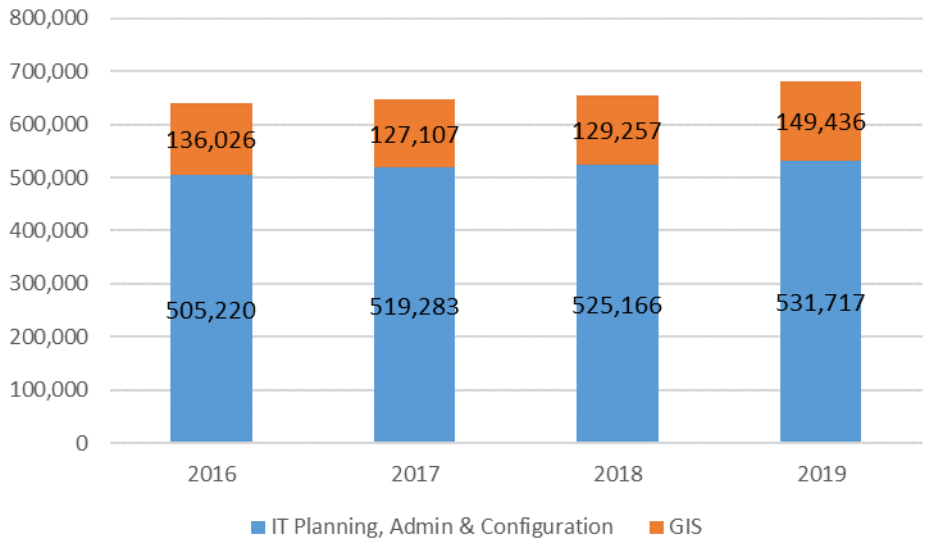
Information Technology

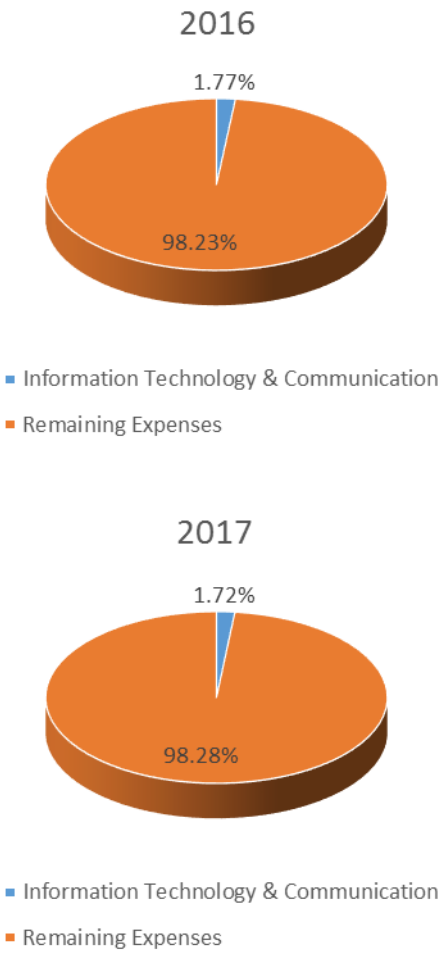
2016-2019 Operating Budget Roll-up

	2016 Budget	2016 Q2 Forecast	2017 Approved Budget	2017 Proposed Budget	2018 Proposed Budget	2019 Proposed Budget
REVENUES						
Other Revenue				$300	$300	$300
TOTAL REVENUES				**300**	**300**	**300**
EXPENDITURES						
FTE Count	3.75	3.75	3.75	3.75	3.75	3.75
Wages & Benefits	322,918	327,848	337,518	331,482	338,615	346,153
Contracted & General Services	204,318	204,398	204,088	214,708	214,708	233,500
Materials, Goods & Supplies	95,400	95,400	85,900	86,100	86,100	86,100
Internal Charges	13,600	13,600	14,500	14,100	15,000	15,400
TOTAL EXPENDITURES	**636,236**	**641,246**	**642,006**	**646,390**	**654,423**	**681,153**
REVENUES LESS EXPENDITURES	**(636,236)**	**(641,246)**	**(642,006)**	**(646,090)**	**(654,123)**	**(680,853)**
Associated Amortization	**16,117**	**16,117**	**13,197**	**15,385**	**15,385**	**15,385**
Transfers to Reserves	**(26,900)**	**(26,900)**	**(33,900)**	**(32,955)**	**(32,955)**	**(26,955)**
Transfers from Reserves	**114,000**	**114,000**	**105,000**	**105,000**	**105,000**	**117,000**
Tax Funding Required	**(549,136)**	**(554,146)**	**(570,906)**	**(574,045)**	**(582,078)**	**(590,808)**

