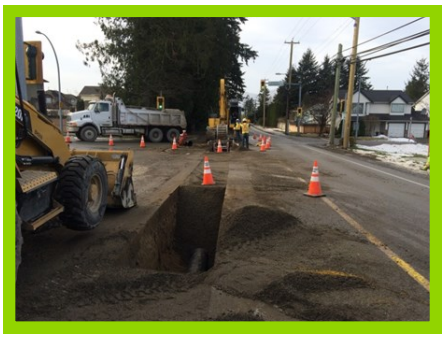
Engineering



Engineering is responsible for water and sewer, transportation and environmental services.

Second Quarter Report, 2017

CITY OF CHILLIWACK

2016 Water and Sewer Combo Project

The project is a combination of one water main installation, one storm main installation and five sewer main upgrades throughout Chilliwack that have been combined to increase scope and economy of scale. The proposed water main installation will increase supply, fire flow capacity and improve the water quality of the existing water system in the local area. The proposed sewer main replacements and upgrades will replace aging infrastructure and increase capacity to satisfy increased flow from new and future developments. The proposed storm main installation will convey storm water away from water supply production wells to protect the City's drinking water.

The following table shows water, storm and sewer main installation and upgrade projects.

Name of Project	Contract Value	Project Status
Keith Wilson Road Water Main	$840,130	Completed
Watson Road Storm Main	$808,389	Completed
Watson Road Sanitary Main	$82,147	Completed
Watson Road Paving Works	$315,384	Completed
Evans Road Sanitary Main	$348,242	Design completed
Vedder Road Sanitary Main	$643,364	Design completed
Cheam Avenue Sanitary Sewer	$935,604	Completed
Hodgins Avenue Sanitary Sewer	$746,777	Completed
Hodgins Avenue Paving Works	$333,730	Completed
Princess Avenue Sanitary Sewer	$89,957	Completed

The Sandpiper Contracting/Wedler Engineering Design Build team is proceeding with design and construction of the project. This $5,143,724 overall project is scheduled to be completed in August 2017.

2016 Utilities Project

The project is a combination of water main and sanitary sewer projects that have been combined to increase scope and economy of scale. The proposed water main installation will increase supply, fire flow capacity and improve the water quality of the existing water system in the local area. The proposed sanitary sewer rehabilitation will replace aging infrastructure and improve system reliability.

This $1,251,290 overall project was substantially completed by the Sandpiper Contracting/Wedler Engineering Design Build team in May 2017.

The following table shows water and sewer main installation and upgrade projects.

Name of Project	Contract Value	Project Status
Chilliwack River Road Water Main	$644,890	Completed
Wellington Avenue Water Main	$411,400	Completed
Williams Street Sanitary Sewer	$195,000	Completed

Wastewater Treatment Plant High Strength Wastewater Pre-treatment Facility Project

The project involves construction of a pre-treatment facility with high-rate anaerobic treatment technology combined with a biogas heat recovery system to heat an anaerobic bioreactor, an effluent heat recovery system to be used to maintain the required thermal balance, odour control and waste biomass handling components and a dedicated building to house electrical and testing equipment.

The PCL Constructors Westcoast Inc. (PCL) has been selected as the Construction Manager along with Associated Engineering (B.C.) Ltd. as the design consultant for this Construction Management Project. Global Water & Energy has been selected as the preferred vendor to supply an anaerobic wastewater treatment system for the pre-treatment facility after successful completion of the Request for Proposal (RFP) process. The ground improvement works at the site were completed by PCL in May 2018. The overall project is scheduled to be completed in December 2018.

Safer City—Engagement

Safer City was invited to speak at a lunch meeting hosted by the Canadian Council of the Blind – Chilliwack. Discussions included sharing the intention of the Safer City program, road safety questions and concerns. This delightful opportunity was a highlight in the quarter where a deeper appreciation and understanding was gained for the challenges that blind individuals face roadside while going about their daily routine.

Safer City provided an informational tent on road safety for the annual Jump Start event at Canadian Tire on May 27. Visitors were eager to share their input regarding local road safety.

