage area network (SAN) and other storage systems and the system backup processes. This service is a commodity IT service provided to all users in the city, and cost is typically allocated to departments based on "retail service" provisioning.

6. **Telecommunications Services** supports data circuits, T1/Fiber connections to City facilities, telephone systems, and mobile handsets. The telecommunications technician is also responsible for the cabling and wiring throughout the City to ensure that standards are maintained. Telecom service is a commodity IT service provided to all users in the city, and cost is typically allocated to departments based on "retail service" provisioning.

2.3.4 IT Talent Management

Delivering effective IT services is a human capital-intensive operation; hence it requires extensive efforts to manage the supply side of IT services effective. Best practices for IT talent management include periodic skill gap analysis of IT personnel, providing cross functional training to improve service capacity and developing and documenting standard operating procedures.

2.3.4.1 IT Skill Gap Analysis

It is industry best practice to develop an IT skill gap management process to periodically update the skill sets required to support the evolving needs of the IT department and compare that with the skills of available staff. Based on the skill gaps identified, a new training plan is created to bridge the gaps in-house or acquire talent from outside.

Benefits:

Periodic skill gap analysis is an important exercise to undertake that helps the IT manager to proactively take actions to provide effective service to business partners.

2.3.4.2 Cross-functional training

It is industry best practice to provide cross-functional training among IT personnel either through formal or through informal channels. Cross-functional knowledge among the team helps improve capacity of the team and allows for succession planning.

2.3.4.3 Standard Operating Procedure

An effective documented plan is created to hire and retain IT support personnel. Additionally, an effective succession plan is developed to mitigate any personnel risks along with creation of a standard operating procedure for each role to ease transition of a new employee.

2.3.5   IT Capabilities

2.3.5.1   *Enterprise Architecture*

IT Department provides a standard platform to run the operations of all departments of the City. The standard platform is the "single source of truth" for all citizens' information as well as data for all business operations. The standard platform provides standardized essential IT services based on "rules" to provide access to the data repository to all participants. Essential IT capabilities are the most important end-to-end IT services delivered to business lines to support delivery of City services to end users. These services span all business functions and support common business activities.

Benefits:

- Standard operating platform ensures smooth business transactions across multiple departments.
- Data quality and data governance are of utmost importance to run effective operation of the City. A standard platform provides the ability to consolidate data capture and easy maintenance.
- Standardizing platforms helps reduce software maintenance cost by reducing fragmented architectures.
- Similar operating platform helps reduce training cost to use and maintain the systems.

2.3.5.2   *Business Services*

Standardization and Business Process Optimization:

Standardized information technology solutions reduce costs and optimize information sharing. An active movement towards improving processes has turned cities towards centralization and consolidation of existing systems in order to reduce operating costs. Information technology systems are implemented to increase business process performance through requirements, modeling and cross-functional business involvement. Some of the best practices include:

- Utilization of **commodity hardware and software** emphasizing reusable components, centralized management, and shared infrastructure.
- **Consolidation of enterprise databases** on a single database standard and architecture.
- Identification of **technology standards** for supported systems and applications to ensure adequate staff support for commercial off-the shelf (COTS) applications.
- Implementation of **enterprise applications** supporting City financial, permitting, human resources, and utility billing needs.
- Creation of a **Center of Excellence** using both technical and business competencies to ensure enterprise applications positively impact business performance.

Essential IT capabilities to provide standard platforms across the City include:

Enterprise Work Management Solution – provides functionality to automate business processes related to service requests for efficient work order creation, assignment, dispatch, resolution tracking and reporting. They can also include asset management, inventory management, and preventative maintenance.

Benefits:

- An enterprise work management solution provides an effective way to track resolution of service requests.
- The solution works as a single source of truth for all asset management related data.
- Preventive maintenance management capability reduces any manual tracking of maintenance schedule.
- EWM information can be integrated with the financial systems to track process efficiency.

Enterprise Content Management – Enterprise Content Management (ECM) encompasses the strategies, methods and tools used to capture, manage, store, preserve, and deliver content and documents related to organizational processes in a collaborative environment. ECM functionality includes imaging, workflow, document management, and records management.

Benefits:

- ECM solutions provide the ability to collaborate among users to review, update and finalize a document, thereby reducing inefficient review processes.
- Provides records management capability to retain, search, retrieve and decommission documents at a future time on-demand.
- Provides customizable approval workflow to streamline process.
- Provides ability to create documents based on predefined templates to reduce the manual effort of repetitive document creation.

Enterprise Resource Planning (ERP) – An ERP system is an integrated, computer-based application used to manage internal and external resources, including tangible assets, financial resources, materials, and human resources.

Benefits:

- Acts as a single source of truth for all information regarding the City's financial operations.

- Provides seamless access to all users, based on roles and responsibilities, for tracking preset operational metrics in real-time.
- Provides the ability to automate common business processes such as HR activity management, budgeting etc. to improve efficiency.

Business Intelligence – Business Intelligence technologies provide historical, current, and predictive views of business operations enabling users to analyze data from different perspectives to make better business decisions. Common functions of business intelligence technologies are reporting, online analytical processing, analytics, data mining, business performance management, benchmarking, text mining, and predictive analytics.

Benefits:

- Provides role based access to visualize operational data in real time
- Provides ability to make decisions based on multi-dimensional data
- Provides ability to use predictive analytics to optimize resource usage by the city

Citizen Relationship Management – Serves as the single repository for all citizens' information. The data can be used for multi-channel communications to increase access to information and services, improve opportunities for engagement and offer members of the community a choice in how they receive information from the City.

Benefits:

- In coordination with enterprise operational data, provides a single view of the citizen to improve communication when citizens call the city or for walk-in support
- Helps focus messaging from the City using channels such as social media, video, online feedback mechanisms, and email to drive participation

Comprehensive Land Management – Comprehensive Land Management tracks and manages land use and community development activities including permits, building safety, inspections, investigations, reviews, zoning, project plans, code enforcement, etc. Comprehensive Land Management applications are tightly integrated with GIS.

Benefits:

- Streamlines all actions based on land parcels, such as permitting, inspections etc.
- In coordination with CRM system, provides single view of citizen for cross-department coordination.
- Provides ability to track code conformance over time.

- Provides ability to streamline planning for community development in coordination with other departments and private parties.

2.3.5.3 Business Continuity - Disaster Preparedness and Recovery

The need for planning to mitigate the effect of man-made or natural disasters has become an imperative. Cities are implementing various tools and procedures such as replication software and mirrored sites to minimize downtime in an attempt to restore systems and bring them back online. Development and maintenance of an effective Emergency Operations Center has also become a priority. It is important for cities to categorize business applications and infrastructure based on criticality for its operations and interdependency with other systems in place.

Benefits:

- Redundant instances of databases, network and mission critical applications help continue business as usual.
- Periodic backup of important data helps to reduce time and cost to recover from any unforeseen circumstances.
- Carefully analyzing the need and level of disaster recovery systems helps cities optimize the cost.
- Helps conform with local, state and federal laws for business continuity.

2.3.5.4 Geographic Information Systems (GIS)

The GIS function is typically responsible for developing and maintaining the City's geospatial data while delivering simple, interactive mapping tools to enable City employees and citizens to seamlessly access, query, and visualize geographically based information.

GIS includes development and maintenance of GIS data, tools and models, and support for spatial and web applications. GIS products include the development of GIS tools and web-based applications and customized geographical data for computer applications. Enterprise GIS includes the coordination and utilization of GIS data collected by City departments that is distributed to computers or mobile devices for use on site and in the field. Enterprise GIS support also typically distributes GIS-related software and licensing to all relevant City departments, publishes City-generated GIS data to a centralized server environment to optimize system performance, and develops custom GIS applications as needed.

It is important for cities to use GIS databases as the single source of truth for all information about City's land assets to reduce fragmentation of data. The cities that see technology investment as a value enabler typically strive to improve data quality in the GIS database in a

coordinated effort with all city departments. Also, these cities emphasize the importance of using the GIS data and keeping it current to all participants and make this a priority for the city.

Benefits:

- Provides single source of information to everybody involved
- Improves confidence on data maintained
- Provides ability to use geo-spatial data in coordination with asset related data to streamline planning and operations activities

2.3.5.5   Social Media

Providing the technology and support to fully engage and collaborate with employees and the community enables opportunities to more fully engage citizens. The communication tools can be expanded to allow enhanced input on plans, projects and major decisions. The overall goal is to reach a wider audience, increase options for involvement, and make participation easier, while minimizing cultural barriers that might otherwise limit engagement.

Social media engagement is one of the most important trends in government. Government organizations that operate Twitter, Facebook, YouTube and other social media services have transformed communication with the public. Government agencies are increasingly leveraging social media to directly communicate with citizens, reach a wider audience, and get more feedback from the community.

Social media is a factor in the following City efforts:

- *Communications*– Cities communicate news, events and important information via many channels – print, television, website and social media. With ubiquitous use of social media by citizens, social media will continue to be an important channel for the communications function.
- *Citizen Input*– There are many efforts for which Cities seek citizen's input. The goal is to provide more options for citizens to engage on these opportunities and create a two-way dialog with staff and citizens on a variety of issues facing the community.
- *Outreach*– There are many regular outreach efforts that cities undertake, such as interacting with neighborhood associations to make streets safer and/or coordinating with groups to minimize project impacts. There are also operational needs, such as emergency communications, that can be further enhanced with more real-time social media use.

The role of the IT department is to provide a seamless interface for the citizen and the communication team to encourage productive participation. The IT department may also be

responsible for collecting data and metadata from different channels for internal users to analyze for informed decision making.

Benefits:

- Reach wider audience with minimal investment.
- Provide ability to analyze citizens' input in a scientific way to make informed decisions.
- Provide ability to focus resources and messaging based on the success of the engagement.
- Provide ability to measure effectiveness of using different communication channels.

2.3.5.6 Big Data

Government organizations are dealing with enormous data sets produced by IT systems, embedded sensors, communication networks, constituent transactions and other sources. Governments use this "big" data to enhance citizen services, make better decisions, improve operations, and realize cost efficiencies. Big data has transformed many cities into data-driven enterprises that make better decisions.

Benefits:

- *Citizen-facing*– There are many cities that have implemented open data portals, making their data public and accessible to citizens and businesses. This increases transparency and engagement in a variety of areas.
- *Smart devices and sensors*– There are many projects that either currently produce or will produce large volumes of data that will need to be stored and analyzed. For example, the massive data sets in smart building systems can be analyzed to optimize energy efficiency, performance, alerting and preventive maintenance. Also street light management systems for transportation and automated meter infrastructure for utilities utilize sensors that can generate data streams continually for alerting, reading and analysis.
- *Analytics* – Cities are using predictive analytics in many departments like Finance Planning, Community Development and Transportation to improve service and reduce costs.

2.3.6 IT Infrastructure

The IT department builds a technology infrastructure that is scalable, reliable, and secure. The IT department typically supports the following major commodity infrastructure services:

2.3.6.1 Network Infrastructure:

The IT department is responsible for:

- Deployment of a citywide fiber network to reduce ongoing vendor costs for network connectivity at city facilities, increase speed and reliability of network connections, and enable smart building management and video conferencing.
- Implementation of Wi-Fi at major City facilities and parks increasing network access for City maintenance staff and citizens.
- Creation of a centralized Network Operations Center to provide monitoring and incident response for all IT systems.
- Connection of partner organizations to the City network to enable innovative sharing of information, the creation of new partnerships, and drive economic development.

2.3.6.2   Communications Infrastructure:

The IT Department is responsible for:

- Implementation of centralized Voice over Internet Protocol (VoIP) telephone system reducing ongoing costs and providing infrastructure that scales to support new facilities.
- Implementation of video conferencing to allow effective meetings while reducing costs and environmental impact associated with travel by outside consultants and City staff.
- Support of mobile devices like smartphones and tablets to allow mobile workers to increase their efficiency.

2.3.6.3   Security Infrastructure:

Cities rely extensively on IT systems and electronic data to carry out their missions; consequently, they must have a full, secure, and reliable network and telecommunications infrastructure with physical security protection. Identity management and content security to prevent spam, worms and viruses are two major focal points. Additionally, the increase in online services provided to the public requires technology to identify theft and credit card fraud.

IT Departments are responsible for implementation of a comprehensive information security program including enterprise governance, policies and procedures, and technical solutions to protect critical information assets.

2.3.6.4   Cloud Computing Infrastructure

Cloud services are changing how information technology is delivered and consumed, and promise cost savings from large economies of scale. Cloud infrastructure enables aggregation of services and makes them available from anywhere on the Internet. Decisions on whether to move to a cloud service are made on a case-by-case basis, with decision criteria that include cost benefit analysis, maturity of service, integration with other City systems and security of data. Cloud computing can be used in a variety of ways from, Software as a Service (SaaS) to online payment systems, to replacement of email systems.

Cloud computing is a general direction, and cities decide on the appropriate model based on the tradeoffs among public, private and hybrid cloud infrastructures.

Benefits:

- Public cloud is maintained by a third party vendor; hence low to no initial capital investments are necessary. Typically, the cost is based on user or transaction volume.
- Private clouds are hosted and maintained by the City while providing access to services over the web.
- Hybrid clouds are a combination of the two, where mission critical applications and data are hosted by the city while commodity services are provided by public vendors.

2.3.6.5   Virtualization

Virtualization technology permits one physical hardware system to host multiple instances of software, which enables significant increases in hardware utilization, and allows for cost reduction. Industry best practice is moving towards not only a virtualized network infrastructure, but also virtual desktops. Virtual desktops are essentially "thin" clients that connect to enterprise systems over the Internet and allow for centralized, remote management of workstation infrastructure.

Benefits:

- Increased hardware utilization
- Reduced maintenance cost

2.3.6.6   Mobile Infrastructure

Increasingly, both the community and the City's workforce need and expect access to necessary information wherever and whenever it is needed. The IT department provides and supports the technology solutions to enable a mobile workforce.

Mobile solutions include not only the infrastructure (i.e. broadband, wireless) to support mobility but also the applications themselves. Mobility is not one major project, but many efforts that take advantage of mobile technologies. Here are the types of projects that are envisioned for mobility solutions:

- *Citizen-facing* – ability of citizens to receive and submit information using smart devices. This includes requests for service from the City, tracking status of service requests, making payments to the City, and engaging with the city through social media and other channels.

- *Maintenance* – staff who maintain City assets, facilities, parks and trails use mobile enabled solutions to receive and update work orders as they perform their assignments. They are also able to access GIS, and upload as-built images and diagrams in real time.
- *Inspections* – building and engineering inspectors need access to assignments, permits and plans on their mobile devices in near real time to efficiently carry out their tasks. They also need the ability to print inspection results on-site to reduce duplication of work.
- *Field crews* – roads crews and utility workers need to access and update data, maps and documents remotely in the field; they also need to collaborate effectively with co-workers and stakeholders to decide their course of action. The field crews also need to have the ability to update assets in real time to improve data quality in the GIS and asset management systems.
- *Vehicle tracking*– Utilities and street vehicles need to be located, dispatched, tracked and rerouted in real-time to improve efficiency and reduce cost.

2.4 Benchmarking

Benchmark Analysis is an excellent tool for analyzing the levels of efficiency in an organization and comparing that against other similar organizations and/or standard industry practices. This benchmark analysis evaluates the current state of IT at the City of Wilsonville and several key areas of the IS Department.

The Project Team used its prior experience and an analysis of standard IT industry practices to identify the best practices used in IT management, systems, and processes in Wilsonville. A subset of winners of the 2015 Digital Cities Survey conducted by the Center for Digital Government (CDG), have been included as comparison cities. The entities chosen most closely matched Wilsonville's size and budget, while offering the opportunity to benchmark against slightly larger organizations noted for their IT innovation. The table below lists the Cities that used for comparison, along with several key metrics:

City	Population	Annual Budget (million)	Budget/capita	2015 Digital Cities Survey Rank
City of Wilsonville, OR	21,484	$35	$1,629	NA
City of Albany, OR	51,583	$85.1	$3,102	6th *"under 75k population"*
Avondale, AZ	78,822	$88.5	$2,195	1st *"75-125k population"*
City of Santa Cruz, CA	62,864	$86	$1,368	3rd *"under 75k population"*
City of Shawnee, KS	64,323	$47.8	$1,088	1st *"under 75k population"*

In the following section, we have detailed the benchmark analysis of the most critical aspects of IT management and IT systems and processes. The aspects used for benchmarking are below:

IT Management Benchmarks

- IT Investment Decision Making
- Standardization of IT Environment
- IT Funding
- IT Budget
- IT Staffing

IT Systems and Process Benchmarks

- Enterprise Asset Management (EAM)
- Enterprise Resource Planning (ERP)
- Utility Billing
- Business Intelligence
- Customer Database and Portal
- Geographic Information Systems (GIS)
- Web presence and Social Media

IT Investment Decision Making: Development of five year (5) IT Strategic Plan

Description:
Develop a five (5) year IT strategic plan for the City. Review the strategic plan with key stakeholders annually and groom backlog to align IT projects with City's goals

Maturity at the City of Wilsonville, OR

Medium – The City does not have an existing IT Strategic Plan (in process)

City of Albany, OR Maturity Level: High	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: High	City of Shawnee, KS Maturity Level: Medium
IT infrastructure investments are recommended, managed and approved by the IT Department. New solutions and application related investments go through an IT Project management process and are decided on through a rigorous evaluation process that includes customers and IT staff.	Has a two-year strategic plan that is updated annually Updates and grooms backlog every two weeks to align IT projects with City's goals	Develops annual budget; IT steering committee, composed of department managers and City Manager, reviews and prioritizes IT projects every other month.	Funding for IT projects is required to go through a vetting process by the City Council. Funds for equipment are supported by transfer funds.

Standardization of IT Environment: **Implement Enterprise Architecture**

Description:

Implement Enterprise Architecture to provide a standard platform with essential enterprise wide IT systems and single repository for data.

Maturity at the City of Wilsonville, OR

Medium – PCs and network environment are standardized, but enterprise systems between major system areas such as asset management, utility billing, and the financial ERP are not integrated

City of Albany, OR Maturity Level: High	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: Medium	City of Shawnee, KS Maturity Level: Medium
The City has an IT Enterprise Architecture, which is neither rigid nor completely open. All IT services are centralized. All PCs and servers, and the SAN are standardized.	The CIO ensures enterprise architecture is followed in terms of application stack, hardware infrastructure and GIS capability whenever new projects are implemented.	The City does not have a defined policy for enterprise architecture; however, IT department acts as a lead for technology acquisition and ensures compatibility with existing infrastructure and application portfolio.	The City does not have a defined policy for enterprise architecture; however, the application development team ensures compatibility of new IT systems with existing infrastructure and application portfolio.

IT Funding: **Use a mix of centralized and decentralized activities to fund IT capital and operating budget**

Description:
Use IT department's budget to fund city-wide infrastructure and charge-back process for providing support. Use centralized reserve fund overseen by IT department and funded proportionately by the various stakeholder departments to acquire and replace enterprise applications.

Maturity at the City of Wilsonville, OR

Medium – IS Department does not oversee IT capital fund

City of Albany, OR Maturity Level: High	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: Medium	City of Shawnee, KS Maturity Level: Low
IT Capital projects are funded through department budget allocation or through equipment replacement funds. Each department contributes to an IT equipment replacement fund based on the cost of assets and useful life of assets. IT operation expenses are covered through a charge back model based on the number of PCs/laptops used by each department/fund.	Two capital funds are used to fund major IT infrastructure. Personal computing devices are allocated centrally. Central IT operating costs and most capital costs are allocated to individual department. A simple service catalog is used for providing support and activities are tied to performance measures.	IT investments that are part of the Capital Improvement Plan are allocated to individual departments. Specialized IT systems procured for individual departments are charged back to the respective departments. Regular operating expenses are charged back to individual departments based on number of devices (PCs, phones etc.)	The city does not have a chargeback policy to allocate operating expenses to individual departments. All expenses are incurred from the IT budget.

