
# The City of Cupertino

# 2021 IT Strategic Plan Update

February 22, 2022

**Prepared by:**

SDI PRESENCE LLC

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# Table of Contents

# Revision Log

| Version | Date | Description |
|---|---|---|
| 1.0 | December 10, 2021 | Client Working Draft |
| 2.0 | February 22, 2022 | Final Report |

# Section 1: Introduction

"The Mission of the City of Cupertino is to provide exceptional service, encourage all members of the community to take responsibility for one another, and support the values of education, innovation and collaboration." – City of Cupertino

## 1.1 – Scope and Objectives

This document, entitled The City of Cupertino, 2021 Information Technology Strategic Plan Update (IT Strategic Plan), was prepared for the City of Cupertino ("City") by SDI Presence, LLC (SDI) to document the results of the project to update the City's IT Strategic Plan. The initial IT Assessment Report and IT Strategic Plan were developed by SDI (then NexLevel Information Technology) in 2015 and provided the basis for the City to improve the delivery of information technology services to the City's user community and the public. An update to the IT Strategic Plan in 2017 reviewed progress since the adoption of the initial plan and provided information regarding upgrades to the City's information technology infrastructure. This update similarly reviews the City's progress but is more focused on looking at user requirements for information technology through FY 2023/24.

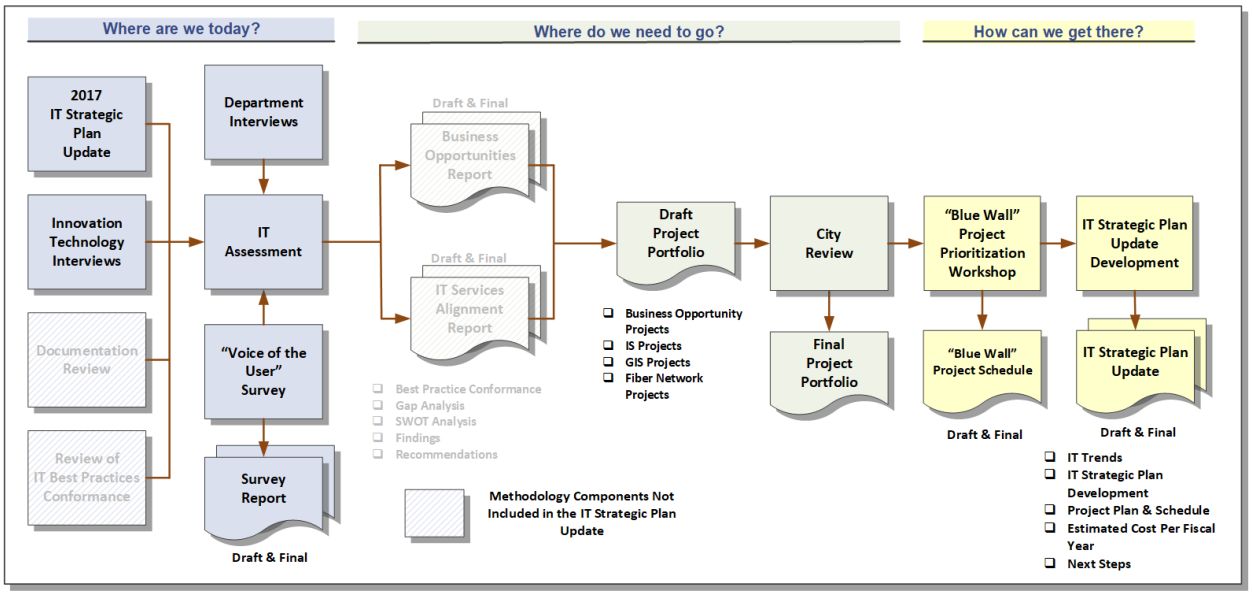


Figure 1.1, Development of IT Strategic Plan Update (Source: SDI)

Figure 1.1, Development of IT Strategic Plan Update, illustrates the modified strategic planning methodology used by SDI to develop the update to the City's IT Strategic Plan. Please note that some components of SDI's IT Strategic Planning methodology were not included in the scope of this engagement at the request of the City including, but not limited to, an updated assessment of the City's conformance to IT Best Practices. Additionally, the process was streamlined to reduce the number of deliverables to just the IT Strategic Plan Project Portfolio and the IT Strategic Plan Update. As a result, the IT Strategic Plan Update, for example, contains information regarding the City's present information technology environment that would otherwise normally be provided in prior deliverables.

The development of the IT Strategic Plan Update included a survey of all members of the City's user community with a logon-id as well as a series of interviews conducted with key user stakeholders and the City's Chief Technology Officer and the managers and staff members of the Innovation Technology Department. The results of these interviews and the survey were instrumental in developing the IT Strategic Plan Project Portfolio (provided as Appendix A) which was reviewed with the City prior to the "Blue Wall" Project Prioritization Workshop (so called since the workshop is facilitated using a blue adhesive panel on which placards representing each of the projects in the IT Strategic Plan Project Portfolio are mounted and can then be moved by the participants).

The Project Prioritization Workshop was attended by the City's Department Heads and provided an opportunity for them to collaborate on the roadmap for the completion of the projects which was then used as the basis for developing the project schedule and estimating the cost per fiscal year for the completion of the projects.

Due to the circumstances occasioned by the COVID-19 pandemic, the update was developed through the use of virtual meetings.

## 1.2 – Document Organization and Contents

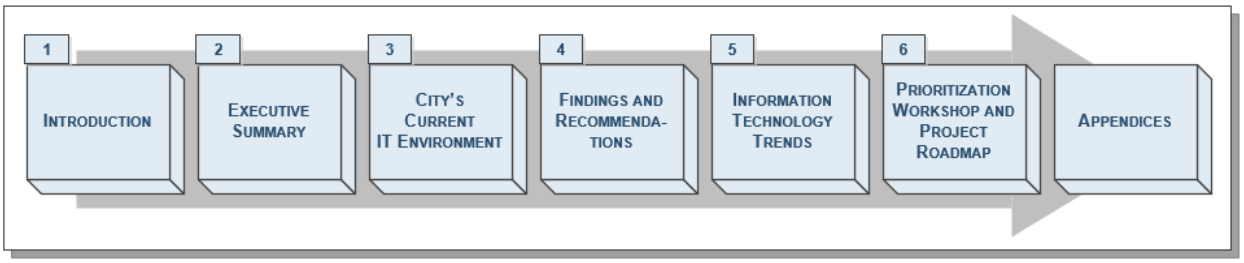


Figure 1.2 – Document Organization (Source: SDI)

Figure 1.2, Document Organization, illustrates the organization of this report. As depicted this document includes the following sections:

- **Section 1 – Introduction**: This section of the report provides information regarding the scope and objectives of the update to the City's IT Strategic Plan, the organization and contents of the document, and notes regarding terminology and the numbering of figures and tables.
- **Section 2 – Executive Summary**: Provides a high-level summary of the contents of the IT Strategic Plan Update.
- **Section 3 – City's Current Information Technology Environment**: Provides information regarding the City's current information technology environment including summaries of the interviews conducted with key stakeholders from the City's departments, summaries of the interviews conducted with the City's Chief Technology Officer and the managers and staff of the Innovation Technology Department, a review of the City's business and operational applications, and a review of the delivery of information technology services to the City's user community and the public. Please note that the interview summaries reflect SDI's understanding of the discussion points.

- **Section 4 – Findings and Recommendations:** Provides a summary of the findings and recommendations developed by SDI.
- **Section 5 – Information Technology Trends**: Provides a discussion of information technology trends that SDI considers will be relevant to the City in the implementation of the IT Strategic Plan through FY 2023/24.
- **Section 6 – Prioritization Workshop and Project Roadmap**: Provides a discussion of the virtual prioritization workshop conducted for the City and the project roadmap that was developed in the course of the workshop, as well as discussion of the next steps that the City should take in the adoption and implementation of the IT Strategic Plan.
- **Appendices**: Provides additional information including the IT Strategic Plan Project Portfolio that was developed by SDI based on the information gathered during the interviews and that served as the basis for the workshop.

## 1.3 – Terminology and Numbering

### Terminology

This document is intended for the use of the City's elected officials, executives, department heads, and user stakeholders, information technology professionals, and other interested persons. To better accommodate this broad audience, SDI has avoided the use of technical acronyms as much as possible. References to information technology in general will be spelled out as such while the City's Innovation Technology Department will generally be referred to as "City IT."

### Numbering

Tables and figures within the report are numbered consecutively within each section, thus the first figure in Section 4 would be Figure 4.1, and if the figure was followed by a table, the table would be Table 4.2.

# Section 2: Executive Summary

## 2.1 – Introduction

This section of the report provides a summary of where the City is today with regard to its use of information technology, where it needs to go through the end of FY 2023/24, and how it is going to get there. The IT Strategic Plan Update builds on the original IT Strategic Plan developed for the City in 2015 and last updated in 2017. Much has changed since the original IT Strategic Plan was prepared; in 2015, an under-staffed IT Division struggled to maintain the City's information technology infrastructure and to support basic user needs while departments worked independently to select, procure, and implement business applications. Since then the City has recruited an experienced Chief Technology Officer and recruited an experienced cadre of staff members in the Innovation Technology Department who have strengthened the information technology infrastructure and who work closely with departments to help them sustainably and effectively meet their IT needs.

The information technology challenges and opportunities facing the City going forward are far different from the challenges and opportunities in 2015 and include:

- Ensuring that the City can sustainably deliver IT services and information to the City's internal user and the public in the face of seismic and other events.
- Better managing the City's total cost of ownership for information technology and obtaining greater value for its investments in information technology.
- Increasing user competencies and familiarity with the information available to them.
- Deploying new solutions including business intelligence and "Smart City" capabilities.
- Continuing to meet the challenges posed by having a large portion of the City's workforce working from remote locations.

## 2.2 – Departmental Interviews

A wide-range of key user stakeholders were interviewed by SDI between June 2, 2021 and June 21, 2021, with the objective of obtaining information regarding:

- Current business processes, issues that the users were experiencing in using information technology, and projects that they were working on.
- Future needs for information technology, including both new applications / services, as well as changes to existing applications, and access to information.
- Projects that the departments would like to undertake through FY 2023/24.

Interview groups included:

- City Manager's Office: City Manager, City Clerk, Communications, Emergency Management, and Sustainability.
- Capital Improvement (CIP).

- Code Enforcement.
- Community Development: Building, Planning.
- Development Services.
- Finance.
- Housing.
- Human Resources.
- Parks and Recreation: Business and Community Services, Sports and Recreation.
- Public Works: Environmental, Service Center, Transportation, Traffic.

### Key "Takeaways" from the Departmental Interviews

The key "takeaways" from the departmental interviews included:

- The City's user community is making use of a wide-range of business applications including commercial-off-the-shelf (COTS) products some of which are hosted on-premises in the City, some COTS products hosted in the Web and provided as software-as-a-service (SaaS), and some locally-developed applications.
- Some of the business applications and services are problematic for the users including the content management application for the City's web-site (and, as a result, the look and feel of the City's web-site), the application being used for agenda management and publishing Council meeting minutes, and the application being used for finance and HR.
- The City is not making the fullest possible use of some business applications including the application being used for land management / permitting, and the City's content / document management system.
- Although the user community has adapted remarkably quickly to remote working, some remote users are experiencing challenges with connectivity to the City's business applications.

## 2.3 – Innovation Technology Interviews

Interviews were conducted with the City's Chief Technology Officer and the Division Managers and staff members of the Innovation Technology Department with the objectives of obtaining information regarding:

- Current IT business processes, issues that they may be experiencing in using information technology, and projects that they are working on.
- Projects that are either in-progress or that are planned through FY 2023/24.
- Difficulties that have been encountered in the development, deployment, and delivery of information technology software and services for the City's internal user community and the public.
- Possible future uses of information technology that should be considered in the update to the City's IT Strategic Plan.

### Key "Takeaways" from the IT Interviews

The key "takeaways" from the IT interviews included:

- Despite the obstacles related to working remotely as well as supporting other City staff members working remotely, Innovation Technology managers and staff members are of the opinion that they are effectively supporting the City's requirements.
- The Chief Technology Officer's vison going forward includes:
  - Continuing to improve customer service.
  - Helping departments with budgeting for IT-related items.
  - Continuing to improve collaboration with the users.
  - Increasing public awareness of City programs and information that are available to them.
  - Expanding programs for the public, including improving the City's web-site.
  - Improving data literacy and establishing a "Dataverse" of information that can be used to support analytics and reporting.
  - Keeping up with modern, secure infrastructure.
  - Ensuring that the City's security needs are met, including either creating and staffing a position for a Chief Security Officer or leveraging security as a service.
  - Improving succession planning / staff development within City IT.
  - Continuing to improve the resilience of the City's IT infrastructure.
- Challenges being experienced by City IT include:
  - The number and frequency of requests from the user community for the implementation of new business applications and/or for changes / upgrades to existing business applications, and the need to reconcile priorities to allocate limited resources.
  - The integration of information in multiple City platforms such as GIS, the Laserfiche content/document management system, and other business applications that leverage geospatial and document information.
  - Enabling the user community to effectively respond to mandates for the generation of periodic reports related to the City's environmental and sustainability programs.
  - Keeping pace with the continued development of cybersecurity threats.

## 2.4 – Findings and Recommendations

The findings and recommendations developed in the course of the update to the City's IT Strategic Plan are discussed in greater detail in Section 4, Findings and Recommendations. As noted there, SDI's objective is to focus on the findings that have the greatest potential impact on the City's operations and to provide realistic and actionable recommendations to remediate them. The key findings and the related recommendations to remediate the findings are:

- *Finding 1: The City has a highly diverse portfolio of business applications.*

- Recommendation 1.1: The City should develop an application portfolio.
- Recommendation 1.2: The City should rationalize the use of business applications.

❑ *Finding 2: The City is not making the fullest possible use of enterprise-wide business applications.*

- Recommendation 2.1: The City should routinely conduct post-implementation reviews for all enterprise business applications.
- Recommendation 2.2: The City should establish a formal, recurring user training program for enterprise business applications.

❑ *Finding 3: The City does not have a formal process for the governance of information technology (carry-over from 2015 IT Strategic Plan).*

- Recommendation 3.1: The City should establish a formal process for the governance of information technology.

❑ *Finding 4: The City does not have formal plans for the exchange of information between business applications.*

- Recommendation 4.1: The City should establish a formal program to facilitate the exchange of information between business applications.

❑ *Finding 5: The City's cyber-security plan has not been updated recently.*

- Recommendation 5.1: The City should develop an updated cyber-security plan that is consistent with current national standards and conduct a comprehensive security review.

❑ *Finding 6: The City existing policies for remote workers have not been reviewed or updated to reflect the wider adoption of remote working as a result of the COVID-19 pandemic.*

- Recommendation 6.1: The City should conduct a formal review of its current remote worker program focusing on lessons-learned and opportunities for improvement and update its policies and procedures for remote workers.

❑ *Finding 7: Although the City has completed an integrated document management strategy it does not have a formal plan for the implementation of a paperless environment.*

- Recommendation 7.1: The City should develop and execute a plan for the implementation of a largely paperless environment.

❑ *Finding 8: The City does not have an enterprise plan for the implementation of smart technologies.*

- Recommendation 8.1: The City should develop an enterprise plan for the implementation of smart technologies and periodically update the plan as new services become available.

❑ *Finding 9: The City's EOC is not located in a dedicated and secure space (carry over from 2014 IT Strategic Plan).*

- Recommendation 9.1: The City should complete the migration of the EOC from City Hall to the Service Yard.

Each of the recommendations is discussed in Section 4 including:

- A description of the recommendation including the rationale, scope, and objectives.
- Information regarding how the City could implement the recommendation.
- Dependencies between the recommendation and other recommendations that could impact implementation.
- Whether the recommendation could feasibly be implemented by internal staff or whether the City should consider the use of external resources.
- An estimate of the level of effort involved in the implementation of the recommendation.
- An analysis of the potential benefits, including whether implementation of the recommendation would:
  - Increase the City's ability to agilely and effectively respond to new requirements.
  - Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities.
  - Improve the City's ability to sustainably deliver IT services.
  - Improve the delivery of IS services and information to the City's user community and the public.
  - Improve the City's return / value on investment for spending on information technology.

## 2.5 – Information Technology Trends

SDI notes in Section 5, Information Technology Trends, that not only does information technology continually evolve but the pace of this evolution is continually accelerating. As a result, the ways in which organizations, including the City, use information technology are changing as are the expectations of internal and external stakeholders for access to information and services. Although predicting the future of information technology can be problematic, SDI has identified six key information technology trends that are relevant to the City, that have become mature (i.e., are stable, scalable, and that are effectively supported), and that will likely impact business objectives and priorities in the future and shape how the organization implements this IT Strategic Plan including:

- Mobility and the Consumerization of IT.
- Analytics (Business Intelligence and Artificial Intelligence).
- Cybersecurity.
- Strategic Sourcing and Cloud Services.
- Smart Communities.
- Organizational Transformation.

## 2.6 – IT Strategic Plan Prioritization Workshop

The key inputs for the Workshop were documented in the course of the interviews conducted by SDI with the City's key user stakeholders, the City's Chief Technology Officer, and the managers and staff members of the City's Innovation Technology Department. The inputs included:

- The ITSP Project Portfolio which included information regarding IT projects that were in-progress or planned as well as projects that resulted from SDI's findings and recommendations. The ITSP Project Portfolio was reviewed by the City prior to the Prioritization Workshop and updated as needed.
- City-wide and departmental needs and priorities.
- Needs and priorities related to the City's information technology infrastructure and staffing.

The ITSP Project Portfolio (please see Appendix A) was reviewed by the City prior to the Prioritization Workshop and modified as needed. For each of the proposed projects the portfolio provides information including a description of the scope and objectives, the project's sponsor(s), its status, the level of effort and the level of risk associated with its implementation, and the estimated cost based on similar projects previously conducted by SDI's clients and adjusted for the City of Cupertino.

The prioritization workshop was conducted on Wednesday October 6, 2021. Due to the circumstances related to the COVID-19 pandemic, the workshop was conducted virtually using Zoom, with the project timeline (aka the "Blue Wall") displayed to the participants using MS Visio. SDI facilitated the workshop with the objective of providing an open and collaborative forum in which the participants, starting from a pre-staged plan developed by SDI in concert with City IT, reviewed the priority of each project and moved them across the timeline for the IT Strategic Plan which included:

- Six projects that had been completed by the first quarter of FY 2021/22.
- Twenty-one projects that are scheduled to begin during the second quarter (October through December) of FY 2021/22. Please note that although this is a large number of projects, all but two of them have durations that extend beyond the second quarter of FY 2021/22, some of the projects have limited scopes, and some will involve external service providers in addition to City IT staff.
- Five projects that are scheduled to begin during the third quarter (January through March) of FY 2021/22.
- Nine projects that are scheduled to begin during the fourth quarter (April through June) of FY 2021/22, including a post-implementation review of the City's implementation of its Finance / Human Resources application with the objective of determining whether it should consider procuring a replacement for it.
- Sixteen projects that are scheduled to begin during FY 2022/23.
- Eleven projects that are scheduled to begin during FY 2023/24.
- Two projects that could not be scheduled during the workshop.

The "Blue Wall" at the end of the workshop is depicted in Figure 6.2 – Project Roadmap Following Prioritization Workshop, in Section 6. Following the workshop, SDI worked with the City to review and confirm the results of the workshop and this effort resulted in the IT Strategic Plan Project Gantt Chart, which is discussed in Section 6.2, Project Schedule and Cost per Fiscal Year.

Table 2.1, Summary of Concurrent Projects and Cost Per Fiscal Year, provides a summary of the project roadmap including:

- The number of concurrent projects in-progress or planned for each of the quarters of FY 2021/22, and in total for FY 2022/23 and FY 2023/24. Please note that although the number of concurrent projects seems to be relatively high, the size of the projects varies, many of them are planned to be in-progress over multiple time periods, and some of them will be handled in part of entirely by external resources.
- The total estimated cost per Fiscal Year for FY 2021/22 (excluding projects that are already in-progress since it is assumed that their cost has been incurred), FY 2022/23, and FY 2023/24. Please note that the cost estimates were developed using an average of the low and high estimated cost for each project and based on the assumption that the full cost for a project would be incurred in the Fiscal Year in which the project begins.
- The total estimated cost for all of the projects in the IT Strategic Plan Update.

**Table 2.1 – Summary of Concurrent Projects and Estimated Cost per Fiscal Year.**

| | FY 2020/21 | | | | FY 2022/23 | FY 2023/24 |
|---|---|---|---|---|---|---|
| | Q1<br>Completed | Q2<br>Oct - Dec | Q3<br>Jan - Mar | Q4<br>Apr - Jun | Jul-Jun | Jul - Jun |
| Number of Concurrent Projects: | 10 | 22 | 22 | 21 | 24 | 17 |
| Estimated Cost Per Fiscal Year ($000's): | | | | $ 377 | $ 918 | $ 268 |
| Total Estimated Cost ($000's): | | | | | | $ 1,562 |

## 2.7 – Next Steps for the City

Since the adoption of the initial IT Strategic Plan for the City of Cupertino in 2015, SDI has consistently advocated for the establishment of a formal approach to the governance of information technology (the IT Strategic Plan Update includes a project to accomplish this which is scheduled in FY 2021/22) and SDI hopes that this will be among the first order of business as the City moves forward with the IT Strategic Plan. Section 6.3, Next Steps for the City, provides a discussion of SDI's perspectives regarding the importance of IT Governance to:

- The successful management and completion of the projects identified in this update to the City's IT Strategic Plan.
- Enabling the City to better manage its total cost of ownership for information technology and obtaining greater value for its investments in information technology.
- Promoting innovation in the use information technology.
- Improving the delivery of IT services and access to information.

# Section 3: City's Current Information Technology Environment

## 3.1 – Introduction

This section of the report provides a brief overview of how the City presently uses information technology that was developed through a series of interviews conducted with key stakeholders from the City's departments as well as the City's Chief Innovation Technology Officer and staff. Based on the interviews, SDI developed a portfolio of the business and operational applications being used in the City as well as a description of how IT services are presently delivered to the City's user community and the public.

## 3.2 – Department Interviews

Between June 2, 2021 and June 21, 2021, SDI conducted group interviews with key stakeholders from the City's user community including:

- City Manager's Office: City Manager, City Clerk, Communications, Emergency Management, and Sustainability.
- Capital Improvement (CIP).
- Code Enforcement.
- Community Development: Building, Planning.
- Development Services.
- Finance.
- Housing.
- Human Resources.
- Parks and Recreation: Business and Community Services, Sports and Recreation.
- Public Works: Environmental, Service Center, Transportation / Traffic.

The interviews are summarized below. The summaries include:

- **Current State:** Information regarding current business processes, issues that they may be experiencing in using information technology, and projects that they are working on.
- **Requirements:** Future needs for information technology, including both new applications / services, as well as changes to existing applications, and access to information.
- **Planned Projects:** Projects that the department would like to undertake through FY 2023/24.

Please note that these summaries reflect SDI's understanding of the key discussion points.

