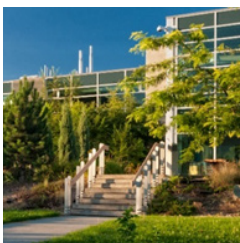
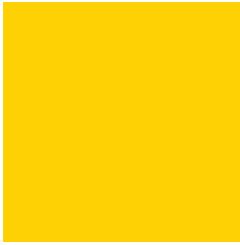


2017



Annual Report

Public Works and Utilities Department



Canada's Tournament Capital

CONTENTS

Message from the Director.....	2
Summary	3
Department Overview.....	4
Office Services Section	4
Capital Projects Division.....	4
Streets and Environmental Services Division	4
Trades Division.....	4
Utility Services Division	4
Office Services Section	5
Calls for Service	5
Telephone and Email Inquiries	6
Communications	6
Capital Projects Division	7
Capital Projects.....	7
Streets and Environmental Services Division	12
Streets and Sign Shop Section.....	12
Environmental Services Section.....	13
Trades Division	17
Mechanical Shop Section	17
Fleet Planning and Compliance Section	17
Electrical, Instrumentation, Carpentry, Mechanical, Millwright, and HVAC.....	18
Utility Services Division	19
Wastewater Treatment and Collection.....	19
Drainage Collection, Flood Protection, and Dike Inspection.....	20
Water Treatment and Distribution.....	20
Celebrating our Successes.....	22
Moving Forward into 2018.....	23

MESSAGE FROM THE DIRECTOR



There is no better way to test a team than seeing how it operates in an emergency situation. 2017 provided us with many opportunities to show just how strong, competent, resilient, and dedicated the Public Works and Utilities team is. Not only did we deal

with numerous significant flooding events in the spring, we also successfully dealt with some breakdowns at the Kamloops Centre for Water Quality.

In addition to dealing with emergencies, the team in this department completed their day-to-day operations and responded to requests from the public. All requests received from the public are logged into our Request for Service system. This allows us to track each and every request and ensure that we are dealing with them

appropriately. In 2017, we had a 49% increase in the number of requests we received. It goes to show that the public needed us more than ever this past year, and we were there to help.

I look forward to working with my great team in 2018 to continue providing fantastic service day in and day out. As always, we will provide you with water, remove your waste and recycling, ensure that the street lights are functioning, plow your roads, and provide many other services.

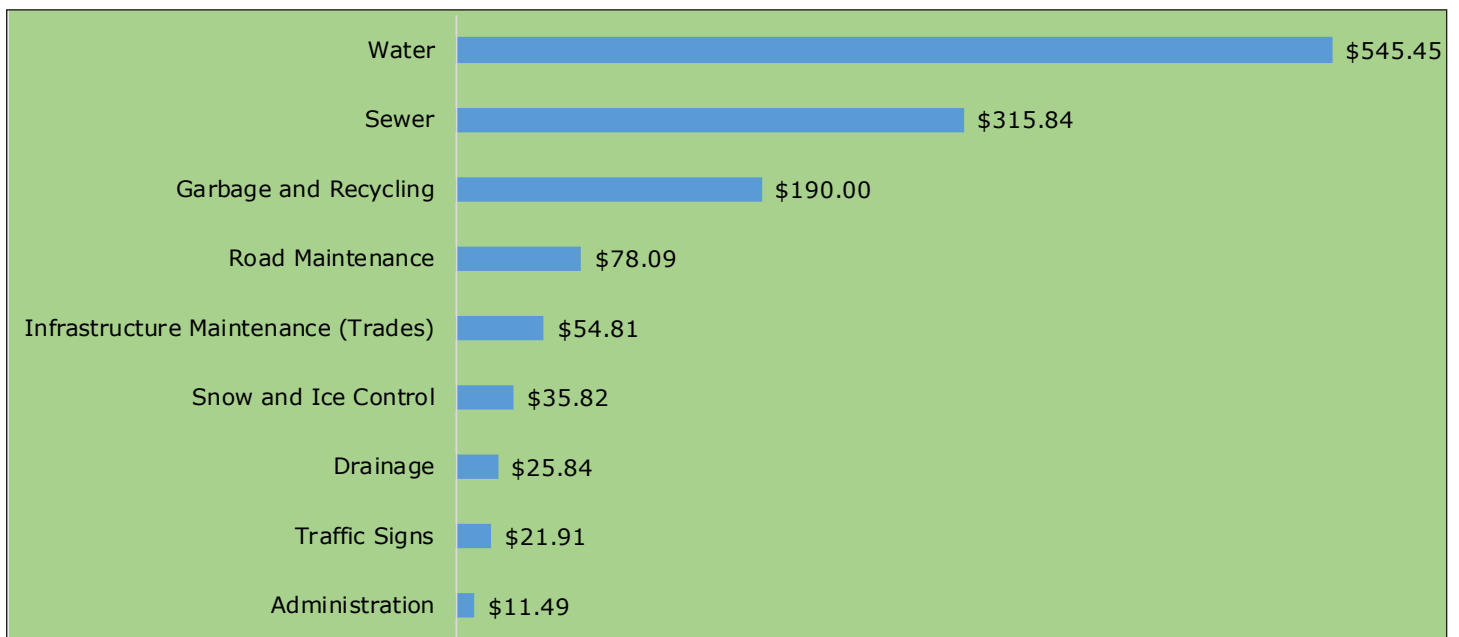
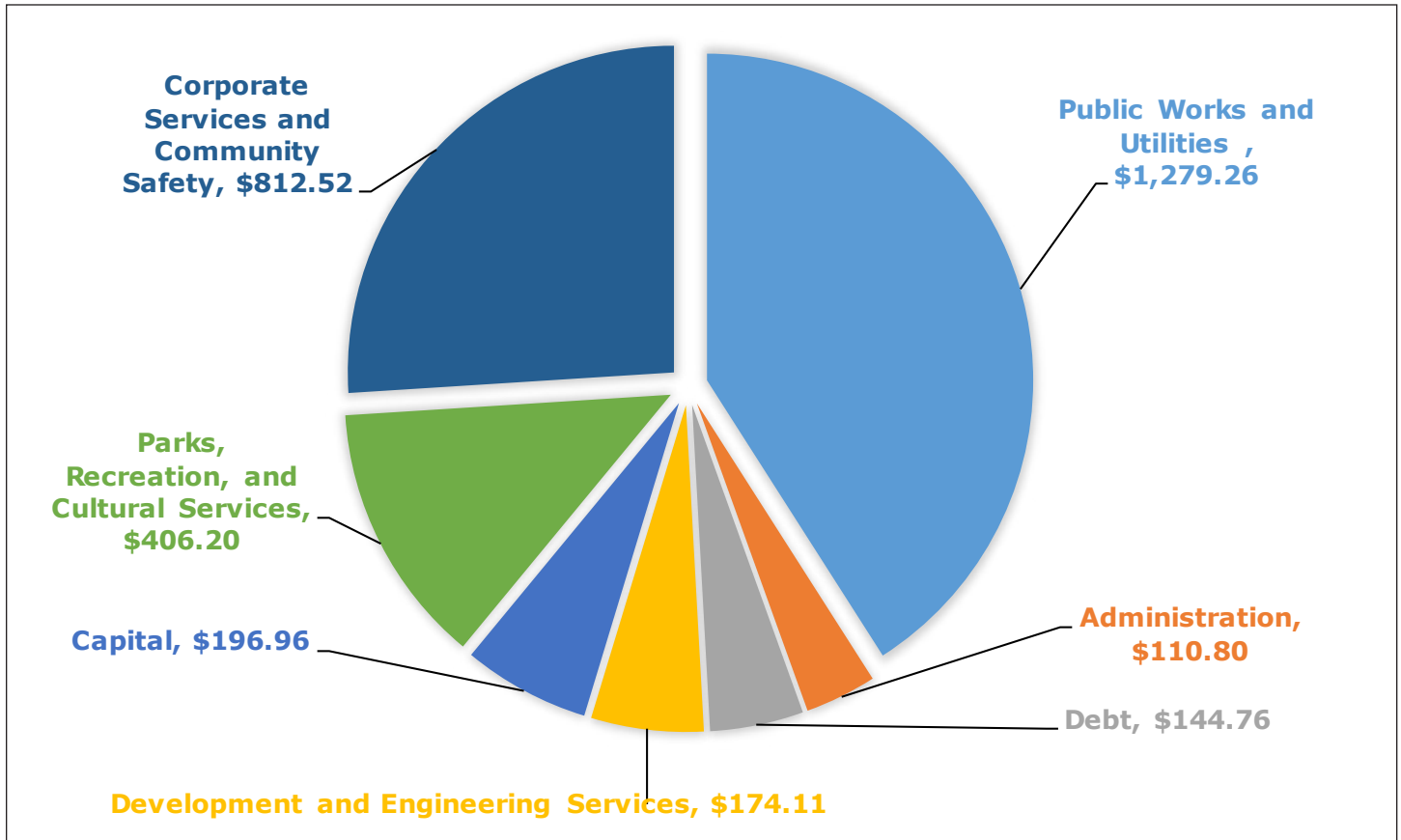
Please don't hesitate to reach out to us at any time. We look forward to continuing to **Make Kamloops Shine**.