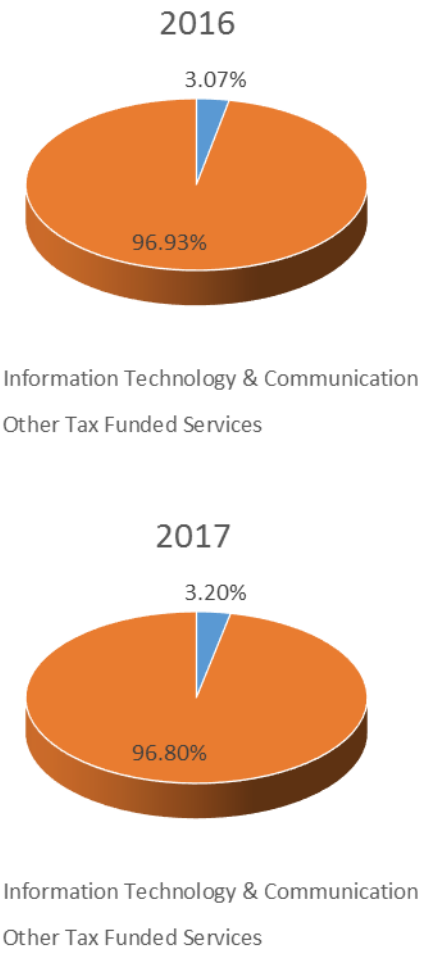
IT & Communication Expenses by Function



Percentage Total Expense



Percentage Total Tax Funding



Service Area: IT Planning/Administering/ Configuring/ (1 of 2)

The Department of Information Technology provides leadership and guidance to Town of Banff departments in the introduction and use of new technologies to enhance Town services to citizens. The staff provides an array of technical services and products for Town management, staff, elected officials and citizens. Among these services are development and implementation of technology related projects, centralized computer support for municipal functions, software and database administration, security of electronically-stored information, computer, telephone and mobile device support, and local and wide-area network communication design and implementation.

IT Planning, Admin & Configuration
2016-2019 Operating Budget

	2016 Budget	2016 Q2 Forecast	2017 Approved Budget	2017 Proposed Budget	2018 Proposed Budget	2019 Proposed Budget
EXPENDITURES						
FTE Count	2.75	2.75	2.75	2.75	2.75	2.75
Wages & Benefits	$237,365	$239,702	$249,353	$243,665	$248,848	$254,307
Contracted & General Services	160,218	160,218	176,218	178,918	178,918	179,710
Materials, Goods & Supplies	94,400	94,400	85,400	85,400	85,400	85,400
Internal Charges	10,900	10,900	11,600	11,300	12,000	12,300
TOTAL EXPENDITURES	**502,883**	**505,220**	**522,571**	**519,283**	**525,166**	**531,717**
REVENUES LESS EXPENDITURES	**(502,883)**	**(505,220)**	**(522,571)**	**(519,283)**	**(525,166)**	**(531,717)**
Associated Amortization	**16,117**	**16,117**	**13,197**	**14,656**	**14,656**	**14,656**
Transfers to Reserves	**(22,900)**	**(22,900)**	**(22,900)**	**(22,955)**	**(22,955)**	**(22,955)**
Transfers from Reserves	**114,000**	**114,000**	**105,000**	**105,000**	**105,000**	**105,000**
Tax Funding Required	**(411,783)**	**(414,120)**	**(440,471)**	**(437,238)**	**(443,121)**	**(449,672)**

Service Area: IT Planning/Administering/ Configuring/ (1 of 2)

COUNCIL EXPECTATIONS

1) Seamless service.
2) Data integrity.
3) Protection of data.
4) Utilize the benefits of technology for efficiency and effectiveness.