## City Manager

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| Current State: | ❑ City IT receives a lot of credit for helping the City attain its goals.<br>▪ Of the opinion that the City's innovative use of IT makes them one of the leading cities in the County.<br>▪ Believes that the City should make effort to maintain that position with goals being ease of communication, safety, and that City staff should be able to do their jobs more easily.<br>❑ The City has experienced some issues with Granicus, with members of the public pointing out some "glitchy" issues regarding meeting agendas and minutes in Granicus and Legistar.<br>❑ The City was able to implement a teleworking program on very short notice.<br>❑ The implementation of VoIP was a big win for the City.<br>❑ The City Manager is of the opinion that the Council is reasonably satisfied with the City's ability to use information technology to meet public demand for information and transparency. |
| Requirements: | ❑ N/A. |
| Planned Projects: | ❑ N/A. |

## City Manager's Office - City Clerk

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| Current State: | ❑ Business applications being used include:<br>▪ An application for the electronic filing of Form 700 applications (disclosure documents).<br>▪ Next Request for public requests for information (PRA – public records access).<br>▪ Records retention is handled through Laserfiche. City IT brought in a consulting firm to develop a three-year IDM (Integrated Document Management) roadmap. Developed dashboard through Laserfiche portal on to the City's web-site.<br>▪ Granicus and Legistar (agenda management and media manager) have experienced some "glitches" in the interface with Adobe (always updating).<br>▪ Also have some problems in Legistar with documents that come out of Adobe Sign that have a secure link in them (the contract documents originate in CobbleStone with the Adobe Sign feature).<br>❑ Issues being experienced include:<br>▪ Adobe (crashes a lot).<br>▪ Sometimes missing staff reports when generate packet from Granicus. When have an issue, initiate a ticket with Granicus, if they turn the ticket back to the City, then will open a ticket with City IT. Otherwise feels that Granicus is good to excellent.<br>▪ Not thrilled with Laserfiche. Not all documents of record are in Laserfiche yet (for example, the City does not have a complete set of As-Built diagrams for City facilities in Laserfiche). |

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| | ❑ Building registration system for Lobbyists (similar to Form 700) – in beta testing through October, implementation targeted through July 1.<br>❑ Status of projects from prior IT Strategic Plan:<br>▪ Digital signatures are complete (Adobe sign). Now working on e-signatures for non-legal documents.<br>▪ Haven't implemented digital speaker cards (Granicus has something).<br>▪ PRA tracking is taken care of (Next Request). Functionality is very useful for them – includes redaction and time tracking. |
| Requirements: | ❑ Need to improve integration between applications – dragging documents into Laserfiche would like to have them transfer automatically. |
| Planned Projects: | ❑ Use Outlook to gather e-mails as part of fulfilling records request. Would like to have Logical (used for depositions) to review the e-mails. Converting 9,000 e-mails can be very time consuming. |

## City Manager's Office - Communications

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| **Current State:** | ❑ Business applications being used include:<br>▪ Using City web-site a lot. Photos, images, documents, stories; handles much of the content on the web-site but is not the web-master.<br>▪ E-mail notifications to subscribers.<br>▪ Acrobat, Photoshop, Illustrator, etc. for publishing content.<br>▪ Using CobbleStone (contracts), New World (Logos).<br>▪ OpenTownHall to do surveys – will shut down when have Engagement HQ fully implemented.<br>▪ GIS for location planning.<br>❑ All social media posts go through Brian.<br>❑ Produces flyers, pamphlets, A-frame signs, etc. for programs, services, events (if does not create, will review before it gets printed). Just Adobe, no Apple tools.<br>❑ Trying to be more responsive to public interests / needs, track queries and traffic to the web-site.<br>❑ City IT is working on the City's Intranet site ("The Hub") using SharePoint. First iteration will be out at the end of June (HR, IT, etc.) includes MS Teams.<br>❑ Have to clean up local file storage so that can migrate files from network shared drives to SharePoint. |
| **Requirements:** | ❑ Wants to use EngagementHQ to create project web-pages in a central location.<br>❑ Is of the opinion that the City needs to get a new web-site – searching for a page or topic doesn't work well, could also be more user-friendly.<br>❑ Would like to use data to create "Art" such as water use, etc. |
| **Planned Projects:** | ❑ Replacement of the City's web-site and the use of EngagementHQ to create web content. |

## City Manager's Office – Office of Emergency Management

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| **Current State:** | ❑ Using remote applications – have been fantastic during the pandemic (Teams internally and Zoom externally), OneDrive working well for them.<br>❑ No huge gaps in technology.<br>❑ Don't have integration with County CAD (Sheriff's dispatch system) and radio.<br>❑ Cannot monitor radio traffic in the Emergency Operations Center (EOC) at City Hall – need to go out into the lobby. The EOC at City Hall is not ideal; it is used as storage area and is not seismically sound.<br>❑ They have built a "mirror" EOC at the City's Service Yard (approximately 2 to 2.5 miles from City Hall depending on the route taken) – same technologies installed there as at City Hall.<br>❑ While it would take 4-5 days to get the City Hall EOC cleaned up and operational, the Service Yard ready to go today. Ran incident out of there last June – worked very well.<br>❑ The City has a Volunteer Portal for residents (using an off-the-shelf solution). The information is very stagnant and needs to be updated.<br>❑ GIS data is current, accurate.<br>❑ Do not conduct regular activation drills at this time – plan to do so in the future.<br>❑ Thinking about using MS Teams rather than Web EOC.<br>❑ Have formal Emergency Plan – scheduled for update every five years. |
| **Requirements:** | ❑ Need to improve situational awareness. |
| **Planned Projects:** | ❑ Would like to integrate the Volunteer Portal with the City's Alert / Warning system to automatically volunteers when they are needed and where to report. Need City HR contact information to feed into the Alert Warning System, IT is working on this.<br>❑ Update / refresh information in Volunteer Portal.<br>❑ IT is working with them on drone management and autonomous drone deployment so that they can map the City before an event and then during an event to see what has changed. |

## City Manager's Office – Sustainability

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| **Current State:** | ❑ Collecting a lot of data points – getting information by conducting interviews (as many as 100). Includes many accounts / facilities as well as City-wide data, to support the Municipal Climate-Action Plan.<br>❑ Interacting with Finance, EOC, plus CM's office on policy.<br>❑ Business applications being used include:<br>▪ Building dashboards with Power BI for public information.<br>▪ Reliant on Teams, Zoom, and SharePoint. Very pleased with Teams, and about 50% done with migration of files from file servers to SharePoint.<br>▪ Laserfiche.<br>▪ CobbleStone (for contract management) - getting better at it.<br>▪ Custom applications that were developed locally including CRM. |

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| | ▪ Mytel phone system.<br>▪ Utility analytics program (from 3rd party vendor) that consolidates City utility bills.<br>▪ Commercial, off the shelf, software (COTS) and cloud-based services.<br>▪ Have custom layers in GIS and working with GIS to create dashboard for CIP programs with interface to MS Project.<br>▪ Pollution monitoring.<br>▪ OpenGOV for budgeting<br>❑ Issues being encountered include:<br>▪ Would like to have all analytic information in one repository.<br>▪ The City's file structure is very complex and locating files / documents can be a significant issue for part-time employees working remotely.<br>▪ A problem in monitoring power use has been the different types of meters in each location and the absence of an interface between the metering systems and the City's financial system.<br>▪ How to get workflow integrated with Laserfiche workflow? (Note: the City completed an integrated document management (IDM) strategy last year, objective is to become a paperless City).<br>❑ Looking at opportunities to update building heating and lighting management systems to improve efficiency.<br>❑ Keeping tabs on metadata – where is the information coming from, what is being changed? Need to know where meters are, what accounts the meters are associated with, the usage information, etc. Need to look at both power (solar) production and consumption – PGE bills are not sufficiently informative.<br>❑ Reporting approach being changed next year.<br>❑ City IT is digitizing forms. |
| **Requirements:** | ❑ Need to apply sub-metering to the water system (want to use AMI for City owned facilities water meters). Watering system is aged. Water biggest single utility expense for the City.<br>❑ Demands for reporting / transparency are significant and increasing.<br>❑ Need documentation / training for staff.<br>❑ Potential future need for secure document control (at present have to physically redact portions of documents for public release).<br>❑ Would like to have all analytic information available in one repository.<br>❑ Demands for reporting / transparency are significant and increasing.<br>▪ Need more data for reporting – immense reporting for Climate Action Plan, 200 measures, reported annually.<br>❑ Fleet installing Telematics in City vehicles; want to capture information from it for reporting.<br>❑ Need integration with Finance (Logos ERP system) to obtain information for analytics.<br>❑ Clean energy options for emergency power generation. |

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| | ❑ Need to apply sub-metering to the water system (want to use AMI for City owned facilities water meters). Watering system is aged. Water biggest single utility expense for the City.<br>❑ Need to develop automated workflows using functionality provided by Laserfiche.<br>❑ Have had some glitches with projects disappearing in MS Project (Cloud issue?).<br>❑ Search function for public in Laserfiche is clunky. Need advanced search that is more accessible to City staff (limited number of licenses).<br>❑ Need to perform a review of document management options.<br>❑ Would like to have one-page / two page tutorial / knowledgebase. |
| **Planned Projects:** | ❑ Implementing Engagement HQ (https://www.capterra.ca, provides a suite of tools for community engagement / transparency). |

## Administrative Services - Finance

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| **Current State:** | ❑ Business applications being used include:<br>▪ New World (Logos) for revenue collection (some sub-ledger systems in other departments that are integrated with Logos), A/R, and A/P.<br>▪ New World does not have a strong public portal for business licenses, so they are being are being migrated from Logos to Accela. This will be completed by the end of the year.<br>▪ OpenGOV for transparency (public information) and for building budget. This is not fully completely integrated with home-grown collective budget.<br>▪ GovInvest for labor costing.<br>▪ RBI – Community Budgeting tools.<br>▪ Using Wels-Fargo, Active.NET, and PayPal – for revenue collection, changing readers to Square. All are compliant with Payment Card Industry (PCI) security requirements.<br>❑ Issues being encountered with the business applications include:<br>▪ Native security in Logos has some issues regarding the specific permissions that can be granted to a user (access is all or nothing).<br>▪ Logos' native Application Program Interface (API) is not easy to use and integrating New World with other business applications is difficult.<br>▪ Experiencing some payroll issues, Tyler support has not been as proactive as they would like in addressing the issues and have needed to go back to some manual processes.<br>▪ Modules within New World do not talk to each other.<br>▪ Pulling historical information from New World is difficult.<br>▪ Logos' budget forecasting model did not work well for them, and Tyler was not able to support them so still using Excel for projections.<br>▪ Have the same issue with "out-year" projections.<br>▪ Use Business Analytics reports where they can, but not so much available on the HR side (i.e., compensation data). |

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| | ▪ Also have some issues with CIP budget in New World – may be related to configuration issues.<br>▪ Departments are not pulling information from Logos as often as they should – could be both an ease-of-use issue as well as a training issue.<br>❑ Status of projects from prior IT Strategic Plan:<br>▪ PCI Compliance Project done in 2017/18 (may be also handled in the City's annual audit).<br>❑ City IT has recommended performing a requirements analysis / gap analysis for finance and HR processing with the objective of identifying current user requirements and determining if they can be met by Logos.<br>❑ Integration with Active.NET is a challenge (geo coding issue – might be a configuration issue). Active.NET not fund-accounting based.<br>❑ Need to manually adjust fund-balances, would be nice to have solution that provides analytics – taking up a lot of his time, have to run a lot of reports to get the information.<br>❑ Getting both internal and external requests for information. |
| **Requirements:** | ❑ Performance management system for HR that is integrated with payroll. Want to integrate performance metrics with the budget.<br>❑ Contract processing (CobbleStone) integrated with finance.<br>❑ Fixed asset module that is integrated with purchasing (currently manual).<br>❑ Application Program Interface (API).<br>❑ Want Departments to become more self-sufficient in use of the financial system. |
| **Planned Projects:** | ❑ Looking at potential ERP replacement within the next 2 – 3 years. Logos pretty efficient for Finance but common theme from Departments is that reporting (budget monitoring) is a little more difficult. |

## Community Development - Building

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| **Current State:** | ❑ Have established Permits Center.<br>❑ Have been on Accela for over a year now.<br>▪ Has citizen access online portal to pay for permits and schedule inspections (simple permits, i.e., change water heater).<br>▪ Can be paid for and printed off on-line.<br>▪ Inspections are in Accela.<br>❑ Had problems with inspections being scheduled later in the day – has been resolved.<br>❑ ePermit forms – send declarations out to Contractor / Homeowner and they electronically sign. Need to consider DocuSign, but sometimes e-mail looks like junk mail – is there a more secure way of sending the e-mail.<br>❑ ProjectDox – plan review system, 100% paperless. Just upgraded to version 9.2, latest version. Some changes to the user interface. Communicates with Accela when Permit is in review. |

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| | ❑ Public feels that it is confusing – two systems, (Accela and ProjectDox) which system do they use? Need to marry the two together. Have it all in one web-site. Would eliminate most of the phone calls.<br>❑ Have QueueList for managing public coming to Counter.<br>❑ Using e-mail as customer service front-end and getting thousands of emails, including on weekends, evenings. Same with telephone calls.<br>❑ Need to be able to track, route, and manage these e-mails.<br>❑ How do they eliminate need to answer the same question over and again (same for phone calls)?<br>❑ Looking to use ticket system (ZenDesk) from City IT. ZenDesk has a "chatbot" with widget on the web-page to assist users in completing tickets.<br>❑ Using G drive as overall umbrella – maxed out on capacity (90%) – looking to move to SharePoint. Inspector can then e-mail document to applicant when on-site. Community Development is next in line to migrate to SharePoint for access to files. |
| **Requirements:** | ❑ Seeking to have just one permit application that can accommodate a range of request rather than 15 permits as at present.<br>❑ Would like to be able to the public input information electronically and then review, edit, and approve it rather than having to enter the information into Accela.<br>❑ Need overall dashboard that would enable them to directly generate queries and/or reports as needed.<br>❑ Provide integrated access to Accela and ProjectDox for the public with clear guidance as to which application they should use for their project / request. |
| **Planned Projects:** | ❑ Building is looking at using MS Booking for the Permit Counter to enable the public to schedule appointments. |

## Community Development - Code Enforcement

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| **Current State:** | ❑ Using CitizenServe to capture all of their data along Cupertino311 (citizen portal for complaints), and service requests in Accela – so information in too many areas – would like to consolidate into one if they could. Also draw information from GIS. Functionality in both Citizen Serve and Accela works for them.<br>❑ Very reliant on GIS – would like additional information in GIS such as contact information for parcel owners.<br>❑ Zoning information in GIS. Business Licenses are in New World. Will be moved in next three to four months.<br>❑ Code enforcement has mobile devices and can access systems but wait to do their research until they are back in the office. Office safety makes it impractical to do work in the field.<br>❑ Limited sharing of information with the Sheriff's office. Have two code enforcement officers assigned to the SO. Don't have direct access to SO systems but can call the dispatch center. Would be great to have access to their CAD system.<br>❑ Animal Control is handled for Cupertino by the City of San Jose – get calls from the public through 311 and pass them over to San Jose.<br>❑ Management perspective is that they want to make sure that everyone has access to all of the information that they need. |

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| | ❑ Code Enforcement officers are wary of their safety and reluctant to use mobile devices in the field, even if all of the information they needed was in a single repository (such as Accela). |
| **Requirements:** | ❑ Other data in the City that they would like to have access to includes:<br>▪ Laserfiche for building permits and plans (historical).<br>▪ ProjectDox (current information).<br>❑ Have started talking about body-worn cameras for code enforcement staff, but no consensus in the State regarding whether Code Enforcement officers should have body cams although they do have contact with the public and some of these contacts can be contentious.<br>❑ Code Enforcement would like to purchase a program called TLOxp (TransUnion). Very useful and powerful tool to assist code enforcement.<br>▪ Skip tracing tool with access to contact information for individuals (such as e-mail, social media, and telephone numbers). Would make their operations as effective as is possible.<br>▪ Priced by transaction, also licensed by seat. [Please note this software was subsequently acquired by the City]. |
| **Planned Projects:** | ❑ Will be getting police radios so that they can communicate directly with the Sheriff's Dispatch Center.<br>❑ The City is putting a mount in one of their vehicles as a pilot program so that Code Enforcement officers can print tickets in the field. |

## Community Development - Development Services

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| **Current State:** | ❑ Business applications being used include:<br>▪ Accela. Has been in for two years. Can they improve the use of the product?<br>▪ Buildings is the owner of Accela, Development follows them.<br>▪ ProjectDox.<br>❑ Issues being encountered include:<br>▪ Some users are resistant to using software, too much training involved, software needs to be user-friendly. They don't have time to sit down and figure out how to use seven different packages.<br>▪ Need to get information from Accela, contractor information, licenses, etc.<br>▪ Need to make better use of Accela for items such as encroachment permits and pending expiry of permits so can work proactively with contractors. Same for insurance certificates.<br>▪ Also do block-party permits (not in Accela) – get 20-30 of them each year. Can these be automatically generated? Attachments are the same for each one.<br>▪ Have numerous ways of communication, phones, Teams, need to be able to save and document chats in Teams, etc. Team Chats expire after 30 days – is there an easier way to direct to e-mail other than having to do cut and paste.<br>▪ Have manual process to reconcile information on development bonds and releases. |

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| | ▪ Takes too long to download e-Mail messages. |
| **Requirements:** | ❑ Need to automate the generation of reports from Accela (workflow issue?).<br>❑ Continuing training very important, need same access to Laserfiche as the Clerk has. More training in how to search for files in Laserfiche.<br>❑ Need way to notify staff when payments are made online by an applicant. Asking applicant to e-mail the City when they have paid online – seems backwards. |
| **Planned Projects:** | ❑ N/A. |

## Community Development - Housing

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| **Current State:** | ❑ Business application being used include:<br>▪ City Data Services (https://www.citydatservices.net) - provides remote grant and loan management for cities and counties for public services, housing and economic development.<br>▪ HomeKeeper (https://www.groundedsolutions.org) - web-based application to manage affordable homeownership and housing counseling programs.<br>❑ Meeting their needs, happy with both of them. Has the information that they need. |
| **Requirements:** | ❑ Need access to translation services for printed materials (citywide need), have verbal translation, need may increase with affordable housing projects in the pipeline.<br>❑ Handling a lot of affordable home ownership documents (sale / refinance) due to the COVID-19 pandemic.<br>▪ Concerned about being able to securely exchange and track documents.<br>▪ Possibly could use CobbleStone / Adobe Sign for legal documents that need to be executed and then store the executed documents in Laserfiche. |
| **Planned Projects:** | ❑ N/A. |

## Community Development - Planning

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| **Current State:** | ❑ Like to hold on to documents whenever possible for future reference.<br>❑ Using Accela (repository and payments).<br>▪ Where the permitting process begins.<br>▪ Has workflow functionality.<br>▪ Business Licenses are being moved from the Finance System (New World / Logos) to Accela.<br>▪ Code Enforcement is using a separate system, can they be brought into Accela?<br>❑ ProjectDox more important for planning; handles all processing following the issuance of the permit.<br>▪ Accessible to the public from https://www.cupertino.org.<br>▪ Repository for all of the materials regarding the development of the project.<br>▪ Can see status in of permit approval in ProjectDox. Public just want to hear that permit is ready for pick-up. |

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| | ▪ Santa Clara County is also using ProjectDox.<br>❑ Laserfiche is the ultimate document repository once the project has been completed.<br>❑ Prior to working from home had Qless for managing the public counter. Do not get the same breadth of questions as Building. Sometimes calls get improperly routed to them rather than to Building.<br>❑ The City's telephone system is a challenge, need to route calls more effectively, calls not queued, planners just take next call.<br>❑ Calls can be directed to anyone in the office even though they a person who is "On Duty" to answer calls.<br>❑ Do preliminary review for projects and applicants – most inquiries come via telephone call.<br>❑ Have CivicCentral (https://www.CivicCentral.com) – web-based solution tied in to Accela for public inquiries.<br>❑ People tend to call Building first. It may be useful to have a Planning presence in the Permit Center.<br>❑ Have to record covenants, get them notarized, and then submit them to the County. No way to look into the County's system to see if all of the documents have been recorded against the property. They cannot release the hold on the final inspection until all of the documents have been recorded by the County. |
| **Requirements:** | ❑ Need template messaging to respond to applicants. Coordination is challenging on how they respond back to applicants.<br>❑ Need to make the City's web-site more useful, limited in how they can use Widgets, need more flexibility.<br>❑ People tend to call Building first. It may be better to have planning presence in the Permit Center.<br>❑ Many documents have been digitized but have not been indexed and are thus not readily accessible / searchable. The process of digitizing hard-copy documents is difficult. They do not have a Project Manager and work on digitizing documents as time permits due to staffing constraints.<br>❑ Need to put a note or a hold on a project / parcel. Can do this in Accela – but don't know what the condition is until you create the project.<br>❑ Need to have ability for online scheduling of appointments – plus consider having the Permit Office in the lobby of City Hall rather than in the basement. Building is looking at MS Booking for the Permit Counter, Planning could use as well. |
| **Planned Projects:** | ❑ Talking about project to map municipal codes. Would like to have a graphics based interface (CodeHub) to map ordinances to parcels and make it available to the public to reduce number of questions they receive. |

## Parks and Recreation - Business and Community Services

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| **Current State:** | ❑ Business applications being used include:<br>▪ Active.NET for everything related to recreation. Went live in 2018. Looking to move forward with Phase II. Have automated interface between Active.NET and Logos (the City's financial system). |

- Active.NET has a lot of updates – need more dedicated resource to review them, get them installed, test them, and train staff to use them.
- Use City IT as their liaison with Active.NET regarding problems, upgrades, etc.
- Using Active.NET "out of the box" – have to understand how it works, has some workarounds but have to know where they are and how to use them.
- Experience has been that Active.NET more user-friendly for the staff than for the public.
- Only have two staff members in the Department who really know how to use the system.

▪ Logos.

▪ GolfNow (https://www.golfnow.com) - online booking service for tee times at golf courses.

▪ "WhentoWork" (https://whentowork.com) for scheduling part-time staff and volunteers (have around 200 individuals). Inexpensive, easy to use mobile application but not configured for them yet – still relying on Excel. Need some help from IT to get it fully implemented and someone to administrate it.

▪ Communications Team handles publications, on own use Canva to generate them.

▪ Issuu (https://www.issuu.com), digital marketing platform for communicating with the public.

▪ CobbleStone (contract processing), initially implemented last year, integrated with Adobe Sign.

- Using maybe 20-30% of the functionality at this time.
- The Department uses many different contractors and coordinators can manage as many as 5 to 15 separate contractors.

❑ Issues being experienced include:

▪ Need more technical training for staff, only a few people in the Department really know how to use Active.NET.

▪ Maximizing reporting.

▪ Need to revisit decision to use GolfNow and to determine whether this functionality could be provided by Active.NET with the objective of breaking down internal barriers and streamlining business processes. Could use Active Point of Sale (already in) just need to get the reservation component installed.

▪ Very challenged regarding connectivity at some of their locations, including the Golf Course, McClelland, and Blackberry Farm. City IT has a list of park sites where they want to improve Wi-Fi connectivity including Wilson Portal and Creekside.

▪ Want to blanket the parks with WiFi – but are wary of people spending more time online rather than enjoying the park. Should Memorial Park be blanketed?

▪ Need to get away from using multiple applications (such as Square for point-of-sale) when can do it all through Active.

❑ Feeling that remote learning / meeting will be the norm from now on, hybrid combination of on premises and on-line attendance.

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| | ❑ Have 27 different fields – would be helpful to have on-line access as to when they are available.<br>❑ QR Code at fields so that people can pull up the schedule for the facility.<br>❑ Need to be mindful that have people in the community that are not as comfortable using automated solutions and will have continuing need to generate hard-copy materials.<br>❑ City IT is working on a number of projects for them including putting in access controls for the Senior Center, digital signage for Quinlan, plus augmented reality at McClelland.<br>❑ Status of projects from the prior IT Strategic Plan:<br>▪ Apple Pay was cancelled (not needed) and no longer have case management program at the senior center.<br>▪ Same for "Dog Off Leash" reporting application. |
| **Requirements:** | ❑ Public expectation that the City can be as forward as Apple, i.e., mobile application to reserve Tennis Courts. Church nearby has something that they can use – they will review.<br>❑ City IT has recommended that they should have Active.NET's professional services unit perform a post-implementation review of the City's implementation and how it can make the best possible use of the product going forward.<br>❑ Need to complete the implementation of CobbleStone including interface with Logos for invoicing and risk management as well as a customer interface.<br>❑ Engagement HQ – Open Town Hall – would like to have more information about this for surveys, mass communication, etc.<br>❑ GIS information would be helpful for direct marketing, i.e., where do seniors live, where do families with children live, etc. Need to know what GIS can do for them. IT is rolling out some training for GIS.<br>❑ Would like to have work order system – if the asset the is location-based can use Cityworks, otherwise can use IT's Ticketing System or Customer Service Portal (ZenDesk).<br>▪ ZenDesk can be configured to handle both tickets opened by internal staff members as well as the public and can develop knowledgebase behind each issue that can be leveraged to resolve similar future issues.<br>▪ Parks liked the demonstration for ZenDesk. |
| **Planned Projects:** | ❑ Implement "WhentoWork."<br>❑ CIP project for next year – amphitheater upgrades, etc. Need to define what IT upgrades should be included in the renovation budgets. |

## Parks and Recreation - Sports and Recreation

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| **Current State:** | ❑ Business applications being used include:<br>▪ Active.NET. Want to make better use of Active rather than adding more applications.<br>▪ Have a software defect in Active regarding cancelling tennis reservations. |

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| **Requirements:** | ❑ Sports Center at Quinlan may need an AV refresh – also network and cabling may need to be upgraded. Could use one of the smart panels like they have at Quinlan.<br>❑ Looking to repurpose conference room since not using it (not a project for 2022, maybe 2023).<br>❑ Need to look at access control – when upgrade Senior Center will go back and look at the rest of the buildings. Would like to change out keypads on doors to card access.<br>❑ Tech refresh in 2023/24 for team center. May want to move this to another building.<br>❑ Add project to Upgrade Portal Park to be network capable.<br>❑ May want to look at digital timekeeping for Tennis Courts, so people know when their time is up.<br>❑ Could digital signage be a solution (showing who is signed up for what courts and at what time) – connect to MS Bookings.<br>❑ EEC looking at being more interactive – may need more displays would like to have walk-through with IT staff to see what they can do. (See IT budget presentation).<br>❑ Looking at Augmented Reality – then long term, 3D projection without a screen.<br>❑ Opportunities at the Preserve as well.<br>❑ Need to look at Access Control and Security Cameras at the Swimming Pool. FY 2023.<br>❑ Want Mytel phones in most rooms (budgeted for Quinlan) so can broadcast if have security issue. |
| **Planned Projects:** | ❑ N/A. |

## Public Works - Capital Improvement (CIP)

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| **Current State:** | ❑ Capital Improvement is focused on project management: budget, schedule, quality, etc. Don't do design in-house at this time, may do so in the future.<br>❑ Business applications being used include:<br>▪ MS Project and want to make more robust use of it. Are their better tools for them other than MS Project?<br>▪ Extract financial information from Logos, about one-third of what they do.<br>▪ OpenGOV – but not made for printing, so got Collective Budget<br>▪ Bluebeam as a PDF drawing tool, like the ability to share with Bluebeam. Working better than Project Docs.<br>▪ Making a lot of use of Excel.<br>▪ GIS (great for background information, but not seen as being core to what they are doing).<br>▪ The City is using ESRI Storymaps, as well as EngagementHQ on the web-site. Information good but the presentation is not as good as it could be. A project to address this should be in included in the update to the IT Strategic Plan.<br>▪ Automated Bidding Process (custom application developed by City IT).<br>▪ ProjectDox.<br>❑ Issues being experienced include: |