***IT Budget:* Use optimum budget for investing in city's IT resources**

Description:

Allocate optimum budget to IT investments and supporting IT operations of the city. Typically, the optimum level falls in a range of 2.5-4% of overall city budget. ***City of Wilsonville's is 2.66%***

IT Budget compared to Operating Budget
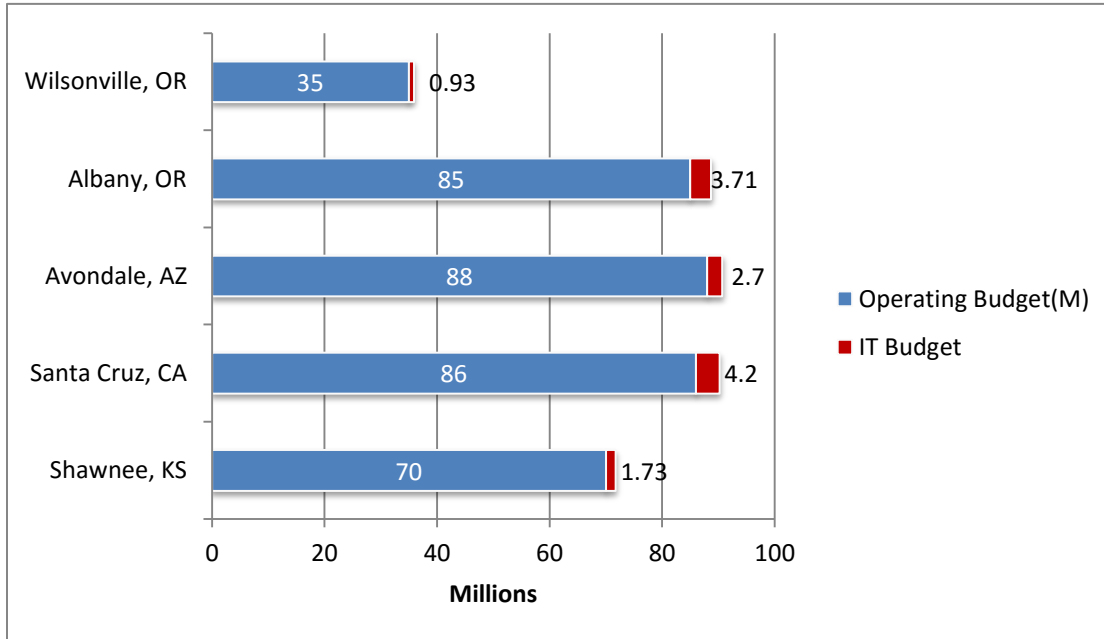
IT Budget as a percent of Operating Budget
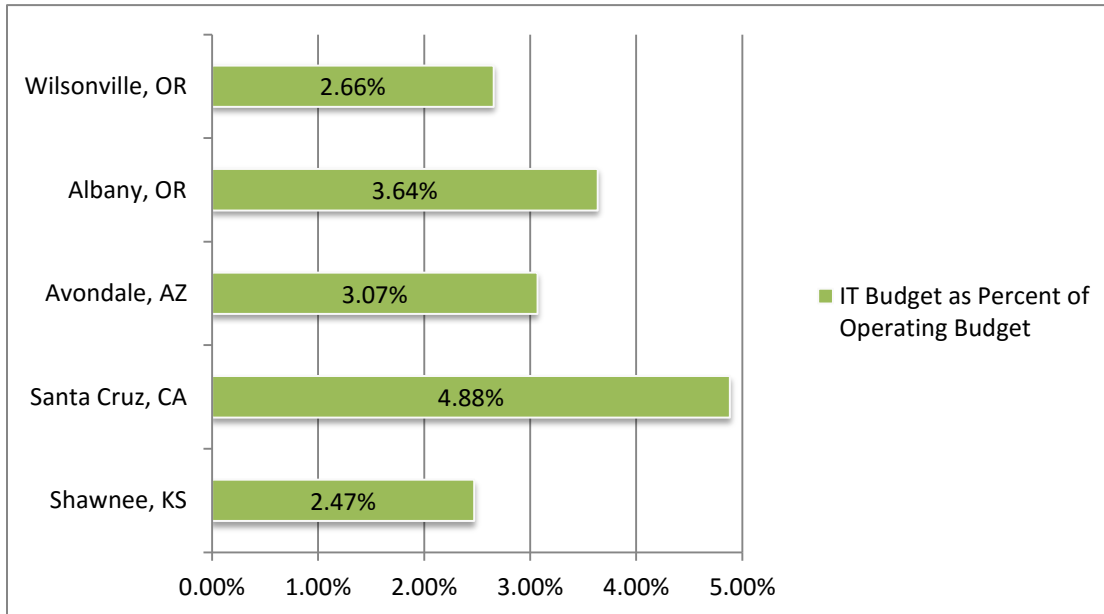
IT Staffing: **Use optimum staffing level to provide IT services**

Description:
Maintain optimum IT staffing level to support IT operation of the city. Typically, the optimum level falls in a range of 3-3.5% of total city wide FTE supported. **City of Wilsonville's is** *2.55%*

Maturity at the City of Wilsonville, OR

Low – City's IT staffing is at the lower end of benchmarked cities

| City of Albany, OR Maturity Level: High	City of Avondale, AZ Maturity Level: Medium	City of Santa Cruz, CA Maturity Level: Low	City of Shawnee, KS Maturity Level: High
Total city wide FTE: 390 IT FTE: 12 IT FTE%: 3.08%	Total city wide FTE: 507 IT FTE: 18 IT FTE%: 3.55%	Total city wide FTE: 735 IT FTE: 20 IT FTE%: 2.72%	Total city wide FTE: 330 IT FTE: 11 IT FTE%: 3.33%

IT Staffing as a percentage of total FTE

Percent of FTE in IT/GIS

City	Percent
Wilsonville, OR	2.55%
Albany, OR	3.08%
Avondale, AZ	3.55%
Santa Cruz, CA	2.72%
Shawnee, KS	3.33%
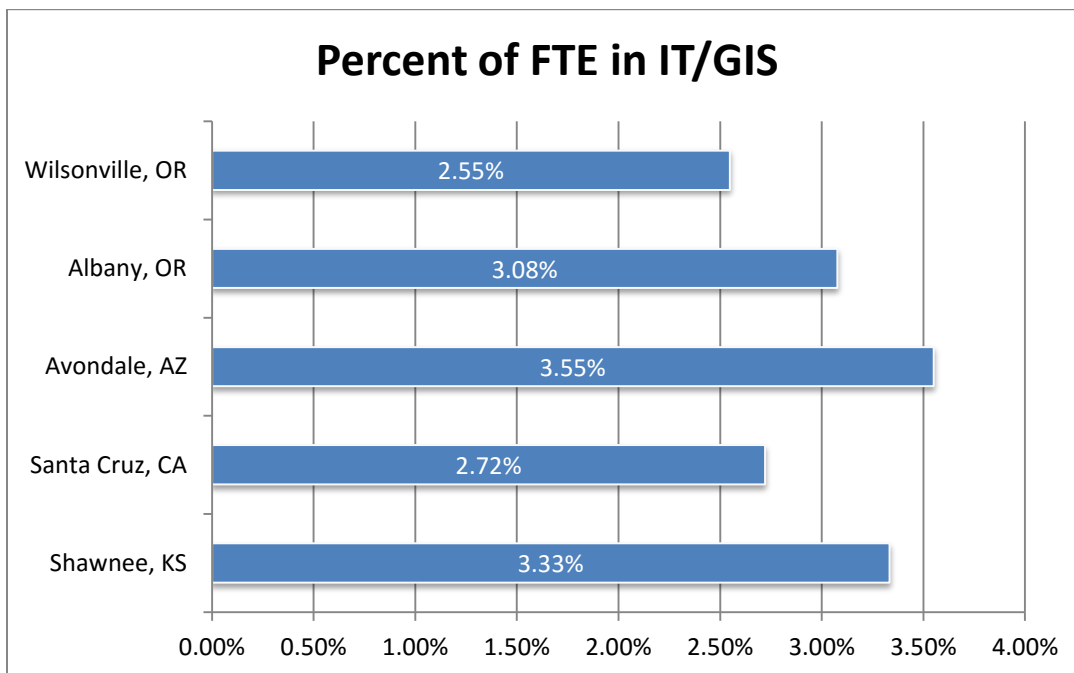
Enterprise Asset Management (EAM): **Use an integrated EAM system**

Description:

Use an Enterprise Asset Management (EAM) system as a single repository for all asset related data. This system, in coordination with the GIS database provides extensive asset management information and reporting.

Maturity at the City of Wilsonville, OR

Medium – Cartegraph is used for Public Works, but asset information not integrated with ERP

City of Albany, OR Maturity Level: Medium	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: Medium	City of Shawnee, KS Maturity Level: High
Cartegraph is currently used to manage public works related assets and processes.	Infor and Accela are used as the EAM tool by Public Works, Engineering, Utilities and Development departments to track most of the assets. The City also uses an internally developed system, track IT inventory, which is connected to an inventory management system.	The City is currently in the process of implementing Maintenance Connection for its EAM needs.	Cityworks is used as the core EAM system. The City also interfaces with the county to manage joint assets.

Enterprise Resource Planning (ERP): **Use an integrated ERP system**

Description:
Use an integrated ERP system as a single repository for all information regarding the city's business operations that is integrated with other enterprise systems to automate business processes and share relevant data across departments.

Maturity at the City of Wilsonville, OR

Medium – Tyler's Eden is used as the City's ERP system supplemented by manual processes

City of Albany, OR Maturity Level: Medium	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: Medium	City of Shawnee, KS Maturity Level: Medium
Eden from Tyler Technologies is used as the ERP system. Daily financial transactions are uploaded from other systems, such as Permits, Court, and Utility Billing.	Tyler Eden system is used for financials and is integrated with Kronos Telestaff (workforce scheduling) and internally developed budgeting system.	Uses Tyler's Eden system for financial management, and CRW Trackit system for managing the permitting process.	Uses GEMS system from Harris Corp as a financial ERP system. Looking to move to Innoprise system in 2017.

Utility Billing: Use an integrated ERP system for utility billing

Description:

ERP system provides easy analytical support to identify anomalous meter reads. Customers use Citizen Relationship Management (CRM) system to request service related to utility meters. CRM and ERP systems are integrated with Asset Management system to automatically create work orders to resolve any utility billing issues.

Maturity at the City of Wilsonville, OR

Medium – Tyler's Eden system is used for Utility Billing supplemented by manual processes

City of Albany, OR Maturity Level: Medium	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: High	City of Shawnee, KS Maturity Level: NA
Monthly billing to customers is managed through Springbrook, now part of Accela. No AMR.	Uses AMR technology and Tyler Cashiering for water, wastewater, and sanitation billing.	Uses AMR technology to read two different meter types, and Eden system for utility billing.	N/A (no utilities)

Business Intelligence: Use a robust Business Intelligence (BI) tool track well defined Key Performance Indicators (KPIs)

Description:

Use a robust Business Intelligence (BI) tool to provide historical, current, and predictive views of business operations enabling users to analyze data from different perspectives to make better business decisions.

Maturity at the City of Wilsonville, OR

Low – No business intelligence/ad hoc reporting or dashboarding capabilities

City of Albany, OR Maturity Level: High	City of Avondale, AZ Maturity Level: Medium	City of Santa Cruz, CA Maturity Level: Low	City of Shawnee, KS Maturity Level: Low
The City implemented its "Open Budget" project to provide transparency in City finances. The City uses SQL Server reporting services (SSRS) and tracks KPIs as part of the City's Strategic Plan.	Uses dynamic reporting to a limited degree. IT department standardizes business intelligence on MS SQL based platform. Individual department specific IT systems provide niche reporting capability.	The City does not use dynamic reporting extensively, and does not track/measure well defined KPIs.	The City does not use dynamic reporting extensively, and does not track/measure well defined KPIs.

Customer Database & Portal: **Use a comprehensive Customer Database**

Description:

Use a comprehensive customer database and portal to serve as the single repository for all citizens'
information which is integrated with Land Management system (permitting, utility billing, etc.).

Maturity at the City of Wilsonville, OR

Low – No comprehensive, single customer database

City of Albany, OR Maturity Level: Low	City of Avondale, AZ Maturity Level: Medium	City of Santa Cruz, CA Maturity Level: Low	City of Shawnee, KS Maturity Level: Medium
The City does not currently utilize a customer database.	Currently supports multiple customer databases; however, working on consolidating into a single Accela/ PublicStuff platform.	The City currently does not have a customer database to manage customer interaction; however, they are planning to procure a CRM system in the future.	The City currently uses Cityworks as its customer database; however, planning to migrate to Microsoft Dynamics platform in the near future.

Geographic Information Systems (GIS): **Use a single GIS enabled database for all fixed assets**

Description:
Maintain a single GIS enabled database for all fixed assets and integrate the consolidated GIS database with other enterprise systems such as financial ERP, permitting, land management, asset management, etc.

Maturity at the City of Wilsonville, OR

Medium – Current self-service tools have limited functionality

City of Albany, OR Maturity Level: Medium	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: High	City of Shawnee, KS Maturity Level: High
GIS is used, which is integrated with Cartegraph, but does not manage all assets.	Uses ESRI based GIS system that is integrated with Infor and Accela EAM systems.	The City is in the process of integrating GIS data with Maintenance Connect.	Uses ESRI based GIS system that is integrated with Cityworks.

Web presence and Social Media: **Consolidated Web and Social Media presence**

Description:

Consolidate individual websites under parent city domain and enforce a thematic framework to improve branding. Clearly define formal policies for content management and posting.

Maturity at the City of Wilsonville, OR

Low – Multiple City web sites and social media accounts

City of Albany, OR Maturity Level: Medium	City of Avondale, AZ Maturity Level: High	City of Santa Cruz, CA Maturity Level: High	City of Shawnee, KS Maturity Level: High
Mostly monitored and managed through the City's Public Information Officer and Webmaster.	Provide multi-channel presence through Facebook, LinkedIn, Mobile apps etc. with the City's website serving as a central resource. Web Coordinator manages interaction in the online channels and resides in the Community Relations department.	Web content and social media communication is managed by the Assistant City Manager. IT department provides support to the extent of maintaining related infrastructure.	Web content and social media communications are centralized and are managed by the Public Information Office. IT department provides support to the extent of maintaining related infrastructure.

2.5 IT Gap Analysis

In order to gain a complete understanding of the City of Wilsonville's IT environment, and to help formulate appropriate strategic recommendations for the organization, Mindboard conducted a comprehensive IT Gap Analysis. This IT Gap Analysis considers the current state of the IT environment across the City, the desired future state of the IT environment, and gaps present in the City's pursuit of attaining the desired future state.

Mindboard assessed the current ("As-Is") state and envisioned the desired future state of IT at the City. In this process, our team identified related "gaps" that need to be addressed for the City to be able to attain this future state. The current state assessment focused on leveraging the existing data gathered from the documentation review, interviews, surveys and feedback from key personnel, in order to identify concerns/constraints and opportunities for enhancement. Furthermore, the future state describes desired results or most favorable outcomes based upon City stakeholders' business vision/objectives, in conjunction with observed industry best practices. The identified gaps are organized by related topics that are grouped into the following target areas:

Information Services Gaps

Enterprise System Gaps
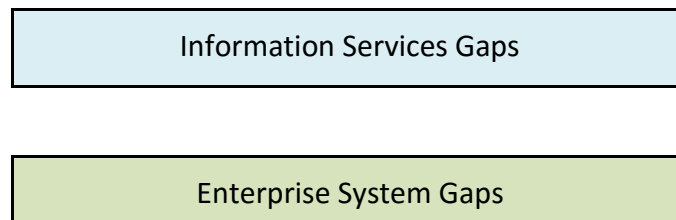
2.5.1   Information Services (IS) Gaps

IT Procurement Process

Current State: IT investments are managed by the IS Department based on business needs, available budget, ad-hoc requests and available human resources. Though the IS department takes inputs from the respective departments about their needs, there is no formal process for making and vetting IT investment requests. Procurement and prioritization of new systems are not formally discussed with all stakeholders to generate buy-in or assure compatibility and integration.

Future State: A rolling 5 year IT Strategic Plan would incorporate an annual update with reprioritization of the IT Projects based on input from the City Manager and Executive Team. Technology projects seeking to be implemented outside the strategic planning process would come to the IS Department for vetting and procurement assistance.

Gap: No Strategic Plan or formalized process for annual plan review. No IT procurement process for projects outside the strategic planning process.

Standardization of IT Environment

Current State: Foundational IT systems such as desktop computers, operating systems, business productivity suite, mobile devices, printers, etc. are standardized as much as possible in order to reduce support and training costs across the organization. Enterprise systems are all SQL-based but lack integration between major system areas such as asset management, utility billing, and the financial ERP.

Future State: Continue current level of standardization of IT Environment and focus future efforts on standardization of business enterprise software systems. Wherever possible, data duplication would be eliminated across the organization through consolidation and integration of overlapping systems and system functions.

Gap: No current integrations between major enterprise applications. No formally documented standardization policy. Duplication of data and system functionality.

IT Funding

Current State: Financing for IT services is a mix of centralized and decentralized activities with common, city-wide infrastructure and basic business software budgeted in IT, while department and function specific capital software and systems are typically budgeted by the relative department. *Ex. Departments such as Community Development and Finance have saved funds over multiple years to replace the current Eden financial ERP and permitting system, while IT budgets to replace Office software and desktop computers across the organization.*

Basic support is charged to individual departments based on underlying cost drivers such as the number of PCs, specific applications, and mobile devices in use in a department. This system allows Individual departments to decide on their IT investments using the IS department in an advisory role, which can lead to investments that don't necessarily integrate with other enterprise applications.

Future State: Continue current IT specific infrastructure funding and charge-back process for support. Enterprise applications replacement should have a centralized reserve fund overseen by IT but funded proportionately by the various stakeholder departments.

Gap: No IT oversight of enterprise application funding. Not all large-scale projects have set asides for anticipated implementation and/or replacement.

IT Service Demand

Current State: The IS department serves individual departments on an ad-hoc basis without publishing a list of standard services that are offered. IS maintains a basic charge back model based on the number of PCs, mobile devices, department specific applications, and users being supported in each department. The lack of a service catalog that defines what services IT offers results in requests for service outside the scope of traditional IT, creates higher demand and leads to difficulty in measuring IT department efficiency.

Additionally, the IT department receives a number of calls related to trivial matters, such as formatting MS Word documents and Excel spreadsheets. IT offers training courses on basic office applications, but without training tied to a performance management system in HR, courses are taken voluntarily, and may not be taken by staff most in need.

The core enterprise systems are all currently self-hosted, creating a greater than necessary maintenance burden on an already lean department.

Future State: The IS department publishes a catalog of standard services that are provided, to guide department requests and help manage demand for IT Services. In conjunction with the HR department, IT implements a system for identifying and reporting software training needs and class attendance. Wherever appropriate, the City should be looking to implement new applications using the software as a service (SaaS) model to reduce IT maintenance and overhead.

Gap: No IT Service Catalog. No HR performance management system for tracking IT training needs. Core enterprise applications are self-hosted.

IT Staffing

Current State: The IS Division, organized under the Finance Department is headed by the IS Manager and supported by one (1) Network Administrator, one (1) Systems Analyst and one (1) GIS Manager. All three IT staff perform basic user and desktop support as needed and back each other up on core tasks.