Jen Fretz, P.Eng.
Public Works and Utilities Director
jfretz@kamloops.ca
250-828-3697



SUMMARY

In 2017, the typical home contributed \$3.50 per day (\$1,279.26 per year) in property taxes and utility fees to PWU. This contribution was for support services, roads, environmental services, drainage, water, sewer, and solid waste utilities.



DEPARTMENT OVERVIEW

The Public Works and Utilities Department (PWU) serves a population base of approximately 90,000 residents and composes a workforce of more than 200 employees. The department provides the following core services:

Office Services Section

- call centre services
- administrative and clerical support services

Capital Projects Division

- coordination and execution of the City's Capital Plan
- project management
- administration of construction contracts
- construction inspection
- site survey services

Streets and Environmental Services Division

- production and maintenance of traffic signs
- street sweeping
- snow and ice control
- roadway markings
- street maintenance and construction
- weed control
- pollution reduction (water, land, and air)
- regulatory environmental compliance and monitoring
- garbage collection
- landfill operations
- recycling operations
- yard waste and biosolids composting

Trades Division

- fleet maintenance and management
- millwright services
- carpentry services
- electrical services
- heating, ventilation, and air conditioning services (HVAC)
- traffic operations
- street lighting

Utility Services Division

- water treatment and distribution
- sewage collection, treatment, and disposal
- drainage collection and disposal
- flood protection
- 24 hour emergency response

OFFICE SERVICES SECTION

The Office Services Section listens to citizens' concerns and calls for service, provides them with answers, records their information, refers them to the appropriate department staff for action, and tracks and monitors the actions taken to resolve the calls for service. This section also provides clerical support services for PWU and assists in the office's daily operation.

Did You Know . . .

For the public's convenience, there are several ways to submit inquiries:

