

CAPITAL FUND - 2018 Capital Projects

| General Government Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 |
|---|--|----------------------|---------------------|-----------------------|---------------------|---------------------|---------------------|
| Project ID | Project Description | Actuals (\$000's) | Budget (\$000's) | Forecast (\$000's) | Budget (\$000's) | Budget (\$000's) | Budget (\$000's) |
| Policy, Communication & Economic Development | | | | | | | |
| 30006304 | Destination Marketing Organization | 44 | 350 | 350 | 220 | - | - |
| 30006570 | Post-Secondary Feasibility/Econ. Impacts Study | | | | 50 | | |
| 30006571 | Revitalization Strategy for Downtown | - | - | - | 75 | - | - |
| Total Policy, Communication & Economic Development | | 44 | 350 | 350 | 345 | - | - |
| Corporate Services | | | | | | | |
| 40007907 | Dispatch Services | 264 | - | 321 | - | - | - |
| 42007611 | Electronic Tendering | - | - | - | 20 | - | - |
| 42007670 | Cold Storage Shelter | - | - | - | 140 | - | - |
| 44017600 | Disk Expansion | - | - | - | 100 | - | 100 |
| 44027600 | Network Renewal & Expansion | 27 | 44 | 48 | 52 | 63 | 76 |
| 44037670 | Server & Storage Renewal & Expansion | 62 | 49 | 55 | 53 | 59 | 65 |
| 44077670 | Printers & Multifunction Devices | 49 | 51 | 51 | 53 | 56 | 56 |
| 44107600 | Satellite Imagery | 7 | - | 5 | - | - | - |
| 44107611 | GIS Enhancements | 49 | 20 | 34 | 46 | 35 | 35 |
| 44107670 | Data Collection and Verification | - | 18 | 18 | 19 | 19 | 20 |
| 44137600 | Public Safety In-Car Computers | - | - | - | 34 | - | - |
| 44147600 | Library Computers Upgrades | 19 | - | - | - | - | - |
| 44157670 | Plotter Replacement | - | - | - | 15 | - | - |
| 44167600 | Class Replacement | - | 147 | 147 | - | - | - |
| 44217670 | Phone System | - | - | - | 40 | 40 | - |
| 44297670 | Library Public Access Computer | - | - | - | - | - | 20 |
| 44307600 | Budget Management | - | 134 | 134 | - | - | - |
| 44357611 | Door Access Controls | 23 | 11 | 11 | - | - | 20 |
| 44367600 | Computer Aided Dispatch | 9 | - | - | 75 | - | - |
| 44367611 | Emergency Operations Centre Equipment | - | - | - | - | 11 | - |

CAPITAL FUND - 2018 Capital Projects

| General Government Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 |
|-------------------------------------|--------------------------------------|------------|------------|--------------|--------------|------------|------------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) |
| 44367615 | Stanton Equipment Relocation | - | 50 | 10 | - | 100 | - |
| 44367670 | Communication Infrastructure Renewal | 50 | 16 | 37 | 20 | 25 | 25 |
| 44387670 | Server Room Upgrade | 20 | - | - | - | 100 | - |
| 44397670 | Public Safety In-Car Cameras | 39 | - | - | - | 56 | - |
| 44407611 | Website / Online Services Renewal | 20 | - | - | 32 | 20 | 25 |
| 44477670 | Security Cameras | 19 | 20 | 26 | 21 | 22 | 24 |
| 44497670 | Secondary Site & Data Replication | 16 | 12 | 16 | 12 | 53 | 60 |
| 44507611 | Virtualization | 119 | 26 | 26 | - | - | - |
| 44507670 | Core Router Upgrades | 7 | - | - | - | - | - |
| 44517611 | Wireless Controllers | 52 | - | - | - | 61 | - |
| 44527600 | Webcasting Equipment | - | - | - | - | 75 | - |
| 44527670 | Inventory Bar Coding | 14 | - | - | - | - | - |
| 44537600 | One-Stop Shopping | - | - | 50 | - | - | - |
| 44537670 | Voice Radio Support Equipment | - | - | 75 | - | - | - |
| CO0004 | Website Refresh | - | - | - | - | 50 | - |
| CO0005 | Unmanned Aerial Vehicle | - | - | - | - | - | 25 |
| CO0006 | GIS Equipment | - | - | - | - | - | 50 |
| Total Corporate Services | | 865 | 598 | 1,064 | 732 | 845 | 601 |
| Total Capital Projects | | 909 | 948 | 1,414 | 1,077 | 845 | 601 |



CAPITAL FUND - 2018 Capital Projects

| General Government Capital Projects | 2018 Budget (\$000's) | Formula Funding (\$000's) | Other Grants (\$000's) | Reserves (\$000's) |
|---|-----------------------------|---------------------------------|------------------------------|-----------------------|
| General Government | | | | |
| Policy, Communications & Econ Dev | | | | |
| 30006304 Destination Marketing Plan | 220 | 70 | 150 | - |
| 30006570 Post-Secondary Feasibility/Econ. Impacts Study | 50 | 50 | - | - |
| 30006571 Revitalization Strategy for Downtown | 75 | - | - | 75 |
| Total Policy, Communications & Econ Dev | 345 | 120 | 150 | 75 |
| Corporate Services | | | | |
| 42007611 Electronic Tendering | 20 | 20 | - | - |
| 42007670 Cold Storage Shelter | 140 | 140 | - | - |
| 44017600 Disk Expansion | 100 | - | - | 100 |
| 44027600 Network Renewal & Expansion | 52 | - | - | 52 |
| 44037670 Server & Storage Renewal & Expansion | 53 | - | - | 53 |
| 44077670 Printers & Multifunction Devices | 53 | - | - | 53 |
| 44107611 GIS Enhancements | 46 | - | - | 46 |
| 44107670 Data Collection and Verification | 19 | - | - | 19 |
| 44137600 Public Safety In-Car Computers | 34 | - | - | 34 |
| 44157670 Plotter Replacement | 15 | - | - | 15 |
| 44217670 Phone System | 40 | - | - | 40 |
| 44367600 Computer Aided Dispatch | 75 | - | - | 75 |
| 44367670 Communication Infrastructure Renewal | 20 | - | - | 20 |
| 44407611 Website / Online Services Renewal | 32 | - | - | 32 |
| 44477670 Security Cameras | 21 | - | - | 21 |
| 44497670 Secondary Site & Data Replication | 12 | - | - | 12 |
| Total Corporate Services | 732 | 160 | - | 572 |
| Total Capital Projects | 1,077 | 280 | 150 | 647 |

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Policy, Communications & Economic Dev.
Project 30006304 Destination Marketing Plan

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 220,000 | | | 220,000 |
| Funding | | | | |
| Formula Funding | 70,000 | | | 70,000 |
| Other Grants | 150,000 | | | 150,000 |
| <i>Total Funding</i> | 220,000 | | | 220,000 |

Description

Purpose

In the 2017 Budget, Council approved a \$70,000 capital expenditure towards the implementation of the Destination Marketing Plan (approved for information by Council Motion #0095-16). This project incorporates the retention of a marketing agency along with resources to satisfy the Plan's implementation priorities until a DMO is established (targeted for 2019). The long term intent of this project is to incubate a DMO within the bureaucracy, then to establish the legislative framework to initiate a hotel levy which would support the DMO without municipal resources in the future.

The 2017 Budget indicated a two year commitment from the City of \$70,000 in each year.

This project meets the funding criteria through the Canadian Northern Economic Development Agency's (CanNor) Strategic Investments in Northern Economic Development (SINED) Program. The City is currently in year two of a multi-year agreement with CanNor for \$430,000, with the City's contribution targeted at \$140,000 (\$70,000 in year one and \$70,000 in year two).

In year one the City of Yellowknife issued a request for proposal (RFP) for professional marketing services. The contract was awarded to Outcrop in January 2017, and the professional services listed in Gallery 1 were rendered prior to the March 31 fiscal year end of the main funder, CanNor.

In 2018 the Project sets out to undertake work in the areas listed in Gallery 2.

The City's contribution, for planning purposes, was targeted to be \$70,000 in year two, with CanNor contributing \$280,000 that same year. Please note that year two commenced on April 1, 2017 in relation to CanNor's funds.



Background

The City of Yellowknife can have a direct impact on the success of tourism. Visitors contributed close to \$98M to Yellowknife's economy in 2014 and the number of visitors has been trending upward over the last 5 years with an average growth of 5% both in visitor numbers and revenues generated. The average visitor spends \$1,550 during their stay in Yellowknife, with most of this spent on hotels, restaurants and other businesses.

A 10% increase in the number of visitors annually will increase revenues by \$10M, which will create thriving local businesses, increase employment opportunities as well as the overall standard of life in Yellowknife and ultimately produce additional tax revenue. Achieving such growth requires an investment by the City of Yellowknife to incubate a Destination Marketing Organization (DMO), enhance the visitor experience, and pursue tourism marketing initiatives in partnership with other tourism stakeholders.

This submission identifies year two of a successful two year project which will fund marketing activities until a visitor levy can be established. A visitor levy, targeted to be in place by 2018 will provide sustainable funding to the DMO budget without the need for further City investment. At this time, the GNWT has begun engagement activities related to amendments to the Cities, Towns and Villages Act for the purposes of establishing a hotel levy.

Operational Impact

The incubation of a DMO within City bureaucracy places the City of Yellowknife in a better position to drive the local economy. The current programs operating via the O&M budget will be expanded and used as leverage in 2018 marketing campaigns to promote visitation to Yellowknife.

Gallery

Gallery 1

| |
|--|
| 1. Professional Services for RESEARCH AND CO-ORDINATION |
| a. Visitor Levy; |
| 1. Review all background and existing materials and information. |
| 2. Review and prepare document regarding levies in other Canadian Provinces and Municipalities. |
| 3. Develop Levy implementation plan in conjunction with City and GNWT. |
| 4. Consulted with legal counsel - discussed with legal counsel. Determined that City of Yellowknife legal counsel would take the lead. Outside support only. |
| b. Destination Marketing Organization (DMO); |
| 1. Conduct general discussions regarding a Yellowknife DMO. |
| 2. Research DMOs across Canada. Prepare possible models. |
| 3. Prepare invite list and first stakeholder meeting. Logistics regarding meeting and handout materials. |
| 2. Professional Services for AWARENESS CAMPAIGNS AND SURVEY |
| a. Hold one stakeholder meeting. Determined that a dedicated website could work better than monthly meetings. |
| b. Prepare info campaign regarding value of tourism. |
| c. Prepare info campaign regarding visitor levy. |
| d. Prepare summary presentation, uploaded to website and requested feedback. |
| 3. Professional Services for MARKETING AND PARTNERSHIP DEVELOPMENT |
| a. Finalized MOU with NWT Tourism's conference bureau. |
| b. Discussed participation in other campaign, but unable to participate in the in-market "Secrets" campaign. |
| c. Purchased a buy-in to Globe and Mail advertisement and Rendezvous Canada programs with NWT Tourism. |
| d. Determine Yellowknife tourism brand, including positioning. |
| e. Test brand concepts with target markets, stakeholders and general public in Yellowknife. |
| f. Developed materials for G&M advertisement and for Rendezvous Canada. |



Gallery

Gallery 2

- Professional services for visitor levy research, legal services, project management and coordination.
- Professional services for research ,accounting and legal counsel in order to establish DMO and tourism hub.
- Professional services for communication, marketing campaigns and development of marketing materials to communicate information about the value of tourism to the local economy and about the proposed accommodation levy and proposed DMO.
- Professional services for new website development, working in conjunction with NFVA to expand the website to include more marketing capacity.
- Professional services for purchase of add-ons to NWTT marketing campaigns per MOU, and to develop and implement an in-market campaign to promote Yellowknife as a travel destination.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Policy, Communications & Economic Dev.
Project 30006570 Post-Secondary Feasibility/Econ. Impacts Study

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 50,000 | | | 50,000 |
| Funding | | | | |
| Formula Funding | 50,000 | | | 50,000 |
| Total Funding | 50,000 | | | 50,000 |

Description

Purpose

This capital project has been identified for the purpose of conducting a feasibility study for the potential establishment of a post-secondary institution in Yellowknife and the associated economic impacts.

Background

The study will be based on Council's Goals and Objectives to establish Yellowknife as a knowledge center and will include an analysis of data to determine things such as population demographics, current and forecast high school achievement rates, current post-secondary levels and destinations, and current trends in International Student recruitment. This study will also include interviews with key stakeholders to get their qualitative input into the study. Stakeholders may include Government of the Northwest Territories, Universities Canada, Aurora College and Canadian High Arctic Research Station. Additional research will review similar standalone models being operated around the globe; Alternative models of delivery including research into indigenous models of post-secondary education; Review of economic plans and forecasts for the Northwest Territories; Potential funding sources & financing options; and Potential Programming options.

A final report will be prepared detailing the feasibility of establishing a post-secondary institution in the City of Yellowknife.

Operational Impact

The project will require project management and as such will have a minimal impact on operational requirements.



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Policy, Communications & Economic Dev.
Project 30006571 Revitalization Strategy for Downtown

| Budget | | | | |
|----------------------|--------|------|------|--------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 75,000 | | | 75,000 |
| Funding | | | | |
| Reserves | 75,000 | | | 75,000 |
| <i>Total Funding</i> | 75,000 | | | 75,000 |

Description

Purpose

This capital project has been identified for the purpose of retaining professional services for obtaining expertise on how to support and enhance retail in the Downtown.

Background

The Retail Revitalization Strategy will be based on Council's approved Vision for the Downtown and will address the following:

1. How can the City of Yellowknife attract retail tenants (franchise and independent)?
2. What type of retail space is required, and where do we need this space?
3. What changes do we need to make in our downtown to meet the needs of retailers?
4. What incentives are needed to attract retail and what other regulatory changes should be considered in order to better facilitate retail opportunities?

As part of the Strategy, the successful proponent will engage with downtown owners, tenants, businesses, as well as the Yellowknife Chamber of Commerce and other stakeholders.

A final report will be prepared, detailing a retail revitalization strategy for Yellowknife's downtown.

Operational Impact

The project will require project management as well as staff involvement. All City Departments are involved in the development of a strategy targeted at Downtown retail revitalization. In addition to the creation of the strategy, all City Departments will also be involved in the implementation of the strategy.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Corporate Services & Risk Management
Project 42007611 Electronic Tendering

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 20,000 | | | 20,000 |
| Funding | | | | |
| Formula Funding | 20,000 | | | 20,000 |
| Total Funding | 20,000 | | | 20,000 |

Description

Purpose

Upgrade and enhance the City's online, electronic tendering capabilities.

Background

For several years, Procurement has made use of the 'Bidding Opportunities' page on the City website to notify potential bidders of the various opportunities available to the public. An upgrade is now available through the City's website provider that would allow full electronic tendering, including the ability to receive and evaluate bids electronically. This will benefit suppliers and internal stakeholders by reducing the time spent creating bids, as well as the time required to properly evaluate those bids. This type of tendering is expected to be of particular benefit to smaller companies in Canada, as the process of creating bids and maintaining a bidder profile will be streamlined, decreasing the amount of time and effort required to submit a bid.

The move to full electronic bidding will also become a requirement for all levels of government in Canada with the new Canada-Europe Comprehensive Trade Agreement (CETA) having come into effect July 1, 2017. Governments are expected to have fully implemented electronic tendering within five years of the agreement.

Operational Impact

Full electronic tendering will reduce the staff hours required to evaluate tenders and requests for proposals. Submissions will also be locked in automatically and electronically, avoiding any potential loss or misplacement of bids, and helping to ensure that all bids arrive on time and in a uniform format.



CAPITAL FUND - 2018 Capital Projects

Department GG General Government
Project 44017600 Disk Expansion

Division Information Technology

| Budget | | | | |
|----------------------|----------------|------|----------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 100,000 | | 100,000 | 200,000 |
| Funding | | | | |
| Reserves | 100,000 | | 100,000 | 200,000 |
| Total Funding | 100,000 | | 100,000 | 200,000 |

Description

Purpose

To expand the City’s disk storage capacity to meet burgeoning demands.

Background

The organization’s need for disk storage space more than doubles year-over-year, with growth coming from many sources. For example, every new application or service that is added to the City’s Information Technology infrastructure requires disk space for the programs and associated data; every time an existing application is used, more data is acquired and stored; every time a staff member creates a new document, spreadsheet, or presentation, additional disk space is consumed; every permit application includes data and electronic attachments that must be saved; every email sent or received requires disk storage; every road construction project generates contracts, drawings, and maps that are kept in electronic form; every operating system upgrade adds to the disk space needs of every server; and every security camera image resides on disk.

To put quantities into perspective, consider that the average size of an employee mailbox is currently 346 MB, one day of financial system transactions causes the database to grow by 60 MB, an average permit application is 25 MB in size, each sewer inspection video is approximately 353 MB in size, a single tax levy creates 415 MB of documents, an average day of security camera footage measures 892,857 MB, and the final files behind a Budget document take up 112 MB of space. None of these are significant in isolation, but when extrapolated across all staff or an entire year, the volumes add up quickly.

In addition to the original copies of all of this data, multiple backup copies are required to protect it. In general, following best practices means keeping between 30 and 45 copies of each piece of data to ensure recoverability and/or business continuity in the event of small or large calamities.

The City has approximately 54,200 GB of disk space capacity. If backup standards are to be adhered to, the City will need 97,850 GB of space so there is a current infrastructure gap of 43,650 GB, meaning the City has approximately 45% of what it should have.



Current capacity 54,200 GB
Standard requirement 97,850 GB
Shortfall 43,650 GB

This shortfall developed in spite of regular incremental increases, and is testament to the rapid data growth that has been experienced in recent years. It also clearly highlights the need for significant infusions of capital investment to enable the organization to bridge the gap and establish a solid foundation for future growth.

Operational Impact

When sufficient disk space is available, services can be delivered more reliably and at a lower cost than when resources must be constantly manipulated and reallocated.

If this project does not proceed, the current disk shortage will continue and its effects will escalate. In the near term, overall infrastructure performance will be negatively impacted as will service delivery to both internal and external clients. As well, backup reliability will further degrade and soon the lack of available disk space will prevent the City from adopting new solutions.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44027600 Network Renewal & Expansion

| Budget | | | | |
|----------------------|---------------|---------------|---------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 52,000 | 63,000 | 75,600 | 190,600 |
| Funding | | | | |
| Reserves | 52,000 | 63,000 | 75,600 | 190,600 |
| <i>Total Funding</i> | 52,000 | 63,000 | 75,600 | 190,600 |

Description

Purpose

To continue the City’s planned and incremental investment in its network, so that it can continue to meet the increasing demands placed on it as functions throughout the organization turn to technology to streamline workloads and improve services.

Background

The City’s Information Technology infrastructure is essential for effective service delivery and the network that provides connectivity among its computers, laptops, servers, printers, cameras, mobile devices, telephones, and emergency voice radios is vital to the City’s operations.

The City’s network employs ethernet, leased and city-owned fiber, wireless, and microwave technologies to create connections among fourteen sites. (Gallery 1)

Within each site the network connects numerous devices, ensuring that staff, citizens, and stakeholders have consistent and reliable access to applications, data, printers, and the internet.

In 2016, the network expanded to provide connectivity to every traffic light in order to streamline traffic control management within the Public Works department; this initiative alone added 63 network devices to the City’s infrastructure. (Gallery 2)

In addition to connectivity, the network also plays a key role in protecting the City’s information technology infrastructure and the corporate data assets stored within it. The network’s firewall and other protective mechanisms routinely deny more than 100 unauthorized access attempts per minute while its spam filter rejects almost 85% of the emails directed at the organization. (Gallery 3)



As employees and stakeholders increasingly turn to technology to maintain and expand service levels, demands and reliance on the network continue to grow. In recent years, the City implemented Computer-Aided Dispatch; adopted enterprise solutions such as CityWorks, CityView, and City Explorer; installed industry-standard communications infrastructure; introduced traffic cameras; expanded online service offerings; deployed mobile solutions; provided public internet access; increased its reliance on security cameras; established traffic light connectivity; and enhanced its Customer Service functions. All of these data-intense applications create increasingly heavy demands on the network, both in terms of capacity and reliability. As well, the increased reliance on specialty applications such as SCADA and computer-based Dispatch consoles has introduced unique network security and dependability challenges. It is therefore critical that network capacity and reliability keep expanding at a comparable pace through regular, ongoing enhancements.

Over the term of this budget, there will continue to be a strong focus on security because threats – both internal and external – are becoming increasingly sophisticated and pervasive. Recommended initiatives include ongoing cyber threat awareness campaigns to help staff become more knowledgeable and mindful users, continual refinement of security configurations to mitigate risks from all sources, and enhanced and more granular monitoring of network activity.

Another priority will be to repatriate some network connectivity solutions. A lease is in place and over the term of this budget City equipment will be acquired, configured and deployed to establish City-owned and operated connections to several sites, thereby reducing the City's reliance on third party fiber services and reducing overall operating costs.

Other work will include replacing key network equipment at sites proactively to replace obsolete gear, reduce unplanned outages, and prepare for future technologies and growth.

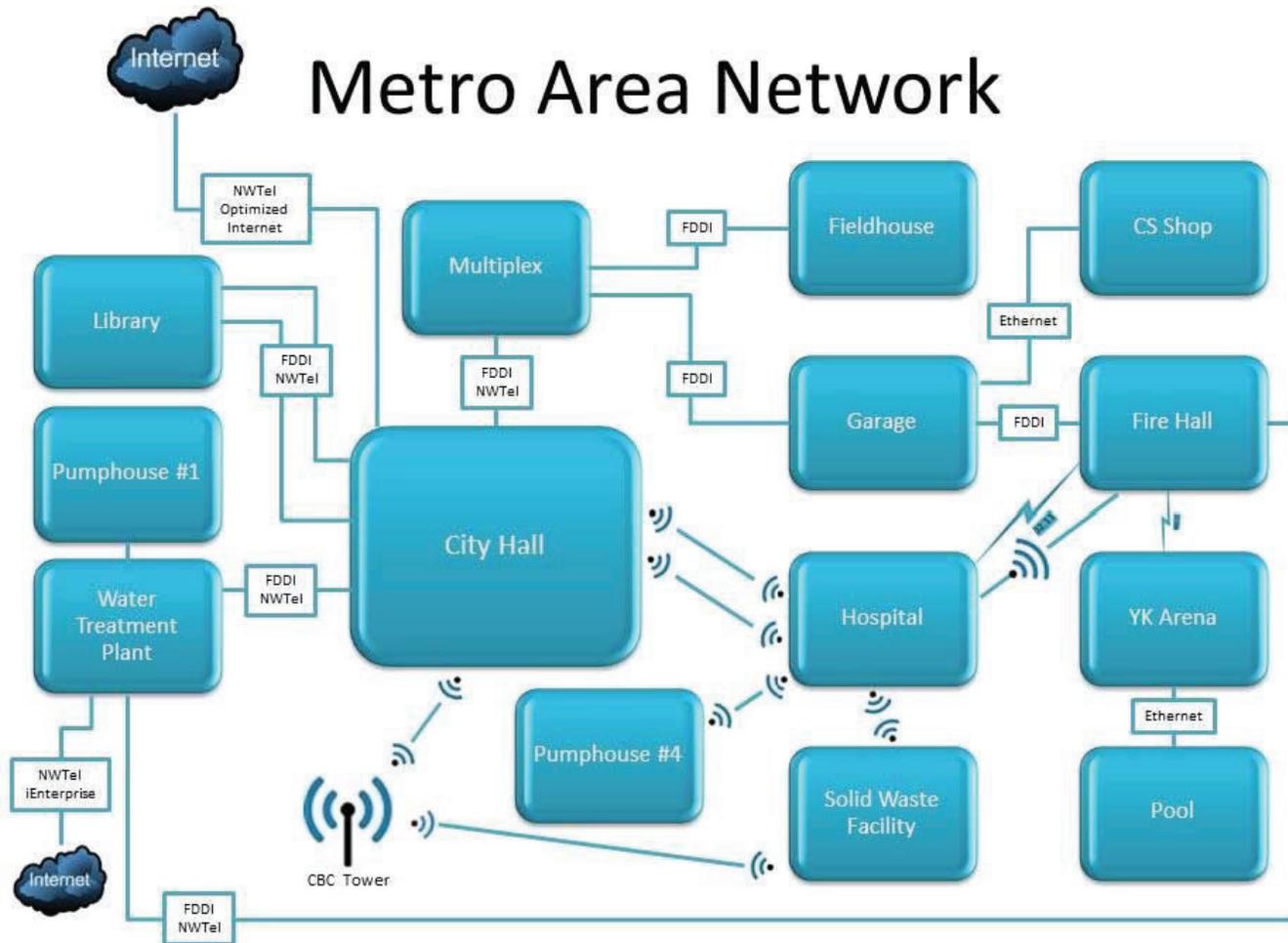
Operational Impact

The City's network is vital to its operations and even short service interruptions have significant impacts on service delivery and employee productivity. It will be more cost effective – and present a lower risk to the City – to replace and enhance this equipment in a planned and orderly fashion than to experience problems that require excessive troubleshooting and repair, or failures that create service outages.

If this project does not proceed, it will negatively impact the organization's ability to sustain its network. In the short term, network congestion will reduce service delivery to staff, citizens, and stakeholders, and there will be no opportunity to expand services to meet new requirements. Over time, there will be increasingly frequent service disruptions when equipment fails. These failures will interrupt many aspects of City operations, including most internal staff activities as well as external citizen and stakeholders services.