The Network Administrator supports the City's infrastructure needs including networking, telecommunication, storage, and server administration. The Network Administrator manages network related capital infrastructure IT projects as well as participating in new facility design and remodel projects and HVAC control systems.

The Systems Analyst supports users with advanced trouble-shooting services such as desktop, email and printer related support and maintains the internet and intranet infrastructure. This position also manages systems analysis projects, maintains the IT hardware and software inventory, assists the Network Administrator with basic systems administration tasks, and conducts end user training classes for various Office applications.

The IS Manager is responsible for large scale enterprise and capital projects, the City's Fiber program, IT contracting, and manages the department budget and staff. The IS Manager is also the first point of contact for issues related to the City's Financial and Permitting Software.

The GIS Manager, while part of the IT department is dedicated to GIS related tasks. His duties are primarily map creation, small projects, infrastructure maintenance, and GIS database management.

Future State: The City has dedicated resources to support the following activities:
- A dedicated IT Assistant to support users with services such as desktop, email and printer related troubleshooting and basic training. This position would also maintain an inventory of IT hardware and software across the city and rollout new computers/devices.
- A dedicated IT Analyst to manage systems analysis projects, maintain the City's websites and social media infrastructure, and provide advanced troubleshooting services for users.
- A dedicated Network Administrator to support the City's infrastructure needs including networking, telecommunication, storage and server administration
- An IT Manager to oversee capital projects, contracting, budget, policies, and personnel.
- A dedicated GIS Manager to oversee the self-service mapping tools and keep the GIS data up-to-date.

Gap: No dedicated IT Assistant.

IT Talent Management

Current State: The current high performing team runs lean but, due to the longevity of the existing staff, strong standardization procedures, and efficient communication and operation, they maintain a high level of customer satisfaction, as reported across the City.

No formal skill gap management process has been created to periodically update the skill sets required to support evolving needs of the IS department and compare that with the skills of available staff. Based on the skill gaps identified, a new training plan is created to bridge the gaps in-house or acquire talent from outside. Because the current team runs so lean, training for IT staff is not emphasized.

While the existing staff have been retained for many years, no formally documented plan has been created to hire and retain IT support personnel nor has a succession plan been developed. The Network Administrator currently functions as the backup to the IS Manager. To successfully transition into the IS Manager position, opportunities should be given for the Network Administrator to obtain personnel management experience.

Future State: IT skill gap management process is developed. Additional cross-functional training is provided among IT personnel either through formal or through informal channels to improve the capacity of the team. Effective documented plan is created to hire and retain IT support personnel. Additionally, effective succession plan should be developed along with creation of a standard operating procedure for each role.

Gap: No formal skill gap management process, succession plan, or hiring and retention plan.

Network Infrastructure

Current State: The City is in the process of implementing a City-wide fiber network to cover all City facilities and remote assets. Currently, the roadmap for fiber network implementation is not well defined, although a Fiber Business Plan project is underway.

The City also provides network integration with the County network for the library and police, and provides WiFi network for staff and visitors within the City facilities. It does not provide WiFi connectivity to visitors to its parks.

The City centralizes most printing capabilities using networked lasers and multi-function devices. Users have indicated that several of these devices are a source of frustration.

Future State: City fiber asset use based on results of the fiber business plan currently underway. Wi-Fi expansion to include City facilities and parks with both staff and public access networks. Continued utilization of centralized printing and copying resources but with upgraded devices.

Gap: Incomplete fiber business plan, no Wi-Fi availability in parks, and a few frustrating printer/copier devices.

Communication Infrastructure

Current State: The City uses Cisco's voice over IP communication for its phone network. The network is aging with insufficient reporting capability and difficult administration. The phone system is the backbone of communication with residents. An aging phone system exposes the City to the risk of a breakdown in that communication. Additionally, because the system does not provide sufficiently detailed reporting, no analysis can be done to optimize usage.

The City also uses Tyler's Plumvoice in a limited capacity to provide Interactive Voice Response (IVR) functionality for scheduling building inspections and automated utility billing past due payment reminders. Because the IVR system is not user friendly and often does not register calls, gaps in communication with residents and contractors frequently occur.

A self-hosted Microsoft Exchange application is currently used for the City's email system. The City does not currently have an archiving tool, other than the limited built-in Exchange tool, which leads to user mailbox sizes growing rapidly and frustration with mailbox size limits. Mailbox storage size restrictions have been implemented to help staff better comply with State mandated records management regulations, which require that e-mail be stored in accordance with its content – meaning each e-mail message must be evaluated individually as to whether or not it is a record, and if it is, how long it must be retained. Additionally, email attachment size restrictions (15 MB) create issues when sending large files.

Future State: The City uses a user -friendly Voice over Internet Protocol (VoIP) based unified communication system with detailed reporting capability. The City also provides a user-friendly, robust IVR system that is integrated with different enterprise systems (such as financial ERP, CRM, Asset Management, Utility Billing, Permitting, etc.). A modern, automated email archival system is used to archive old emails and still comply with document retention laws.

Gap: Aging phone network with insufficient reporting capability and an error prone and unfriendly IVR system. No email archival system. Insufficient attachment size allowance.

Security Infrastructure

Current State: The city uses Palo Alto for its firewall and internet filtering. Within its network, it uses Symantec for its antivirus solution. Via the Palo Alto firewall, the city provides secured Virtual Private Network (VPN) access to requesting staff that have city provided laptops for access to the City's network remotely. Not all staff with city provided laptops are aware of this capability and no staff are currently allowed to connect remotely from home or other non-city computers.

The City provides mobility devices such as iPhones and iPads to field crews and a subset of office staff and manages security policy through Maas360. The City also allows staff to participate in a "Bring Your Own Device" program but requires personal cell phones to include the security application or they are not allowed to access City e-mail and calendaring functions.

Physical access to servers, core network equipment, and network storage devices is limited to select staff with electronic keycard access. The Keri system is used as the key-card based access system both for facilities and secured rooms, with only IT and HR staff having access to the administration and audit portions of the application. Different Keri systems are in place at different facilities, leading to the inability to manage all facilities from one central database. Desktops with access to Law Enforcement Data Systems (LEDS) are subject to greater physical access security than general staff machines and may require enhanced security implementation such as two factor authentication and proximity based authentication depending on current and future Criminal Justice Information Systems (CJIS) guidelines.

For desktop users, strong passwords have been implemented with a required change every 180 days. Standard active directory security is in place on electronic files stored in the file servers. This is limited with respect to auditing and the complexity of cross department access to files leads to permissions issues and access errors.

A Payment Card Industry (PCI) audit has been scheduled in order to ascertain the City's level of PCI security compliance. Any issues identified in the report will need to be remediated to ensure continued authorization to perform credit card processing.

Future State: The City continues to use Palo Alto and Active Directory to implement security policy within its network, and use Mass360 to manage policy on mobile devices but augments Active Directory with a more comprehensive auditing and permissioning tool. The City implements a more robust VPN tool to allow designated staff to access the City network and systems remotely. The IS department streamlines the key-card access management process. Security systems are managed as part of remote access and control systems, building on the City's Internet of Things (IoT) infrastructure. An independent PCI audit is completed every 3 to 5 years with an annual self-assessment.

Gap: No comprehensive auditing and permissioning tool for file security. More robust VPN capabilities and centralized access system needed. No current PCI audit.

Virtualization

Current State: The city plans to implement virtual desktops to support public computers at the Library. This project will serve as a pilot project for implementation of virtual desktops across the City. The current use of physical fully configured desktops for all users increases maintenance cost and reduces hardware utilization.

A virtualized server environment, running on VMware, has been in place for many years. While some physical servers continue to be utilized, it is only in specialized situations where the use of a physical machine is optimal or required.

Future State: The city expands its virtual desktop infrastructure to all standard desktop configurations for its staff while providing sufficient computing power as required by staff members. The City continues to utilize a virtual environment for data and applications that need to be self-hosted. Any applications that can reasonably be converted to software as a service (SaaS), over time, should be.

Gap: Lack of virtual desktop infrastructure.

Mobile Infrastructure

Current State: The City provides "Ask the City" mobile application to citizens to report issues and request services from the City. The "Ask the City" app is a powerful but underutilized application due to lack of awareness both by Citizens and staff. It is also not integrated with the Cartegraph work order system, so citizen requests related to Public Works issues must be re-entered into the work order system in order to be tracked in Cartegraph.

The City also provides iPhones and iPads to full-time field crew to access work orders remotely and check emails. iPhones cannot be used to track work orders since Cartegraph is not adaptable to the iPhone interface and Building inspectors don't have access to portable printers at remote worksites leading to reduced usage of the iPads since they cannot print reports onsite. All cellular contracts, service, and purchasing are managed by the IT Department.

Future State: The City promotes the "Ask the City" application to citizens and uses it as the primary source of reporting problems related to City services. The "Ask the City" app is integrated with asset management system with automated workflows. The building inspectors use iPads and portable printers to document and print inspection reports onsite.

Gap: Lack of awareness of "Ask the City" application. No integration between "Ask the City" and work order system. No printing for iPads.

Business Continuity - Disaster Preparedness and Recovery

Current State: The City uses a combination of mirror site and replication software to backup data at periodic intervals and uses a tiered structure to prioritize the importance of its business systems. The mirror site for the City is within the same geographic area. Since natural disasters typically affect all buildings in a particular geographic area, the mirror site is susceptible to damage as well when the primary location is affected.

A formal disaster recovery plan is only partially completed and a full test of recovery procedures has not been made. Additionally, as more SaaS applications are utilized and the use of internet access becomes a core business function, redundant internet connectivity becomes a critical part of business continuity. The City currently has very limited fault tolerance with respect to internet access.

Future State: The City uses a geographically dispersed location to house its mirror site.
The City continues to use current practice of regular data backup and application/database redundancy to provide business continuity. A formal disaster recovery plan is completed and annual testing implemented. The City implements fault tolerant, duplicate, internet connections for enhanced business continuity.

Gap: Lack of geographic dispersal in mirror site. Incomplete formal disaster recovery plan and testing procedure. Lack of redundancy in high speed business internet connectivity.

Remote Infrastructure Monitoring and Management

Current State: The City uses a Supervisory Control and Data Acquisition (SCADA) system to monitor and remotely manage its water, sewer and storm water distribution facilities. The software controlling the SCADA system is state of the art, however, some of the telemetry hardware used to collect and process remote sensor data is at the end of life. Monitoring systems, including Wonderware, for security purposes, have been installed on systems that do not connect to the City's network, which limits the ability of staff to access the systems remotely. Shared water resources with the City of Sherwood create a need for shared telemetry access. This access is currently remote.

The City also uses the Delta Connects system to remotely monitor and manage HVAC systems at City Hall and is planning to use RainBird systems to remotely manage irrigation in its parks (Maxicom is currently used).

Future State: The City uses a state of the art telemetry system, and connects the remote sensors with the fiber network to improve data flow. The IS department maintains the monitoring software such as Wonderware, Delta Connects and RainBird in a server environment to mitigate risks associated with individual desktops and allow remote access where security allows. The water telemetry network remains "air gapped" in order to maintain the security of this highly sensitive network and current remote monitoring by the City of Sherwood is converted to fiber connectivity through a joint fiber build. The City continues to build on its Internet of Things (IoT) infrastructure.

Gap: End of life telemetry hardware. Lack of access to telemetry monitoring stations. Remote connection to water system by City of Sherwood. No comprehensive fiber network for SCADA. Not all City facilities utilizing Delta Connects or other HVAC management.

Geographic Information Systems (GIS) Infrastructure

Current State: The City's GIS infrastructure is built on a SQL database server with GIS Enterprise Licensing through ESRI, an industry standard. In addition to the GIS database, there is a separate AutoCAD database maintained within the Engineering Department. The Engineering and GIS departments are currently working on a project, with the help of some outside consulting resources, to rectify and consolidate the data from these two databases into one authoritative source. This project will eliminate duplicate work and data confusion that currently exists. Additionally, Engineering staff have expressed a desire for "survey grade" data in GIS for Engineering Design purposes. A long term plan has been established to enable the collection and input of field verified and rectified data utilizing summer interns and staff within the Engineering Department.

The current GIS database integrates with Cartegraph, the Public Works Asset Management application. It also integrates through a manual, refresh process, with the parcel information that serves as a base for the enterprise permitting and utility billing applications. The update process for the permitting and utility billing application is time consuming and cumbersome, leading to a slow data refresh cycle on key information such as new addresses and ownership changes.

GIS includes two web sites, a public web site that offers basic utility and land use information to homeowners, realtors, and other interested parties, and an internal site that provides Community Development staff with front counter mapping needs as well as a parcel research and daily information tool. The current sites are built on older technology and do not offer the flexibility and visual appeal of newer, more modern web based applications.

GIS staff maintain the user tools, database, and web sites along with performing data analysis, map creation, and plotting services. They also support ArcMap use across the organization. Users have indicated that additional training on the GIS tools and greater self-service options are desired.

Future State: A single, authoritative, GIS database replaces the existing multiple databases and new enterprise permitting and utility billing applications fully integrate with GIS for parcel and addressing information – without manual processing. New web based self-service GIS tools built on current technology offer faster performance, greater flexibility, and enhanced visual appeal, which leads to GIS staff spending more time on GIS infrastructure, data updates, and training instead of map making.

Gap: Duplicative GIS & CAD databases, lack of automated integration with permitting and utility billing, and outdated self-service tools.

Audio/Visual and WilsonvilleTV Infrastructure

Current State: Most City facilities offer basic audio/visual (AV) capabilities in highly used conference rooms, including Wi-Fi, projector, screen, conference phone, and a laptop or stationary, networked, desktop computer. Some, but not all facilities, also have video conferencing capability. At City Hall, a few, advanced meeting spaces, include enhanced sound systems, AppleTV functionality, and cameras for live streaming of meetings/events.

A sophisticated AV control room, primarily for the live capture of meetings for broadcast on the City's government channel, WilsonvilleTV, exists in City Hall. The operation of the equipment is contracted to a third party vendor, Willamette Falls Media Center. Scheduling and coordination of the third party is the purview of the City's Communications staff. Management of the Public, Education, and Government (PEG) funds and the associated long term replacement and enhancement of the control room systems is under the purview of IT. The current split in duties is unclear in several areas and leads to confusion for both IT and Communications staff. Clarity of the roles and responsibilities between the two City departments and the third party vendor is needed.

Future State: All major City facilities have video conferencing capabilities in their main conference room areas, as well as AppleTV functionality for interfacing with staff iPads and iPhones. Clarified roles surrounding the AV control room support removes staff confusion and a rolling 5-year replacement/enhancement plan for AV resources in put in place.

Gap: Not all City facilities have video conferencing or AppleTV functionality at their locations. No clarification of AV control room support roles. No 5 year rolling PEG replacement plan.

IT Policies

Current State: With the high degree of longevity among staff within the IT Department, policies have developed organically, over time, and without significant formalization. Currently, basic policies covering cell phone use, BYOD, and the safe and appropriate use of City computing and internet resources are part of the City's employee handbooks and signed by each new employee at orientation.

The lack of formal policies leads to difficulty deferring requests that fall outside the current informal policies and confusion for both staff and customers.

Future State: IT develops formal policies in place of informal policies now utilized in the areas of mobile device management, IT equipment standards, remote access, physical access (key cards), etc.

Gap: Lack of formalized IT policies.

2.5.2   Enterprise Systems Gaps

Enterprise Asset Management (EAM)

Business Context: In 2012 the City began a multi-year implementation of the Cartegraph asset management and work order system. Initial asset information was input utilizing annual summer intern programs in GIS and PW. To date, water, waste water, storm water, roads, signs, and work orders have been implemented. Facilities, parks, trees, irrigation, and a variety of miscellaneous items are still in need of collection and implementation.

Current state: The City's current Enterprise Asset Management system, Cartegraph, is in use by the Public Works Department for work management and a variety of assets. Not all staff are utilizing the work order management, not all activities are tracked using the system, and not all assets are in the system yet.

The Engineering Department also utilizes Cartegraph for pavement inspections, fiber conduit and vaults, and general utility reference. ArcDocument Building Information System is currently being piloted for use for detailed information on specific buildings by the Facilities Department.

A major finding of this system is that Asset Management through the Cartegraph system and Fixed Asset Management in the Finance Department via the Eden system are treated as two separate disciplines. The assets for Fixed Assets are recorded and accounted for in a manner that is consistent with capital project work but inconsistent with the way assets are grouped and utilized in a maintenance system. Because of this, the two systems cannot be effectively integrated and multiple copies of asset related information are stored on the two systems, leading to potentially inaccurate data related to asset valuation and potentially inaccurate capitalization/depreciation of assets.

Future State: An Enterprise Asset Management (EAM) system is used as a single repository for all asset related data (purchase date, useful life, depreciation, work performed, etc.). This system, in coordination with the GIS database provides extensive asset management information. Relevant departments that maintain an asset record all activities on assets through work orders generated in this system. The EAM is mobile enabled to allow field workers to receive, complete and track work orders seamlessly. Work order information submitted in the field is updated in real time with the EAM. The EAM is used in an inventory management capacity (parts attached to relevant work orders, reorder points, etc.) and real time information is maintained on inventory utilized for each work order and for the maintenance of each asset. ERP system is seamlessly integrated with the Enterprise Asset Management System to track process efficiency and asset related reporting.

Gaps: Cartegraph is not used for work order management City-wide, Cartegraph is not used as single repository for asset related data, Asset valuation information is inconsistent with

the Eden financial system, Inventory is not tracked in Cartegraph.

Enterprise Resource Planning (ERP)

Business Context: In 2003, the City began a multi-year implementation of the current Eden Financial and Permitting System. The rollout was substantially complete in 2008, although Eden has continued to update their application and the City has added enhancements and customizations over time. The Eden application includes modules for Accounts Payable, Accounts Receivable, Applicant Tracking (HR), Budget Preparation, Fixed Assets, General Ledger, Human Resources, Licensing, Parcels, Permits/Inspections, Payroll, Project Accounting, Purchasing, Special Assessments, and Utility Billing. It also includes an integrated web site that offers online Utility Bill Payment. The City has elected not to use the Applicant Tracking, Accounts Receivable, or Special Assessments modules. The HR module is only partially used.

Current State: The City uses Tyler Technologies' Eden ERP/Financial system for most of the financial processes and utility billing. Although Eden provides a powerful financial management platform, several processes require manual "work arounds":

- Quickbooks is used in place of Eden's Accounts Receivables
- Accounts Payable still requires a largely manual component for Invoice processing
- Different business processes surrounding finance are not integrated to provide end-to-end work flow, leading to laborious paper based manual processes. Manual data entry and re-entry to circumvent system integration issues leads to inefficiencies and has the potential of affecting data quality
- The various departments find Eden to be unfriendly, from a user experience, so instead of utilizing the Budget module, excel spreadsheets are used. Using disparate spreadsheets for annual budgets is time and effort intensive for both individual department heads as well as the finance department
- Lack of correct data structure and configuration of land parcel information and tax code leads to a less than perfect tax calculation and collection system. For example, the configuration of Eden financial system makes it difficult to calculate business taxes in situations where a business owner resides outside the City, or to consolidate taxes when an owner has multiple businesses in the city

Future State: An Enterprise Resource Planning (ERP) system is used as a single repository for all information regarding the city's business operations. The ERP system provides seamless access to all relevant users based on roles and responsibilities to track preset operational metrics real-time. The ERP system automates common business processes such as accounts receivable, accounts payable, budgeting etc. to improve efficiency.

The ERP system is integrated with other enterprise systems to automate business processes and share relevant data across departments (HR, Payroll, Inventory control, Asset Management, etc.) The ERP system is accessible remotely (desktop and mobile) for appropriate users.