On May 31, Safer City provided a cycling safety chat for the riders participating in the annual Bike to Work with Mayor and Council event. Cyclists travelled from the starting point at Sardis Senior Secondary School to the Fraser Valley Regional District parking lot on Young Road where they enjoyed speeches, bike registration, bike repairs, information on Cycle Vision Chilliwack, music, coffee and a breakfast sandwich before heading off to work for the day.

Safer City—Driver Communication

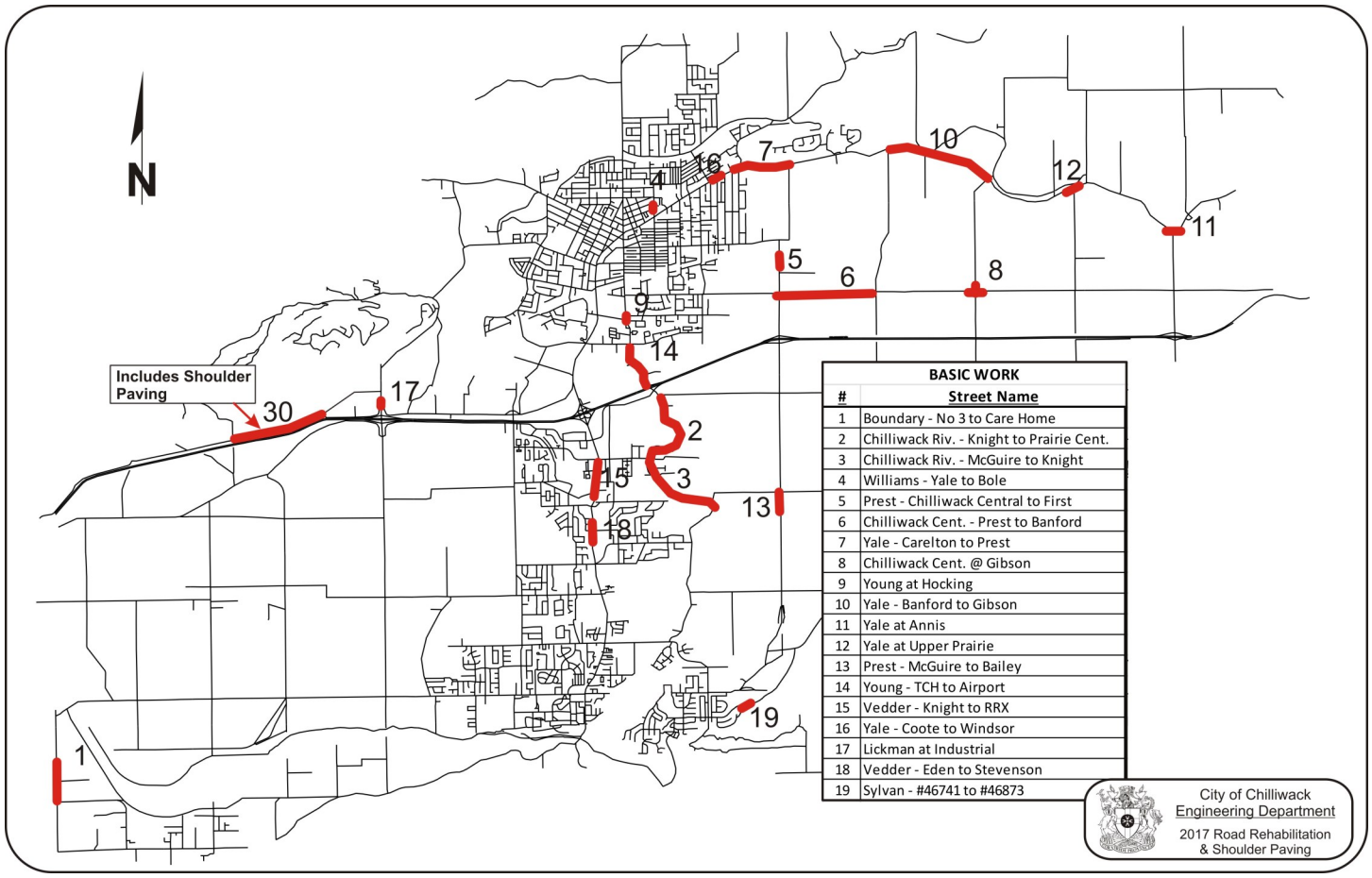
The two portable message boards that Safer City utilizes to raise road safety awareness were deployed in a number of locations throughout the community this quarter. The larger sign nicknamed 'Big Orange' was the victim of vandalism; therefore it was taken out of the rotation for a few weeks this quarter until repairs could be completed. The smaller sign nicknamed 'Little Orange' maintained its two-week deployment rotation.

