

Engineering



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

First and Second Quarter Reports, 2020

Organic Waste Facility & Digester #4 Project



The Wastewater Treatment Plant (WWTP) is currently treating wastewater and generating renewable energy through the anaerobic digestion of wastewater residual solids. The new organic waste facility and digester will enhance gas production at the WWTP and allow production of biogas generated for beneficial reuse either in WWTP operations or through sale to energy markets. The organic waste facility will receive and pre-process organic waste prior to its introduction into the digester waste stream. The digester will be



the fourth at the WWTP and is required to meet the growing demand for wastewater treatment in the City as well as to enable increased energy production from co-digestion. The completed project will also include infrastructure to upgrade biogas for beneficial use.

The procurement process is underway to engage a consultant to complete the preliminary design and to procure documentation for the design-build contractor. The overall completion of this \$9,000,000 project is dependent on final grant funding approval by the Province in the summer of 2020.

2019 Utilities Upgrade Project

The 2019 Utilities Upgrades Project includes the upgrade of six water mains, two sewer mains, one storm sewer main, two new pressure reducing valves (PRV) and the landfill gas collection system. These upgrades have been combined to increase scope and economy of scale. The water main installations will increase supply, fire flow capacity and protect the water quality in the existing water system. The storm and sewer main replacements and upgrades will replace aging infrastructure while increasing capacity to satisfy increased flow from new developments. The new Jinkerson PRV station will facilitate current and future development activities in the area by ensuring downstream fire flow demands can be met. The new Salmonberry PRV replaces aging infrastructure to protect the integrity of supply. The Bailey Landfill gas system improves landfill gas collection to contribute to the City's actions to protect the environment.



The Timbro Contracting Ltd./Onsite Engineering Ltd. design-build team have completed the design and construction of the following upgrades:

- Banford Road watermain;
- Bailey Landfill gas collection system;
- South Sumas Road gravity sanitary sewer main;
- Fletcher Street (Reece to Mellard) watermain;
- Mellard Avenue (Reece to Victoria) watermain;
- Cleveland Avenue (Young to Victor) watermain;
- Lewis Avenue (Young to Williams) watermain;
- Nowell Street gravity storm and sanitary sewer main;
- Fletcher Street (Yale to Bole); and
- Crestwood Drive, Leary Crescent, and Haig Drive with the exception of some final paving works.

The Jinkerson PRV has been installed and will be commissioned by end of August 2020. The design work for the Salmonberry PRV has been completed and installation is underway by the City's Operations crews. The \$3.85 million project is scheduled to be completed in September of 2020.

Wastewater Treatment Plant Inlet Works Upgrade Project

The existing Wastewater Treatment Plant (WWTP) inlet works, constructed in 1973, need investment to replace aging infrastructure and to accommodate increased flows due to growth in the city. The new inlet works will be able to manage flows projected for the next 30 years and beyond. The project includes a new inlet works building housing the new treatment system which includes the following efficient, high-performance processing systems:

- fine screening;
- screenings washing, compaction and conveyance;
- induced vortex grit removal;
- grit washing and dewatering; and
- space for a future trucked septage receiving and screening station.

Tritech Group Ltd. / Stantec Consulting Ltd. design-build team completed detailed design work. Underground utility installation is complete and construction of the concrete foundation is underway. This \$9.15 million design-build project is scheduled to be completed in May 2021.



Vedder / Promontory / Prest Design-Build Project

Vedder Road (Keith Wilson Road to Watson Road)

Detailed design progressed including coordination with BC Hydro, Telus and Shaw for the conversion of overhead to underground utilities along the Vedder Road corridor. Construction will begin late in the third quarter with drainage and utilities works.

Promontory Road (Vedder Elementary to Chester Drive)

Detailed design was completed including coordination with BC Hydro, Telus and Shaw for necessary relocations. Construction works began in the second quarter with drainage, electrical, road widening and concrete curb pours. The first phase of paving and sidewalk works are scheduled in the third quarter.

Prest Road (Highway 1 to McGuire Road)



Detailed design was completed including coordination with BC Hydro, Telus and Shaw for necessary relocations. Some portions of the road widening works including base gravels were completed. Continuation of the works will be scheduled once BC Hydro and Telus have relocated their poles during the third quarter.

Hack Brown / Prest / Five Corners Design-Build Project

Prest / Chilliwack Central Road Roundabout

Jakes Construction Ltd. has finished placing concrete curb and sidewalks, including road widening approaches and drainage improvements. In June, BC Hydro completed hydro pole relocation work including transferring of services to new poles and currently Telus is in the process of transferring their services to new poles. The project is planned to be completed by the end of August.