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| | ▪ Have issue with e-mail management / retention, etc. May have to buy more mail manager licenses for the City. Have issue with mail manager and Active Directory.<br>▪ Chad –Have not looked at New World. Not much knowledge in how to use it. No one has talked to them.<br>▪ Contractor using PlanGrid for Library – rely on consultants / contractors. Would PlanGrid work for them?<br>▪ Experiencing some issues when have to exchange information and/or coordinate activities with CalTrans.<br>▪ There is some resistance to using enterprise applications, it seems that too much training is required in order to make effective use of them – the software needs to be more user-friendly for casual users. Don't have the time to figure out how to use seven different packages.<br>▪ Have the same thought about MS Teams. Documents and other content are being stored in MS Teams, OneDrive, and other places (such as ProjectDox and network drives) to find the information they need. This is very time-consuming.<br>▪ Problem when need to archive project information at the end of the project. Have contractors that handle project archiving as part of their contracted responsibilities. Can the project folder be integrated and automatically archived? |
| **Requirements:** | ❑ Certified payroll management.<br>❑ Streamline contract creation and C3 compliance monitoring plus ADA compliance.<br>❑ Streamline development of RFPs.<br>❑ Integrate automated bidding process with the City's financial applications (Logos and CobbleStone).<br>❑ Have to get cost information all of the time. Would like to have information on cost metrics and escalation trends.<br>❑ Visual presentation of information. Used Tableau (visual analytics platform) in the private sector.<br>❑ Create unified repository ("Dataverse") of information so that don't have to re-enter the same information as many as four times.<br>❑ Integrate finance information with the rest of project information (such as tasks, timelines, deliverables, etc.)<br>❑ Facilities Management software to catalog the City's portfolio of facilities.<br>❑ Improve ability to electronically exchange information with contractors when initiate projects (doing it "old school" today with PDFs).<br>❑ Better automate the overall CIP process.<br>❑ Replacement of ESRI Storymaps and EngagementHQ for creating visual content as part of the project to replace the City's current web-site. |
| **Planned Projects:** | ❑ N/A. |

## Public Works - Environmental

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| **Current State:** | ❑ Business applications being used include: |

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| | ▪ Cityworks. Used for drain inlet maintenance, etc. Cityworks has streamlined their workflows and helps them track activities / productivity and to develop meaningful performance measures / workload indicators.<br>- Increases efficiency / accountability.<br>- Limitation is that cannot use Cityworks to obtain information on assets that not owned by the City, such as private sector businesses.<br>- The implementation of Cityworks is a partnership between the Department and City IT. Bill – Cityworks is a partnership between the Department and IT – may need to have a BSA shadow Environmental for a while to see how IT can be of benefit to them.<br>▪ Treated acres are in GIS – urban run-off pollution management, plus creeks page.<br>▪ Environmental Hub is on the City's web-site.<br>❑ Projects in progress include:<br>▪ Rolling out GreenHalo in the fall of 2021 (Sept/Oct) – COTS software product that provides support for tracking construction and demolition debris.<br>▪ RFID for trash cans on hold for now.<br>▪ Have a couple of pilot projects in projects including Acclima (pollution and noise sensors in the vicinity of quarries).<br>❑ SB1383 – A lot of record tracking about paper procurement record keeping, energy, compost. Also tracking for CalRecycle. Paper needs to have 30% recyclable content.<br>❑ Pull information from multiple sources and compile reports for the State. A lot of narrative goes with the data.<br>❑ Not using Laserfiche.<br>❑ Need to be able to tell their story well.<br>❑ Storm drain parcel fees change as land-use changes, and the fees need to be certified every year. Use a consultant for this. |
| **Requirements:** | ❑ It may be useful to have a business systems analyst from City IT work with Environmental for a while to better define how they can make better use of the City's existing information technology assets / applications. |
| **Planned Projects:** | ❑ N/A. |

## Public Works - Service Center

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| **Current State:** | ❑ Divisions supported from the Service Center include Fleet, Facilities, Streets, and Grounds.<br>❑ Business applications being used include:<br>▪ Rock Solid (311).<br>- Integrated with Cityworks (major factor in decision to procure). 311 system will create a service request in Cityworks and then workers will create a work order.<br>▪ Rapid Plan for street closures, shut-downs, events.<br>▪ Cityworks. Facilities is still in the process of migrating assets. Ongoing project. Fleet has been on Cityworks for over three years. FuelMaster is integrated with |

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| | Cityworks for preventive maintenance and Telematics is also integrated with Cityworks. Have remote access in the field (Streets) using iPads and can update Cityworks. Grounds also doing the same thing.<br>▪ The Department is using Cityworks to:<br>- Create work orders, inspections, etc.<br>- Manage fleet and facility assets.<br>- Reporting. Using dashboard to monitor status of tasks, uses for reporting, performance measures, etc.<br>▪ AutoDesk (need more training than functionality).<br>▪ Adobe for PDF documents.<br>▪ Plans mostly in Laserfiche.<br>▪ Property Information Application.<br>▪ Proprietary software (Omega, Flexi) to design signs, etc. Use them on daily basis.<br>▪ FuelMaster to track usage and software to track capacity of fuel storage tanks.<br>▪ Specialized trouble-shooting and diagnostic software from Ford.<br>▪ Telematics for automated SMOG checks, etc.<br>▪ Access management software for various facilities and a key application for older facilities.<br>▪ Vehicle check-out.<br>▪ Online system for safety data sheets (through outside vendor), gave vendor all of the data sheets and put them in database for them.<br>▪ Have Rainbird software for irrigation management.<br>❑ Support for these business applications is a combination of using the product vendor for training, etc., and working with City IT regarding installation, configuration, access, and performance issues.<br>❑ Issues being encountered include:<br>▪ Asset tracking handled a bit differently in each of the shops, some are point-based (GIS) – put GIS layers seamlessly into Cityworks. All housed in GIS and pushed into Cityworks.<br>▪ Each division is different regarding tracking hours on work orders, all time is reported in Cityworks against work orders and in New World for payroll – not trying to identify every possible working hour. Labor in Cityworks is tied to the asset not to the employee.<br>❑ Performing a lot of services that can be tracked with metrics, performance measures. Don't want performance measures to create additional work. Looking to add more. Want them to be just an outgrowth of what they already have in Cityworks. Don't want to take away from the work that needs to be done.<br>❑ City Street Light transition plan is in development – approved by City Council. Could be CIP project by 2023.<br>❑ No need for specialized fleet management system at this time.<br>❑ Have four storerooms in Cityworks (one virtual) fleet is the most recent. Will add new ones if needed in the future. Might want to look at other inventory management systems in the future. |

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| | ❑ Have integrated pest management – paper-driven. Pesticide management.<br>❑ Status of projects from prior IT Strategic Plan:<br>▪ Did re-inventory of trees, filled in gaps. Built application that is forward-facing for residents to look at their trees including the ability to generate 311 requests. |
| **Requirements:** | ❑ Need quicker, easier access to drawings, documents (in Laserfiche) from Cityworks.<br>❑ On Facility side greatest need is for energy management – two largest facilities are not on energy management, antiquated, need to be updated. City Hall and Quinlan Community Center. Need to standardize energy management across the City.<br>❑ Need uniform, standardized approach to energy management – highest need.<br>❑ Fire Alarm Boxes in some City facilities are using obsolete systems, and these will need to be replaced.<br>❑ Future needs, possibly outside of 3-year horizon, include:<br>▪ Smart Streets.<br>▪ Street Light Monitoring and Management.<br>▪ Automated digital displays on Stevens Creek Blvd rather than banners for events – could also be used for emergencies, alerts, etc.<br>❑ Need to develop illness / injury prevention plan (required by OSHA) is there an automated way to generate the plan and then track progress?<br>❑ Don't have a strategic plan for urban forestry – need to get on cyclical basis for updating tree inventory and planning for tree management.<br>❑ Need for integration between Cityworks and New World (Logos). |
| **Planned Projects:** | ❑ Planning to implement automated approach to preventive maintenance. |

## Public Works - Transportation / Traffic

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| **Current State:** | ❑ Applications being used:<br>▪ Use a lot of the MS Suite, MS Publisher, etc.<br>▪ Adobe and Bluebeam for plan review (not all staff members have Bluebeam, more intuitive than Adobe).<br>▪ AutoCAD if doing in-house design.<br>▪ Cityworks (pretty good).<br>▪ Accela for transportation permits.<br>▪ 311 City Source software for the public to create work orders.<br>▪ govAccess (from Granicus) to modify the web-site, very clunky, hard to get a good looking web-site.<br>▪ GIS applications, tools are very nice.<br>▪ Chris – Google Earth, some web-site work, seems to work OK. Only thing coming up in the future may need more complex modelling software – using VTA model but would like to have own model as go into the BLT transition. Transportation-impact mitigation. Otherwise, happy with Teams, Word, etc.<br>▪ APMS Now used to manage controllers in the field.<br>▪ Gresemark for video detection. |

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| | ▪ Econolite Supervisor to manage cameras.<br>▪ Polara app on iPhone.<br>▪ SolarWinds to manage Etherwind switches in the field.<br>▪ PCMP tester, etc., in the shop.<br>▪ exacqVision for video surveillance.<br>▪ Laserfiche for old blueprints.<br>▪ GIS.<br>▪ Cityworks.<br>❑ For the future would like to have more freedom to manage software with regard to updates (have a lot of software and a lot of updates). Work directly with the vendors and the set up something with IT. Anticipates will add software in the future. Would like to upgrade video to IP.<br>❑ Traffic center network was refreshed last year. Migrating from serial video controllers to Ethernet / IP-based video controllers – some network connection issues. |
| **Requirements:** | ❑ Need to provide capability for the public to identify safe routes to school - want public to be able to plug in an address and then get route but does not seem possible with GIS. This can be done in Google but does not identify which routes are the safest. |
| **Planned Projects:** | ❑ N/A. |

## 3.3 – Innovation and Technology Interviews

Interviews conducted with the City's innovation technology managers and staff included:

- ❑ Bill Mitchell, Chief Technology Officer.
- ❑ Nidhi Mathur, Applications Division Manager.
- ❑ Applications Division Staff Members.
- ❑ Teri Gerhardt, GIS Division Manager.
- ❑ GIS Division Staff Members.
- ❑ Benny Hsieh, Infrastructure Division Manager.
- ❑ Infrastructure Division Staff Members.

The interviews are summarized below. The summaries include:

- ❑ **Current State:** Information regarding current business processes, issues that they may be experiencing in using information technology, and projects that they are working on.
- ❑ **Projects in Progress or Planned:** Projects that are either in-progress or that are planned through FY 2023/24.
- ❑ **Issues and Challenges:** Difficulties that have encountered in the development, deployment, and delivery of information technology software and services for the City's internal user community and the public.

- **Opportunities:** Possible future uses of information technology that should be considered in the update to the City's IT Strategic Plan.

Please note that these summaries reflect SDI's understanding of the key discussion points and that potentially confidential or sensitive information regarding the City's information technology infrastructure and applications has been removed from the published summaries.

## Bill Mitchell - Chief Technology Officer

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| **Current State:** | ❑ General observations:<br>▪ Meeting with Directors on quarterly basis – feels that City IT needs to drill down to the next level of management to get a better perspective of challenges, issues, opportunities, and priorities.<br>▪ The City has an informal IT governance process. The CTO works with is staff to triage requests.<br>▪ The City has a policy that all IT expenditures must go through IT. Finance helps if someone tries to purchase hardware, software, or services without going through City IT first. Even so, some departments have software and/or services that City IT doesn't know about.<br>▪ Getting there with awareness that anything that touches the City's network must go through City IT.<br>▪ All users have mandatory security training and City IT sends out "Phishing" e-mails to assess whether users can identify them.<br>▪ The disaster recovery (DR) site is "solid." City IT staff members go the DR site annually to ensure that they are familiar with the facility.<br>▪ IT Team is very stable and solid, engaged – have technical muscle.<br>▪ It will be interesting to see where the City goes with telework.<br>▪ Centralization of IT support services went well. Putting Business System Analysts (BSAs) out in the field to assist users with the definition of requirements and in making better use of business applications.<br>❑ Software and services that have been deployed include:<br>▪ Have deployed SSO and self-service password reset for users.<br>▪ Using an artificial-intelligence (AI) based cyber-security tool that autonomously responds to cyber-attacks), so the City is prepared to respond in the event that it is hacked.<br>▪ Maze and Associates performs a network penetration test every year as part of the audit, getting a professional testing service in every two years.<br>▪ Implemented BOSSDesk (https://www.bossdesk.com), an IT Service Management and Help Desk Solution for both cloud and on-premises computing.<br>▪ Implemented Zendesk (http://www.zendesk.com) for customer relationship management (CRM) for public issue reporting, routing, and management.<br>- Users preferred Zendesk and is more cost-competitive as well. |

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| | ▪ Creating a data warehouse for source data – pulling data from Active Directory, New World, Accela, etc. into a common repository ("Dataverse") so that can quickly launch applications.<br>- Have some initial successes, were able to respond quickly to County requirement for vaccination status statistics for City staff, volunteers, etc., within the required 14-day window.<br>▪ Have Portfolio Dashboard for any project that has to be reported out to the City Council – takes data from MS Project and New World. |
| **Projects in Progress or Planned:** | ❑ Projects in progress include:<br>▪ Working on adaptive traffic management / signaling.<br>▪ Have Esri Velocity database for IoT (Internet of Things) data from "smart" devices – feels that the demand for IoT for real-time management and reporting is going to be significant.<br>▪ Deploying drones (and the software to manage them) to capture damage reports following an emergency. DroneDeploy (http://www,dronedeploy.com) allows them to fly a drone over a pre-defined flight path.<br>▪ Going into the Public Works Service Center next with video capture.<br>▪ Project with Aclima (http://www.aclima.io) - works with Bay Area Air Quality. Drive every street in the City 20 times per year to measure and analyze air pollution and greenhouse gasses.<br>▪ Data literacy in the organization is important – have a Data Governance project for next year. Looking to eliminate the need to redundantly maintain the same information in multiple business applications.<br>- Minimize the need to create and maintain interfaces between business applications. |
| **Issues and Challenges:** | ❑ Need to decide if the City should have an Information Security Officer (ISO).<br>▪ In a highly mobile and remote working environment, users represent the biggest security exposure is the user.<br>▪ Concerned that it may cost too much to hire an ISO and then have them constantly in training.<br>▪ See the City doing more penetration-testing.<br>▪ Could consider security as a service as an alternative to hiring an ISO.<br>▪ In interim looking at bringing in a Senior Network Engineer (possibly from within) and bringing the other network staff members to Network Specialist.<br>❑ Concern about the usability of the City's web-site for the public, the difficulty being experienced by the users with the proprietary content management tools for the web-site, and the level of support from Granicus / Civica. Might go with Druppel. |
| **Opportunities:** | ❑ Vision going forward includes:<br>▪ Continuing to improve customer service.<br>▪ Helping departments with budgeting for IT-related items.<br>▪ Continuing to improve collaboration with the users.<br>▪ Working with OEM group on Neighborhood Watch. Need to make the public more aware of City programs and information that are available to them. |

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| | ▪ Expanding programs for the public – need to redo the web-site and make it more graphical.<br>▪ Keeping up with modern, secure infrastructure. Moving cautiously to make sure that their security needs are met.<br>▪ Doing a better job of succession planning within City IT.<br>▪ Improving resiliency. Thinking about going to a cloud-based DNS. |

## Nidhi Mathur, Applications Division Manager

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| **Current State:** | ❑ The Division was created approximately four years ago – Nidhi has run it since then.<br>▪ Had previously managed the implementations of New World and Magnet (not successful, was failing to begin with, objective was just to get the application implemented and then was successfully replaced with Accela).<br>❑ Have been closely collaborating with the GIS Division (which supports the Esri GIS platform as well as the Laserfiche document / content management system) but boundaries are not formal as to the respective responsibilities of the Applications and GIS Divisions.<br>❑ The number of applications is a challenge, i.e., procured NEOGOV because New World could not support all of their HR needs.<br>❑ Current state:<br>▪ Had a lot of home-grown solutions on AWS (cloud) platforms. Working to improve, optimize, and consolidate.<br>▪ Meeting with all departments in the City. Distributing resources based on criticality of project for the City and budget.<br>▪ All business applications had to be available for remote workers during the pandemic.<br>▪ Always manage to find a solution for the users, i.e., appointment calendars (using MS Booking), have never been in a situation where they could not find some way to help out the users.<br>❑ All staff members taking training to keep them ready to take on new tasks. |
| **Projects in Progress or Planned:** | ❑ Current projects include:<br>▪ Moving the processing of business licenses from New World to Accela.<br>▪ Other Accela projects include:<br>- Rolling out encroachment permits in Accela and integrating with Adobe Sign so applicants can sign for permit online.<br>- Trying to optimize building permits in the portal, only five now, want to have all of them available to the public.<br>- Working on customer service portal for Community Development and planning to use Zendesk.<br>- Depending on the project may have external support for help with implementation, i.e., Accela, Zendesk.<br>- Will bring in external resources but Nidhi will be the project manager. |

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| | ▪ Nidhi is working to develop an application portfolio.<br>▪ Rolling out NextRequest for City Clerk – using internal resources and planning.<br>❑ Planned projects include:<br>▪ A project for the replacement of New World (the City's financial and HR application) is planned.<br>- New World not "open" and information exchanges with other business applications are difficult to implement, the Application Program Interface (API) is very limited.<br>- Will hire 3rd-party firm to perform a Needs Analysis, funding approved for next FY, but no budget for the next steps yet. May do so in six months.<br>- Need application for employee performance management.<br>▪ Migrating business applications from on-premises to fully SaaS (Software as a Service) to make them more readily available to City users who are working from remote locations as well as to improve resiliency / availability of the applications in the event of a disaster such as an earthquake.<br>▪ Getting the code enforcement officers on Accela. |
| **Issues and Challenges:** | ❑ Can get from 10 to 40 requests in on a daily basis. Some are very complex and require more time and resources to turn around than others so need to prioritize.<br>❑ The implementation of SaaS will be a challenge, although very useful in a remote environment, have been consumed with its implementation / rollout.<br>❑ City does not have a dedicated Project Management Office (PMO) and there is no discussion at this time about implementing one. City IT is nonetheless firm about having a project charter and a project plan before signing-off on funding requests for new projects. |
| **Opportunities:** | ❑ Would like to have another dedicated Business Systems Analyst (BSA), have 2 full-time BSA's and two part-time persons.<br>▪ An additional BSA would enable them to better triage requests.<br>▪ Thinking that would have 30% of internal staff on new projects and 70% on maintenance (varies over time – this is the proportion at this time).<br>❑ The implementation of the "Dataverse" is very critical for them – need to get to next level. Need to be able to support business analytics. |

## Applications Division Staff

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| **Current State:** | ❑ Supporting New World (Finance / HR) and CobbleStone (contract management).<br>▪ Average user does not have many issues, much of Application's work relates to managing security permissions.<br>▪ Have some one-off issues in New World, but other working OK, from a day to day perspective.<br>▪ Human Resources is not happy with the functionality in New World.<br>▪ CobbleStone went in last year.<br>- Application is slow since the users have to be connected to the City's VPN to access it. |

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| | - Had to develop a custom integration with Adobe Sign.<br>- There is no integration between New World and CobbleStone. Once a contract is completed in CobbleStone Finance has to manually set up the payments in New World.<br>❑ Application selection is a collaborative process with the users. Budget is in IT – so IT makes the final decision on selection (review with Bill).<br>❑ Supporting a wide-range of applications as well including:<br>▪ Accela.<br>▪ Cityworks.<br>▪ SharePoint.<br>▪ Office365.<br>▪ City's website (https://www.cupertino.org) – formerly Civica, now acquired and supported by Granicus.<br>▪ Laserfiche (in conjunction with the GIS Division).<br>▪ Custom applications.<br>❑ Workload / priorities vary – get direction from Nidhi and Bill. Have tickets (in BOSSdesk) and solutions that they track in BaseCamp. Approach is agile, continuous delivery. Work out priorities with Nidhi and the users.<br>❑ All division staff members getting certified on the MS Power platform (a service for building business apps that work across the web and mobile environments with potentially less time and expense compared to traditional custom software development) so will be ready for the City's transition to a low-code SaaS applications environment.<br>❑ Getting other training as they need it. |
| **Projects in Progress or Planned:** | ❑ Introducing Zendesk for business programs such as the Permit Center.<br>▪ Great fit for the business process.<br>▪ Will be integrated with business process automation, dashboards, visualizations, reporting, etc.<br>❑ Evaluation / replacement of New World.<br>❑ New projects on the AWS platform using .Net such as Open Enrollment Forms, etc.<br>❑ Application development / maintenance as required. |
| **Issues and Challenges:** | ❑ Need to stay on top of SaaS solutions that can be readily implemented to meet specific business needs. Need to work with users to expose workflows to new automated solutions. |
| **Opportunities:** | ❑ Migration of business applications from on-premises to SaaS. |

## Teri Gerhardt, GIS Division Manager

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| **Current State:** | ❑ GIS is the data backbone of the City. Is of the opinion that the GIS Division is doing a good job of making sure that staff have all of the layers that they need and that have links back to Laserfiche. |

- ❑ Have quarterly internal GIS meeting with key users from all over the City to review what is available to use.
  - Highlight all of the new apps and maps and go over any updates that they have.
  - Get very good feedback from the users regarding what is working for them and what is not, and questions from the public that are difficult to answer.
- ❑ Ensure that the GIS functionality that is made available to the public is intuitive to use.
- ❑ Don't have a newsletter or special web-site regarding GIS – but do have a page on the City's web-site – have gallery of all of the tools that are available.
- ❑ The City does not have a GIS steering committee.
  - Projects / priorities are driven by the budget and what is requested by the users.
  - Information regarding the status of GIS projects is available in the Planner in MS Teams and keep track of completed projects in the Help Desk system.
  - Get a lot of questions regarding potential uses of GIS, i.e., Storm Drain Program, information regarding private storm drains.
- ❑ Feel as though they are staying current with backlog – tend to move through requests very quickly. Known for fast turnaround in the City.
- ❑ GIS programs supported include:
  - Extensive asset management program through Cityworks – used in all operations divisions. Expanding what is captured in Cityworks. Some users not 100% onboard (i.e., Grounds, Traffic) but everyone else very committed to use of the application.
  - Pavement management – 84% PCI, much higher than other Cities, like to highlight what the City is doing very well. Also have CIP story map for the public.
  - Have augmented reality art works tour regarding public works of art in the City.
  - Employees get training in GIS as part of onboarding, esp. with regard to property information.
  - Also provide some training with regard to Cityworks.
  - Sharing GIS information – part of regional GIS group. Created GIS Disaster Response Group, developing different common regional responses to Disasters. Working on a regional tool for building damage assessment.
  - Moving into aerial – doing it every year with LIDAR every four years.
  - Meeting with City Disaster Response team, to get tools built and tested. Recently did exercise with volunteers and staff.
  - Working with the City's sidewalk inspection vendor to pull in their information.
- ❑ Working with City public safety committee – SO comes to them periodically for maps. Share information with them in different forums.
- ❑ City IT is working towards a City-wide project management methodology.
- ❑ Getting a lot done, but also have a long "laundry list."
- ❑ Comfortable with what they have. Training is key and do a lot with it using the Power platform.
- ❑ Working on an enterprise roadmap for Laserfiche.

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| | ▪ IT hired consultant to develop the roadmap – in first year of three year project. Ad-hoc team of four people (two from Public Works).<br>▪ Laserfiche was initially implemented in the City 18 years ago.<br>▪ The implementation was very siloed by department and coming up with a unified structure. |
| **Projects in Progress or Planned:** | ❑ Big project is the "Dataverse" repository. Have employee data in there now, and continuing development is budgeted. Everyone wants enterprise information, digital forms, and want access to information to be automated.<br>❑ 3D modelling is big – and the technology is getting more robust and easier to use.<br>❑ Starting drone program – think of use cases all of the time. Team working towards drone certification, plan is to quickly capture imagery and make it available to the users.<br>❑ Augmented reality for McClelland preserve – nature information.<br>❑ Doing more AI and deep learning. Had interns going out into the field to collect information, if could use machine learning instead that would be better – more accurate.<br>❑ Expand Cityworks, get everyone on Storeroom, Public Works is hiring a person to manage Storeroom.<br>❑ Use Esri Velocity to capture real-time data and generate work orders (such as related to potholes) |
| **Issues and Challenges:** | ❑ Missing that they are not advertising enough to the public regarding the GIS features that are available to them.<br>❑ Need more communication after the initial roll-out of GIS applications to encourage their use.<br>❑ COVID has changed user's expectations regarding speed of delivery.<br>❑ Have only one part-time intern that is the "guru" for Laserfiche, need full-time person.<br>❑ Moving to SharePoint as the replacement for network drives for publishing and sharing files. |
| **Opportunities:** | ❑ Continue deployment of GIS functionality for both the City's internal user community and the public.<br>❑ Implementation of the "Dataverse." |

## GIS Division Staff

**Current State:**

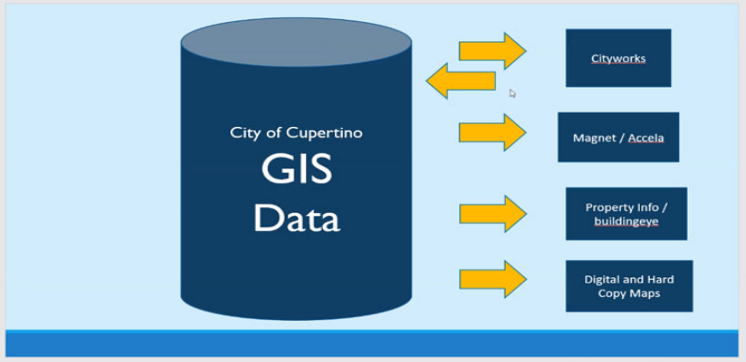


Figure 3.1 – City's GIS Environment (Source: City of Cupertino)

- The City has an extensive GIS program including:
  - Data is usually maintained by City staff and then reviewed by GIS staff.
  - The County of Santa Clara downloads GIS data from the Open portal to update the County's GIS.
  - The City gets updated parcel data from the County monthly.
  - GIS is responsible for a number of new projects as well as the maintenance of existing GIS applications.
  - Get aerials annually and get Lidar scan every three to five years.
  - In an emergency, members of the public can post updates to ArcGIS online.
  - Needs driven by customers (internal staff) such as Tree application as well as from members of the public.
  - The City's 311 project has a dashboard attached to it and they are using some triggers to work with 311.
  - Conduct GIS training sessions for City staff members, annually and as needed.
  - Users can generate maps, but requests for more detailed maps come to the GIS team.
  - Users are reportedly very happy with City's GIS program although every department uses GIS a little bit differently.
  - Users can access GIS from the field and update data – also using a mobile application for Cityworks.
    - Have some connectivity issues out in the field.
  - GIS staff members meet with the GIS Division Manager and the Meet with Teri every week and the Chief Technology Officer every other week to review projects / priorities.
- Current projects include:
  - Cityworks:
    - Data is sent from GIS to Amazon (AWS) server and then integrated with Cityworks.

