

ENGINEERING & OPERATIONS



Operating Budget:

\$ 2,847,700

Capital Budget:

\$ 7,324,500

Staffing Complement:

23.2 FTE (Full-Time Equivalent)
+ 2 Seasonal Workers

Supports Strategic Focus Areas:

Corporate Excellence,
Economic Prosperity,
Community Livability
& Transportation and
Infrastructure

OVERVIEW

The Engineering & Operations Department is comprised of two divisions:

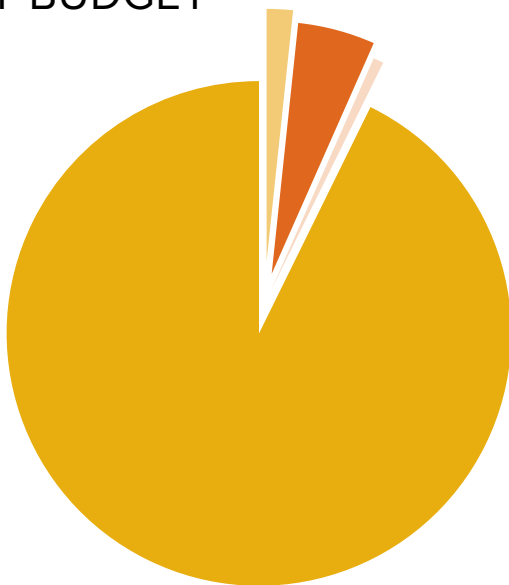
ENGINEERING DIVISION

Engineering is responsible for the engineering design, planning, and construction of the City's infrastructure. The engineering division is also an integral partner in reviewing construction applications and spearheads the environmental protection & stewardship programs to ensure the City of Pitt Meadows is not only compliant, but considered a municipal leader.

SERVICES INCLUDE:

- Engineering Information Services
- Infrastructure Renewal and Replacement
- Capital Infrastructure Planning and Construction Coordination
- Development Engineering
- Transportation Planning, Traffic Management, and Active Transportation
- Advisory Committee Support – Agricultural Advisory Committee, Active Transportation Committee, Rail Community Advisory Panel
- Environmental Protection & Stewardship
- Sustainability

DEPARTMENT'S SHARE OF CITY BUDGET



REMAINING CITY BUDGET **92.7%**

OPERATIONS **5%**

ENGINEERING **1.7%**

ENVIRONMENTAL STEWARDSHIP **.70%**

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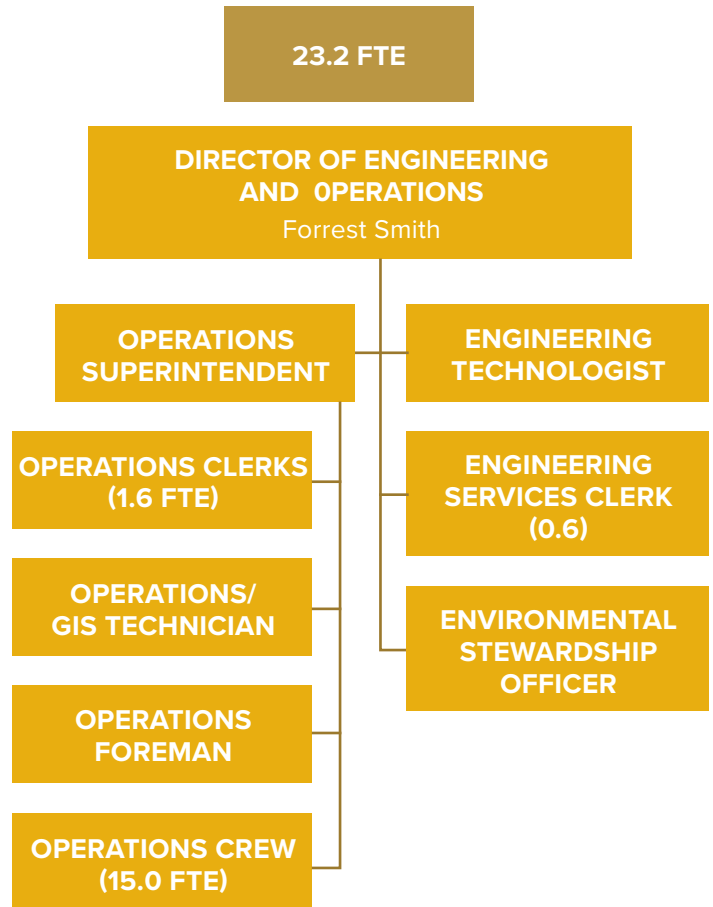
OPERATIONS DIVISION

The Operations Division ensures that the City's public infrastructure is operated, and maintained to the highest standard given available resources. This includes the managing and servicing of equipment and machinery as well as the maintenance of capital infrastructure.

SERVICES INCLUDE:

- Public Works Administration
- Drinking Water Quality and Distribution – testing and meter reading
- Waste Water Collection System
- Storm Drainage Management
- Solid Waste Collection – garbage and green waste
- Dike Maintenance
- Fleet and Equipment Infrastructure Renewal and Replacement
- Maintenance of Roads, Bridges and Sidewalks – including winter control and street sweeping
- Mosquito Control

STAFFING COMPLEMENT



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AT A GLANCE

CITY INFRASTRUCTURE. The City maintains water, diking, sanitary sewer, storm drainage and road infrastructure as follows:

- **WATER UTILITY (DOMESTIC & FIRE PROTECTION)**

- 112.5 km of water main
- 6 PRV (pressure reducing valve) stations & 1 PB (pressure booster station)
- 481 hydrants
- 3,951 service connections
- 989 water valves
- 720 water meters
- Water quality testing & meter reading

- **DIKING SYSTEM**

- 0.9 km dikes

- **SANITARY SEWER SYSTEM**

- 48.5 km of sewer main
- 8 sewer lift stations
- 3,035 sanitary connections
- 697 sewer manholes
- 6 fixed generators, 1 portable generator
- 16 pumps and controls

- **STORM DRAINAGE SYSTEM**

- 176.7 km open drainage ditches (public land)
- 48.9 km storm sewer pipes
- 742 manholes

- 1,405 catch basins
- 2,343 service connections
- 6 pump stations and 15 pumps
- 11 floodgates
- 740 culverts

- **ROAD NETWORK**

- 114.7 km of road (149.9 lane km)
- 2,034 signs on 1,249 poles
- 1,009 streetlights
- 8 traffic signals
- 9 bridges
- 58.7 km of sidewalk
- 36 km of bike lane
- 14.8 km of off-road multi use trails
- Solid waste receptacles and street amenities throughout the City

CARBON NEUTRALITY. The City of Pitt Meadows has demonstrated a strong commitment to reducing greenhouse gas emissions within the community and corporate operations. Accordingly, for the 2016 reporting year, the City achieved Carbon Neutral status for its second year in a row.

ELECTRIC VEHICLE CHARGING STATION. In April 2013, The City installed its first electric vehicle charging station outside of City Hall. The station has seen dramatic increases in use that have corresponded to greenhouse gas (GHG) reductions for the community.