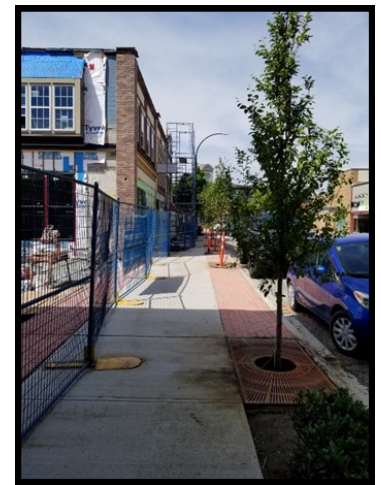


Hackbrown Road Realignment

The City and the contractor are working with the Ministry of Transportation and Infrastructure to finalize the design package before commencing work during the coming months for the portion of Hackbrown Road realignment. The new intersection work is planned to be completed by October 2021 after obtaining necessary approval from the relevant government agencies.

Five Corners

After adjustments to ensure the continued safety of the public and construction staff due to COVID-19, work commenced again on the Five Corners project in April. The Wellington Avenue and Yale Road East as well as the Young Road North portion are complete, except for streetlight installation. The contractor is currently working in stages at the Five Corners intersection to minimize business impact and public inconvenience. The remaining intersection work, including final paving, is planned to be completed by early September.



Chilliwack Central Road Sidewalk

All drainage improvement work, curb and sidewalk preparation work is completed and currently the contractor is in the process of completing sanitary sewer pipe installation, roadwork, streetlighting and curb and sidewalk placement. The project is planned to be complete by the end of July.

Walden Street Sidewalk

Detailed design work was completed and the work began in mid-July. The project is planned to be complete by the end of August before the commencement of the next school year.

Valley Rail Trail North Extension



Trail works were completed during the start of the second quarter including the trail lighting and the installation of a new Rapid Rectangular Flashing Beacon crossing at Airport Road.

Teskey-Spadina-Vedder Design-Build Project

Council accepted the proposal by Emil Anderson Construction for the design and construction of these projects at the July 7 Council meeting.

Teskey-Jinkerson Connector



Works include one single-lane roundabout, approximately 250m of new road construction, storm main relocation, drainage works, streetlighting and trail connections. This new connection to Teskey Way will reduce travel time for residents on the east side of Promontory and will reduce traffic volumes at the intersection of Teskey Way and Jinkerson Road/Hudson Road. The road will be constructed within the existing Ross Road right-of-way. Construction is scheduled March 2021 to September 2021.

Spadina Avenue (Ashwell to Corbould)

This project incorporates the vision of a Neighbourhood Greenway as recommended in the Downtown Land Use and Development Plan (2010). Both sides of Spadina Avenue, as well as along the centre median, will be receiving new sidewalks. Three new crosswalks will be installed. A tree lined buffer between the sidewalk and the travel lane will enhance safety and comfort for pedestrians. Construction is scheduled August to October 2020.



Alder-Webb Connector

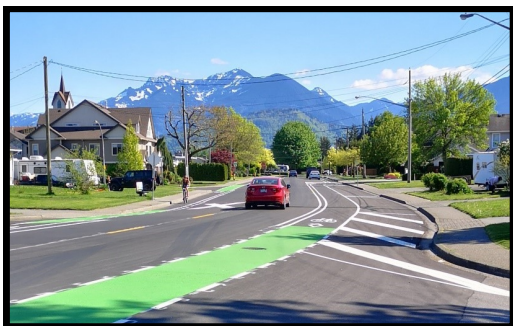
Works include 120m of new road construction complete with paving, drainage, street trees, streetlights, curb and sidewalk. This new road connection was a recommendation of the Alder Neighbourhood Plan and will provide for better connectivity and access to the Alder Avenue area. Construction is scheduled for September to November 2020.

Vedder & South Sumas Intersection

Works include traffic signal expansion and approximately 260m of road widening complete with paving, conversion of overhead utilities to underground, drainage, streetlights, curb and sidewalk. Construction is scheduled for March 2022 to May 2022.

Cycling Corridors

Airport/Broadway Corridor and Spruce/Britton/Sheffield Corridor



Cycling improvements along these two corridors connecting to the Valley Rail Trail have now been completed. The scope of work involved asphalt rehabilitation, roadway markings, delineators, signage changes and traffic signal improvements. Council's support for this project resulted in Chilliwack residents who worked for the prime contractor to safely continue working during the early stages of the pandemic.