Deployment Locations:

- Kinsmen Park (Portage Avenue)
- Sheffield Way
- Jinkerson Park (Jinkerson Road)
- Stewart Park (Crescent Drive)
- Bernard Elementary (Bernard Avenue)
- McCammon Elementary (Wellington Avenue)
- Sardis Elementary (Manuel Drive)
- Ecole La Verendrye (Lickman Road)
- Yarrow Central Road

2017 Asphalt Rehabilitation and Shoulder Paving

The contract for the 2017 program has been awarded to B.A. Blacktop Ltd. Paving is expected to commence in mid-July.



BASIC WORK	
#	Street Name
1	Boundary - No 3 to Care Home
2	Chilliwack Riv. - Knight to Prairie Cent.
3	Chilliwack Riv. - McGuire to Knight
4	Williams - Yale to Bole
5	Prest - Chilliwack Central to First
6	Chilliwack Cent. - Prest to Banford
7	Yale - Carelton to Prest
8	Chilliwack Cent. @ Gibson
9	Young at Hocking
10	Yale - Banford to Gibson
11	Yale at Annis
12	Yale at Upper Prairie
13	Prest - McGuire to Bailey
14	Young - TCH to Airport
15	Vedder - Knight to RRX
16	Yale - Coote to Windsor
17	Lickman at Industrial
18	Vedder - Eden to Stevenson
19	Sylvan - #46741 to #46873

Bus Stop Shelters

All of the new bus stop shelters are now in place with the exception of the Yale at Airport southbound stop which will be completed as development of the Midtown site progresses.

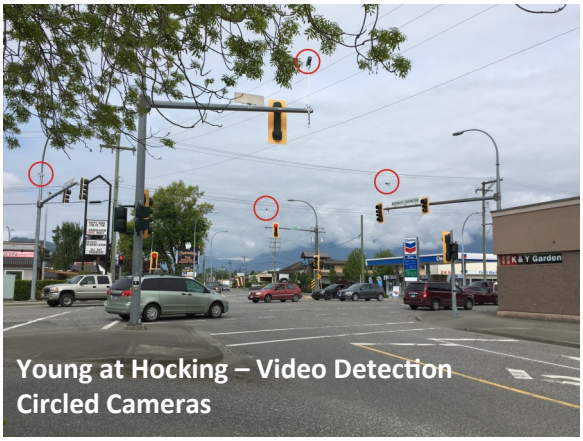

Eagle Landing at Kal Tire

Eagle Landing at Shell

CITY OF CHILLIWACK

Traffic Signal Upgrades—Young Road and Hocking Avenue

Video detection was installed for all approaches in place of detection loops that had failed due to worn asphalt. The cameras provide the added feature of bicycle detection and some basic traffic count features. This system will eliminate the need for in-pavement detection loops and will provide continuous detection during paving operations at the intersection this summer.


Young at Hocking – Video Detection
Circled Cameras


Young at Hocking—Video Detection

School Zone Traffic Information

In January a radar traffic data collector was installed across from Evans Elementary School to gather information on traffic speed, volume and type of vehicle. In early June speed reader signs with emoticons were installed at both approaches to the school zones.