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| | - Property information system for public linked to Esri and Laserfiche, plus open data portal hosted by Esri.<br>- GIS is the central repository – just edit from Cityworks.<br>▪ ServiceFinder app on AWS server.<br>▪ Accela is doing the same – getting spatial data from GIS, but permit information kept somewhere else.<br>❑ Have Google analytics page – know that they get 100's of views per month.<br>❑ GIS enterprise license with maybe 10 users – looking at going into to the enterprise license model. |
| **Projects in Progress or Planned:** | ❑ Goal is to get all documents that are subject to records retention in Laserfiche. Have property number in Laserfiche metadata, same for streets – each has own asset ID.<br>❑ IoT. Looking at traffic sensors, etc. Looking at vendors right now.<br>❑ Drone Program - still going through certification process for the drones, will likely result in more data requests.<br>❑ More public information, i.e., Garage sales.<br>❑ Looking at more integration with other applications, i.e., CIP projects and budget information, etc. – expand use of Cityworks for CIP projects.<br>❑ Have different ways to connect to GIS, would be nice to have a faster, less seamless connection (as fast in the field as in the office).<br>❑ Make GIS applications easier to use, so don't always have to go through Esri. |
| **Issues and Challenges:** | ❑ Do not have a great way of getting information to the public regarding what the City has in GIS.<br>❑ Don't get very many direct contacts from the public. Should they have chatbots on the City's web-site (the 311 application has chatbots as well as a knowledge base and this could be a model for what GIS should have available).<br>❑ Managing user requests (tickets) tickets through MS Teams and BOSSDesk, double entry since most people just come up to him in person. Can't pull the data out of Teams as easily as BOSSDesk. |
| **Opportunities:** | ❑ N/A – please see above. |

## Benny Hsieh, Infrastructure Division Manager

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| **Current State:** | ❑ General notes:<br>▪ Implemented a lot of the items identified in the 2015 IT Strategic Plan and the 2017 update.<br>▪ City IT is generally responsible for the support of anything that has an IP address.<br>▪ A lot of the workload going to SaaS.<br>▪ Starting to take over some responsibilities from Public Works such as the phone system, video capture, and facility access systems.<br>▪ Have a vendor supporting the City's implementation of VoIP.<br>▪ Reviewing user requests / issues in BOSSDesk on a regular basis, looks for patterns. |

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| | ▪ IT Division Managers meet with the Chief Technology Officer every other week.<br>❑ Infrastructure:<br>▪ Have revamped the City's infrastructure but coming to the point where they are going to need to reevaluate / replace access points, servers.<br>▪ City Hall is an older facility; the server room is in a weak area of the building. Internet connectivity at City Hall is also an issue since there is no fail-over in the event that the connection fails.<br>▪ Next step with the City's remote disaster recovery (DR) site is to have staff visit every six months to ensure that they are familiar with site and equipment.<br>- They can VPN into the DR site.<br>- DR site is updated every 15 minutes and backups to the DR site occur weekly.<br>- Also have some infrastructure at the Corp Yard, but not a full DR site and at other sites.<br>▪ Uniformly using Apple devices for tablets – user preference. iPads in Service Center.<br>❑ Security:<br>▪ Working on the security side of things – using AI-based tools to manage the network.<br>▪ Security is a huge issue for them – question of when, not if, they will get hit with a ransomware attack.<br>▪ Need to have complete security review.<br>❑ Remote Working:<br>▪ City provides devices but employees provide their own internet access.<br>▪ Infrastructure Division staff members are mostly working from home at the current time.<br>- Not sure that is sustainable in the long-run.<br>- Using Teams, a lot to keep in touch and review status, staff members have VoIP on their laptops.<br>- Need to always have at least one person on-site at City Hall. |
| **Projects in Progress or Planned:** | ❑ Looking at IaaS (Infrastructure as a Service) – migrated domain services to Window 2019 – should they go to Office 365?<br>- Open to thought of moving services to the Cloud. |
| **Issues and Challenges:** | ❑ Office space for City IT at City Hall is not optimal – too public, too much traffic.<br>❑ With many City staff members working remotely during the pandemic, the City needs to review and update policies, i.e.:<br>▪ What does the hybrid / remote workplace look like?<br>▪ What is the City responsible for?<br>▪ What is the employee responsible for?<br>❑ Similarly, the policy for telecommuting should also be addressed when the City reopens its facilities.<br>❑ They have a lot of "application creep" lately (development of new custom applications by the City's IT staff); keep adding new applications. |

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| | ▪ Question as to the supportability of these applications in the long run.<br>▪ Should first choice always be COTS and then only develop custom applications if an existing application is not available or a good fit for the City's requirements?<br>❑ Security is becoming a much bigger concern. Need a dedicated person responsible for managing security.<br>▪ Need to develop a strong security policy particularly when have many City staff members working remotely. |
| **Opportunities:** | ❑ N/A – please see above. |

## Infrastructure Division Staff

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| **Current State:** | ❑ General:<br>▪ The City has come a long way from 2017.<br>▪ Moving more and more to the cloud.<br>▪ Initial challenge was that COVID came on fast, had already been moving to notebooks. Logistics were a challenge, also home environments are not always ideal (internet access, workspace, etc.).<br>- Having most of the staff on notebooks was a big advantage.<br>▪ City very good about training.<br>❑ User Support:<br>▪ All users have notebooks, very mobile workforce. Need to review best practices for managing a mobile workforce.<br>▪ Using BOSSDesk (WMI technology) for support, some challenges with remote workforce. Inventory / asset tracking functionality is limited.<br>❑ Infrastructure:<br>▪ Have standard configuration for notebooks and desktops (small number).<br>▪ The City has standardized on Dell devices (except for Apple tablets) they try to make sure everyone has the same configuration.<br>- Update images about every six months.<br>- All devices are locked down, no local administrators.<br>- Have MDM (Mobile Device Management) for notebooks, can track, freeze, and wipe them remotely.<br>▪ UPS at City Hall has been overhauled, have DR site in Phoenix, can spin-up VM's over there, have not tested yet. In plans to do during 2021/22.<br>▪ Went to hyper-converged virtual infrastructure.<br>▪ Have two Internet providers (ATT at City Hall and redundant circuit at Parks – some branch offices have Comcast Business).<br>▪ Tech refresh is ongoing. Using SmartDeploy and PDQ to image devices and push out software. Handling much of the physical work themselves, have an external service provider for help as needed. Also have Dash to help with deployments. IT staff handles "racking and stacking."<br>❑ Security: |

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| | ▪ Responsibility is split. The Applications Division handles cloud-based security, and Infrastructure handles local security, firewalls, etc.<br>▪ Biggest challenge for them. Need to be able to weed out the soft alerts so that are not over-whelmed.<br>▪ No outside Pen testing – last time was 2015.<br>▪ Would like to know more about database security – some concern that the Applications Division may not have sufficient staff to effectively manage database security. |
| **Projects in Progress or Planned:** | ❑ Traffic Operations Center now on the City Network (ongoing).<br>❑ Implementing additional network controls including DarkTrace appliance to protect them from ransomware.<br>❑ Finishing up MFS rollout – started with City users now moving on to Commissioners and volunteers.<br>❑ Upgrading cameras around the City from analog to digital (took over from Public Works) – responsible for video capture.<br>❑ Taking responsibility for access control to City buildings. |
| **Issues and Challenges:** | ❑ The Data Center is located in the worst part of City Hall – will need an earthquake retrofit or move of Data Center to an alternative facility combined with migration to Cloud-based infrastructure services.<br>❑ Would be nice to have an IT Lab. Used to have part of the EOC at City Hall but now limited to just to one wall.<br>❑ Would be nice to have devices with more efficient multi-factor authentication than is provided by current Dell devices.<br>❑ Office space for IT is a problem – big open space at City Hall can be distracting. |
| **Opportunities:** | ❑ N/A – please see above. |

## 3.4 – Business Applications

This section of the IT Strategic Plan Update provides a review of the City's portfolio of business applications that considers:

- The business applications that are being used, their users, and opportunities for the City to make better use of them.
- Their impact on the City's total cost of ownership (TCO) for information technology and its return / value on this investment (ROI).

### City's Current Application Portfolio

The City's portfolio of business applications has steadily increased since the development of the IT Assessment Report and the original IT Strategic Plan in 2015 and includes:

- Vendor-supported Commercial-off-the-Shelf (COTS) products that are hosted on-premises in the City such as Tyler's Logos financial and human resources system which is widely used throughout the City.
- Vendor-supported Commercial-off-the-Shelf products that are delivered as web-based services (i.e., hosted remotely and accessed through the Internet) such as the Active.NET application used by Parks and Recreation. The general trend (discussed in more detail in Section 5, Information Technology Trends) is that COTS applications are moving from on-premises environments to web-based services since support for the application is greatly simplified and improved by having all clients utilizing the same code base.
- Business applications that have been developed by the City.
- Although not included in the applications portfolio, it is also likely that various users have developed ad-hoc databases and spreadsheets to facilitate their business processes. While these are helpful, they can also be a source of concern with regard to their backup and recovery as well as their security.

This diversity is depicted in Table 3.2, Matrix of Business Applications. Table 3.2 lists nearly fifty applications that were identified in the course of the departmental and Innovation Technology Interviews with the exception of:

- Office software (Word, Excel, Access, Visio, etc.).
- County and State systems used by the City.
- Software products used solely by City IT for the management of the IT infrastructure or for the creation and maintenance of applications.

For each business application Table 3.2 identifies:

- **Application:** The name of application.
- **Vendor**: The vendor supporting the application.
- **Business Function**: A brief description of the functionality provided by the application.

- **Users:** The user community.
- **Action**: The steps the City should take with regard to the application:
  - *Replace:* The City should consider replacing the application.
  - *Retain:* The City should continue to use the application.
  - *Review:* The City should review the current implementation of the business application with the objective of determining whether: a) the functionality provided by the application overlaps with other applications and could be a candidate for consolidation, or b) whether the City could be making better use of the functionality provided by the application by reviewing and re-engineering its business processes.
- **Notes:** Additional information regarding the business application.

| Application | Vendor | Business Function | Users | Action | Notes |
|---|---|---|---|---|---|
| 311 City Source | City Source, Inc. | Community Relationship Management | PW/Traffic | Review | 1 |
| Accela | Carahsoft | Land use / Permitting/ Inspection Scheduling | Community Development | Retain | |
| Active | Active.NET | Recreation back office application & Portal | Parks & Recreation | Review | |
| Adobe Sign | Adobe | Signature routing & Signature API | City-wide | Retain | |
| ArcGIS | Esri | Geographic information | IT/GIS | Retain | |
| AutoCAD | Autodesk | Drafting software | Public Works | Retain | |
| Better Impact | Better Impact | Volunteer Management Apps | Recreation, CMO, CERT | Retain | |
| Bluebeam | Novedge | markup tool for Architectural drawings | CIP | Retain | |
| BOSS | BOSSDesk | Help desk ticketing system | HR, IT | Retain | |
| Building OS | Atrius | Monitor City Facility energy usage | CMO/Sustainability | Retain | |
| Buildingeye | Buildingeye, Inc. | Rapid Plan traffic control plan software | IT/GIS, PW/Service Center | Retain | |
| CitizenServe | Online Solutions | Code Enforcement Case Management App | Code Enforcement | Review | 2 |
| City Data Services | CDS | Grant Module Software | Housing | Review | 3 |
| Cityworks | Trimble Utilities | Civic Central Building & Planning Modules | Public Works, IT/GIS | Retain | |
| Civica | Granicus | City's Web-Site and Content Management | IT | Replace | 4 |
| CivicCentral | Civic Central | Public inquiries regarding permits | Community Development | Retain | |
| CobbleStone | CobbleStone Software | Contract management system | City-wide | Review | 3 |
| Community Climate Solutions | Community Climate Solutions | Climate Action Plan supporting application | CMO/Sustainability | Retain | |
| exacqVision | Exacq Technologies | IP Video Surveillance  Management | Public Works/Transportation | Retain | |
| EngagementHQ | bangthetable | Community engagement software | CMO/Communications | Retain | 1 |
| FordIDS software | Ford Motor Co. | Diagnostic software used SC Mechanic Shop | PW/Service Center | Retain | |
| FuelMaster | Syntech | Track usage of fuel and capacity of fuel storage tanks | PW/Service Center | Retain | |
| GolfNow | Golfnow.com | Tee Time Booking Service | Parks & Recreation | Review | |
| Government jobs | NEOGOV | NeoGov Public Job Portal | HR | Retain | |
| GovInvest | GovInvest, Inc. | Pension & OPEB Licensing | Finance | Retain | |
| Granicus | Granicus | Govt. Transparency and Meeting Efficiency suite | CMO, CMO/City Clerk | Review | |
| GreenHalo | Greenhalo.com | Construction and demolition debris tracking | PW/Environmental | Retain | 5 |
| HomeKeeper | Groundedsolutions | Manage Housing programs | Housing | Retain | |
| Issuu | Issuu.com | Digital marketing platform | Parks & Recreation | Retain | |
| LaserFiche | Laserfiche | Digital Record Management System | City-wide | Retain | |
| LegisStar | Granicus | City Council Minutes Media Manager | CMO | Review | |
| Logos | Tyler | Financial Management & HR | Finance | Review | 3 |

| Application | Vendor | Business Function | Users | Action | Notes |
|---|---|---|---|---|---|
| MetroScan | Corelogic | Property Database. | Community Development | Retain | |
| NextRequest | NextRequest | Public Records request management | CMO/City Clerk | Retain | |
| OpenGov | Opengov.com | Town Hall, Budget Builder, Financial Integration, Management Reporting | Finance, Communications | Review | |
| PayPal | PayPal | Point of Sale for Online Payments | Finance | Review | |
| Prodemand | Mitchell1 | Auto repair information software | PW/Service Center | Retain | |
| ProjectDox | Avolve | City's Plan Check review | IT/Applications | Retain | |
| Qless | Qless.com | Permit Counter Queue Management System | Community Development | Retain | |
| QueueList | N/A | Appointment Scheduling | Code Enforcement | Review | 6 |
| RapidPlan | Invarion | Traffic control plan software. | IT/GIS | Retain | |
| Recyclist | Recyclist.co | Environmental/Commercial Outreach Tracker | Environmental | Retain | |
| RideAmigos | RideAmigos | Ride Sharing Application | CMO/Sustainability | Retain | |
| Rock Solid | Rock Solid Technologies | Constituent Relationship Management (CRM) | IT/GIS | Retain | |
| SQ Box | catdv.com | Intranet Content Management System | IT/Applications | Retain | |
| Telematics | GeoTAB USA, Inc. | Vehicle management | Public Works | Retain | |
| TLOxp | Trans Union | Skip Traing | Code Enforcement | Retain | 7 |
| Velocity EHS | CVC Capital Partners | Material Safety Data Sheet account portal | PW/Service Center | Retain | |
| WhentoWork | WhentoWork | Mobile application for staff scheduling | Parks & Recreation | Retain | 8 |

**Notes:**

(1) The City has a number of applications that perform functions related to community relationship management / 311 and the City should consider whether it might be feasible to consolidate them.
(2) It has been suggested that the functionality provided CitizenServe might also be provided by Accela.
(3) The City has a number of applications performing financial and HR functions and is considering whether to replace Logos with a newer public sector ERP solution that would enable the City to eliminate the use of some of these applications.
(4) Users reported considerable dissatisfaction with the look and functionality provided by the City's web-site and the difficulty in editing existing content and adding new content to the web-site. The City should consider the redesign of the web-site and replacement of the site.
(5) GreenHalo was being implemented in the fall of 2021.
(6) QueueList may not be in use at this time.
(7) TLOxp was implemented in the fall of 2021.
(8) WhentoWork will be implemented in 2022.

## Impact of the Application Portfolio on the City's Total Cost of Ownership and Return on Investment

A diverse portfolio of business and operational applications impacts both the City's total cost of ownership for information technology as well as the return / value realized for these investments and underscores the need to carefully manage and coordinate what business and operational applications the City is using since:

- The procurement and/or in-house development of a diverse portfolio of business applications is often the result of a number of factors including:
  - Individual departments that are performing similar business functions in dissimilar ways, thus an application that is a good fit for one department might not be a good fit for another department.
  - Applications that provide support for a number of business / operational functions, but that provide better automated functionality for some business / operational functions than others.
  - Under-utilization of the functionality provided by City-wide business applications.
- The number of business and operational applications impacts the City's total cost of ownership for IT in a number of ways including:
  - License and maintenance fees.
  - Internal support costs (whether this support is delivered by City IT, external service providers, or City employees in non-IT classified positions).
  - The cost to develop and maintain automated information exchanges between core applications.
  - The costs related to manual workarounds including the effort to export / import information between applications, the redundant entry of the same information by multiple individuals into multiple applications, and the effort related to reconciliation of this information.

# Section 4: Findings and Recommendations

## 4.1 – Introduction

This section of the IT Strategic Plan Update provides information regarding the findings and recommendations developed by SDI and includes:

- A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis that provides a high-level view of the City's current information technology environment.
- An itemization of the specific findings that were identified and information regarding the recommendations to remediate the findings.

## 4.2 – SWOT Analysis

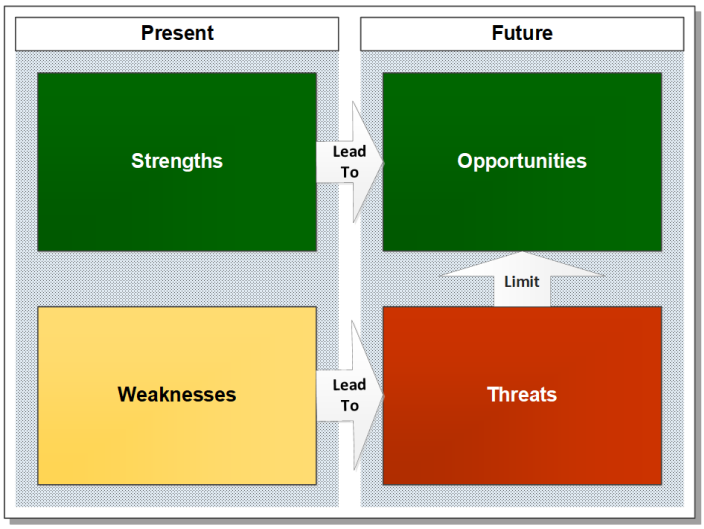


Figure 4.1 – SWOT Analysis Framework (Source: SDI)

The SWOT Analysis provides a holistic view of the results of SDI's assessment of the City's strengths, weaknesses, opportunities, and threats in its information technology environment. As shown in Figure 4.1, SWOT Analysis Framework, the City's present strengths should lead to opportunities in the future to make greater use of information technology in serving the needs of the City's internal user community and the public, while its present weaknesses make it vulnerable to potential threats which could impede the City's ability to realize the opportunities. Looking at the City in this framework, SDI found that it has both significant strengths and opportunities; however, it must act to remediate the weaknesses and mitigate the potential threats in order to realize the opportunities.

The key findings of the SWOT Analysis include:

- **Strengths**: Since the initial IT Strategic Plan was prepared for the City in 2015 and then updated in 2017, the City has made significant progress in its use of information technology and key strengths include:
  - City IT is now well-staffed and effectively managed.
  - The delivery and management of IT services has been largely centralized.
  - The City has successfully implemented key enterprise business applications for finance / human resources, land management, asset management, document / content management, and GIS.
  - The City's IT infrastructure is more robust and sustainable than in the past.

- The City has taken appropriate actions to better prepare for disaster recovery.

- **Weaknesses:** Many of the weaknesses identified in the original IT Strategic Plan have been remediated; however, there are a still a number of items that remain to be addressed including:
  - The City continues to rely on ad-hoc processes for the governance of information technology. While these have been effective in meeting the needs of individual departments and some groups of City-wide users, the need for better collaboration between individual departments remains.
  - One of the consequences of not having a high-level of collaboration between these departments is the growth of the number of individual business applications in use and, as noted in Section 3.4, Business Applications, has mixed results. While these business applications can be tailored to the specific needs of individual departments, the number of business applications impacts the City in a number of ways including its total cost of ownership for information technology.
- **Opportunities:** The City has a number of opportunities to make better use of information technology, including better managing its total cost of ownership for IT as well as improving its return / value for these investments including:
  - Increasing the City's ability to sustainably deliver IT services to the internal user community and the public.
  - Replacing the current application used for Finance / HR with an application that can better integrate with other City business applications, better supports the City's requirements for application security, provides functionality for supporting performance management, and functionality that would enable the City to retire a number of other business applications such as CobbleStone (used for contract management).
  - Implementing a formal plan for information sharing to mitigate the impact of maintaining redundant repositories of information.
  - Making better use of smart technologies.
- **Threats:** The threats facing the City, assuming that it is not able to mitigate the weaknesses in a timely manner, include:
  - Incurring higher costs for information technology while obtaining less value / return for those investments.
  - Potential disruptions to the City's ability to provide IT services to the internal user community and the public.
  - Greater exposure to future cyber-threats.

## 4.3 – Findings and Recommendations

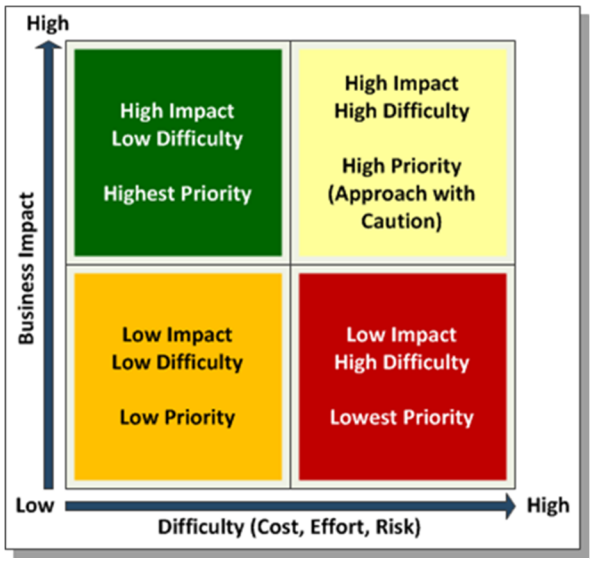


Figure 4.2 – Framework for Findings and Recommendations (Source: SDI)

Figure 4.2, Framework for Findings and Recommendations, provides SDI's model for the development of findings and associated recommendations to remediate them. No organization has sufficient resources and time to address every possible finding; therefore, SDI seeks to focus on those items that have the highest value to our clients and that can be feasibly accomplished. Figure 4.2, illustrates this. The vertical access of the matrix represents business impact (i.e., value) while the horizontal axis represents the difficulty (in terms of cost, effort, and risk) of remediating a finding. SDI's philosophy is that recommendations (irrespective of the difficulty) should always have a real business impact on the City's operations (i.e., from the middle of the chart up).

Table 4.4, Summary of Findings and Recommendations, provides a list of the key findings (findings that have a real impact on the City's operations) developed in the course of preparing the IT Strategic Plan Update. For each finding, Table 4.4 provides:

- **Priority:** The priority of the finding (low, medium, high).
- **Recommendations:** The recommendation(s) associated with the finding.
- **ITSP Project(s)**: Provides the number(s) of the IT Strategic Plan project(s) to remediate the finding. Please note that not all recommendations are associated with a specific project and will be remediated through existing IT workplans.

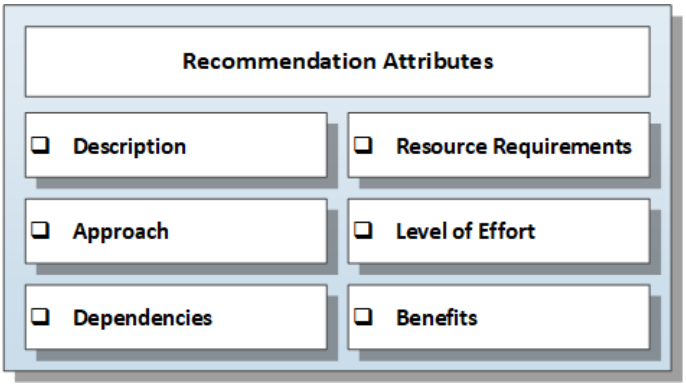


Figure 4.3 – Recommendation Attributes (Source: SDI)

As depicted in Figure 4.3, Recommendation Attributes, following Table 4.4, additional information is provided for each of the recommendations including:

- **Description:** A description of the recommendation including the rationale, scope, and objectives.
- **Approach:** Information regarding how the City could implement the recommendation.
- **Dependencies:** Identifies any dependencies between the recommendation and other recommendations that could impact implementation.
- **Resource Requirements:** Identifies whether the recommendation could feasibly be implemented by internal staff or whether the City should consider the use of external resources.
- **Level of Effort:** Provides an estimate of the level of effort involved in the implementation of the recommendation.
  - *Small* projects are estimated to take from 3 to 6 months.
  - *Medium* projects from 6 to 12 months.
  - *Large* projects from 12 to 18+ months.
- **Benefits:** An analysis of the potential benefits related to the implementation of the recommendation such as improving the ability of the City to sustainably deliver information technology services to the internal user community and the public and the impact on the City's total cost of ownership and return / value on investment.