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YEAR	YEARLY GHG SAVINGS (KG)	YEARLY ENERGY CONSUMPTION (KWH)
2013	278	661
2014	254	606
2015	1,177	2,803
2016	2,154	5,128
2017 (ESTIMATE)	5,600	13,300

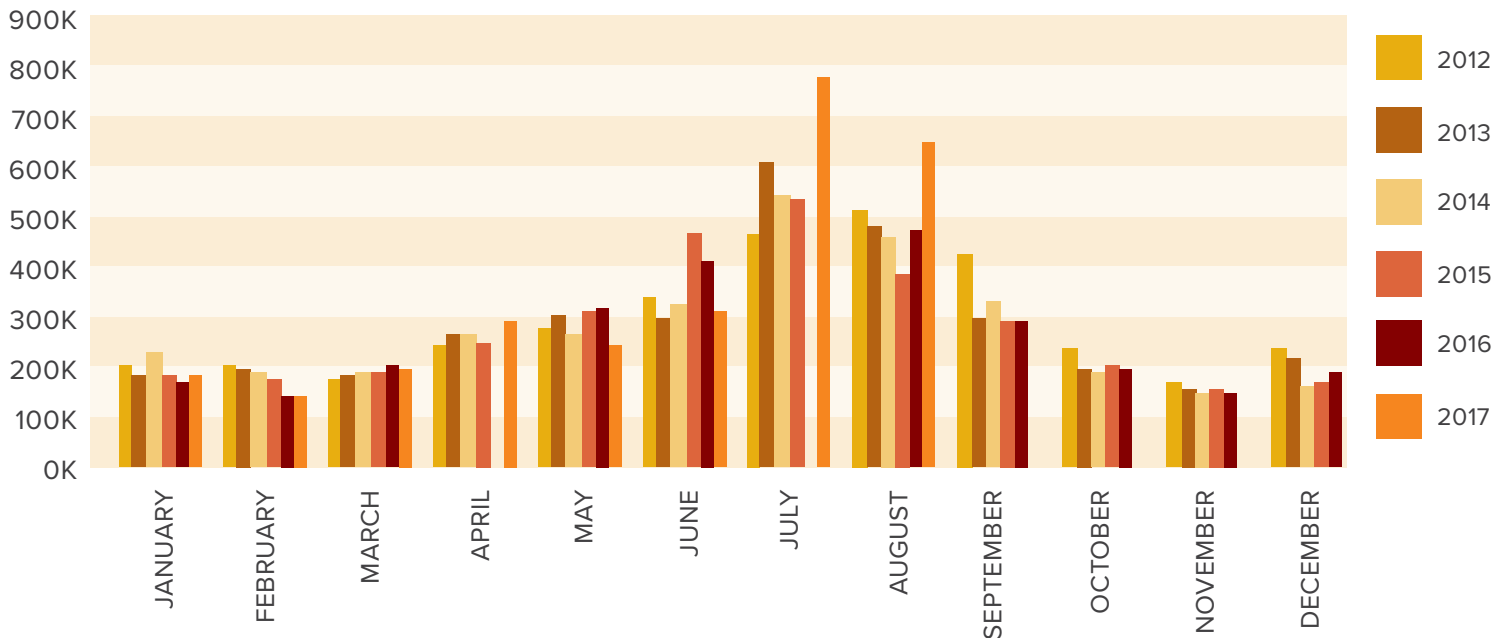


PUBLIC UTILITY INFRASTRUCTURE

WATER UTILITY

- Over the past five years the City on average has purchased approximately 3,400,000 cubic metres of water a year from Metro Vancouver. The cost to purchase this water is approximately \$2,200,000. The summer of 2017 saw a significant spike in water use. Staff are currently investigating this with Metro Vancouver.

ROLLING 5 YEAR WATER CONSUMPTION RECORDS (M³)



PUBLIC UTILITY INFRASTRUCTURE (CONTINUED)

- The City is responsible for the distribution and delivery of the water it purchases to households, businesses, institutions, and agricultural users. The provision of domestic water to agricultural users is unique and sets Pitt Meadows apart from the rest of Metro Vancouver. Over 55% of the City's water distribution system services the rural agricultural area. As a result, the City of Pitt Meadows is one of the largest per capita water users in Metro Vancouver.
- Pitt Meadows water quality is reported annually and all testing results are available on the City Website. In 2016, the City of Pitt Meadows water system met all regulatory requirements for drinking water quality as set out by the BC Drinking Water Protection Act. All water quality objectives suggested by Health Canada were also met:
 - Two chlorine residual tests fell below the minimum level of 0.2 ppm.
 - No samples tested positive for E. coli.
 - 100% of the samples had 0 Total Coliform per 100 mL.
 - The annual average Total Trihalomethane results ranged between 41 and 46 parts per billion (ppb), less than the Health Canada guidelines of 100 ppb.
 - The annual average Total Haloacetic acid results ranged from 47 to 55 ppb, less than Health Canada's guidelines of 80 ppb.
- The City continues to replace aged Asbestos Cement Water (AC) Mains and is replacing these mains with Ductile Iron (DI) pipe. This program

will be realized over the next twenty years with an anticipated completion for replacement by 2038. There remains approximately 14,600 meters (13.1 %) of AC pipe out of a total system of 111,200 metres of water main for replacement. This equates to a yearly replacement rate of 730m, equivalent to approximately \$875,000 per year (2017 dollars).

SANITARY SEWER UTILITY

- The main purpose of the City's sanitary sewer system is the collection and routing of domestic and industrial sewage and wastewaters to Metro Vancouver sewer trunk mains.
- All of the sewage and waste water from Pitt Meadows is treated at the Annacis Island Sewage Treatment Plant. The City is billed based on the volume of waste transferred to the Metro Vancouver system for treatment.
- The infiltration and inflow (I & I) of rain water into the sanitary sewer system during wet weather events can hydraulically overload the sanitary sewer collection pipes, lift stations and wastewater treatment plants. The City performs flow monitoring investigations to assess the impact of infiltration and inflow on the sewer system.
- The City is continually improving its sanitary infrastructure with upgrades to existing Sanitary Lift Stations and re-lining existing aged Asbestos Cement (AC) Pipes with Cured in Place Polyethylene (CIPP). This upgrade extends the life of the pipes by approximately 50 years and is a low carbon solution to maintain our system (alternate technique requires trench excavation and laying new pipe). Funding for this program is every second year and is estimated to be realized over 32 years with a completion date of 2050. There remains approximately 16,500 linear meters of the original 20,285 linear meters of AC sewer pipe for replacement. This equates

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to a replacement rate of 1,050m every two years, equivalent to approximately \$300,000 (2017 dollars).

- The City is responsible for the maintenance of 204 kilometres of key ditches. Not all key ditches are located within City rights of way which makes access a challenge. Maintaining improved water flow not only improves water conveyance but also improves the slough’s ability to provide habitat for fish and other aquatic species.