Successes	Challenges/Opportunities
○ In-house installation of wireless network links to support traffic signals and data collection. ○ In-house installation of travel time monitors, pedestrian counters, traffic webcams and a web based Dashboard to display data. ○ E-forms improved with database connectivity. ○ ~~AV in Council Chambers~~ ○ ~~Fenlands internet access~~ ○ Internet and internal network connectivity.	○ ~~Network connectivity between Town Hall and Fenlands and Town Hall and WWTP~~ ○ Expansion of public Wi-Fi infrastructure in downtown area. ○ Phone system at end of useful life

2016 Priorities:	Priority Status
➢ Network connectivity between Town Hall and Fenlands and Town Hall and WWTP ➢ Expansion of public Wi-Fi infrastructure in downtown area	*Complete*

2017 Priorities:	Communication Format (RFD/Briefing/Policy/Bylaw/Workshop/Etc.)
• Roll out new phone system with enhanced connectivity to the other town communications systems	Briefing

#1 New Service Request – Public Wi-Fi

Objective:
Decision on the continuation of Public Wi-Fi trial.

Summary:
The Public Wi-Fi trial has been running throughout 2016, with an increased capacity internet connection for the second half of the year. The current areas served by the trial are centered around the Banff/Caribou intersection, extending as far south as the Keg and north to the Grizzly House and Bear Street from Bear Street/Caribou to Bear/Wolf (Map 1).

The trial was well received by the public. On average during peak season (June – August) around 40GB of data was transferred by around 4000 individual devices per day. In the fourth quarter of 2016 we plan on surveying users of the system to gauge satisfaction and usage.

In 2017 to formalize the project we have 3 options:

1) Use current technology and complete coverage area for the 100/200 block of Banff Ave., and the 100/200 block of Bear St. including the section of Caribou between Banff Ave and Bear Street (Map 2). This section would not require any additional capacity for the internet connection but would require the following infrastructure:

13 Point to point radios @ $100 -	$1,300
13 Network switches @ 200 -	$2,600
13 Wi-Fi access points @ $150 -	$1,950
Advertising	$4,000
Installation and Supplies	$9,150
Total cost to implement option 1 -	$19,000

   This would allow for a much greater area of coverage while still keeping infrastructure costs down. We would see a greater number of devices using the network and along with this would come a greater amount of data consumed.

   Although adequate, a wireless network backbone does have drawbacks in terms of reliability issues and speed bottlenecks that don't allow us to share the internet connection evenly to all parts of the network.

2) The Town has investigated collaborating with an existing third party internet provider, either by adding their Wi-Fi connection to our infrastructure or adding our "Banff Free Public Wi-Fi" connection to their infrastructure. The first option would redirect Wi-Fi users from our internet connection to the third party internet connection if they were a customer of the third party then they would move to a different connection, reducing the use of our internet connection. The second option would allow use of existing third party infrastructure to extend the coverage of the "Banff Free Public Wi-Fi" without adding extra Town of Banff infrastructure and maintenance to the infrastructure. Final costs are not yet available for both options.

   The main benefit of using third party infrastructure is that the solution would be entirely managed by them which would avoid adding to IT's work load and would provide 24/7 service coverage.

3) Enhance coverage and speeds by running copper and network cable to the Town owned street lights allowing constant power and a stronger signal. Further research would have to be done to determine if this could be done on Bear Street. The cost of infrastructure on Banff Avenue would be:

5 Wi-Fi access points plus installation -	$ 4,000
Purchase and install cable to streetlights -	$300,000
Advertising	$ 4,000
Contingency -	$ 45,000
Total cost of option 3	$353,000

This option, although expensive, in our opinion would be the best long term solution if going to handle this project internally. Due to the congested 2.4 and 5 Ghz wifi spectrums relying on wireless links to join the access points together can prove volatile at times. A wired link guarantees that the entire backbone supporting the transmission of wireless client data will always be running at optimal speed and will deliver visitors to Banff the best experience.

Once again this would allow for a much greater area of coverage and a more resilient backbone to support this area of coverage. Furthermore it would allow us to more densely canvas the area with wireless access points and be less reliant on non-Town of Banff properties for placement of wireless access points.