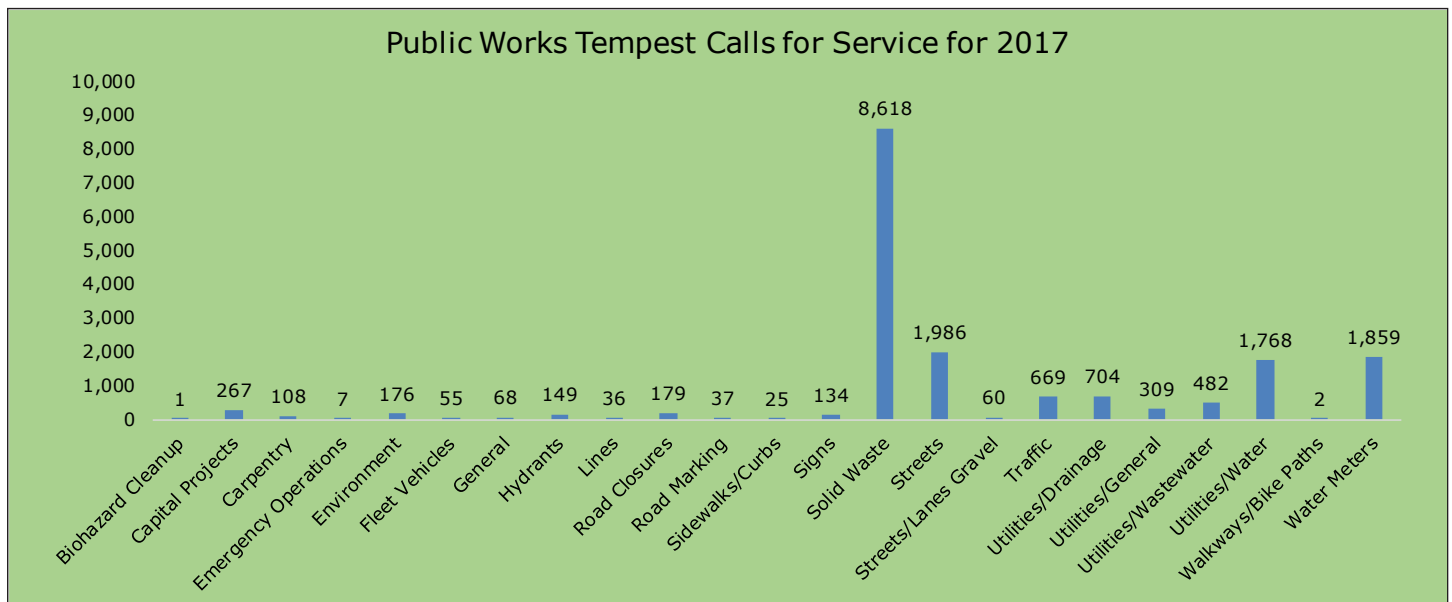
- in person at our front counter
- by telephone at 250-828-3461
- by email to publicworks@kamloops.ca
- via the myKamloops mobile app

The City can respond more efficiently to inquiries if each request is received by only one method.

Calls for Service

Calls for service (phone calls, emails, and app submissions that require action from our department) totalled 17,699 in 2017, compared to 11,898 in 2016. The increase in calls is largely due to tracking the number of residences where items were placed in the wrong containers since Recycle BC came into effect. The Office Services Clerks respond to a large percentage of the requests received through the myKamloops app, and, in 2017, City staff responded to 1,559 requests, compared to 1,139 in 2016.

Public Works Tempest Calls for Service for 2017



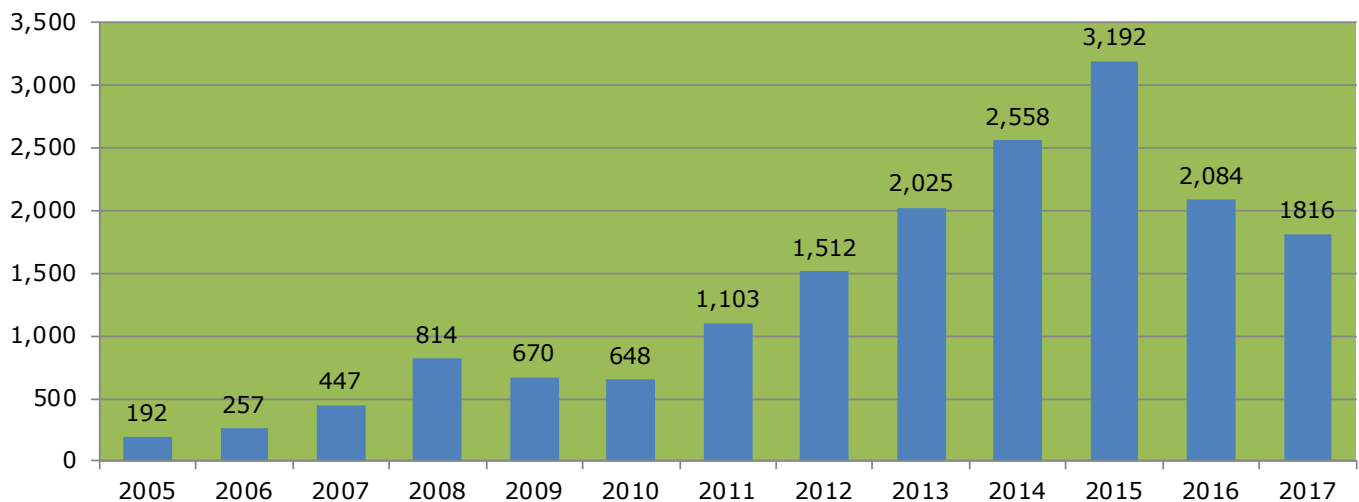
Telephone and Email Inquiries

We are proud of our excellent customer service in PWU. Despite the convenience of social media avenues, we encourage the public to contact PWU by calling 250 828 3461 so that we can continue to provide timely and professional service in the most direct manner.

Telephone Calls Handled by the Public Works Call Centre

	2017	2016	2015	2014	2013
Telephone calls handled	15,264	13,277	16,509	14,754	16,700
Average speed of answer	11 sec.	12 sec.	13 sec.	13 sec.	13 sec.
Average hold time	21 sec.	14.5 sec.	14.33 sec.	42.5 sec.	42 sec.
Average talk time	102 sec.	95 sec.	116 sec.	100 sec.	85 sec.

Emails Generated Through "Report an Issue"



Communications

PWU believes that strong communication regarding our operational and capital work is one of the most important keys to success. We work closely with the Communications and Community Engagement Division to consistently provide the public with transparent, honest, timely, and considerate messages regarding our projects. More formal communications plans, open houses, and community meetings are executed on our larger projects, and we strive for consistency across all of our work. Whether it is a water main break on a local road or major bridge rehabilitation, our goal is to work as a team. We want to ensure that we achieve successful public engagement—that people come away from a process saying “I may not agree or support this project, but I understand it.”