Gallery

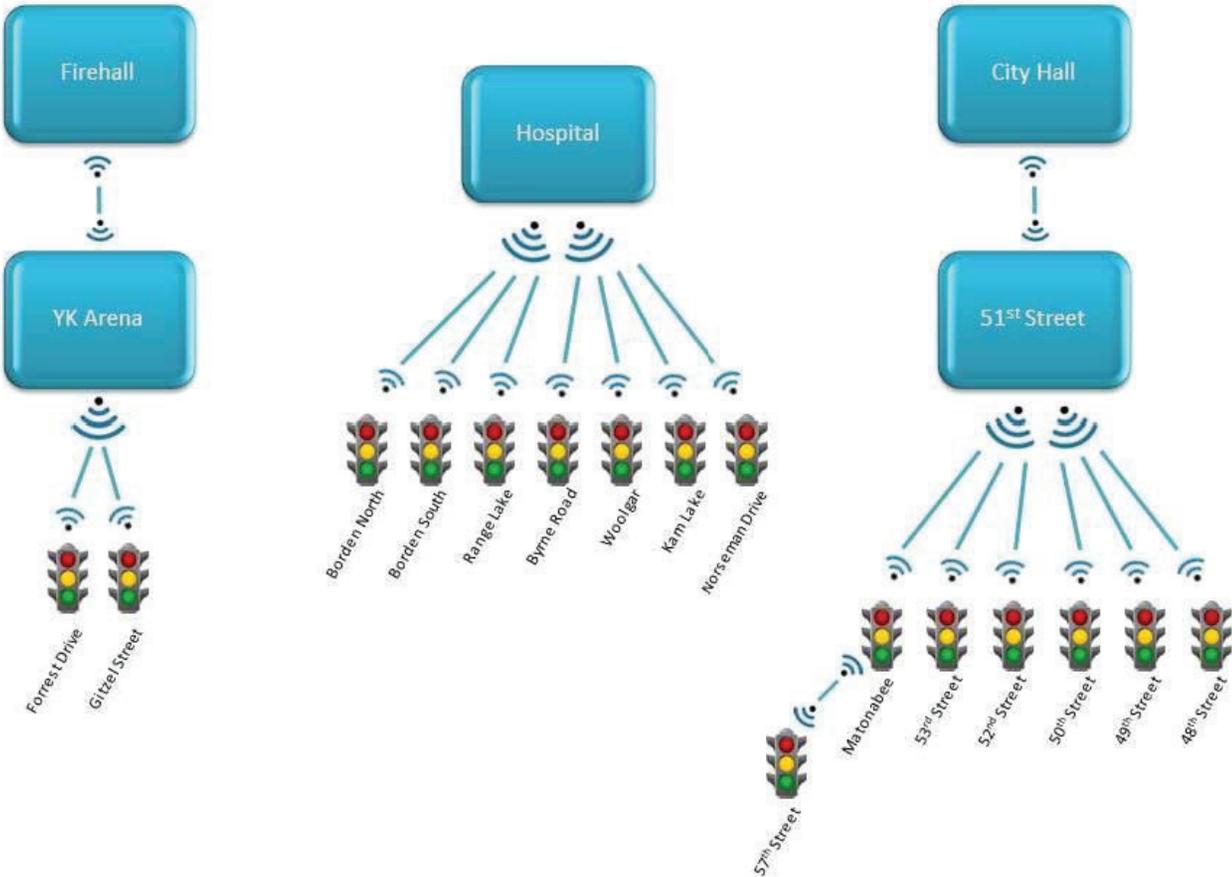
Gallery 1



Gallery

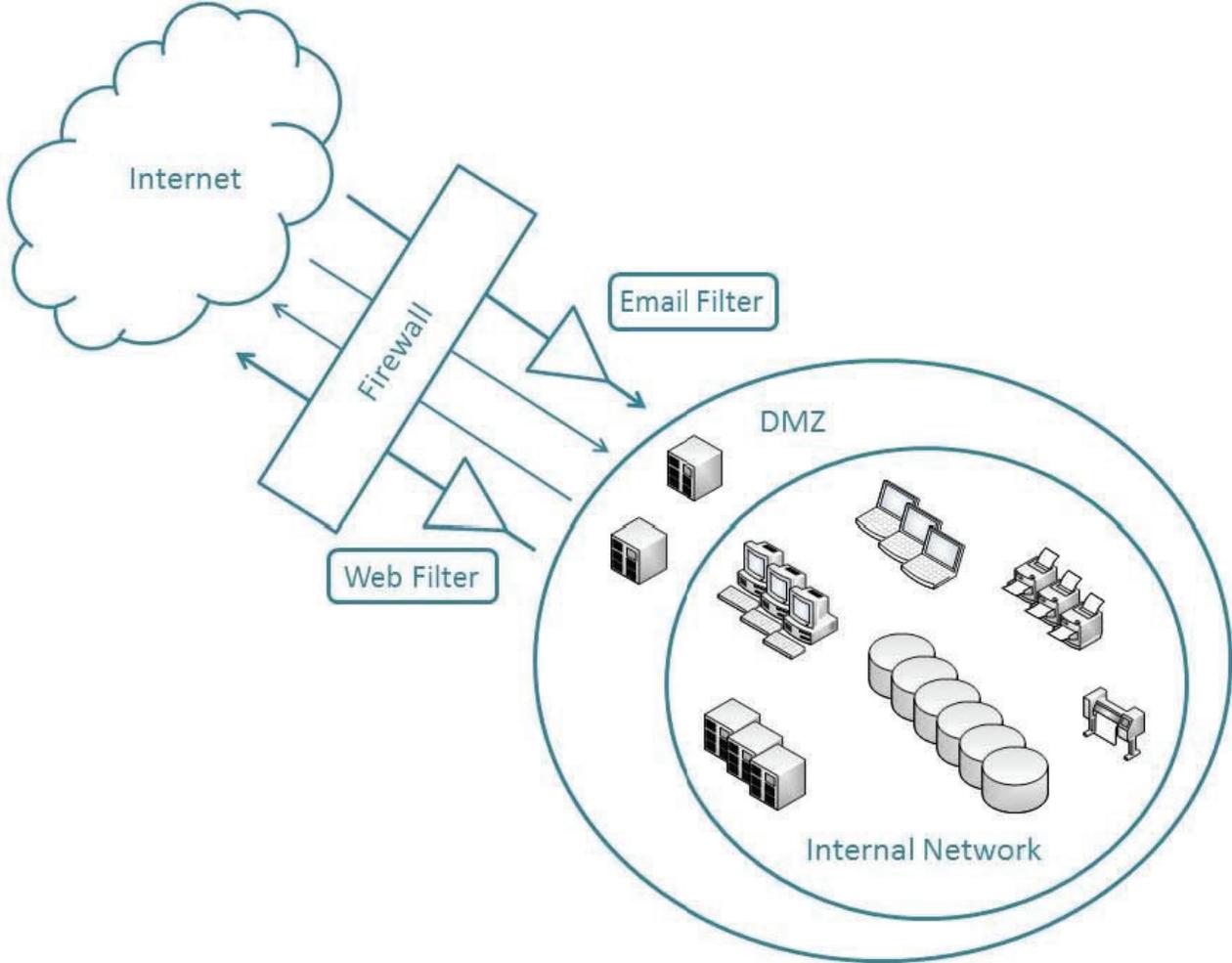
Gallery 2

Traffic Light Network



Gallery

Gallery 3



CAPITAL FUND - 2018 Capital Projects

As with the demand for server capacity, the organization's need for storage continues to grow. For example, increasing numbers of higher resolution security cameras are improving the City's ability to protect its citizens and assets, but are also creating more and larger data files. Existing disk space only allows for data to be retained for about two weeks, leaving the organization unable to satisfy requests for footage older than that. Similarly, the City now has the ability to capture aerial images and thus provide much-needed up-to-date information for tasks ranging from sewage lagoon management to assessment reviews, but a lack of disk space has left staff scrambling to find room to house the images.

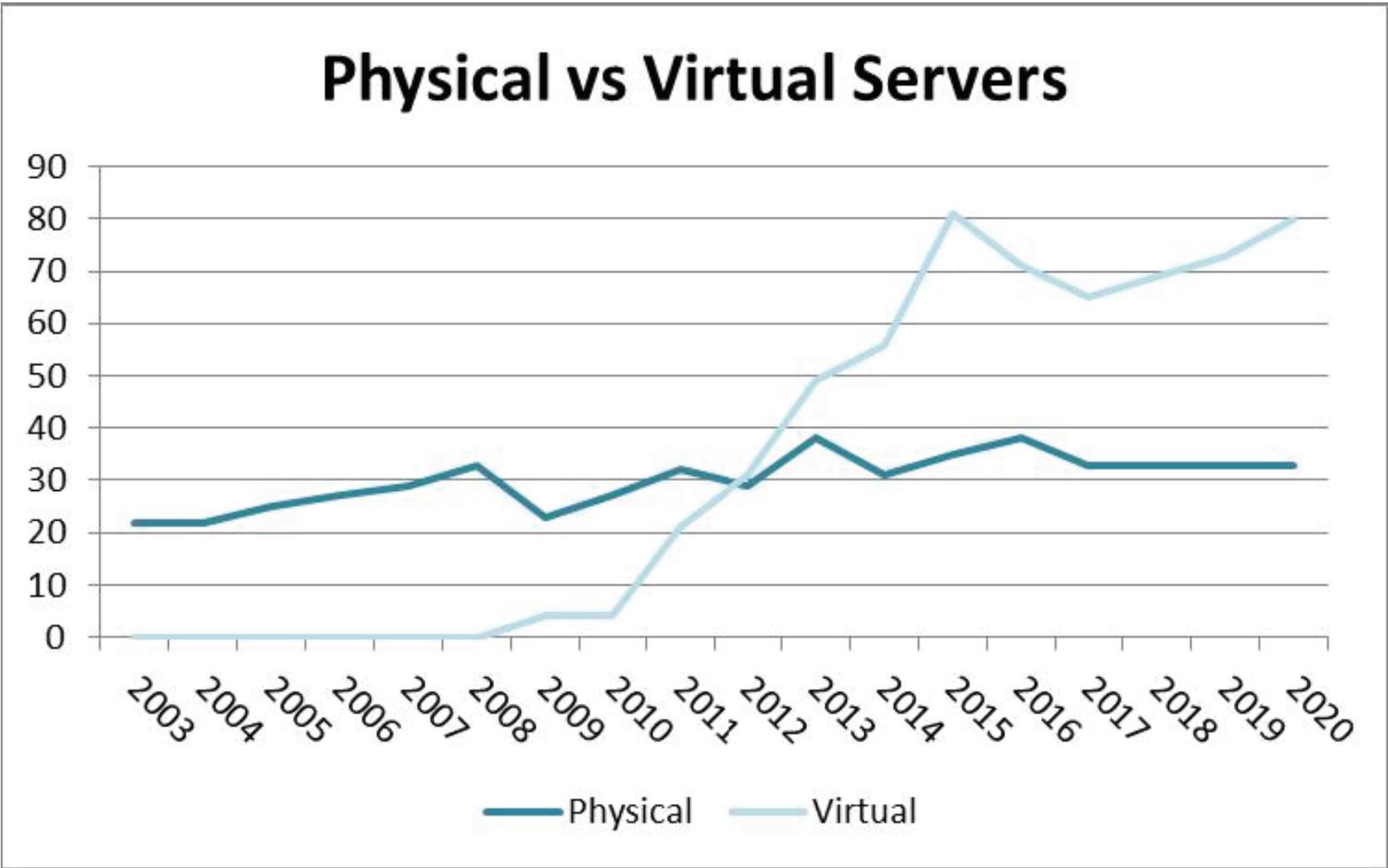
Current disk space limitations also mean that Information Technology staff constantly has to juggle backup schedules and reduce restore points and retention times just to provide basic backup services. It is no longer possible to comply with industry standard backup practices, and this reduces the quality of service provided and increases the risk that important corporate information will be lost or time consuming work will have to be redone.

Over the next three years, part of this budget allocation will be used to incrementally increase the disk storage capacity and backup services offered by the Information Technology Division.



Gallery

Gallery 1



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44077670 Printers & Multifunction Devices

| Budget | | | | |
|----------------------|---------------|---------------|---------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| <i>Expenditures</i> | 53,000 | 56,000 | 56,000 | 165,000 |
| <i>Funding</i> | | | | |
| Reserves | 53,000 | 56,000 | 56,000 | 165,000 |
| <i>Total Funding</i> | 53,000 | 56,000 | 56,000 | 165,000 |

Description

Purpose

To continue the organization’s incremental approach to implementing and maintaining multifunction devices throughout the organization so that printing, scanning and copying requirements can be met in the most cost-effective manner possible.

Background

In 2014, the City issued a request for proposals for multifunction device management and entered into a long-term arrangement with the successful proponent. The vendor conducted an initial inventory and assessment of the City’s existing printer/copier/fax/multifunction device fleet and then met with key stakeholders to ascertain current and future user requirements. Based on this information the vendor prepared a multi-year Plan with the goals of reducing costs and realizing maintenance and support efficiencies.

The Plan identified three tiers of devices and all subsequent acquisitions have been selected from one of these tiers. This has minimized the variety of devices installed throughout the organization, streamlined consumables management, and reduced costs.

The Plan also identified end-of-life and high-cost, low-usage devices and these have incrementally been removed from service. As well, several units have been reallocated to better meet varied needs within the organization.

In late 2017, a follow up analysis will be conducted to ascertain where unmet requirements exist and to identify detailed acquisition, deployment, reallocation, and retirement plans for future years.

Operational Impact

Most staff members rely on scanning, printing, and copying services during their day-to-day activities. If these services are not readily available or are not dependable, it negatively impacts their productivity and their ability to provide services.



CAPITAL FUND - 2018 Capital Projects

As with many other infrastructure components, the Information Technology Division developed a strategy of sustained investment in this system, its data and its capabilities. This investment and growth are dictated and directed by the needs and requirements of staff, citizens, and stakeholders.

In 2017, funding was devoted to maintain the existing infrastructure and services, as per Council direction; no new features or enhancements were procured.

Going forward, resources should be allocated to expand and enhance the City's GIS. Although specific enhancements will be driven by current and foreseeable requirements and will depend on available funding, recommendations for the term of this budget include:

- Embracing mobile usage. The proportion of users viewing City Explorer with mobile devices (cell phones and tablets) has grown from just under 15% in 2015 to almost 35% in the first half of 2017. However the City's current application tools deliver less-than-optimal results to these devices and so to meet current and emerging trends, appropriate software and server technologies should be acquired.
- Enabling more data collection via mobile devices. The success of the in-house CLEM (Cart Location Editing Matrix) system, which enables staff to collect and update green and black cart information in the field, has proven that this approach of capturing data electronically right at its source is immediately beneficial as it streamlines data collection processes and allows them to be completed more quickly and with fewer errors. Going forward, asset inspection data will be a prime candidate for mobile data collection as there are considerable advantages in having crews capture the data electronically in the field during inspections and then integrating this information directly into CityWorks. Similarly, it will be beneficial for hydrant flow testing and water meter installation information to be captured in the field and fed directly into the systems that utilize it.
- Obtaining and incorporating facility information. Facility managers are increasingly being called upon to provide detailed information such as field or rink area measurements and room and building capacity. For example, in 2017, GIS staff were called upon to map and calculate areas within the Fieldhouse in support of the Climbing Wall project and to determine measurements for maintenance purposes. As facility information was not readily available, staff had to painstakingly extract it. Rather than spend considerable time and resources reacting to individual requests in an ad hoc manner, it will be more cost effective to map each facility and incorporate the data into the GIS to create a centralized data repository with intuitive tools to enable staff to provide more accurate, consistent, and timely information.

A proof-of-concept map of City Hall is already in use internally. It depicts each room in the facility and enables users to interactively identify spaces, occupants, and Information Technology infrastructure. (Gallery 2)

- Developing a 3-D model of the city. There are increasing requirements for information that can be obtained from a 3-D model. For example, Planners can utilize a 3-D model showing buildings to better visualize new developments and their impacts on existing neighborhoods, and Engineers can use 3-D models of critical water and sewer infrastructure to accurately locate and access it. (Gallery 3)



- Updating aerial photographs. The 2017 Unmanned Aerial Vehicle (UAV) proof-of-concept project successfully collected aerial photographs of strategic regions including the sewage lagoon and the Solid Waste Facility, and the Hall Crescent and Grace Lake areas. This provided the Public Works Department with much-needed current information about areas within their jurisdiction, and Planners, Engineers, and the Assessor benefitted from the updated neighbourhood photos, obtained at a fraction of the cost of traditional methods. Over the course of this budget, additional aerial photos will be taken to create a seamless mosaic of the entire City, providing high-resolution imagery in support of efforts throughout the organization.
- Enabling more of the City's fleet with Automatic Vehicle Location (AVL) services. This technology not only tracks location but can also monitor factors such vehicle speeds, engine data, and fuel consumption to help improve overall fleet management. Equipping snow plows, sanders, and street sweepers with this technology will provide Public Works with useable information about equipment performance and task accomplishments.
- Expanding the City's route analysis capabilities. This will be done by adding an integrated road network to support route planning and aid in identifying potential cost savings.
- Providing each department with the ability to edit its own data within the City Explorer environment. Data owners are best equipped to manage the data they are responsible for – they understand it and they are well-positioned to know when it changes – therefore it is logical that they control it within centralized repositories. The benefits of this have been demonstrated in several instances. For example the GIS team created a Lease Management tool that enabled the Planning group to enter lease information directly into City Explorer, and a City Owned Lots for Sale tool where they can update lot status and price information dynamically. These initiatives helped ensure the data was kept current and accurate, without the need for Information Technology intervention. Going forward, more tools like this will be developed to further streamline processes and improve data quality.

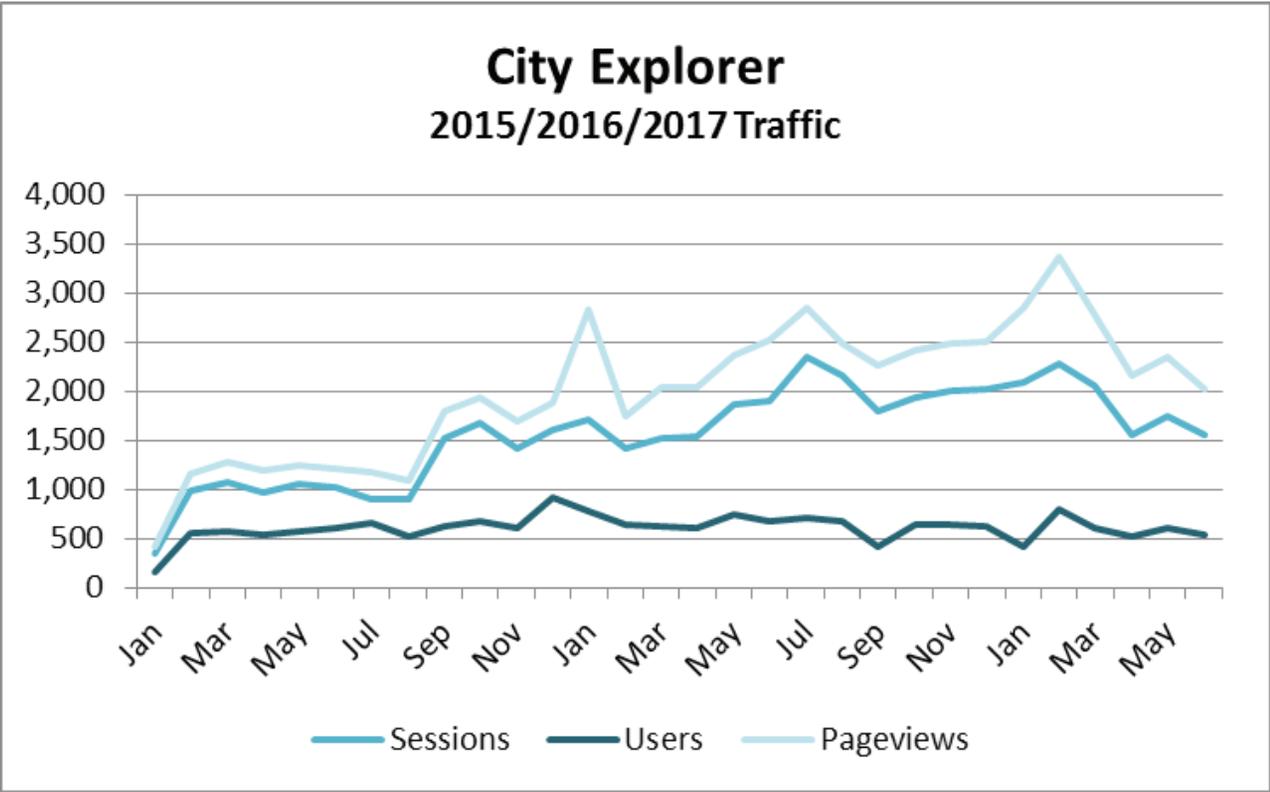
Operational Impact

The City's GIS services have been widely embraced by staff, citizens, and stakeholders, and have created efficiencies throughout the organization. Continued investment in this resource will help ensure that data accuracy is maintained and that features and functionality continue to grow to meet expanding demands.

If this project does not proceed, the associated enhancements will not be implemented and the anticipated benefits will not be realized. This will adversely affect the clients who have identified the needs for these additional data and features.

Gallery

Gallery 1



Gallery

Gallery 2

gis.yellowknife.ca/Html5Viewer/Index.html?viewer=City_Hall_Explorer&layer=Workspace%20Second%20Floor&attribute=gisprd1.YK_SPATIAL.workspace.workspace

CITY OF YELLOWKNIFE | City Central Explorer

Workspace Second Floor (1) | I want to...

Mark Heyck
Mayor
Mayor's Office
Mayor's Office
mheyck@yellowknife.ca

867-920-5693
Ext: 5693

Mark Heyck
Mayor
Mayor's Office
5693

Boardroom
Sheila Bassi-Kellet
Senior Administrative Officer
Director's Office
5693

Jeff Dailey
Director, Corporate Services
Director's Office
5698

Slavica Jovic
Deputy City Clerk
City Clerk
5602

Mark Heyck
Mayor
Mayor's Office
5693

Lucy Spencer
Supervisor, Customer Service
Customer Service
5415

Robert Waddell
Finance Officer
Financial Services
5658

Council Chambers

Gallery

Gallery 3



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44107670 Data Collection and Verification

| Budget | | | | |
|----------------------|---------------|---------------|---------------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 19,000 | 19,000 | 20,000 | 58,000 |
| Funding | | | | |
| Reserves | 19,000 | 19,000 | 20,000 | 58,000 |
| <i>Total Funding</i> | 19,000 | 19,000 | 20,000 | 58,000 |

Description

Purpose

To update spatial database and datasets to ensure data is as accurate and complete as possible.

Background

Staff, citizens, and stakeholders rely on the City’s spatial datasets for many aspects of their work processes so it is important that they be accurate and up-to-date. However, collecting current data is time consuming and largely repetitive work and cannot generally be accomplished with existing resources.

In 2017, a summer student was hired to help bridge some of the data infrastructure gap. In just the first three months of his four month tenure, the student collected current GPS data and took pictures of over 2,700 assets (Gallery 1).

He incorporated this information into the City’s Geographic Information System (GIS) where it can be accessed intuitively through City Explorer.

As well, the student drew 973 water services and 378 sewer services in the ArcGIS Map Application and scanned and attached the related service card to each one. This information is also now readily available to staff via the internal version of City Explorer. He also spent 3 ½ days doing traffic counts at intersections and 3 ½ days collecting transit ridership data in support of Engineering Division initiatives.

This productivity confirms that these types of tasks can be accomplished very effectively by students, with the added benefits that the students gain valuable work experience and staff are freed up for more complex responsibilities. Therefore, it is recommended that this initiative continue each summer.

CAPITAL FUND - 2018 Capital Projects

This project helps to ensure that the City's spatial database remains current, useful, and reliable. It goes beyond the regular data maintenance processes conducted as part of routine operations and represents an extraordinary effort to keep pace with rapidly changing data. As such, it complements, but does not replace, work to be done as part of the ongoing GIS Maintenance and Enhancements project.

Operational Impact

Spatial data is a valuable organizational asset and it is important that it be current and accurate as staff, citizens, and stakeholders are becoming increasingly reliant on it for planning work, delivering services, and making recommendations. If this data is out of date or incomplete, it puts the City at risk of providing incorrect information and/or making erroneous decisions.

Gallery

Gallery 1

| Asset | Quantity |
|------------------|----------|
| Stairs | 4 |
| Boardwalks | 19 |
| Park Signs | 27 |
| Trail Signs | 88 |
| Trail Markers | 40 |
| Picnic Tables | 30 |
| Bike Racks | 59 |
| Benches | 132 |
| Waste Bins | 291 |
| Cemetery Markers | 900 |
| Street Signs | 1,126 |
| Bus Shelters | 23 |



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44137600 Public Safety In-Car Computers

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 34,000 | | | 34,000 |
| Funding | | | | |
| Reserves | 34,000 | | | 34,000 |
| <i>Total Funding</i> | 34,000 | | | 34,000 |

Description

Purpose

To replace the in-car computers in the Municipal Enforcement vehicles.

Background

The Municipal Enforcement Division operates four patrol vehicles in which the officers spend most of their day. The officers rely heavily on computers to document occurrences or to retrieve information such as motor vehicle information. Patrol cars have been equipped with laptop computers since 2010, allowing officers to be more efficient and spend more time on the street instead of in the office. Under the City's evergreen policy these computers are due for replacement after four years of service. These computers, unlike office computers, are operated in extreme weather conditions and are prone to malfunction; past experience has indicated that by the fourth year of service the computers are not reliable.

Reliable computers are important for officer safety, as they allow officers to have immediate access to information on dangerous individuals, dogs, stolen vehicles, etc., which allows them to take proper precautions when dealing with these situations. Officers also rely heavily on these computers to access motor vehicle information on persons and vehicles during traffic stops, which is a large component of their work day. Access to by-laws and GNWT legislation by computer is also essential, with the alternative being carrying around large binders with this information. The patrol cars are equipped with a global positioning system which contributes to the safety of the officers and requires a reliable computer in the patrol vehicle. It also allows officers to monitor each other, and is used for dispatching purposes which reduces the need to use radio communications.

The current in-car laptops were purchased for the four patrol vehicles in 2014 and 2015, with replacement scheduled for year four, in 2018.

Operational Impact

Aging technology (infrastructure) has higher operational costs. In the case of electronic equipment operating at extreme temperatures in the vehicles, the malfunction and subsequent down-time of the equipment will adversely affect MED and Corporate Services staff. This project should result in less operational time spent by Corporate Service staff trouble-shooting this equipment.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44157670 Plotter Replacement

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 15,000 | | | 15,000 |
| Funding | | | | |
| Reserves | 15,000 | | | 15,000 |
| Total Funding | 15,000 | | | 15,000 |

Description

Purpose

To replace the City’s wide-format multifunction device, commonly referred to as the Plotter.

Background

The Geographic Information System (GIS) team uses the City’s only wide-format multifunction device to fulfill printing, plotting, and scanning requirements for clients throughout the organization. For example, it is used to:

- Print all maps larger than 11” x 17”. Maps such as these are requested by all City staff and are essential for the operations within the Fire Division, the Public Works Department, and the Planning and Development Department
- Generate all signage and banners larger than 11” x 17”. City staff request these products for all types of purposes, including special events, consultations, elections, budget meetings, road closures, and citizen engagements
- Scanning documents larger than 11” x 17”. For example, all copies of survey plans and building plans are generated by the device

Thus, many staff members rely heavily on this device and the services it provides – the current plotter has produced almost 35,000 square feet of output – and they expect it to be readily available as many requirements arise on short notice. However by 2018 it will have reached the end of its useful life and will need to be replaced.

Operational Impact

It will be more cost effective to replace this device in a planned manner than to experience problems that require excessive troubleshooting and repair or failures that create service outages.



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44217670 Phone System

| Budget | | | | |
|----------------------|---------------|---------------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 40,000 | 40,000 | | 80,000 |
| Funding | | | | |
| Reserves | 40,000 | 40,000 | | 80,000 |
| <i>Total Funding</i> | 40,000 | 40,000 | | 80,000 |

Description

Purpose

To replace the City’s telephone system back-end infrastructure.

Background

The City’s telephone system is a hybrid of NorthwesTel services to the door and City-owned Toshiba equipment within each facility. The exact vintage of the City-owned infrastructure is uncertain as it predates current staff and the existing financial system.

A study conducted in 2009 recommended retaining the hardware in place at the time and augmenting it with software to provide integrated communication features. The iLink product was introduced, however, there was a low adoption rate of the advanced functionality, and the application became increasingly time-consuming and costly to maintain so in 2016, it was replaced with a simple voicemail appliance.

Since the 2009 study, many desk sets have been replaced. However, now the aging backend infrastructure has outlived its life expectancy, resulting in service restrictions and reliability concerns. Therefore it is recommended that it be replaced in 2018 and 2019.

Operational Impact

It will be more cost effective and will present a lower risk to the City to acquire, configure, and maintain this telephone infrastructure in a planned and orderly fashion, than to experience unplanned and possibly extended service outages.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44367600 Computer Aided Dispatch

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 75,000 | | | 75,000 |
| Funding | | | | |
| Reserves | 75,000 | | | 75,000 |
| <i>Total Funding</i> | 75,000 | | | 75,000 |

Description

Purpose

To refresh key hardware components of the Computer Aided Dispatch system.

Background

Computer-Aided Dispatch was approved by Council for 2014 and introduced at the City for the new Dispatch operations in 2015. The existing Dispatcher workstations and monitors were acquired and deployed at that time; and additional Supervisor workstation and monitors were deployed in 2017.

This is a mission-critical function and equipment downtime presents an unacceptable risk to the City. These workstations are used on a 24-hour basis for Public Safety and Public Works dispatching and radio checks. It is therefore recommended that the original hardware be replaced once it has provided three years of service in 2018. It is further recommended that the Supervisor workstation be replaced at the same time for consistency and ease of support. All three workstations can be repurposed in areas that are less mission-critical.

If this replacement does not proceed, there is considerable risk of equipment downtime and/or failure. Recent experience has repeatedly shown that workstations and monitors become increasingly problematic throughout their service life and that by the fourth year of service problems and even complete failures are frequent. Forcing this equipment to last beyond three years will significantly increase the chance of downtime – an unacceptable situation in a critical service like Dispatch – and will require inordinate amounts of technical support time which could be more effectively invested in other areas.

Operational Impact

It will be more cost effective – and present a lower risk to the City – to replace this equipment in a planned and orderly fashion than to experience problems that require excessive troubleshooting and repairs or failures that create service outages. The dispatch centre impacts both Public Safety and Public Works essential service operations.



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44367670 Communication Infrastructure Renewal

| Budget | | | | |
|----------------------|---------------|---------------|---------------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 20,000 | 25,000 | 25,000 | 70,000 |
| Funding | | | | |
| Reserves | 20,000 | 25,000 | 25,000 | 70,000 |
| <i>Total Funding</i> | 20,000 | 25,000 | 25,000 | 70,000 |

Description

Purpose

To implement regular, ongoing renewals of the City’s Communications Infrastructure system so that it continues to provide essential voice radio services to emergency personnel and to Public Works and Community Services staff.

Background

The City’s Communications Infrastructure system was deployed in early 2015. It created a robust, redundant backbone for radio communications and introduced significant improvements to the organization’s public safety and emergency communications capabilities. Regular, ongoing maintenance and enhancement of this infrastructure are required to protect the City’s investment and to ensure that it remains effective throughout its life expectancy.

By 2018 some of the original devices will be out of warranty and it is anticipated that they will require replacement. As well, ongoing process and technology changes will create requirements for continued investment to maintain the infrastructure.

Operational Impact

A voice radio outage could severely jeopardize the safety of the City’s emergency responders and its citizens. Every reasonable effort must be made to ensure uninterrupted service, including proper maintenance and incremental enhancements.

If this project does not proceed, it will not be possible to implement the incremental improvements and repairs necessary to ensure ongoing reliable system performance. This presents considerable risk to the organization. Over time, lack of regular investments will shorten the life expectancy of this system and necessitate a costly replacement.

CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44407611 Website / Online Services Renewal

| Budget | | | | |
|----------------------|---------------|---------------|---------------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 32,000 | 20,000 | 25,000 | 77,000 |
| Funding | | | | |
| Reserves | 32,000 | 20,000 | 25,000 | 77,000 |
| <i>Total Funding</i> | 32,000 | 20,000 | 25,000 | 77,000 |

Description

Purpose

To incrementally enhance online service delivery to provide focused citizen services and streamline internal operations.