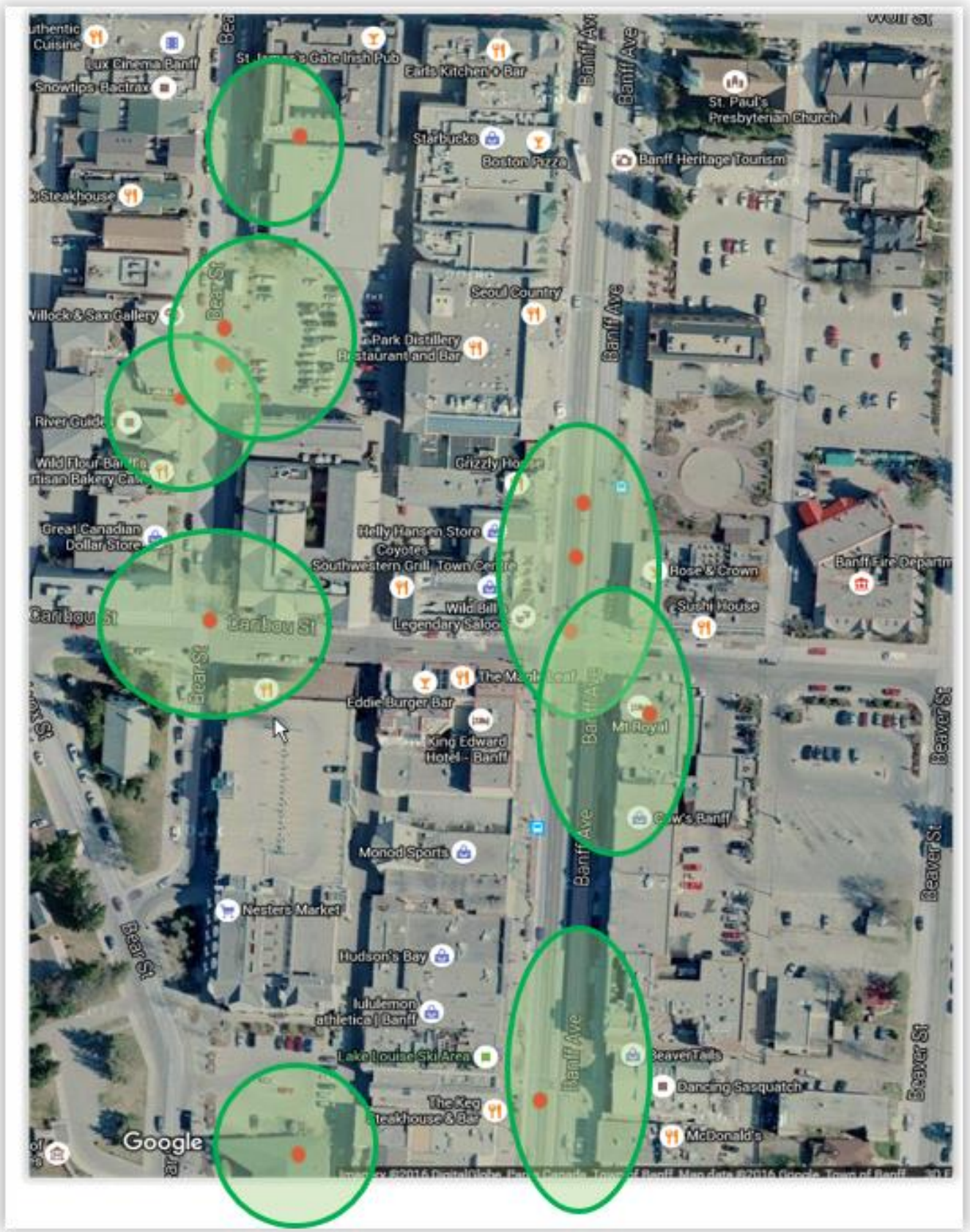
The current internet connection used by the public wifi network still has capacity left to support additional connections. A wired backbone would allow us to distribute this internet connection more evenly and reliably to wireless clients.

In addition to the 3 options Council could decide to leave the trial project as is and continue to operate or the equipment could be removed and the Town could reduce internet costs by roughly $8,000 per year.

Council Strategic Priority? No

Is this an approved Service Review Item? Yes

Map 1


Lux Cinema Banff
Snowtips Bactrax
Earls Kitchen + Bar
Banff Ave
St. Paul's Presbyterian Church
Starbucks
Boston Pizza
Banff Heritage Tourism
Bear St
Seoul Country
Park Distillery Restaurant and Bar
Great Canadian Dollar Store
Helly Hansen Store
Coyotes Southwestern Grill Town Centre
Hose & Crown
Sushi House
Caribou St
Wild Bill Legendary Saloon
Eddie Burger Bar
King Edward Hotel - Banff
Mt Royal
Beaver St
Monod Sports
Nesters Market
Hudson's Bay
lululemon athletica | Banff
Lake Louise Ski Area
Dancing Sasquatch
The Keg Steakhouse & Bar
McDonald's
Google

Map 2


Lux Cinema Banff
St. Paul's Presbyterian Church
Starbucks
Boston Pizza
Banff Ave
Beaver St
Great Canadian Dollar Store
Holly Hansen Store
Rose & Crown
Banff Fire Departm
Moncol Sports
Nesters Market
Hudson's Bay
Dancing Sasquatch
McDonald's
Google

IT Planning/Administering/ Configuring

#2 New Service Request – IT Support Analyst

Objective:
Expand IT resources to meet the increasing demand on IT for resources and support to implement approved organization-wide initiatives.