CAPITAL PROJECTS DIVISION

The Capital Projects Division coordinates the City's Capital Plan, manages projects, administers construction contracts, provides inspection services for internal/external construction, and provides site survey services for the City.

Capital Projects

The Capital Projects Division managed approximately 55 projects in 2017. Some of the highlights included:

Project: 2017 North Primary Gravity Main Upgrade

Budget: \$4 million

Project Description: This project included supply and installation of sanitary and storm main; multiple sanitary tie-ins, including one at the North Primary Lift Station; water main crossings; concrete curb and gutter; full road reconstruction; and pavement marking and signage.



Did You Know . . .

Did you know that the City was able to reuse native granular material for pipe bedding? This resulted in a cost savings for the project and reduced our impact on the environment!

Project: 2017 Grasslands Boulevard Extension Improvement Project

Budget: \$3 million

Project Description: Connect Grasslands Boulevard from Cantle Drive to Woodrush Drive with a wider paved surface, upgrade utilities, improve the lighting for pedestrian facilities, and improve bicycle path connections. This work included:

- installing 520 m of new asphalt and 520 m of new sidewalk to provide a pedestrian connection for the entire neighbourhood
- installing 340 m of 300 mm diameter PVC water main to allow for future development in a higher water pressure zone
- replacing an existing 200 mm diameter AC water main with a new 200 mm diameter PVC water main to provide services for seven new properties and replace services for seven existing properties
- repairing an existing 200 mm diameter AC sanitary sewer main on Alpine Terrace and installing 110 m of new 200 mm diameter PVC sanitary sewer main to provide services for seven new properties
- installing 305 m of 300 mm diameter PVC storm main, complete with catch basins
- installing 258 m of 450 mm diameter PVC storm main
- installing a gabion wall to support the new road connection, approximately 90 m long and ranging in height from 1 m to 4 m



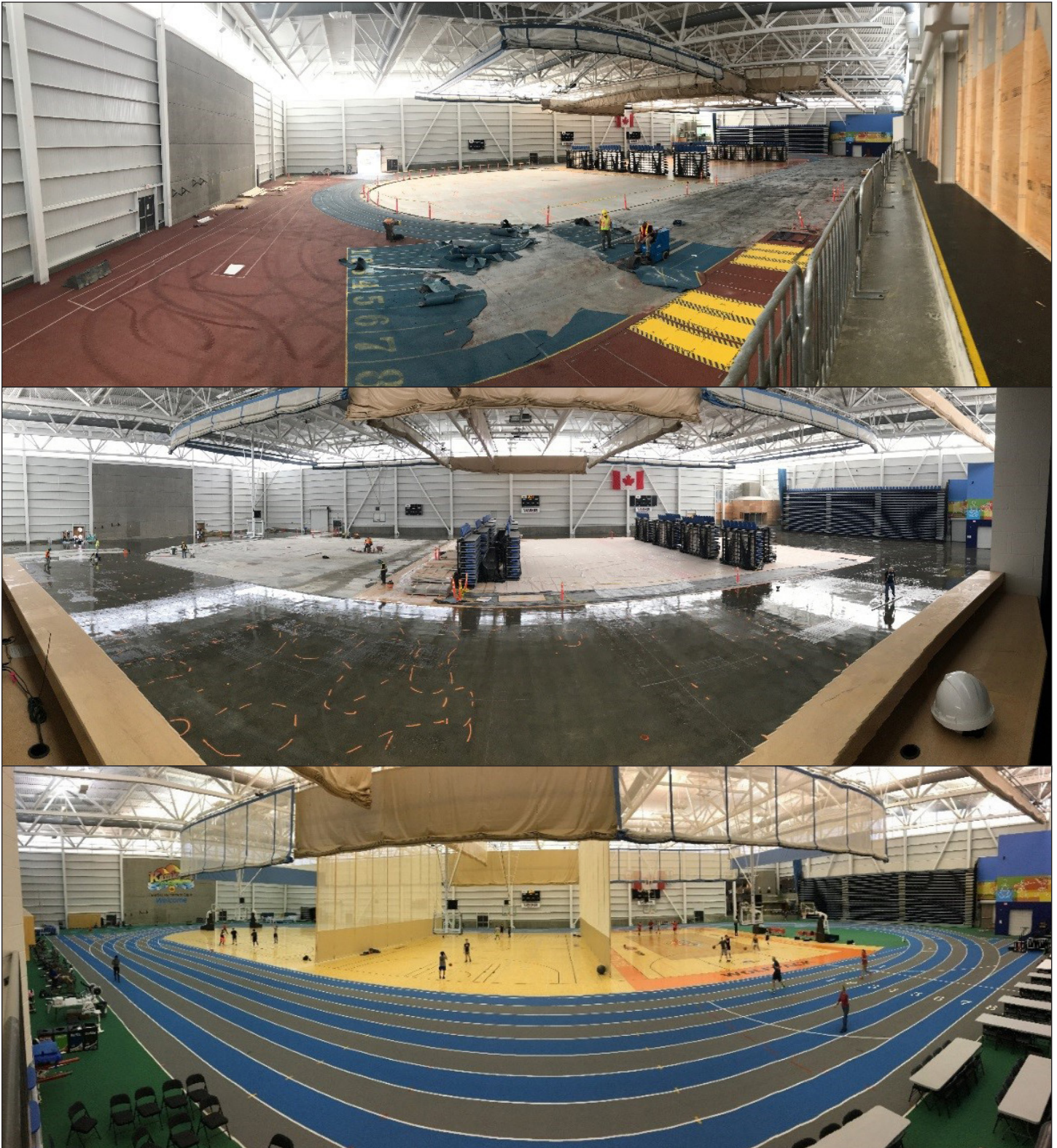
Did You Know . . .