Table 4.4 – Summary of Findings and Recommendations

| Findings | Priority | Recommendations | ITSP Project(s) |
|---|---|---|---|
| 1 – The City has a highly diverse portfolio of business applications. | High | 1.1 – The City should develop an application portfolio.<br>1.2 – The City should rationalize the use of business applications. | 54 |
| 2 – The City is not making the fullest possible use of enterprise-wide business applications. | High | 2.1 – The City should routinely conduct post-implementation reviews for all enterprise business applications.<br>2.2 – The City should establish a formal, recurring user training program for enterprise business applications. | 17, 25, 33, 55 |
| 3 – The City does not have a formal process for the governance of information technology (carry-over from 2015 IT Strategic Plan). | High | 3.1 – The City should establish a formal process for the governance of information technology. | 57 |
| 4 – The City does not have formal plans for the exchange of information between business applications. | High | 4.1 – The City should establish a formal program to facilitate the exchange of information between business applications. | IT Workplan |
| 5 – The City's cyber-security plan has not been updated recently. | High | 5.1 – The City should develop an updated cyber-security plan that is consistent with current national standards and conduct a comprehensive security review. | IT Workplan |
| 6 – The City existing policies for remote workers have not been reviewed or updated to reflect the wider adoption of remote working as a result of the COVID-19 pandemic. | High | 6.1 – The City should conduct a formal review of its current remote worker program focusing on lessons-learned and opportunities for improvement and update its policies and procedures for remote workers. | 57 |
| 7 – Although the City has completed an integrated document management strategy it does not have a formal plan for the implementation of a paperless environment. | High | 7.1 – The City should develop and execute a plan for the implementation of a largely paperless environment. | 9 |
| 8 – The City does not have an enterprise plan for the implementation of smart technologies. | High | 8.1 – The City should develop an enterprise plan for the implementation of smart technologies and periodically update the plan as new services become available. | 48 |
| 9 – The City's EOC is not located in a dedicated and secure space (carry over from 2015 IT Strategic Plan). | High | 9.1 – The City should complete the migration of the EOC from City Hall to the Service Yard. | 5 |

## Recommendation 1.1 – The City should develop an application portfolio.

| | |
|---|---|
| **Description:** | Although the City has the beginnings of an application portfolio, not all of the applications / services are included in the portfolio, and the information is not complete. |
| **Approach:** | Starting with the existing application portfolio and the information provided in this report, a survey should be conducted of all user departments to ensure that all business applications (including web services) are identified and that information regarding each application is compiled (i.e., user community, business functions supported, requirements for disaster recovery, etc.). |
| **Dependencies:** | There are no dependencies on other projects; however, the City may wish to consider the use of external resources as needed. |
| **Resource Requirements:** | Given the need for familiarity with the City's user community this project should be completed by internal staff. |
| **Level of Effort:** | Small project, 3 to 6 months. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☐ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 1.2 – The City should rationalize the use of business applications.

| | |
|---|---|
| **Description:** | Following the development of the Application Portfolio the City should work to identify opportunities to reduce the number of applications in use to reduce the expense of licensing and maintaining multiple applications that provide similar functionality as well as the challenges related to the maintenance of separate databases containing similar data elements. |
| **Approach:** | The process of rationalizing the City's portfolio of business applications should include:<br>❑ A thorough review of all current business applications with the user community to identify opportunities to consolidate business applications that provide similar functionality and to streamline business processes.<br>❑ The development of project charters for each potential opportunity to identify the resources required and the expected benefits.<br>❑ Securing approval to proceed. |
| **Dependencies:** | The City is conducting a review of its Finance / HR application and this project should provide the opportunity to consolidate some business functions not currently handled by the Finance / HR application including contract and procurement management. |

| | |
|---|---|
| **Resource Requirements:** | Given the need for familiarity with the City's user community this project should be completed by internal staff with the assistance of external resources as needed. |
| **Level of Effort:** | Medium project, from 6 to 12 months (to complete the business review) and then a number of projects (the number, scope and level of effort to be determined) to consolidate business applications in a phased manner. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☒ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 2.1 –The City should routinely conduct post-implementation reviews for all enterprise business applications.

| | |
|---|---|
| **Description:** | As noted, the City has a large portfolio of business applications and Innovation and Technology has been highly focused on helping users with the configuration and implementation of purchased software and services as well as the development of custom applications; and has not had the opportunity to conduct post-implementation reviews for these applications. Post-implementation reviews help organizations derive greater value for their investments in information technology by:<br>❑ Documenting lessons learned that can be applied to other implementations and/or software upgrades and that can minimize the potential for business disruptions.<br>❑ Documenting opportunities to make better use of existing software / services.<br>❑ Documenting issues that the users may be encountering with the software / services. |
| **Approach:** | The City should develop a standard approach for conducting post-implementation reviews and then systematically conduct them for all business applications beginning with the most critical applications. |
| **Dependencies:** | There are no dependencies on other projects; however, the IT Strategic Plan Update does call out post-implementation reviews for a number of business applications including Active.NET and Accela. |
| **Resource Requirements:** | The development of the post-implementation methodology as well as subsequent post-implementation reviews should be within the capabilities of the City's existing IT staff; however, the assistance of external resources may be useful. |

| | |
|---|---|
| **Level of Effort:** | ❑ The development of the post-implementation review methodology should be accomplished relatively quickly, and likely in less than three months.<br>❑ Subsequent reviews for all but the largest applications should be completed in less than three months.<br>❑ Subsequent reviews for larger / enterprise business applications can range from three to six months, i.e., small projects. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☐ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 2.2 – The City should establish a formal, recurring user training program for enterprise business applications.

| | |
|---|---|
| **Description:** | A recurring theme through many of the interviews conducted with key stakeholders in the City's user community was the need to provide training in the use of business applications to offset the results of staff attrition and to make the better use of the functionality provided by the applications. |
| **Approach:** | With the continued use of remote working due to the COVID-19 Pandemic; the City will need to consider the use of distance learning and knowledge bases to help users gain, and maintain, competencies. |
| **Dependencies:** | There are no dependencies on other projects; however, the City may wish to consider the use of external resources as needed. |
| **Resource Requirements:** | The development of distance learning programs and knowledge bases for the City's business applications could be handled by internal staff with the assistance of external resources as needed. |
| **Level of Effort:** | This may involve multiple projects carried out over the length of the IT Strategic Plan with each project likely being small, i.e.: three to six months for the development of individual training programs. |
| **Benefits:** | ☐ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☐ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 3.1 – The City should establish a formal process for the governance of information technology.

| | |
|---|---|
| **Description:** | The City should implement a formal process for the governance of Information Technology with the objectives of promoting communication and collaboration between various City departments, promoting application re-use, and data governance. |
| **Approach:** | The City should begin with the establishment of a formal IT Governance Committee (whose meetings could be included within the agenda of an existing management team meeting) to meet periodically and/or as-needed to provide guidance as to the relative priority of IT projects and the allocation of IT and user resources. This would include:<br>❑ Developing the Charter for the IT Governance Committee.<br>❑ Developing the standard agenda.<br>❑ Providing an initial briefing for the participants.<br>❑ Supporting the work of the IT Governance Committee as needed. |
| **Dependencies:** | There are no dependencies on other projects. |
| **Resource Requirements:** | The City should be able to develop the Charter for the IT Steering Committee and form the committee using internal resources; however, external resources can be used if needed. |
| **Level of Effort:** | Small project, three to six months. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☒ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☐ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 4.1 – The City should establish a formal program to facilitate the exchange of information between business applications.

| | |
|---|---|
| **Description:** | The City has a large number of business applications / services (over 40 were identified in the course of the IT Strategic Plan Update), most of which operate in isolation from each other and likely have redundant repositories of information. Apart from the effort expended in the maintenance of these repositories, they are problematic in that separately maintained data elements are often inconsistent and require time and effort to reconcile them. |
| **Approach:** | The City should develop and implement a formal program to facilitate the exchange of information between business applications using a common set of tools, standards, and controls. |

| | |
|---|---|
| **Dependencies:** | The City is conducting a review of its Finance / HR application and this project should provide the opportunity to consolidate some business functions not currently handled by the Finance / HR application including contract and procurement management (thus reducing the need for interfaces) as well as provide improved functionality for the development of interfaces using an Application Program Interface (API). |
| **Resource Requirements:** | While this project can be handled by internal staff it may be useful to include a requirement for providing professional services to implement API-based interfaces as part of the implementation of the replacement of the current Finance/HR application. |
| **Level of Effort:** | This will involve business process review and re-engineering, resolving issues related to data ownership, governance, and security, and thus should be seen as:<br>❑ A small project (three to six months) to establish the information exchange program.<br>❑ A series of small projects (each with a duration of three to six months) for the implementation of specific information exchanges. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☐ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 5.1 – The City should develop an updated cyber-security plan that is consistent with current national standards and conduct a comprehensive security review.

| | |
|---|---|
| **Description:** | The City has a comprehensive cyber-security program, including measures to identify and isolate ransom-ware attacks) that has thus far served the City well' however, these threats are likely to persist, if not escalate in the timeframe of the IT Strategic Plan Update, and new security risks may emerge. With a large number of City staff members working from remote workspaces, and with varying degrees of cyber-security preparedness in these workspaces, it should be foreseen that the potential threat of disruption to the City due to a cyber-attack of some form is greater than previously.<br>Apart from the impact of a cyber-attack on the ability of the City to sustainably provide IT services and information to the City's user community and the public, organizations can suffer damage to their reputations and loss in the public confidence. |
| **Approach:** | The City should address these risks by:<br>❑ Conducting a comprehensive security review to identify and remediate potential weaknesses / vulnerabilities that could be exploited.<br>❑ Developing and adopting a formal cyber-security plan that is consistent with current national standards and that would provide a systematic process for the City program to prepare for cyber-threats, to detect and isolate them should they occur, to recover, and to identify the vulnerability that was exploited and |

| | |
|---|---|
| | remediate it. The plan should also address measures to increase City staff member's security-awareness. |
| **Dependencies:** | Recommendation 6.1 – The City should conduct a formal review of its current remote worker program focusing on lessons-learned and opportunities for improvement and update its policies and procedures for remote workers. |
| **Resource Requirements:** | While the implementation of this recommendation could be feasibly handled by internal staff, the City may wish to engage qualified external resources to provide an independent assessment. |
| **Level of Effort:** | ❑ Comprehensive security review: Small project, three to six months.<br>❑ Development and implementation of a formal cyber-security plan: Small project, from three to six months with the assistance of external resources. |
| **Benefits:** | ☐ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☐ Improve the City's return / value on investment for spending on information technology |

## Recommendation 6.1 – The City should conduct a formal review of its current remote worker program focusing on lessons-learned and opportunities for improvement and update its policies and procedures for remote workers.

| | |
|---|---|
| **Description:** | The circumstances related to the COVID-19 pandemic and the need to minimize the number of staff on-site in City facilities shifted the City from a situation where most employees worked on-site with a small number working remotely on occasion to a situation where most employees are working remotely, and only essential staff members are working on-site as needed. The City's current policies and procedures did not envision this contingency and should be reviewed and updated based on the lesson learned from having a large number of City staff members working remotely. |
| **Approach:** | Conduct a review of the City's experience with having a large number of staff members working remotely including:<br>❑ Best practices for collaboration and for virtual meetings.<br>❑ What software products / services have worked best, especially regarding connectivity via the City's VPN vs. connectivity via the Web.<br>❑ Best practices for user support and security.<br>❑ Delineation of responsibilities (what is the City responsible for, what is the staff member responsible for, especially with regard to security and to the protection of the City's IT and information assets). |
| **Dependencies:** | Recommendation 5.1 – The City should develop an updated cyber-security plan that is consistent with current national standards and conduct a comprehensive security review. |

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| **Resource Requirements:** | This review and update can be performed by City IT staff members. |
| **Level of Effort:** | Small project, three to six months. |
| **Benefits:** | ☐ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☐ Improve the City's return / value on investment for spending on information technology |

## Recommendation 7.1 – The City should develop and execute a plan for the implementation of a largely paperless environment

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|---|---|
| **Description:** | The City has recently completed the development of an integrated document strategy; however, it has not yet developed a comprehensive plan for the implementation of a largely paper-less environment for the City which considers the potential opportunities to improve productivity through the introduction of automated workflows. Since it is likely that there may be residual use of paper forms, etc. by members of the community for some time, the strategy will need to address how to digitize these items as soon in the workflow as possible and produce hard-copy documents for these persons as needed. |
| **Approach:** | Develop and execute plan for the implementation of a largely paperless environment. |
| **Dependencies:** | There are no immediate dependencies on other projects; however, the potential procurement and implementation of a new ERP system which might provide a content management solution that is an integrated part of the solution could impact the City's direction with regard to Laserfiche. |
| **Resource Requirements:** | The City may wish to consider the use of external resources as needed. |
| **Level of Effort:** | ❑ Small project, 3 to six months for the development of the plan.<br>❑ Large project, 12 to 18+ months, for the phased implementation of the plan including digitization of any remaining hard-copy documents and the development and implementation of automated workflows. |

| | |
|---|---|
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 8.1 – The City should develop an enterprise plan for the implementation of smart technologies and periodically update the plan as new services become available

| | |
|---|---|
| **Description:** | As noted in Section 5, Information Technology Trends, the implementation of "Smart" technologies is unusual in that this is not a single technology, per-se, but rather represents an integrated approach to the utilization of a variety of emerging information technologies that leverage the ability of devices to communicate through the Internet and provide the ability for cities to more readily recognize and respond to trends and conditions. To date, the City's implementation of these technologies has been through a number of discrete projects without an overall framework to provide cohesion and to enable the City to obtain greater value / return. |
| **Approach:** | Develop a City-wide plan for the utilization of smart technologies that can be revisited and updated as new services become available. |
| **Dependencies:** | There are no dependencies on other projects; however, the City may wish to consider the use of external resources as needed. |
| **Resource Requirements:** | The City may wish to engage the services of an external firm to assist in the development of the plan. |
| **Level of Effort:** | Small project, 3 to six months. |
| **Benefits:** | ☒ Increase the City's ability to agilely and effectively respond to new requirements<br>☒ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☐ Improve the City's ability to sustainably deliver IT services<br>☐ Improve the delivery of IS services and information to the City's user community and the public<br>☒ Improve the City's return / value on investment for spending on information technology |

## Recommendation 9.1 – The City should complete the migration of the EOC from City Hall to the Service Yard.

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|---|---|
| **Description:** | In the 2015 IT Strategic Plan a number of deficiencies were noted with regard to the City's Emergency Operations Center (EOC) at City Hall including that it was not a dedicated or secure space, that City Hall was vulnerable to damage from seismic shock, and that a diesel generator located in proximity to the EOC was loud when in operation and made communication difficult. Since then, the City has made a number of improvements to the EOC at City Hall and created an alternative EOC at the Service Yard. SDI has recommended that the City continue to enhance the EOC at the Service Yard and make it the City's primary facility. |
| **Approach:** | The City has already taken steps to upgrade the IT infrastructure at the EOC is the Service Yard and is planning to implement access to satellite-based communications but should consider the use of a qualified external resource to provide advice regarding improvements to the security and sustainability (including redundant connections to the Internet) of the EOC and then implement the improvements. |
| **Dependencies:** | There are no dependencies on other projects. |
| **Resource Requirements:** | It is anticipated that this project will require both City resources (from the City Manager's Office, Public Works, and City IT, etc.) as well as external resources as needed to advise the City on requirements and to construct the modifications to the EOC. |
| **Level of Effort:** | Large project (from beginning to completion of the modifications), 12 to 18+ months. |
| **Benefits:** | ☐ Increase the City's ability to agilely and effectively respond to new requirements<br>☐ Enable the City to Improve the alignment of IT directions and priorities with the City's business priorities<br>☒ Improve the City's ability to sustainably deliver IT services<br>☒ Improve the delivery of IS services and information to the City's user community and the public<br>☐ Improve the City's return / value on investment for spending on information technology |

## Section 5: Information Technology Trends

Not only does information technology continually evolve but the pace of this evolution is continually accelerating. As a result, the ways in which organizations use information technology are changing as are the expectations of internal and external stakeholders for access to information and services. Another consideration in evaluating the potential impact of information technology trends is that they do not always impact the operations and priorities of different cities and/or agencies to the same degree. Although predicting the future of information technology can be problematic, SDI has identified six key information technology trends that:

- Are relevant to the City.
- Have become mature (i.e., are stable, scalable, and that are effectively supported).
- Will likely impact business objectives and priorities in the future and shape how the City implements this IT Strategic Plan.

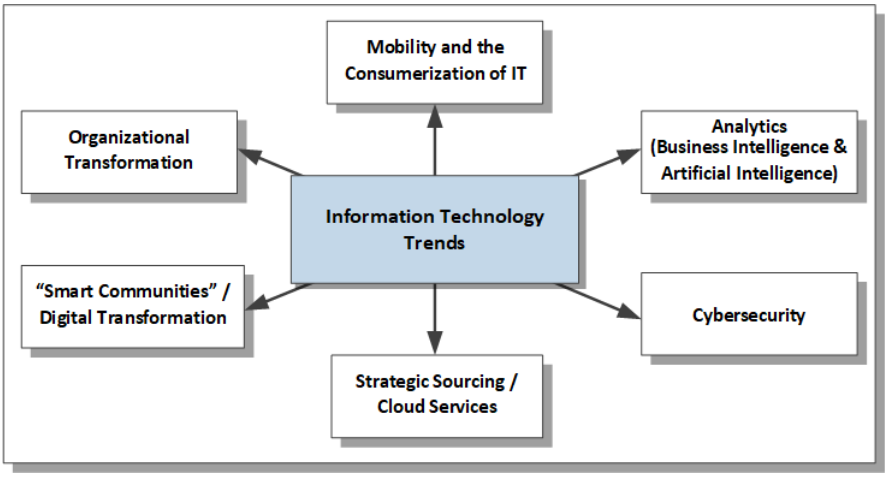


Figure 5.1 - Information Technology Trends (Source: SDI)

As depicted in Figure 5.1, Information Technology Trends, the IT trends that SDI would like to review with the City include:

- Mobility and the Consumerization of IT.
- Analytics (Business Intelligence and Artificial Intelligence).
- Cybersecurity.
- Strategic Sourcing and Cloud Services.
- Smart Communities.
- Organizational Transformation.

Each of these is discussed below.

## 5.1 – Mobility and the Consumerization of IT

"Customer-centric government means that agencies respond to customers' needs and make it easy to find and share information and accomplish important tasks... The mantra of "anytime, anywhere, any device," is increasingly setting the standard for how information and services are both delivered and received in a two-way exchange of information and ideas." – *Digital Government: Building a 21st Century Platform to Better Serve the American People, US Office of Management and Budget*

The consumerization of information technology refers to the use of personal devices, most often mobile, to obtain access to organizational services and information (also sometimes referred to as BYOD – bring your own device). This is particularly relevant to the City as field staff increasingly use their own devices in the field to take pictures of installations and problems they encounter and to retrieve and share information. As the City has seen consumerization and mobility are closely linked. Collectively, they represent a significant opportunity for government to become more customer-centric and to improve the effectiveness and timeliness of service to the public; however, they are also vexing for managers and IT planners since:

- The proliferation of devices is a challenge for support organizations as users attempt to obtain connectivity to secured wireless networks and utilize applications. It is estimated that the introduction of mobility in an organization can increase Help Desk Workload by as much as 10%. Some organizations adopt a "bring your own device" policy as being preferential to attempting to limit the devices that users employ; often with the caveat that IT support for other than officially supported devices will be provided only as available and with no guarantees as to response time. The practicality of these policies tends to be limited since the priority of a service request tends to be driven more by the nature of the incident or request and the person reporting it than by the device involved.
- User access to enterprise information and services from mobile / wireless devices potentially exposes both the enterprise assets and the mobile device to cyber-attacks.
- Public-facing solutions need to be both open and adaptive to optimize user experience from a universe of devices, (each with different screens, browsers, and operating systems) that is continually evolving.
- "Follow me" mobility fundamentally changes the paradigm of the standard desktop computing model where the computer, the operating system, the applications, plus the user's data and preferences are integrated into a single platform (either a desktop PC that remains in the same location or a laptop or notepad that moves with the user and then connects to the host network). Whereas desktop computing is device and location centric, mobility is user centric.

Despite these challenges, mobility is a "game changer" in the public sector, enabling users to move as needed and to enter or update information on a real time basis thus eliminating the need to capture information on paper or offline and then enter or upload the information in the office. In addition, mobility enables access to information where and when it is most needed (i.e., in responding to incidents and emergencies).

## 5.2 – Analytics (Business Intelligence and Artificial Intelligence)

"One increasingly common way to get BI into the hands of … decision makers more quickly and painlessly is by leveraging an existing implementation of another enterprise application such as Enterprise Resource Planning (ERP) or Customer Relationship Management (CRM)." – *Analytical Execution for Today's Mid-Sized Enterprise, Aberdeen Group*

There has been considerable progress in the development of tools that enable organizations to consume a growing body of information for either tactical / reactive purposes (business intelligence) or for strategic / proactive purposes (business analytics). The collection, aggregation, and analysis of information from disparate business units and sources across an enterprise are variously referred to as "Big Data," or the "Dataverse" by the information technology industry. Irrespective of what it is called, the accumulation of information into a central data repository provides the foundation for business intelligence and business analytics. Recent trends in this area have included making these tools more "user friendly" and available so that trained users can formulate and execute queries with less need for support from IT professionals.

The developments in this area are highly relevant to the City of Cupertino since it is considering the potential replacement of its current Finance / HR application with a more comprehensive ERP suite with both improved user functionality as well as improved capabilities for information exchange with other business applications and is looking at the implementation of a City-wide data repository to support user needs for analytics.

The development, implementation, and maintenance of the enterprise data architecture / "Dataverse" required to support the use of BI/BA tools is one of the "hidden costs" of implementing business intelligence. The development of the enterprise business architecture includes:

- The development of processes (including processes for its governance, support, and evolution) and the allocation of staff resources to support the data architecture since both the data being collected and the organization's use of the data will change over time.
- The development of standards and policies to ensure that business applications will be able to exchange information with other business applications and support the integration and compilation of information. This effort will be complicated by the City's diverse application portfolio which consists of on-premises and web-based COTS business applications and locally-developed applications. Gartner has noted that "… the integration of independently developed applications is a challenge. Integration would be straightforward if all of the applications conformed to the same set of standards… But they do not…. The task of connecting them so that they can work together is daunting."[1]

As noted by the Aberdeen Group (please see text box above), mid-sized organizations are often able to leverage the data stores within enterprise applications (such as ERP) and dashboard technology within the application to achieve an effective, but limited, implementation of BI. Nonetheless, organizations without an enterprise data architecture, supporting standards, and staff to support it, often attempt to

[1] Message Brokers: A Focused Approach to Application Integration, R. Schulte, June, 1996

support the information needs of decision-makers through a cumbersome combination of ad-hoc applications, databases, and spreadsheets. These tools often use data inconsistently, are seldom well documented or able to quickly meet new requirements, and eventually become a drain on organizational resources. This can quickly become a worst-case scenario as the total cost of ownership for these ad-hoc processes quickly mounts while the return on the organization's investment decreases.

### Artificial Intelligence (AI)

One of the primary challenges being faced in the implementation of analytics is the ability to process masses of information including disparate forms of information including data and media content as well as to enable case workers to consistently maximize options and outcomes for clients. AI can also be used to analyze this mass of disparate data to optimize the delivery of services in real or near-real time with less human intervention. The AI environment is developing very rapidly, and for this reason as well as due to the cost and complexity of AI, many enterprises implement AI as a cloud-based service.

## 5.3 – Cybersecurity

"The shift toward mobility and cloud services is placing a greater security burden on endpoints and mobile devices that in some cases may never even touch the corporate network. The fact is that mobile devices introduce security risk when they are used to access company resources; they easily connect with third-party cloud services and computers with security postures that are potentially unknown and outside of the enterprise's control. In addition, mobile malware is growing rapidly, which further increases risk. Given the lack of even basic visibility, most IT security teams don't have the capability to identify potential threats from these devices." – *Cisco Annual Security Report*

While the need to secure information systems is not new, the increased focus and importance of cybersecurity is a direct result of the increased utilization of the web for the delivery of information and services and the related rise of the use of mobile and personal devices. In 2016, the President's Homeland Security and Counterterrorism Advisor warned that "we are in the middle of a revolution in the cyberthreat – one that is growing more persistent, more diverse, more frequent, and more dangerous every day."

The number of remote workers has greatly increased as a result of the circumstances related to the COVID-19 pandemic, and this has increased the threat threshold. While the City can make recommendations to staff members to help them maintain the security of City devices; individuals in the home might innocently load files or install applications on the device that could present a threat.

In this environment, organizations can be crippled not just by attacks which result in the disclosure, modification, and destruction of information but also by attacks which takeover critical infrastructure components and potentially disable them or hold them hostage through the installation of "ransom ware," or impede the ability of legitimate users to access information and services ("denial of service" attacks).

The nature of cybersecurity threats is continually evolving due to the growing sophistication of hackers, the resources available to them, and an increase in the range of motivations from mischief and activism to profit. As a result, the community of hackers has expanded to include criminal enterprises that profit

through extortion as well as through the theft of digital assets (such as social security numbers, account numbers, etc.).

As a result, organizations must adopt and implement systematic approaches to protect their information assets from cyber threats including the abilities to: (a) detect and defeat cyber threats; (b) limit the impact of intrusions; (c) recover from them; and (d) learn from them and adapt processes to better prevent and/or manage similar attacks in the future. The development and implementation of a cybersecurity plan that is conformant with the requirements of NIST (National Institute of Standards and Technology) Special Publication 800-53 is a starting point for the implementation of controls to heighten the security of information systems.

## 5.4 – Strategic Sourcing and Cloud Services

"Unless [they are] very small, most enterprises will continue to have an on-premises (or hosted) data center capability… but enterprises… need to focus on managing and leveraging the hybrid combination of on-premises, off-premises, cloud and non-cloud architectures, with a focus on managing cloud-delivered capacity efficiently and effectively." - *Thomas J. Bittman, Vice President, Gartner.*

SDI considers sourcing to be a contractual arrangement in which an organization delegates some of its in-house IT services to a third party. Thus, sourcing is a contracting transaction through which one organization purchases services from another while keeping ownership and ultimate responsibility for them. The emergence of "Cloud" (Internet) based services including "Software-as-a-Service" (SaaS), Infrastructure-as-a-Service (IaaS), and "Desktop-as-a-Service (DaaS) has increased the sourcing options available to organizations. The objectives of strategic sourcing include: (a) obtaining and using the most effective service provider to respond to user needs; and (b) enabling permanent IT staff members to focus on high-priority, high-value tasks and technologies by allocating less critical functions to other service providers.