Gaps: Manual Workarounds for Payroll and Accounts Payables Processes, Lack of Integration with Asset Management System, Eden Not Used by Departments outside Finance for

Budgeting and Reporting.

Utility Billing

Business Context: The Utility Billing (UB) software is a module in the Eden Financials & Permitting ERP Application. Utility Billing is housed in Finance and works very closely with the Public Works Utility Crew, who are responsible for the maintenance of the utility system and performing shut off/turn on, leak checks, irregular meter reads, and emergency repairs. Regular, monthly reads, are performed by a contracted meter reading service. The City invested in Automated Meter Reading (AMR) infrastructure to read some of the meters in city; however, AMR is not used currently. Another contracted vendor prints and mails the monthly bills. An online component of the UB system exists to provide customers the ability to pay by credit card and/or view their payment and consumption histories.

Current State: The City uses monthly actual usage data, collected by the meter readers, for water and sewer billing. The data is imported into the Eden ERP system to generate utility bills. The City uses an automated phone system (IVR) to remind past due customers of bill payment and any customer can utilize the IVR to pay by credit card. However, UB staff have taken complaints that the system is cumbersome to use for payment.

The online customer payment system for UB is also reportedly cumbersome and difficult for Utility Billing staff to troubleshoot in the event of an error. In addition to online, credit card payment, the UB system allows users to have their bill auto-deducted from their checking account (ACH) or set up recurring payments to their credit card. A balanced billing option is also included but does not get much use. The Eden software does not allow flexibility in setting timing for balanced billing, which reduces its attractiveness to customers.

Reporting for UB is not intuitive which leads to substantial time being spent researching and identifying utility accounts with over / under usage. Additionally, several processes required for Utility Billing are manual and time consuming, such as street light auditing and calculations.

Paper based work orders are used to resolve any UB related communication between Finance and Public Works, such as addition of new meters, billing issues, leak checks, etc. The work orders are manually entered into the Eden system and manually updated with resolutions. This is a time consuming process that allows neither department the ability to efficiently utilize the work order components of either of their applications – Eden or Cartegraph.

Future State: ERP system provides easy analytical support to identify anomalous meter reads. Customers use Citizen Relationship Management (CRM) system to request service related to utility meters. CRM and ERP system is integrated with Asset Management system to automatically create work orders to resolve any utility billing issues.

Gaps: Paper work orders generated to respond to utility related work – manually entered

into Eden, inflexible application leads to excessive staff time to complete billing process, no process for cross-checking work order history between Eden and Cartegraph, the IVR payment process and online payment system are cumbersome.

Payroll

Business Context: The Payroll system is a module in the City's Eden Financial/ERP Application. It has been in place since 2004 and critical components of the system are updated by the vendor annually. The Payroll and the HR module in Eden are integrated, with the Payroll module dependent on at least basic HR entry of new positions in order to complete payroll tasks. The Eden software includes, as part of the Payroll system, an online component to allow employees self-service for basic benefits, accruals, and paycheck history information. The web site, for security purposes, is not accessible outside the City's network. Finally, Eden offers a time sheeting application that integrates with Eden Payroll – however, after implementing a pilot program in Finance, it was determined that the Eden timesheet application was too difficult to use and did not offer the level of flexibility desired and use of the system was stopped.

Current State: Timesheets, in most departments, are filled out in an excel spreadsheet, set up for each employee, in a central file server location. Once filled out, the timesheet is printed and manually routed to the appropriate supervisor for signature. Supervisors approve and send the paper timesheets to the Finance Department, where they are manually checked for accuracy and conformance with policy, benefits, etc. The Payroll clerk enters aggregate data for individual staff in the ERP (Eden) system before running payroll. Post payroll, the Payroll clerk manually balances the benefit accounts for health insurance and retirement. The process is very time consuming.

The City uses Replicon to track labor for capital projects; however, the software is not used widely to track time for all staff. Also, Replicon is not integrated with the ERP to enable electronic data exchange. Manual data entry and reconciliation of benefits accounts makes the process extremely inefficient and prone to errors.

The City relies heavily on spreadsheets to work around the deficiencies of the ERP system related to payroll.

Future State: Time tracking software is used by all employees of the City to report time spent on defined and undefined activities in regular intervals. Time tracking software keeps track of the time worked by individual employees and their vacation accruals. The ERP system automatically reconciles and balances benefits accounts.

The time tracking system is integrated with the Human Resource Management Information System (HRIS) and ERP system to automate the payroll process.

Gaps: No Electronic Time Tracking System, Heavy Reliance on Spreadsheets

Enterprise Content Management

Business Context: In 2015, the City purchased Laserfiche document and records management software and limited implementation services from a third party implementer. Laserfiche offers imaging, workflow, document management, and records management. Implementation of the Laserfiche product is beginning in the Admin and Finance Departments and is currently underway.

Current State: At present, the City stores documents as paper copies, microfiche, or scanned images on CD/DVD or a shared network drive. The implementation of Laserfiche is just beginning, and will provide a full text searchable repository for archived electronic files and scanned file images. Active electronic files, in general, reside on a shared drive on the City's file server. Each Department has a secure folder under the shared drive. This has led to collaboration difficulties as staff across departments have not had security access to each other's files and folders. To resolve this issue, a folder was set up as an open share, allowing full access to all departments. The result is a disorganized, free for all, that enables collaboration but without appropriate management or order, leading to chaos.

The City is using Box.net on a limited basis for large document sharing and collaboration with vendors and consultants.

The review and approval process of documents is manual/paper based which is time consuming and less collaborative

Photographs (for use in City communications) are saved in the shared drive and are not searchable.

Future State: The City uses Laserfiche for its document management needs along with facility for electronic review, update and approval of documents through workflows. The document management tool stores metadata about documents as well as an audit trail of activities on the documents to enable easy search and retrieval operation.

City uses web based collaboration tools for sharing and accessing documents and picture files that are appropriately tagged for easy retrieval.

Gaps: No City-wide Electronic Content/Document Management System
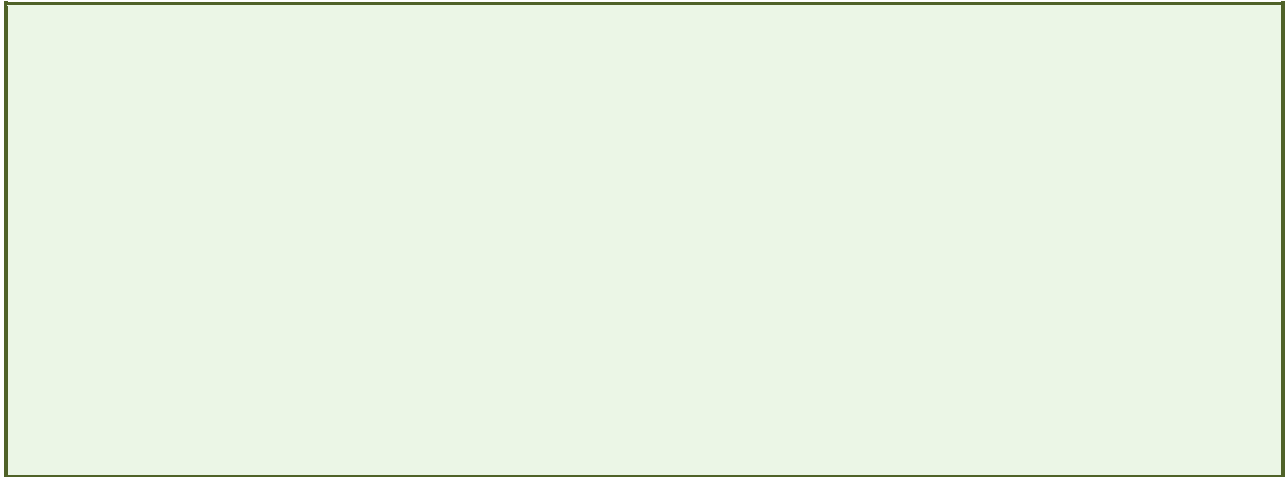
Enterprise-wide Event Management

Business Context: Class registrations, facilities and room reservations, and volunteer and event management functions happen across a variety of City departments. The Library holds events, manages volunteers, and reserves rooms to the public. The Parks and Recreation Department conducts classes, reserves facilities and rooms, and manages volunteers. Administration holds community BBQs and works with a variety of volunteers and boards and commission members.

Current State: The Library utilizes Evanced software to allow public booking of reservable rooms and Volgistics to manage volunteers. Parks & Recreation uses ActiveNet software for class registrations, and basic facility reservation schedule information. Parks & Rec's Community Center operations use Volunteer Works to manage volunteers. No other City departments have access to event/volunteer management software. The lack of an enterprise-wide system has led to duplication in existing department-based applications and no access to appropriate functionality for some departments.

ActiveNet, which is used by Parks and Recreation for event registration, is reportedly not user friendly and is expensive per transaction. This reduces usage of the system and extends manual processes. ActiveNet is also only being used for basic schedule information rather than full-fledged online facility reservation. This leads to customer inconvenience, and more manual paper processing by Parks staff.

Volunteer Works is unsupported by its developers and needs to be replaced.

The event registration and volunteer management systems are not integrated with the financial ERP system, requiring staff to process, reconcile and balance payments manually.

Future State: The City has user-friendly enterprise event registration and volunteer management systems, which are integrated with the financial ERP system and CRM system. The new integrated solution automates all event management processes and manages payment without any manual intervention and integrates with a single sign-on customer portal and backend single payment/merchant account processor.

Gaps: No City-wide Event Registration, Facility Booking and Volunteer Management System ActiveNet is not User Friendly and is Expensive per Transaction, Volunteer Works is Unsupported by its Developers, No Integration with Financial ERP for Reconciliation of Financial Transactions, No Access to Event Management for Other City Departments such as Administration

Business Intelligence

Business Context: The City's Enterprise Financial and Permitting System, Eden, provides some basic reports, but customization of existing reports or new reports must either be created by the customer through Crystal reports or paid for, as a customization, to the vendor. The Eden system runs on a SQL database, which is technically open, allowing the potential for other tools to be used to extract pertinent data. The schema provided by Eden to enable customer reporting against the database is very complex and difficult to follow, making all but basic report generation or modification by customers unlikely.

Current State: The Finance department generates monthly budget reports and distributes to individual departments and several custom reports have been created in the Community Development department to gather summary level data on permit activity such as volume, types, and basic trends.

The City's different departments do not track key performance indicators (KPIs) to track performance in real time. Lack of KPIs and dashboards make it difficult to quantify and track overall performance of the City and that of individual departments.

Individual supervisors and staff members don't have access to dynamic reports to track operational metrics in real time. Some budget reporting is available but staff indicate that Eden is cumbersome for non-daily users to navigate. They also don't have access to generate ad-hoc reports based on individual needs. Lack of real time availability of reports to staff members has the potential to cause cost over-run for projects

Future State: The City uses a robust Business Intelligence (BI) tool to provide historical, current, and predictive views of business operations enabling users to analyze data from different perspectives to make better business decisions. The BI solution provides common functions such as reporting, analytics, data mining, business performance management and benchmarking. The BI solution also provides role-based access to staff members to visualize operational data in real time and enables decision-making based on multi-dimensional data. It should enable the city to optimize resource usage by effective use of predictive analytics.

Gaps: No Dynamic Tool for Real Time Ad-Hoc Reporting, No Dashboarding Tool to Support Executive Decision making

Comprehensive Land Management/Permitting

Business Context: The City's Permitting system is a module in the Eden ERP, which has been in place since 2004. Originally, the single vendor system offered a higher level of integration over multiple vendor Financial and Permitting applications and ensured that there was a single source for supporting the integration points between the two business functions. Over the years, however, Eden has focused their energies on their core financial products and provided little to no innovation or substantial refresh of their permitting system, leaving staff with a cumbersome process, old technology, and poor mobility options. The Permitting application includes a web component for online permit inquiry and building inspection requests and an integrated third party Interactive Voice Response (IVR) for dial-in building inspection requests. The land component of the permitting system is based on a Parcel module also integrated with the Eden system. The Parcel module, however, is also based on very old technology, requiring a laborious manual process to keep the property and address information updated, which has led to frequently outdated information appearing in the permitting system.

Current State: The City uses Eden permitting software for a wide range of building, planning, and engineering permits, some limited planning project tracking, and building inspections. The system is not best of breed or flexible enough to easily handle the somewhat complex business processes that are part of the City's permitting and land use functions. More importantly, as the technology has not been improved to keep up with standard enhancements in the permitting, inspection, and project tracking arena – the City's capabilities are behind that of similar jurisdictions. The current system also does not include a code enforcement component, so staff tracks code enforcement issues in a round-about way utilizing a custom "permit type" in the Eden system.

The citizen and contractor interfaces with the Permitting system are also woefully inadequate. Business requirements prevent any but small, over the counter permits, from being obtained online and the difficulty in using the Eden online permitting has led to staff shutting down the site, rather than cause customers even greater frustration. The City currently uses the State of Oregon provided permitting system (Accela) for these small permits (water heater replacement, etc.) Permits that come in from this system arrive via e-mail and must be manually input into the Eden system.

The City purchased an integrated third party IVR solution, Tyler Plumvoice, for dial-in inspection scheduling. The system has not been popular and most of the customers who utilized a previous, but no longer available IVR solution, have moved to using the online system for scheduling instead. With the proliferation of smart phones, an IVR system may no longer be necessary, but a smart phone app that allowed inspection scheduling could be very useful for customers.

The City is planning to replace the existing Eden permitting system with a modern permitting system and has set aside money to do so.

Future State: The City uses a Comprehensive Land Management system that streamlines all actions based on parcels including permits, inspections, investigations, reviews, zoning, project plans, code enforcement, etc. The land management system is built on a GIS platform so that any changes to the property information in the City's GIS system are automatically up to date in the land management system. This system is also integrated with the Financial ERP and Customer Database to provide a single view of the customer and track code conformance over a period of time.

The land management system is mobile enabled to allow field workers to compile inspection reports remotely, including a template based document generation system to speed completion of inspection reports in the field.

The land management system utilizes an automated workflow to route items between staff both within and across departments for assignment, review, notification and approval. It also includes timers and ticklers to keep projects flowing and ensure that all appropriate items are tracked, notified on, and completed – including long term land use actions, agreements, and conditions.

Finally, the land management system includes a modern web interface that provides customers with a fast and easy way to schedule inspections and pay for permits online. The web interface integrates with the City's customer portal and single merchant account for payment processing and customer service.

Gaps: Paper based Inspection Processes, Inaccurate Land Parcel Information – not Integrated with GIS. Eden IVR, Online and Mobile Systems are inadequate.

Customer Database & Portal

Business Context: A single view of and for the customer is not a new concept, but is a relatively innovative approach for municipal government. Without system-wide integration of all customer based applications, a single view of the customer is difficult, if not impossible to provide, and integration across all key systems is only recently becoming an affordable option for small to medium local government entities.

Current State: The city uses the ERP system to store customer information related to permitting, licensing, utility billing, and municipal court. Different points of interaction with the citizen, such as when a citizen registers for a class or event conducted by the library and parks & recreation, are captured via the different departmental applications. Customer complaints and requests for service are captured in the Ask the City application and ownership information is available in the GIS system or via the Eden Parcels module. These differing systems are not integrated and access to them is not generally available across City departments. Unavailability of comprehensive single view of citizens may lead to reduced service level and lost opportunities when citizens call the City or walk-in for support.

Lack of knowledge about the citizens may lead to scattered messaging from the City using channels such as social media, video, online feedback mechanisms and email to drive participation.

Future State: The City uses a comprehensive Customer Database to serve as the single repository for all citizens' information. The CRM system is integrated with Land Management system (permitting, utility billing, etc.).

The City captures information about its citizens at different points of interaction, such as when a citizen registers for a class or event, to build a robust database. The City uses the information in the CRM database to direct multi-channel communications to increase access to information and services, improve opportunities for engagement and offer members of the community a choice in how they receive City information.

Gaps: Customers Forced to Use Multiple Payment Services Online, No Singular View of the Customer.

Web Presence and Social Media

Business Context: The City moved to Civic Plus for web services in FY13-14 with a 5-year contract that provides a free graphical refresh in year four. Unlike previous providers, Civic Plus hosts the City's sites so IS staff do not have to manage the servers or security. With the move to Civic Plus, the City added a Parks & Recreation web site and an Economic Development web site to the 3 sites it already had (City, SMART, and Library). An option to incorporate all sites under the main site was available at the time the new sites were implemented, but the capabilities at that time did not allow departmental or sub-sites to have their own separate navigation. Due to the "retail" nature of some of the sites, and the extensive content, it was not feasible to subsume them under the City site.

Current State: The City operates one website for the City and several different websites for individual departments such as Parks & Recreation, Library, Transit, and Economic Development. All the websites are maintained separately from the parent City website with no integration, although all sites are managed using the Civic Plus content management system – so editing for one site is the same, administratively, as editing on any of the sites. Maintaining separate websites with no integration dilutes the City's brand and leads to staff double-entering content that needs to be shown on multiple sites and absence of a central place for users to access all the events being carried out by the city.

Each website handles relevant payments (such as permit fees, court fees, event registration and facility booking fees for Parks & Recreation and Library etc.) differently with multiple payment merchants and no integration with the ERP system. Multiple payment merchants lead to increased payment processing costs.

None of the websites provide end-to-end process automation to handle full-fledged customer self-service. Lack of a self-service feature on the websites leads to manual processes and users who do not have a way to fully track the progress of their service requests.

The City also provides an intranet for its staff (Staff Zone) and maintains separate social media (Facebook, Twitter) accounts for each of the above departments. Separate social media accounts with no consolidation and lack of integration with the websites requires messages to be individually placed in each account and updated in each website which is time consuming and error prone.

The City has identified publishing a City tourism web site as a top priority. It is unclear if this site will be integrated with the other sites or a stand-alone site.

No formal policies have been developed for web site content, leading to confusion regarding links to non-profit organizations, posting of non-City sponsored community events, and requests from the public for advertising of private charitable functions.

Future State: The City consolidates all individual websites under its parent domain and enforces a thematic framework to improve branding. The websites provide a common self-service framework to automate most common services to citizens and integrate with the ERP, Land management and CRM systems to provide real time automated workflow to users.

The payment process for different websites are streamlined and consolidated to achieve cost efficiency, better user interface and better integration with other enterprise systems (such as financial ERP, Land Management, CRM, etc.).

The City uses a social media consolidation tool to manage accounts and publish content to multiple channels in an efficient manner. The City allows two-way communication with citizens on its social media accounts and allows for comment on council meetings online. The City tracks, analyzes, reports and makes communication decisions (web site, social media, etc.) based on web traffic analytics for its web site.

Formal policies are developed for content management and posting.

Gaps: Multiple merchant Accounts for Web Sites, Inconsistent Branding and Messaging, No Consolidated Calendar of Events.

Transit System (SMART)

Business Context: The City's Transit Department operates 32 transit buses and manages the rest of the City fleet of vehicles and equipment. Transit began implementation of its first Automated Vehicle Locator (AVL) system on the buses in 2015, and is still completing testing and configuration of an online, public, next bus tracking system that will allow customers to see when to expect the bus to arrive at their stop. A new, integrated demand response and Computer Aided Dispatch (CAD) system was implemented as part of the same project and is currently in use. An online payment portal for monthly bus passes is available as part of the City's Civic Plus web site functionality.

Current State: The new Engraph software for dispatch and demand response scheduling is up and running well. The integrated ETA software interfaces with specialized mobile units in the vehicles to provide AVL tracking, dispatch communication, and screens for driver information and passenger count entry. Testing is underway for the public interface for tracking bus locations.