DRAINAGE UTILITY

- The entire drainage catchment includes 8,020 hectares of land with six pump stations in four of the drainage areas. 609 hectares of this catchment is in the City of Maple Ridge. 86 percent of the municipality’s land base is located in the floodplain and is protected by 60.9 kilometres of dikes. Therefore, Pitt Meadows needs to continually move large volumes of water out of the community. (See the Pitt Meadows Catchment Area map at the end of this section)
- The rising cost of hydro continues to be a concern for the drainage utility with rate increases estimated to be 4-9% annually over the next few years. The Department continues to trial changes in the operation of the drainage system to reduce pump run times, i.e. maximising the gravity drainage through flood gates, fine tuning of variable drive pumps to operate at optimal efficiency and improve ditch conveyance capacity through regular cleaning. Future upgrades to more efficient pumps should also help mitigate the increasing costs of hydro.



HYDRO EXPENSES

2012	\$ 189,487
2013	\$ 181,812
2014	\$ 218,950
2015	\$ 230,150
2016	\$ 238,000
2017 (ESTIMATE)	\$ 260,000

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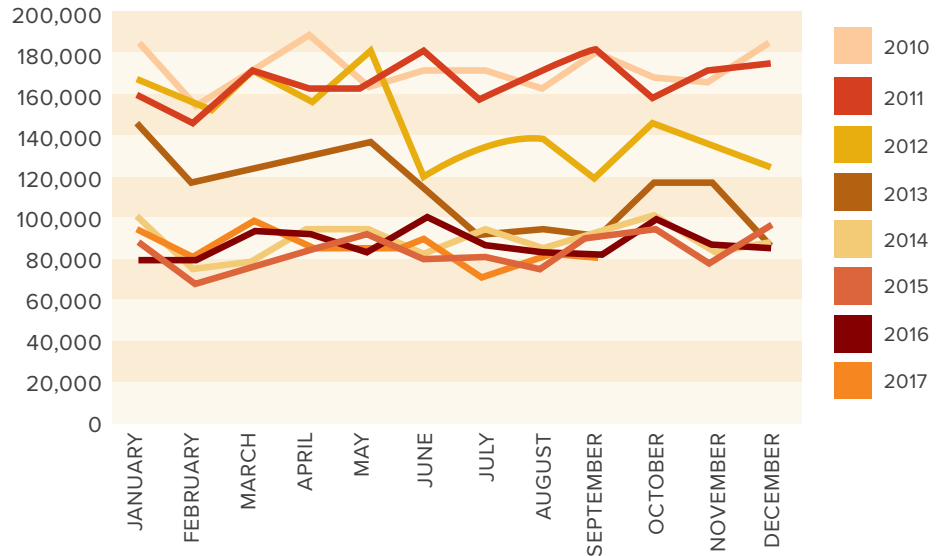


PUBLIC UTILITY INFRASTRUCTURE (CONTINUED)

SOLID WASTE UTILITY

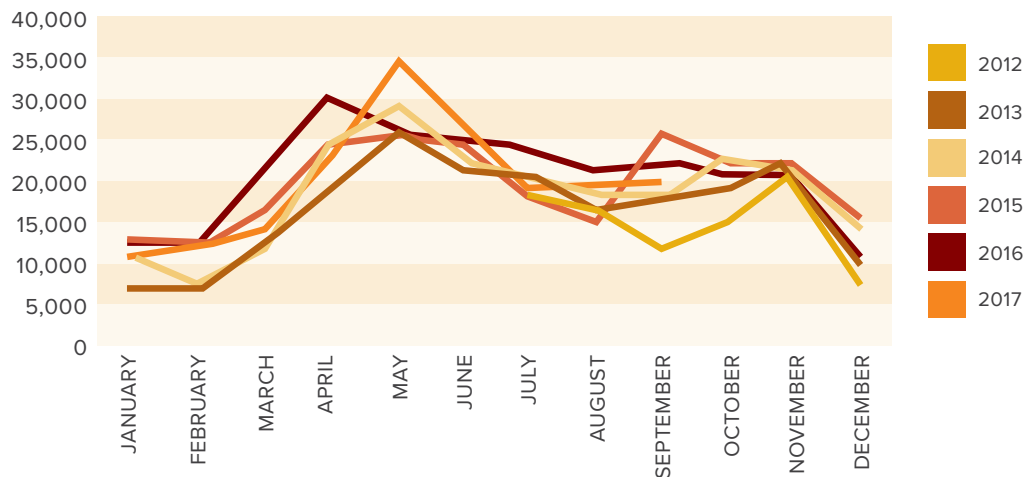
- In Metro Vancouver, solid waste collection is a municipal responsibility, and disposal is a regional responsibility.
- The costs to provide these services are primarily determined by two factors: (1) the volume and cost to dispose of garbage and organics at transfer station/disposal facilities, and (2) the contracted cost of third party collection services.

MONTHLY GARBAGE COLLECTION (KG)



Monthly Garbage Collection by Weight (kg)

MONTHLY GREEN WASTE COLLECTION (KG)



Monthly Green Waste Collection by Weight (kg)

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- In July 2013 the City rolled out a green waste (food scraps & yard trimmings) collection program and as a result annual garbage volumes are declining and the volume of green waste collected has been increasing.

DIVERSION RATES	TONNES OF GARBAGE COLLECTED
2012 = 39%	2012 = 1,745 tonnes
2013 = 60%	2013 = 1,356 tonnes
2014 = 68%	2014 = 1,067 tonnes
2015 = 70%	2015 = 998 tonnes
2016 = 71%	2016 = 1,043 tonnes
2017 = 71%	2017 = 1,030 tonnes (estimate)

- In 2017, Metro Vancouver closely monitored the regional organics processing. In response to a large number of public odour complaints, Metro Vancouver has required air quality permits along with odour reduction requirements for some of the local processing facilities. In some instances these odour reduction requirements have limited processing capacity. Accordingly, organic processing costs are on the rise and in region processing capacity is challenged to meet the growing demands of this waste stream.
- In May 2011, the BC Recycling Regulation was amended to require producers to be responsible for the collection and recycling of packaging and printed paper. This amendment intended to shift financial and administrative responsibility for managing those materials from local government to producers. Businesses that sell packaged goods or supply printed paper to British Columbia residents are classed as stewards under the BC Recycling Regulation, making them legally and financially responsible for the costs of recycling the packaging and printed paper. Multi-Material British Columbia

(MMBC) took over this program in May of 2014. Since then, effective September 2016, Multi-Material BC (MMBC) assumed responsibility for residential recycling services in Pitt Meadows. In 2017 MMBC was rebranded as Recycle BC. Recycle BC has contracted Smithrite Disposal Ltd. to provide weekly pick up of residential recycling for residents living in single family homes, as well as townhouses and mobile homes that currently receive curbside blue box service. Residents retained their existing recycling level of service and benefited from additional curbside segregated glass collection. This transition resulted in an increased service level at a lower cost to the Citizens of Pitt Meadows.