When a vehicle approaches at less than the speed limit a “smiley face” is displayed. If they are travelling faster than the speed limit a ”sad face” is displayed and if significantly faster “SLOW DOWN” flashes.

Initial data indicates the signs have significantly reduced traffic speeds during the days and times the school zone is in effect.

Vedder Bridge Replacement Design-Build Project

In April the bridge was launched across the river and set in its ultimate position. Bridge abutment walls were completed. Pre-cast concrete deck panels were placed across the bridge. Curb and sidewalks were completed along Vedder Mountain Road. BC Hydro, Telus and Shaw pulled cable through ducting across the new bridge and overhead hydro lines were decommissioned. The roundabout embankment fill and retaining wall have been completed. Underground utilities (storm, sanitary and water) were completed to tie into the new bridge. Concrete bridge deck and walkways were placed during night time operations.

Annual Traffic Count Program

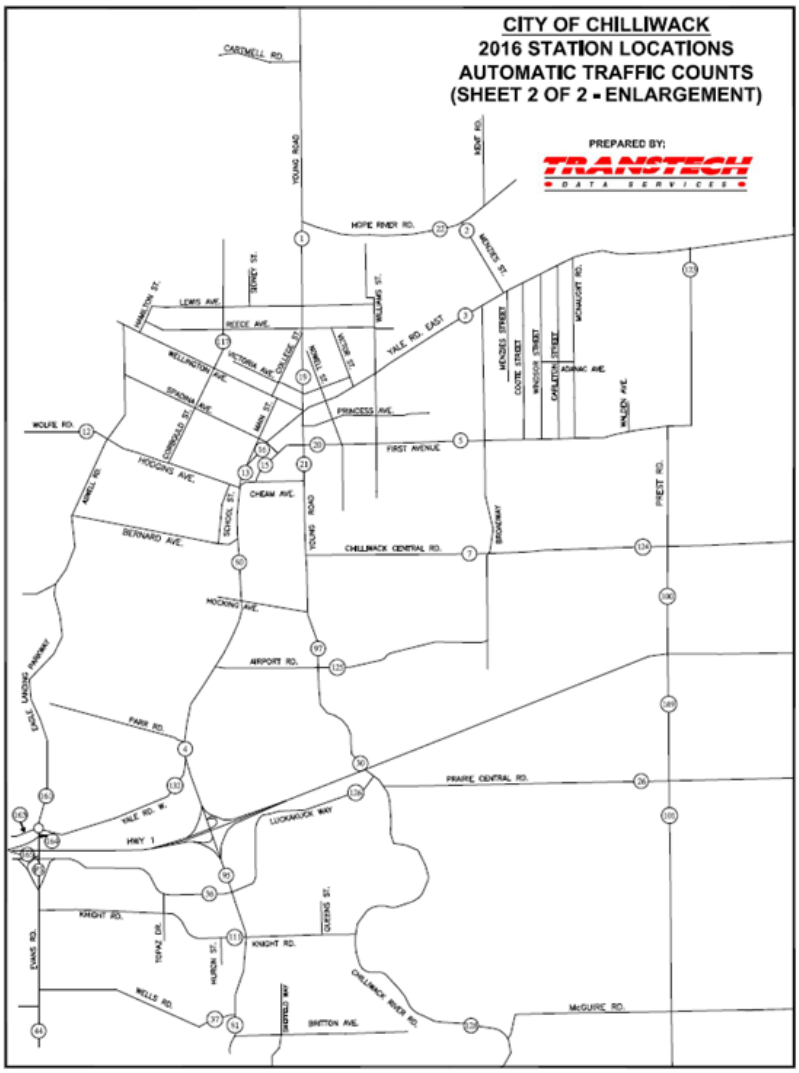
TransTech Data Services has been contracted to undertake the Annual Traffic Count program in Chilliwack. This year the program includes:

- 80 Automatic Counts
- 60 Manual Intersection Counts
- 4 Permanent Station Data Summaries
- 14 School Automatic Speed and Volume Counts
- 4 Intersection Data Summaries, and
- Final report

The counts this year also took into consideration recommendations made by ISL in the updated Transportation Plan.