Background

Electronic services are an accepted – and expected – way to provide information, conduct business, and engage citizens. The City has established a good foundation with its website content, eServices portfolio, City Explorer mapping tools, open data portal, consultation tools, and mobile applications. Staff and citizens have embraced these service offerings and thus enabled the organization to provide related services more efficiently and effectively.

Website:

The City’s Information site attracts steady visits, and another peak in traffic can be expected leading up to the 2018 election. Users of this service are obtaining information they would otherwise have to contact City Hall personnel to obtain. (Gallery 1)

On an annual basis, the most-visited pages have remained relatively constant in recent years: (Gallery 2)

eServices

The eServices portfolio also has a loyal clientele.

For example, traffic peaks to the eConnect site – which primarily provides program registration services – align perfectly with the release of new Recreation Guides. This self-service approach reduces the number of registrations performed by staff, freeing them for other tasks. (Gallery 3)

Similarly, Virtual City Hall – which enables citizens to pay parking tickets, review and pay utility bills, view property assessment and tax data, look up animal license information, search for businesses, and obtain Tax Certificates – has a steady following and each transaction done online represents a client served at their convenience without staff intervention. (Gallery 4)



The relatively new Bids and Tenders service is showing a growing adoption rate. While traffic ebbs and flows relative to bidding opportunities, overall the tool has streamlined the competitive purchasing process by making it easier for staff to post documents and follow-up information, and for potential bidders to obtain documents and related information. (Gallery 5)

The Prevue service, although hosted and supported externally, is incorporated into the City's website. Its popularity is growing among job seekers, and it provides Human Resources with tools that streamline the entire hiring process. (Gallery 6)

City Explorer

City Explorer utilization is growing quite steadily as an increasing number of clients recognizes the value of the intuitive mapping tools and services it provides. (Gallery 7)

Open Data

The Open Data portal is also growing in popularity as more users become aware of its potential and new data sets are added. (Gallery 8)

Mobile Applications

The City's mobile applications are yet another example of new service delivery mechanisms that are meeting citizen expectations and requirements and reducing the need for staff intervention.

Click Fix YK empowers citizens to report issues ranging from overflowing garbage bins to potholes using their cellphone, tablet, or computer. Backend software automatically creates a work order and assigns it to the appropriate division, then provides the reporter with updates. This means reports can be submitted at the citizen's convenience, any time of the night or day, without the need for City staff to record the details and then direct the issue. (Gallery 9 and 10)

PingStreet was introduced in September of 2015 to simplify access to a growing number of mobile services provided by the City. Between then and July 25, 2017, 1,048 unique users availed themselves of this portal and viewed 32,135 pages on their mobile phones. Almost three-quarters (72.2%) of them used iPhones, 23% were Android users, and 4.2% used Blackberry devices.

Transit information has been the most well-utilized service overall, although the popularity of features like Events ebbs and flows around event schedules. (Gallery 11)

CAPITAL FUND - 2018 Capital Projects

These utilization rates confirm that Yellowknife citizens adopt and utilize electronic services, and therefore it is logical to expand these services where it makes business sense to do so. This expansion seeks to follow the successful approach proven with many other Information Technology components and ensure regular, incremental funding to facilitate consistent, manageable, and beneficial improvements to the City's online service offerings.

- Creating a Tourism Directory to provide an interactive and searchable online catalogue of local tourism-related businesses and an itinerary building tool for visitors that enables them to create a customized plan for their travels. The concept layout for the initiative at Kawartha Lakes provides an example of how this could be presented to potential travelers: (Gallery 12)
- Developing a City Services tool to provide single-window access to information about City services. A common lament is that citizens and stakeholders who are not familiar with the organizational structure of their municipal government do not know who to contact to obtain specific information or get assistance with a process or issue. The City of Cambridge's implementation provides an example of how a virtual map can consolidate common service categories: (Gallery 13)

Each category links to further information. For example, clicking on Permits & Property leads to an interactive diagram of common projects: (Gallery 14)

A citizen considering building a shed can click on the question mark near the shed to display links to the appropriate permit information: (Gallery 15)

- Upgrading SwagIt to enhance the City's webcasting services. Specific features include increasing accessibility by adding closed-captioning for both live and on-demand viewers; providing webcast services on mobile devices by adding a responsive mobile media interface and incorporating access into the PingStreet portal; and improving search services by adding sound search capabilities.

The 2019 plans tentatively include:

- Adding a Trail information tile to the PingStreet portal to provide citizens and visitors with mobile access to current trail maps and related information.
- Implementing the eBook module. The tool is designed to convert articles intended for print into visually appealing and responsive booklets that display well on mobile phones and tablets. For example, the City's Recreation Guide could easily be converted to an eBook, enabling citizens to access it in a useable format on their smartphones. Other candidates could include Property Tax brochures, the Annual Report, the Heritage Walking Tours, or any other document produced by the City. (Gallery 16)



Tentative enhancements for 2020 may include:

- Adding beacon/geo-fencing capability to the PingStreet portal. This will enable the City to send automatic notifications to users based on geographic location. For example, tourists who sign up for the service could be sent messages about nearby sites of interest as they move about the City, or the availability and timing of tours that are close to them. Citizens who subscribe to the service could be sent information about community events in their area, local road closures or service interruptions, or even safety alerts.
- Introducing an Online Donation tool to encourage site visitors to support special events or causes and to make it easy for them to do so. The secure service could look something like the one in use in Milton: (Gallery 17)
- Implementing Secure Push capabilities to facilitate targeted information dissemination to citizens and staff. For example, the service could push out routine notifications to subscribers to remind them of upcoming garbage or compost pickups, notify them when program registration opens, or announce Special Events. It could also alert staff in the event of emergencies.

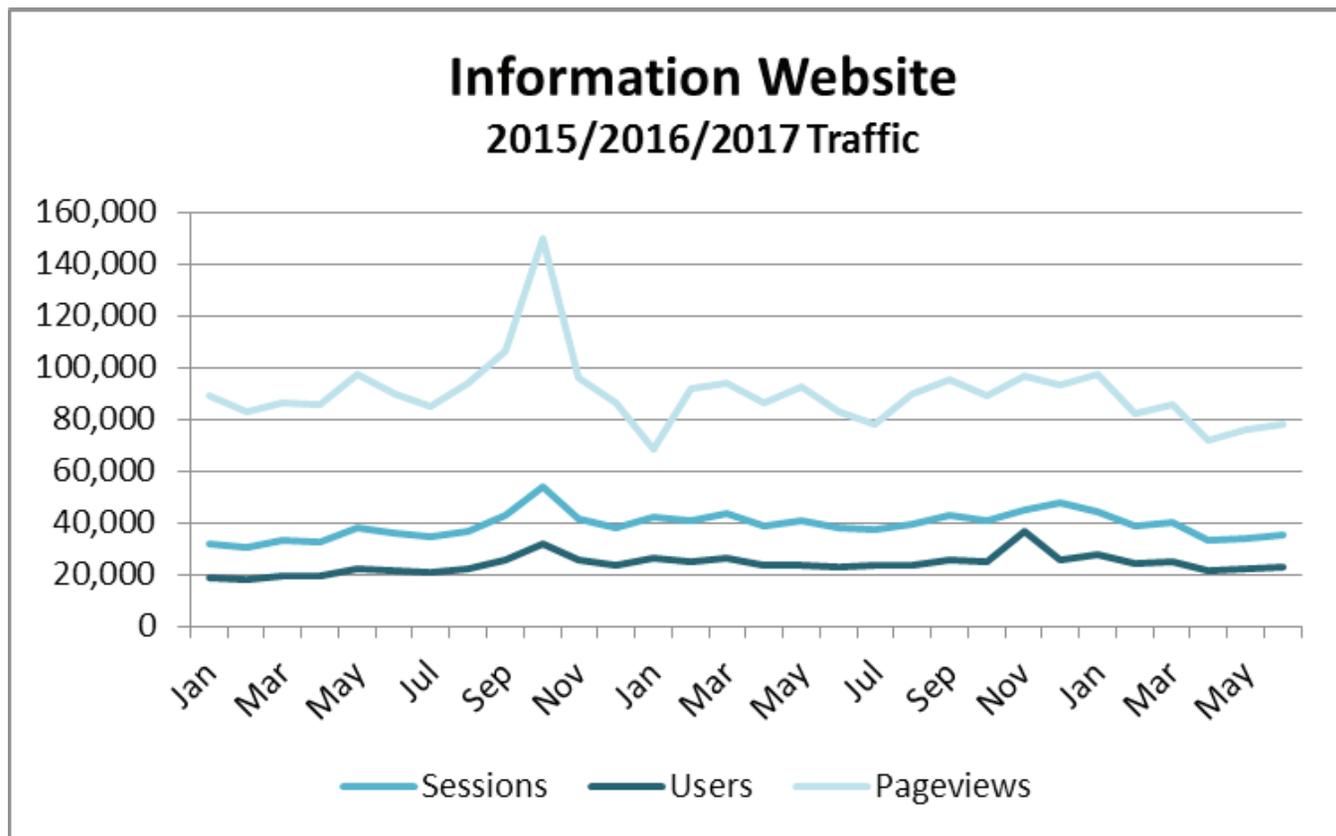
Specific enhancements and additions will be finalized closer to the implementation timeframes, based on requirements and potential return on investment.

Operational Impact

Each proposed enhancement will introduce nominal support costs in future years, but these will be more than offset by operational savings.