The Grasslands Boulevard project will connect the Batchelor Heights and Westsyde neighbourhoods and provide an additional emergency access. The project was paid for by Development Cost Charges (DCCs).

Project: 2017 TCC Field House Floor Replacement

Budget: \$2 Million

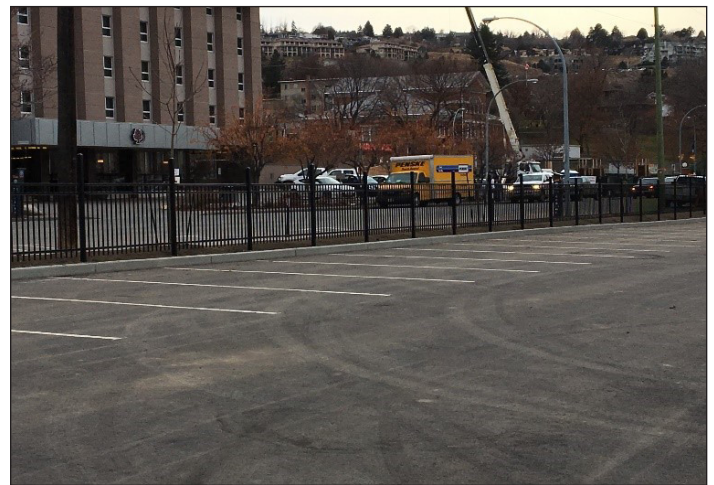
Project Description: Remove and replace the flooring in TCC's Stadium Fieldhouse, including resizing the track lanes and using MONDO flooring to meet international standards for competition. The project also included adding a third hardwood court inside the track for basketball, volleyball, and badminton.



Project: 2017 Kamloops Daily News Demolition and**Parking Lot Construction**

Budget: \$1.1 million

Project Description: Demolition of the former Kamloops Daily News building commenced in August and completed in October. Reconstruction of a new asphalt surface parking lot, complete with 172 new parking stalls, landscaping, irrigation, and fencing, was completed in late fall by City crews and local contractors.



Did You Know . . .

All of the concrete and bricks from the demolition of the building structure were processed, crushed, blended with other material, and reused as backfill on site for the parking lot.

Project: 2017 Qu'Appelle Boulevard Overlay

Budget: \$1.3 million

Project Description: Milling and paving from Highland Road to Omenica Drive as well as storm drainage improvements, pedestrian upgrades, and safety improvements around Juniper Ridge Elementary School.

Project: Barnhartvale Road Full Depth Reclamation

Budget: \$1 million

Project Description: To roto-mill and stabilize approximately 22,000 m² of existing roadway (Todd Road to Campbell Creek Road) and supply and install approximately 22,000 m² of asphalt pavement at 100 mm thickness. Approximately 440 tonnes of gravel shoulder restoration and drainage ditching improvements were made.

Other Capital Projects

Other projects completed by the Capital Projects Division in 2017 included:

- Fraser Street Sidewalk
- Wood Street Pedestrian Upgrades
- New Sanitary Main at Howe Road/Balmoral Drive
- Hillside Drainage Improvements
- Public Works Yard Improvements
- Rayleigh Skate Park
- Campbell Creek Road
- Juniper Park West
- Simms Road
- Tranquille Road (Cinnamon Ridge to Criss Creek)

**Did You Know . . .**

Did you know that the City took an escalated public safety approach during the 2017 wildfire season by requiring contractors to follow the safety guidelines outlined in the *Wildfire Act* and Regulations on all contracted civil projects? This was implemented on all City projects that were adjacent to high-risk areas.

STREETS AND ENVIRONMENTAL SERVICES DIVISION

Streets and Sign Shop Section

The Streets and Sign Shop Section is responsible for the maintenance of over \$150 million in corporate assets, including road maintenance and reconstruction, street markings, and traffic signs. The following table illustrates several examples of typical activities undertaken in 2017.

Activity	Measurement
Paved street travel lane	1,184 km
Gravel street travel lane	61 km
Signs maintained (approximately)	16,800
Tangent road line painted	400 km
Road markings painted	13,300 m ²
Snowfall received (airport/Barnhartvale)	90 cm/182 cm
Snowfall occurrences (airport/Barnhartvale)	54/36
Labour hours for pothole repairs	3,618 hrs

Did You Know . . .

The Streets Division removes snow from both business districts and metered street parking spaces with a fleet of 12 trucks, 2 graders, and 1 snow blower when windrows reach 60 cm.

In 2017, the Streets and Environmental Services Division also:

- utilized over 3,600 tonnes of asphalt in road repairs
- prepared the subgrade structure for the Seymour Street parking lot
- completed road reconstruction projects internally on Comox Avenue, Oak Road, Simms Road, and Jasper Avenue
- assisted in cleanup efforts following the December 2016 Lorne Street sewer break



Environmental Services Section

Waste Diversion

In 2017, work continued at the Kamloops Resource Recovery Centre (KRRRC) to improve the site's capacity to function as a receptor for construction and demolition materials. This site will aid in the City's efforts to achieve the diversion targets outlined in the Sustainable Kamloops Plan, while saving space in our landfills. This year, completed projects included installing a new 80 ft. scale, decommissioning and removing old hydro poles, reinforcing two bunkers, demolishing an old house, installing a concrete pad for improved wood diversion, and paving the first 800 m of the entrance to the site from Valleyview Drive.



A campaign to collect and compost pumpkins was introduced in October 2016. The pumpkins, which would normally be destined for the landfill, were diverted to produce compost at the Cinnamon Ridge Compost Facility. While the total weight of pumpkins collected in 2017 was lower than in 2016 (7,145 kg compared to 13,655 kg), this decrease was likely attributable to the extreme cold weather conditions that occurred in early November.



Recycling Collection

The City joined Recycle BC in April 2017 as a collector under the provincial packaging and printed paper stewardship program. Under the new stewardship program, glass and soft plastics were removed from curbside and multi-family bin collection. As part of the transition to the new program, the City's efforts to reduce contamination levels to the program target of 3% involved a robust education program through customer outreach and curbside recycling cart inspections.