2017 ACHIEVEMENTS

OPERATIONS AND ENGINEERING

- **TRANSITION TO CARTEGRAPH OPERATIONS MANAGEMENT SOFTWARE (OMS).** The Public Works department successfully transitioned to OMS, a high performance asset management software which provides tools for scheduling infrastructure repairs, tracking resources and managing work requests. This software utilizes mobile devices to share information directly with crews in the field and allows for instantaneous, GPS tracked data capture.
- **ACTIVE TRANSPORTATION.** Highlights include:
 - Reconfiguration of Bonson Road and 120B Avenue intersection to improve pedestrian crossing safety.
 - Reconfiguration of Ford Road and Baynes intersection to improve pedestrian crossing safety.
 - 6 trail head staggered fences were removed and replaced with bollards to improve

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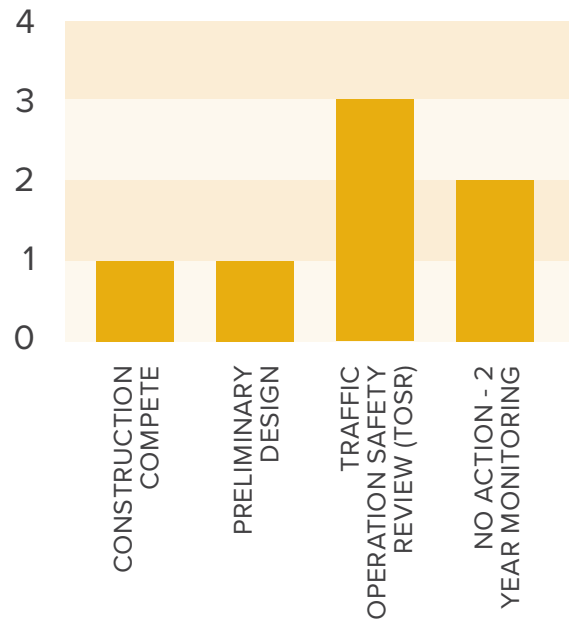


2017 ACHIEVEMENTS (CONTINUED)

accessibility between neighbourhoods.

- Facilitated Bike Awareness and Learn to Ride at Pitt Meadows Elementary, Davie Jones Elementary and Edith McDermott Elementary schools. (Highland Park completed the course in 2016)
- Flashing pedestrian crossing design for Airport Way at Southgate Road. (Will be installed winter of 2017)
- Bikeway design completed for 122 Avenue and 193 Street. Implementation to follow in the spring of 2018.
- **TRAFFIC CALMING POLICY.** A revised traffic calming policy was adopted in November 2016. Since then, staff have been working any requests received through the revised workflow. The status of all traffic calming statistics for the period of November 2016 to October 2017 are shown below:

TRAFFIC CALMING REQUESTS STATUS



- **MMBC TRANSITION.** Effective September 2016, Multi-Material BC (MMBC) assumed responsibility for residential recycling services in Pitt Meadows. In 2017 MMBC was rebranded as Recycle BC. Recycle BC has contracted Smithrite Disposal Ltd. to provide weekly pick up of residential recycling for residents living in single family homes, as well as townhouses and mobile homes that currently receive curbside blue box service. Residents retained their existing recycling level of service and benefited from additional curbside segregated glass collection. This transition resulted in an increased service level at a lower cost to the Citizens of Pitt Meadows.
- **SUPPORTED PUBLIC CONSULTATION ON PROPOSED DEVELOPMENT PROJECTS.** Staff worked to facilitate questions and answers on several industrial, commercial, and residential projects as well as coordinate additional public input opportunities.



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- **IRRIGATION STUDY.** In 2016, the drainage system was successfully modelled to determine its capacity. Additional modelling is still required to determine the feasibility to bring water into the system for irrigation purposes and be able to move water out of the system sufficiently if inclement weather occurs. This work will be integrated into the 2018 Integrated Water Management Master Plan.
- **PHASE I FLOOD RISK ASSESSMENT APPLICATION SUBMISSION.** In 2016 the City prepared and submitted a comprehensive flood risk assessment application to Public Safety Canada's National Disaster Mitigation Program to inform flood risks. Grant funding for this project was received in 2017. The risk assessment serves as a foundational step in disaster mitigation and will identify flood hazards, potential impacts, and community and infrastructure vulnerabilities as well as the overall flood risk profile for the City. The assessment is schedule to complete in the spring of 2018.
- **RAIL COMMUNITY ADVISORY PANEL (CAP).** In 2017, Staff established a Council -appointed Rail Community Advisory Panel that meets bi-annually to provide a forum for the exchange of information between the Canadian Pacific Railway and the City of Pitt Meadows. This committee includes representatives from Council, CP management, community members, and Pitt Meadows staff.
- **RAIL OBSTRUCTION ANALYSIS.** The engineering department performed rail obstruction counts to document impacts on vehicle traffic at the City's two grade crossings.
- **PAVEMENT MANAGEMENT STUDY.** An updated pavement management study was completed in 2017. This study will be used to plan future capital work improvements as pavement integrity is a

driving factor for scheduling a number of our capital investments. Additional information on this study is included in the Capital Section.

- **ENGINEERING CONSULTANT RFP PROCESS.** Staff issued and RFP for engineering services in 2017.
- **CAPITAL WORKS.** These achievements are highlighted in the Engineering and Operations Capital Assets Plan.

ENVIRONMENTAL PROTECTION AND STEWARDSHIP

- **BYLAW AND POLICY REVIEW.** A continued review with an environmental lens focusing on existing bylaws and policies is ongoing. Various bylaws and policies include Soil Deposit and Fill Removal Bylaw, Drainage System Protection Bylaw, Subdivision and Development Servicing Bylaw, Bylaw Notice Enforcement, Demolition application and Tree Preservation Policy.
- **COMMUNITY STEWARDSHIP AND ENGAGEMENT.** The City continues to strive towards building effective, mutually respectful working relationships with our community members. Examples of relationship building include supporting various Katzie First Nation initiatives such as the Katzie Slough Spring Reclamation Project. A Farmer to Farmer Forum on the Farmland Advantage Program hosted February 25, 2017 by Watershed Watch Salmon Society was supported by City staff through a presentation on the local context, potential challenges and demonstrating how this program may benefit our community. The Environmental Stewardship Officer continues to be a City of Pitt Meadows representative for various Metro Vancouver Regional District committees.