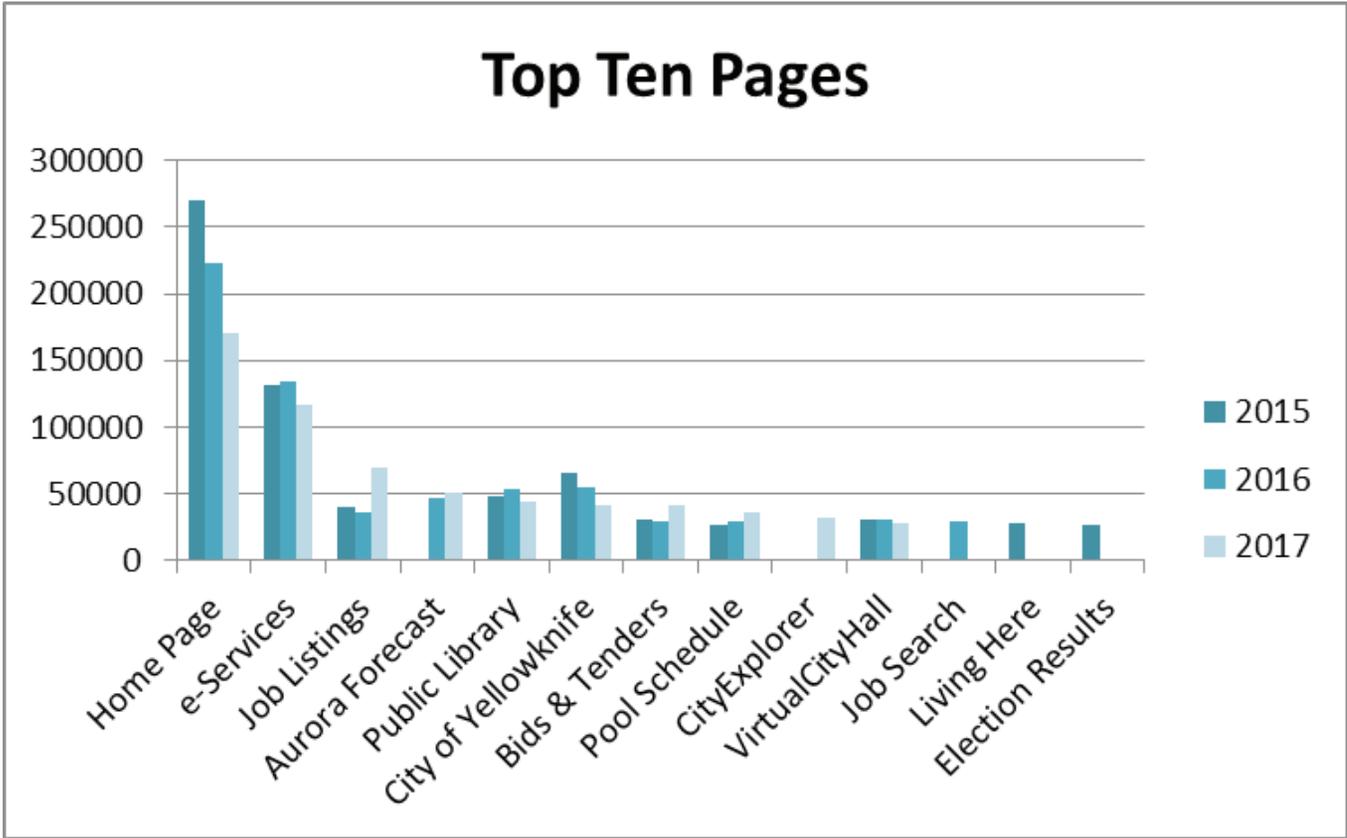
Gallery

Gallery 1



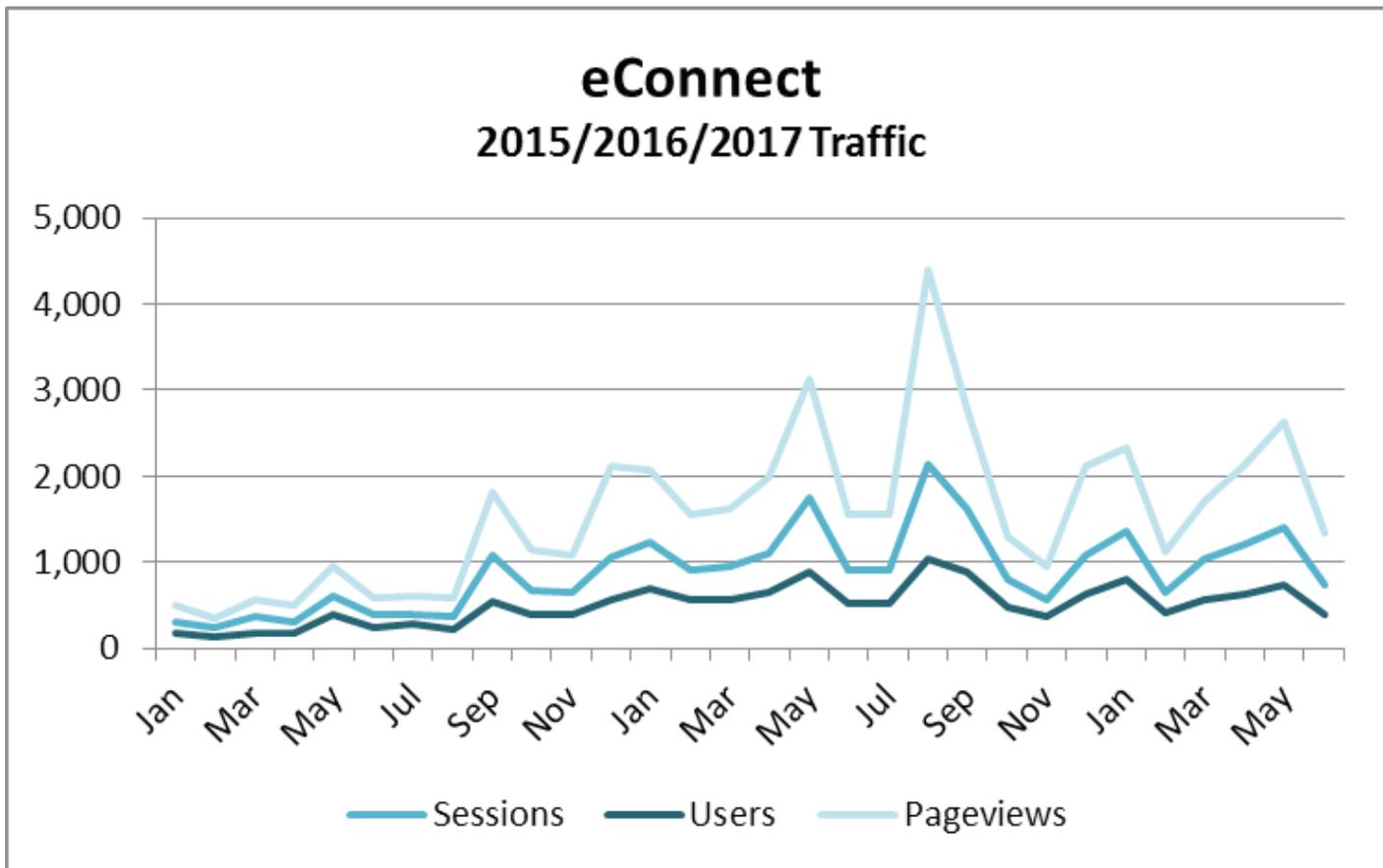
Gallery

Gallery 2



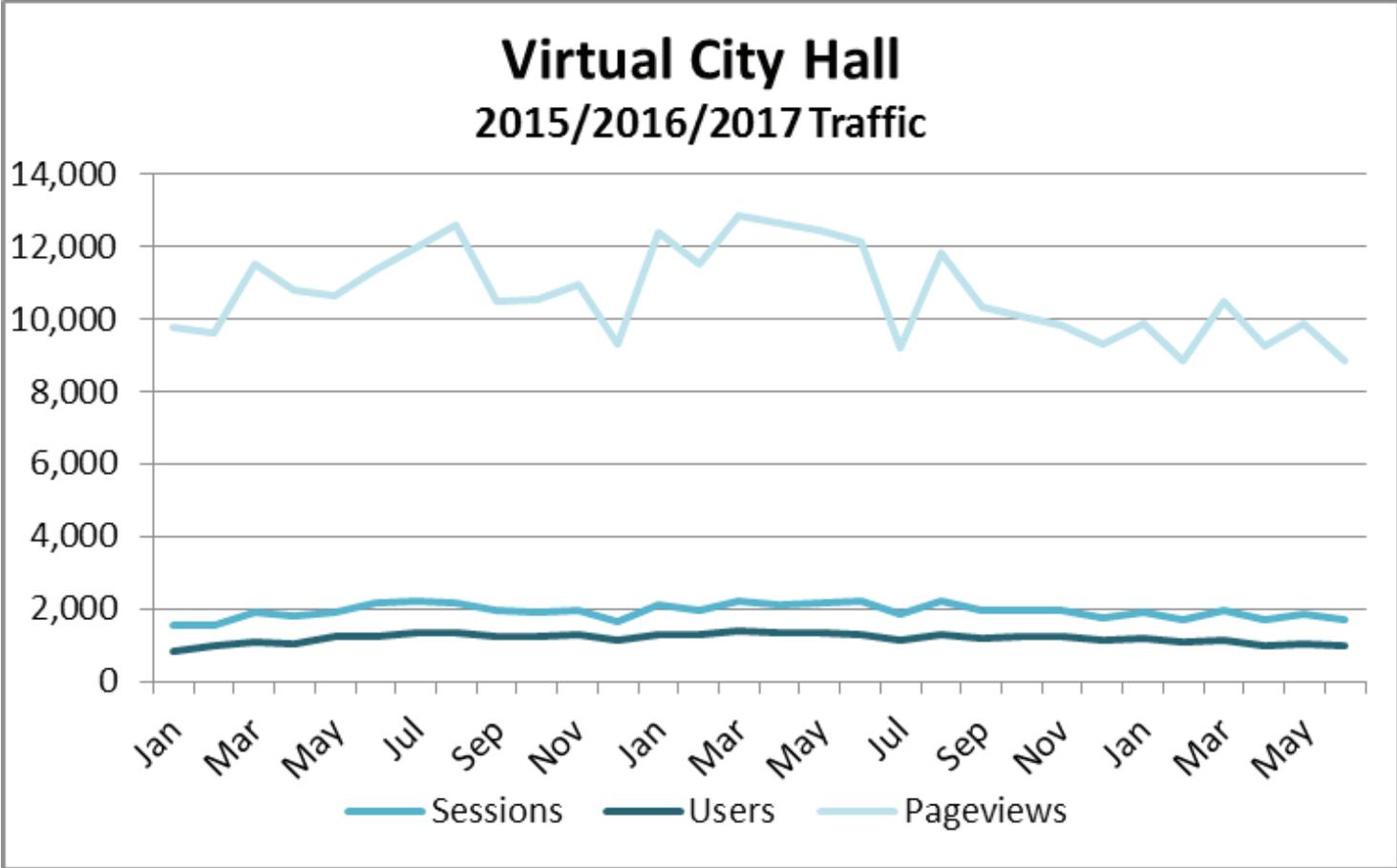
Gallery

Gallery 3



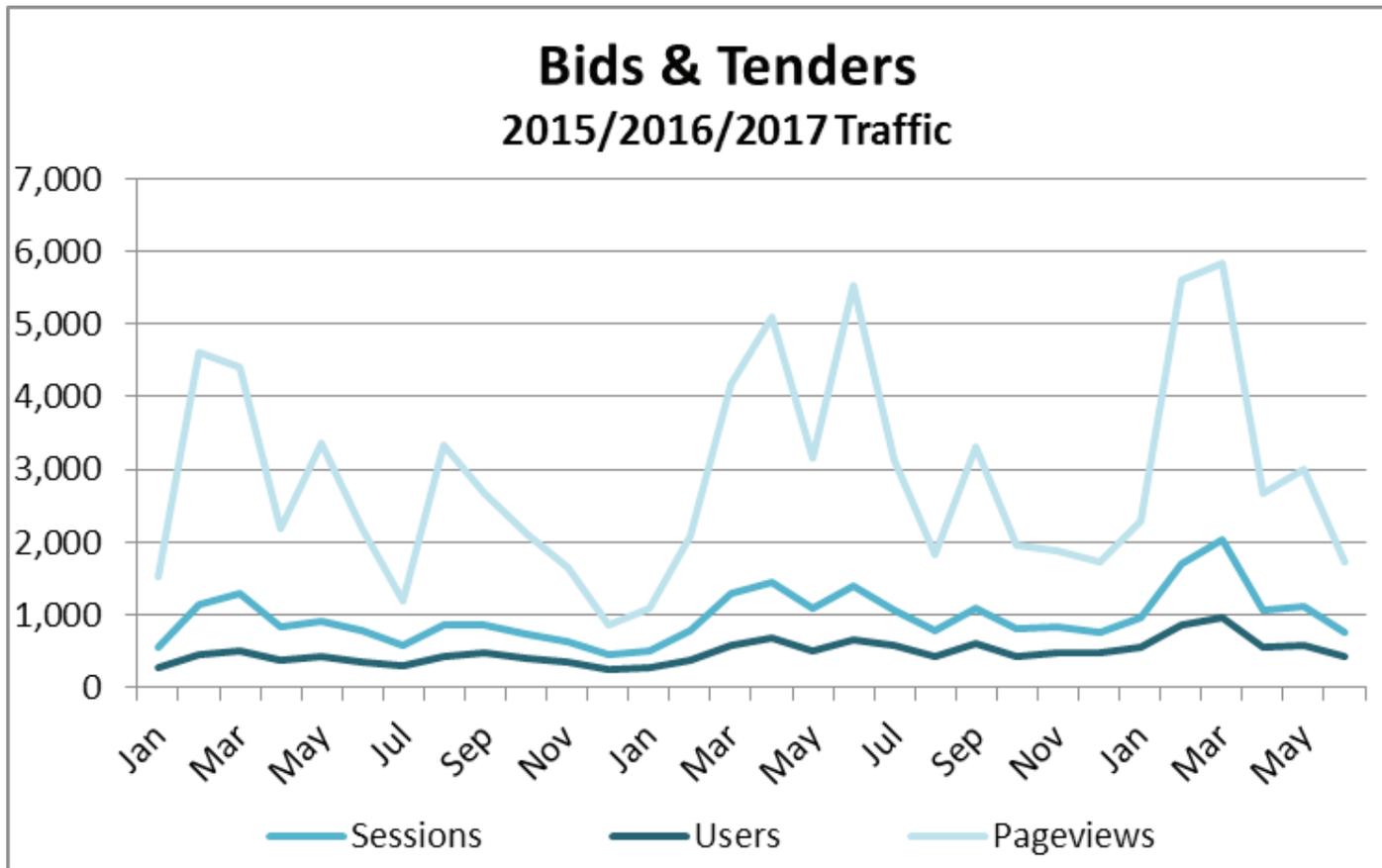
Gallery

Gallery 4



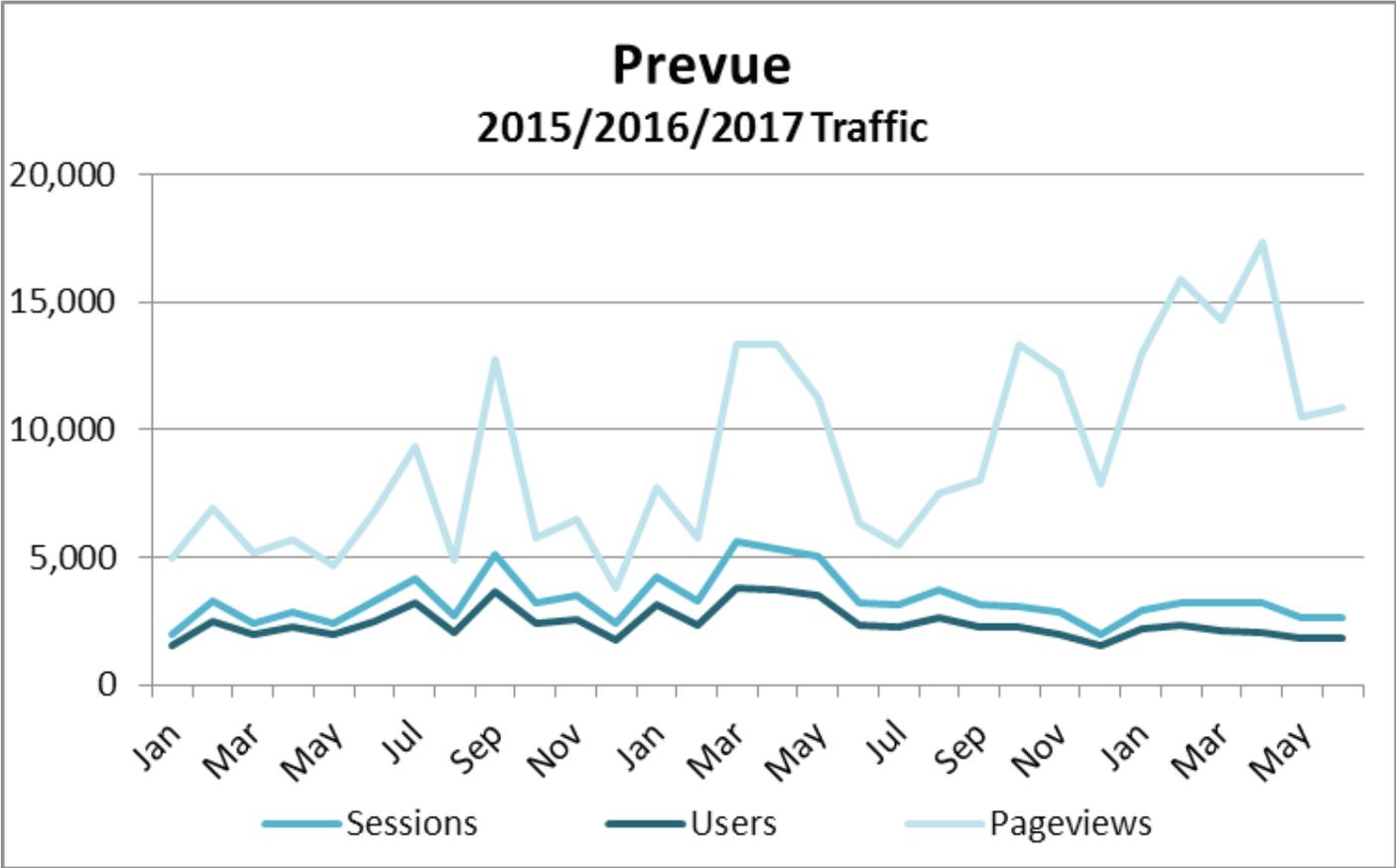
Gallery

Gallery 5



Gallery

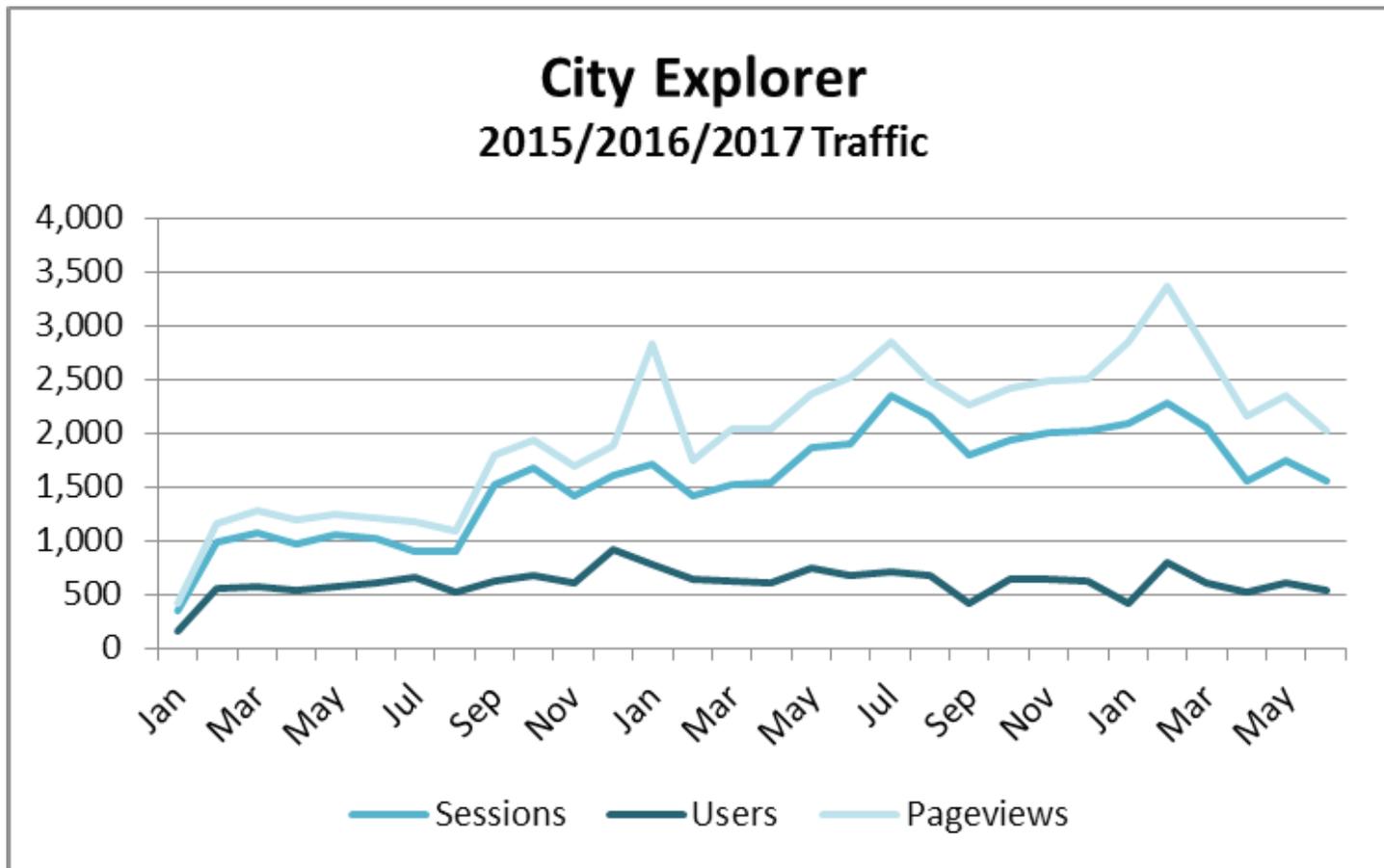
Gallery 6



CAPITAL FUND - 2018 Capital Projects

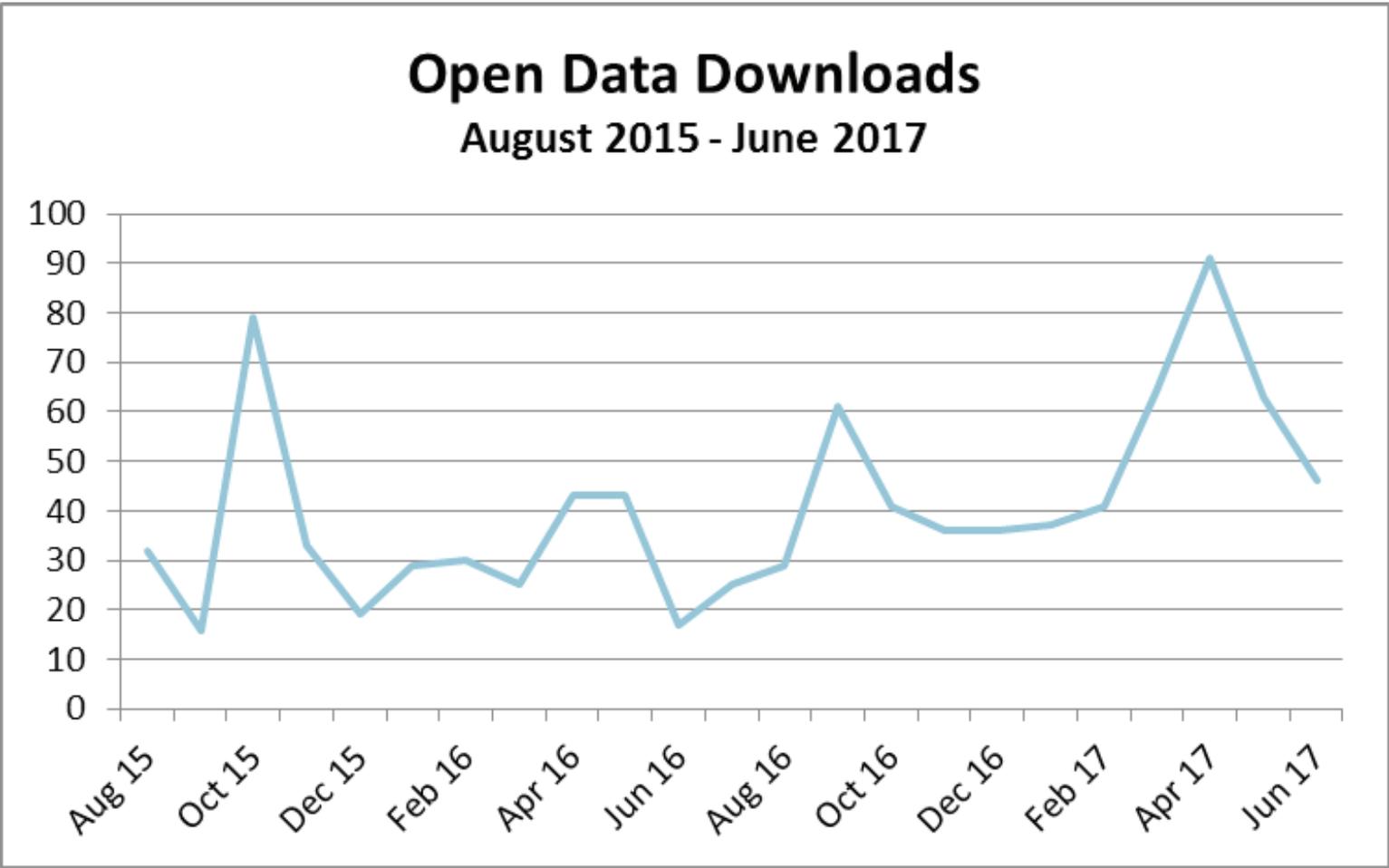
Gallery

Gallery 7



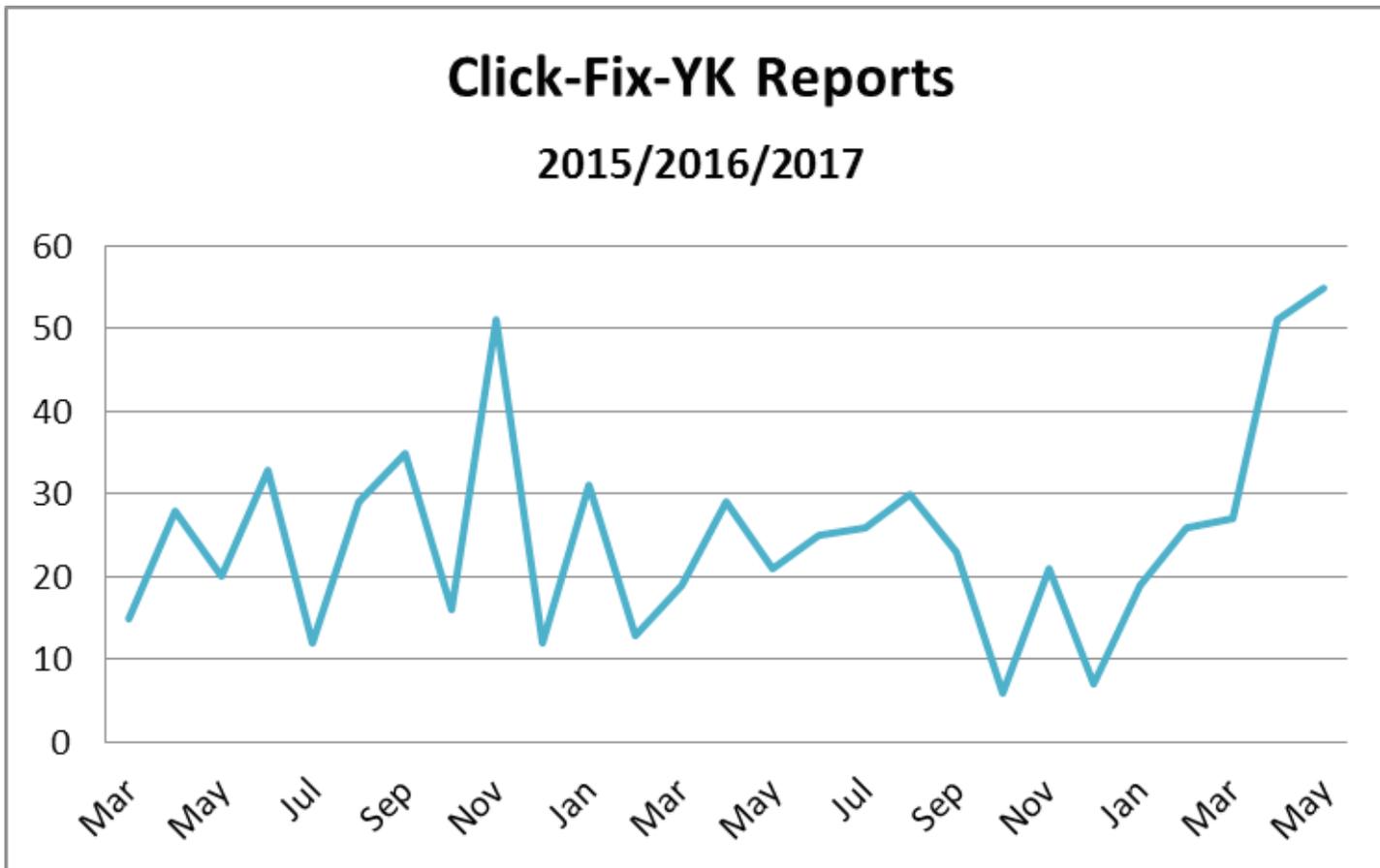
Gallery

Gallery 8



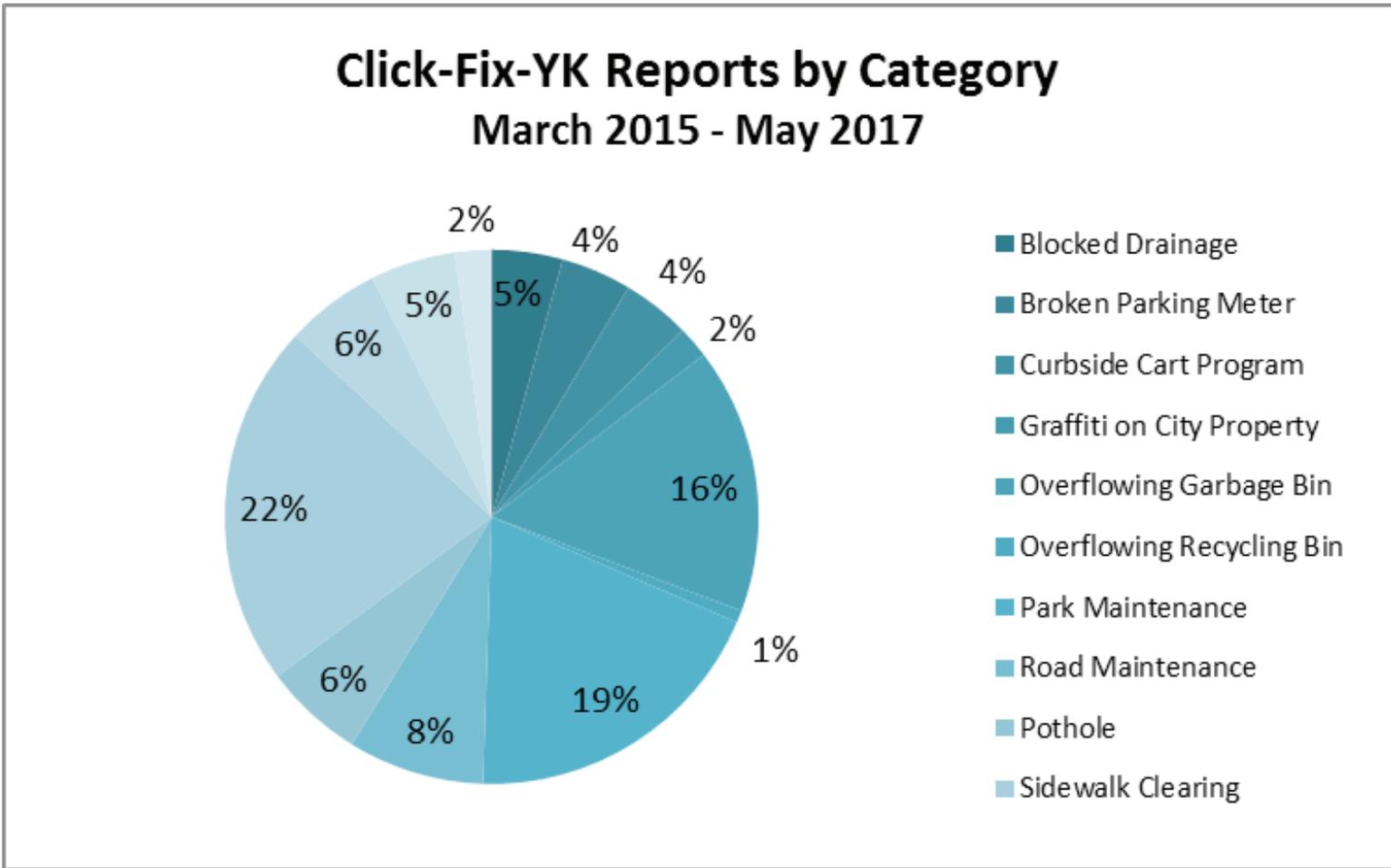
Gallery

Gallery 9



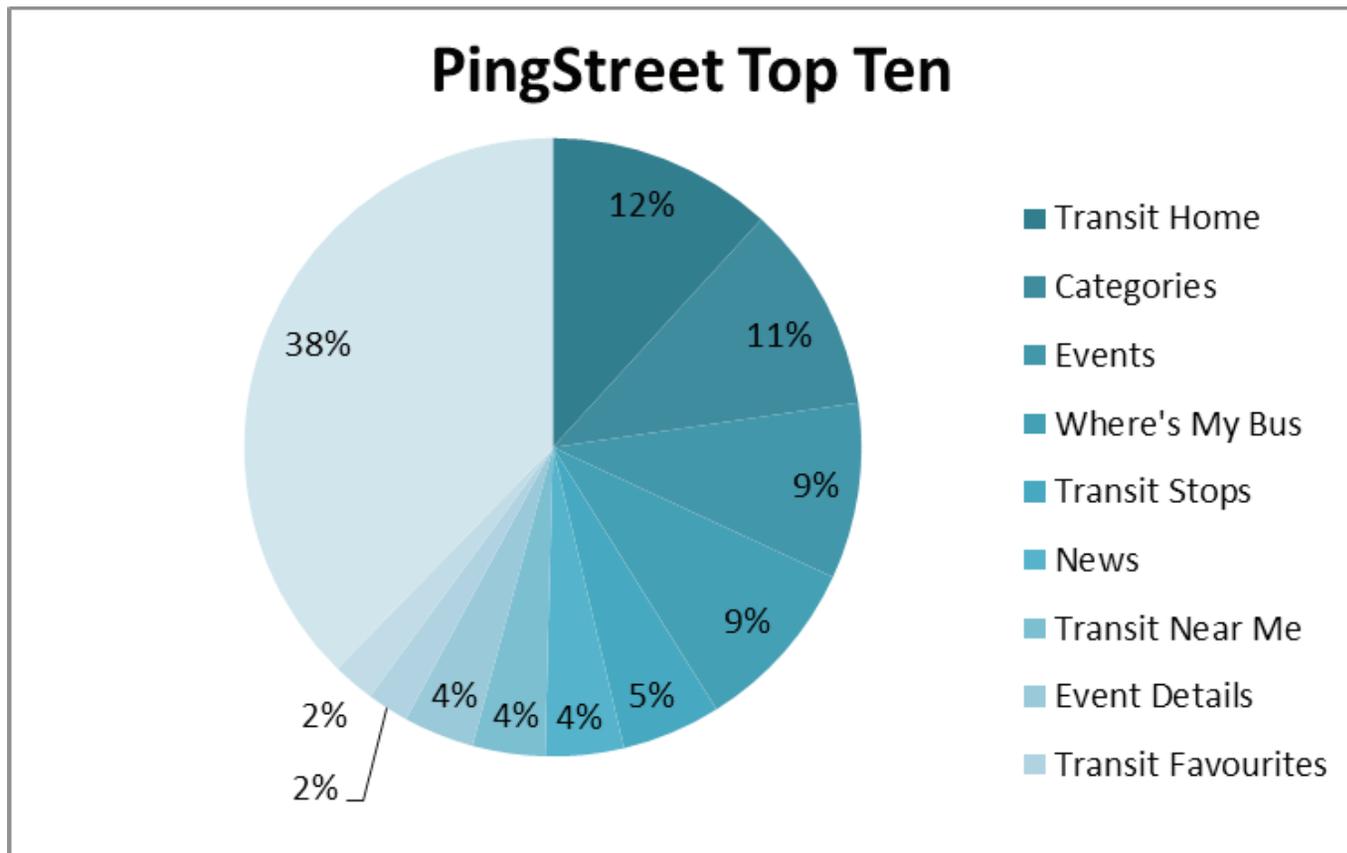
Gallery

Gallery 10



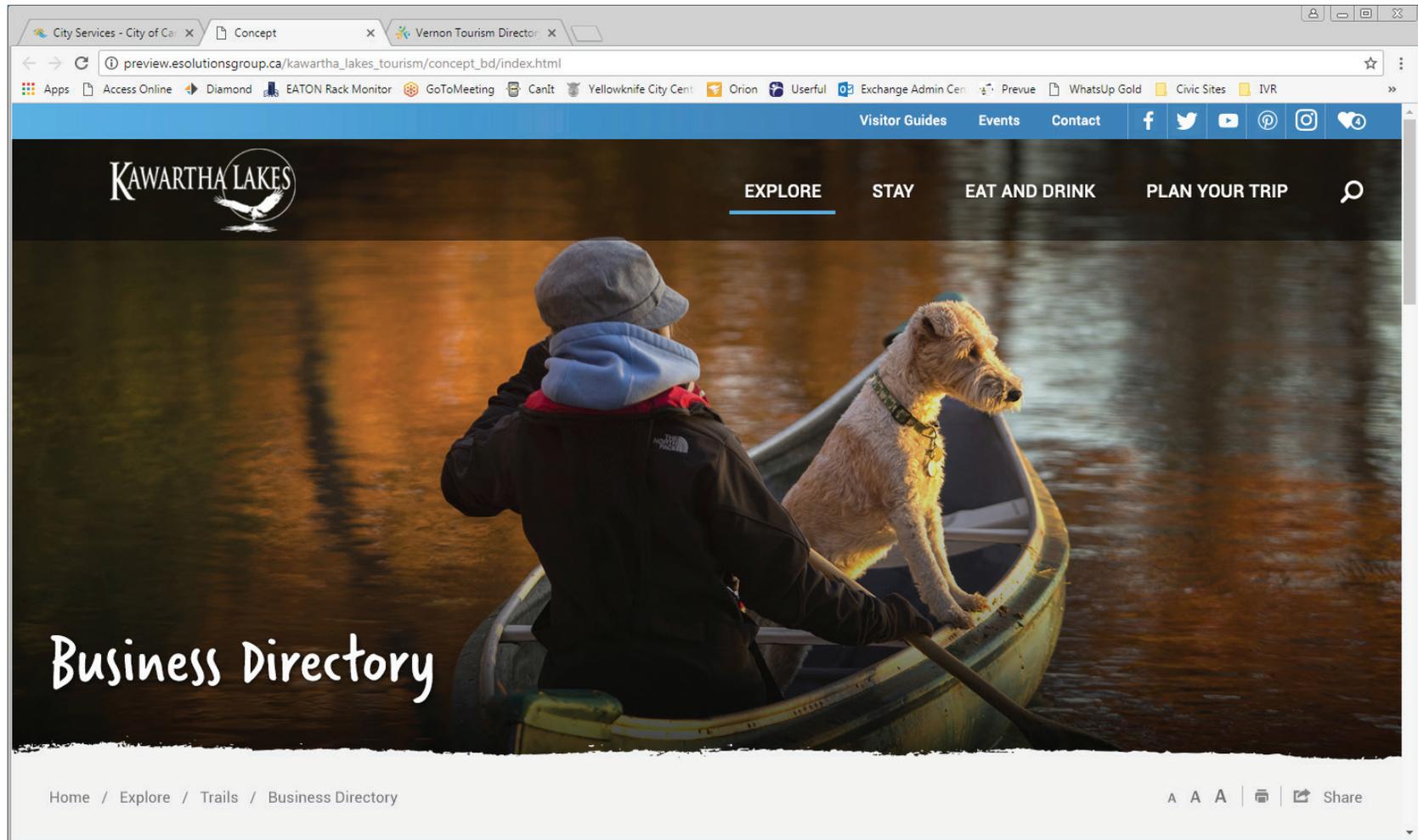
Gallery

Gallery 11



Gallery

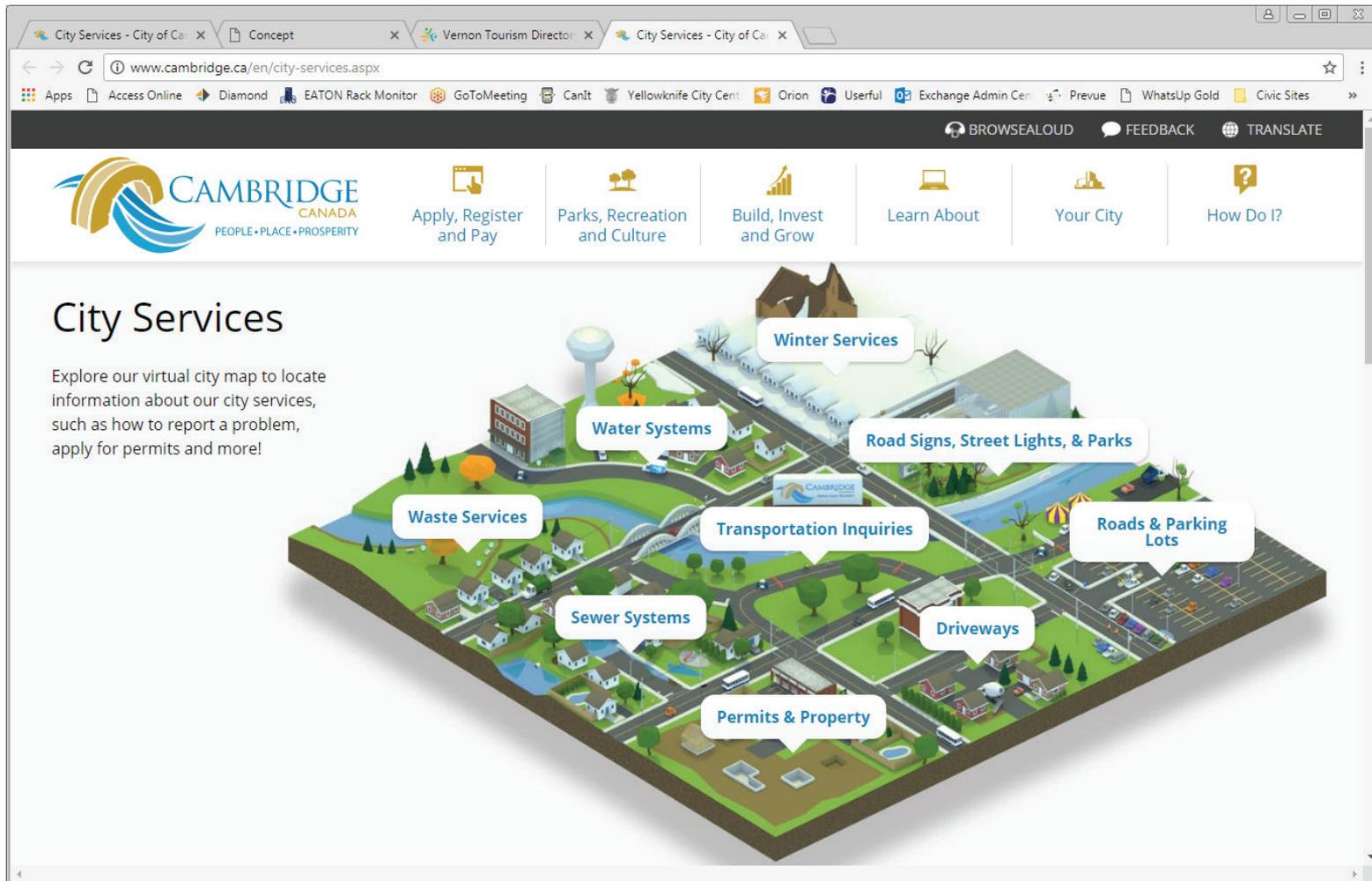
Gallery 12



CAPITAL FUND - 2018 Capital Projects

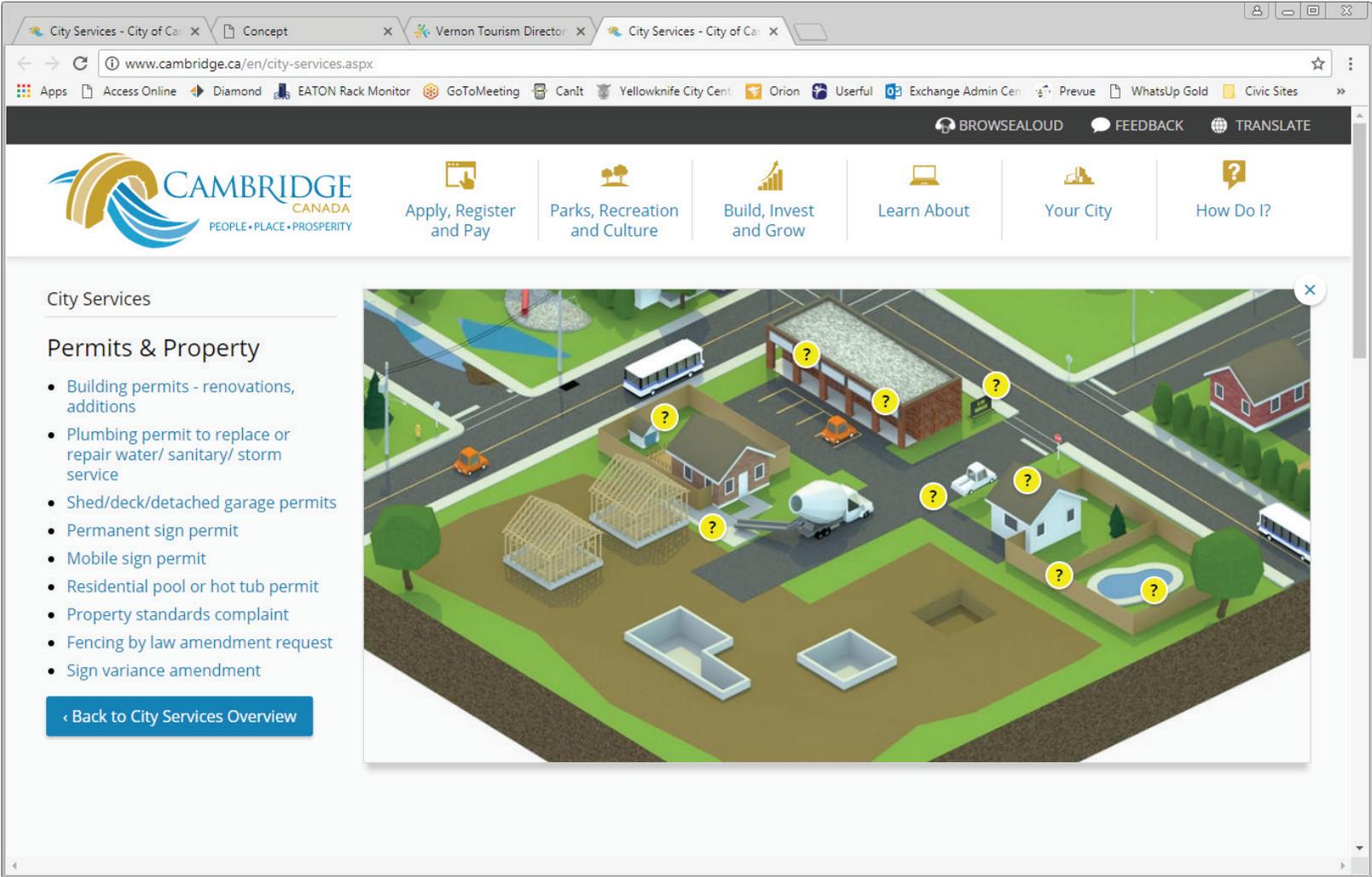
Gallery

Gallery 13



Gallery

Gallery 14



Gallery

Gallery 15

The screenshot shows a web browser window displaying the City of Cambridge website. The address bar shows the URL: www.cambridge.ca/en/build-invest-grow/Permits.aspx#Residential-Permits. The page header includes the City of Cambridge logo and navigation tabs: 'Apply, Register and Pay', 'Parks, Recreation and Culture', 'Build, Invest and Grow', 'Learn About', 'Your City', and 'How Do I?'. The main content area is titled 'Which application form(s) do I need to complete?' and lists common projects and required building permit applications:

- Residential (regulated by Part 9 of the Building Code) [+]
- Industrial, Commercial, Institutional and Large Residential (regulated by Part 3 of the Building Code) [+]
- Demolition Permits [+]
- Plumbing Permits (Independent of other construction) [+]

Below this list are expandable sections for:

- Where do I submit my application package? [+]
- What happens after I submit my application package? [+]
- When will I receive my permit? [+]
- Additional information required [+]

The right sidebar contains service tiles for 'Building and Planning', 'Property Tax', and 'Water Billing', along with a 'Contact Us' section providing the address (50 Dickson Street, 3rd floor, Cambridge ON N1R 8S1) and contact numbers (T. (519) 621-0740, TTY (519) 623-6691).