The amount of material collected as recycling from residents decreased by approximately 2%, from 6,259 tonnes in 2016 to 6,144 tonnes in 2017. This decrease in the tonnage collected can likely be attributed to a decrease in the amount of materials not accepted under the provincial stewardship program including glass, soft plastics and various non-recyclable materials.

Waste and Recycling Statistics

The following table provides a snapshot of the 2017 solid waste statistics compared to previous years.

Solid Waste Statistics	2017*	2016*	2015	2014
Total annual waste material (tonnes)	91,820	87,185	68,975	65,000
Waste landfilled (tonnes)	63,951	58,680	46,400	44,000
Recycling at the landfill (tonnes)	16,339	15,005	10,275	10,000
Yard waste materials (tonnes)	11,530	13,500	12,300	11,000
Curbside recycling (tonnes)	6,144	6,259	5,579	6,130
Population estimate (BC Stats)	92,317	91,402	90,429	89,828
Per capita landfilled (tonnes/person)	0.693	0.642	0.513	0.490

*figures include tonnage from the KRRRC acquired in 2016, in addition to the Barnhartvale and Mission Flats Landfills.

Did You Know . . .

Each year, the City waives garbage container exchange fees for downsizes during Waste Reduction Week. In 2017, 195 households took advantage of this initiative and downsized their garbage containers for free.

Waste Wise App

In November 2017, the City launched the Waste Wise Kamloops app. This new tool helps residents stay connected to the City's waste collection programs and overall waste management. The Waste Wise Kamloops app currently includes two features:

- customizable reminders that provide curbside customers with notifications of their designated collection day
- a waste wizard search engine that helps residents find details regarding how a material can be reused, recycled, or composted or if it needs to be disposed of as garbage



The app has been well received by residents, with 8% of households using the tool in the first two months since its launch. The app also provides the City with data to better understand which types of materials residents are seeking clarity on how to properly manage.

Waste Wise Statistics	2017
Active collection day reminders	2,106
Addresses searched (unique)	4,260
Materials searched (total searches)	4,687
Most popular material searched (number of searches)	Plastic bags and overwrap (151) Glass bottle and jars (97) Glass (90)

Landfill Gas Collection System

The City continues to operate and refine the landfill gas collection system at the Mission Flats Landfill. The system collects landfill gas through a system of extraction wells and then burns the landfill gas. This process converts methane (CH₄), a potent greenhouse gas, into carbon dioxide (CO₂), which is a less harmful greenhouse gas. City staff work to maximize system runtime throughout the year and continue to improve overall system performance.

Landfill Gas System Statistics	2017	2016
System runtime	66%	63%
Unplanned system shutdowns	56	143
Methane collected and converted to CO ₂ (tonnes)	178	175



Mission Flats Landfill Groundwater Monitoring

In fall 2017, the City hired a consultant to expand the groundwater monitoring program related to the Mission Flats Landfill with the intent to better understand what, if any, impacts the landfill may be having on groundwater in the area. The results of the expanded groundwater monitoring program are still pending and will be summarized in the 2018 annual report.

Did You Know . . .

In 2017 the ASK Wellness Society collected almost 7,000 mattresses and box springs from City landfills for recycling? These items are taken offsite where they are dismantled into their various construction components, the majority of which are recycled or reused. This is a significant improvement from initial mattress recycling efforts which began in 2015 and only included the recovery and recycling of metal and wood from these items.

Asphalt Shingle Recycling

In 2017, the City entered an agreement with Intercity Recycle Ltd. to recycle asphalt shingles collected at City sites. Shingles are diverted at the Mission Flats Landfill and KRRC and then transported off site by Intercity to be downer-processed and recycled into new asphalt for roads.



Did You Know . . .

- Between April and October 2017, there were 353 black bear, 40 cougar, 19 coyote, and 193 deer reports to the Conservation Officers Service. Other communities are experiencing increasing numbers of deer conflicts and are looking to control the deer population, and local conservation experts expect our number of deer conflicts to increase as well.
- As part of the City's Bear Smart Program for 2017, the City's WildSafeBC Community Coordinator (WCC) increased door-to-door canvassing in high-risk wildlife conflict areas (Juniper Ridge and Juniper West) and used local events and presentations to supplement those campaigns. Highlights included BC Goes Wild, Boo at the Zoo, and BC Bears Day. The WCC visited several elementary schools to deliver the Junior Ranger Program, which encourages children to take an active role in preventing conflicts with wildlife. A total of 1,252 students were reached, and 946 Junior Ranger Kits were handed out. City staff also developed new animated commercial in support of the City's Bear Smart Program.

Environmental Monitoring

Each year, the Environmental Services Section monitors the impact, if any, that the City has on the surrounding environment. Our ongoing monitoring includes:

- groundwater and compost sampling at the Cinnamon Ridge Compost Facility
- groundwater level monitoring in the Aberdeen area
- groundwater levels and chemistry at the Mission Flats and Barnhartvale Landfills
- concentrations of landfill gas generated at the former McGill Road Landfill
- quantity and composition of landfill gas generated at the Mission Flats Landfill

The Environmental Services Section also oversees the ongoing operation of the Cinnamon Ridge Composting Facility.

Did You Know . . .

Each year, the City collects Christmas trees to be composted at the Cinnamon Ridge Composting Facility. Over the past five years, approximately 20,000 Christmas trees have been composted. The nutrient-rich compost is used in parks and gardens throughout the city.



The City continued to participate in reviews and environmental assessments of major projects taking place in the Kamloops area, including the proposed KGHM Ajax Mine and the Kinder Morgan Trans Mountain pipeline expansion.

TRADES DIVISION

The Trades Division is made up of seven components: electrical, mechanical, carpentry, instrumentation, millwright, HVAC, and fleet. These areas work co-operatively in a number of different areas around the city, including servicing of the City's vehicles and equipment, operating and maintaining the traffic signals, ensuring the City's buildings function properly, and maintaining all of the pumps in the water and sewer utility systems.