For many organizations in both the public and private sector who have aging IT facilities and infrastructures or who need to ensure that IT services can be continually provided to the user community and the public, the use of "cloud" based services offer an alternative to initial capital expenditures, the recruitment of additional staff members, or the procurement of traditional staff-supplementation services (contractors). An additional benefit for many organizations is that using SaaS simplifies their disaster recovery and business continuity planning since they can quickly resume operations from a facility that has connection to the internet.

Firms supporting commercial-off-the-shelf (COTS) business applications are also moving towards cloud-based models since they provide the opportunity to lower product development and support costs and to streamline the development and delivery of new releases and functionality by reducing the number of variations between client installations. Increasingly, commercial-off-the-shelf business applications are now being offered only as cloud-based application services.

Common strategies for cloud-based services include:

- **Public Cloud** – Public Cloud services are generally shared (thus "public") with other user organization and all users of the service sharing a common infrastructure and/or code base but

with their data kept separately (but often located in the same database). The advantages of a public cloud service include reduced cost (as a result of the cost for the service being spread over a larger number of users), but organizations find that they have less flexibility (the code base generally changes for all users at the same time) and less control over the security of their information.

- **Private Cloud** – is similar to a public cloud, but in a COTS / SaaS environment the private cloud is based on a separate code base and database for each organization (although multiple organizations may share physical resources in a virtualized computing environment). Since the code base is not shared with other user organizations, users have more control over the timing of updates and the installation of new versions and more control over the security of their data, but at a higher cost than for Public Cloud services. Organizations can also host legacy, proprietary solutions in a private cloud.
- **Hybrid Cloud** – a combination of private and public cloud services, potentially from different service providers including both services that are hosted on-premises as well as cloud-based services. The deployment of hybrid cloud architectures (and the need to support them) is becoming a significant trend in both government and the private sector. An industry source noted that, ""The ability of hybrid cloud to function as an extension of an existing IT environment and processes allows IT to quickly deliver the agility benefits of cloud computing to the business. IT can use the same management tools and governance policies they have already adopted in their data centers and maintain security and visibility." Finally, hybrid cloud solutions also appeal to organizations that need to have their business applications continuously available, since in a "multi-cloud" environment (that could potentially include both locally hosted and remotely hosted services) access can fail over to the backup service.

As noted above, commercial-off-the-shelf application providers are increasingly turning to SaaS as their preferred method of delivery. Compared to the traditional model where software was installed in multiple client sites, often with some variation in both the installation of the software and the supporting systems environment and with differing levels of technical currency, SaaS greatly simplifies the process of providing user support and helps limit the variety of releases and versions that the application provider must support. SaaS can be delivered either as private cloud or public cloud offering (with private cloud offering more flexibility and security and public cloud offering the opportunity to lower license / subscription and support costs through the economies of scale). For user IT organizations, SaaS dramatically reduces application management and support costs, particularly with regard to backup and disaster recovery.

Key benefits of strategic sourcing include:

- The ability to obtain services under the terms of a service level agreement.
- The ability to obtain service coverage for extended hours of operation including 24x7 operations.
- The ability to defer, or avoid, capital costs for the acquisition of information technology infrastructure (such as servers and storage devices).
- The ability to more readily scale the IT environment to meet demand.

- Reduced dependence on local staff resources, including training and planning for staff succession.

Nonetheless, organizations seeking to use external services (cloud-based or not) need to carefully consider:

- The ability of the cloud-service provider to comply (and to certify continuous compliance) with applicable information-protection standards such as CJIS and HIPAA.
- The costs related to implementation, including training, data extract and purification, and testing (in a public cloud environment, these costs can be higher since you may have less choice about when to go live with an update).
- The continuing costs for utilization as well as for the management of multiple service providers.
- The provisions for the availability and security of information that is stored off-site (particularly if the service is hosted offshore).
- Potential issues with data ownership and security.
- The costs and effort related to potentially exiting the sourcing arrangement in the future.
- Network connection capacity bandwidth and redundancy should be evaluated to ensure the hosted services are available when needed and meet performance expectations.

## 5.5 – "Smart Communities" / Digital Transformation

"After a decade of trial and error, municipal leaders are realizing that smart-city strategies start with people, not technology. "Smartness" is not just about installing digital interfaces in traditional infrastructure or streamlining city operations. It is also about using technology and data purposefully to make better decisions and deliver a better quality of life." – *McKinsey Global Institute, Smart Cities: Digital Solutions for a More Livable Future*

The implementation of "Smart" technologies is unusual in that this trend is not a single technology, per-se, but rather represents an integrated approach to the utilization of a variety of emerging information technologies that enable local governments to more effectively identify trends (such as incidents, traffic, power demand, parking space availability, etc.), to re-allocate or reprogram government resources in response to these trends, and to support programs such as Smart Buildings, autonomous vehicles, Smart Payment, and Smart Street Lights that benefit the public. Although SDI sees "Smart" technologies as an emerging trend; it is maturing rapidly as a result of the need for communities to maximize the use of assets and facilities as well as public expectations.

Smart Community capabilities can also benefit residents and visitors by enabling them to obtain information through smartphone apps regarding employment services, public safety, healthcare, social services, transit and driving route information, parking, and transit service options, etc., as well as to report incidents and concerns.

The Internet of Things (IoT) provides the foundation for many Smart Community initiatives. For some time, devices have stored data so that it could be manually downloaded and accessed on demand. Combining this capability with the ability to access the internet (and thus the ability to both

autonomously receive and transmit information) has brought us to the IoT. McKinsey has suggested six distinct types of applications to consume this information; tracking behavior, enhanced situational analysis, sensor-driven decisions analytics, process optimization, optimized resource consumption, and complex autonomous systems (such as collision avoidance).

Although some local governments look at Smart Community in very tactical terms (involving highly specialized and isolated IoT applications such as "Smart Intersections," "Smart Traffic Lights," and "Smart Corridors," the effective implementation and continued use of Smart technologies includes:

- The development and implementation of open and collaborative processes to develop the visions for the implementation of Smart technologies as well as for the continuing governance of the Smart Community initiative. Governance should include the ability to prioritize initiatives, program funds, and take advantage of opportunities made possible by private / public partnerships, and to assess the reproducibility of interoperable solutions. The governance process will also need to provide leadership for the management of the changes in governmental operations brought about by smart technologies.
- The implementation of secure, resilient, and ubiquitous wireless services that enable access to smart services from any device, anywhere, and anytime and that can scale to meet expected surges in demand (such as events) as well as unexpected surges in demand. Planning for the resilience, security, and performance of the wireless services is critical as is the development of processes and agreements to support 24 x 7 operations. IBM has noted that "A resiliency plan should concentrate on both the business and IT processes that are most vital to the enterprise. Creating and sustaining processes that support resilient business operations and infrastructures requires identification of the minimum required process functionality during disruptive events, alternate processes and procedures that will allow operations to continue during times of stress, and redefinition of processes to achieve better workload balance."
- The development of a comprehensive plan for the implementation and continuing support of the Smart Community services that leverages public / private partnerships as well as regional partnerships (including regional transportation) including plans for regional collaboration and information exchange).
- The development and implementation of a plan and the processes that are required to support continuing communication and collaboration with members of the community (digital government), to identify community needs and priorities, and preferred delivery channels so that "Smart" features can be readily accessed by the public.
- The development and implementation of a plan to leverage the information produced by smart devices, including the use of business intelligence, business analytics, and artificial intelligence. A critical success factor for the effective use of these tools is surmounting separate silos of information through the development of an enterprise data architecture that provides a framework for the storage and aggregation of the information produced by "Smart" devices.

One of the inhibitors to the fuller use Smart Community technologies is that they are typically implemented as siloed, departmental applications rather than as an enterprise program. The motivations for these limited efforts include the desire to gain experience in a limited area first, external

funding is often targeted to specific initiatives, and the time to implementation, immediate cost, and risk are less with siloed applications. Nonetheless, in the absence of an overall vision and plan for the use of Smart City technologies, Cities are liable to experience greater costs and reduced value in the long term.

## 5.6 – Organizational Transformation

"The role of enterprise IT is changing. Organizations are realizing the benefits of using multiple cloud platforms to support employee productivity, collaboration, and business innovation. However, this rapid adoption brings a unique set of challenges to IT teams, as they transition to the new world of cloud-native applications and services… In this new model, IT organizations must find a way to provide and enable services from multiple portals and vendors, while ensuring consistent performance, security and governance within the multi-cloud ecosystem." *– Forbes Technology Council*

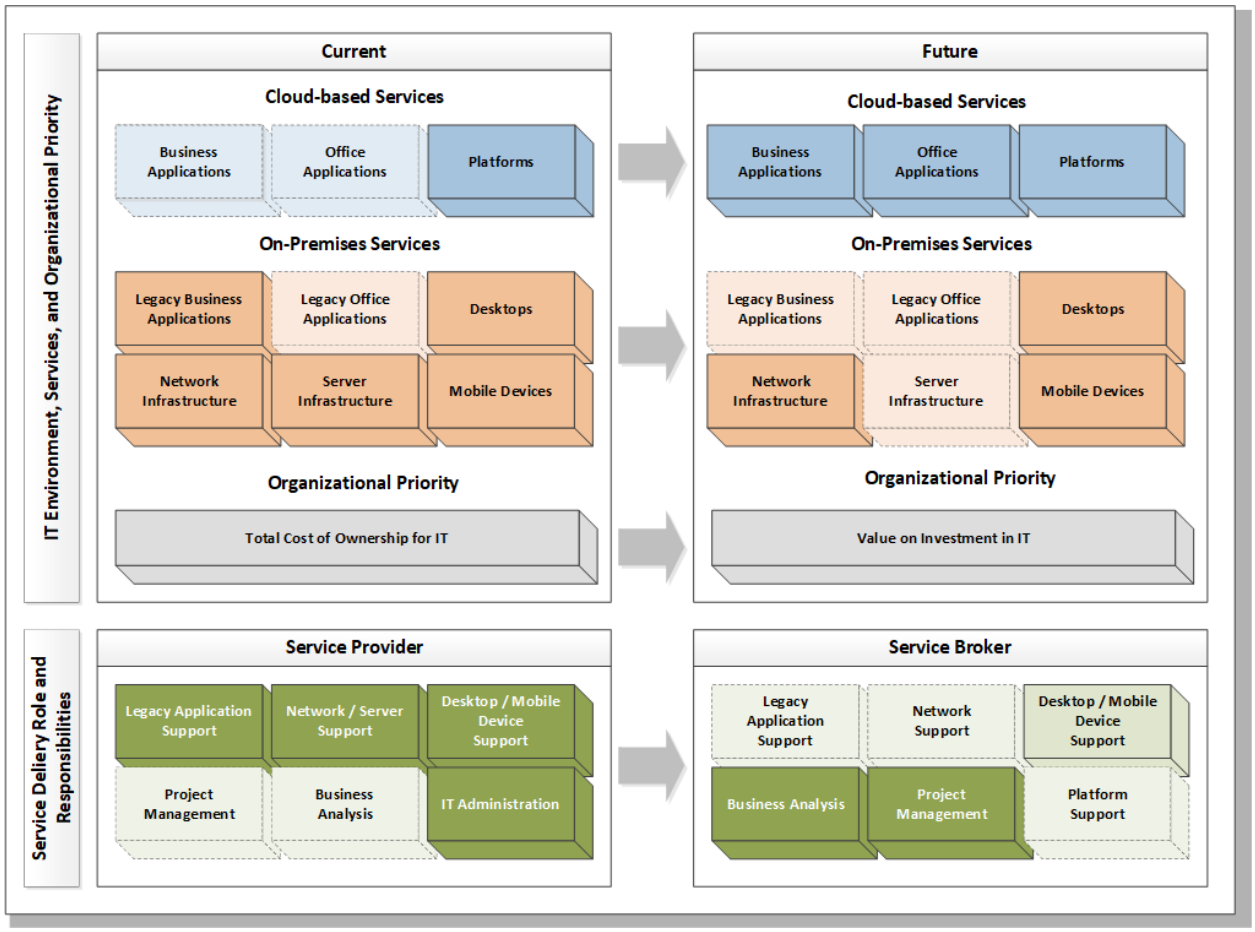


Figure 5.2 – IT Service Delivery Options

Changes in information technology, particularly the move to Cloud-based services, mobility, and the increasing user dependence on IT services to effectively meet changes in public needs and expectations are, in turn, changing how organizations govern the use of information technology and manage the delivery of IT services. Services that were formerly delivered by internal IT departments are now being delivered by external (usually Cloud-based) service providers. Cities find that this transformation

enables them to reduce costs, increase scalability and sustainability, and to free up valuable internal resources to focus on the organization's key needs.

Figure 5.2, IT Service Delivery Options, depicts the impact of this transformation, illustrating how the services provided and the responsibilities of IT organizations are changing as organizations transform from current IT environments (the left side of the diagram) that are primarily based on services that are hosted on premises with some cloud-based applications to hybrid environments (the right side of the diagram) in which the IT organization supports a greater variety of services with a general shift from services that are based on-premises to services that are predominantly cloud-based.

In this model, both the current and future IT environments (depicted in the two upper frames) consist of cloud-based services, on-premises services, and organizational priority for information technology. SDI anticipates that the following transformations in each of the areas will occur over the time frame of the City's IT Strategic Plan:

- **Cloud-based Services:** The lighter blue boxes with dotted lines represent cloud-based services that are emerging today while the darker blue boxes with solid lines represent established services. Over the course of the IT Strategic Plan the City will likely see nearly all its business and operational applications being delivered as Cloud-based services. This has some implications for the need to be agile since the Cloud-services vendor will control when new versions, new releases, and "bug" fixes are applied to the service.
- **On-Premises Services**: The support of on-premises infrastructure and the delivery of services based on this infrastructure such as legacy business applications and office applications are a traditional core competency of IT organizations. Of these services (depicted by the orange-shaded boxes), legacy office applications are already being gradually being phased out in the current IT environment and shifted to the cloud and SDI anticipates that the same will happen for legacy business applications and on-premises servers in the future.
- **Organizational Priorities:** SDI is of the opinion that one of the most difficult transformations over the length of the IT Strategic Plan will be the shift in organizational priorities from minimizing the City's total cost of ownership for information technology (particularly staffing and infrastructure) to using IT resources (both internal and external) in the future to obtain greater value (such as operational efficiencies, etc.). IT governance and planning will play critical roles in the City's future IT environment, enabling it to respond to new requirements and increased user and customer expectations by ensuring that IT and user resources are allocated (or reallocated as needed) based on organizational objectives and priorities. In the absence of IT governance, the City is at risk of making IT decisions without having a complete understanding of the benefits, costs, risks, and support requirements, resulting in additional costs for information technology without fully realizing the potential value that could be obtained.

The lower two frames in Figure 5.2, depict the impact that the transformation from the current IT environment to the future IT environment will have on the service delivery roles and responsibilities of IT organizations as they move from being primarily service providers to becoming service brokers. As depicted above:

- In the current IT environment IT organizations are generally service providers who deliver services (including legacy application support, network / server support, desktop / mobile-device support, and IT administration) based on the on-premises IT infrastructure that they support. With the exception of some enterprise-level services such as office applications, the adoption of cloud-based in being generally driven by the user community (sometimes in collaboration with the IT organization) rather than being driven by the IT organization. Although some IT organizations provide project management services, few are staffed to provide support for business analysis activities such as requirements analysis and business process re-engineering (BPR) and thus rely on external service providers.
- In the future IT environment IT organizations will need to become service brokers, organizations that can continue to deliver legacy, on-premises services, while also being able to work with the user community to enable them to select and implement cloud-based services that are consistent with organizational priorities and standards and that can effectively exchange information with both legacy business applications and cloud-based business applications. SDI is of the opinion that:
  - The shift from on-premises IT infrastructure and business applications to web-based services will free up internal IT resources to perform higher-level functions such as planning for innovation, business analysis, business process re-engineering, and assisting the users in both optimizing IT services to meet their needs.
  - As a result, the role of the IT organization in the future will be somewhat reversed compared with the current environment in that project management and business analysis will become core competencies, with other services either farmed out to external service providers (the light shaded boxes with dotted lines), or shared, such as desktop / mobile device support. As a result, IT organizations will need to reconsider how they are organized and staffed.

# Section 6: Prioritization Workshop and Project Roadmap

## 6.1 – Introduction

Change has been, and continues to be, a constant concern for public sector executives who must often respond to increased public expectations and new mandates with limited resources and information technology environments that are not agile. Without a plan to manage and respond to change, organizations tend to become reactive rather than proactive and, as a result, obtain reduced benefits for their investments in information technology. This multi-year IT Strategic Plan sets forth a roadmap for the City that identifies current technology projects and, to the extent possible, future technology needs. The plan lays out the strategy and steps to meet those needs and to enable the City to sustainably deliver high quality services to its internal user community and the public.

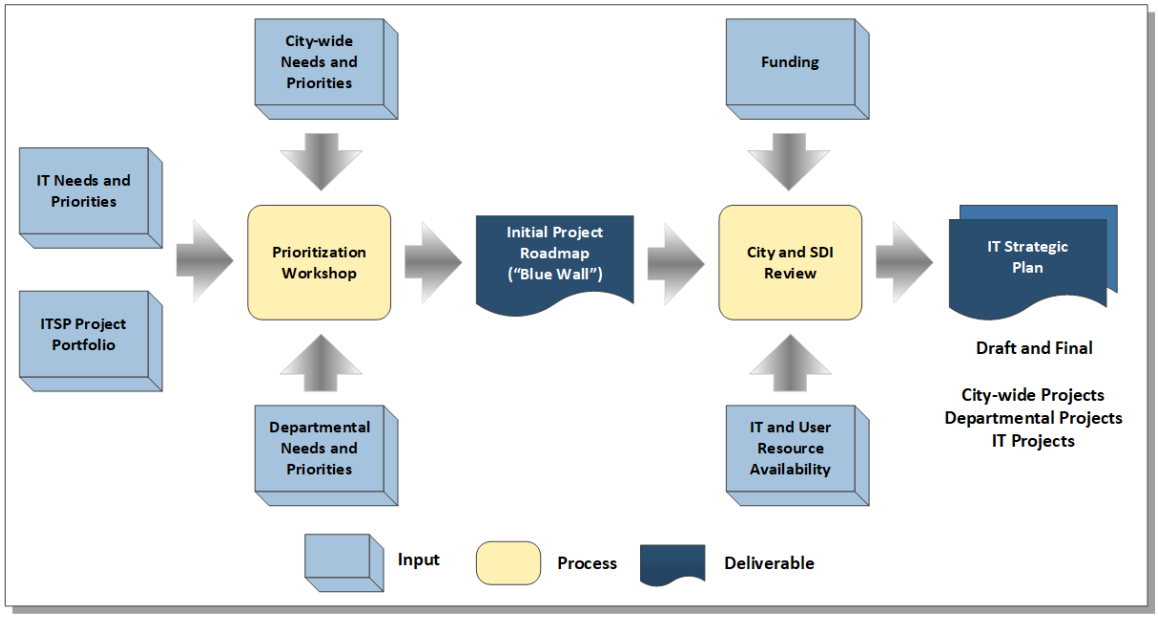


Figure 6.1 – Development of the IT Strategic Plan for the City of Cupertino (Source: SDI)

Figure 6.1, Development of the IT Strategic Plan for the City of Cupertino, provides a high-level overview of the development of the IT Strategic Plan. As depicted, there were two primary steps in the process including the Prioritization Workshop itself and then review and refinement of the "Blue Wall" developed in the course of workshop by the City and SDI. Each is discussed below.

### ITSP Prioritization Workshop

The key inputs for the ITSP Prioritization Workshop were documented in the course of the interviews conducted by SDI with the City's key user stakeholders, the City's Chief Technology Officer, and the managers and staff members of the City's Innovation Technology Department. As shown in Figure 6.1, this included:

- City-wide and departmental needs and priorities.
- Needs and priorities related to the City's information technology infrastructure and staffing.

- The ITSP Project Portfolio which included information regarding IT projects that were in-progress or planned as well as projects that resulted from SDI's findings and recommendations. The ITSP Project Portfolio was reviewed by the City prior to the Prioritization Workshop and updated as needed.

The ITSP Project Portfolio was reviewed by the City prior to the Prioritization Workshop and modified as needed. For each of the proposed projects the portfolio provides information including a description of the scope and objectives, the project's sponsor(s), its status, the level of effort and the level of risk associated with its implementation, and the estimated cost based on similar projects previously conducted by SDI's clients and adjusted for the City of Cupertino.

The prioritization workshop was conducted on Wednesday October 6, 2021. Due to the circumstances related to the COVID-19 pandemic, the workshop was conducted virtually using Zoom, with the project timeline (aka the "Blue Wall") displayed to the participants using MS Visio. SDI facilitated the workshop with the objective of providing an open and collaborative forum in which the participants, starting from a pre-staged plan developed by SDI in concert with City IT, reviewed the priority of each project and moved them across the timeline for the IT Strategic Plan which included:

- Projects that were in progress during the development of the IT Strategic Plan and that had been completed by the first quarter of FY 2021/22.
- The remaining three quarters of FY 2021/22.
- FY 2022/23.
- FY 2023/24.
- A "Parking Lot" for projects that could not be scheduled at this time.

### City and SDI Review

The "Blue Wall" at the conclusion of the workshop is depicted in Figure 6.2, Project Roadmap Following Prioritization Workshop. As shown in Figure 6.2, the participants reviewed and scheduled seventy projects including:

- Six projects that had been completed by the first quarter of FY 2021/22.
- Twenty-one projects that are scheduled to begin during the second quarter (October through December) of FY 2021/22. Please note that although this is a large number of projects, all but two of them have durations that extend beyond the second quarter of FY 2021/22, some of the projects have limited scopes, and some will involve external service providers in addition to City IT staff.
- Five projects that are scheduled to begin during the third quarter (January through March) of FY 2021/22.
- Nine projects that are scheduled to begin during the fourth quarter (April through June) of FY 2021/22, including a post-implementation review of the City's implementation of its Finance / Human Resources application with the objective of determining whether it should consider procuring a replacement for it.

- Sixteen projects that are scheduled to begin during FY 2022/23.
- Eleven projects that are scheduled to begin during FY 2023/24.
- Two projects that could not be scheduled during the workshop.

The projects in Figure 6.2 have been color-coded by the department that is nominally the sponsor. As noted in the ITSP Project Portfolio provided in Appendix A, some projects involve multiple departments. Figure 6.2 also calls out a series of projects that are related to the City's review and potential replacement of its Finance and Human Resources application and this represents an opportunity to potentially consolidate a number of business applications whose functions could be performed by a City-wide ERP solution.

Following the workshop, SDI worked with the City to review and confirm the results of the workshop and this effort resulted in the IT Strategic Plan Project Gantt Chart, which is discussed in Section 6.2, Project Schedule and Cost per Fiscal Year.

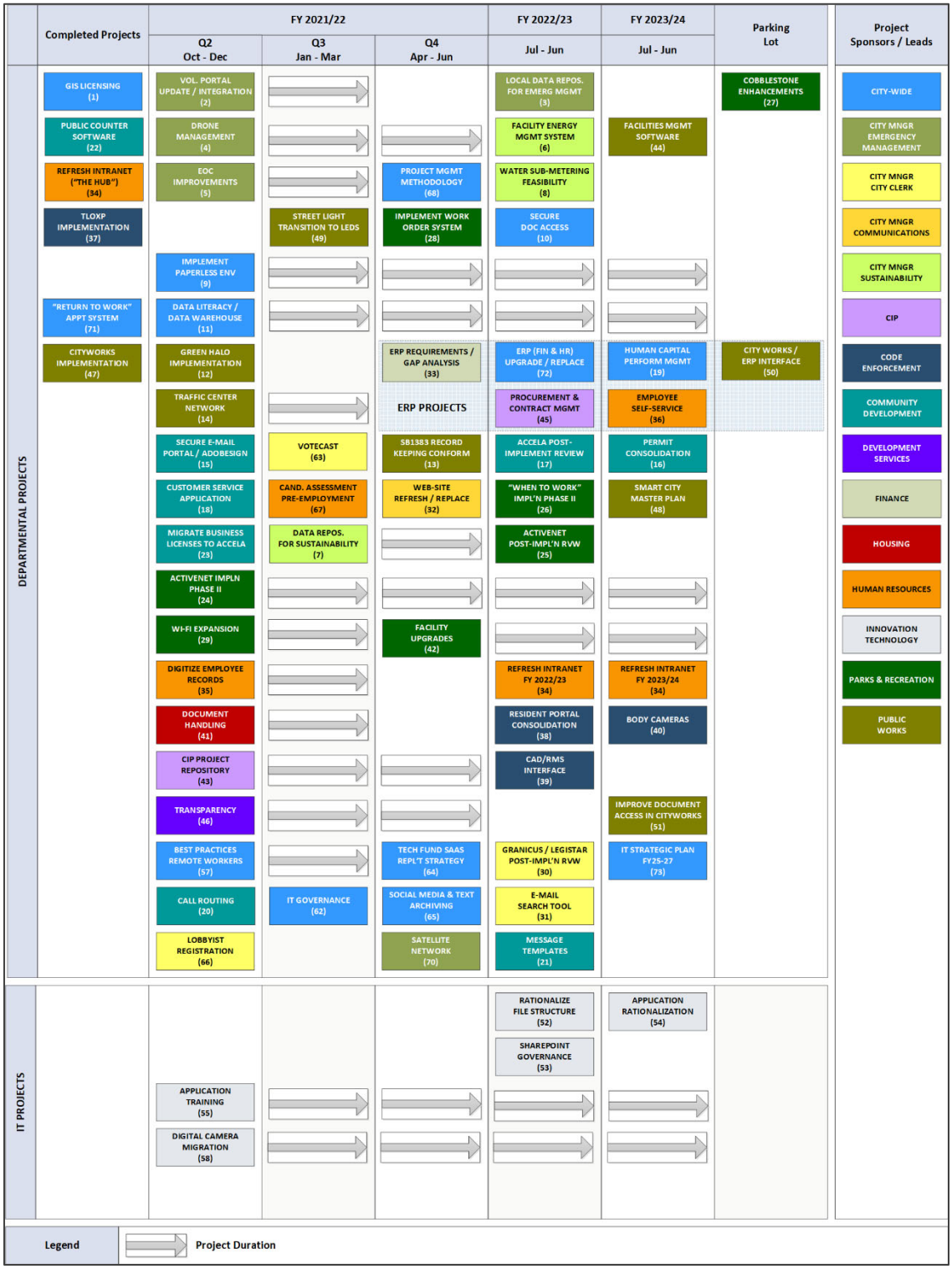


Figure 6.2 – Project Roadmap Following Prioritization Workshop

## 6.2 – Project Schedule and Cost per Fiscal Year

Figure 6.3.1, Project Schedule and Cost per Fiscal Year, Page 1 of 2, and Figure 6.3.2, Project Schedule and Cost per Fiscal Year, Page 2 of 2, were developed based on the information developed in the course of the "Blue Wall" planning and prioritization workshop and differs from Figure 6.2, Project Roadmap Following Prioritization Workshop, in that it is more linear and granular and provides the basis for calculating the City's potential cost per fiscal year. Figure 6.3.2 also provides a count of the number of concurrent projects active in each time period of the plan.