Gallery

Gallery 16



Gallery

Gallery 17

Careers - Town of Milton x

Secure | <https://donate.milton.ca/en/donate/donateonline.aspx?o=Hsc50nPIUsY2UYsfb5IA5HckYETMweQuAleQuAl>

MILTON Play Live Build Work Town Hall

Secure Online Donation

MAKEITHAPPEN
Bring Canadian Cycling to the World

Donate to the Mattamy National Cycling Centre
Thank you for supporting this world class and community facility.

Donation Amount: * \$ CDN Format: 00.00
** All Donations are processed in Canadian Dollars

Personal Information

First Name: *

Last Name: *

Address Line 1: *

Address Line 2:

City: *

Country: *

Province / State: *

Postal / Zip Code: *

E-Mail Address: *

Phone Number: * Format: 000-000-0000

I wish to remain anonymous.
 Please include me in future mailings regarding Milton Velodrome Project/Donations

[Click Here to view our Privacy Policy.](#)
[Click Here to view our Terms of Use.](#)
[Click Here to view our Refund Policy.](#)



CAPITAL FUND - 2018 Capital Projects

Department GG General Government **Division** Information Technology
Project 44497670 Secondary Site & Data Replication

| | | Budget | | | |
|---------------------|----------------------|---------------|---------------|---------------|----------------|
| | | 2018 | 2019 | 2020 | Total |
| Expenditures | | 12,000 | 53,000 | 59,500 | 124,500 |
| Funding | | | | | |
| | Reserves | 12,000 | 53,000 | 59,500 | 124,500 |
| | Total Funding | 12,000 | 53,000 | 59,500 | 124,500 |

Description

Purpose

To maintain the organization's secondary Data Centre site.

Background

The City's Information Technology infrastructure was traditionally centralized at City Hall. However, this singularity presented an unacceptable level of risk to the organization because if the site had been compromised in any way, the organization would not have been able to conduct business. To mitigate this risk, the Information Technology Division undertook to establish a secondary site to run essential services in the event that the primary site becomes unavailable for any reason.

An incremental replace-then-redeploy strategy approach was adopted to alleviate the budget impact. Physical facility preparations at the secondary site were completed in 2013, and since that time the Information Technology Division has been redeploying retired City Hall equipment to the secondary site. This strategy will continue through 2018, with minor investments to address equipment failures. However, by 2019 it will be necessary to make more significant server and storage acquisitions so that basic operational services could be supported at the site if needed.

Operational Impact

Continued, incremental enhancements are essential if the organization is to sustain a functional secondary Data Centre capable of resuming and sustaining basic operations. Without them, the City may have to return to the single Data Centre model, which would leave the organization in a very vulnerable position should anything prevent normal operations within the sole Centre.



CAPITAL FUND - 2018 Capital Projects

| Community Services Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 |
|---|--|------------|------------|--------------|------------|--------------|------------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) |
| Directorate | | | | | | | |
| 50007610 | Cigarette Butt Receptacles in Downtown | - | 10 | 10 | - | - | - |
| 50036570 | Accessibility Audit | - | 55 | 55 | - | - | - |
| Total Directorate Capital Projects | | - | 65 | 65 | - | - | - |
| Arenas | | | | | | | |
| 51056570 | YKCA Upgrades | 45 | - | - | - | - | - |
| 51527670 | Multiplex Gymnasium Floor Replacement | - | - | - | 160 | - | - |
| Total Arenas Capital Projects | | 45 | - | - | 160 | - | - |
| Parks | | | | | | | |
| 53006571 | Bristol Freighter Repainting | - | - | - | 55 | - | - |
| 53026570 | Surfacing Niven Lake Trail | - | - | - | - | 230 | - |
| 53026575 | Bike Park | - | - | - | 50 | 45 | 20 |
| 53046570 | Ball Diamonds Upgrade | - | - | - | - | 45 | - |
| 53046571 | Tommy Forrest Ball Park | - | - | - | 200 | 200 | 200 |
| 53096570 | Moyle Park Multi-Use Sport Surface | - | - | - | - | 30 | - |
| 53106570 | Skate Board Park Relocation | - | - | - | - | 255 | - |
| 53116570 | Park Equipment Replacement | 59 | - | - | - | - | - |
| 53156570 | Twins Pine Hill Trail Development | - | - | 509 | - | - | - |
| 53196570 | Sport & Multiuse Fields Upgrade | 4 | - | - | - | - | - |
| 53236570 | Frame Lake Trail Upgrades | - | 200 | 255 | - | - | - |
| 53236571 | Trail Enhancement and Connectivity | - | - | - | 25 | 300 | - |
| 53276571 | Tennis Court Resurfacing | - | 137 | 137 | - | - | - |
| 53286570 | Lakeview Heights Playground | - | - | - | 90 | - | - |
| 53526570 | Cemetery Expansion/Irrigation | 51 | 105 | 159 | - | - | - |
| 53536570 | Columbarium Park | - | - | - | - | - | 100 |
| Total Parks Capital Projects | | 114 | 442 | 1,060 | 420 | 1,105 | 320 |
| City Hall | | | | | | | |
| 56016570 | City Hall Upgrades | 12 | - | 94 | 210 | - | - |
| Total City Hall Capital Projects | | 12 | - | 94 | 210 | - | - |

CAPITAL FUND - 2018 Capital Projects

| Community Services Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 |
|--|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) |
| Fieldhouse | | | | | | | |
| 58006570 | Fieldhouse Floor Cover | - | - | - | - | 170 | - |
| 58006571 | Fieldhouse Climbing Wall | - | 160 | 160 | - | - | - |
| 58016570 | Fieldhouse Upgrades | - | - | - | 100 | - | - |
| Total Fieldhouse Capital Projects | | - | 160 | 160 | 100 | 170 | - |
| Programs - Pool & Recreation | | | | | | | |
| 54007640 | Commercial Christmas Tree Replacement | - | - | - | 30 | - | - |
| 55006570 | New Aquatic Centre | - | - | - | 75 | 6,750 | 22,905 |
| 55056570 | Pool Upgrades | - | - | 15 | - | - | - |
| 55056570 | Retiling of Pool Interior | - | - | - | 20 | 20 | 20 |
| 55057611 | Siding Pool Exterior Walls | - | - | - | 100 | - | - |
| 55057670 | Heat Exchanger | - | - | - | - | - | 50 |
| 55076570 | Security Improv. to Pool Reception & Changing Area | 2 | - | - | - | - | - |
| Total Programs - Pool & Recreation Capital Projects | | 2 | - | 15 | 225 | 6,770 | 22,975 |
| Library | | | | | | | |
| 52016570 | Library Washroom Development | - | - | 57 | - | - | - |
| Total Library Capital Projects | | - | - | 57 | - | - | - |
| Total Community Services Capital Projects | | 173 | 667 | 1,451 | 1,115 | 8,045 | 23,295 |



CAPITAL FUND - 2018 Capital Projects

| Community Services Capital Projects | 2018 Budget (\$000's) | Formula Funding (\$000's) | Other Grants (\$000's) | Reserves (\$000's) |
|--|-----------------------------|---------------------------------|------------------------------|-----------------------|
| Community Services | | | | |
| Arenas | | | | |
| 51527670 Multiplex Gymnasium Floor Replacement | 160 | 160 | - | - |
| Total Arenas | 160 | 160 | - | - |
| Parks | | | | |
| 53006571 Bristol Freighter Repainting | 55 | - | - | 55 |
| 53026571 Bike Park | 50 | 25 | 25 | - |
| 53046571 Tommy Forrest Ball Park Upgrades | 200 | 60 | 140 | - |
| 53236571 Trail Enhancement and Connectivity | 25 | 25 | - | - |
| 53286570 Lakeview Heights Playground | 90 | 10 | 80 | - |
| Total Parks | 420 | 120 | 245 | 55 |
| Fieldhouse | | | | |
| 58016570 Fieldhouse Upgrades | 100 | 100 | - | - |
| Total Fieldhouse | 100 | 100 | - | - |
| City Hall | | | | |
| 56016570 City Hall Upgrades | 210 | 210 | - | - |
| Total City Hall | 210 | 210 | - | - |
| Programs & Recreation | | | | |
| 54007640 Commercial Christmas Tree Replacement | 30 | 30 | - | - |
| Total Programs & Recreation | 30 | 30 | - | - |
| Pool | | | | |
| 55006570 New Aquatic Centre | 75 | 64 | 11 | - |
| 55056570 Pool Upgrades | 20 | 20 | - | - |
| 55057611 Siding Pool Exterior Walls | 100 | 100 | - | - |
| Total Pool | 195 | 184 | 11 | - |
| Total Capital Projects | 1,115 | 804 | 256 | 55 |

CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Multiplex
Project 51527670 Multiplex Gymnasium Floor Replacement

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 160,000 | | | 160,000 |
| Funding | | | | |
| Formula Funding | 160,000 | | | 160,000 |
| Total Funding | 160,000 | | | 160,000 |

Description

Purpose

To replace the flooring in the Multiplex Gymnasium to reduce safety concerns and address the increasing maintenance cost associated with maintaining the floor.

Background

At the time the Multiplex was being contemplated, the City entered into discussions with the Department of National Defence (DND) to add a gymnasium component to the facility. An Agreement was reached whereby DND provided the capital cost of \$1M. The Agreement stipulated that the City would retain ownership and control over the facility and DND would be allocated a set amount of time per week as well as exclusive access to the mezzanine level. The \$1M was to be considered pre-paid rent for this use. Each year a calculation of the number of hours utilized by DND of the gym is undertaken and that amount is deducted from the original contribution. The mezzanine area is also included in this calculation.

The gymnasium is utilized for many activities and events programmed by the City including Judo, Tae Kwon Do, Summer Day Camp Program, Movie Nights, Volunteer Appreciation Breakfast, the Community Showcase, Sport Camps and many other recreation programs to numerous to list. In addition the facility is popular with many clubs and organizations. Uses over the past number of years have included basketball, volleyball, soccer, fitness training, floor hockey etc. The gymnasium is also popular for birthday parties and many other informal gatherings.

The facility is booked to 78% of its available capacity and generates approximately \$30,000 annually in revenue. The users of this facility range in age from toddlers to seniors.

Over the past two to three years the maintenance on the gym flooring has increased due to the ongoing wear and tear associated with the use. The floor material is marmoleum product and has been ripped, torn and gouged. These areas must be cut out and replaced and the sport lines repaired. These intrusions into the integrity of the floor cause issues with the maintenance and safety of users. Through regular janitorial maintenance on the floor, water and cleaning solution is able to penetrate the floor and leach between the sub-surface and marmoleum causing further issues such as lifting and bubbling of the material, which in turn leads to additional ripping, tearing and gouging,

The rips, tears and gouges in the flooring material pose a safety hazard for those utilizing the gym. They become tripping hazards and lead to abrasions and cuts on the users. It is estimated by staff that there are in excess of 85 locations where the floor has sustained this damage.



Gallery 1 (Tear in flooring to sub-surface) and Gallery 2 (Gouge & rip with lifted flooring) are examples of the damage to the floor. In discussing the condition of the floor with a local contractor, the estimated life of the floor is 10 to 15 years. Also, the estimated down time for a scheduled repair is approximately 2 to 3 weeks. If there is an issue mid-budget season where the floor is compromised beyond a repair, the length of down time will be between 10 and 12 weeks. This amount of unscheduled down time will have a large effect on the various users, recreation programs and events and of course lead to reduced revenue.

The mezzanine level of the gymnasium is for the exclusive use by DND and their designated partners as per the contribution agreement. The City has duty to maintain its facilities in a safe and operable standard. The condition of the mezzanine floor is the same as the main gym floor. There are cuts, rips and gouges that compromise the safety of the users.

For these reasons and to achieve an economy of scale, the replacement of both floors is being proposed for the 2018 capital budget.

Operational Impact

There will be no additional operational costs associated with this project.

Gallery

Gallery 1



Gallery

Gallery 2



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Parks & Trails
Project 53006571 Bristol Freighter Repainting

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 55,000 | | | 55,000 |
| Funding | | | | |
| Reserves | 55,000 | | | 55,000 |
| <i>Total Funding</i> | 55,000 | | | 55,000 |

Description

Purpose

To sandblast, prime and re-paint the steel base, as well as pressure wash and re-paint the Bristol Freighter with the same three existing colours.

Background

The Bristol Freighter along Highway #3, near the Airport, welcomes visitors to Yellowknife. This plane, once operated by Wardair Limited, was the first to land on skis at the North Pole in 1967. This historic aircraft was donated to the City of Yellowknife in 1970. It was last painted in 1996.

Around the plane there are picnic tables, tables and interpretative signage. This project will allow the City to manage its assets wisely by strategically investing in infrastructure to optimize function, service and safety.

Prior to commencing the project, administration will carry out research for additional funding from outside sources related to heritage, aviation, etc.

Operational Impact

It is anticipated that this project will not affect the current O&M budget.



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Parks & Trails
Project 53046571 Tommy Forrest Ball Park Upgrades

| Budget | | | | |
|----------------------|----------------|----------------|----------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 200,000 | 200,000 | 200,000 | 600,000 |
| Funding | | | | |
| Formula Funding | 60,000 | 60,000 | 60,000 | 180,000 |
| Other Grants | 140,000 | 140,000 | 140,000 | 420,000 |
| <i>Total Funding</i> | 200,000 | 200,000 | 200,000 | 600,000 |

Description

Purpose

To partner with the Yellowknife Men’s Fastball Association for the continued development of the Tommy Forrest Ball Park.

Background

Following a presentation from the Yellowknife Men’s Fastball Association, Council is desirous of establishing a partnership with the Association for continued development of the Tommy Forrest Ball Park as a community park. The partnership will see the City contributing \$60,000, contingent upon the Association contributing \$140,000 annually for the following three years, to help the development of items such as a playground, protective screening, historic display, proper field drainage, installation of bleachers, etc.

There are no direct financial benefits for the City under this partnership, however this will provide an opportunity for the Association to further develop the sport in Yellowknife and provide the opportunity to explore Sport Tourism by seeking out regional and national events.

Operational Impact

There are no anticipated operational costs associated with this partnership arrangement.



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Parks & Trails
Project 53236571 Trail Enhancement and Connectivity

| Budget | | | | |
|----------------------|---------------|----------------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 25,000 | 300,000 | | 325,000 |
| Funding | | | | |
| Formula Funding | 25,000 | 300,000 | | 325,000 |
| <i>Total Funding</i> | 25,000 | 300,000 | | 325,000 |

Description

Purpose

Develop trail connectivity on the McMahon Frame Lake Trail by extending the multiuse trail behind the new Stanton Hospital to connect the existing paved portion of the trail and to the trail leading to the underpass adjacent to Staples. This needs to be done in respect of and in collaboration with land use options being considered for Commissioners lands for health care, healing, wellness and reconciliation.

As well, the City will work with the Transportation Issues Committee (TIC) to develop a trails connectivity strategy for the city.

Background

Yellowknife City Council would like to extend the McMahon Frame Lake multiuse trail in order to increase options for active transportation. Specifically, the portion that extends behind the new Stanton Hospital will be converted from nature trail to accessible trail connecting to the underpass adjacent to Staples. This will be done in collaboration with GNWT's Department of Health and Social Services and other partners who will be collaborating in order to align land use in the area. Should this be the location of a future Indigenous Healing and Wellness Centre, careful planning must be undertaken to ensure optimal and appropriate access.

The trail has been in existence for many years in this area as a natural trail. Those utilizing the trail would follow painted footsteps along the rock as well as trail markers. The current alignment has to be adjusted to allow for the footprint of the new hospital, as well as any potential future health care/healing facilities, and the trail would be upgraded to match the existing asphalt surface. Signage would also be included in the project to ensure those using the trail are aware of the full extent of the trail system. The 2018 funding represents Phase 1 and pending the discussions on land use and subsequent trail location, any required resources for paving and completion will be identified for 2019.

The project will reflect some of the key points of the Integrated Parks, Trails and Open Spaces Development Study including connectivity and the creation of non-motorized commuting systems.

CAPITAL FUND - 2018 Capital Projects

In addition, the City proposes to work with the Transportation Issues Committee to develop a Trails Connectivity strategy that will take a macro approach to connecting all multi use and non-motorized commuting systems throughout the community.

Application for a variety of grant sources such as Active Transportation and Get Active Funding opportunities will be investigated to offset the capital costs of the project.

Operational Impact

Maintenance of this trail system is a full year process. Snow and ice maintenance is carried out via mechanical means on a priority basis as this is a heavily utilized trail by commuters on a daily basis. The addition of approximately 500 meters of multiuse trail will increase the time that staff allocates to these duties. It is anticipated that there will be minimal financial impact however, the allocation of resources to secondary and tertiary tasks will be adjusted. Any costs related to the implementation of the Trails Connectivity Strategy will need to be considered in future years.



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Parks & Trails
Project 53286570 Lakeview Heights Playground

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 90,000 | | | 90,000 |
| Funding | | | | |
| Formula Funding | 10,000 | | | 10,000 |
| Other Grants | 80,000 | | | 80,000 |
| <i>Total Funding</i> | 90,000 | | | 90,000 |

Description

Purpose

When Lakeview Heights was established in 2012, an area referred to as Lot 102 was identified to develop into park space, complete with a playground apparatus for the residents of the area. The City has been approached by the Developer to ensure that the planned park development is completed in a timely manner.

Background

As per the 2012 General Plan:

1. a. (ii) All residents within the Residential Community, Mixed-Use and Downtown designations should be within 250m of a neighbourhood Park;
2. a. (iii) No crossing of an Arterial Road will be required to access a neighbourhood Park.

As per the Development Agreement, this area was partially developed to ensure easy access for the completion of the park. The site was filled with rock, crush and clay to a completed grade level. The project will entail completing the site development by adding the finishing material, play structure, fencing etc. There are no other City owned play structures in the vicinity so a new park and playground will stimulate young children, and encourage mental and physical growth.

Prior to finalizing the park amenities, a public consultation phase will be carried out, eliciting input from the residents in the area.

Operational Impact

As per the Performance Measures, the addition of a playground and park space requires an additional \$3,932 for annual maintenance. It is anticipated that this park will be completed in the late fall; therefore the cost will be associated with 2019.

CAPITAL FUND - 2018 Capital Projects

| | | Operating Impact | | | |
|------------------|--------------|------------------|--------------|------|--------------|
| | | 2018 | 2019 | 2020 | Total |
| Contracted Costs | | | 3,932 | | 3,932 |
| | Total | | 3,932 | | 3,932 |



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** City Hall
Project 56016570 City Hall Upgrades

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 210,000 | | | 210,000 |
| Funding | | | | |
| Formula Funding | 210,000 | | | 210,000 |
| Total Funding | 210,000 | | | 210,000 |

Description

Purpose

To upgrade the main entrance of City Hall by replacing the current stairs and improving the entrance.

Background

City Hall was built in 1975 as the administrative center of the City of Yellowknife. Over the years the main stairway to the building has degraded, creating the need for numerous repairs to be carried out. Over the past several repairs, it has become apparent that the stairs are reaching their full life expectancy and require replacement.

It is proposed that the project will include the re-design and replacement of the stairs to ensure the ongoing safety of visitors to and from City Hall as well as reflecting the importance of the building as the administrative centre for the City of Yellowknife.

Operational Impact

It is anticipated that this project will not affect the current O&M budget.



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Programs
Project 54007640 Commercial Christmas Tree Replacement

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 30,000 | | | 30,000 |
| Funding | | | | |
| Formula Funding | 30,000 | | | 30,000 |
| <i>Total Funding</i> | 30,000 | | | 30,000 |

Description

Purpose

To replace the City of Yellowknife's Commercial Christmas tree.

Background

The City of Yellowknife has been celebrating the Christmas season by installing a 30' Commercial Style Christmas tree on the City Hall Grounds for the past 20 years. The Christmas tree is set up annually, prior to the First Thursday of December, when the City of Yellowknife participates, along with the 12 other Capital Cities, in the annual Capital City Light Up. The City has hosted many other events surrounding the Christmas tree in Somba K'e Civic Plaza, and it has been a tourist draw as well over the years. The current Christmas tree has been utilized for almost twenty years and has well surpassed its life expectancy. The extreme cold temperatures and the annual setting up and taking down have taken its toll on the tree; the wiring is beginning to crack and certain sections of the tree are not lighting up or staying lit. The greenery that composes the tree is beginning to fall apart, giving the tree a shabby appearance.

Operational Impact

No O&M funds have been directed to this project.

CAPITAL FUND - 2018 Capital Projects

Department CS Community Services
Project 55006570 New Aquatic Centre
Division
Pool

| Budget | | | | |
|---------------------------|---------------|------------------|-------------------|-------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| Public Consultation | 75,000 | | | 75,000 |
| Architectural/Engineering | | 6,750,000 | | 6,750,000 |
| Construction | | | 22,905,000 | 22,905,000 |
| <i>Total Expenditures</i> | 75,000 | 6,750,000 | 22,905,000 | 29,730,000 |
| Funding | | | | |
| Formula Funding | 63,750 | | | 63,750 |
| Other Grants | 11,250 | 1,012,500 | 7,125,750 | 8,149,500 |
| Debt Funding | | 5,737,500 | 15,779,250 | 21,516,750 |
| <i>Total Funding</i> | 75,000 | 6,750,000 | 22,905,000 | 29,730,000 |

Description

Purpose

The development of an Aquatic Centre is a multi-year project commencing in 2018 and concluding in 2021. The initial phase of the project will be carrying out a full public consultation including discussions with all major and minor user groups, the aboriginal community and stakeholders.

Funding in 2018 will be used to engage the services of a qualified service provider to carry out an extensive consultation process to determine the feasibility and community requirements of an aquatic centre. This study will identify the current and future needs of the community as well as the various user groups to ensure that the new development will be relevant, well into the future of Yellowknife. The study will identify the various components that will comprise the facility, location and budget.

Subsequent year funding will include the development of the Architectural and Engineering Phase of the project in 2019 with construction commencing in 2020 with completion in 2021.

Background

The City has made an application to the Building Canada Fund (BFC), Provincial-Territorial Infrastructure Component for the development of an aquatic centre. The funding available to the City for this project is \$12,900,000.00 which the City must match with \$4,300,000.00 (75%/25% funding as shown in Gallery 1).



The development of an aquatic centre to meet the needs of the community would likely include a facility large enough for additional program space, the provision of a competition pool and revenue generating space to ensure the facility is sustainable and keeps the cost impact to the ratepayers to a minimum. The current situation within the Ruth Inch Memorial Pool is that the pool has reached its capacity several years ago. There is typically a wait list of approximately 300 – 350 per session for the swim lessons sessions offered; therefore close to 1,000 annually. The competitive swim club must send athletes to the south to train in a proper sized pool and the ability to generate additional funds within the facility is very limited.

Operational Impact

It is anticipated that the project will be completed in 2021 with the full impact of the operational costs to be in effect in 2022. It is estimated that the net operational cost of the facility will be \$1,582,000 with a recovery rate of 65%. This recovery rate is based on a facility that includes the components to generate revenue over and above regular pool operations.

CAPITAL FUND - 2018 Capital Projects

Gallery

Gallery 1

| Year | Phase | Cost | BCF | City |
|--------------|---------------------------|---------------------|---------------------|---------------------|
| 2018 | Public Consultation | \$75,000 | \$11,250 | \$63,750 |
| 2019 | Architectural/Engineering | \$6,750,000 | \$1,012,500 | \$5,737,500 |
| 2020 | 60% Construction | \$22,905,000 | \$7,125,750 | \$15,779,250 |
| 2021 | 40% Construction | \$15,270,000 | \$4,750,500 | \$10,519,500 |
| Total | | \$45,000,000 | \$12,900,000 | \$32,100,000 |



CAPITAL FUND - 2018 Capital Projects

Department CS Community Services **Division** Pool
Project 55057611 Siding Pool Exterior Walls

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 100,000 | | | 100,000 |
| Funding | | | | |
| Formula Funding | 100,000 | | | 100,000 |
| Total Funding | 100,000 | | | 100,000 |

Description

Purpose

To install a rain screen cladding over existing stucco siding on the exterior walls of the Ruth Inch Memorial Pool.

Background

Ruth Inch Memorial Pool opened its doors to the public in the fall of 1988 and continues to be popular among residents and visitors alike. The proposed project would cover the exterior walls of the building with new siding. This would require the removal of a portion of the existing stucco finish to inspect for moisture penetration and possible damage to the insulation and vapor barrier. The building would then be resealed with rigid insulation and clad with metal siding.

A facility life cycle analysis that was conducted by Williams’ Engineering identified many issues that needed to be addressed to ensure the building will meet or exceed its life expectancy. Since the time of the initial report, several items identified have been addressed such as replacement of the Air Handling Unit, replacement of exterior glazing, and upgrading of insulation in the exterior walls of the office space. In addition to these items, the study found that the exterior finish is showing signs of deterioration (Gallery 1 & 2) due to the combination of extreme weather outside the building and high humidity inside. The initial report was followed by an assessment in 2017 that further indicated that to ensure the damage to the exterior of the building did not continue, remedial action must be undertaken.

There were four proposed options in the 2017 report to address the issue ranging from \$50,000 to \$406,000. The low range of options considers a repair assuming the building will remain in operations for the next 3 to 5 years, while the higher cost option assumes that building operations will continue for 15 to 20 years. The option selected assumes the building will remain in operations as a pool for a 5 to 10 year period.

If the problem with the outer walls is not dealt with soon, the reports indicated that moisture will penetrate the walls, leading to the deterioration of materials, allowing mold and mildew to develop.



Operational Impact

There are no anticipated impacts to the O&M Budget.