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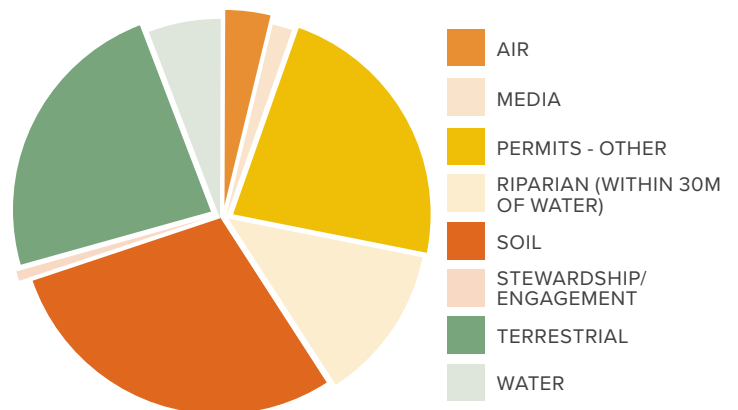


ENVIRONMENTAL PROTECTION AND STEWARDSHIP (CONTINUED)

- **DRAFT INTERIM RIPARIAN PROTECTION AND MANAGEMENT POLICY.** With in-house expertise now available on staff, gaps have been identified on the protection and management of provincially-regulated riparian areas. Accordingly, a draft interim policy addressing riparian protection and management within our community is under development and scheduled for Councils review in Q1 of 2018.
- **ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT.** The Environmental Stewardship Officer position created in 2016 now provides the City with in-house, professional environmental expertise. Increased compliance and enforcement initiatives for the protection and management of air, soils and water on development sites and agricultural lands have contributed to increased land owner education and awareness, improved land management and accountability. Multi-level governmental cooperation and liaising have diversified community connections and increased the City's profile as a steward of environmental protection.
- **ENVIRONMENTAL MAPPING.** In 2016, the City created an environmental layer to update its Geographic Information Systems mapping application MapGuide for internal staff. This mapping layer better informs land use decision making processes. In 2017, staff included updates on various attributes such as invasive species management, Metro Vancouver's sensitive ecosystem inventory layer and soil/fill permits have been recently updated, with additional attributes and ongoing updates expected for the coming year.

- **IMPLEMENTATION OF TEMPEST.** The implementation of the second phase of Tempest, municipal management software, has been helpful in tracking environmental calls for service throughout much of 2017. Over 140 environmental calls for service were logged between November 1, 2016 and October 31, 2017.

ENVIRONMENTAL CALLS FOR SERVICE BY CATEGORY November 1, 2016 -October 31, 2017



- **INVASIVE SPECIES MITIGATION AND MONITORING.** Provincially regulated noxious weeds such as Japanese Knotweed and Hogweed are continually being treated bi-annually and monitored by a third party Qualified Professional. City staff and the public are instrumental in the management of invasive species by diligently reporting new location occurrences.
- **SOUTH BONSON INDUSTRIAL AND RESIDENTIAL DEVELOPMENT PROPOSALS.** Reviews of various environmental reports and plans have been completed and will continue for the project's duration. These reviews include Construction Environmental Management Plans, Erosion and Sediment Control Plans and other technical reports. To assist in monitoring these sites, the City has appointed a third-party, Independent QEP which

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has been engaged since May 2016 to assist with technical report and plan reviews and conduct regular site audit inspections.

SUSTAINABILITY AND GREEN LEADERSHIP TEAM

- **CLIMATE ACTION.** The City of Pitt Meadows is pleased to have achieved carbon neutrality for its second year in a row in 2016. The City purchased a Greenhouse Gas (GHG) Emissions Inventory Report and Sustainability Management Program as a software-based service this year, making GHG emissions tracking and management more efficient. A GHG Emission Reduction Potentials Project was also undertaken in 2017 – this project explores meaningful and effective options customised for the City to help develop a strategy for local climate action initiatives. Ongoing LED light conversions throughout our facilities continued. The City of Pitt Meadows continues its commitment to reducing greenhouse gas emissions and achieving carbon neutrality and sustainability.
- **EARTH DAY.** Pitt Meadows celebrated Earth Day on April 22 with great success. For the first time, this year's event focused on a theme – riparian areas (the area of land directly connected to a stream ecosystem). The well-attended event saw over 500 elementary students and provided focused yet diverse eco- education and entertainment such as Alouette River Management Society (ARMS), local author Annette LeBox, Friends of Katzie Slough, Invasive Species Council of Metro Vancouver (ISCMV), Kanaka Education and Environmental Partnership Society (KEEPS), Pitt Meadows Library, Raptor Ridge, TaDaa Lady's EcoDome and Watershed Watch. Sustainable crafts were a big hit and our new Parks Department greeted our community with a free native plant and composted soil.

KEY CHALLENGES FOR 2018

- **DEVELOPMENT REVENUE.** Revenue generated from engineering services and permitting is cyclical and is driven by market conditions and only a few significant projects. As a result predicting revenues is challenging. A means of addressing the cyclical nature of development revenue the City is establishing a reserve fund to stabilize development revenue over the next ten years and to provide funding for staff resources.
- **RESOURCING REQUIREMENTS.** The complexity and volume of development has created increased demands in the engineering and environmental stewardship departments that are challenging current staffing levels.
- **INCREASING DEMAND FOR SERVICES.** There are challenges associated with providing services to an increasing population and infrastructure inventory, along with increased citizen expectations regarding delivery of services, with minimal change to resources.
- **PUBLIC CONCERNS AND INQUIRIES.** Customer service is a priority for the City. Supporting the public is a significant function of our work that is not documented in the work program, however, requires considerable allocation of staff time. Some of the areas of growing community concern include traffic calming, neighborhood development, and environmental protection.
- **ACTIVE TRANSPORTATION.** The City has been working hard to increase accessibility throughout our Community. An area of active transportation that needs continued attention is retrofitting neighborhoods where sidewalk slopes, curb let downs and gates are not accessibility compliant

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KEY CHALLENGES FOR 2018 (CONTINUED)

and are creating challenges for people who need mobility devices, cyclists and strollers. In 2016, the Active Transportation Committee was able to retrofit 14 curb let downs, however, there is a large inventory of retrofits still required. The high cost of reworking this infrastructure will likely result in multi-year replacement program. In the mean time staff is creating a plan that proactively begins alterations along routes to schools and parks, while also responding to areas where residents are raising concerns.

- **TRAFFIC CALMING.** In recent years residents have been voicing increasing concerns with vehicular speeds and pedestrian safety in their neighborhoods. The City's Transportation Plan and Pedestrian and Cycling Master Plan address some of these concerns through suggested neighborhood improvements. The City has prioritised these improvements and begun implementation. Additionally, the revised traffic calming policy provides residents guidance on how to identify a concern within their community and provides them with a detailed work flow each traffic calming request follows.
- **DIKE INFRASTRUCTURE PLANNING.** Regional work has begun through the Fraser Basin Council to review Dikes in the Lower Mainland with respect to rising sea levels and seismic stability. As a result new standards are emerging that suggest not only increasing the height of dikes, but also the width and structural stability. In 2017 the City of Pitt Meadows initiated a study to review the current status of our dikes in comparison to provincial criteria and to complete a cost benefit analysis of performing upgrades. This work will aim to identify

most critical areas and provide the necessary background to lobby other levels of government for funding. The first phase of this work is expected to complete in spring of 2018.