Did You Know . . .

In 2017, the Fleet Planning and Compliance Section replaced 10 compact cars with 10 hybrid cars, which will reduce greenhouse gases by approximately 19,000 kg of CO₂ per year and reduce fuel consumption by approximately 8,000 L per year.

Mechanical Shop Section

The City rolled out a fleet management system (FMS) in 2017. This system included installing global positioning system (GPS) units in 304 vehicles and pieces of equipment. A policy for fleet use was also created to ensure all operators were aware of the changes. Since the rollout, we have seen a decrease in safety concerns such as seatbelt compliance, speeding, and other issues. There has also been a combined fuel savings of 10% in gas and diesel.

In 2017, the Mechanical Shop Section also:

- performed 110 government-regulated motor vehicle inspections
- completed 6,180 (a 20% increase over 2016) work orders for repairs and maintenance on the light- and heavy-duty vehicle fleet, including the Utility Services Division's generator diesel engines

Fleet Planning and Compliance Section

The Fleet Planning and Compliance Section has worked closely with the Purchasing and Inventory Control Division (Purchasing) to change how vehicles and equipment are purchased. This work has streamlined the buying process and allowed the Fleet Planning and Compliance Section to satisfy all of its buying requirements in 2017, including clearing the backlog from 2016. Fleet Planning and Compliance Section staff have also been working closely with user groups to better understand their fleet requirements and are now ordering equipment early if it has a long lead time to ensure that the equipment arrives when it is needed.

Purchasing and the Fleet Planning and Compliance Section also worked closely together to examine and change equipment disposal. In the past year, the City has looked at getting the best dollar value by adding the option of a trade-in when purchasing new equipment. If the City feels that the value is not sufficient, then another option is to place the equipment on the BC Auction website. The table to the right lists the 2017 totals for purchases and surplus sales.

2017 Fleet Purchases		
24	Trucks	\$1,083,179.40
15	Cars/Vans/SUVs	465,077.37
2	Garbage Trucks	672,564.94
1	Sweeper	340,251.44
2	Mowers	206,932.23
2	Backhoes/Excavators	376,589.55
1	Screen Plant	249,394.80
5	Other Equipment	430,965.66
		\$3,824,955.39

2017 Fleet Surplus		
11	Trucks	\$ 42,805.64
14	Cars/Vans/SUVs	36,473.75
9	Machinery	201,650.00
20	Equipment/Parts	23,053.18
		\$303,982.57

Did You Know . . .

The cost saving from fleet purchases for 2017 was approximately \$400,000, which was achieved by changing the equipment replacement process to include considerations such as right-sizing, vehicle repair history, and kilometres.

Electrical, Instrumentation, Carpentry, Mechanical, Millwright, and HVAC

The following were completed in 2017:

- maintained 32,516 m² of buildings and offices
- conducted preventative maintenance on the 58,528 m² of recreational facilities (TCC, Sandman Centre, pools, arenas, etc.)
- received 2,009 service requests and created 4,517 work orders on the new CityWorks work order system
- installed variable frequency drives on several large pieces of HVAC equipment to reduce energy costs and increase occupant comfort
- installed a solar irrigation service for Juniper West Park, which eliminated the need for hydro service
- replaced eight rooftop heating/cooling units with new, more energy-efficient equipment
- repaired or replaced approximately 250 m of sidewalk throughout the city
- replaced the concrete retaining wall on Connaught Street with new Redi-Rock blocks (an estimated cost saving of \$50,000 over a concrete replacement)
- installed pressure-reducing valves to improve water quality in the Pineview area
- upgraded all pumps/motors and electrical components at the 509 Water Booster



Did You Know . . .

This solar service was installed at Juniper West Park for the irrigation system, which resulted in a cost saving of \$13,000.

UTILITY SERVICES DIVISION

The Utility Services Division is made up of four sections that are collectively responsible for the operation and maintenance of the City's water, sewer, and drainage systems. This dedicated team of staff operates one of the most complex water distribution and treatment systems in Canada. The Utility Services Division also operates and maintains an extensive sewer collection system that includes a unique and innovative sewage treatment facility. Utility Services staff oversee the City's drainage collection system and provide crucial inspections of the City's flood protection measures, including an annual dike inspection. Utility Services Division staff work 24 hours a day, 365 days a year, to ensure that Kamloops is provided with top quality utility services.

Wastewater Treatment and Collection

The Kamloops Sewage Treatment Centre (KSTC) completed its third full year of operation in 2017. The original lagoon treatment system was replaced with a modified activated sludge facility in fall 2014. Highly trained staff oversee operations of the KSTC, which includes a nationally accredited laboratory. KSTC staff ensure that top quality reclaimed water is produced and provided for beneficial reuse through the Cinnamon Ridge Effluent Distribution System (CREDS).

Key statistics from the KSTC in 2017:

- The KSTC received and treated 10.75 million m³ of raw sewage.
- Over 2.36 million m³ of treated effluent were sent to the CREDS for irrigation purposes. Treating our effluent discharge to this level of quality for the purpose of irrigation water eliminated discharge to the Thompson River for a period of 102 days during the irrigation season.
- An estimated 1,500 dry metric tonnes of biosolids were produced for potential beneficial reuse purposes.

The sewer collection system consists of 61 major sewer pump stations, 54 residential sewer pump stations, 538 km of sewer mains, and 23,364 service connections. City crews cleaned and flushed 163,727 m of sanitary sewer mains, and CCTV video inspected 21,008 m of sanitary main in 2017. Utilities Maintenance staff hauled 10,512 m³ of sewage from the Campbell Creek Industrial Area in 2017, which is an increase of nearly 4,500 m³ over 2016.

Did You Know . . .

- The highly trained group of dedicated staff working at the KSTC are able to treat our sewage to a level of quality that allows it to be beneficially reused for a variety of purposes, including irrigation and forest fire suppression. During the devastating fire season in summer 2017, treated effluent was used by aerial support units fighting the massive fires around Kamloops to help save our forests and protect the lives of ground crews battling the blazes.