Gallery

Gallery 1



Gallery

Gallery 2



CAPITAL FUND - 2018 Capital Projects

| Public Safety Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 |
|--|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) |
| Directorate | | | | | | | |
| 65007611 | Wildland Fire Mitigation Emergency Measures | 126 | 125 | 136 | 125 | 150 | 150 |
| Total Directorate Capital Projects | | 126 | 125 | 136 | 125 | 150 | 150 |
| Fire & Ambulance | | | | | | | |
| 63006430 | Portable Radios | - | 132 | 132 | 141 | - | - |
| 63007611 | Fire Safety Helmets | - | 12 | 12 | 9 | 9 | - |
| 63007670 | FDM Software | - | - | 10 | 27 | - | - |
| 63046540 | Fire Division Master Plan | 106 | - | - | - | - | - |
| 63046571 | Fire Hall Improvement | - | - | - | 39 | 26 | - |
| 63107615 | Additional Firefighter Outfitting Costs | - | 40 | 40 | - | - | - |
| 63107670 | Station Wear / Bunker Gear | 27 | 20 | 20 | 10 | 10 | 30 |
| 63117670 | Aggressor Jackets | 5 | - | 8 | - | - | - |
| 63137670 | Self-Contained Breathing Apparatus | - | - | - | - | 225 | 225 |
| 63176571 | Paving & Foundation Repairs | 13 | 30 | 97 | - | - | - |
| 63187670 | Automatic External Defibrillators | - | 105 | 105 | - | - | - |
| 63227670 | Additional Firefighters Outfitting Costs | - | - | - | 40 | - | - |
| 63246571 | Repairs to Air Make-up System | 19 | - | - | - | - | - |
| 63247600 | Fire Hall Emergency Generator | - | 100 | - | 100 | - | - |
| FD0001 | Fire Extinguisher Trainer | - | - | - | - | 28 | - |
| FD0002 | Propane-Fueled Fire Trainer | - | - | - | 90 | - | - |
| Total Fire & Ambulance Capital Projects | | 170 | 439 | 424 | 456 | 298 | 255 |
| Municipal Enforcement | | | | | | | |
| 64007610 | Mobile Radar Replacement | 8 | 5 | 5 | - | - | - |
| 64007670 | Communication Equipment Replacement | 30 | - | - | - | - | - |
| 64017670 | Parking Meter Replacement | 38 | - | - | - | - | - |
| Total Municipal Enforcement | | 76 | 5 | 5 | - | - | - |
| Total Public Safety Capital Projects | | 372 | 569 | 565 | 581 | 448 | 405 |

CAPITAL FUND - 2018 Capital Projects

| Public Safety Capital Projects | 2018 Budget (\$000's) | Formula Funding (\$000's) |
|--|-----------------------------|---------------------------------|
| Public Safety | | |
| Directorate | | |
| 65007611 Wildland Fire Mitigation Emergency Measures | 125 | 125 |
| Total Directorate | 125 | 125 |
| Fire & Ambulance | | |
| 63006430 Portable Radios | 141 | 141 |
| 63007611 Fire Safety Helmets | 9 | 9 |
| 63007670 FDM Software | 27 | 27 |
| 63046571 Fire Hall Improvement | 39 | 39 |
| 63107615 Additional Firefighters Outfitting Costs | 40 | 40 |
| 63107670 Station Wear / Bunker Gear | 10 | 10 |
| 63227670 Propane-Fueled Fire Trainer | 90 | 90 |
| 63247600 Fire Hall Emergency Generator | 100 | 100 |
| Total Fire & Ambulance | 456 | 456 |
| Total Capital Projects | 581 | 581 |



CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Directorate
Project 65007611 Wildland Fire Mitigation Emergency Measures

| Budget | | | | |
|----------------------|----------------|----------------|----------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 125,000 | 150,000 | 150,000 | 425,000 |
| Funding | | | | |
| Formula Funding | 125,000 | 150,000 | 150,000 | 425,000 |
| <i>Total Funding</i> | 125,000 | 150,000 | 150,000 | 425,000 |

Description

Purpose

This project, which is the continuation of the emergency mitigation started in 2015, is intended to protect residential neighbourhoods in the southern portion of our City from the risk of wildland (forest) fire.

Background

Starting in 2010, the Government of the Northwest Territories Department of Environment and Natural Resources (ENR) began to conduct assessments for territorial communities in relation to the risk of wildfire. The GNWT-ENR Department completed the “Yellowknife Community Wildfire Protection Plan” in 2012, and this report has become the basis for the City’s wildland fire mitigation strategy.

The 2014 and 2015 forest (or wildland) fire seasons in the Northwest Territories (NWT) were the worst ever recorded in the Territory. The 2017 fire season was difficult elsewhere in Canada (interior of British Columbia and parts of Alberta and Ontario) as well, and new climate models indicate low water levels and minimal precipitation in the years to come in the NWT. Wildland fires are often large and difficult to control or subdue, therefore, work that reduces the risks from wildland fire is important to ensure the safety of our residents.

Based upon recommendations from ENR regarding “fire-smarting” in Yellowknife, this phased approach will continue to deal with the most serious threats first.

Work planned for 2018 will provide for the following:

1. A review of the number of emergency structure protection kits, forestry hoses and pumps, with assistance by officials from the ENR Department, to determine if more kits or equipment are required. Each structural protection kit includes hoses, connections and sprinklers that could be deployed in neighbourhoods threatened by approaching wildland fires (multiple neighbourhoods facing the south); and

CAPITAL FUND - 2018 Capital Projects

2. Brush or tree clearing in specific areas of the city as part of an overall “fire-smarting” project - For more information on fire-smarting, visit; www.firesmartcanada.ca. In 2017, specialized heavy equipment was contracted for one area where work was completed. In 2018 and beyond, City crews will continue to review equipment requirements that may further assist with the work.

If the City of Yellowknife does not continue with this project, there is a risk that those properties near the forested areas of the southern-side of the City may be exposed to wildland fire. While the City has 28 full-time firefighters, mitigating the risks of wildland fires will help the City to deal with any potential future emergency, especially since mutual aid (Town of Hay River, Town of Fort Smith) and any ‘available’ resources (personnel or equipment) from ENR are limited.

Operational Impact

As stated earlier, this strategic investment in infrastructure will allow emergency responders to better assess, handle and control a potential wildland fire approaching the City. Employees from the Community Services Department have performed the majority of the work in 2017, with input from Public Safety and Planning and Development. This will continue in 2018 and, depending on resources, the City may look to employ outside contractors to assist in the work. When possible, brush that has been cleared will be used in other City operations.



CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63006430 Portable Radios

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 141,000 | | | 141,000 |
| Funding | | | | |
| Formula Funding | 141,000 | | | 141,000 |
| <i>Total Funding</i> | 141,000 | | | 141,000 |

Description

Purpose

To replace outdated radios that have reached the end of their useful life cycle and for which parts or servicing won't be available beyond 2017.

Background

The City of Yellowknife Fire Division (YKFD) responds to approximately 5,000 emergency and non-emergency service calls each year. The portable radios are part of a larger system developed to provide a robust and reliable communications system that protects the City's employees, citizens and property.

The portable radios used by the YKFD are often utilized in harsh conditions at emergency scenes and may be subject to extreme cold, heat, water or other fluids that could affect their operational capabilities if they are not designed to handle such conditions.

The radios currently in use are nearing the end of their serviceable life and will no longer have replacement parts available sometime in 2017. This will make repairs extremely difficult in the event that they become damaged or no longer work. It was previously agreed upon that half of the radios required by YKFD would be replaced in the 2017 fiscal year and the remaining radios would be replaced in 2018 in an effort to complete the project. The first order of radios has gone out as a request for proposal (RFP). The total budget for this project, including 2017 and 2018, equals to \$273,100.

Operational Impact

There should be minimal operational impacts as the O&M in place for communications will still be required for repairs or replacement of parts if required after fire or rescue scenes. Given the nature of emergency scenes, equipment is often used to in harsh conditions with demands that are immediate in nature.

CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63007611 Fire Safety Helmets

| Budget | | | | |
|----------------------|--------------|--------------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 9,000 | 9,000 | | 18,000 |
| Funding | | | | |
| Formula Funding | 9,000 | 9,000 | | 18,000 |
| Total Funding | 9,000 | 9,000 | | 18,000 |

Description

Purpose

To replace outdated bunker gear to meet requirements set out in the National Fire Protection Association (NFPA) guidelines for protective gear.

Background

The City of Yellowknife Fire Division (YKFD) budget in O&M has historically not been able to keep up with the required replacement and maintenance of outdated or worn protective gear on an annual basis.

The Office of the Fire Marshall (OFM) of the Government of the Northwest Territories (GNWT) has adopted some standards of the National Fire Protections Association (NFPA) within the regulations of the Fire Protection Act of the Northwest Territories. The NFPA 1851 has a standard (or best practices) on the age that certain equipment must be replaced and that standard is adopted by manufacturers and certified repair agencies for that equipment. If a helmet is older than 10 years as stipulated by the NFPA, they will no longer be repaired by the certified repair agency, which leaves the YKFD short of required equipment.

Operational Impact

The YKFD has an O&M budget to maintain protective gear, however, it is not enough to replace all out-dated bunker gear, helmets, gloves, and provide the necessary repairs or servicing.



CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63007670 FDM Software

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 27,000 | | | 27,000 |
| Funding | | | | |
| Formula Funding | 27,000 | | | 27,000 |
| <i>Total Funding</i> | 27,000 | | | 27,000 |

Description

Purpose

To update our present fire management software from WIN 4 to WIN 6 and appropriately train the personnel that is directly involved to use the new software programs.

Background

The original Fire Department Management System (FDM) was installed in 1998 with only one major upgrade completed when the dispatch services was expanded.

The new version of FDM will allow the Fire Division to collect valuable data and prepare analysis which will allow accurate program planning and deployment of resources as the trends may vary in the future.

Operational Impact

This project will have a minimal impact on the Fire Divisions O&M.

CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63046571 Fire Hall Improvement

| Budget | | | | |
|----------------------|---------------|---------------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 39,000 | 26,000 | | 65,000 |
| Funding | | | | |
| Formula Funding | 39,000 | 26,000 | | 65,000 |
| Total Funding | 39,000 | 26,000 | | 65,000 |

Description

Purpose

To upgrade the fire station to better accommodate the new hires that were made over the past few years and to reseal the apparatus bay floor.

Background

The City's Fire Hall was built in 1989 and opened in 1991. Since that time, there has been one expansion (addition) in 2012 with only minor retrofits to some of the operating systems in the facility.

As to Occupational Health & Safety (OH&S) requirements the Fire division is required to have an appropriate number of washers and dryers to accommodate the number of personnel on staff. At the present time we have one washer and dryer for washing Personal Protective Equipment (PPE) and would like to increase the number to three of each.

Extra parking spaces are also required, and they will need powered receptacles for winter time use (2019).

In order to protect the apparatus bay floor, we normally repaint and seal it every five years.

Operational Impact

Aging infrastructure costs have a higher operational cost over time. This project may have a minimal impact as the Fire Division may assist with the completion of this project.



CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63107615 Additional Firefighters Outfitting Costs

| Budget | | | | |
|----------------------|---------------|------|------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 40,000 | | | 40,000 |
| Funding | | | | |
| Formula Funding | 40,000 | | | 40,000 |
| <i>Total Funding</i> | 40,000 | | | 40,000 |

Description

Purpose

The Yellowknife Fire Division (YKFD) will hire four (4) additional fire fighters for October of 2018. All gear, clothing and equipment will need to meet requirements set out in the National Fire Protection Association (NFPA) guidelines.

Background

During the 2018 budget deliberations, Council recommended that the City of Yellowknife Fire Division (YKFD) hire an additional four (4) fire fighters for October of 2018. The additional personnel will require additional equipment that was not previously budgeted for. Therefore, Council requested that these costs be included as a separate budget item.

These outfitting costs will cover the costs for the following required equipment (list is not exhaustive); bunker gear, safety helmets, station wear, boots, pagers, O&M costs for physicals/medicals, as well as new lockers.

Operational Impact

The YKFD has an O&M budget to maintain protective gear. However, it is not enough to purchase new bunker gear, helmets and gloves for the additionally requested fire fighters and also cover any necessary repairs or servicing throughout the year.

CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63107670 Station Wear / Bunker Gear

| Budget | | | | |
|----------------------|---------------|---------------|---------------|---------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 10,000 | 10,000 | 30,000 | 50,000 |
| Funding | | | | |
| Formula Funding | 10,000 | 10,000 | 30,000 | 50,000 |
| Total Funding | 10,000 | 10,000 | 30,000 | 50,000 |

Description

Purpose

To replace outdated bunker gear to meet requirements set out in the National Fire Protection Association (NFPA) guidelines for protective gear.

Background

The City of Yellowknife Fire Division (YKFD) budget in O&M has historically not been able to keep up with the required replacement and maintenance of outdated or worn protective gear on an annual basis. If bunker gear is destroyed during a fire or hazmat situation, the bunker gear costs are billed out. However, the revenues go back into the general revenues of the City (as the process for most billings) and not back to the YKFD to replace the bunker gear in question.

The Office of the Fire Marshall (OFM) of the Government of the Northwest Territories (GNWT) has adopted some standards of the National Fire Protections Association (NFPA) within the regulations of the Fire Protection Act of the Northwest Territories for the manufacture of bunker gear. The NFPA 1851 has a standard (or best practices) on the age that certain equipment must be replaced and that standard is adopted by manufacturers and certified repair agencies for that equipment. If bunker gear is older than 10 years as stipulated by the NFPA, they will no longer be repaired by the certified repair agency, which leaves the YKFD short of required bunker gear.

Operational Impact

The YKFD has an O&M budget to maintain protective gear, however, it is not enough to replace all out-dated bunker gear, helmets, gloves, and provide the necessary repairs or servicing.



CAPITAL FUND - 2018 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63247600 Fire Hall Emergency Generator

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 100,000 | | | 100,000 |
| Funding | | | | |
| Formula Funding | 100,000 | | | 100,000 |
| Total Funding | 100,000 | | | 100,000 |

Description

Purpose

To replace a 27 year-old emergency stand-by generator for the fire hall that also acts as the secondary Emergency Operations Centre for the City of Yellowknife in the event of a crisis.

Background

When the City of Yellowknife fire hall was built in 1989 it had an emergency stand-by generator installed to ensure there was power for our emergency responders. The generator has worked beyond its useful age and the City's mechanics and private contractors (called in to attempt repairs) recommend that it should be replaced.

The cost for the replacement generator was reviewed by Public Works as they have replaced, installed or repaired the majority of the back-up generators within the City (used at pump houses or lift stations).

Additional financing is required as the new generator must be relocated to the outside of the fire station. 2017 Capital Budget of \$100,000 will be carried over making the total cost for this project \$200,000.

Operational Impact

There will be a positive impact on O&M once the generator has been replaced given the repairs and necessary maintenance required on that machinery.



CAPITAL FUND - 2018 Capital Projects

| Planning & Development Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 | |
|--|--|--------------|--------------|--------------|--------------|--------------|--------------|------|
| Project Description | | Actuals | Budget | Forecast | Budget | Budget | Budget | Note |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | |
| Planning & Development | | | | | | | | |
| 60006571 | Housing & Affordability Strategy/ Eco Housing | 10 | - | 242 | - | - | - | |
| 60006575 | 50th Street. Revitalization & Business Incubation | 15 | 75 | 75 | - | 2,500 | 2,500 | (1) |
| 60016571 | Streetscaping | 69 | - | - | - | - | - | |
| 60036570 | Smart Growth/ Harbour Plan Initiatives | 18 | - | - | - | - | - | |
| 60036571 | Wiley Road Improvement (Smart Growth/Harbour Plan) | 239 | - | 255 | - | - | - | |
| 60036575 | Kam Lake Rd. Improvement(Smart Growth/Harbour) | 1 | - | - | - | - | - | |
| 60046570 | Land Fund Capital Projects | 2,519 | 3,650 | 3,650 | 1,250 | 2,500 | 2,500 | |
| 60066570 | General Plan Review | - | - | - | 100 | - | - | |
| Total Planning & Development Capital Projects | | 2,871 | 3,975 | 4,222 | 1,350 | 5,000 | 5,000 | |

Note

(1) 2019 & 2020 budget will change based on recommendations of Downtown Multi-purpose Building Study.

CAPITAL FUND - 2018 Capital Projects

| Planning & Development Capital Projects | 2018 Budget (\$000's) | Formula Funding (\$000's) |
|---|-----------------------------|---------------------------------|
| Planning & Development | | |
| Planning & Lands | | |
| 60066570 General Plan Review | 100 | 100 |
| Total Planning & Lands | 100 | 100 |
| Total Capital Projects | 100 | 100 |



CAPITAL FUND - 2018 Capital Projects

Community plans are also required to be prepared on the basis of surveys and studies of land use, population growth, the economic base of the municipality and its needs relating to transportation, communication, public services and social services, and must be done in consultation with a professional planner.

Once a community plan is adopted by a municipality, Council is required to amend the zoning by-law for consistency. This requirement is established pursuant to Section 7 (1) and (2) of the Act.

This is an opportune time for the City to review its community plan. Incorporating Council goals around better engagement with stakeholders, downtown revitalization, and community sustainability should and can be included in how our community grows and how we regulate land. The Planning and Development Operational Review recommends a new lens through which we make land development decisions and land administration decisions. These policy questions should all form part of our community plan.

At a territorial and regional level the community plan should include a review of the Greater Land Application and how to move forward with land development within a physically constrained community, identify where there are opportunities, and identify key parcels that should be considered to accommodate community growth. The impact of remediation activities, regulatory reviews of particular land and water issues, as well as facilitating public access to the waterfront for better recreational purposes may also be reviewed as part of Yellowknife's tourism strategy.

A robust engagement strategy which tackles difficult community questions will be part of the project design, giving residents, business and stakeholders varied opportunities to be part of the vision for our community over the next 10-20 years.

Operational Impact

The project will require hands-on project management as well as staff involvement. All City Departments are involved in the development of a community plan. In addition to the creation of the plan, all City Departments will also be involved in the implementation of the plan.



CAPITAL FUND - 2018 Capital Projects

| Public Works & Engineering Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 | |
|--|--|-----------|-----------|-----------|-----------|-----------|-----------|------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget | Note |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | |
| Engineering and Garage | | | | | | | | |
| 70007600 | Survey Equipment & AutoCAD Software | - | - | 17 | - | - | - | |
| PW0002 | Others | - | - | - | - | 1,275 | - | |
| Total Engineering & Garage Capital Projects | | - | - | 17 | - | 1,275 | - | |
| Fleet Replacement | | | | | | | | |
| 71507801 | Annual Fleet Replacement Program | 1,653 | 1,088 | 2,580 | 1,127 | 1,227 | 1,326 | |
| Total Fleet Replacement Capital Projects | | 1,653 | 1,088 | 2,580 | 1,127 | 1,227 | 1,326 | |
| Public Transit | | | | | | | | |
| 72006570 | Transit Upgrades (Federal) | - | 213 | 175 | - | - | - | |
| PT0001 | Transit Stop Upgrades | - | - | - | - | - | 91 | |
| Total Public Transit Capital Projects | | - | 213 | 175 | - | - | 91 | |
| Roads & Sidewalks | | | | | | | | |
| 73006575 | Intersection Upgrades & New Traffic Light Installation | - | 500 | 500 | 500 | - | - | |
| 73076571 | McMeekan Causeway Stabilization | - | - | - | 450 | - | - | |
| 73807611 | Traffic Lights Video Detection Equipment | 249 | 80 | 80 | 80 | 80 | 150 | |
| 75206570 | Drainage Improvements | - | - | - | 50 | 50 | 50 | |
| 76156570 | Annual Paving Program | 2,850 | 2,950 | 3,550 | 3,925 | 3,300 | 3,500 | |
| Total Roads & Sidewalks Capital Projects | | 3,099 | 3,530 | 4,130 | 5,005 | 3,430 | 3,700 | |
| Solid Waste Management | | | | | | | | |
| 80006500 | Site Restoration | 18 | - | 212 | - | - | - | |
| 80006540 | Waste Audit & Long-Term Planning Study | - | 75 | 75 | - | - | - | |
| 80006571 | Baling Facility Upgrades | - | - | 100 | - | - | - | |
| 80036570 | New Landfill/ Landfill Expansion | 3,563 | - | 148 | - | - | - | |
| 80036571 | Transfer Station and Cell Access Improvements | - | - | - | 200 | - | - | |
| 80057670 | Baling Facility- Mechanical Upgrades | - | - | 48 | - | - | - | |
| 80067670 | Weigh out Station at SWF | - | - | - | 300 | - | - | |
| 80086570 | Landfill Fire Control & Risk Reduction Plan | - | - | 25 | - | - | - | |
| 80116570 | Monitoring Well Installation | - | - | - | 200 | - | - | |
| 82047670 | Ban Commercial Cardboard | - | - | 25 | - | - | - | |
| 82056570 | Centralized Composting Program | 226 | 700 | 854 | 150 | - | - | |
| SW0001 | Others | - | - | - | - | 400 | 440 | |
| Total Solid Waste Management Capital Projects | | 3,807 | 775 | 1,487 | 850 | 400 | 440 | |

CAPITAL FUND - 2018 Capital Projects

| Public Works & Engineering Capital Projects | | 2016 | 2017 | 2017 | 2018 | 2019 | 2020 | |
|--|---|---------------|---------------|---------------|---------------|---------------|---------------|------|
| Project ID | Project Description | Actuals | Budget | Forecast | Budget | Budget | Budget | Note |
| | | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | (\$000's) | |
| Community Energy Plan (CEP) | | | | | | | | |
| 70046555 | Sustainability Coordinator | 80 | 100 | 110 | 100 | 100 | 100 | |
| 70047670 | CEP Energy Efficiency Fund | 257 | 1,205 | 3,107 | 300 | 20 | 420 | |
| CP0001 | Biomass Boiler | - | - | - | - | 900 | - | |
| Total Community Energy Plan (CEP) Capital Projects | | 337 | 1,305 | 3,217 | 400 | 1,020 | 520 | |
| Water & Sewer | | | | | | | | |
| 90026540 | Water Source Selection Study | - | 75 | 104 | - | - | - | |
| 90027600 | SCADA Upgrades (Federal) | - | 500 | 500 | - | - | - | |
| 90116570 | Pump Replacement and New Plant | 156 | - | 111 | - | - | - | |
| 90217670 | Pumphouse #2 Capital Upgrades | - | - | - | - | 1,063 | - | |
| 90406570 | PH#4 Right-Hand Only Exit | - | 50 | 50 | - | - | - | |
| 90617610 | Pump Replacement Program | - | - | 33 | - | - | - | |
| 90627670 | PHs & LSs- Water Meter Replacement | - | - | 14 | - | - | - | |
| 90637670 | PHs- New Piping | - | 263 | 263 | - | - | - | |
| 91126570 | Reservoir Inspection & Repairs | - | - | 597 | - | - | - | |
| 93007670 | Backup Power Liftstation Generator Installation | - | - | 90 | - | - | - | |
| 93557670 | Lift Stations Exhaust Fans/Capital Upgrade | - | - | 43 | - | - | - | |
| 94006570 | Lagoon Control Structure Replacement | 2 | - | - | - | - | - | |
| 94406540 | Lagoon Phosphorus Study | - | 50 | 74 | - | - | - | |
| 96156570 | Water & Sewer Infrastructure Replacement | 8,997 | 2,880 | 2,963 | 5,435 | 3,437 | 5,756 | (1) |
| 96156571 | CMP/W&S Federal Funded | 129 | 12,100 | 12,100 | - | - | - | |
| 96156572 | Water & Sewer Replacement - PAVING | 380 | - | - | - | - | - | |
| 97016570 | Submarine Pipeline Inspection | 35 | - | - | 80 | - | 30 | |
| 97036570 | W&S- Service Repairs | 227 | - | - | - | - | - | |
| WS0001 | Federally Funded Capital Projects | - | - | - | 8,176 | 425 | - | |
| WS0002 | Submarine Intake Line Replacement | - | - | - | - | 1,000 | 19,000 | |
| WS0003 | Pumphouse Upgrades | - | - | - | - | - | 136 | |
| WS0004 | Liftstation Upgrades | - | - | - | - | - | 300 | |
| Total Water & Sewer Capital Projects | | 9,926 | 15,918 | 16,942 | 13,691 | 5,925 | 25,222 | |
| Total Public Works & Engineering Capital Projects | | 18,822 | 22,829 | 28,548 | 21,073 | 13,277 | 31,299 | |

Note:

(1) 2016 Actuals included \$4.99M tangible capital assets related to Block 501.



CAPITAL FUND - 2018 Capital Projects

| Public Works & Engineering Capital Projects | 2018 Budget (\$000's) | Formula Funding (\$000's) | Gas Tax Rebate (\$000's) | Other Grants (\$000's) | Community Public Infrastructure (\$000's) | Reserves (\$000's) | User Fees (\$000's) | Land Fund (\$000's) |
|---|-----------------------------|---------------------------------|--------------------------------|------------------------------|---|-----------------------|---------------------------|---------------------------|
| Public Works | | | | | | | | |
| Fleet Management | | | | | | | | |
| 71507801 Annual Fleet Replacement Program | 1,127 | - | - | - | - | 1,127 | - | - |
| Total Fleet Management | 1,127 | - | - | - | - | 1,127 | - | - |
| Roads & Sidewalks | | | | | | | | |
| 73006575 Intersections Widening & New Traffic Lights Installation | 500 | 399 | - | 101 | - | - | - | - |
| 73076571 McMeekan Causeway Stabilization | 450 | 450 | - | - | - | - | - | - |
| 73807611 Traffic Lights Video Detection Equipment | 80 | 80 | - | - | - | - | - | - |
| 75206570 Drainage Improvements | 50 | 50 | - | - | - | - | - | - |
| 76156570 Annual Paving Program | 3,925 | 465 | - | - | 2,210 | - | - | 1,250 |
| Total Roads & Sidewalks | 5,005 | 1,444 | - | 101 | 2,210 | - | - | 1,250 |
| Solid Waste Management | | | | | | | | |
| 80036571 Transfer Station and Cell Access Improvements | 200 | 124 | 76 | - | - | - | - | - |
| 80067670 Weigh Out Station at SWF | 300 | 300 | - | - | - | - | - | - |
| 80116570 Monitoring Well Installation | 200 | 200 | - | - | - | - | - | - |
| 82056570 Centralized Composting Program | 150 | 150 | - | - | - | - | - | - |
| Total Solid Waste Management | 850 | 774 | 76 | - | - | - | - | - |
| Community Energy Plan (CEP) Initiatives | | | | | | | | |
| 70047670 CEP Energy Efficiency Fund | 400 | 400 | - | - | - | - | - | - |
| Total Community Energy Plan (CEP) Initiatives | 400 | 400 | - | - | - | - | - | - |
| Water & Sewer | | | | | | | | |
| 96156570 Water& Sewer Infrastructure Replacement | 5,435 | - | 5,435 | - | - | - | - | - |
| 97016570 Submarine Pipeline Inspection | 80 | 80 | - | - | - | - | - | - |
| WS0001 Federally Funded Capital Projects | 8,176 | 212 | - | 6,132 | - | - | 1,832 | - |
| Total Water & Sewer | 13,691 | 292 | 5,435 | 6,132 | - | - | 1,832 | - |
| Total Capital Projects | 21,073 | 2,910 | 5,511 | 6,233 | 2,210 | 1,127 | 1,832 | 1,250 |

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Fleet Management
Project 71507801 Annual Fleet Replacement Program

| Budget | | | | |
|-------------------------------|------------------|------------------|------------------|------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| 1153-15 MED Explorer | 64,374 | | | 64,374 |
| 1155-05 one ton pick up | 64,747 | | | 64,747 |
| 1156-05 1/2 Ton pick up | 35,287 | | | 35,287 |
| 1158-05 Medium Duty | 91,568 | | | 91,568 |
| 1165-06 3/4 ton pick up | 64,747 | | | 64,747 |
| 2034-11 Grader | 320,811 | | | 320,811 |
| 2126-04 Vac Truck | 431,989 | | | 431,989 |
| T020-01 Trailer | 3,440 | | | 3,440 |
| T018-98 Tilt Trailer | 6,167 | | | 6,167 |
| T031-04 Medium Trailer + Pump | 43,400 | | | 43,400 |
| Others | | 1,226,667 | 1,326,156 | 2,552,823 |
| <i>Total Expenditures</i> | 1,126,530 | 1,226,667 | 1,326,156 | 3,679,353 |
| Funding | | | | |
| Reserves | 1,126,530 | 1,226,667 | 1,326,156 | 3,679,353 |
| <i>Total Funding</i> | 1,126,530 | 1,226,667 | 1,326,156 | 3,679,353 |

Description

Purpose

To continue replacing fleet units according to the City's Fleet Management Practices.

Background

The mobile equipment fleet has a replacement value of \$16.2 million and must be maintained to meet the service levels expected by residents. The City has a fleet of 148 heavy-duty and mobile equipment that support Fire and Ambulance, Road Maintenance, Water and Sewer Maintenance, Solid Waste, Parks, Arenas and Administrative functions, as well as 26 stationary engines for emergency power generation and fire pumping capacity.

Fleet management practices allow the City to properly budget and plan the replacement of all fleet vehicles on a regular basis. These policies and practices help to mitigate risk and repair costs associated with aged vehicles. As vehicles and equipment get older, the operation and maintenance costs of those vehicles increase, with limited resources available for maintenance and repairs. These vehicles should be replaced on a scheduled basis to reduce 'down time' due to repairs or failures, which could negatively impact the delivery of City services such as snow removal or water/sewer repairs.



Summary of Units:

Small Equipment - 30 units

Small equipment includes the miscellaneous equipment required by City departments to do their work. Included are: riding mowers, snowmobiles

(Municipal Enforcement Division), All-Terrain Vehicles (firefighters), light trailers (Community Services and Public Works), line-painters, crack sealing equipment, trailer mounted water pumps, and ground thawing equipment. Equipment in this group has a varied life expectancy and replacement cost.

Light-Duty Trucks - 41 units

According to the City of Yellowknife Fleet Management Practices, these vehicles should be reviewed for replacement after seven years and replaced after ten years. We currently have 41 pickup trucks and vans in the fleet. The ages vary from one year to more than ten years.

Medium-Duty Trucks - 8 units

According to the City of Yellowknife Fleet Management Practices, these vehicles should be reviewed for replacement after six years and replaced after ten years. The City currently has eight medium-duty trucks in the fleet.

Heavy Trucks - 15 units

The 15 heavy-duty trucks and trailers include: trailers, tandem tractors, and dump trucks. The heavy trucks are to be replaced every twelve years. Trucks are used for City projects and snow removal in the winter. The cost of operating these vehicles rather than hiring contractors is approximately half. Each truck is operated for approximately 1,000 hours/year, saving the City \$45,000/year for each truck it operates rather than contracting out. Trailers are reviewed when aged out. If practical, the trailer is refurbished and returned to service. The dump trailer (due to more use and normal wear and tear) is replaced when aged out.