- **CHANGING WEATHER PATTERNS.** Weather patterns and intensities are changing, resulting in increased storms, longer dryer summers and overall changing weather patterns. As a result, there is an impact on our infrastructure with respect to performance and maintenance needs.
- **COMPETING INTERESTS BETWEEN DRAINAGE AND IRRIGATION.** An Integrated Water Management Master Plan is required given the number of competing interests for water levels throughout the community including; irrigation, drainage, fish habitat, invasive species management, recreational, and provincially issued water licences.
- **MAINTAINING INFRASTRUCTURE.** Continued long range infrastructure planning and full-life cycle accounting is required to provide for the replacement of aging and deteriorating infrastructure, capacity for growth and changing regulatory requirements. Infrastructure, in particular drainage, is deteriorating faster than the current rate of replacement and the historic lack of funding for sufficient repair and maintenance of these assets continues to create funding challenges. In 2018, the City of Pitt Meadows will perform current condition assessments on the drainage network and the water distribution network which will help refine the City's Asset Management Program.
- **DRAINAGE.** Ditch cleaning is on-going through both a rotation program as well as on an as-needed basis. The two prong approach ensures that all sloughs and ditches are assessed on a consistent rotation while at the same time responding to needs

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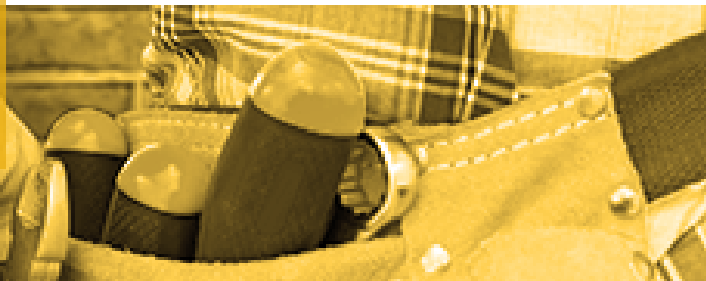
in areas where water flow is impeded. Maintaining sloughs is important for ensuring water flow to pump stations during high water events. A spin off benefit to this program is improved habitat for fish.

- **VEGETATION MANAGEMENT.** Managing vegetation in the rural drainage system is physically demanding, labour intensive and time-consuming work that is made increasingly more difficult due to the presence of aquatic invasive species. Milfoil and Parrot Feather infestations in many areas of the system are driving up operating expenses related to bar screen cleaning and ditch maintenance. A newly identified species, Dotted Smart Weed is now also adding to the challenges of vegetation management. Vegetation is proposing two challenges for the City: growth is occurring faster than time and budgets to keep up with removal, and the increased long hot summers are accelerating plant growth. The City along with other Metro Vancouver municipalities are looking for creative solutions to manage this problem.
- **DRAINAGE PUMP STATIONS.** Pitt Meadows has six pump stations throughout the community. These six stations dramatically reduce the flooding events in Pitt Meadows. Many of these stations are aged infrastructure working on technology that is no longer used and difficult to find parts to complete maintenance and respond to repair needs. Where possible, stations are retrofitted to extend the life of the station. As well, new technology such as trash racks are also installed to improve the water flow and effectiveness of the stations. Even with the improvements being made to the system new infrastructure is required to ensure the drainage needs in Pitt Meadows are met.
- **INFILTRATION AND INFLOW.** The infiltration and inflow (I & I) of rain water into the sanitary sewer

system during wet weather events can hydraulically overload the sanitary sewer collection pipes, lift stations and wastewater treatment plants. This can lead to volume capacity concerns and treatment of additional waste.

- **ORGANICS BAN.** Metro Vancouver implemented a ban on all organic material in the garbage stream in 2015. The introduction of organics collection in Pitt Meadows in 2013 has made the transition easier for our community. Fines are now in effect for non-compliance, but to date Pitt Meadows has been successfully diverting our green waste out of the garbage stream. A large regional education campaign by Metro Vancouver has aided compliance. Continued local education is critical in maintaining the City's diversion and avoiding increased costs to the solid waste utility to pay for fines.
- **COMMITMENT TO SUSTAINABILITY.** The City has sustainability goals, however tight budgets have limited resource allocation to sustainability efforts such as focussing on actions outlined in the Community Greenhouse Gas Reduction Plan and the Community Sustainability Plans. The City meets all its mandated responsibilities often resulting in mandates leading our efforts rather than supporting our efforts. Further discussion within our community on environmental / sustainability values, goals, and actions in Pitt Meadows is needed to embark on a more proactive, rather than reactive, approach. The Environmental Inventory and Management Strategy will assist.
- **SNOW AND ICE POLICY.** After the large snow fall accumulations during the 2016/2017 winter, Council has directed staff to review the Snow and Ice Removal Policy and recommend service level changes. These changes will be considered by Council in November 2017.

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KEY INITIATIVES 2018

DIVISION	INITIATIVE	TARGET
ENGINEERING	UPDATE THE TRAFFIC CALMING POLICY. Staff will return to Council with proposed changes to streamline the policy process based on feedback received thus far.	Q2
	REVIEW THE HIGHWAY AND TRAFFIC BYLAW. Review the bylaw to include additional language addressing on-street container storage, clarity regarding parking restrictions and when Highway Use Permits are required.	Q2-Q3
	BONSON ROAD TRUCK TRAFFIC WORKING GROUP. Establish a working group inclusive of both communities (City of Pitt Meadows and the Katzie First Nation) to guide any potential improvements along Bonson Road, including the consideration of a truck levy.	Q1
OPERATIONS	NDMP PHASE 1 FLOOD RISK ASSESSMENT. Complete flood risk assessment	Q1-Q2
	INTEGRATED WATER MANAGEMENT MASTER PLAN (IWMMP). An IWMMP is required given the number of competing interests for water levels throughout the community including; irrigation, drainage, fish habitat, invasive species management, recreational, and provincially issued water licences. This initiative will require a large amount of research and extensive community consultation.	Q3-Q4
	DITCH AND SLOUGH CLEANING. This work is scheduled as an ongoing 4 year cycle balanced against immediate needs and weather conditions.	Q2-Q3
	ASSET CONDITION ASSESSMENTS. In 2017 drainage condition assessments and potable water supply condition assessments will be completed. These condition assessments will help refine the City's asset management plan.	Q2-Q3
	NDMP PHASE 2 FLOOD MAPPING. Apply for 2018 flood mapping funding.	Q3-Q4
	DIKE USE POLICY. Implement community engagement strategy to facilitate the creation of a dike use policy outlining permitted activities on the dike network.	Q2-Q3
	ZERO WASTE CAMPAIGN. This GLT-focused approach for 2018 on environmental sustainability involves maximizing education, outreach and action opportunities. Special events and an active social media campaign centered around this theme are planned.	Q1-Q4
ENVIRONMENT / SUSTAINABILITY	ADOPT A TRAIL PROGRAM. In partnership with the Alouette River Management Society (ARMS), the City plans to implement this stewardship initiative which involves collecting litter on a regular basis throughout our community. The program will initially be offered as an Adopt a Trail program with opportunity for expansion into Adopt a Stream and Adopt a Block programs.	Q1-Q4
	RIPARIAN PLANTING & MAINTENANCE EVENT. This initiative is aimed at working with community groups and individuals to ecologically benefit a select area along Katzie Slough.	Q3