The data collected is used by the Engineering and Development departments for long-term planning, traffic signalization and timing, road safety and functional improvements. It is also utilized by professional consultants, developers, businesses, real estate and advertising.

The data collection work has been concluded and TransTech is compiling the final report which we anticipate receiving in August 2017.

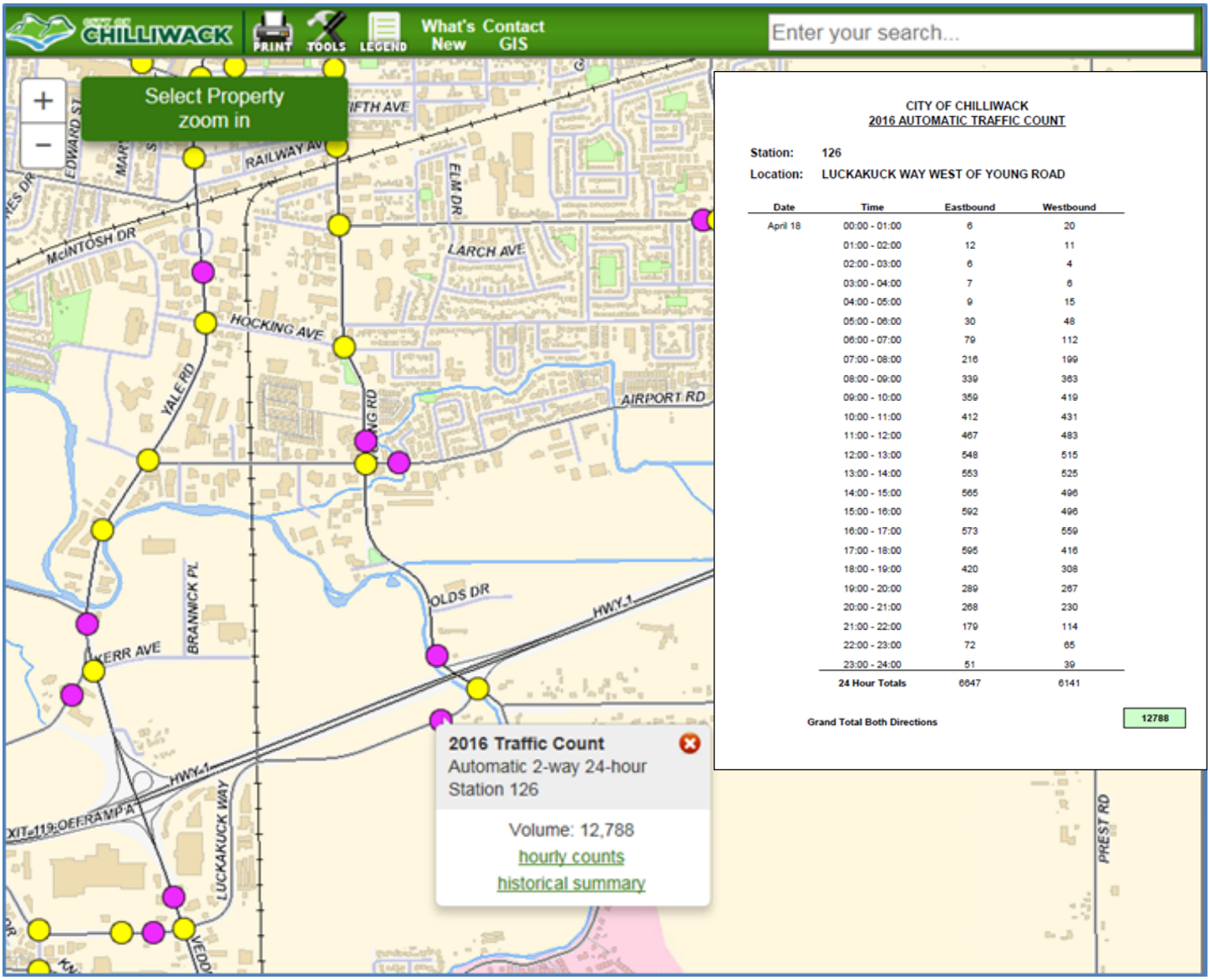


Traffic Count Data Added to City Public Webmap

The City GIS department has been able to bring our traffic count data to a new layer on our public webmap: http://maps.chilliwack.com. This new layer, under the Roads and Transportation section, allows public, consultants and businesses to access available traffic count data for their use with greater ease.