Fleet Services utilizes RTA software for tracking work orders and vehicle maintenance information, but the fleet parts inventory is not maintained in RTA. A separate system is used for fuel system tracking.

In-town bus service is free, but customers pay fares for out of town service either in cash, as they board the bus, or by presenting a monthly bus pass. These paper passes are available for purchase at City Hall or online. Monthly passes are not available for purchase at the Transit Center. Non-availability of monthly passes at the transit center, or inside the bus, leads to a poor customer experience.

The City's Finance Department receives online pass payment notifications via e-mail and physically mails the paper passes to customers. They also receive the fare boxes from SMART daily, and two Finance Account Technicians manually empty, count, and track the money from the boxes. The percentage of transit revenue from fares is low and the processing and accounting time for the fare collection process is high.

The City's fleet (other than transit buses) is not tracked using an Automated Vehicle Location (AVL) system.

Automated passenger count is not available; drivers use clickers to count different segments of travelers and staff manually maintain spreadsheets to keep track of daily passenger count. Screens on the mobile units in the buses will allow electronic entry of the counts, but still require driver input rather than automating the process.

Run-cutting process is performed manually, as a paper process. Only one employee at SMART knows how to perform this process and that employee is due to retire soon.

Future State: The Transit department tracks all fleet related assets in the Cartegraph system and all maintenance activities on the assets are tracked through work orders.

The City continues to use the CAD/AVL system to track its transit fleet, and expands the infrastructure to track the fleet of City vehicles.

The City also provides a cashless magnetic card based ticketing system for riders and makes purchase of these cards available at the transit center The City also provides a mobile application that allows riders display and scan their pass on their smartphone as they board the bus.

The City uses an automated routing and run-cutting process to improve efficiency and accuracy of its transit operation.

Gaps: City Fleet (other than buses) is not Tracked via AVL. Maintenance Inventory is not Tracked through RTA. Bus Passes are not Available at the Transit Center – only online (physically mailed) and at City Hall. No Run Cutting System.

Human Resource Management

Business Context: The Human Resources department manages hiring, employee on-boarding, employee performance, compensation, employee benefits, and training for all City employees. The HR department also negotiates union contracts and maintains personnel files.

Current State: The HR Department utilizes NeoGov for hiring. Human Resources has access to an HR module that is part of the Eden financials suite, but uses this system very limitedly, due to frustrations over the system's lack of value-added built-in reports. The Eden HR module integrates heavily with the Payroll module, and some difficulties occur in Payroll when information is not available in the HR module for it to draw from.

With the exception of hiring, all HR processes, including management of benefits and compensation, are paper or MS Excel based manual processes, which makes them time and labor intensive and potentially error prone.

All personnel files are maintained in paper form which makes storage difficult, and search and retrieval of specific information labor intensive.

Employee on-boarding process is paper based which makes coordination among various relevant departments difficult. An online form is used to assist with IT needs for hardware and software resource allocation and security access management for new employees.

Annual performance measurement is paper based with no defined process for individual development planning. Paper based performance management process makes tracking organizational development over time difficult. Lack of formal individual development plan for employees, leads to gaps in training, needs assessment, and employee performance.

Future State: The HR department uses a Human Resource Management System (HRMS) to automate all HR related process with automated workflows. The HRMS is integrated with the Financial ERP system and Electronic Document Management System and uses guided workflows for easier coordination among different departments. The HR department is able to generate value-added built-in and ad-hoc reports from the HRMS to make data driven HR related decisions for the City. The HR department uses the HRMS to strengthen employee performance management and implement goal based individual development plan.

The HR department continues to use NeoGov for hiring needs.

Gaps: Heavily Manual, Paper based Processes, Limited use of Eden for HR processes, No Employee Performance Management System.

Project Management

Current State: Nearly every department in the City is involved in the management of projects of varying sizes and durations, and often including other departments, agencies, vendors, or consultants. As such, proactively managing the time, cost and schedule of these projects are critical for the City's success; however, there is no City-wide standard of managing the projects. Without modern project management tools and standard processes, individual department managers rely entirely on their significant experience to adequately manage projects. With retirements and attrition, critical information and key processes are lost. The lack of formal City wide project management process and systems also make it difficult to coordinate and communicate projects across departments.

Future State: The City uses a standard process of documenting and managing projects across all departments of the city. Relevant departments use standard project management software to proactively track and manage the budget and schedule of projects.

The data in project management software is in sync with time tracking system to accurately measure variances. Data in project management software is kept updated and historical data is used to improve project planning continuously.

Gap: No Project Management Tool or Formal Processes.

3   Strategic Recommendations and Action Plan

Based on the key findings identified from all project activities, Mindboard developed a set of recommendations. These recommendations were categorized into the following groups for implementation purposes:

✓ *Immediate Recommendations (0-6 months)*

✓ *Short Term Recommendations (6 months – 1 year)*

✓ *Medium Term Recommendations (1-3 years)*

✓ *Long Term Recommendations (3-5 years)*

✓ *Ongoing*

The pie chart below shows the percentage of recommended projects in each category. This chart represents the number of projects, not the relative effort required for each project.

Recommended Projects by Category

- Immediate (0-6 months)
- Short Term (6 months - 1 year)
- Medium Term (1 - 3 years)
- Long Term (3 - 5 years)
- Ongoing
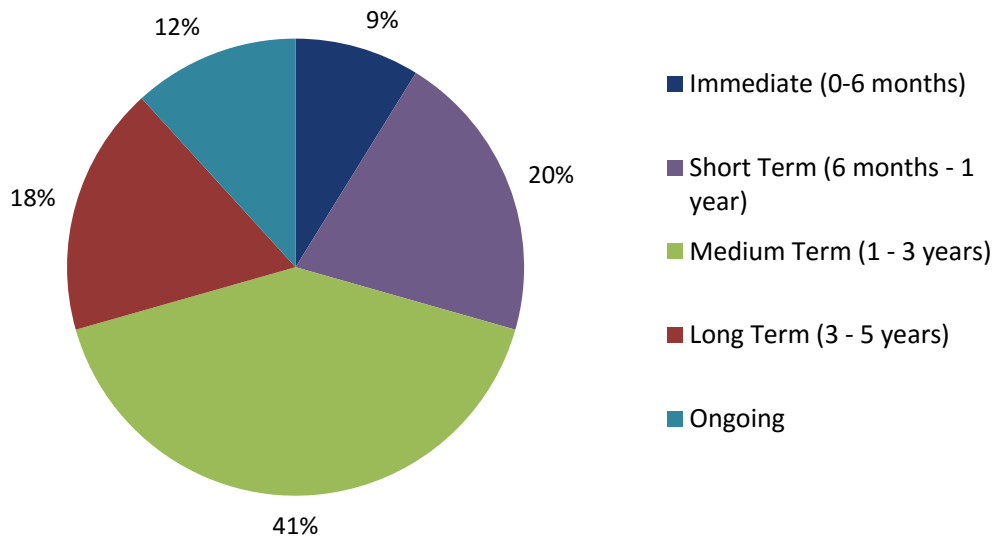
Not all IT projects require the same level of effort. Recommended projects have been broken down into relative level of IT workload. Projects, such as enterprise systems replacement, require greater implementation support, absorbing significant IT staff resources. Department Initiatives, alternatively, may only require oversight by IT staff.
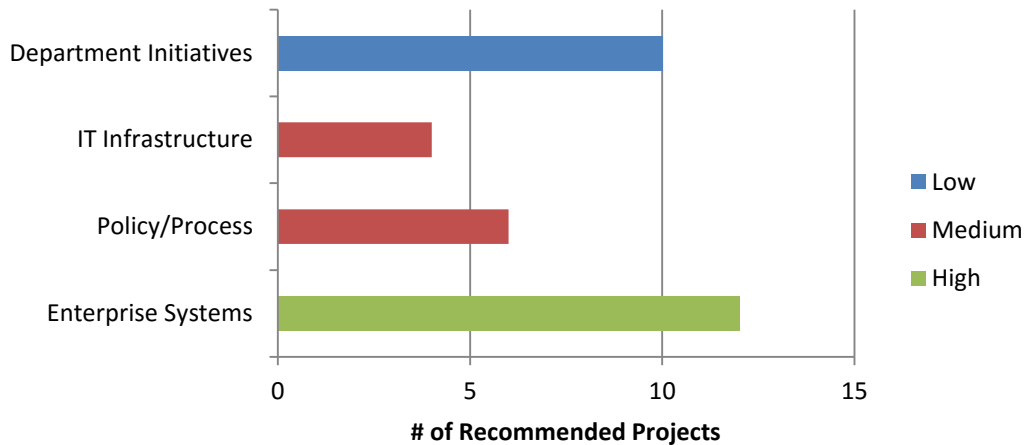
It is important to note that this IT strategic plan by no means represents the complete picture of the Wilsonville IS Department's total workload. The chart below shows the general workload by function and capacity of total staff time available for plan initiatives given the current staffing level.

Percent of IT Staff Time by Function
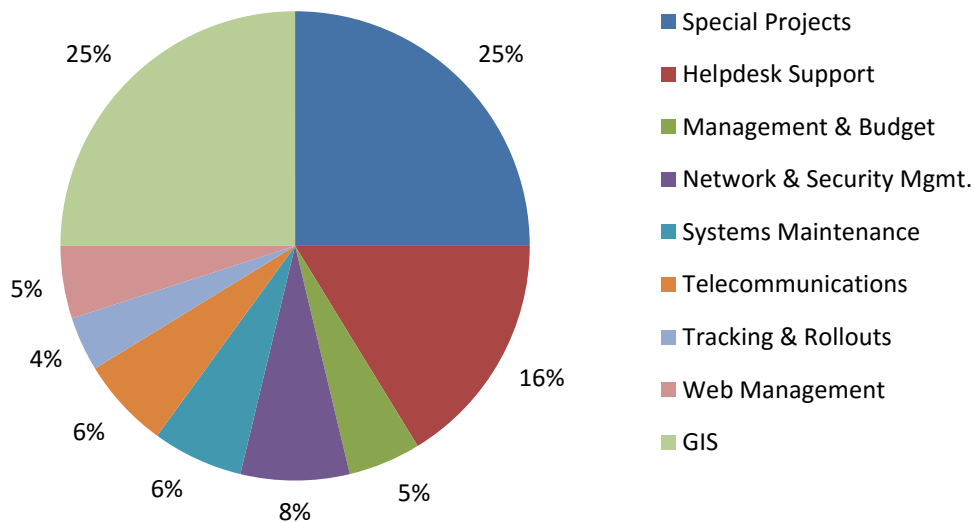
The following action plan presents Mindboard's strategic recommendations including action steps, resources, timelines, and anticipated costs for successful implementation of each recommendation. The table below will provide a description of each line item included in the action plan. Please note that any costs provided are general estimates. A market survey should be conducted in order to provide a more reliable price range.

Line Item	Description
Strategic Recommendation	Mindboard's recommendation associated with the corresponding strategic theme
Gaps Addressed	Gaps associated with the strategic area.
Action Steps	A sequence of steps that must be taken, or activities that must be performed well, for the strategic recommendation to succeed.
Prerequisite(s)	The action step or the activity that should have been completed prior to implementing the strategic recommendation.
Stakeholders	All parties that are involved in implementing the strategic recommendation.
Resources	Employees responsible for undertaking the action steps/activities defined in the plan.
Estimated Cost	Estimated costs for implementing the recommendation based on industry research and experience. Please note that cost estimates from Vendors were not directly obtained.
Impact/Comments	Additional comments associated with the corresponding strategic recommendation. If applicable, any Council Goals this project supports will be noted here.

List of Recommendations by Category

Immediate 0 - 6 months	Short Term 6 months - 1 year	Medium Term 1 - 3 years	Long Term 3 - 5 years
1. Streamline IT Procurement Process 2. Streamline IT Funding 3. Develop Fiber Business Plan			
	4. Hire IT Assistant 5. Implement Event, Facility Booking and Volunteer Management System 6. Combine City Web Sites and Social Media Accounts 7. Upgrade Exchange - Evaluate Cloud Based Email Alternative 8. Implement Run Cutting System at SMART 9. Develop Disaster Recovery Plan 10. Develop IT Policies and Procedures		
		11. Use Cartegraph as an Enterprise Asset Management System 12. Implement New Financial ERP System (Including Utility Billing and HRIS) 13. Implement Laserfiche as City Wide Electronic Document Management System 14. Implement Integrated Land Management System (permitting, Inspections, Code Enforcement) 15. Promote Use of GIS as an Organizational Priority 16. Combine Payment Processing Systems and Merchant Accounts-Citizen Portal 17. Implement Enhanced Interactive Voice Response (IVR) Solution 18. Implement Email Archiving and E-Discovery Solution 19. Implement Project Management System 20. Implement Integrated Time Tracking and Payroll System-Electronic Timesheets 21. Implement a Collaboration System (Cloud Based?) 22. Implement Integrated Security Access System	
			23. Implement centralized, Integrated Customer Database and Portal 24. Implement a Business Intelligence (BI) Tool 25. Implement a Cloud Based VoIP Telephone System 26. Implement Virtual Desktops and Enhanced VPN Solution 27. Modernize Fare Collection System at SMART 28. Consider Implementing Automated Meter Reading (AMR) Infrastructure
29. Continue Standardizing IT Environment			
30. Establish Periodic IT Skill Gap Review Process			
31. Continue Enhancing Audio/Video and WilsonvilleTV Infrastructure			
32. Implement Municipal Fiber Program			

3.1   Immediate Recommendations (0-6 Months)

Recommendation	1. Streamline IT Procurement Process
Gaps Addressed	• No Formalized IT Procurement Process • No IT Strategic Plan or Formalized Process for Annual Plan Review
Action Steps	• Adopt IT Strategic Plan as the City's definitive IT investment plan • Ensure proposed projects conform to the standardized IT environment • Make collective decision for IT investments • Communicate proposed IT projects across the City • Communicate potential changes to business process to all stakeholders • Include IS Manager in Procurement Vetting and Contracting Process up front • Refresh IT Strategic Plan Annually with Executive Team
Resources	• Department Directors • Information Systems Manager
Stakeholders	• IS Staff • All city staff
Prerequisites	None
Estimated Cost	• Staff time - Internal
Impact/Comments	A rolling 5 year IT Strategic Plan would incorporate an annual update with reprioritization of the IT Projects based on input from the City Manager and Executive Team. Technology projects seeking to be implemented outside the strategic planning process would come to the IS Department for vetting and procurement assistance. Supports Council Goal 2 – Fiscal Discipline

Recommendation	2. Streamline IT Funding
Gaps Addressed	• No IS Oversight of Enterprise Application Funding • Not all Large Projects have Set Asides for Implementation or Replacement
Action Steps	• Centralize IT Reserve Funding • Include IS Department in Funding Oversight • Make IS department owner of all IT projects across the City • Fund city-wide initiatives such as essential standard IT capability development from a centralized IT fund managed by IS Manager
Resources	• Department Directors • Information Systems Manager
Stakeholders	• IS Staff • All city staff
Prerequisites	• Streamline IT Procurement Process
Estimated Cost	• Staff time - Internal
Impact/Comments	Continue current IT specific infrastructure funding and charge-back process for support. Enterprise applications replacement should have a centralized reserve fund overseen by IT but funded proportionately by the various stakeholder departments. Supports Council Goal 2 – Fiscal Discipline

Recommendation	3. Develop Fiber Business Plan
Gaps Addressed	• Incomplete fiber business plan
Action Steps	• Complete and implement fiber business plan
Resources	• IS Manager • Municipal Fiber Consultant
Stakeholders	• IS Staff • All city staff
Prerequisites	• None
Estimated Cost	• Staff time – Internal • Consulting Fees
Impact/Comments	City fiber asset use based on results of the fiber business plan currently underway. Supports Council Goal 6 – Well Maintained Infrastructure

3.2   Short Term Recommendations (6 months – 1 year)

Recommendation	4. Hire one (1) full-time Helpdesk Support Staff (IT Assistant)
Gaps Addressed	No dedicated IT Assistant (helpdesk)
Action Steps	• Develop a job description • Conduct interviews with the selected candidates • Hire the most suitable candidate and assign responsibilities • Train the new hire (6 months until fully functional)
Resources	• IS Manager • IS Staff • Human Resources Manager
Stakeholders	• All city staff
Prerequisites	• Budget Approval
Estimated Cost	• Staff time • $75,000 per year (fully loaded)
Impact/Comments	Hiring an IT Assistant will provide the City with staff dedicated to supporting users with services such as desktop, email and printer related troubleshooting and basic training. This position would also maintain an inventory of IT hardware and software across the city and rollout new computers/devices. A full-time IT Assistant will allow experienced IS resources to perform higher level, strategic tasks. Currently, entry-level helpdesk tasks are addressed ad-hoc by existing staff, negatively impacting higher value enterprise project and support efforts.

Recommendation	5. Implement an Enterprise wide Integrated Event, Facility Booking and Volunteer Management Systems
Gap Addressed	• No City-wide Event Registration, Facility Booking and Volunteer Management System • ActiveNet is not User Friendly and is Expensive per Transaction • Volunteer Works is Unsupported by its Developers • No Integration with Financial ERP for Reconciliation of Financial Transactions • No Access to Event Management for Other City Departments such as Administration
Action Steps	• Perform detailed needs assessment for an enterprise wide event registration and volunteer management system • Scan the market for available solutions • Compare the available features of the solutions with needs of the city • Ensure the solution conforms to the City's strategic plan • Select an event registration and volunteer management system • Develop plan and timeline to implement the solution • Communicate the plan to all relevant department directors • Procure and Implement selected solution • Integrate ERP and other relevant enterprise IT systems with the solution • Conduct training for relevant city staff on a "train the trainer" method • Roll out the new solution to all users
Resources	• IS Staff • Relevant City staff
Stakeholders	• All City staff • All city residents
Prerequisites	• Streamline IT Procurement • Development of Enterprise Architecture Standards
Estimated Cost	• Staff time • Cost of event registration and volunteer management system
Impact/Comments	Implementation of this recommendation will ensure that the City has user-friendly enterprise event registration, facility booking and volunteer management systems, which are integrated with the financial ERP system and Citizen database and portal. The new integrated solution automates all event management processes and manages payment with minimal manual intervention and integrates with a single sign-on customer portal and backend single payment/merchant account processor.

Recommendation	5. Implement an Enterprise wide Integrated Event, Facility Booking and Volunteer Management Systems
	Supports Council Goal 7 – Community Amenities & Recreation
Recommendation	**6. Combine City Web Sites and Social Media Accounts**
Gaps Addressed	• Multiple Social Media Accounts • Inconsistent Branding and Messaging • Multiple Calendars of Events, News, Site Searches, and Notifications
Action Steps	• Conduct Web site usability analysis • Identify consolidation process • Hire Web site content management vendor to redesign and consolidate web sites • Publish new, consolidated web site • Clarify Web Site and Social Media content management responsibilities between IS and Communications staff • Allow Two-Way Communication between City and Citizens through Social Media Platforms • Track Web Analytics
Resources	• IS Department • Communications Department • City-wide Web Team
Stakeholders	• IS Staff • All city staff • Citizens
Estimated Cost	$36,000 (Web design vendor) plus ongoing maintenance costs
Impact/Comments	The City consolidates all individual websites under its parent domain and enforces a thematic framework to improve branding. The websites provide a common self-service framework to automate most common services to citizens and integrate with the ERP, Land management and CRM systems to provide real time automated workflow to users. The City investigates a social media consolidation tool to manage accounts and publish content to multiple channels in an efficient manner. The City allows two-way communication with citizens on its social media accounts and allows for comment on council meetings online. The City tracks, analyzes, reports and makes communication decisions (web site, social media, etc.) based on web traffic analytics for its web site. Formal policies are developed for content management and posting.