Summary:
The IT department added a position in 2015 on approval from council to provide support to departments on initiatives related to new software solutions, expanded services for public Wi-Fi, implementation of new technology for tracking and monitoring.

While software solutions often provide greater ability to track and report information factually, the resources required to research, analyse and implement continue to grow. Further, the expansion into project-related services has prevented or delayed delivery internally on help-desk related requests that were the basis of IT services in past.

IT support in 2016 was required in:

- Daily network operations and support, for example:
    - employee network, e-mail, device management (procurement, systems set-up, disconnect, etc.)
    - printer maintenance, replacement, trouble-shooting
    - network connectivity, maintenance,

- Project implementation, software solution support are on-going functions, example:
    - Engineering: Transportation Master Plan (smart parking counters and signs, traffic light network radio communications system, pedestrian & vehicle counters, support of banffparking.ca)
    - Operations: Network link to Waste Water Treatment Plant
    - Internal network installation linking 101 Bear Street to Town Hall.

Pending projects within IT service area (these are tasks that have been carried over for at least two years):

- Development of pronto forms database
- Town of Banff phone system – assessment and upgrade

The anticipated new projects and services for 2017, include:

- Engineering: (5 Bluefax vehicle counters, smart parking entrance signs, traffic management software implementation)
- Corporate Services: on approval of the ECM and EDRMS (records management software) software review, implementation and support will be required.

Cost to Implement:

Wages & Benefits	**Training, Meals, Travel**	**Phone/Computer**	**Office Equip/ Furniture**	**Office Location**
$70,000.00 GA Job Grade Benefits (25%)	**$4,000.00**	**$3000.00**	**$ 4,000.00**	**IT office/2nd floor renovation**

Ongoing Operational Cost per year:

Wages & Benefits	**Training, Meals, Travel**	**Phone/Computer**	**Office Equip/ Furniture**	**Office Location**
$70,000.00 GA Job Grade Benefits (25%)	**$4,000.00**	**On-going plan $$**	**One-time expense**	**IT office/2nd floor renovation**

Resources Required to Implement:
HR – implementation (recruitment, on-boarding)
IT – on-going departmental training, scheduling, etc.

Resources Required to Maintain:
IT Supervisor/Coordinator assistance required to mentor.
Estimated at 4 hours a week.

Return on Investment:
Improved service levels for IT involved projects, measured by:

- Execution of projects according to specs and deadlines
- Regular maintenance of programs/systems, network and provision of software support
- Scheduling of help-desk response, regular support and project resources covers wider range of time and internal skills sets.

Council Strategic Priority? Yes/No
(See http://www.banff.ca/town-hall/banff-town-council/strategic-priorities.htm)

Is this an approved Service Review Item? Yes/No

Service Area: Geographical Information System (2 of 2)

GIS is a system of computer databases and software that enables the creation and management of town data, as well as the ability to perform analysis and reporting through maps and reports. For example, detailed location and attributes about data sets such as Civic Address, Property Lines, Permits, Utilities are all collected and maintained inside GIS using desktop software. GIS technology allows for the analysis and sharing of these datasets with Town of Banff staff and the public through interactive mapping applications and mobile services from anywhere at any time.

GIS
2017-2020 Operating Budget

	2016 Budget	2016 Q2 Forecast	2017 Approved Budget	2017 Proposed Budget	2018 Proposed Budget	2019 Proposed Budget
REVENUES						
Other Revenue				$300	$300	$300
TOTAL REVENUES				300	300	300
EXPENDITURES						
FTE Count	1.0	1.0	1.0	1.0	1.0	1.0
Wages & Benefits	85,553	88,146	88,165	87,817	89,767	91,846
Contracted & General Services	44,100	44,180	27,870	35,790	35,790	53,790
Materials, Goods & Supplies	1,000	1,000	500	700	700	700
Internal Charges	2,700	2,700	2,900	2,800	3,000	3,100
TOTAL EXPENDITURES	**133,353**	**136,026**	**119,435**	**127,107**	**129,257**	**149,436**
REVENUES LESS EXPENDITURES	**(133,353)**	**(136,026)**	**(119,435)**	**(126,807)**	**(128,957)**	**(149,136)**
Associated Amortization				**729**	**729**	**729**
Transfers to Reserves	**(4,000)**	**(4,000)**	**(11,000)**	**(10,000)**	**(10,000)**	**(4,000)**
Transfers from Reserves						**12,000**
Tax Funding Required	**(137,353)**	**(140,026)**	**(130,435)**	**(136,807)**	**(138,957)**	**(141,136)**