Yellow symbols indicate peak time manual intersection counts and purple symbols indicate two-way 24 hour volume count. The volume counts also include a link to historical totals for viewing.

The 2017 traffic count data will be added to the webmap once the final report has been received from TransTech Data Services in August 2017.



Curbside Program Changes


Green Cart Deliveries in April

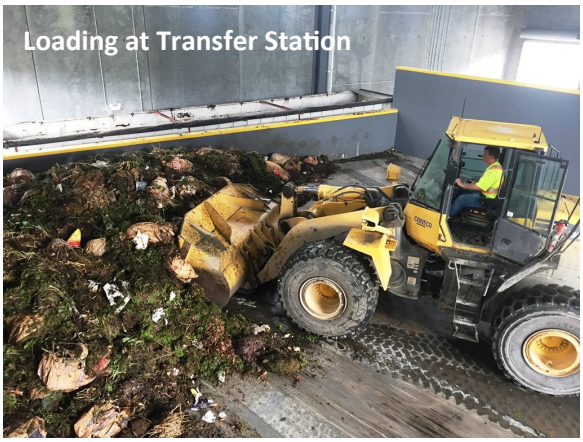
Big changes to the Curbside Collection Program commenced in May with the separate collection of compostable waste. Food waste, food-soiled paper and yard waste are collected in contractor-supplied Green Carts and dropped off at the new Compostable Waste Transfer Station to be transported to Net Zero Waste in Abbotsford for composting.

Extensive education and outreach were conducted for the new program, and residents are doing a great job of keeping compostable waste free of contaminants.

Cart size exchange requests started to be received in June, with several hundred residents choosing to upsize their carts to either 240L or 360L..

The new program is expected to increase diversion rates from 34% to over 60%. It also provides residents with a convenient way to manage yard waste, which is more environmentally-friendly than other options such as burning or dumping grass clippings in riparian areas.


Cart Collection


Loading at Transfer Station


First Load of Compostables

Earth Month

Activities focused on waste reduction and environmental conservation were once again well received by the community during our annual "Earth Month" events in April.

1) Roadside Clean-Ups:

A total of 20 non-profit groups and one business collected garbage, recyclables, and green waste along the sides of City roads. A total of 0.7 tonnes of material was collected between all of the organizations. Many roadsides throughout the community are also routinely cleaned up by over 60 volunteer groups participating in the City's Adopt a Road program.

2) Residential Pick-Ups:

For those in our community who do not have the means to load or transport bulky waste, four volunteer groups arranged to collect the items by donation. The groups collected over 10 tonnes of material which was responsibly recycled, composted, or disposed of.

3) Adopt a River Event:

290 volunteers from the community and the adopting groups spread out along the banks of the Vedder/Chilliwack River on April 22 to help clean up litter and camping supplies left behind by others. Coordinated by the Chilliwack Vedder River Cleanup Society, the volunteers collected 4.7 tonnes of waste during this year's first of two Adopt a River clean-ups. Various materials including clean wood, tires, and metal were diverted for recycling before the remainder of the material was responsibly disposed of at the Bailey Landfill.

4) Scrap Metal Recycling: 65 tonnes of metal diverted

Scrap metal was received for free at the Bailey Landfill during the month of April. The metal is removed offsite by a contractor for recycling. In total, 733 loads were received, totaling 65.1 tonnes. This is an increase of approximately 15 tonnes over last year!