Recommendation	6. Combine City Web Sites and Social Media Accounts
	Supports Council Goal 8 – Welcoming, Engaged, & Satisfied Residents

Recommendation	7. Upgrade Exchange - Evaluate Cloud Based Email Alternative
Gap Addressed	• On premise, self-hosted Microsoft exchange server in need of upgrade • Email and attachment size limitations with on premise system
Action Steps	• Conduct return on investment (ROI) analysis on continuing self-hosting email server vs migrating to cloud based service • Select appropriate option and implement solution
Resources	• IS Department
Stakeholders	• IS Staff • All city staff
Prerequisite	• Develop Enterprise Architecture Standards
Estimated Cost	• Cost of upgrade to Exchange server or per month per user charges for cloud based email services
Impact/Comments	A self-hosted Microsoft Exchange application is currently used for the City's email system. The current Exchange version is reaching end of life and will need to be upgraded to continue to provide a functional and secure e-mail system. The City does not have an archiving tool, other than the limited built-in Exchange tool, which leads to user mailbox sizes growing rapidly and frustration with mailbox size limits that have been implemented to help staff better comply with State mandated records management regulations. Additionally, email attachment size restrictions (15 MB) create issues when sending large files. These physical limitations can be addressed by moving to a cloud-based exchange system, but a cloud-based system will not address the policy and compliance issues.

Recommendation	8. Implement Run Cutting System at SMART
Gap Addressed	• No Run Cutting System – manual process (rarely used in the public transit industry) managed by staff member who is about to retire
Action Steps	• Perform detailed needs assessment for a run cutting system • Scan the market for available systems • Compare the available features of the run cutting systems with needs of the City • Develop plan and timeline to implement the system • Procure and implement selected system • Integrate run cutting system with fixed route scheduling system • Roll out the new system
Resources	• IS Department • SMART Staff
Stakeholders	• IS Staff • SMART Staff
Prerequisites	• Budget Approval
Estimated Cost	• $40,000 - $60,000 plus ~20% for annual maintenance
Impact/Comments	The City uses an automated run-cutting process to improve efficiency and accuracy of its fixed route transit operations. In conjunction with the newly implemented routing and Computer Aided Dispatch (CAD) and Automated Vehicle Location (AVL) systems, a run cutting software will greatly reduce manual processes. This application is critical due to the upcoming retirement of the Transit Operations Manager, the only staff person trained in run cutting. Staff currently perform this process manually, which involves a skillset that is no longer trained and rarely found. Supports Council Goal 9 – Multi-Modal Transportation Network

Recommendation	9. Develop Disaster Recovery Plan
Gap Addressed	• Lack of Geographic Dispersal for Mirror Site • Incomplete Disaster Recovery Plan and Testing Procedure • Lack of Redundancy in High Speed Business Internet Connectivity
Action Steps	• Assess risks to continuity of business operations • Implement redundant internet connections • Specify data backup procedures and plan for further expansion • Create plan for backup center of operations • Establish vendor relationships for emergency replacement of equipment • Create plan for re-establishment of operations • Test plan and refine based on results of initial and annual testing
Resources	• IS Department
Stakeholders	• All city staff
Prerequisites	• Hire 1 Full time IT Assistant
Estimated Cost	• Staff time
Impact/Comments	The City uses a geographically dispersed location to house its mirror site. The City continues to use current practice of regular data backup and application/database redundancy to provide business continuity. A formal disaster recovery plan is completed and annual testing implemented. The City implements fault tolerant, duplicate internet connections for enhanced business continuity. Supports Council Goal 2 – Fiscal Discipline

Recommendation	10. Develop IT Policies and Procedures
Gap Addressed	Minimal formally documented IT Policies and Procedures
Action Steps	- Develop Enterprise Architecture Plan and Policies - Specify IT equipment and software standards - Specify staff and hardware authorized for remote access - Establish ramifications of non-adherence to policies - Publicize policies across City - Obtain end user signature on new policies as a form of acceptance
Resources	- IS Department - HR Department
Stakeholders	All city staff
Prerequisites	Hire one Full Time IT Assistant
Estimated Cost	- Staff time $20k plus ongoing costs for audit & permissions tool
Impact/Comments	Approaches to computer usage, remote access, internet access, IT equipment procurement, and many other activities should be standardized and communicated throughout the City. Policies should be defined to establish Standard Operating Procedures (SOP) that are uniform and to establish the foundation for enforcement of these policies. Failure to maintain relevant policies and procedures places the City in a position of vulnerability as it relates to enforcement and expenditures on inappropriate use of IT infrastructure. IS develops formal policies in place of informal policies now utilized in the areas of mobile device management, IT equipment standards, remote access, physical access (key cards), etc. The City continues to use Mass360 to manage policy on mobile devices but augments Active Directory with a more comprehensive auditing and permissioning tool.

3.3   Medium Term Recommendations (1-3 years)

Recommendation	11. Use Cartegraph as an Enterprise Asset Management System
Gaps Addressed	• Asset Information is inconsistent with Eden (Finance) Fixed Assets - No Integration Between ERP and Cartegraph System • Detailed Inventory Process Not Utilized • Parks Maintenance does not utilize Cartegraph • Fleet does not use RTA for inventory management
Action Steps	• Develop plan and timeline to add all city assets in shared GIS database • Communicate the plan to all Department Directors • Make Department Directors accountable for accuracy of relevant asset information in GIS database • Integrate ERP and other enterprise IT systems with GIS database • Reconcile and update asset data in GIS database with that in Eden • Eliminate asset data from Eden • Make Department Directors accountable for using Cartegraph to track all activities on assets • Use Cartegraph as the single repository for all asset related information
Resources	• GIS Manager • Relevant City staff • Asset gathering assistance – interns or vendor
Stakeholders	• All city staff
Prerequisites	• Consolidation of GIS and AutoCAD databases • City-wide asset condition assessment
Estimated Cost	• Staff time • License costs for Cartegraph • Intern/vendor costs for initial asset gathering and input • Additional mobile hardware for expanded field use
Impact/Comments	An Enterprise Asset Management (EAM) system is used as a single repository for all asset related data (purchase date, useful life, depreciation, work performed, etc.). This system, in coordination with the GIS database provides extensive asset management information. Relevant departments that maintain assets record all activities on assets through work orders generated in this system. ERP system is seamlessly integrated with the Enterprise Asset Management System to track process efficiency and asset related reporting.

Recommendation	11. Use Cartegraph as an Enterprise Asset Management System
	The EAM is mobile enabled to allow field workers to receive, complete and track work orders seamlessly. Work order information submitted in the field is updated in real time with the EAM. The EAM is used in an inventory management capacity (parts attached to relevant work orders, reorder points, etc.) and real time information is maintained on inventory utilized for each work order and for the maintenance of each asset. Supports Council Goal 2 – Fiscal Discipline Supports Council Goal 6 – Well Maintained Infrastructure

Recommendation	12. Implement New Financial ERP System (Including Utility Billing and HRIS)
Gaps Addressed	• Manual Workarounds for Payroll, Utility Billing, HR and Accounts Payables Processes • Lack of Integration with Asset Management System • Eden not used by Departments outside Finance for Budgeting and Reporting
Action Steps	• Perform detailed needs assessment for an ERP system • Scan the market for available ERP systems • Ensure ERP system conforms to the Enterprise Architecture • Perform cost/benefit analysis of each ERP system and select system • Develop plan and timeline to implement the ERP system • Communicate the plan to all department directors • Procure and Implement selected ERP system • Integrate ERP and other relevant enterprise IT systems with GIS database • If applicable, conduct training to relevant city staff on a "train the trainer" method • Roll out the new ERP system to all users
Resources	• IS Manager • External Consultant (needs assessment and implementation assistance) • Department-level Project Champions
Stakeholders	• IS Staff • All city staff (especially Finance/HR/Public Works – Utilities)
Prerequisites	• Hire 1 full time IT Assistant • Develop IT Policies, including Enterprise Architecture plan
Estimated Cost	• $1,000,000 - $1,200,000 plus annual maintenance fees (~$100,000)
Impact/Comments	An Enterprise Resource Planning (ERP) system is used as a single repository for all information regarding the city's business operations. The ERP system provides seamless access to all relevant users based on roles and responsibilities to track preset operational metrics real-time. The ERP system automates common business processes such as accounts receivable, accounts payable, budgeting etc. to improve efficiency and is integrated with other enterprise systems to have relevant data across departments (HR, Payroll, Inventory control, Asset Management, Utility Billing, etc.) The ERP system is accessible remotely (desktop and mobile) for appropriate users. Supports Council Goal 2 – Fiscal Discipline

Recommendation	13. Implement Laserfiche as City Wide Electronic Document Management System
Gaps Addressed	No City-wide Electronic Content/Document Management System
Action Steps	• Develop an inventory of business processes used across the city • Identify the documents used in each business process and how the documents and related data flows through the processes • Identify the different IT systems used across each of the business processes • Identify integration needs between Laserfiche and other IT systems to ensure smooth data and document flow through the process • Prioritize integration between Laserfiche and other IT systems based on business needs and cost/benefit analysis • Integrate Laserfiche with other IT systems • Fine tune configuration and workflows as necessary
Resources	• IS Department • Implementation Consultant • City Recorder • Department-level Project Champions
Stakeholders	• All City Departments
Prerequisites	• Successful roll out of Laserfiche to Finance Department • Hire 1 Full Time IT Assistant
Estimated Cost	• Staff time • Laserfiche licenses • Implementation Consultant costs
Impact/Comments	The City uses Laserfiche for its document management needs along with facility for electronic review, update and approval of documents through workflows. The document management tool stores metadata about documents as well as audit trail of activities on the documents to enable easy search and retrieval operation. City uses web based tools for accessing documents and picture files that are appropriately tagged for easy retrieval.

Recommendation	14. Implement Integrated Land Management System
Gaps Addressed	• Paper based Inspection Processes • Inaccurate Land Parcel Information – not Integrated with GIS • Eden IVR, Online and Mobile Systems are Inadequate
Action Steps	• Perform detailed needs assessment for a comprehensive land management system • Scan the market for available solutions • Compare the available features of the solutions with needs of the city • Ensure that the chosen solution integrates with ERP and other enterprise IT systems • Perform cost/benefit analysis of each solution • Develop plan and timeline to implement the solution • Communicate the plan to all relevant department directors • Procure and Implement selected solution • Conduct training to relevant city staff on a "train the trainer" method • Roll out the new solution to all users
Resources	• GIS Manager • IS Manager • Relevant City staff • Implementation Consultant
Stakeholders	• All city staff
Prerequisites	• Consolidation of GIS and AutoCAD databases • Hire 1 full time IT Assistant • Development of Enterprise Architecture Standards
Estimated Cost	• Staff time • Land Management System Licenses
Impact/Comments	The City uses a Comprehensive Land Management system that streamlines all actions based on parcels including permits, inspections, investigations, reviews, zoning, project plans, code enforcement, etc. The land management system is built on a GIS platform so that any changes to the property information in the City's GIS system are automatically up to date in the land management system. This system is also integrated with the Financial ERP and Customer Database to provide a single view of the customer and track code conformance over a period of time. The land management system is mobile enabled to allow field workers to compile inspection reports remotely, including a template based document generation system to speed completion of inspection reports

Recommendation	14. Implement Integrated Land Management System
	in the field. The land management system utilizes an automated workflow to route items between staff both within and across departments for assignment, review, notification and approval. It also includes timers and ticklers to keep projects flowing and ensure that all appropriate items are tracked, notified on, and completed – including long term land use actions, agreements, and conditions. Finally, the land management system includes a modern web interface that provides customers with a fast and easy way to schedule inspections and pay for permits online. The web interface integrates with the City's customer portal and single merchant account for payment processing and customer service. Supports Council Goal 11 – Economic Development

Recommendation	15. Promote Use of GIS as an Organizational Priority
Gaps Addressed	• Duplicative GIS and CAD Databases • No Automated Integration with Utility Billing and Permitting Systems • Outdated, Inadequate Self-Service Tools
Action Steps	• Consolidate GIS and AutoCAD databases • Conduct customer needs assessment to determine self-service GIS tool and data needs • Acquire and implement GIS self-service tools • Train users on self-service tools
Resources	• IS Manager • GIS Manager • Engineering Staff
Stakeholders	• All city staff • Public
Prerequisites	• Development of Enterprise Architecture Standards
Estimated Cost	• Staff time • Cost of GIS Self Service Tools (~$40,000)
Impact/Comments	The city has developed a robust database of GIS data for major assets, land use and accompanying attributes and provides three interfaces (internal and external version of Wilsonville Maps and internal use of Arc view) to access the GIS data. The city also separately maintains a different database with similar information for use with AutoCAD. A single, authoritative, GIS database replaces the existing multiple databases and new enterprise permitting and utility billing applications fully integrate with GIS for parcel and addressing information – without manual processing. New web based self-service GIS tools built on current technology offer faster performance, greater flexibility, and enhanced visual appeal, which leads to GIS staff spending more time on GIS infrastructure, data updates, and training and less time making maps. Supports Council Goal 6 – Well Maintained Infrastructure Supports Council Goal 9 – Multi-Modal Transportation Network

Recommendation	16. Combine Payment Processing Systems and Merchant Accounts
Gaps Addressed	• Multiple merchant Accounts for City Web Sites and related payment processes • No single sign-on for online payments and transactions for customers
Action Steps	• Conduct a needs assessment for citizen portal system • Develop a technical specification of applications, points of integration, and functionality for portal based, in part, on results of needs assessment • Identify single payment processing system and merchant account to meet the requirements or find a web integration vendor to develop a citizen portal
Resources	• IS Manager • Finance Department • Relevant City staff • External payment portal vendor and/or integrator • Current web site vendor (CivicPlus)
Stakeholders	• Finance department staff • IS Department • City residents
Prerequisites	• Consolidate City web sites
Estimated Cost	• Staff time • Cost of new payment processing system and merchant account (TBD)
Impact/Comments	The payment process for different websites are streamlined and consolidated to achieve cost efficiency, better user interface and better integration with other enterprise systems (such as financial ERP, Land Management, CRM, etc.). Supports Council Goal 8 – Welcoming, Engaged, & Satisfied Residents

Recommendation	17. Implement Enhanced Interactive Voice Response (IVR) Solution
Gaps Addressed	Cumbersome IVR based payment process and unfriendly system
Action Steps	• Perform detailed needs assessment for an IVR system across all City departments • Scan the market for available IVR systems • Compare the available features of the IVR systems with needs of the city • Select an IVR system • Develop plan and timeline to implement the IVR system • Integrate IVR with ERP and other relevant enterprise IT systems • Roll out new IVR system and publicize to the Citizens
Resources	• IS Department • Building Department • Utility Billing
Stakeholders	• IS Department • Building Department • Utility Billing • Contractors/Developers • Utility Customers
Prerequisites	• Implementation of new ERP (including HR and Utility Billing modules) and Land Management systems • Consolidation of payment processing and merchant accounts
Estimated Cost	• Staff time • Cost of IVR system
Impact/Comments	An enhanced and integrated IVR solution allows the City to provide an option to the Citizens to communicate with the City via an automated system, obtain status information, make payments over the phone, etc. The City provides a user-friendly, robust IVR system that is integrated with different enterprise systems (such as financial ERP, CRM, Asset Management, Utility Billing, Permitting, etc.). Supports Council Goal 8 – Welcoming, Engaged, & Satisfied Residents

Recommendation	18. Implement Email Archiving and E-Discovery Solution
Gap Addressed	• Space Limitations for Email and Attachment Size Limits when Sending Large Files • No Email Archival or E-Discovery System
Action Steps	• Obtain required equipment • Create implementation schedule • Determine archiving Estimated Timelines based on Records Retention Schedule for the State of Oregon • Prepare environment for implementation • Train management and end users on use of system • Incorporate email archiving into a Disaster Recovery Plan • Go Live with Email Archiving system
Resources	• IS Department • Legal Department • City Recorder
Stakeholders	• All City staff
Prerequisite	• Upgrade Microsoft Exchange Server or Migrate to Cloud Based Email System • Obtain clarification on email retention policies from Legal Department
Estimated Cost	~$100,000 plus annual maintenance costs
Impact/Comments	The installation of an archiving system will provide a means for migrating email and PST files. In addition, email archiving will reduce the server requirements of the current system. Once policies are established for mailboxes, emails and other Microsoft Outlook (or cloud based email) data will automatically be archived on a separate server. An additional consideration of archiving is the ability to provide legal discovery (eDiscovery module), which will enable faster search and retrieval of emails, calendar items, contact list, etc. across the organization for legal discovery purposes. Some advanced systems can archive and simultaneously search across multiple social media accounts as well.

Recommendation	19. Implement Project Management System
Gaps Addressed	No City-wide Project Management Tool or Formal Processes
Action Steps	• Establish City-wide project management standards and policies • Identify and implement project management tool • Train staff on project management tool and processes
Resources	• IS Department • Executive Team
Stakeholders	• All City staff
Prerequisites	• Develop IT Policies and Procedures • Hire 1 full time IT Assistant
Estimated Cost	• Staff time • Cost of Project Management tool (Cloud based systems range from $7.99 per user per month to $100 per user one time fees. On premise systems range from $45+ per user in one time fees plus server costs.)
Impact/Comments	The City uses a standard process of documenting and managing projects across all departments of the city. Relevant departments use standard project management software to proactively track and manage the budget and schedule of projects. The data in project management software is in sync with time tracking system to accurately measure variances. Data in project management software is kept updated and historical data is used to improve project planning continuously.

Recommendation	20. Implement Integrated Time Tracking and Payroll System
Gaps Addressed	• No Electronic Time Tracking System • Heavy Reliance on Spreadsheets
Action Steps	• Conduct needs assessment with Finance, HR, and relevant staff to determine time tracking needs and requirements • Roll out Replicon or similar system to all relevant City staff • If Replicon is used to track time, ensure that the chosen ERP system integrates with Replicon to exchange data electronically • Configure approval workflows for time reporting • Conduct training on use of time reporting system
Resources	• IS Staff • Payroll
Stakeholders	• All City staff
Prerequisites	• None
Estimated Cost	• Replicon (or similar) Licenses (~ $10/user/month) • ERP Integration Costs - TBD • Staff time
Impact/Comments	Time tracking software is used by all employees of the City to report time spent on defined and undefined activities at regular intervals. Time tracking software keeps track of the time worked by individual employees. The ERP system automatically reconciles and balances benefits accounts. The time tracking system is integrated with the Human Resource Management Information System (HRIS) and ERP system to automate the payroll process.

Recommendation	21. Implement a Collaboration System (Cloud Based?)
Gap Addressed	• No project management system • Size limitations on email attachments and shared drive storage
Action Steps	• Develop new process for file sharing and collaboration • Identify collaboration systems in the market – consider cloud based • Select appropriate system based on City's collaboration needs • Implement system and processes for collaboration • Conduct training and roll out to all relevant staff
Resources	• IS Department
Stakeholders	• Relevant City staff
Prerequisites	• Develop Enterprise Architecture Standards
Estimated Cost	• Cloud-based systems range in cost from free, basic accounts for small teams with tools such as Slack (www.slack.com) to $8 or more per user per month for enhanced capabilities (searchable archive, unlimited integrations, custom retention policies, etc.) • On premise systems have one time licensing fees and server costs (TBD)
Impact/Comments	A cloud based collaboration system, working in conjunction with a project management tool will allow City users to cut back on or eliminate sending emails back and forth with attachments, thus saving valuable on premise individual mailbox and email server space.