Each year the City of Chilliwack tenders asphalt rehabilitation work for various roads to maintain the driving surface and reduce maintenance costs. The 2020 Asphalt Rehabilitation Program has been awarded to B.A. Blacktop Ltd.



Every five years, the City undertakes a Pavement Status Report and Recommended Work Program for all roadways within Chilliwack, the last report was completed in 2017. This program reviews the roadway conditions and assigns a pavement quality index (PQI) value which helps to prioritize the work on local, collector and arterial routes. Efforts are made to ensure road rehabilitation is occurring fairly throughout all of Chilliwack. The goal is to rehabilitate the roads that are in the poorest quality first within their road classification.



The sidewalk civil and electrical design will be completed by KM Civil shortly. Tendering and construction is expected this fall.

The new art sculpture in the Vedder Road roundabout is officially complete, celebrating the history of the Ts'elxwéyeqw Tribe and the Stó:lō Nation. The artwork was designed by Squiala First Nation Chief David Jimmie and Coast Salish artist Bonny Graham, in consultation with the Ts'elxwéyeqw Tribe and the Stó:lō Nation Chiefs Council.

The prime contractor for this project was State of the Art Concepts. The City's Parks Department completed the complimentary landscaping.

An explanation board regarding this project has been placed at the north end of the Vedder Bridge along the west sidewalk for pedestrians to learn about the Ts'elxwéyeqw Tribe as well as the roundabout art project.

The Ts'ekw'eqw Tribe

Ts'ekw'eqw TRIBE

The Ts'ekw'eqw Tribe provided the following information:

The Ts'ekw'eqw are the first People of the Chilliwack River Watershed in the Central Fraser Valley of northwestern British Columbia. Our tribal name, "Ts'ekw'eqw" is commonly known in English as "Chilliwack". We are one of the five of the Stó:lō (Stó:lō = People of the River – as our beachhead was very much connected to the Fraser River). We are also one of the major river systems of the lower Fraser River Watershed and extends into northwestern Washington State. Our part of the broader Coast Salish collective whose lands surround the Salish Sea of the northwestern American Pacific Northwest.

The Ts'ekw'eqw Tribe's traditional Territory covers over 15 thousand hectares of land in southwestern BC and is rich in Ts'ekw'eqw cultural heritage, natural beauty and resources. The Territory is the ancestral home and spiritual realm of the Ts'ekw'eqw community of children (Atcheltch, Sqw'eqw [Shawish], Shw'eqw, Ts'eqw [Sowahlie], Saww'eqw [Sawah], Ch'eqw [Tsawwassen] and Ts'eqw'eqw [Ts'ekw'eqw]). The Territory encompasses the entire Chilliwack River Valley including Chilliwack Lake, Chilliwack River, Cultus Lake and areas, and parts of Chilliwack municipal area.

Stó:lō Nation

CITY OF CHILLIWACK

Yakwekwioosce **Skwokwale** **Sowwahlie** **Squiala** **Tzeachten** **Shxw'há'y** **Aitcheltz**

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Road Marking Maintenance

Infinite Road Marking Ltd. has completed the repainting and thermoplastic installation of most of the base work under the contract. Some additional markings will be done as funding allows and on a priority basis. Seven unsignalized crosswalks will be converted from parallel line to zebra type markings for improved visibility. A crosswalk located on Tyson Road has already been converted to zebra type markings as seen in the photo on the right.



Rectangular Rapid Flashing Beacons Tender



The electrical design works for the Rectangular Rapid Flashing Beacons (RRFB) is 95% completed. A construction tender will be released shortly for the construction of 20 RRFB crosswalks throughout Chilliwack and will include minor sidewalk and pathway improvements, road markings, signage changes and RRFB traffic signal systems.

Commercial Vehicle Inspection Project

On March 10, Safer City hosted its annual Commercial Vehicle Inspection Project. Vehicles were inspected throughout the day with representatives from the Ministry of Transportation and Infrastructure’s Commercial Vehicle Safety and Enforcement Branch (CVSE), Chilliwack RCMP and Fraser Valley Traffic Services (RCMP) for a one-day road safety project. A variety of commercial and passenger vehicles were inspected to confirm their compliancy with applicable safety legislation. This public safety initiative did result in violation tickets for some drivers; however, the Safer City team advises that it is important to remember the majority of commercial vehicles are being operated in a professional and safe manner on local roadways.