Heavy Equipment - 10 units

The heavy equipment is to be replaced every 12 years, except specialty equipment, which is explained under that heading. Each piece of heavy equipment is operated for approximately 1,000 hours/year, saving the City \$45,000/year for each piece of heavy equipment it operates. As heavy equipment gets older, increased maintenance and repairs are required, such as replacing motors and transmissions at a cost of \$30,000 and \$20,000 respectively. Breakdowns inevitably occur when equipment is needed, resulting in a cost to the City to engage contractors.

Mobile Tractors - 9 units

This includes Zambonis, skid steers, compactors, and forklifts. The anticipated life span of these units is ten years.

Municipal Enforcement Vehicles - 4 units

These are to be replaced every four years or 100,000 km. Due to high usage, Municipal Enforcement vehicles require a high amount of maintenance (nearly five times that of similar vehicles in the fleet). For this reason, it is important to maintain the replacement of these vehicles. One Municipal Enforcement vehicle must be replaced yearly to maintain the City standards and in order to reduce O&M costs and labor requirements.

CAPITAL FUND - 2018 Capital Projects

Emergency Vehicles – 10 units

This includes fire trucks, ambulances and water trucks. Due to increased demand, the replacement life cycle standard has been re-evaluated by Public Works and the Fire Department. The standard for replacement was reduced from 30 years to 20 years for most firefighting equipment. Ambulances are now replaced on a 12-year cycle due to the high amount of use and reliability issues with ambulances as they get older. We have three ambulances and one is replaced every four years. The newest is placed on “first out the door” service and the oldest is surplus.

Seasonal Vehicles -- 18 Units

Once a vehicle is removed from its primary use, such as a light duty pick-up truck, it is placed into a lower priority use, such as vehicle used for summer student work activities. If the repair costs of a summer vehicle exceed an estimated cost of \$500, the vehicle may be removed from service at the discretion of the Director of Public Works & Engineering.

Stationary Engines – 26 Units

Our fleet mechanics also maintain and service 26 stationary engines. These include standby generators for City water and sewer supply and City facilities (City Hall, Fire and Ambulance Division, Multiplex/Fieldhouse). The stationary engines provide standby electricity for water and sewer services in times of power outage or natural disaster. The estimated value of the stationary engines is approximately \$4.8 million. Many of the existing engines are older: five are over 30 years old, 12 are over 20 years old, 14 are over 10 years old, and only seven are under 10 years old. Parts are often unavailable for engines over 20 years old. Although these engines get little use, even small breakdowns may lead to lengthy repairs.

The Mobile Equipment Reserve Fund (MERF) is not used to replace stationary engines even though the Fleet resources are used to maintain them. It is recommended to departmental managers that the older stationary engines be replaced. Fleet-wide, it is recommended that one engine a year be replaced until all stationary engines are less than 20 years old.

Specialty Equipment – 9 Units

These pieces of equipment fall into their own category due to their level of importance to City operations. They are graders, street sweepers and vactor trucks. These are replaced more frequently because vital City operations would suffer due to prolonged breakdowns or repairs, which would have a direct impact on residents, vehicular traffic, emergency vehicle routes and the City's transit system.

Operational Impact

The total O/M costs of the units to be replaced are shown in the attached table. (Gallery 1)



Gallery

Gallery 1

| 2018 Fleet Replacement Schedule | | | | | | | | | |
|--|-----------------------|-------|--------|---------------|---------------------|-------------------|-------|------------|---|
| Unit #: | Description: | Year: | Class: | Replace Year: | Estimated Budget: | O&M To Date: | Hours | Kilometres | End Use: |
| 1153-15 | MED Explorer | 2015 | 7 | 2018 | 64,374.00 | 20,454.00 | 5,978 | 93,463 | Repurposed to Planning & Development |
| 1155-05 | one ton pick up | 2005 | 3 | 2015 | 64,747.00 | 9,635.00 | 6,059 | 81,083 | Deferred from 2015 budget. |
| 1156-05 | half ton pick up | 2005 | 2 | 2015 | 35,287.00 | 5,018.63 | 8,540 | 52,124 | Deferred from 2015 budget. |
| 1158-05 | Medium duty | 2005 | 12 (3) | 2015 | 91,568.00 | 6,476.39 | 1,971 | 18,432 | Special case due to type of engine. |
| 1165-06 | ¾ ton pick up | 2006 | 2 | 2016 | 64,747.00 | 12,542.33 | 7,081 | 29,798 | Deferred from 2016 budget. |
| 2034-11 | Grader | 2011 | 11 | 2017 | 320,811.00 | 24,720.89 | 4,450 | N/A | Trade-in. |
| 2126-04 | Vac truck | 2004 | 11 | 2017 | 431,989.00 | 125,043.43 | 8,187 | 82,566 | Disposal, major failures. |
| T020-01 | Trailer | 2001 | 1 | 2017 | 3,440.00 | 1,859.97 | N/A | N/A | From 2017 Fleet Report & Replacement List |
| T018-98 | Tilt Trailer | 1998 | 1 | 2017 | 6,167.00 | 935.17 | N/A | N/A | From 2017 Fleet Report & Replacement List |
| T031-04 | Medium trailer + pump | 2004 | 1 | 2017 | 43,400.00 | 1,209.96 | N/A | N/A | From 2017 Fleet Report & Replacement List |
| | | | | | 1,126,530.00 | 207,895.77 | | | |

City of Yellowknife Fleet Replacement Cycle Guidelines Summary:

| Class | Description: | Examples: | Life Cycle: |
|-------|-----------------------|--|--|
| 1 | Small Equipment | Riding mower, ground thaw, line painter, snowmobiles, ATVs, etc. | Different replacement cycles dependant on use. |
| 2 | Light Duty | Cars, vans, half ton trucks, 3/4 ton trucks. | Review after 7 years, replace after 10 yrs. then repurposed for seasonal use. |
| 3 | Medium Duty | One ton to 5 ton trucks, includes Zambonis. | Review after 6 years or 100,000 kms, replace after 10 years. |
| 4 | Heavy Duty | Trucks/ Trailers used for sanding, snow removal, waste removal, etc. | Review after 6 years or 6000 hrs, replace after 12 years. |
| 5 | Heavy Equipment | Loaders, dozers, excavators, backhoes, plows, etc. | Review after 8 years or 10,000 hrs, replace after 12 years. |
| 6 | Mobile Tractors | Heavy rollers, sander bodies, steamers, etc. | Review after 8 years or 10,000 hrs, replace after 10 years. |
| 7 | Municipal Enforcement | Cars, trucks, SUV ("sport utility vehicles"). | Replace after 4 years or 100,000 kms. |
| 8 | Emergency Equipment | Fire trucks, tankers, aerial ladder, ambulance, etc. | Replaced based on industry standards and NFPA requirements. |
| 9 | Seasonal Vehicles | Any vehicle replaced but still serviceable, summer trucks, etc. | Not replaced, removed disposed of if repair costs exceed \$500. |
| 10 | Stationary Engines | Used to pump water, sewage, produce emergency power. | Review after 15 years, replacement after 20 years. |
| 11 | Critical Equipment | Graders, street sweepers, vector trucks, etc. | Graders replaced every 6 years with expected trade-in of \$150K. Vector trucks reviewed after 6 years, replaced after 12 years. Street sweepers reviewed after 6 years, replaced after 12 years. |
| 12 | Thawing Equipment | 5 Ton trucks equipped with boiler/steamer, ground thaw equip. | Cab & chassis reviewed after 15 yrs. replaced after 20 yrs. (boilers and steamers replaced under O&M budget) |

Note: Vehicles that are repurposed for seasonal use will remain with the fleet for approximately 20 years (total use).

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Roads & Sidewalks
Project 73006575 Intersections Widening & New Traffic Light Installation

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 500,000 | | | 500,000 |
| Funding | | | | |
| Formula Funding | 399,000 | | | 399,000 |
| Other Grants | 101,000 | | | 101,000 |
| <i>Total Funding</i> | 500,000 | | | 500,000 |

Description

Purpose

To complete road and intersection improvements at the 44 Street - Franklin Avenue intersection, including the installation of a signalized intersection to better accommodate the flow of traffic in the area.

Background

Traffic at the intersection of 44 Street and Franklin Avenue (Gallery 1) has increased over the last few years due to increased development in the Area.

In 2011 and 2015, traffic studies were conducted for the intersection as a result of the Twin Pine Hill proposed development. The results of this study indicated that while the intersection of 44 Street and Franklin Avenue did not meet the Transportation Association of Canada (TAC) requirements for a signalized intersection, it should be monitored due to the increase in side street traffic entering the intersection from 44 Street.

This intersection forms part of Yellowknife Transit's Routes A, B and C. During peak periods, Route A, which is the only route that turns left from 44 Street onto Franklin Avenue, can experience up to a 5 minute delay due to traffic volumes on Franklin Avenue.

In addition to increases in vehicular traffic at this intersection, there has been an increase in pedestrian traffic due to the new development. The current signalized crosswalk at 44 Street and Franklin Avenue was installed using the best equipment available for the site conditions. However it is difficult to see due to the volume of street signs and overhead power lines in the area.



Installation of traffic lights at the intersection will include:

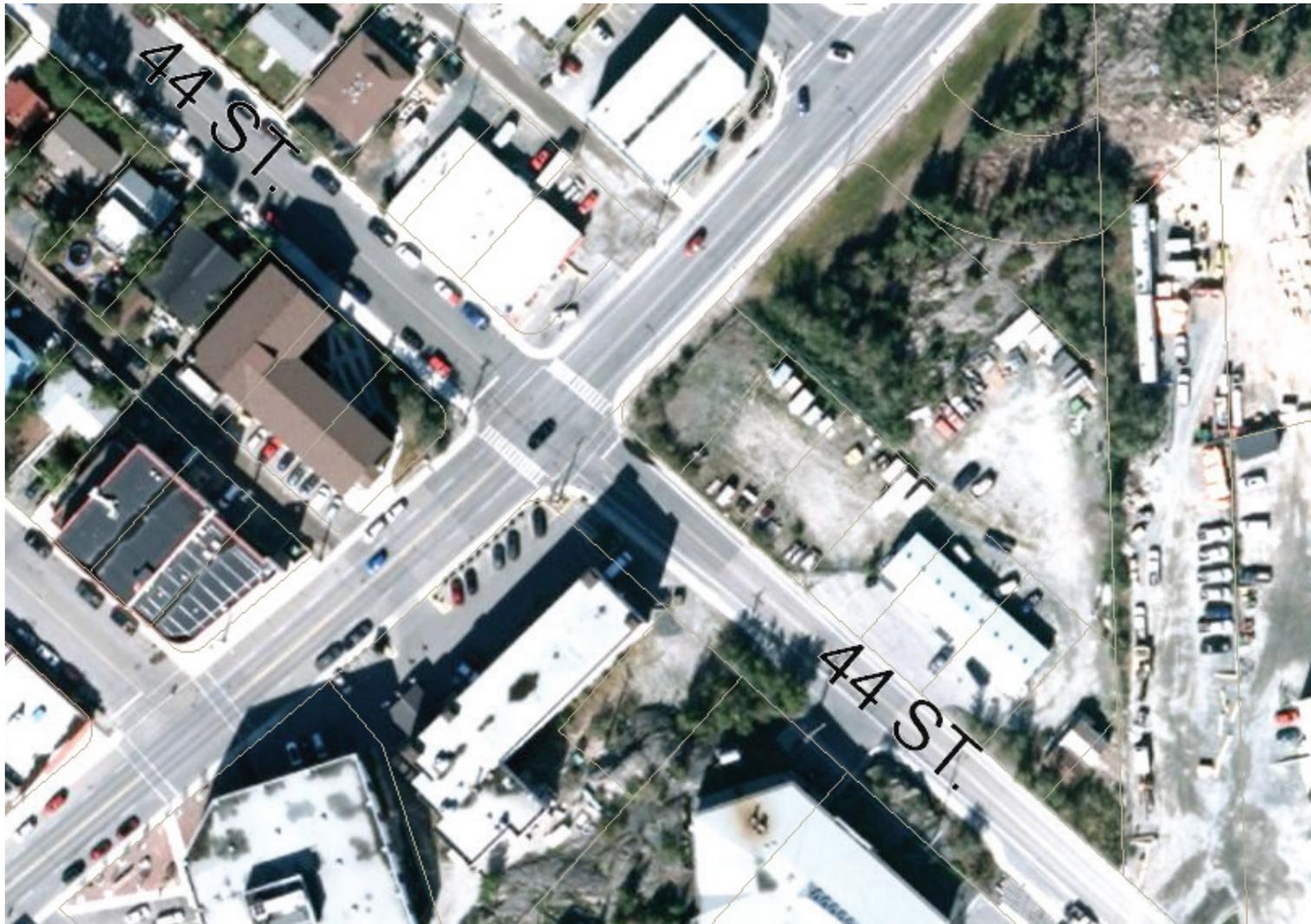
- Moving of power lines at the intersection from overhead to underground
- Improvements to the intersection approach from 44 Street by St. Patrick High School
- Installation of traffic lights with communication and video detection equipment

Operational Impact

The project will increase the number of traffic controlled intersections to 20, which is approximately a 6% increase in the operational budget for traffic light maintenance as well as traffic light power costs.

Gallery

Gallery 2; Aerial photo of the 44 Street/Franklin Avenue Intersection. The New Twin Pine Hill development is to the right



Gallery

Gallery 1; Showing erosion control methods failing, causing abutment destabilization



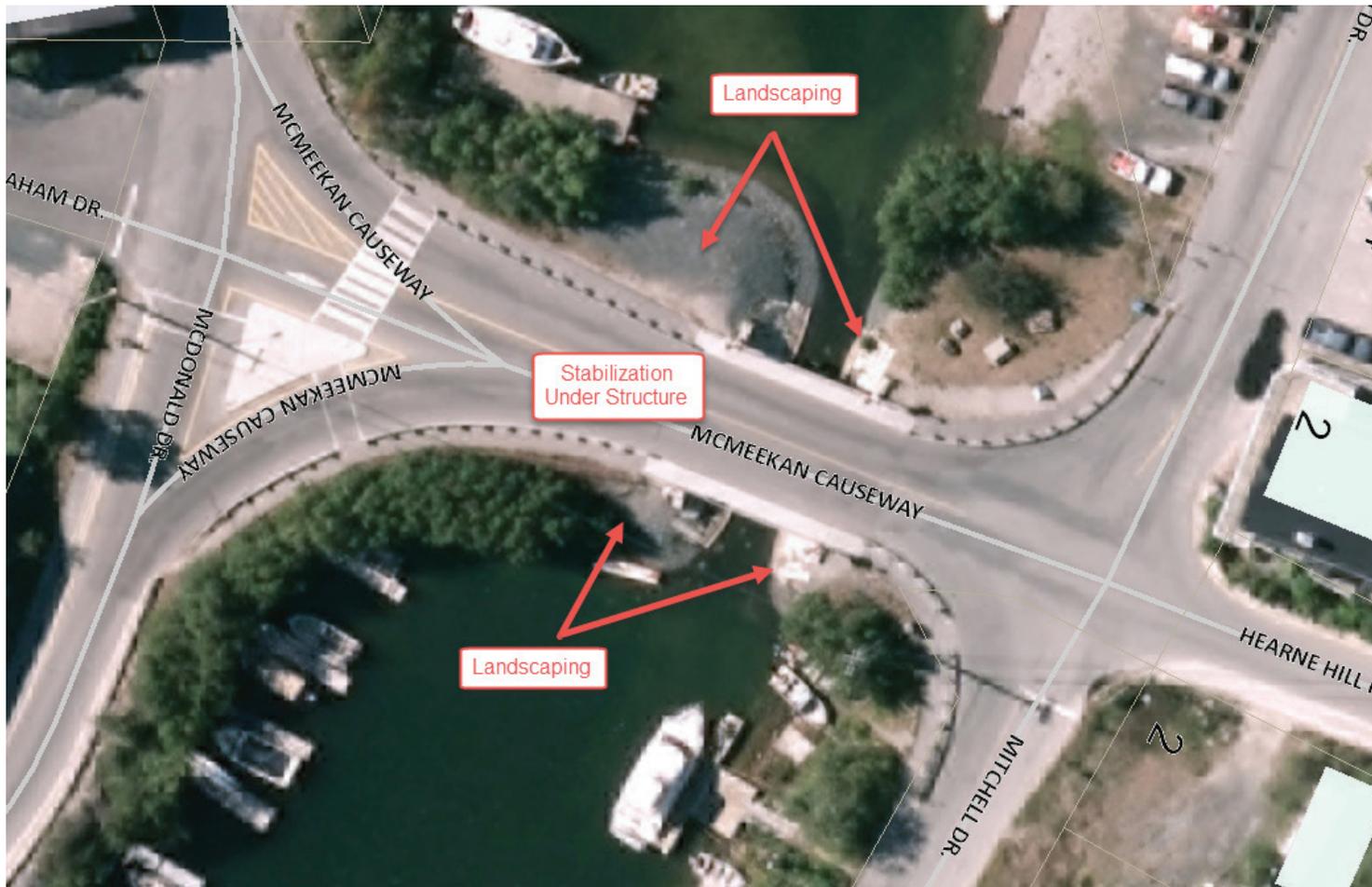
Gallery

Gallery 2; Showing erosion control methods failling, causing abutment destabilization



Gallery

Gallery 3; Aerial photo of the McMeekan Causeway and areas of note



CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Roads & Sidewalks
Project 73807611 Traffic Lights Video Detection Equipment

| Budget | | | | |
|----------------------|---------------|---------------|----------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 80,000 | 80,000 | 150,000 | 310,000 |
| Funding | | | | |
| Formula Funding | 80,000 | 80,000 | 150,000 | 310,000 |
| Total Funding | 80,000 | 80,000 | 150,000 | 310,000 |

Description

Purpose

To improve vehicle detection at traffic light intersections from failed in-ground wire loops to video detection equipment.

Background

There are 19 intersections which rely on vehicle detection equipment for proper functioning of the traffic lights. Video detection equipment (Gallery 1) is the new standard in detection and data collection and is easy to install and program. This equipment has a proven field detection accuracy of 98% according to the manufacturer’s specifications; this also includes motorcycles and bicycles. The cameras can also capture traffic data, such as traffic counts of cars, trucks and pedestrians, as well as vehicle speeds. However, vehicle speed data can only be used for design methods and not as a method of speed enforcement.

Most intersections would require four cameras, one for each direction of traffic. Intersections along Franklin Avenue use vehicle detection for cross streets only, which would require the installation of only two cameras per intersection. Additional cameras could be installed along Franklin Avenue for data collection.

An investment of \$80,000 in 2018 and 2019 and \$150,000 in 2020 would allow cameras to be installed at most of the intersections.

See Gallery 2 for anticipated remaining investments, not in any order of priority.

Operational Impact

The video detection will collect data such as traffic counts, which would otherwise require a person counting vehicles, which is used for timing and coordination patterns.

Gallery

Gallery 1; Example of a video detection camera



Gallery

Gallery 2

| | | | |
|--------------------|--------|-------------------------------|----------------|
| 1. 48 Street | 20,000 | 2. 49 Street | 20,000 |
| 3. 50 Street | 20,000 | 4. 51 Street | 20,000 |
| 5. 52 Street | 20,000 | 6. 53 Street | 20,000 |
| 7. 54 Street | 20,000 | 8. 57 Street | 20,000 |
| 9. Gitzel Street | 20,000 | 10. Franklin/Old Airport Road | 50,000 |
| 11. Woolgar Avenue | 40,000 | 12. Range Lake Rd | 50,000 |
| 13. Byrne Road | 40,000 | | |
| TOTAL | | | 440,000 |

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Roads & Sidewalks
Project 75206570 Drainage Improvements

| Budget | | | | |
|----------------------|---------------|---------------|---------------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 50,000 | 50,000 | 50,000 | 150,000 |
| Funding | | | | |
| Formula Funding | 50,000 | 50,000 | 50,000 | 150,000 |
| <i>Total Funding</i> | 50,000 | 50,000 | 50,000 | 150,000 |

Description

Purpose

To complete various improvements to drainage areas and storm water infrastructure in multiple areas of the City.

Background

Water from the spring freshet can cause serious problems, including erosion of roads and flooding of properties. A washed-out road creates a hazard to residents since there is no safe way to get off a property. As well, service and emergency vehicles cannot access a property while flooding is occurring.

The proposed project could consist of ditch restoration or installation. It could include underground storm sewer repairs, replacements or installations ranging from manholes, catch basins or outfalls to receiving water bodies. Since the capital budget for such activities is used on a priority basis, it could be consumed by one large project or several smaller ones.

2018 Work:

- Walking path between Mandeville Drive and England Crescent.
- Greenspace between Rivett and Stevens.
- Improvements behind 29 Melville Drive.
- Kam Lake Road ditching. (i.e. Ron's Auto)



Past highlights:

- Low area affecting remaining unsold lot in Grace Lake.
- Culvert on Curry Drive that was causing flooding of private property.
- Large section of Franklin Avenue near Bretzlaf Drive.
- Ditching and culvert work near Fibreglass North in Kam Lake.
- Ponding and severe road deformation in Forrest Park.

Operational Impact

There are minimal operational impacts as this work is completed by City staff. Most of this capital budget expenditure is for the purchasing of materials for the improvements, or hiring contractors where required.

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Roads & Sidewalks
Project 76156570 Annual Paving Program

| | Budget | | | |
|---|------------------|------------------|------------------|-------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| Northland -Phase 1 | 650,000 | | | 650,000 |
| Hall Crescent -Phase 2 | 850,000 | | | 850,000 |
| Grace Lake North | 850,000 | | | 850,000 |
| Franklin Avenue | 1,175,000 | | | 1,175,000 |
| Engle - Phase 1 | 400,000 | | | 400,000 |
| Otto Drive | | 700,000 | | 700,000 |
| School Draw Avenue | | 800,000 | | 800,000 |
| Hall Crescent -Phase 3 | | 800,000 | | 800,000 |
| Cemetery Road | | 350,000 | | 350,000 |
| Northlands -Phase 2 | | 650,000 | | 650,000 |
| 45 Street (49 Ave to Franklin) | | | 700,000 | 700,000 |
| 47 Street (49 Ave to 51 Ave) | | | 1,281,000 | 1,281,000 |
| Hwy 4 -Sidewalk (Conditional) | | | 650,000 | 650,000 |
| Franklin/Old Airport Road Overlays | | | 869,000 | 869,000 |
| <i>Total Expenditures</i> | 3,925,000 | 3,300,000 | 3,500,000 | 10,725,000 |
| Funding | | | | |
| Formula Funding | 465,000 | 990,000 | 1,290,000 | 2,745,000 |
| Gas Tax Rebate | | 100,000 | | 100,000 |
| Community Public Infrastructure Funding | 2,210,000 | 2,210,000 | 2,210,000 | 6,630,000 |
| Land Fund | 1,250,000 | | | 1,250,000 |
| <i>Total Funding</i> | 3,925,000 | 3,300,000 | 3,500,000 | 10,725,000 |

Description

Purpose
 To repair or replace asphalt, concrete and other appurtenances on city streets as required, including storm water infrastructure (Gallery 1 & 2). This project also installs concrete, asphalt and landscaping (if specified) on newly developed streets in the city.



Background

The typical design life of pavement is generally between 20 and 25 years, but will vary significantly due to various factors such as traffic volumes, vehicle types, geotechnical conditions, construction practices, and adequate maintenance. The design life of 20 to 25 years applies to most city streets, except for the Kam Lake Industrial Subdivision (Gallery 3), where the roads were historically paved with no base reconstruction. This construction practice has changed and all roads in Yellowknife now receive the same base preparation prior to paving.

The construction of new roads generally coincides with the development of new subdivisions. The replacement of roads generally follows the replacement of water and sewer infrastructure. Otherwise, paving is scheduled for reconstruction when a road is in poor condition and may be a danger to the public or when maintenance and repairs are no longer cost-effective. The paving of roads may be done in the same year as water and sewer infrastructure replacement or may be delayed a year or two to allow for settlement, depending on the ground conditions.

As streets are reconstructed, the City works with Northland Utilities Limited to ensure that street lighting levels are evaluated and increased to comply with national standards. Additional underground ductwork is being coordinated in this work with Northland Utilities Ltd., NorthwesTel Inc. and NorthwesTel Cable Inc. to answer present and future needs.

As new areas of Yellowknife are developed and constructed, the road asphalt and concrete infrastructure must also be installed. There will be three new areas of the City that require new road construction (Gallery 4), they are:

- Northlands Area, which includes Stinson Rd, Fairchild Dr, Bellanca Ave, Norseman Dr, Catalina Dr, and Anson Dr, scheduled to be done in 2018.
- Hall Crescent, which will be done in four paving phases with the first 3 phases done in 2017, 2018 and 2019, and includes Gibbon Dr.
- Grace Lake North scheduled to be done in 2018.
- Engle Business District, which includes Eagle Dr, Osprey Rd and Falcon Rd, scheduled to be done in 2018.

Operational Impact

Aging infrastructure has an operational cost somewhere between 2-4% of replacement costs. By replacing this infrastructure, it allows the department to focus operational and maintenance activities on other roads, sidewalks and storm water appurtenances in the City.

However, there will be increased operational costs due to the City taking over the section of Highway #4 from the GNWT. These costs are estimated to be approximately \$55,000 annually for various maintenance activities as well as \$60,000 in added equipment (i.e. plow wing for grader) necessary for snow removal.

This project will also have an impact on other City departments as there are landscaping requirements for the Franklin Avenue upgrades for both the medians on the roadway and the area by the Fire Hall.

Gallery

Gallery 1; Example of failing concrete and storm infrastructure



Gallery

Gallery 2; Example of failling concrete and storm infrastructure



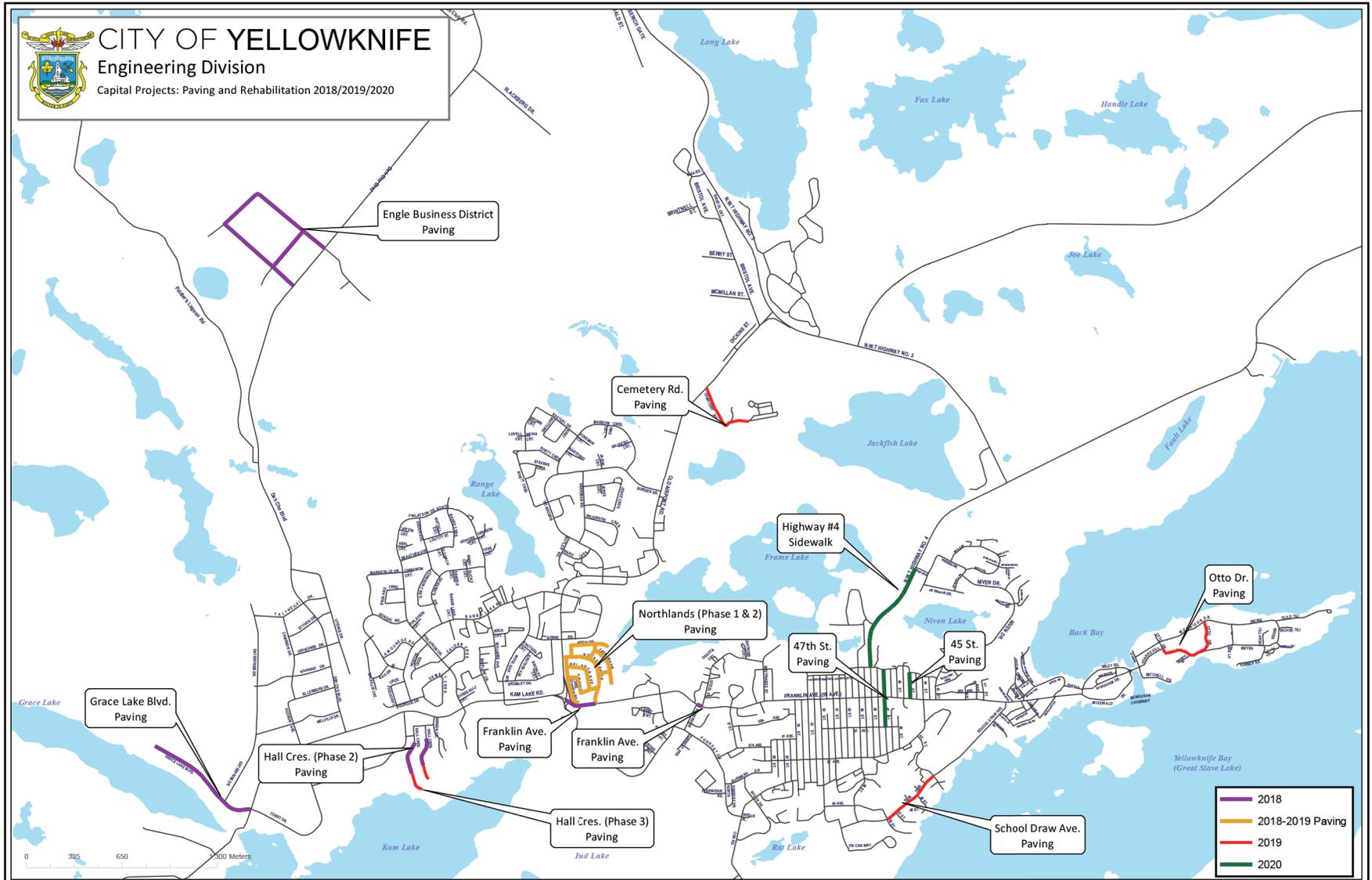
Gallery

Gallery 3; Paving contractor on Utsingi Drive in Kam Lake



Gallery

Gallery 4



CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Solid Waste
Project 80036571 Transfer Station and Cell Access Improvements

| Budget | | | | |
|----------------------|---------|------|------|---------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 200,000 | | | 200,000 |
| Funding | | | | |
| Formula Funding | 124,000 | | | 124,000 |
| Gas Tax Rebate | 76,000 | | | 76,000 |
| <i>Total Funding</i> | 200,000 | | | 200,000 |

Description

Purpose

To increase the number of transfer station bins that are available for the public to dump waste into and improve the access to the Cell A & B area of the Solid Waste Facility (SWF), including the installation of an automatic gate. These improvements will make the SWF safer for the public, our employees, and the neighbouring quarry operations.