Recommendation	22. Implement Integrated Security Access System
Gaps Addressed	Multiple instances of facility security access systems
Action Steps	• Identify replacement or upgrade for the Keri security access system • Follow City's procurement processes to acquire new system • Implement consolidated system City-wide
Resources	• IS Staff • Facilities Division
Stakeholders	• All City staff
Prerequisites	• None
Estimated Cost	• Staff time • Cost of Security Access System (TBD)
Impact/Comments	The IS department streamlines the key-card access management process to allow centralized administration and oversight of physical access to all facilities and secured areas. Security systems are managed as part of remote access and control systems, building on the City's Internet of Things (IoT) infrastructure.

3.4   Long Term Recommendations (3-5 years)

Recommendation	23. Implement Integrated Customer Database and Portal
Gaps Addressed	• Customers Forced to Use Multiple Payment Services Online • No definitive "single view" of the customer • No single "account management" process for customers
Action Steps	• Perform detailed needs assessment customer information • Evaluate Customer Relationship Management functionality of the chosen ERP system o If the functionality provided by ERP is insufficient, scan the market for available solutions • Ensure that the chosen solution integrates with the ERP system and other enterprise IT systems • Develop plan and timeline to implement the solution • Communicate the plan to all relevant department directors • Procure and Implement selected solution • Integrate customer database and portal with City Web site
Resources	• IS Staff
Stakeholders	• All City Staff • Customers
Prerequisites	• Consolidate City Web sites • Consolidate Payment Processing and Merchant Accounts • Implement New ERP System
Estimated Cost	• Staff time • Cost of ERP system and Web site integration
Impact/Comments	The city should use a comprehensive customer database to serve as the single repository for all customer information. The database should be integrated with Land Management system, and the City should capture information about customers at different points of interaction, such as registration for classes or events, to build a robust database. The city should use the information in the database to direct multi-channel communications to increase access to information and services, improve opportunities for engagement and offer members of the community a choice in how they receive information from the City. Additionally, a single Customer Portal, integrated with the City's web site should allow the customer to log in and access various City services and make payments and conduct transactions seamlessly.

Recommendation	24. Implement a Business Intelligence (BI) Tool
Gaps Addressed	• No Dynamic Tool for Real Time Ad-Hoc Reporting • No Dashboard Tool to Support Executive Decision making
Action Steps	• Perform detailed needs assessment for reporting needs of all stakeholders of the city • Evaluate reporting feature of the chosen ERP system o If the reports provided by ERP is insufficient, evaluate data needs for required reporting and dashboards • Create a plan to consolidate relevant data from different systems • Scan the market for available solutions • Compare the available features of the solutions with needs of the city • Ensure that the chosen solution integrates with consolidated data • Perform cost/benefit analysis of each solution • Select a BI solution • Develop plan and timeline to implement the solution • Procure and Implement selected solution • Conduct training to relevant city staff on a "train the trainer" method • Roll out the new solution to all users
Resources	• IS Staff • Executive Team
Stakeholders	• Executive Team
Prerequisites	• Implementation of new ERP System • Implementation of new Land Management System • Use Cartegraph as City's Enterprise Asset Management System
Estimated Cost	• $175,000 - $250,000 plus 20% annual maintenance
Impact/Comments	The City uses a robust Business Intelligence (BI) tool to provide historical, current, and predictive views of business operations enabling users to analyze data from different perspectives to make better business decisions. The BI solution provides common functions such as reporting, analytics, data mining, business performance management and benchmarking. The BI solution also provides role-based access to staff members to visualize operational data in real time and enables decision-making based on multi-dimensional data. It should enable the city to optimize resource usage by effective use of predictive analytics. Supports Council Goal 2 – Fiscal Discipline

Recommendation	25. Implement a Cloud Based VoIP Telephone System
Gaps Addressed	Aging phone network with insufficient reporting capability and an error prone and unfriendly IVR system
Action Steps	• Develop plan for rollout • Conduct cost/benefit analysis on "on-premise" v/s cloud based VoIP telephone system • Establish emergency 911 connection if network is down • Ensure Quality of Service (QOS) for voice traffic over data traffic • Educate end user on phone operations • Rollout new phone according to predetermined schedule
Resources	• IS Department
Stakeholders	• All City staff • City residents and customers • City Dispatch and call takers
Prerequisites	• Adequate funding built up through annual set-aside
Estimated Cost	• Staff time • Cost of VoIP system ($100,000 - $200,000, depending on number of ports and connections) and ongoing maintenance – cloud-based system costs TBD
Impact/Comments	The City uses a user -friendly Voice over Internet Protocol (VoIP) based unified communication system with detailed reporting capability. The City also provides a user-friendly, robust IVR system that is integrated with different enterprise systems (such as financial ERP, CRM, Asset Management, Utility Billing, Permitting, etc.).

Recommendation	26. Implement Virtual Desktops and Enhanced VPN Solution
Gaps Addressed	Lack of Virtualized Desktop Environment
Action Steps	• Continue to virtualize the City's network infrastructure • Move enterprise applications to cloud based Software as a Service (SaaS) model where applicable • Develop plan for desktop virtualization • Install appropriate network hardware and software to facilitate desktop virtualization • Roll out virtualized desktops City-wide
Resources	• IS Department
Stakeholders	• All City staff
Prerequisites	• Virtualized network infrastructure
Estimated Cost	• Staff time • Cost of network upgrades • Virtual licensing (Office, Windows, Virtualization SW Licenses, etc.) – onetime costs ~$250,000 plus ongoing maintenance costs
Impact/Comments	The City expands its virtual desktop infrastructure to all standard desktop configurations for its staff while providing sufficient computing power as required by staff members. Virtual desktop infrastructure enables more robust remote access functionality, allowing the City to expand its remote access functionality and policies.

Recommendation	27. Modernize Fare Collection System at SMART
Gaps Addressed	• Bus Passes are not Available at the Transit Center – only online (physically mailed) and at City Hall • Bus fare collection and reconciliation with Financial ERP is a manual process
Action Steps	• Define changes to fare collection policy and process • Identify technology to be used (mobile apps, magnetic or RFID card based, etc.) • Procure and implement selected technologies • Ensure integration with Financial ERP and other relevant enterprise systems
Resources	• SMART Staff • IS Department
Stakeholders	• SMART Staff • Finance Staff • SMART Riders and Wilsonville Employers
Prerequisites	• Re-definition of fare collection processes and policies
Estimated Cost	• $250,000 - $500,000 (depending on retrofitting required with existing fare box system)
Impact/Comments	The City's Finance Department receives online pass payment notifications via e-mail and physically mail the paper passes to customers. They also receive the fare boxes from SMART daily, and two Finance staff members manually empty, count, and track the money from the boxes. The percentage of transit revenue from fares is low and the processing and accounting time for the fare collection process is high. The City features automated kiosks at the transit center and major bus stops to sell monthly passes. The City also provides a cashless magnetic card based ticketing and/or mobile app based system for riders.

Recommendation	**28. Consider Implementing Automated Meter Reading (AMR) Infrastructure**
Gaps Addressed	• Lack of Automated Meter Reading infrastructure for real time view of city-wide water usage • No facility for rapid leak detection • Difficult for customers to monitor water usage
Action Steps	• Conduct study for assessing the feasibility of an AMR system • If feasible financially and operationally, implement AMR system
Resources	• IS Staff • Utilities Billing Staff • Utility Management Contractors
Stakeholders	• Relevant City staff • Citizens
Prerequisites	• Implementation of a new ERP system that includes a robust Utility Billing module
Estimated Cost	• TBD
Impact/Comments	An Automated Meter Reading (AMR) infrastructure may allow the City to collect meter readings for its 5,000 utility billing accounts automatically, thereby eliminating the current manual, contracted process. It can provide utility billing staff with real time water usage and meter reads to eliminate dispatching crews to perform emergency and one-time, customer requested reads. It can also provide real time usage trends to assist in rapid leak detection. Detecting leaks conserves water and can save both the City and the customer money and frustration. Supports Council Goal 6 – Well Maintained Infrastructure

3.5   Ongoing Recommendations

Recommendation	29. Continue Standardizing IT Environment
Gaps Addressed	• No Integrations between Major Enterprise Applications • No Formally Documented Standardization Policy
Action Steps	• Develop Formal IT Standardization Policy • Continue Standardization of IT Environment, but Include Major Enterprise Applications in Standardization • Virtualize IT Environment, Including Virtual Desktops
Resources	• IS Staff
Stakeholders	• IS Staff • All City Staff
Prerequisites	• Develop Enterprise Architecture Standards
Estimated Cost	• IS Staff time
Impact/Comments	Continue current level of standardization of IT Environment and focus future efforts on standardization of business enterprise software systems. Wherever possible, data duplication should be eliminated across the organization through consolidation and integration of overlapping systems and system functions.

Recommendation	30. Establish Periodic IT Skill Gap Review Process
Gaps Addressed	• No Formal Skill Gap Management Process • No Succession Planning • No Formal Hiring and Retention Plan
Action Steps	• Develop IT Skill Gap management process • Communicate process with IS Staff • Implement and regularly monitor skill gap review process
Resources	• IS Staff • Human Resources Staff
Stakeholders	• IS Staff
Prerequisites	• None
Estimated Cost	• Internal
Impact/Comments	IT skill gap management process is developed. Cross-functional training is provided among IT personnel either through formal or through informal channels to improve the capacity of the team. Effective documented plan is created to hire and retain IT support personnel. Additionally, effective succession plan should be developed along with creation of a standard operating procedure for each role.

Recommendation	31. Continue Enhancing Audio/Video and WilsonvilleTV Infrastructure
Gaps Addressed	• Lack of clarification of AV control room support roles. • Incomplete 5-year rolling PEG replacement plan. • Not all City facilities have video conferencing or AppleTV functionality at their locations.
Action Steps	• Clarify Support Roles between IS and City's Communications Staff • Implement Video Conferencing Facilities City-wide • Implement 5 year Rolling Replacement Plan for AV Resources • Use Periscope or other Live Broadcast Tools with City's web site • Consider using a Tool for Interaction between Citizens and Council during Council Meetings • Consider Maximizing Utilization of AV Equipment to Offer Additional Video Content for the Public
Resources	• IS Manager • Communications Manager
Stakeholders	• IS Department • Communications Department • All City Staff • Viewing Public
Prerequisites	• None
Estimated Cost	• Internal
Impact/Comments	Clarified roles surrounding the AV control room support removes staff confusion and a rolling 5-year replacement/enhancement plan for AV resources is completed, vetted with stakeholders and put in place. All major City facilities have video conferencing capabilities in their main conference room areas, as well as AppleTV functionality for interfacing with staff iPads and iPhones. Supports Council Goal 8 – Welcoming, Engaged, & Satisfied Residents

Recommendation	32. Implement Municipal Fiber Program
Gaps Addressed	• Enhanced utilization of City fiber asset
Action Steps	• Complete municipal fiber "ring" for fiber fault tolerance • Complete build out of fiber to City facilities, telemetry locations, parks, security infrastructure, and transportation systems • Implement fiber program adopted in Fiber Business Plan
Resources	• IS Manager • Others as defined by Fiber Business Plan
Stakeholders	• All city staff • Business Community • Residents
Prerequisites	• Fiber Business Plan
Estimated Cost	• Staff time – Internal • Annual set-aside for continuing fiber build for City connections - $55k/year • TBD – See Fiber Business Plan
Impact/Comments	Depending on the recommendations set forth in the adopted Fiber Business Plan, the fiber program has the potential to provide significant positive economic development benefits to the City, enhance the competition, reduce costs, improve telecommunications and internet services for the Wilsonville business community, and potentially even offer high-speed internet access at reduced rates to Wilsonville residents. At the least, continued development of the fiber asset for City purposes will reduce long term telecommunications costs for the organization, enable enhanced connectivity and functionality in intelligent transportation systems throughout town, provide fast, reliable connectivity for telemetry monitoring of critical City utility infrastructure, and offer interconnection for data and service sharing between the City and other local government agencies. Supports Council Goal 6 – Well Maintained Infrastructure Supports Council Goal 7 – Community Amenities & Recreation Supports Council Goal 11– Economic Development

4 Appendices

4.1 City of Wilsonville - Information Technology Strategic Plan - Internal Stakeholders Survey

City of Wilsonville has engaged Mindboard Inc. to conduct an Information Technology (IT) needs assessment and to develop an Information Systems (IS) Strategic Plan. Your input through this survey is critical towards understanding the City's current IT environment, and in the identification and evaluation of viable IS strategies for the next five (5) years.   Please take a moment between now and January 15, 2016 to complete this survey. We estimate that it will take approximately 20 to 25 minutes of your time. Your answers will be completely anonymous.

Q1. Please indicate which of the following you are:

❍   Management employee (1)
❍   Non-management employee (2)

Q2. Please choose your Department:

❍   Administration/Legal/HR (1)
❍   Community Development (2)
❍   Finance (3)
❍   Library (4)
❍   Parks & Recreation (5)
❍   Public Works (6)
❍   Transit / Fleet (7)

Q3. Please indicate your level of agreement with the following statements:

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
I believe that the Information Systems (IS) Department is very crucial to our business (1)	❍	❍	❍	❍	❍
I believe that the Information Systems (IS) Department is properly equipped (resources, skills and training, etc.) to provide services (2)	❍	❍	❍	❍	❍

Q4. Please indicate your level of agreement with the following statements:

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
I have access to the appropriate IT hardware to perform my job (3)	❍	❍	❍	❍	❍
I have access to the appropriate IT software to perform my job (4)	❍	❍	❍	❍	❍
I have at least basic skills in MS office, email, internet etc. (5)	❍	❍	❍	❍	❍
I have the skills necessary to use existing IT systems and applications (6)	❍	❍	❍	❍	❍
I have been provided with the necessary training to use existing IT systems and applications (7)	❍	❍	❍	❍	❍

Q5. What are the most common IT related problems you encounter while performing your day to day job functions?

Q6. How can they be resolved

Q7. What type of interaction do you have with the Information Systems (IS) Department? Select all that apply.

❑   I contact the help desk when issues arise (1)
❑   I work with IS on department technology projects and enhancement requests (2)
❑   I work with IS on hardware / equipment requests (3)
❑   I work with IS on other software requests (4)
❑   I do not have direct contact with IS, all issues are brought to my supervisor's attention (5)
❑   Other (Specify below) (6) _____

Q8. How often do you contact Information Systems (IS) Department for service or support?

- Once or twice a week (1)
- Once or twice a month (2)
- Once or twice a quarter (3)
- Once or twice a year (4)
- Never (5)

Q9. How do you primarily contact Information Systems (IS) for support?

- Phone (1)
- In person (2)
- Direct email to an IS staff member (3)
- Send email to helpdesk@ci.wilsonville.or.us so a ticket is created (4)

Q10. If you have used the helpdesk ticket system (helpdesk@ci.wilsonville.or.us), has the response to your request:

- Improved (1)
- Stayed the same (2)
- Taken longer (3)

Q11. Please rate the service you have received from the Information Systems (IS) Department:

	Very Satisfied (14)	Satisfied (15)	Neutral (16)	Dissatisfied (17)	Very Dissatisfied (18)
Ease of communication with Information Systems (IS) Deptartment (1)	❍	❍	❍	❍	❍
Timeliness of the initial response to your inquiry (2)	❍	❍	❍	❍	❍
Ability to solve problems (3)	❍	❍	❍	❍	❍
Timeliness of problem resolution (4)	❍	❍	❍	❍	❍
IS Staff knowledge and technical expertise (5)	❍	❍	❍	❍	❍
Courtesy and professionalism of IS staff (6)	❍	❍	❍	❍	❍
Range of services/support provided (7)	❍	❍	❍	❍	❍

Q12. Please indicate your level of agreement with the following statements:

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)
I am happy with the level of IS support I received (1)	❍	❍	❍	❍	❍
Information Systems (IS) Department provides services that are valuable to me (2)	❍	❍	❍	❍	❍
Information Systems (IS) Department helps me to use technology effectively (3)	❍	❍	❍	❍	❍

Q13. In your opinion, what are the Information Systems (IS) Department's three most important strengths?

Q14. In your opinion, what are the Information Systems (IS) Department's three most critical weaknesses?

Q15. In your opinion what are the three most important challenges (internal and external) faced by the Information Systems (IS) Department?

Q16. On average, how often do you contact GIS for service or support?

- ❍ Once a week (1)
- ❍ Once a month (2)
- ❍ Once a quarter (3)
- ❍ Once a year (4)
- ❍ Never (5)

Q17. If you do not ever contact GIS, why?

Q18. Please rate your satisfaction with the following from the GIS Department:

	Very Satisfied (14)	Satisfied (15)	Neutral (16)	Dissatisfied (17)	Very Dissatisfied (18)
Ease of communication with GIS Department (1)	❍	❍	❍	❍	❍
Timeliness of the initial response to your inquiry (2)	❍	❍	❍	❍	❍
GIS Staff knowledge and technical expertise (3)	❍	❍	❍	❍	❍
Courtesy and professionalism of GIS staff (4)	❍	❍	❍	❍	❍
Range of services/support provided (5)	❍	❍	❍	❍	❍
The final product or service provided (6)	❍	❍	❍	❍	❍
Training provided on GIS tools (7)	❍	❍	❍	❍	❍

Q19. Please indicate your level of agreement with the following statements:

	Strongly Agree (6)	Agree (7)	Neither Agree nor Disagree (8)	Disagree (9)	Strongly Disagree (10)	N/A (11)
My Computer/Laptop is adequate (3)	❍	❍	❍	❍	❍	❍
My Department Printer/Copier/Scanner is adequate (4)	❍	❍	❍	❍	❍	❍
My Department Fax is adequate (5)	❍	❍	❍	❍	❍	❍
My Desk Phone is adequate (6)	❍	❍	❍	❍	❍	❍
My City Cell Phone is adequate (7)	❍	❍	❍	❍	❍	❍

Q20. Is there additional equipment you would like to see in the future?

Q21. Please indicate your level of agreement with the following statements:

	Strongly Agree (1)	Agree (2)	Neither Agree nor Disagree (3)	Disagree (4)	Strongly Disagree (5)	N/A (6)
The City needs to improve/update its enterprise applications (e.g. Eden, GIS, etc.) (1)	❍	❍	❍	❍	❍	❍
The City needs to upgrade its basic desktop applications (e.g. MS Office, Windows, etc.) (2)	❍	❍	❍	❍	❍	❍
The City has a need to improve/update its IT infrastructure (eg. servers, routers etc.) (3)	❍	❍	❍	❍	❍	❍
The hardware (e.g. printers, scanners, computers, copiers) used by the City are up -to -date (4)	❍	❍	❍	❍	❍	❍

Q22. Please select any and all of the systems below that you would like to see improvements or enhancements in, in order to better perform your job:

- ❑ Activenet (1)
- ❑ CowMaps (2)
- ❑ Cartegraph (3)
- ❑ CRM/Ask the City (4)
- ❑ Eden AP (5)
- ❑ Eden Financials (GL/Budgeting) (6)
- ❑ Eden HR (7)
- ❑ Eden Payroll (8)
- ❑ Eden Permitting (9)
- ❑ Eden Project Accounting (10)
- ❑ Eden Purchasing (11)
- ❑ Eden Utility Billing (12)
- ❑ Incode Municipal Court (13)
- ❑ Laserfiche (14)
- ❑ NeoGov (15)
- ❑ Paraplan/Spot (Transit System) (16)
- ❑ Replicon (Time tracking) (18)
- ❑ RTA (Fleet) (19)
- ❑ Wonderware (SCADA Telemetry) (20)
- ❑ None of the above (21)

Q23. Please provide some general comments on enhancements or improvements you would like to see to the systems you selected.

Q24. How satisfied are you with the Email system?