Figures 6.3.1 and 6.3.2 provide the following information:

- **ID**: The number of the project from the ITSP Project Portfolio to enable readers of the document to quickly reference information regarding the scope and objectives of the project.
- **Project Name:** The name of the project used in the "Blue Wall" (Figure 6.2), please note that this may be abbreviated version of the project name provided in the ITSP Project Portfolio.
- **Sponsor(s):** The Departments that are sponsoring the project, please note that the potential user community could extend beyond the project's sponsors. Projects that are expected to impact all users in some way are shown as "City-Wide."
- **Status:** The status of each project is shown as follows:
  - Complete: The project was in-progress but had been completed at the time the workshop was conducted.
  - In-Progress: The project was currently being worked on at the time the workshop was conducted.
  - Planned: The project is planned to be completed as scheduled in the Project Timeline.
- **Project Timeline:** The Project Timeline is the same as for Figure 6.2, i.e.:
  - The first quarter of FY 2021/22 for projects completed or in-progress.
  - The remaining three quarters of FY 2021/22.
  - FY 2022/23.
  - FY 2023/24.
  - A "Parking Lot" for projects that could not be scheduled at this time.
- **Project Cost in $000's**: Provides the estimated low and high project costs from ITSP Project Portfolio and the average of the low and high costs. Generally, costs are only provided for planned projects on the assumption that the costs for projects that are either complete or in-progress have already been incurred.
- **Cost for Planned Projects per Fiscal Year:** Project cost has been allocated by fiscal year (FY 2021/22, FY 2022/23, and FY 2023/24) as follows:
  - Except for projects that have annual recurring costs (such as for the annual refreshment of the City's IT infrastructure or for services contracts), the cost for a project is assumed to be

fully incurred in the FY in which the project commences even if the project's duration spans FYs.

- The costs for the maintenance of existing business and operational applications and/or application services that are not part of the IT Strategic Plan are not included.

As project charters are developed and approved for each of the projects in figures 6.3.1 and 6.3.2, City IT will be able to calculate and plot the user and IT resource requirements within each time period to review with the City's executive team so that the project schedule can be adjusted as needed. The number of IT resources (whether internal or external) available will generally be limited by:

- ❑ The number of IT resources required to perform scheduled maintenance on the City's IT infrastructure and needed to work on foundational projects (such as the adoption of IT best practices and business continuity).
- ❑ The number of IT resources required to respond to user requests and problem reports.
- ❑ The number of IT resources that are diverted from project work in order to respond to contingencies.

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| ID | Project Name | Sponsor(s) | Status | FY 2020/21 | | | | FY 2022/23 | FY 2023/24 | Parking Lot | Cost in $000's | | | Cost In FY for Planned Projects ($000's) | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q1 Completed | Q2 Oct - Dec | Q3 Jan - Mar | Q4 Apr - Jun | Jul-Jun | Jul - Jun | | Low | High | Mid | FY 2021/22 | FY 2022/23 | FY 2023/24 | |
| **Part 1: Completed Projects** | | | | | | | | | | | | | | | | | |
| 1 | GIS Licensing | City-Wide | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| 22 | Public Counter Software | Community Development | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| 34 | Refresh Intranet "The Hub" | Human Resources<br>IT | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| 37 | TLOxp Implementation | Code Enforcement | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| 47 | CityWorks Implementation | Public Works | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| 71 | "Return to Work" Appointment System | City-Wide | Complete | ■■■■■ | | | | | | | $ - | $ - | $ - | | $ - | $ - | |
| **Part 2: ERP Projects** | | | | | | | | | | | | | | | | | |
| 33 | ERP Requirements / Gap Analysis Study | Finance | Planned | | | | ■■■■■ | | | | $ 50 | $ 75 | $ 63 | $ 63 | | | |
| 72 | Upgrade / Replace ERP System | Finance<br>Human Resources | Planned | | | | | ■■■■■ | | | $ 625 | $ 950 | $ 788 | | $ 788 | | 5 |
| 19 | Human Capital Performance Management | City-Wide | Planned | | | | | | ■■■■■ | | $ - | $ - | $ - | | | | 5 |
| 36 | Employee Self-Service | Human Resources | Planned | | | | | | ■■■■■ | | $ - | $ - | $ - | | | | 5 |
| 45 | Procurement and Contract Management | CIP | Planned | | | | | | ■■■■■ | | $ - | $ - | $ - | | | | 5 |
| 50 | CityWorks / ERP Interface | Public Works | Planned | | | | | | | ■■■■■ | $ - | $ - | $ - | | | | 5 |
| **Part 3: City-Wide and Departmental Projects (Sorted by Sponsor and Project)** | | | | | | | | | | | | | | | | | |
| 43 | CIP Project Repository | CIP | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | | | | $ - | $ - | $ - | | | | |
| 57 | Best Practices for Remote Workers | City-wide | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 9 | Implementation of Paperless Environment | City-Wide | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | $ - | $ - | $ - | | | | |
| 62 | IT Governance | City-Wide | Planned | | | ■■■■■ | | | | | $ - | $ 15 | $ 8 | $ 8 | | | 3 |
| 73 | IT Strategic Plan FY25-FY27 | City-Wide | Planned | | | | | | ■■■■■ | | $ - | $ 75 | $ 38 | | | $ 38 | |
| 68 | Project Management Methodology | City-Wide | Planned | | | | ■■■■■ | | | | $ - | $ 20 | $ 10 | $ 10 | | | |
| 10 | Secure Document Access | City-Wide | Planned | | | | | ■■■■■ | | | $ - | $ 10 | $ 5 | | | $ 5 | |
| 65 | Social Media and Text Archiving | City-Wide | Planned | | | | ■■■■■ | | | | $ 25 | $ 50 | $ 38 | $ 38 | | | |
| 64 | Technology Fund Replacement Strategy for SaaS Applications | City-Wide | Planned | | | | ■■■■■ | | | | $ - | $ 15 | $ 8 | $ 8 | | | |
| 11 | Data Literacy / Data Warehouse | City-Wide<br>IT | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | $ - | $ - | $ - | | | | |
| 31 | e-Mail Search Tool | CM - City Clerk | Planned | | | | | ■■■■■ | | | $ 15 | $ 20 | $ 18 | | | $ 18 | |
| 30 | Granicus / Legistar Post-Implementation Review | CM - City Clerk | Planned | | | | | ■■■■■ | | | $ - | $ 15 | $ 8 | | | $ 8 | |
| 66 | Lobbyist Registration | CM - City Clerk | In-Progress | | ■■■■■ | | | | | | $ - | $ - | $ - | | | | |
| 63 | VoteCast | CM - City Clerk | Planned | | | ■■■■■ | | | | | $ - | $ 5 | $ 3 | $ 3 | | | |
| 32 | Web-Site Refresh / Replacement | CM - Communications | Planned | | | | ■■■■■ | | | | $ 75 | $ 150 | $ 113 | $ 113 | | | |
| 4 | Drone Management | CM - Emergency Management | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | | | | $ - | $ - | $ - | | | | |
| 5 | EOC Improvements | CM - Emergency Management | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 3 | Local Data Repositories for Emergency Management | CM - Emergency Management | Planned | | | | | ■■■■■ | | | $ - | $ 15 | $ 8 | | $ 8 | | |
| 2 | Volunteer Portal Update / Integration | CM - Emergency Management | In-Progress | ■■■■■ | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 70 | Satellite Network | CM - Emergency Services | Planned | | | | ■■■■■ | | | | TBD | TBD | TBD | | | | 6 |
| 8 | Water Sub-Metering Feasibility | CM - Sustainability | Planned | | | | | ■■■■■ | | | $ - | $ 20 | $ 10 | | $ 10 | | |
| 7 | Data Repository for Sustainability | CM - Sustainability | In-Progress | | | ■■■■■ | ■■■■■ | | | | $ - | $ - | $ - | | | | |
| 6 | Facility Energy Management Systems | CM - Sustainability<br>Public Works | Planned | | | | | ■■■■■ | | | $ 25 | $ 50 | $ 38 | | $ 38 | | |
| 40 | Body Cameras | Code Enforcement | Planned | | | | | | ■■■■■ | | $ 15 | $ 30 | $ 23 | | | $ 23 | |
| 39 | Interface with County CAD/RMS | Code Enforcement | Planned | | | | | ■■■■■ | | | TBD | TBD | TBD | | | | 6 |
| 38 | Resident Portal Consolidation | Code Enforcement | Planned | | | | | ■■■■■ | | | $ - | $ 25 | $ 13 | | $ 13 | | |
| 17 | Accela Post-Implementation Review | Community Development | Planned | | | | | ■■■■■ | | | $ - | $ 15 | $ 8 | | $ 8 | | |

Figure 6.3.1 – Project Schedule and Cost per Fiscal Year, Page 1 of 2

| ID | Project Name | Sponsor(s) | Status | FY 2020/21 | | | | FY 2022/23 | FY 2023/24 | Parking Lot | Cost in $000's | | | Cost In FY for Planned Projects ($000's) | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q1 Completed | Q2 Oct - Dec | Q3 Jan - Mar | Q4 Apr - Jun | Jul-Jun | Jul - Jun | | Low | High | Mid | FY 2021/22 | FY 2022/23 | FY 2023/24 | |
| 20 | Call Routing | Community Development | In-Progress | | ■■■■■ | | | | | | $ - | $ - | $ - | | | | |
| 18 | Customer Service Application | Community Development | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | | $ - | $ - | $ - | | | | |
| 21 | Message Templates | Community Development | Planned | | | | | ■■■■■ | | | $ - | $ 5 | $ 3 | | $ 3 | | |
| 16 | Permit Consolidation | Community Development | Planned | | | | | | ■■■■■ | | $ - | $ 75 | $ 38 | | | $ 38 | |
| 15 | Secure e-Mail Portal / DocuSign | Community Development | In-Progress | | ■■■■■ | | | | | | $ - | $ 5 | $ 3 | $ 3 | | | |
| 23 | Migration of Business Licenses from New World to Accela | Community Development Finance | In-Progress | | ■■■■■ | | | | | | $ - | $ - | $ - | | | | |
| 46 | Transparency | Development Services | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | | | | $ - | $ - | $ - | | | | |
| 44 | Facilities Management Software | Development Services CIP | Planned | | | | | | ■■■■■ | | $ - | $ 100 | $ 50 | | | $ 50 | |
| 41 | Document Handling | Housing | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 67 | Candidate Assessment Pre-Employment | Human Resources | Planned | | | ■■■■■ | | | | | | $ 25 | $ 50 | $ 50 | | | 2 |
| 35 | Digitization of Employee Records | Human Resources | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 34(b) | Refresh Intranet, FY 2022/23 | Human Resources | Planned | | | | | ■■■■■ | | | $ - | $ 10 | $ 5 | | $ 5 | | |
| 34(c) | Refresh Intranet, FY 2023/24 | Human Resources | Planned | | | | | | ■■■■■ | | $ - | $ 10 | $ 5 | | | $ 5 | |
| 74 | CodeHub | Multiple Departments | Planned | | ■■■■■ | ■■■■■ | ■■■■■ | | | | $ 20 | $ 28 | $ 24 | $ 24 | | | 7 |
| 26 | "When to Work" App Implementation, Phase II | Parks and Recreation | Planned | | | | | ■■■■■ | | | $ - | $ 10 | $ 5 | | $ 5 | | |
| 24 | ActiveNET Implementation, Phase II | Parks and Recreation | In-Progress | | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | $ - | $ - | $ - | | | | |
| 25 | ActiveNET Post-Implementation Review | Parks and Recreation | Planned | | | | | ■■■■■ | | | $ - | $ 15 | $ 8 | | $ 8 | | |
| 27 | Cobblestone Enhancements | Parks and Recreation | Planned | | | | | | | ■■■■■ | TBD | TBD | TBD | | | | 4 |
| 28 | Implement Work Order System | Parks and Recreation | Planned | | | | ■■■■■ | | | | $ - | $ 15 | $ 8 | $ 8 | | | |
| 29 | Wi-Fi Expansion | Parks and Recreation | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 75 | McClelland AR | Parks and Recreation | Planned | | | | ■■■■■ | ■■■■■ | | | $ 36 | $ 44 | $ 40 | $ 40 | | | 7 |
| 12 | Green Halo Implementation | Public Works | In-Progress | | ■■■■■ | | | | | | $ - | $ - | $ - | | | | |
| 51 | Improve Document Access in CityWorks | Public Works | Planned | | | | | | ■■■■■ | | $ - | $ 25 | $ 13 | | | $ 13 | |
| 13 | SB1383 (Record Keeping) Conformance | Public Works | Planned | | | | ■■■■■ | | | | $ - | $ 25 | $ 13 | $ 13 | | | |
| 48 | Smart City Master Plan | Public Works | Planned | | | | | | ■■■■■ | | $ 50 | $ 75 | $ 63 | | | $ 63 | |
| 49 | Street Light Transition Plan | Public Works | In-Progress | | | ■■■■■ | | | | | $ - | $ - | $ - | | | | 1 |
| 14 | Traffic Center Network | Public Works IT | In-Progress | | ■■■■■ | ■■■■■ | | | | | $ - | $ - | $ - | | | | |
| 42 | Facility Upgrades | Sports and Recreation | Planned | | | | ■■■■■ | ■■■■■ | ■■■■■ | | TBD | TBD | TBD | | | | 6 |
| **Part 4: Innovation Technology Projects** | | | | | | | | | | | | | | | | | |
| 55 | Application Training | IT | In-Progress | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | $ - | $ - | $ - | | | | |
| 58 | Digital Camera Migration | IT | In-Progress | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | | $ - | $ - | $ - | | | | |
| 52 | Rationalize File Structure | IT | Planned | | | | | ■■■■■ | | | $ - | $ 50 | $ 25 | | $ 25 | | |
| 53 | SharePoint Governance | IT | Planned | | | | | ■■■■■ | | | $ - | $ 20 | $ 10 | | $ 10 | | |
| 54 | Application Rationalization | IT | Planned | | | | | | ■■■■■ | | $ - | $ 20 | $ 10 | | | $ 10 | |
| | | **Number of Concurrent Projects:** | | **10** | **22** | **22** | **21** | **24** | **17** | **Estimated Cost Per Fiscal Year ($000's):** | | | | **$ 377** | **$ 918** | **$ 268** | |

**Legend:**

■■■■■ **Completed Work**
■■■■■ **Planned Work**

**Notes:**

1 Scope of IT participation in this project is not known at this time.
2 Service is sourced to an external provider, need for project is TBD.
3 Carry-over from prior IT Strategic Plan.
4 Scope of enhancements to Cobblestone not known at this time, functionality may be provided by new ERP solution.
5 The actual cost for the procurement and implementation of the ERP solution will be dependent on the scope of services requested and the bids received by the City.
6 Scope and cost of project not known at this time.
7 Project added following the Prioritization Workshop

Figure 6.3.2 - Project Schedule and Cost per Fiscal Year, Page 2 of 2

## 6.3 – Next Steps for the City

"Innovation is less about generating brand-new ideas and more about knocking down barriers [such as such as inefficient processes or hierarchies] to making those ideas a reality." - *John P. Kotter, Accelerate, https://www.Kotterinternational.com*

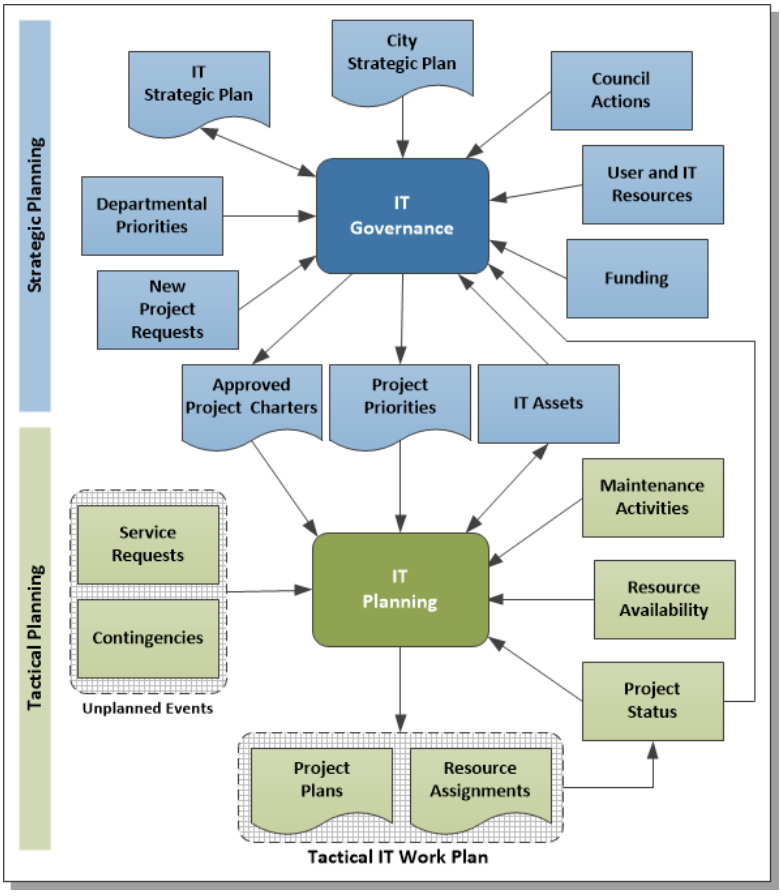


Figure 6.4 – Strategic and Tactical Planning (Source: SDI)

A well-developed and widely accepted IT Strategic Plan is one of the most powerful tools for IT governance since it identifies the destination and the steps to get there. It also provides a baseline for informed discussions as to changes in the destination, the desired route, and the timing of the journey. The IT Strategic Plan Update provides the City of Cupertino with a roadmap for the completion of a wide-range of information technology projects through FY 2023/24. Some of these projects will transform the work of individual departments while other projects, such as the potential replacement of the Financial / HR application and the implementation of a near-paperless environment will impact work City-wide. The ability of the City to fully realize the benefits of these projects can be limited by challenges including resistance to changes in organizational behavior and culture, succumbing to the temptation to focus on technology, rather than people, as a change agents, and not aligning the allocation of user and IT resources consistently with organizational priorities.

Of these, resistance to change is probably the most vexing to planners. Executives, managers, and staff find comfort in established processes even when they find them frustrating. Overcoming this resistance to change in a thoughtful, open, and consistent manner is critical for success. This is particularly true for the establishment of a consistent approach to IT Governance. Even though IT Governance is critical to the ability of organizations to optimize their investments in information technology, to agilely respond to new requirements, and to allocate resources based on enterprise directions and priorities, organizations often struggle to implement and then sustain formal approaches to IT Governance.

As shown in Figure 6.4, Strategic and Tactical Planning, IT Governance can be complex and already over-burdened decision-makers are understandably reluctant to take on yet another responsibility. As a result, organizations either adopt ad-hoc and inconsistent processes for IT Governance or delegate many of the functions of IT Governance to their IT support organization. Both of these approaches can be problematic since:

- Delegation of IT Governance to an IT support organization, no matter how proactive and innovative it may be, diminishes opportunities for collaboration and the places the IT support organization in the uncomfortable position of reconciling competing priorities.
- The complexity of IT Governance is not really suited to ad-hoc approaches.

Despite its complexity, IT Governance is one of the least expensive and most effective steps that an organization can take to improve the delivery of IT services to its internal user community and the public, to realizing greater value / return for its investments in information technology and the only real obstacles to its implementation are generally organizational culture (particularly resistance to change). For these reasons, SID has consistently advocated since 2015 that the City of Cupertino should establish a formal approach to IT Governance and hopes that this will be among the first order of business as the City moves forward with the IT Strategic Plan.

# Appendices

Appendix A – ITSP Project Portfolio

# Appendix A: ITSP Project Portfolio

## Introduction

This document, entitled, City of Cupertino, IT Strategic Plan Project Portfolio, was developed by SDI to facilitate the development of the City's IT Strategic Plan. The Project Portfolio provides summary information for each of the projects that will be considered in the Project Planning Workshop including:

- **Project Number**: The projects have been numbered consecutively; however, there are some gaps in the numbering due to the consolidation of projects.
- **Project Name**.
- **Project Sponsors**: The department that is the sponsor of the project, in some instances a project may be shown as being City-wide meaning that it is beneficial to all departments.
- **Status**: The status of the project, including:
  - In Progress: The project is either being currently worked on or has been approved and funded.
  - Complete: The project has recently been completed.
  - Planned: The project has been approved and scheduled.
  - Interview: The project has been requested or proposed for inclusion in the IT Strategic Plan based on SDI's interviews with City departments or IS staff.
  - Finding: The project is related to a finding discovered by SDI during interviews with City personnel.
  - Recommendation: The project is related to a recommendation made by SDI.
- **Project Description:** Provides information regarding the project including the problem(s) that the project is intended to solve, the potential benefits to the City, and additional information such as dependencies on other projects.
- **Level of Effort**: An estimate of the level of effort involved (Low, Medium, High). The level of effort is determined as follows:
  - Low: A small project with a duration of less than 6 months.
  - Medium: A project with a duration of 6 to 12 months.
  - High: A project with a duration of more than 12 months.
- **Level of Risk**: An estimate of the potential risk involved in the implementation of the project (including both technical risk and the risk of disruption to City operations in the event of the project being delayed or failing to meet the intended objectives) and risk is categorized as being Low, Medium, or High
- **Estimated Cost in $000's (Low and High)**: The estimated cost for the project, in some instances a project could be completed by City staff members (and thus show a cost of $0) or by an external service provider. Costs that: a) cannot be estimated at this time are shown as "TBD",

and b) costs for projects that are shown as “In Progress” are shown as “n/a,” since these are already budgeted.