Service Area: Geographical Information System (2 of 2)

COUNCIL EXPECTATIONS

1) Educate all town staff on its use and potential effectiveness
2) Provide public access
3) Sustain corporate memory
4) Innovative and forward looking use of technology to help visitors and residents
5) Support open data approach

Successes	Challenges/Opportunities
○ Staff engagement with mobile tools ○ Banff parking.ca upgrades ○ Traffic Dashboard > 100,000 views ○ New Air Photo captured, initial training complete ○ Cloud infrastructure is low cost and low maintenance	○ Improvement to addressing data ○ Older Apps need to be re-developed ○ Need to further upgrade GIS architecture ○ Automation of data updates ○ Enhance Trails and Biking offerings

2016 Priorities:	Priority Status
➢ System level upgrades to allow smoother app development	✓ *Underway*
➢ Addressing Review	✓ *Underway*
➢ New GIS Architecture	✓ *Underway*
➢ Aerial Imagery Update	✓ *Complete*

2017 Priorities:	Communication Format (RFD/Briefing/Policy/Bylaw/Workshop/Etc.)
• Expand access to and use of new aerial imagery	Workshop
• Complete Addressing Review	Briefing
• Update Trails and Biking apps	Briefing

#3 New Service Request – GIS Intern

Objective:
The primary roles of this Intern position will be to collect and create new spatial data, to execute small to medium sized GIS projects, to undertake some roles in larger GIS projects and to lend help in data and software migration activities. Support in these roles will have the benefit of allowing the GIS Coordinator to spend a greater proportion of his time focused on managing, directing and delivering larger projects.

Summary:
We are moving to a new GIS platform, employing new technologies which will in turn open many new doors in terms of opportunities to leverage our existing data. These new technologies include server upgrades, desktop software upgrades, interfaces to new imagery products, the chance to rewrite older applications into new more stable and more accessible web technologies, thereby extending the potential scope of our interactive mapping offerings. Offering wider exposure of our data requires that we find efficiencies in the methods by which data is kept up to date. This means taking steps to further automate some procedures.

This intern position would support in addressing these key goals in the GIS service area, as well as aiding with day-to-day mapping and analytical needs as they arise. The position is described as an 'Intern' position because it will be suited to either a student who is nearing the end of their GIS program or a recent graduate looking for their first GIS work experience.

The scope of work will include:

- Roles within projects to improve automation of GIS data updates
- Data and App creation to support traffic analysis
- Develop public outreach apps that inform and connect the Banff public with their community, and that connect the wider community with Banff - particularly in relation to the Trails, Transportation and Recreation Grounds Redevelopment Masterplans
- Researching and developing new workflows to leverage new data products available or potentially available in Banff such as oblique imagery or LiDAR
- Creation of operationally important apps to support activities such as street light maintenance
- Provide effective input on other GIS projects as required

Cost to Implement:
Computer, Monitor & Phone - $2000

Ongoing Operational Cost per year:
Wages - $9,900 (550 hrs @ $18/hr)
Benefits & Vacation Pay - $990
IT hardware and software - $1000
Total - $11,900

Resources Required to Implement:
GIS + Human Resources.
IT support

Resources Required to Maintain:
IT support
GIS supervision of work and deliverables estimated at approximately four hours/week.

Return on Investment:
Improved service levels and timely implementation of GIS projects. Greater ability to cater for all GIS demands whilst maintaining existing levels of service and delivering on projects. Enhanced GIS outreach to both external and internal stakeholders.

Estimated Delivery Date:
March 1, 2017

Council Strategic Priority? Yes

Extra resource in GIS will allow greater support for many of Council's Strategic Priorities, but in particular:

Actively Connecting Banff – improve mapping of new amenities, trails and cycle routes as they are developed. Improve trail experience with better mapping. Develop a Banff Kids map for younger residents and visitors.

Banff – Naturally Active, Vibrant and Inspiring – Potential to use GIS services to increase use of existing facilities, increase public awareness of recreation facilities. This would be achieved though enhancement of our Trails and Biking interactive mapping.

Is this an approved Service Review Item? No