	Very Satisfied (14)	Satisfied (15)	Neutral (16)	Dissatisfied (17)	Very Dissatisfied (18)
Email Uptime (availability of email during working hours) (1)	○	○	○	○	○
Email Storage Space (amount of space for active messages) (2)	○	○	○	○	○
Email Speed (ability to send and receive quickly) (3)	○	○	○	○	○

Q25. How satisfied are you with the Network?

	Very Satisfied (14)	Satisfied (15)	Neutral (16)	Dissatisfied (17)	Very Dissatisfied (18)
Network Uptime (availability of N drive during working hours) (1)	○	○	○	○	○
Network File Storage Space (enough room on N drive for your files) (2)	○	○	○	○	○
Network Speed (ability to access N drive files quickly) (3)	○	○	○	○	○

Q26. How satisfied are you with the City Wireless Network? (if applicable at your location)

	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Dissatisfied (4)	Very Dissatisfied (5)	N/A (6)
Uptime (availability of the wireless network) (1)	❍	❍	❍	❍	❍	❍
Speed (2)	❍	❍	❍	❍	❍	❍
Signal Strength (3)	❍	❍	❍	❍	❍	❍
Security/Access (4)	❍	❍	❍	❍	❍	❍

Q27. Please provide specific comments related to Email, Network, and Wireless:

Q28. How familiar are you with the City's Intranet (Staff Zone)?

- ❍ Use it all the time (1)
- ❍ Familiar (2)
- ❍ Somewhat familiar (3)
- ❍ Somewhat unfamiliar (4)
- ❍ Unfamiliar (5)

Q29. Please provide suggestions for improvements or additions to the Staff Zone:

Q30. On average, how often do you use the GIS provided CowMaps.com?

- ❍ Once a week or more (1)
- ❍ Once or twice a month (2)
- ❍ Once or twice a quarter (3)
- ❍ Once or twice a year (4)
- ❍ Never (5)

Q31. What improvements could be made to CowMaps.com to make it work better for you?

Q32. How familiar are you with the "Ask the City" mobile app?

- ○ Use it all the time (1)
- ○ Familiar (2)
- ○ Somewhat familiar (3)
- ○ Somewhat unfamiliar (4)
- ○ Unfamiliar (5)

Q33. If you have any suggestions for improvements or additions to "Ask the City" mobile app, please provide them below:

Q34. Please rate the following questions based on how satisfied you are with respect to the City's website (www.ci.wilsonville.or.us):

	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Dissatisfied (4)	Very Dissatisfied (5)
How satisfied are you with the content of the City's website? (1)	○	○	○	○	○
How satisfied are you with the timeliness of the information provided on the City's website? (3)	○	○	○	○	○
How satisfied are you with the ease of finding information on the City's website? (4)	○	○	○	○	○
How satisfied are you with your Department's ability to post content to the City's website? (5)	○	○	○	○	○

Q35. Besides the main City website, the City provides several department-specific sites. Please rate your level of satisfaction with each site you have recently visited:

	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Dissatisfied (4)	Very Dissatisfied (5)	N/A (6)
Economic Development (wilsonvilleecdev.com) (4)	○	○	○	○	○	○
Parks & Recreation (wilsonvilleparksandrec.com) (6)	○	○	○	○	○	○
SMART Transit (ridesmart.com) (8)	○	○	○	○	○	○
StaffZone (Intranet) (9)	○	○	○	○	○	○
Wilsonville Library (wilsonvillelibrary.org) (10)	○	○	○	○	○	○
Wilsonville Maps (wilsonvillemaps.com) (12)	○	○	○	○	○	○

Q36. Please tell us what we can do to improve the websites we provide:

Q37. Which TWO of the following channels of communication are you most likely to use to stay informed about the IT related news/projects/initiatives?

❑   Personal outreach (1)
❑   Newsletter (2)
❑   Intranet (Staff Zone) (3)
❑   Email (4)
❑   Information sessions/meetings (5)
❑   Other (Specify below) (6) _____

Q38. How satisfied are you with the Information Systems (IS) Department's ability to keep you informed about the current and future services and projects it provides?

○   Very Satisfied (14)
○   Satisfied (15)
○   Neutral (16)
○   Dissatisfied (17)
○   Very Dissatisfied (18)

Q39. Would you find it useful to have regular meetings with the Information Systems (IS) Department to receive updates on projects that IS is working on and to discuss which areas IS can focus on to help your Department improve?

○ Yes (1)
○ No (2)

Q40. How frequently would you want to meet with representatives from the Information Systems (IS) Department for updates on ongoing projects?

○ Once a week (1)
○ Once a month (2)
○ Once a quarter (3)
○ Once a year (4)
○ No set schedule - as needed (5)

Q41. Currently, major Information Systems (IS) Department projects are announced at the monthly Manager's Meeting. How effective do you perceive this to be for communicating technology projects?

○ Very Effective (1)
○ Effective (2)
○ Neither Effective nor Ineffective (3)
○ Ineffective (4)
○ Very Ineffective (5)

Q42. How do you think the Information Systems (IS) Department Manager's Meeting communications can be made more effective?

Q43. Please comment on how the overall communication from the Information Systems (IS) Department could be more effective.

Q44. Do you have regular meetings with your staff to update them on IS projects and programs or identify IT related training?

○ Yes (1)
○ No (2)

Q45. Do you have regular meetings with your supervisor to receive update on IS projects and programs or identify IT related training?

○ Yes (1)
○ No (2)

Q46. Overall, what is one thing that the Information Systems (IS) Department could do to make your job easier?

Q47. Please feel free to use the space below to provide additional general comments and feedback about City technologies and/or the Information Systems (IS) Department.

Text Response
Build our own Internet connection service
no
Overall, the city website is informative and provides a professional view of the city.
We actually have a very nice web site. As previously stated, our Landing Page has many links to key areas for information. Providing WIFI in our Parks would provide a wonderful addition for families to stay connected to their email and of course the city pages through our own App. I'm not sure of the cost but it could be phased in over time.
Don't find the aforementioned app on the Apple AppStore.
Young folks today seem to rely more on I-Pods, smart phones, and Wi-Fi that can only increase as they grow older. So, it's easy to predict future interaction with city administrators will be more & more on-line than face-to-face. Texting however is still in it's infancy, stone age technology that has to improve. The city should not invest in texting technology services. Primarily, text messages can be interpreted differently by two different people. So, texted messages are getting public employees in trouble across the country.
none
Increased WiFi (in parks, public spaces) would be a very welcome upgrade to our beautiful city!!
The City should improve engagement and outreach using social media. For example for very little money the City can reach all facebook users in Wilsonville to get out important messages and events.
Provide emergency notifications for crime, missing persons, fires, road blocks, traffic delays and real time event listings.
n/a
Several of your survey questions presumed that the indicated use was a singular occurrence and the follow-up questions only allowed for a single response, where-as allowance for multiple responses would have been more appropriate.
I think I covered it in the immediately preceding response.
Thanks for asking!
The city does a great job of communicating and making its government and services accessible online.
Google is still in the planning phase to bring their super fast fiber optic internet to the Portland area. I think the city counsel and the mayor should work very hard at having Wilsonville included as one of the cities Google brings their services to. With the current options of Comcast and Frontier Fios in the city its not much competition. We need more competition to help drive down prices and to improve customer services. Comcast doesn't really have to try in Wilsonville. They pretty much dominate here and have zero incentive to improve in anyway.
?
There should be online interaction by people from their homes whenever a live meeting takes place at city hall.

4.2 City of Wilsonville - Information Technology Strategic Plan - Public Outreach Survey

The City wants to know how we can better use technology to enhance our service to those who live and work in Wilsonville. The following survey will help us to understand how we can improve the online services we currently provide, offer new technologies to enable more civic engagement, and use technology to create a more efficient, convenient, and transparent government for all. Your thoughts, concerns, ideas, and vision, provided in this survey, will be utilized in the formation of a comprehensive Information Technology Strategic Plan that will guide the City's selection, implementation and use of technology for the next 3 to 5 years. Please take a moment between now and January 31, 2016 to give your feedback. Your answers are completely anonymous and incredibly helpful. This survey is estimated to take 15 to 20 minutes to complete.

Q1 Providing basic demographic information will help us group your opinions with others to focus our services where they can best be utilized. Please choose your age from the ranges below:

- ❍ Less than 18 Years (1)
- ❍ 18 - 24 Years (2)
- ❍ 25 - 34 (3)
- ❍ 35 - 44 Years (4)
- ❍ 45 - 54 Years (5)
- ❍ 55 - 64 Years (6)
- ❍ 65 - 74 Years (7)
- ❍ 75 Years and older (8)

Q2 Please choose the gender with which you most closely identify.

- ❍ Male (1)
- ❍ Female (2)

Q3 Please check all of the following that you have access to on a regular basis.

- ❑ Personal Computer/Laptop (1)
- ❑ Tablet (2)
- ❑ Smartphone (3G/4G/LTE etc.) (3)
- ❑ Basic cell phone (voice/text only - no data access) (4)
- ❑ High-speed home internet connection (5)
- ❑ None of the above (6)

Q4 How likely are you to use a City of Wilsonville smartphone app to receive automatic notifications from the city (such as road closures, upcoming events, etc.).

○ Very Likely (1)
○ Likely (2)
○ Undecided (3)
○ Unlikely (4)
○ Very Unlikely (5)

Q5 Of the following smartphone platforms which do you most frequently use?

○ Apple iOS (1)
○ Android (2)
○ Windows (3)
○ Other (Specify below) (4) _____

Q6 Please tell us about your Social Media experience. Which of the following social media platforms, if any, do you actively use? Select all that apply.

❑ Facebook (1)
❑ Twitter (2)
❑ YouTube (3)
❑ Instagram (4)
❑ Vine (5)
❑ Snapchat (6)
❑ Beme (7)
❑ Periscope (8)
❑ Other (Specify below) (9) _____
❑ None of the above (10)

Q7   How do you receive information about activities and initiatives from the City? Please select all that apply.

- ❑   City's website (1)
- ❑   Email/eNews (2)
- ❑   Facebook (3)
- ❑   Twitter (4)
- ❑   YouTube (5)
- ❑   Parks & Rec Activity Guide (6)
- ❑   The Boones Ferry Messenger (City Newsletter) (7)
- ❑   Wilsonville TV (8)
- ❑   Local Newspaper - Wilsonville Spokesman (9)
- ❑   Other (Specify below) (10) _____

Q8 Which of the City's social media channels do you check/interact with most?

- ❑   City Facebook (1)
- ❑   Parks Facebook (2)
- ❑   Library Facebook (3)
- ❑   Transit Facebook (4)
- ❑   City Twitter (5)
- ❑   Parks Twitter (6)
- ❑   Library Twitter (7)
- ❑   Transit Twitter (8)
- ❑   City YouTube (9)

Q9 Please choose which one of these is most important to you for receiving up-to-date City information?

- ❑   City's website (1)
- ❑   Email/eNews (2)
- ❑   Facebook (3)
- ❑   Twitter (4)
- ❑   YouTube (5)
- ❑   The Boones Ferry Messenger (City Newsletter) (6)
- ❑   Wilsonville TV (7)
- ❑   Local Newspaper - Wilsonville Spokesman (8)

Q10 How likely are you to engage in or share your opinions on community matters that are before the City Council, other city boards and commissions, or City staff?

○ Very Likely (14)
○ Likely (15)
○ Undecided (16)
○ Unlikely (17)
○ Very Unlikely (18)

Q11 In the last 12 months, about how many times, if at all, have you or other household members attended or watched (online or on television) a local public meeting?

○ 2 times a week or more (1)
○ 2-4 times a month (2)
○ Once a month or less (3)
○ Not at all (4)

Q12 Which did you do more frequently?

○ Attended a local public meeting (1)
○ Watched (online or on television) a local public meeting (2)

Q13 If City produced videos were made available online, which of the following categories would you be interested in watching? Check all that apply.

❑ Additional Boards & Commission Meetings (other than Planning Commission & Council) (1)
❑ How-To videos (Reading your meter, Making an online payment, etc.) (2)
❑ Library StoryTime (3)
❑ Community Events (Neighborhood BBQs, fun runs, festivals, etc.) (4)
❑ Home safety tips (5)
❑ Disaster planning / Emergency Preparedness (6)
❑ Parks & Recreation Classes (7)
❑ Video tour of parks (8)
❑ Other (Specify below) (9) _____

Q14 If public/community-access television production facilities, video-recording equipment and/or editing software were available to you for producing community-oriented video programs, would you be interested in utilizing them?

❍ Yes (1)
❍ No (2)

Q15 What types of productions would you be interested in creating?

Q16 Please rate the following questions based on how satisfied you are with respect to the City's website (www.ci.wilsonville.or.us).

	Very Satisfied (14)	Satisfied (15)	Neutral (16)	Dissatisfied (17)	Very Dissatisfied (18)
How satisfied are you with the content of the City's website? (1)	❍	❍	❍	❍	❍
How satisfied are you with the timeliness of the information provided on the City's website? (3)	❍	❍	❍	❍	❍
How satisfied are you with the ease of finding information on the City's website? (4)	❍	❍	❍	❍	❍

Q17 Besides the main City web site, the City provides several department specific sites. For each of the sites that you have visited in the last two (2) years, please rate your level of satisfaction.

	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Dissatisfied (4)	Very Dissatisfied (5)	Not Applicable (6)
Wilsonville Library (wilsonvillelibrary.org) (4)	❍	❍	❍	❍	❍	❍
Parks & Recreation (wilsonvilleparksandrec.com) (6)	❍	❍	❍	❍	❍	❍
SMART Transit (ridesmart.com) (8)	❍	❍	❍	❍	❍	❍
Economic Development (wilsonvilleecdev.com) (10)	❍	❍	❍	❍	❍	❍
Wilsonville Maps (wilsonvillemaps.com) (12)	❍	❍	❍	❍	❍	❍

Q18 Please tell us what we can do to improve the websites.

Q19 Have you made an online payment to the City in the last two (2) years?

❍ Yes (1)
❍ No (2)

Q20 For each of the online payment services that you have interacted with in the last two (2) years, please indicate how difficult or easy it was to use.

	Very Easy (19)	Easy (20)	Neutral (21)	Difficult (22)	Very Difficult (23)	Not Applcable (24)
Utility Bill Payment (1)	❍	❍	❍	❍	❍	❍
Bus Pass Purchase (2)	❍	❍	❍	❍	❍	❍
Traffic Court Citation Payment (3)	❍	❍	❍	❍	❍	❍
Parks & Rec Class Registration (4)	❍	❍	❍	❍	❍	❍
Library Room Reservation (5)	❍	❍	❍	❍	❍	❍
Building Permit Purchase (6)	❍	❍	❍	❍	❍	❍

Q21 Please help us to better understand the problem(s) you faced by explaining the difficulties you encountered below.

Q22 Please tell us why you do not make payments online. Check all that apply.

❑ I do not have access to a computer or internet (1)
❑ I am concerned about privacy (2)
❑ I am concerned about security (3)
❑ I prefer paper (4)
❑ Other (Specify below) (5) _____

Q23 How likely are you to make online payments to the City in the future?

○ Very Likely (14)
○ Likely (15)
○ Undecided (16)
○ Unlikely (17)
○ Very Unlikely (18)

Q24 Are there additional online payment services that you would like the City to offer?

Q25 What improvements would you like in the existing online payments for the City?

Q26 Are you aware that the City has a mobile app that can be used to make a service request or report a problem?

○ Yes (1)
○ No (2)

Q27 Have you contacted the City in the last two(2) years to request a service or report a problem?

○ Yes (1)
○ No (2)

Q28 How did you contact the city?

- ❏ Phone (1)
- ❏ In person (2)
- ❏ Mail (3)
- ❏ Email (4)
- ❏ City's website (5)
- ❏ Social media (6)
- ❏ Ask the City - GoRequest App (7)
- ❏ Other_____ (8) _____

Q29 Which City department(s) did you interact with? Please select all that apply.

- ❏ Administration (1)
- ❏ Building (2)
- ❏ Engineering (3)
- ❏ Finance (4)
- ❏ Geographic Information System (GIS) (5)
- ❏ Human Resources (6)
- ❏ Information Systems (7)
- ❏ Library (8)
- ❏ Municipal/Traffic Court (9)
- ❏ Parks & Recreation (Parks maintenance, recreation classes, etc.) (10)
- ❏ Planning (11)
- ❏ Police (12)
- ❏ Public Works (Street maintenance, stormwater, etc.) (13)
- ❏ Senior Services (14)
- ❏ SMART Transit (15)
- ❏ Utility Billing (16)

Q30 How quickly did you receive a response for your request?

- ❍ Very Fast (14)
- ❍ Fast (15)
- ❍ Neutral (16)
- ❍ Slow (17)
- ❍ Very Slow (18)

Q31 How likely are you to request a service or report a problem through online channels in the future?

- ❍ Very Likely (14)
- ❍ Likely (15)

○ Undecided (16)
○ Unlikely (17)
○ Very Unlikely (18)

Q32 What could the City do to improve the way you request a service or report a problem?

Q33 Please rate how likely you would be to use the following technology services if the City provided them.

	Very Likely (14)	Likely (15)	Undecided (16)	Unlikely (17)	Very Unlikely (18)
Online Facility Reservations & Payments (1)	○	○	○	○	○
Online tools for interacting with City Council & other Boards (2)	○	○	○	○	○
Real-time online water meter reads (3)	○	○	○	○	○
Smartphone App for electronic SMART bus passes (4)	○	○	○	○	○
Wi-Fi in the Parks (5)	○	○	○	○	○
Wi-Fi on SMART busses (6)	○	○	○	○	○
Wilsonville Online Neighborhood Crime Map (8)	○	○	○	○	○

Q34 What other technology services would you like the City to consider offering?

Q35 Please provide any additional general comments or feedback for the City regarding online/ technology services.

Text Response
Build our own Internet connection service
no
Overall, the city website is informative and provides a professional view of the city.
We actually have a very nice web site. As previously stated, our Landing Page has many links to key areas for information. Providing WIFI in our Parks would provide a wonderful addition for families to stay connected to their email and of course the city pages through our own App. I'm not sure of the cost but it could be phased in over time.
Don't find the aforementioned app on the Apple AppStore.
Young folks today seem to rely more on I-Pods, smart phones, and Wi-Fi that can only increase as they grow older. So, it's easy to predict future interaction with city administrators will be more & more on-line than face-to-face. Texting however is still in it's infancy, stone age technology that has to improve. The city should not invest in texting technology services. Primarily, text messages can be interpreted differently by two different people. So, texted messages are getting public employees in trouble across the country.
none
Increased WiFi (in parks, public spaces) would be a very welcome upgrade to our beautiful city!!
The City should improve engagement and outreach using social media. For example for very little money the City can reach all facebook users in Wilsonville to get out important messages and events.
Provide emergency notifications for crime, missing persons, fires, road blocks, traffic delays and real time event listings.
n/a
Several of your survey questions presumed that the indicated use was a singular occurrence and the follow-up questions only allowed for a single response, where-as allowance for multiple responses would have been more appropriate.
I think I covered it in the immediately preceding response.
Thanks for asking!
The city does a great job of communicating and making its government and services accessible online.
Google is still in the planning phase to bring their super fast fiber optic internet to the Portland area. I think the city counsel and the mayor should work very hard at having Wilsonville included as one of the cities Google brings their services to. With the current options of Comcast and Frontier Fios in the city its not much competition. We need more competition to help drive down prices and to improve customer services. Comcast doesn't really have to try in Wilsonville. They pretty much dominate here and have zero incentive to improve in anyway.
?
There should be online interaction by people from their homes whenever a live meeting takes place at city hall.