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DIVISION	INITIATIVE	TARGET
	CONTINUED BYLAW AND POLICY UPDATES. Ongoing review and updates to various bylaw and policy frameworks are expected with an environmental lens, including the OCP review starting in 2018.	Q1-Q4
	EARTH DAY. The annual celebration of Earth Day 2018 will focus on Zero Waste. Engaging activities and entertainment for preschool and elementary school-aged children are aimed at promoting Zero Waste initiatives and behaviours within our community.	Q2
	ENVIRONMENTAL INVENTORY & MANAGEMENT STRATEGY. The City is undertaking this initiative to account for its environmental assets and develop strategies to manage these assets. A significant public consultation process is planned to help guide and provide direction for our community in the management of our natural resources.	Q1-Q4
	ENVIRONMENTAL SERVICE AREA REVIEW. An Environmental Service Area Review was initiated in 2017. The report is expected to finalize in Q2 2018 with implementation of recommendations through Q3 and Q4.	Q1-Q4
CROSS ORGANIZATIONAL	OCP REVIEW. Support the Community Services staff with the Official Community Plan review	Q1-Q4
	TREE REPLACEMENT PROGRAM. Assist the Parks Department with their review of the tree replacement policy.	Q1-Q4
	REVIEW OF DEVELOPMENT LANDSCAPE GUIDELINES.	Q3-Q4
	SAFETY & SECURITY WEB. Support discussions regarding Traffic Safety.	Q1-Q4
	WEBSITE REFRESH. Provide updated information to ensure the website has relevant public facing content.	Q2
	BILLING, PERMITTING, LICENSING & TAXATION SYSTEM (BLITS) PHASE 3. Provide support to Prospero implementation.	Q2-Q4

ENGINEERING & OPERATIONS



PROPOSED OPERATING BUDGET

	2017 APPROVED BUDGET	2018 PROPOSED BUDGET	2018 PROPOSED CHANGES	2019 PROPOSED BUDGET	2020 PROPOSED BUDGET	2021 PROPOSED BUDGET	2022 PROPOSED BUDGET
REVENUE							
ENGINEERING	(25,000)	(37,500)	(12,500) -50.0%	(37,500)	(37,500)	(37,500)	(37,500)
OPERATIONS ADMINISTRATION & EQUIPMENT	(593,650)	(593,700)	(50) 0.0%	(594,900)	(594,900)	(595,600)	(596,200)
TRANSPORTATION	(635,700)	(607,100)	28,600 4.5%	(609,900)	(612,700)	(615,600)	(618,500)
DIKING MAINTENANCE	(149,100)	(149,100)	- 0.0%	(149,100)	(149,100)	(149,100)	(149,100)
SUSTAINABILITY	(17,000)	(17,000)	- 0.0%	(17,000)	(17,000)	(17,000)	(17,000)
	(1,420,450)	(1,404,400)	16,050 1.1%	(1,408,400)	(1,411,200)	(1,414,800)	(1,418,300)
EXPENSES							
ENGINEERING	353,400	369,900	16,500 4.7%	380,300	386,400	392,500	398,600
OPERATIONS ADMINISTRATION & EQUIPMENT	503,850	511,900	8,050 1.6%	522,600	532,100	539,600	547,000
TRANSPORTATION	1,500,600	1,485,100	(15,500) -1.0%	1,504,200	1,523,200	1,542,700	1,562,400
DIKING MAINTENANCE	333,800	333,800	- 0.0%	334,800	335,800	336,800	337,800
SUSTAINABILITY	138,500	147,000	8,500 6.1%	149,100	150,700	152,200	154,000
	2,830,150	2,847,700	17,550 0.6%	2,891,000	2,928,200	2,963,800	2,999,800
NET OPERATING EXPENSES	\$1,409,700	\$1,443,300	\$33,600 2.4%	\$1,482,600	\$1,517,000	\$1,549,000	\$1,581,500

ENGINEERING & OPERATIONS

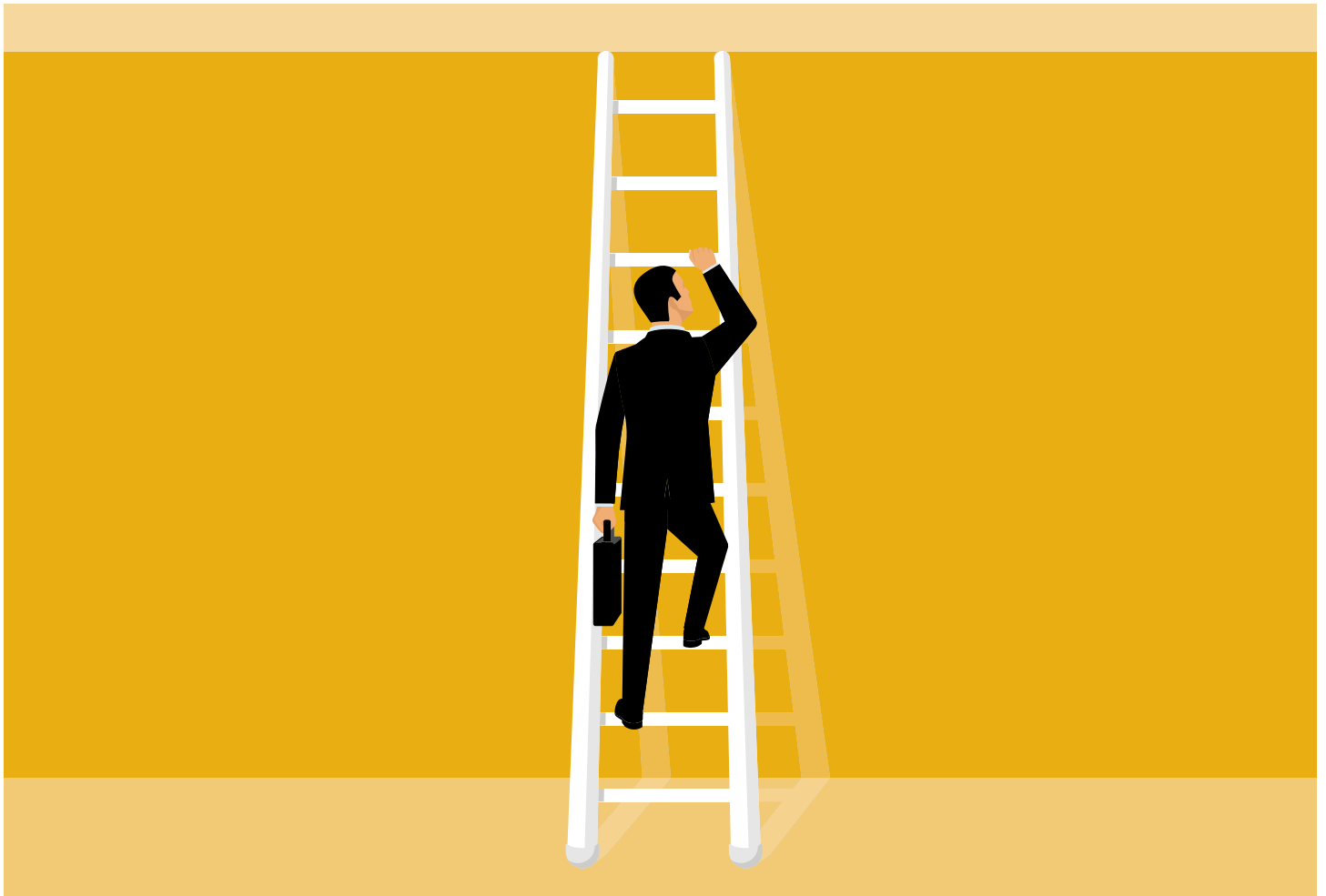


KEY BUDGET CHANGES FOR 2018:

SALARY AND BENEFITS	34,900
PERMIT AND OTHER REVENUE	(12,500)
ROAD MAINTENANCE	7,100
STREET LIGHTS AND AMENITIES	3,400
OTHER	700
CHANGE IN NET OPERATING EXPENSES	\$33,600

PROPOSED CAPITAL BUDGET

Please see City Infrastructure Capital Plan Section.