## Project Portfolio

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Low | High |
| 1 | GIS Licensing | City-Wide | Completed | With increased interest / need in the user community for access to the City's GIS, the City will need to expand GIS licensing to eliminate the need for shared accounts. | n/a | n/a | $ ----- | $ ----- |
| 2 | Volunteer Portal Update / Integration | CM – Emergency Management | In-Progress | The City has a Volunteer Portal for residents (off-the-shelf), but the information in the application is very stagnant. In addition to providing for development and implementation of an approach to review the data in the Volunteer Portal and ensure that it is kept current, this project would also address requirements to:<br>▪ Integrate the Volunteer Portal with the City's Alert / Warning system.<br>▪ Feed HR contact information into the Alert Warning System. | n/a | n/a | $ ----- | $ ----- |
| 3 | Local Data Repositories for Emergency Management | CM – Emergency Management | Interview | The County is rolling out additional web-based applications for emergency management. The City would like to have local repositories of information in the event that the web connection goes down in an emergency. This project would provide for the negotiation of an agreement with the County for the scheduled downloading of information from these applications to a secure local repository in the City. | M | L | $ 0 | $ 15 |
| 4 | Drone Management | CM – Emergency Management | In-Progress | The City is planning to procure and operate drones to provide still and video imagery of the City following an emergency to identify areas of the City that have sustained damage and make that information available to City's EOC. The City has procured and implemented DroneDeploy (https://www.dronedeploy.com) which provides the functionality to fly a drone over a pre-established flight path. This project is in-progress. | n/a | n/a | $ ----- | $ ----- |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| | | | | | | | Low | High |
| 5 | EOC Improvements | CM –Emergency Management | Complete | The City's 2017 IT Strategic Plan as well as the 2019 update to the plan noted the need to remediate the deficiencies in the EOC at City Hall. Since then, the City has begun using an alternative EOC at the Service Yard. This project would provide for:<br>▪ The development and implementation of a plan to ensure that the EOC at the Service Yard can continue to meet the City's needs (i.e., accessibility, connectivity, redundancy, security) or whether the City should consider establishing an EOC in an alternative facility.<br>▪ The development and implementation of an incident response plan. | n/a | n/a | $ ----- | $ ----- |
| 6 | Facility Energy Management Systems | CM – Sustainability<br>Public Works | Recommended | The City is looking at opportunities to update Building, Heating, Lighting management systems to improve energy efficiency / sustainability. This project would provide for:<br>▪ The formal development of the requirements related to achieving conformance with energy management / sustainability standards.<br>▪ A review of all City facilities with the objective of identifying and costing the effort to retrofit them to meet the standards, and those facilities that can be more readily adapted.<br>▪ The development of a plan for renovating or replacing facilities as part of the City's CIP program. | M | L | $ 25 | $ 50 |
| 7 | Data Repository for Sustainability | CM – Sustainability | In-Progress | Sustainability needs to have more data available for reporting – immense reporting for Climate Action Plan, 200 measures, reported annually. Ideally, this information would be contained in a single repository that would be integrated with the City Finance system (Logos). This project would provide for:<br>▪ The definition of the requirements for the repository.<br>▪ Analysis as to whether the City's proposed data warehouse could feasibly meet these requirements or whether a more | n/a | n/a | $ ----- | $ ----- |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| | | | | specific / dedicate solution would be a better fit to the requirements.<br>▪ The development of a plan for the implementation of the required functionality. | | | | |
| 8 | Water Sub-Metering Feasibility | CM - Sustainability | Interview | Need to apply sub-metering to the water system (want to use AMI for City owned facilities water meters). Watering system is aged. Water is the biggest single utility expense for the City. This project would provide for the development of a feasibility study to determine how best to accomplish sub-metering for the City. | L | L | $ 0 | $ 20 |
| 9 | Implementation of Paperless Environment | City-Wide | In-Progress | The City completed an IDMS strategy last year with the objective of becoming a largely paperless City (the City is in the first year of a three-year plan). It was noted that:<br>▪ The use of Laserfiche varies throughout the City.<br>▪ Although the City has scanned a large number of documents that many of them have either not been indexed at all or not indexed consistently. This limits the ability of users to retrieve documents.<br>This project would provide for the development and implementation of a plan to facilitate the City's migration to a near-paperless environment including the use of automated workflows and more closely integrating Laserfiche with the City's core business applications to improve access to documents. | n/a | n/a | $ ----- | $ ----- |
| 10 | Secure Document Access | City-Wide | Interview | Various departments indicated the need to be able to secure access to documents or to control access to areas of documents that contain sensitive / confidential information. This project would provide for a study to determine if this functionality could be provided by the City's document / content management system (Laserfiche) or if another product might be required and, if so, for the selection, procurement, and implementation of that product. | L | L | $ 0 | $ 10 |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| 11 | Data Literacy / Data Warehouse | City-Wide<br>IT | In-Progress | The City would like to broadly improve data literacy. As part of this effort, IT needs to improve data classification and establish a data warehouse and provide users with a "low-code" approach to generate their own dashboards from the data in the warehouse. This project would provide for:<br>▪ The development of the requirements for the data warehouse and the dashboard generator, for data governance, and for improving data literacy (including GIS).<br>▪ Evaluation of the feasibility of creating and maintaining the data warehouse including the availability of the information required to populate the warehouse and, potentially, conducting a pilot project.<br>▪ Review of the staffing requirements and costs related to support the data warehouse including the extraction of data from the City's core information systems.<br>▪ Development of a plan for the implementation of the data warehouse and dashboard tools. | n/a | n/a | $ ----- | $ ----- |
| 12 | Green Halo Implementation | Public Works | In-Progress | The City is planning to roll out Green Halo (http://www.greenhalosystems.com) software in the fall, September / October. The software provides support for construction and demolition debris tracking. | n/a | n/a | $ ----- | $ ----- |
| 13 | SB1383 (Record Keeping) Conformance | Public Works | Interview | SB1383 mandates records management and reporting regarding paper procurement record keeping, energy, compost. Also tracking for CalRecycle. All paper purchased by the City needs to have 30% recyclable content. This project would provide for the development of feasibility study to determine if these requirements can be met through extracting information from the City's ERP system (Logos). | L | L | $ 0 | $ 25 |
| 14 | Traffic Center Network | Public Works<br>IT | In-Progress | Traffic Center network was refreshed last year. Public Works is currently migrating from serial video controllers to Ethernet / IP-based video controllers – some network connection issues. | n/a | n/a | $ ----- | $ ----- |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| 15 | Secure e-Mail Portal / DocuSign | Community Development | In-Progress | Send declarations out to Contractors / Homeowners and they electronically sign the documents and return them to the City. Need to consider DocuSign, but sometimes e-mail looks like junk mail – the City needs a more secure way of sending the e-mail. This project would include reviewing the feasibility of meeting these requirements using the City's current e-Mail system (Outlook) or other software that the City owns and, if this is not possible, developing a plan to select, procure, and implement the needed software. | n/a | n/a | $ ----- | $ ----- |
| 16 | Permit Consolidation | Community Development | Interview | Seeking to have just one permit application rather than 15. Would also like to be able to have other applications enable filers to input permits electronically and forward them to Community Development for review rather than having to manually input the information for the public. This project would provide for:<br>▪ The evaluation of feasibility of accomplishing this in Accela and the level of effort required. This could potentially require the assistance of Accela professional services.<br>▪ Definition and prioritization of the project, including the level of support required from IT and the level of effort for the users to accomplish this consolidation. | H | M | $ 0 | $ 75 |
| 17 | Accela Post-Implementation Review | Community Development<br>IT | Recommendation | The City implemented Accela approximately a year ago, provides the ability for residents to pay for permits and to schedule inspections through an online portal. This project would provide for conducting a post-implementation review of Accela with the objectives of:<br>▪ Documenting lessons learned in the course of the implementation.<br>▪ Identifying opportunities to maximize the City's use of the application, including an assessment of whether Code Enforcement can use Accela (thus eliminating a separate application). | M | L | $ 0 | $ 15 |

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| | | | | ▪ Evaluating the feasibility of providing a single public portal for ProjectDox and Accela to reduce public confusion. | | | | |
| 18 | Customer Service Application | Community Development | In-progress | Community Development receives a large number of e-mail messages and telephone calls from the public all of the time including evenings and weekends. Community Development would like to find a solution that would reduce the need to answer the same questions. There is some interest in using the ZenDesk (https://www.zendesk.com/) ticketing system which has a Chatbox with a widget on the City's web-page for this purpose. | n/a | n/a | $ ----- | $ ----- |
| 19 | Human Capital Performance Management | City-wide | Scheduled FY22 | Performance metrics are a key part of the City's budgeting process and employee evaluations. The City has a need for a performance management system for HR that is integrated with payroll and that would support the integration of performance metrics with the City's budgeting process. HR would also like to have the ability to forecast staffing needs based on performance metrics.<br>This project would provide for the development and implementation of a plan (including the definition of user requirements) for the acquisition and implementation of a performance management system for the City. The solution should include a dashboard to provide managers and staff members with information regarding performance metrics and conformance with training requirements. | M | L | $ 25 | $ 50 |
| 20 | Call Routing | Community Development | Interview | The City's telephone system is challenging – the City is not using phone routing trees, and this limits the ability to route calls. Calls are not queued; planners just take the next call. Everybody gets everything and this defeats having a person who is "On Duty" to answer calls. | L | L | $ 0 | $ 10 |
| 21 | Message Templates | Community Development | In-Progress | The City needs to have a library of standard templates to respond to requests / questions from the public. | n/a | n/a | $ ----- | $ ----- |

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| 22 | Public Counter Software | Community Development | Complete | The Planning Division in Community Development needs to have the ability for the public to schedule appointments online and would also like to assess the feasibility of relocating the permit office from the basement of City Hall to the lobby. It was noted that Buildings is looking at MS Booking for the Permit Counter, and that potentially Planning could use it as well. | n/a | n/a | $ ----- | $ ----- |
| 23 | Migration of Business Licenses from New World to Accela | Community Development<br>Finance | In-Progress | The City is moving the processing of business licenses from New World to Accela in order to take advantage of the functionality and parcel information available in Accela. | n/a | n/a | $ ----- | $ ----- |
| 24 | Active NET Implementation, Phase II | Parks and Recreation | In-Progress | Parks and Recreation is planning a follow-on phase to the implementation of the Active.NET software. | n/a | n/a | $ ----- | $ ----- |
| 25 | Active NET Post-Implementation Review | Parks and Recreation | Recommendation | With the completion of the planned second phase of the implementation of Active.NET, the City should conduct a post-implementation review of the system (potentially with assistance from Active professional services) with the objectives of:<br>▪ Documenting lessons-learned in the course of the implementation and subsequently.<br>▪ Developing a plan for the implementation of updates and additional features.<br>▪ Resolving issues (it is felt that Active NET is user-friendly for the City's staff but not so much for the public).<br>▪ Identifying opportunities to better utilize the application including maximizing reporting, and potentially replacing other applications such as GolfNow and Square in order to break down barriers between divisions and to streamline workflows.<br>▪ Implementing a program to improve user training. | M | L | $ 0 | $ 15 |
| 26 | "When to Work" Implementation, Phase II | Parks and Recreation | Interview | Parks and Recreation is using "WhentoWork" (a mobile application) to schedule work hours for around 200 part-time staff and volunteers, but it is not configured for them yet so are | L | L | $ 0 | $ 10 |

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| | | | | still relying on Excel. Will need some assistance from IT to configure and implement the application, planning to get to it in the next year. | | | | |
| 27 | CobbleStone Enhancements | Parks and Recreation Finance | In-Progress | Parks and Recreation uses many different service providers (a coordinator can manage between 5 to 15 separate contractors) and is using CobbleStone for contract processing. It was implemented last year, integrated with Adobe Sign, but not yet fully implemented (estimate that they are using approximately 20-30% of the functionality). In addition to planning to implement additional functionality in CobbleStone, they need to:<br>▪ Integrate CobbleStone with New World for invoicing and risk management, etc. – Not part of SOW<br>▪ Implement a customer interface. | n/a | n/a | $ ----- | $ ----- |
| 28 | Implement Work Order System | Parks and Recreation | Interview | Parks and Recreation needs to implement a work order tracking and management system with a customer portal and is looking to utilize one of the work order systems presently implemented in the City including Cityworks, ZenDesk, and the IT ticketing system. Parks has seen a demo for ZenDesk and was impressed with the product but needs to perform a more detailed review and evaluation, select a work order system, and then work with IT on implementation. | M | L | $ 0 | $ 15 |
| 29 | Wi-Fi Expansion | Parks and Recreation | In-Progress | IT has been given a list of park sites where Parks and Recreation wants to improve Wi-Fi including Wilson Portal and Creekside. Some of the requirements are still open to discussion, i.e., they want to have Wi-Fi access broadly available they are wary of people spending more time online rather than enjoying the park. | n/a | n/a | $ ----- | $ ----- |
| 30 | Granicus / Legistar Post-Implementation Review | City Manager / City Clerk | Interview | The City is using Granicus for agenda management and Legistar for publishing the agenda and minutes for City Council Meetings (both products are supported by Granicus). Although the Council is generally satisfied with these products, there are some glitches in the process and members of the public often point these out. | M | L | $ 0 | $ 15 |

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| | | | | This project would provide for a review of the City's implementation of Granicus and Legistar with the objectives of identifying and resolving issues and determining if there is a need for additional training in the use of the products. | | | | |
| 31 | e-Mail Search Tool | City Manager / City Clerk | Interview | In order to comply with Public Records requests, the City Clerk has to search large numbers of e-mail messages using the limited search tools available in MS Outlook and then manually review the messages retrieved through the search to confirm their relevance, to eliminate duplicates, and to redact confidential information. The project would provide for the procurement and implementation of a configurable e-mail search tool driven by user-defined business rules to reduce the amount of manual effort involved in processing these requests. | M | L | $ 15 | $20 |
| 32 | Web-Site Refresh / Replacement | City Manager / Communications | Scheduled for FY22 | It was reported that the City's current web-site is becoming dated, is difficult to update, that some functions such as searching for a page or a topic doesn't work well, and that the site should be more user friendly. There is also some concern regarding the level of support being provided for the web-site by Civica following their acquisition by Granicus. This project would provide for an evaluation of the City's current web-site with the objectives of:<br>▪ Identifying immediate improvements that could be made to the existing web-site.<br>▪ Identifying the City's requirements for a new web-site.<br>▪ Developing and implementing a plan for the replacement of the web-site. | H | M | $ 75 | $ 150 |
| 33 | ERP Requirements / Gap Analysis | Finance | Scheduled for FY22 | The City has been using Tyler's Logos (New World) product since 2017 and while the product is generally regarded by the City as being efficient, Finance has a number of concerns regarding Logos including: | M | L | $ 50 | $ 75 |

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| | | | | ▪ Limited responses from Tyler regarding product modifications / support have led to the introduction of manual workarounds.<br>▪ Issues with processing payroll.<br>▪ Limitations in the ability of users to readily extract information from Logos for reporting (especially for budgeting). In particular, Finance would like to enable departments to become more self-sufficient with regard to creation and generation of reports.<br>▪ Logos' forecasting model did not work well for the City and Tyler was unable to support the City and they are using Excel for projections<br>▪ The modules within Logos are not highly integrated with each other.<br>▪ Fixed asset management is not integrated with purchasing and they are using manual processes.<br>▪ HR has also reported some limitations in using Logos for time reporting including the ability to alter supervisors if time reports are not completed and always linking hours worked to GL codes.<br>▪ Limitations in internal application security.<br>▪ The API (used to support information sharing between Logos and other applications) is not easy to use.<br>This project would provide for the development of an ERP requirements / gap analysis that would:<br>▪ Review and update the City's ERP requirements.<br>▪ Determine whether Logos can feasibly meet the City's requirements. | | | | |

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| | | | | ▪ Determine whether the City should consider the procurement of an alternative ERP solution especially given the developments within the ERP marketplace since 2017. | | | | |
| 34 | Refresh Intranet "The Hub" | HR<br>IT | Complete (FY21/22) Planned for FY22/23 and FY23/24 | This is a multi-year, multi-phase, project to revamp the City's Intranet site including new functionality and updated content. The first phase is scheduled to roll-out at the end of June. Will be open City-wide with IT, HR, and Communications.<br>Then a year to add other departments. One of the objectives of this project is to keep the information fresh so that employees keep coming back. The new functionality will enable employees to self-register for classes and for managers to see what classes their employees are enrolling in and the status of program completion. HR would like to have the ability to customize The Hub so that it is specific to an employee (more than a year out). | M | L | $ 0 | $ 10 |
| 35 | Digitization of Employee Records | HR | In-Progress | All new personnel documents are digital and in Laserfiche. Need to do backfile conversion to digitize older hardcopy documents. HR is meeting with a vendor this week regarding digitization. HR would also like to look at developing and implementing user-defined workflows for specific document types. | n/a | n/a | $ ----- | $ ----- |
| 36 | Employee Self-Service | HR | Interview | At present, HR has to manually enroll employees in external programs (health, vision, dental, etc.) – also have to maintain employee information (name, address changes, etc.) in each of these external programs. HR would like to have an employee self-service portal for benefits enrollment / information changes that would also support the ability to generate reports for HR regarding employee enrollments, beneficiaries, etc.<br>The portal would also need to be able to share information on enrollments with the City's ERP system for payroll deductions, etc. This project would provide for the definition of the requirements for the employee self-service portal and the selection, acquisition, and implementation of a solution for the City. | M | M | $ TBD | $ TBD |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| | | | | **NOTE:** Should the City decide to procure a new ERP system, the availability of a self-service portal should be included in the requirements and there would be no need for integration. The cost is shown as TBD pending the outcome of the ERP Gap Analysis. | | | | |
| 37 | TLOxp Implementation | Code Enforcement | Complete | Code Enforcement would like to purchase TLOxp (TransUnion), which would be a very useful tool for them that provides functionality for skip tracing with contact information (e-mail, social media, phone numbers), etc. Code enforcement would like to purchase a program called TLOxp (TransUnion) . Very useful and powerful tool to assist code enforcement. Skip tracing tool with contact information (e-mail, social media, phone numbers). This project would provide for the development of the requirements for TLOxp (including potential integration with Accela) and for the acquisition and implementation of the product. | n/a | n/a | $ ----- | $ ----- |
| 38 | Resident Portal Consolidation | Code Enforcement | Interview | Work orders originating from resident's issues / complaints can reach Code Enforcement through a number of sources including CitizenServe, Cupertino311, and Accela. This project would provide for the development of the requirements for the consolidation of requests into a single repository and automated responses back to the originating portal, and the development, implementation of the interfaces required to enable this process. | M | L | $ 0 | $ 25 |
| 39 | CAD/RMS Interface | Code Enforcement | Interview | Code Enforcement does not have access to the Sheriff's CAD/RMS system, and this poses an officer safety issue since they are not able to see if there are any issues related to a location that is going to be inspected. This project would provide for the development of an agreement with the Sherriff's Office to enable Code Enforcement officers to have access to City information in the CAD/RMS systems. Please note that Code Enforcement Officers will be receiving police radios so that they can communicate directly with SO Dispatch. | L | M | $ TBD | $ TBD |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| 40 | Body Cameras for Code Enforcement | Code Enforcement | Interview | Code Enforcement officers interact with property owners, residents at an address, and other members of the community. This project would provide for the development of a feasibility study for equipping Code Enforcement Officers with body cameras and, subsequent to City review and approval, the acquisition of the equipment and services, and training for the officers. | H | M | $ 15 | $ 30 |
| 41 | Document Handling | Housing | In-progress | Housing has been handling a lot of affordable home ownership documents (sale / refinance), which involves a lot of scheduling and documents to be moved around. Housing is very concerned about routing, tracking, and securing these documents. This project would provide for the development of a feasibility study as to whether these requirements could be met with existing City applications (CobbleStone and Laserfiche), and for the development and implementation of the approach. | n/a | n/a | $ ----- | $ ----- |
| 42 | Facility Upgrades | Sports and Recreation | Interview | Various City facilities need upgrades including access control, video monitoring, expansion of Wi-Fi, digital signage, digital timekeeping, interactive displays, augmented reality, and refreshment of A/V equipment, etc. This project would provide for the development of a prioritized master plan for facility upgrades over current and next two fiscal years, which would be updated annually. | M | L | $ TBD | $ TBD |
| 43 | CIP Project Repository | CIP | In-progress | This project would provide for the creation of a repository ("dataverse") of information from a number of separate sources (including Logos, MS Project, BlueBeam, and ProjectDox) regarding CIP projects to make the information more readily available and to reduce the need to re-enter the same information multiple times and to increase the level of automation provided in support of CIP projects. This would also facilitate the archiving of completed projects. | n/a | n/a | $ ----- | $ ----- |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
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| 44 | Facilities Management Software | Development Services & CIP | Interview | The City has a portfolio of facilities but does not have a tool to effectively manage them including projecting potential budget needs. This project would provide for:<br>▪ The development of the requirements for facilities management.<br>▪ An assessment as to whether Cityworks (which has been implemented in the City and Public Works has an in-progress project to migrate facility information to Cityworks) can meet these requirements or whether the City will need to select, procure, and implement a different solution. | M | L | $ 0 | $ 100 |
| 45 | Procurement and Contract Management | CIP | In-Progress | CIP needs automated functionality to streamline the development of RFPs, contract creation and management, and compliance monitoring. This project would provide for the definition of requirements and an analysis as to whether products already owned by the City (including Logos, CobbleStone, Adobe Sign, etc.) could be effectively adapted to meet the requirements or if new solutions (such as PlanGrid) need to be identified, procured, and implemented. They presently have an "in house" bidding process that they would like to have integrated into an overall procurement management process. | n/a | n/a | $ ----- | $ ----- |
| 46 | Transparency | Development Services | In-Progress | The City is using Esri Storymaps and EngagementHQ on the web-site to make information regarding developments in the City available to the City. It was noted that the "information is good but not pretty." This project would provide for the analysis and prioritization of the City's requirements for transparency and assess whether these requirements could be met by making better use of existing products or if new products need to be identified, procured, and implemented. | n/a | n/a | $ ----- | $ ----- |
| 47 | Cityworks Implementation | Public Works | Complete | The City has a continuing project to add assets to Cityworks (which is integrated with Esri GIS and Rock Solid's 311 / CMS) including the migration of facility information. | n/a | n/a | $ ----- | $ ----- |

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| 48 | Smart City Master Plan | Public Works | Interview | The City plans to make use of various "Smart" programs including street light monitoring and management, adaptive traffic signaling, smart streets, etc. Although the implementation of these programs may be marginally outside of the timeframe for the IT Strategic Plan, the development of a master plan for their implementation would be useful for the City. This project would provide for the development of a Smart City Master Plan for the City with input from all impacted departments / offices in the City. | M | L | $ 50 | $ 75 |
| 49 | Street Light Transition Plan | Public Works | In-Progress | Public Works is developing a street light transition plan (approved by the City Council) which could be a CIP project by 2023.<br>**NOTE:** This project may not require any assistance from IT. | n/a | n/a | $ ----- | $ ----- |
| 50 | Cityworks / Logos Interface | Public Works<br>Finance | Interview | Public Works would like to have an automated interface between Cityworks and Logos (for purchasing, A/P, etc.), and this project would provide for the development of requirements (i.e., the events that would trigger and information exchange, the timing of the exchange, the data elements to be exchanged, the data validation rules, etc.) for the interface, the development of an information sharing agreement between Finance and Public Works, and the development, testing, and implementation of the interface. | M | M | $ 0 | $ 50 |
| 51 | Improve Document Access in Cityworks | Public Works | Interview | This project would provide for the development of the requirements for making the access to documents and drawings (stored in Laserfiche) from Cityworks quicker and easier, and the development, testing, and implementation of the changes required. | M | L | $ 0 | $ 25 |
| 52 | Rationalize File Structure | IT | Interview | The file structure on the City's network drives has always been a problem (i.e., inconsistent). With the implementation of SharePoint for file sharing / collaboration / remote access, this has become more of an issue. The City needs to get the file structures in SharePoint and the network drives rationalized, better organized. This project would provide for the development | M | L | $ 0 | $ 50 |

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| | | | | and implementation of a plan to rationalize the City's file structures consistently with its plan for document and content management. | | | | |
| 53 | SharePoint Governance | IT | Interview | This project would provide for the implementation of a governance structure for the use of SharePoint similar to the governance structure implemented for Teams. | L | L | $ 0 | $ 20 |
| 54 | Application Rationalization | IT | Recommendation | The City's user community has a significant number of applications that have been implemented for different purposes. This project would provide for the review and, where feasible, the consolidation of these applications with the objectives of reducing costs, improving support, and promoting the City-wide sharing of information. | M | L | $ 0 | $ 20 |
| 55 | Application Training | IT | In-Progress | In the course of the interviews conducted with the user community it was repeatedly noted that the users would like to have more information regarding the City's business applications and more training in how to use them. This project would provide for the development and implementation of a plan to provide more information to the user community including the creation of knowledge bases, the routine scheduling of training sessions and presentations. | n/a | n/a | $ ----- | $ ----- |
| 57 | Best Practices for Remote Workers | City-wide | In-Progress | This project would provide for a review of the City's experience in having a large portion of its workforce working remotely with the objectives of:<br>▪ Identifying and documenting lessons learned, particularly what worked well for the City, for IT support, and for the workers and what did not.<br>▪ Identifying applicable industry and public sector best practices for remote working.<br>▪ Developing a plan for revising policies, procedures, user hardware, and plans for connectivity based on the review. | n/a | n/a | $ ----- | $ ----- |

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|---|---|---|---|---|---|---|---|---|
| | | | | | | | Low | High |
| 58 | Digital Camera Migration | IT | In-Progress | IT recently assumed responsibility for the maintenance and support of the City's cameras used for video capture. IT is presently working to upgrade the cameras from analog to digital. This project would provide for the completion of the migration and the development of a plan for the continued support of the video cameras including any additional staffing / external service needs. | n/a | n/a | $ ----- | $ ----- |
| 62 | IT Governance | City-Wide | Carry Over From Prior ITSP | This project would provide for the implementation of an approach to IT Governance for the City in order to maximize the value that it receives for its investments in information technology by:<br>▪ Aligning IT projects with the City's business objectives and priorities.<br>▪ Allocating resources as needed in support of high-priority projects.<br>▪ Sponsoring transformations in how the City conducts operations. | L | L | $ 0 | $ 15 |
| 63 | VoteCast | CM – City Clerk | In-Progress | Replace aged Council voting system located in Community Hall. | n/a | n/a | $ ----- | $ ----- |
| 64 | Technology Fund Replacement Strategy for SaaS Applications | City-Wide | Planned | Develop a funding mechanism for the replacement (implementation and one-time costs) of enterprise SaaS applications | L | L | $ 0 | $ 15 |
| 65 | Social Media and Text Archiving | City-Wide | Planned | Implement capture, archive and oversight solution for the City's social media and text messaging. | M | L | $ 25 | $ 50 |
| 66 | Lobbyist Registration | CM – City Clerk | In-Progress | Per Council directive implement a lobbyist registration system | n/a | n/a | $ ----- | $ ----- |
| 67 | Candidate Assessment Pre-Employment | HR | Planned | Enhance the City's hiring process by adding pre-employment skills testing. | M | L | $ 25 | $ 50 |
| 68 | Project Management Methodology | City-Wide | Planned | Develop a methodology that City staff will utilize for project planning, scheduling, file storage/retrieval, and public presentation. | L | L | $ 0 | $ 20 |

| Nbr. | Project Name | Sponsor(s) | Status | Project Description | Level of Effort | Level of Risk | Estimated Cost in $000's | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Low | High |
| 70 | Satellite Network | CM – Emergency Services | Planned | Increase the resiliency of the City's network by adding satellite internet as an additional telecom solution. | M | M | $ TBD | $ TBD |
| 71 | "Return to Work" Appointment System | City-Wide | Completed | Implement an online appointment scheduling solution to provide City residents and guests to book appointments with City staff. | n/a | n/a | $ ----- | $ ----- |
| 72 | ERP (Finance and HR) Upgrade/Replacement | City-Wide | Planned | Based on the findings of the ERP Assessment upgrade/replace the City's New World Finance/HR System.<br>**NOTE:** The cost estimate assumes that the City would procure a new ERP solution which would likely be provided as a SaaS (Cloud-based) solution. This is subject to a competitive procurement; however, this could result in costs $625K to $950K for professional services and $140 - $200 per user annually for the product subscription and support. | H | H | $ TBD | $ TBD |
| 73 | IT Strategic Plan FY25-FY27 | City-Wide | Planned | Conduct a needs analysis and create a document that defines the strategy the City will follow to enable its IT infrastructure and application portfolio to operate and function in line with business objectives. | M | L | $ 0 | $75 |
| **Projects Added Following the Prioritization Workshop** | | | | | | | | |
| 74 | CodeHub | Multiple Departments | Planned | Implement a unified code text publishing and 3D zoning map | M | L | $20 | $28 |
| 75 | McClellan Ranch AR | Parks & Recreation | Planned | Bring the Cupertino native wildlife to life in a fun interactive augmented reality (AR) environment for the visitors, classes, and tours at McClellan Ranch Preserve. | M | L | $36 | $44 |