Treated Effluent Reuse Comparison	
2016	1.2 million m ³ (m ³ = 1,000 L)
2017	2.36 million m ³ (m ³ = 1,000 L)
Difference	1.16 million m ³ more in 2017

- In 2017, the high demand for our quality treated effluent for irrigation and forest fire suppression allowed KSTC staff to divert 1.16 million m³ more than they diverted in 2016. In other words, compared to 2016, in 2017 we diverted an additional one billion, one hundred sixty million litres of treated effluent from the Thompson River.

Drainage Collection, Flood Protection, and Dike Inspection

Utility Services staff operate and maintain 12 storm pump stations, 375 km of storm mains, 3,989 service connections, 6,798 catch basins, and 569 rock pits. In 2017, Utility Services crews cleaned 12,836 m of drainage mains, performed CCTV inspection of 6,998 m of drainage main and flushed 2,193 m of drainage culverts.

The City inspects and monitors 21 km of dikes/berms each year during freshet. The frequency and duration of these inspections is adjusted based on river elevations, snow pack levels, and predicted weather patterns.

The heavy snow pack and rapid melt in spring 2017 created a very challenging freshet season for many around our region. Utility Services staff responded to a number of freshet-related events, helping to protect our residents and their properties. Our flood response plan was tested, and it proved to be very effective at ensuring the necessary precautions were in place well in advance of the water rising. New flood mapping tools on the City's Geographic Information System were able to predict the impact of rising waters and helped to guide the protective preventative measures. This tool was critical in the decision not to install temporary berms at Riverside Park. This decision saved hundreds of thousands of dollars in installation and restoration costs.

Did You Know . . .

During the 2017 freshet season, Utility Services staff developed an innovative approach to sealing catch basins that typically surcharge with rising river levels. The bags were filled with sand and placed on top of the catch basin grate, preventing water from bubbling out of the catch basin.



Water Treatment and Distribution

Utility Services staff operate and maintain one of the most complex and challenging water treatment and distribution systems in Canada. Distributing drinking water throughout the unique geography of Kamloops demands a high degree of planning and coordination and relies on the dedication and expertise of a highly skilled team of staff. The water distribution system contains 625 km of water distribution mains, 45 booster stations, 46 reservoirs, 24,856 water service connections, and 2,356 fire hydrants.

In 2017, Utility Services staff responded to and repaired 77 water service leaks and 23 water main breaks, which helped to conserve water and protect public health. Staff cleaned and flushed 4,186 m of water mains to help maintain our top quality drinking water. Utility Services staff also played a crucial role in protecting the city by inspecting, maintaining, and repairing 345 fire hydrants in 2017.



Utility Services' in-house construction crews proactively replace water mains and services on an annual basis as part of the City's local road works program. These efforts ensure effective asset management of the City's water distribution network. In 2017, the City's in-house construction crew installed a section of water main on Laroque Street using trenchless installation. Crews installed the water main by directional drilling, which saved thousands of dollars in restoration costs. Our construction crews also install new utility services for development projects. In total, our in-house capital construction crew installed 66 m of water main, 78 water services, 251 m of sanitary main, 65 sanitary services, and 197 m of storm main during the 2017 construction season.

In 2017, the Kamloops Centre for Water Quality (KCWQ) treated a total of 19.03 billion litres of water. The peak daily water usage was 117.08 million litres on July 3, 2017. Despite the incredibly dry summer we experienced, the total water production from KCWQ in 2017 was the second lowest since the commissioning of the plant in 2005.

Did You Know . . .

With the reduced water demand in winter months, Utility Services staff are able to turn off the North Shore pumps at the River Street High Lift station and save energy by supplying the entire Southeast Sector and North Shore by manually operating a valve to control the flow of water to the different sectors of the distribution system. Reducing the number of pumps required to supply water dramatically reduces the energy demand generated by pump starts/stops.

Imagine if we were able to reduce our water use in summer months to a point where this method of operation could occur year-round!

CELEBRATING OUR SUCCESSES

PWU has been celebrating Public Works Week by holding an open house at the Public Works Centre every two years since 2009. In 2017, Public Works Week was celebrated nation-wide from May 21 to 27, and we hosted an open house on Saturday, May 27. This free event for the public included a variety of activities and demonstrations and was a huge success as it was attended by over 680 residents of all ages. The children enjoyed the variety of activities, and the adults picked up some great tips for the home and garden, environmental sustainability information, and a better understanding of how the City operates. A video of the event was created to showcase Public Works and to celebrate the great teamwork in our department.

Other successes in 2017 included the following:

- participated in Career Day at Valleyview Secondary School
- held first Women in Public Works Workshop, which coincided with International Women's Day
- developed and implemented wildfire practices for capital projects
- PWU Director participated in a mentoring program
- PWU Director volunteered with the STEM (Science, Technology, Engineering, and Math) summer camp for girls



MOVING FORWARD INTO 2018

There are a number of projects and initiatives that PWU will be tackling in 2018. Highlights of these projects include:

- Reconstruction of River Road, Lansdowne streetscape improvements, Juniper Creek bank stabilization, Arrowstone booster station improvements, Sandman Centre lighting improvements, Canada Games Pool renovation, and expansion of the North Shore Community Policing Office
- Commissioning the North Shore emergency water intake
- Continuing to work with the Thompson-Nicola Regional District to finalize the Regional Solid Waste Management Plan
- Reviewing the solid waste collection operation for efficiencies
- Continuing to work on our strategy for biosolids, green waste, and organic waste
- Reviewing weed control responsibilities across the community
- Attending a snow clearing conference and bringing recommendations to Council for consideration
- Continuing to work with the Communications and Community Engagement Division to share information with our residents regarding what the Public Works and Utilities Department does on a day-to-day basis
- Continuing to improve our team by focusing on respect, professionalism, teamwork, and communication