ENGINEERING & OPERATIONS



STAFFING DECISION PACKAGE Project Engineer Decision Package

Department/Division: Department of Engineering and Operations

Submitted by: Forrest Smith

DESCRIPTION

The Engineering department is responsible for:

- Public engineering inquiries (road, traffic calming, stormwater, sewer, accessibility)
- Infrastructure renewal and replacement planning
- Master planning (Master Transportation Plan, Integrated Water Management Master Plan, Pedestrian and Cycling Master Plan and Pavement Management Plan)
- Capital works:
 - proactively planning for infrastructure replacement
 - design reviews
 - construction monitoring
 - construction contractor risk management
- Grant applications
- Review of development applications and building permits
- Special event reviews

- Provide assistance to a number of committees including: Safer City, Agricultural Advisory Committee, Active Transportation Advisory Committee and the CP Rail Advisory Panel

This workload is currently managed by one full time Engineering Technologist and a Director (with additional responsibilities of environment and public works). In order to minimize risk and maintain services levels, Staff suggest a Project Engineer be hired on an 18 month trial period through capital works funding. This position would be responsible for the planning and delivery of all engineering and operations capital works projects.

Funding for the 18 month Project Engineer position is included within the current capital works budget before Council for consideration. No additional funding requirements are anticipated; there will be no taxation impact in 2018.

Following this trial period, and upon further assessment of the position, if Staff identify value in making this position permanent, they may submit a business case to the CAO to make the position permanent, outlining a phase-in taxation plan for the 2019 five-year financial plan.

RECOMMENDATION

THAT Council:

- Approve the hiring of a Project Engineer for an 18 month contract, with possibility for extending of the role pending CAO review and approval of future business case submission.

ENGINEERING & OPERATIONS



FINANCIAL IMPLICATIONS:

Exempt Employee (37.5 hours/week)

FINANCIAL IMPACTS

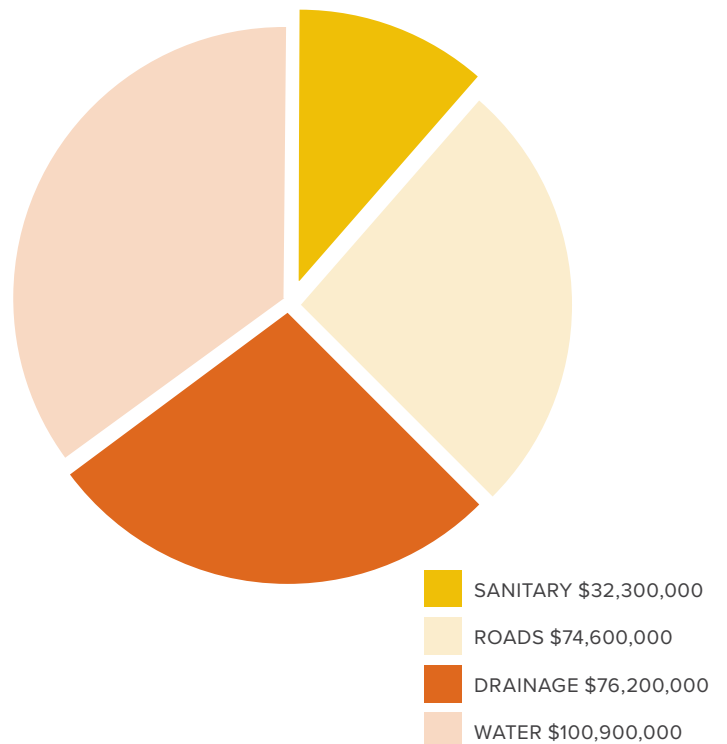
DESCRIPTION OF ANNUAL COSTS FOR THE POSITION	CAPITAL	\$ AMOUNT
BASE SALARY	ONE-TIME	\$96,000
EMPLOYEE HEALTH AND OTHER BENEFITS	ONE-TIME	\$19,200
EMPLOYEE SET-UP (INCLUDING COMPUTER, PHONE, SUPPLIES ETC.)	ONE-TIME	\$5,000
OTHER (SPECIFY):	ONE-TIME	\$
SPECIAL REMARKS: AMOUNT REFLECTS ANNUAL SALARY/BENEFITS		

DISCUSSION

Currently these tasks are managed by the Director of Engineering and Operations. However, given the sustained increase in scope and quantity of capital works projects, there are many instances where the tasks require greater effort than can be afforded. Investing the money in a position which can provide oversight throughout the entire process will undoubtedly provide future dollar savings to the City.

Below is a chart illustrating the total value of infrastructure the proposed candidate would manage in regards to infrastructure replacement planning.

INFRASTRUCTURE VALUE



ENGINEERING & OPERATIONS



The table below includes the scope of 2018 Capital Works which will be managed or supported by the proposed position:

DEPARTMENT	CAPITAL WORKS DOLLAR VALUE
ASSET CONDITION ASSESSMENTS	\$225,000
ROADWORKS INFRASTRUCTURE REPLACEMENT	\$3,500,000
DIKING MASTER PLAN	\$175,000
DRAINAGE INFRASTRUCTURE REPLACEMENT	\$7,800,000
SEWER INFRASTRUCTURE REPLACEMENT	\$475,000
WATER INFRASTRUCTURE REPLACEMENT	\$2,265,000
FIRE HALL REPLACEMENT	\$350,000
TOTAL	\$14,790,000

The above totals include 2017 carry over budgets for work not yet completed.

The Project Engineer position is 1.16% of the planned infrastructure costs, however will be responsible for:

- asset management
- managing infrastructure condition assessments
- grant applications
- proactively planning for infrastructure replacement
- design coordination / design review
- construction monitoring
- construction contractor risk management

ALTERNATIVES

Without a Project Engineer position, staff will continue to perform these duties on a risk based approach. Given that the current tasks are mostly managed by the Director, it may mean decreasing the Director's availability for other business needs of the community.

SUMMARY

It is anticipated that accurate and timely decisions in heavy construction of this magnitude, in partnership with the position's ability to write grant applications, will offset the costs of this position. With the scope of capital works projects increasing over previous years, a dedicated employee will also help the City manage project delivery and help minimize any City risk.