Background

In recent years, construction and demolition (C & D) waste that has been brought to the SWF has been deposited in the old SWF landfill cell whereas baled Municipal Solid Waste (MSW) has been sent to landfill Cell A. Currently, MSW that is brought in by private citizens or companies can be deposited in transfer bins and that waste is then baled and brought to Cell A by City staff. People with C & D waste however, are directed to drop their waste off directly in the designated area of the old landfill cell. As the old SWF landfill cell is reaching its final grade, both the MSW and the C & D waste will now need to be deposited in Cells A & B. This presents a couple of concerns for the SWF.

The first and foremost concern is safety. Cells A & B are located in the adjacent quarry which still has quarry operations ongoing. Sending private vehicles over to the Cells through an operating quarry is a safety issue for everyone involved. In order to reduce the safety concern and ensure that only authorized personnel are traveling through the quarry, more transfer bin stations will be installed adjacent to the current stations. These new stations will allow all manner of waste to be dumped in designated bins which can then be delivered to the new cells by City staff.



The second concern is that the current access road to Cells A & B does not flow through the SWF. The intent, when Cell B was designed, was that a new access road would also be built that would force traffic to flow through the SWF (over the weight scale) in order to access the cells, instead of being able to bypass the facility. Work on this access can be completed by City staff however, additional items such as fencing alongside the road and an automated gate to control access to the landfill cells are required for the safety of everyone involved. The new access road will eliminate the possibility of vehicles driving directly to Cells A & B without checking in at the SWF gatehouse. Together, these two projects will allow a smooth transition to full use of the newest landfill cells while significantly reducing the safety hazards that are involved.

Operational Impact

There will be no operation expenses incurred as a result of this project other than project management of the installation.

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Solid Waste
Project 80067670 Weigh Out Station at SWF

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 300,000 | | | 300,000 |
| Funding | | | | |
| Formula Funding | 300,000 | | | 300,000 |
| Total Funding | 300,000 | | | 300,000 |

Description

Purpose

To install a weigh out scale at the Solid Waste Facility (SWF) in order to improve the operations and safety at the facility, ensure that the fees are charged in a fair manner and accurately reflect the waste being dropped off, and improve our record keeping.

Background

At the Solid Waste Facility, incoming traffic crosses a single scale at the gatehouse, where payment activities are processed. This creates several issues for both residential and commercial users.

Residents are charged a flat fee of \$10.00 per load of residential waste, regardless of the volume of their waste. This fee structure results in residential users maximizing the size of their loads to get the best deal, resulting in the facility not charging residential customers equitably, and full tipping fees not being collected. Furthermore, the scale does not record the weight of incoming residential waste, resulting in inaccurate record keeping for total landfill volumes. Finally, any salvaged items that leave the site are not recorded as being diverted from the landfill. This is a very significant measurement that is being missed.

Commercial users are required to have an account with the tare weight of their vehicles stored in our gatehouse software. The tare weight is dependent on a number of factors including fuel level, number of passengers and miscellaneous items onboard. Once the commercial users are in our system, they are charged by their gross vehicle weight, compared to their stored tare weight, as per the material being brought in. This causes inaccuracies with fees as it is very easy for customers to make their stored tare weight on the heavy side, which reduces the reading for the actual weight of materials being brought in. In the event that a tare weight is not stored or needs to be updated in our system, we require that the customer weigh in, dump their waste and then weigh out. This causes heavy traffic congestion due to the single direction scale since vehicles must either drive in a loop around the scale or enter the scale in the wrong direction.



The installation of a second scale will address these challenges and correct our payment structure to reflect the intent of the City's user pay system. With a second scale, the facility would be able to charge residents for actual waste volumes, thus creating equity among customers.

Operational Impact

The weigh out scale will have little impact on operations. There will be a slight increase in vehicles lined up during busy times as vehicles will need to weigh in and out of the facility, however, the process should be slightly quicker for weighing the vehicles, which should help offset this.

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Solid Waste
Project 80116570 Monitoring Well Installation

| Budget | | | | |
|----------------------|----------------|------|------|----------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | 200,000 | | | 200,000 |
| Funding | | | | |
| Formula Funding | 200,000 | | | 200,000 |
| <i>Total Funding</i> | 200,000 | | | 200,000 |

Description

Purpose

To install monitoring wells around the Solid Waste Facility in order to provide adequate monitoring of the site, as required by the Mackenzie Valley Land and Water Board (MVLWB) as part of the City of Yellowknife's Water Licence.

Background

As part of the City of Yellowknife's Water Licence from the MVLWB, the City is required to maintain a monitoring program around the Solid Waste Facility to ensure that no contaminants are leaching off-site. The MVLWB requires that the City install additional monitoring wells in order to sufficiently monitor the groundwater around the SWF site.

Operational Impact

The additional monitoring wells will have a small impact on operations. The wells will need to be sampled twice a year as part of the Landfill Groundwater Monitoring Program required under the City's Water Licence. This requires additional staff time to perform the sampling and laboratory costs for the analyses.



CAPITAL FUND - 2018 Capital Projects

Operational Impact

Changing the composting operation to a permanent program will increase the overall O&M for the Solid Waste Facility. Time will be required to maintain the compost piles, which includes turning the piles, mixing feedstocks upon arrival at the facility and adding moisture to composting material. There will also be maintenance associated with the fencing, pond liner system and compost pad.

However, diverting waste from the main waste stream will reduce the amount of waste being baled and added to the landfill site, which will in turn reduce the amount of staff time needed for baling activities. The overall impact on operations should be minimal as work required for composting will balance with less time required for baling waste.

Gallery

Gallery 1; Overall anticipated costs and phases

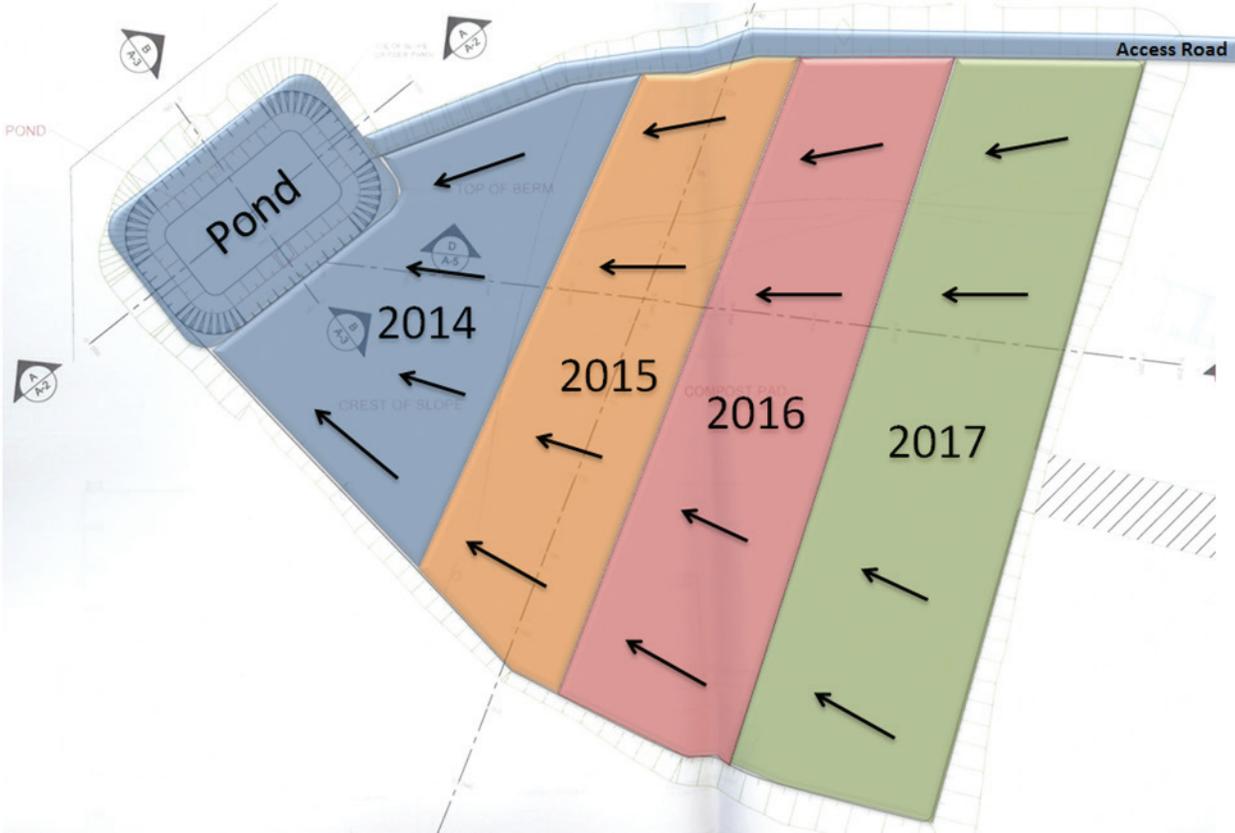
| | | |
|----------------------------|-----------------------|---|
| 2014 Expenditures | \$1,521,000 | Retention pond and pad construction, city wide black bins, and Range Lake green bins. |
| 2015 Expenditures | \$482,989.78 | Pad extension and Niven/Old Town green bins. |
| 2016 Budget | \$750,000 | Pad extension and Frame Lake green bins. |
| 2017 Budget | \$700,000 | Pad extension and Downtown green bins. |
| 2018 Budget | \$150,000 | Multi-family residential and ICI sector collection. |
| Total Project Costs | \$3,603,989.78 | |



Gallery

Gallery 2; Planned phasing of the project

The Compost Site



CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Community Energy Plan
Project 70047670 CEP Energy Efficiency Fund

| Budget | | | | |
|----------------------------|----------------|----------------|----------------|------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| Interior LED Lighting | 100,000 | | | 100,000 |
| Sustainability Coordinator | 100,000 | 100,000 | 100,000 | 300,000 |
| Waste Strategic Plan | 50,000 | | | 50,000 |
| Community Outreach | 20,000 | 20,000 | 20,000 | 60,000 |
| City Hall Boiler Design | 130,000 | | | 130,000 |
| TBD | | | 400,000 | 400,000 |
| <i>Total Expenditures</i> | 400,000 | 120,000 | 520,000 | 1,040,000 |
| Funding | | | | |
| Formula Funding | 400,000 | 120,000 | 120,000 | 640,000 |
| Gas Tax Rebate | | | 400,000 | 400,000 |
| <i>Total Funding</i> | 400,000 | 120,000 | 520,000 | 1,040,000 |

Description

Purpose

The multiple projects of the Community Energy Plan (CEP) will reduce the cost of the core services offered by the City; they will reduce greenhouse gas (GHG) emissions and diversify our energy supply. The CEP makes our community more sustainable and resilient.

Background

The CEP is a plan adopted under the guidance of the Federation of Canadian Municipalities' Partners for Climate Protection Program. It was first drafted in 2006 with the objective of reducing the City's greenhouse gas emissions. The City completed the five milestones of the original Plan and in 2017 updated the Plan for an additional 10 year period. The new plan sets out ambitious targets on both the Corporate and Community side for GHG emission reductions and increased renewable energy use. The CEP projects will help the City reach these targets and contribute to a more sustainable city while also reducing energy costs.

The 2016 Interior LED lighting project was not completed due to staff turnover and other workload priorities. This project is being evaluated and the remaining LED lighting that has yet to be replaced will be done in 2018.

The City is currently in discussions with the owners of the DND and RCMP buildings about a potential district heating biomass boiler for City Hall and those two buildings. The design of this project is to take place in 2018 with installation scheduled for 2019.



Operational Impact

The specific projects detailed will have positive operational impacts in regards to fuel and power cost savings. There will be no operation expenses incurred as a result of these projects other than project management of the installations.

CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Water & Sewer
Project 96156570 Water & Sewer Infrastructure Replacement

| | Budget | | | |
|--------------------------------------|------------------|------------------|------------------|-------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| Williams Avenue (Paving) | 1,175,000 | | | 1,175,000 |
| Dagenais Drive | 4,260,000 | | | 4,260,000 |
| Dagenais Drive (Paving) | | 2,257,000 | | 2,257,000 |
| 54 Avenue (52 St to 49 St) | | 1,180,000 | | 1,180,000 |
| 54 Avenue(Paving) | | | 705,000 | 705,000 |
| 54 Avenue (49 St to School Draw Ave) | | | 1,629,000 | 1,629,000 |
| Range Lake Court | | | 653,000 | 653,000 |
| Finlayson (Mandeville to Arden) | | | 2,769,000 | 2,769,000 |
| <i>Total Expenditures</i> | 5,435,000 | 3,437,000 | 5,756,000 | 14,628,000 |
| Funding | | | | |
| Gas Tax Grant | 5,435,000 | 3,437,000 | 5,111,000 | 13,983,000 |
| User Fees | | | 645,000 | 645,000 |
| <i>Total Funding</i> | 5,435,000 | 3,437,000 | 5,756,000 | 14,628,000 |

Description

Purpose

To replace failing underground water and/or sewer infrastructure (Gallery 1) on a planned and prioritized basis to reduce reactive maintenance costs.

Background

In the late 1940s, the City began providing piped water and sewer services in the present downtown area. Pump House #1 was constructed during this time to draw water from Great Slave Lake and distribute it to the downtown residents of Yellowknife. By 1977, the sewer mains had degraded to the point of entire sections of the city's piped system failing. The water and sewer mains were comprised of cast iron and corrugated metal pipe (CMP) respectively, and were predominantly uninsulated. The pipe material, combined with no insulation in the freeze/thaw layer, resulted in high maintenance and repair costs that the City continues to deal with today.

The City has since changed pipe material standards to insulated, ductile iron pipe. With these changes to City standards, the life expectancy of water and sewer mains can be as much as 50 years. However, prevailing ground conditions and permafrost presence can impact the life span of any pipe installation.



Currently included in annual Water & Sewer Infrastructure Replacement (Gallery 2 & 3) is the following:

1. Replacement of existing corrugated metal pipe sewer mains with ductile iron pipe;
2. Replacement of concrete sewer manholes;
3. Replacement of existing cast iron water mains with appropriately sized insulated ductile iron pipe;
4. Replacement of in-line hydrants, valves with hydrants and valves located in insulated concrete vaults with manhole access;
5. Replacement of individual lot water and sewer services where deemed necessary;
6. Road stabilization and reconstruction with crushed rock backfill;
7. Completion of the project with concrete sidewalks and a paved roadway.

Operational Impact

Aging infrastructure has an operational cost somewhere between 2-4% of replacement costs. By replacing this infrastructure, it allows the department to focus operational and maintenance activities in other areas of the water and sewer systems.

This project will have minimal impact on other City departments.

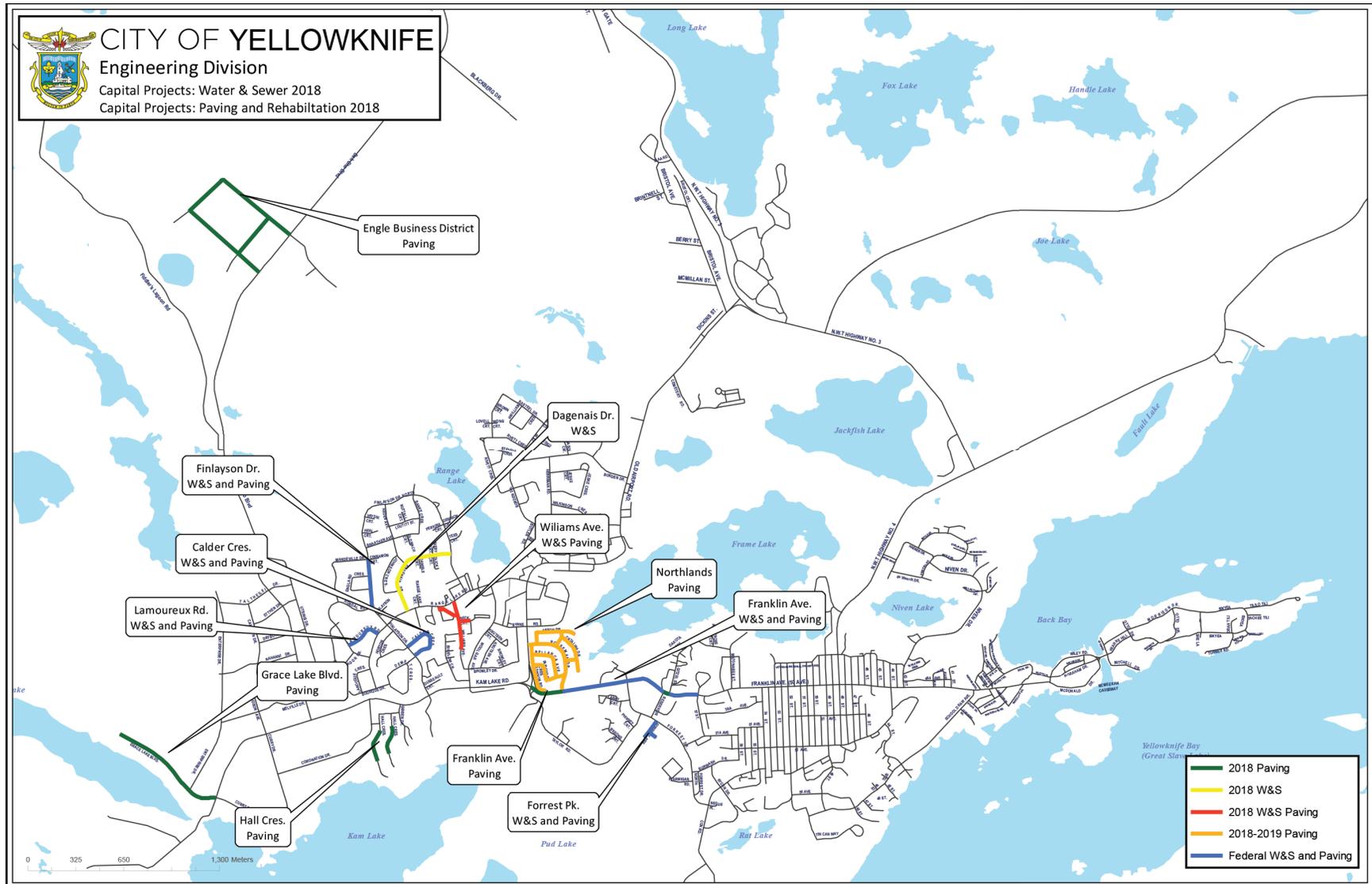
Gallery

Gallery 1; Failed CMP sewer main showing no bottom left in the pipe



Gallery

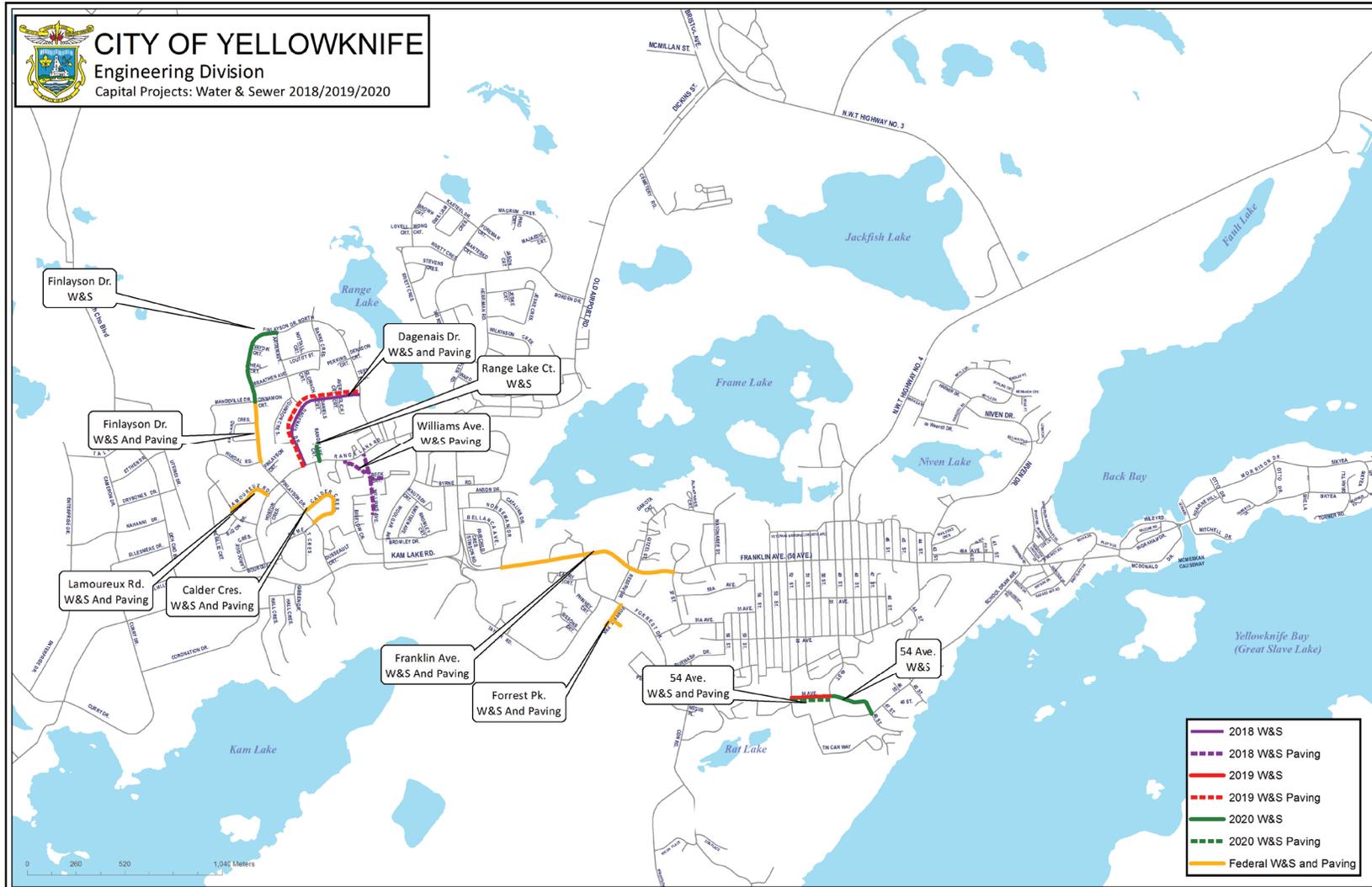
Gallery 2



CAPITAL FUND - 2018 Capital Projects

Gallery

Gallery 3



CAPITAL FUND - 2018 Capital Projects

Department PW Public Works & Engineering **Division** Water & Sewer
Project WS0001 Federally Funded Capital Projects

| Budget | | | | |
|---------------------------|------------------|----------------|------|------------------|
| | 2018 | 2019 | 2020 | Total |
| Expenditures | | | | |
| Transit Upgrades | 213,333 | | | 213,333 |
| CMP/W&S | 6,000,000 | 200,000 | | 6,200,000 |
| LS#5 Piping | 1,312,500 | 175,000 | | 1,487,500 |
| SCADA Upgrades | 650,000 | 50,000 | | 700,000 |
| <i>Total Expenditures</i> | 8,175,833 | 425,000 | | 8,600,833 |
| Funding | | | | |
| Formula Funding | 211,958 | | | 211,958 |
| Gas Tax Rebate | | 11,000 | | 11,000 |
| Other Grants | 6,131,875 | 318,750 | | 6,450,625 |
| User Fees | 1,832,000 | 95,250 | | 1,927,250 |
| <i>Total Funding</i> | 8,175,833 | 425,000 | | 8,600,833 |

Description

Purpose

To complete approved projects under the Clean Water and Wastewater Fund (CWWF) and Public Transportation Infrastructure Fund (PTIF) announced by the Government of Canada.

Background

The Federal Government Budget 2016 announced new infrastructure funding that will be announced in two (2) phases. The first phase has been announced with the Northwest Territories receiving \$51.7 Million in funding for the communities of the Territory.

The federal objective of the funding is to, “accelerate short term municipal investments, while supporting either new or rehabilitation of water, wastewater and storm water infrastructure, and the planning and design of future facilities or upgrades to existing systems. The goal is to accelerate projects that would not occur in the next three years if this funding was not available.”

The Federal Government has listed several criteria that have to be met in order to qualify for CWWF and PTIF funding;

1. Schedule: Due to auditing requirements of projects and CWWF program reporting requirements, NWT communities should plan to have their approved projects substantially completed and “operational” before March 31, 2019.



CAPITAL FUND - 2018 Capital Projects

2. Incrementality: A project that would not otherwise have been undertaken in 2016/17, 2017/18 or 2018/19 and/or a project that would not have been undertaken without federal funding.
3. Funding: Municipality must contribute 25% matching funding and have the capacity (cash flow) to outlay cash payments which are then reimbursed quarterly with progress reports to MACA.
4. City Council Endorsement: Projects applications must have an attached resolution of Council support for the project and the commitment to the 25% matching funding criteria over the next 2.5 years.

The City of Yellowknife submitted applications for a total funding amount of \$17,382,500, unanimously supported by Council Motion #0211-16. The final approved amount was \$16,257,500.

As shown in Gallery 1, this will require the City to commit an additional \$5,419,166.67 to the annual capital budget over the next two fiscal years (2017-18 and 2018-19). This is the required 25% funding to match the federal contribution.

Project descriptions:

- A. Transit Upgrades: The City's transit service is contracted to a third party; therefore the capital upgrades are limited. We have proposed: Replacement of bus shelters (approx. \$50,000), creating accessible bus stops with proper sidewalk, wheel chair ramps and curb drops (approx. \$150,000), create bus pull out areas to create a safe pull over area for buses removed from lanes of travel (approx.\$200,000). This project will include the addition of a 2m asphalt sidewalk to Borden Drive between Jason Ct and Old Airport Road.
- B. CMP/W&S Replacement: We have proposed five (5) additional areas that are in need of immediate repair. They are Franklin Avenue (Gitzel to Norseman), Finlayson Drive (south), Lamoureux Road, Calder Crescent, and Forrest Park. These five (5) areas are in addition to Williams Avenue and Dagenais Drive that are already in the capital plan.
- C. Pipe Replacement at Lift Station 5: The pipe at Lift Station #5 has deteriorated over time to the point that it is now 40% of its original thickness. Average thickness at elbow bends is 50% of original thickness and most straight-run pipes are 60% to 65% of original thickness (A.D. Williams Engineering, November 2004). Leaks require repair approximately every two months. Should pipe replacement not be completed, it is inevitable that a main pipe break will occur resulting in the City being unable to remove sewage. Lift Station #5 is the main lift station for the city. All but one of the other lift stations in the city pump sewage to this facility and from there it is pumped to Fiddler's Lake Lagoon. This project was once part of the capital plan but had to be removed because of higher priority projects. This is a great opportunity to complete the project.

CAPITAL FUND - 2018 Capital Projects

D. SCADA System Upgrades: This project would help to modernize our SCADA (Supervisory Control and Data Acquisition) system, which monitors and controls the City's pump houses and lift stations. Many parts are now obsolete, and with the advancement of computer technology, some replacement parts are no longer available and upgrades are required. This project was once part of the capital plan but had to be removed because of higher priority projects. This is a great opportunity to complete the project.

Operational Impact

Aging infrastructure has an operational cost somewhere between 2-4% of replacement costs. By replacing this infrastructure, it allows the department to focus operational and maintenance activities on other areas of the water and sewer systems.

This project will have minimal impact on other City departments.



Gallery

Gallery 1, Approved projects

| | <u>Total</u> | <u>Federal (75%)</u> | <u>City (25%)</u> |
|-----------------------|----------------------|-----------------------------|--------------------------|
| Transit Upgrades | 426,666.67 | 320,000.00 | 106,666.67 |
| CMP/W&S | 18,300,000.00 | 13,725,000.00 | 4,575,000.00 |
| LS#5 Pipe Replacement | 1,750,000.00 | 1,312,500.00 | 437,500.00 |
| SCADA Upgrades | 1,200,000.00 | 900,000.00 | 300,000.00 |
| | 21,676,666.67 | 16,257,500.00 | 5,419,166.67 |

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