5) Semi-Annual City-Wide Garage Sale

210 residences registered for the popular spring City-wide garage sale this year. Residents were given the option of registering their home or housing complex online to have their address listed both on the City website and in the local paper. A summary of the types of items available for sale at each participating location was also made available to the public. In addition, the City website directs participants to a list of organizations in which they can take their leftover useable clothing and household items after the sale. This semi-annual initiative supports our reuse and recycle goals at little cost to the public.

Green Commuter Challenge

The City's annual Green Commuter Challenge is designed to encourage residents to leave their cars at home and use a more sustainable form of transportation for their commute.

During the 2017 challenge, the City received 395 ballot entries from residents who biked, walked, bused, carpooled, etc. for their commute from May 29 to June 11. This year's prize bike was a Norco Indie valued at $659 which was kindly donated by Jack's Cycle with a contribution from the City of Chilliwack.

This year's winner, Charlize Falkner, takes the bus or carpools most days as a sustainable alternative instead of using a car! Charlize can now commute on her brand new Norco Indie to beat the traffic and help reduce air pollution.

Shred-A-Thon and Food Drive

The June 3rd Shred-A-Thon & Food Drive was the most successful event to date, collecting $5,400 in cash and 1,500 items of food for the Salvation Army from residents taking advantage of the free document shredding service. The successful event was hosted by Shred-it, Emterra, and Cottonwood Mall. The next Shred-A-Thon & Food Drive will be held on December 2 of this year.

Japanese Knotweed Management

The City's annual Japanese Knotweed treatment program recommenced this spring, with approximately 100 knotweed patches in 30 different locations on public land being treated by the Operations Department or the FVRD's contractor. Patches are mapped and prioritized for treatment based on potential impact to public infrastructure such as dykes, roads, or utilities.

Some of the patches that started being treated in 2013/14 have been effectively eradicated, allowing treatment to commence on new patches this year.

Compostable Waste Transfer Station

This $3,600,000 project by the design-build team of Titan Construction Company Ltd./Morrison Hershfield Engineering is substantially complete as of May 24, 2017.

The 900 m^2 Transfer Station building at the Bailey Landfill is required to support the City's compostable waste diversion efforts by allowing compostable waste to be dropped off locally and then transported more efficiently to the Net Zero Waste composting facility in Abbotsford.

The project scope also included substantial upgrades and the expansion of the existing residential waste off-load area at the Bailey Landfill. New bays were constructed to better facilitate the handling of drywall, asbestos, white goods, yard waste, and clean soil and concrete. A used cooking oil tank has also been added to the drop-off area, and the oil is collected by a contractor and refined for biodiesel.

The improvements allowed for increased capacity for the drop-off of residential garbage, which has significantly reduced customer wait-times and in-bound queues on busy days.


Transfer Station

Residential Off-Load Bays


Drywall Off-Load Bay

McGillivray Pump Station Upgrade

This $4.2 million project to increase the pumping capacity to protect against a one-in-100-year rainfall event is being funded through the BC Disaster Mitigation Program. The design-build Expression of Interest resulted in five (5) submissions with three (3) being approved by Council to submit proposals. The proposals' closing date is scheduled for July 26, 2017 with a staff report to Council containing award recommendation at the August 15 regular meeting of Council.

2017 Freshet Update

The Fraser River is currently at level 4.0m (June 23 Mission gauge) after reaching peak levels of 5.65m on June 4, 2017 and 5.35m on June 14, 2017.

The BC River Forecast Centre has **ended** the High Streamflow Advisory for the **Fraser River** (Fraser Canyon to Vancouver). River levels along the lower Fraser River peaked and are now receding. Flows are expected to continue to decline through the rest of the week. A return to high flows again this season is unlikely.

The Camp Hope Intake (CHIP) gate valves were opened on Monday, June 19, 2017 to allow additional water to flow through the Camp/Hope River system. The City's Operations department will monitor the valves to achieve maximum flow rate while ensuring that downstream culverts are not inundated.

The 2017 peak water level of **5.65m** compares with other recent high levels of **6.4m** in 2012 and **5.9m** in 2007. See below for the attached chart showing freshet levels for various years.