Electric Vehicle Charging Stations

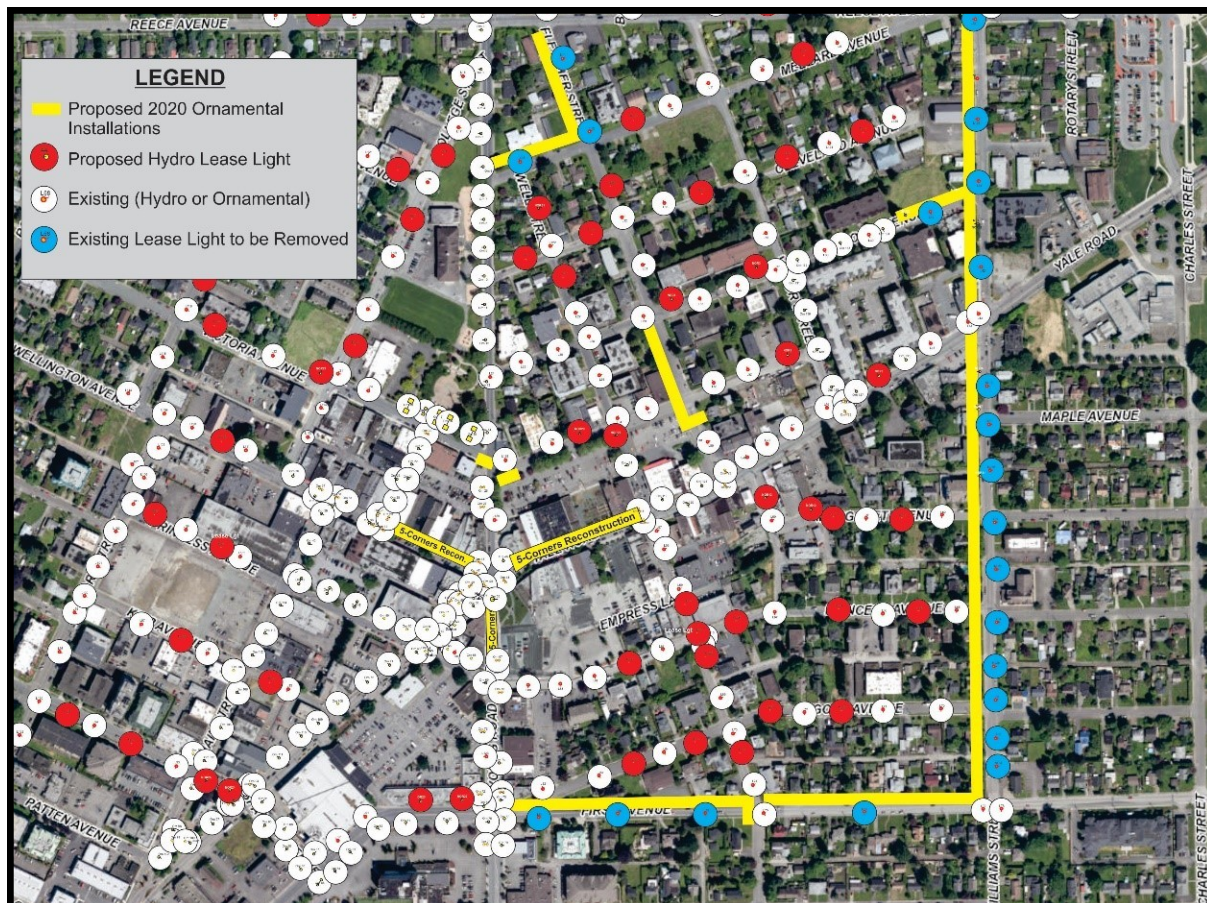
PBX Engineering is advancing the electrical design for a total of 22 charging connectors at the following locations:

- Tourism Chilliwack Visitor Centre – 2 Level 2 Connectors
- Operations Centre – 2 Level 2 Connectors
- Chilliwack Landing Leisure Centre – 4 Level 2 & 2 Level 3 Connectors
- Sardis Sports Complex – 6 Level 2 Connectors
- Chilliwack Courthouse – 6 Level 2 Connectors

An application for federal funding to offset the cost of these charging stations has been submitted and BC Hydro is reviewing the locations for potential installation rebates as well.

Downtown Street Lighting

Electrical design is complete and tendering and construction are expected to be completed by the end of 2020. Below shows the downtown locations of proposed ornamental and BC Hydro lease streetlights.



COVID-19 Changes to Bailey Landfill Operations

Modifications were made to the operations at the Bailey Landfill to protect workers and customers from COVID-19. Site staff perform additional cleaning measures and exercise control methods to minimize the spread of the virus. Control methods include:

- strategically setting up delineators throughout the residential drop-off area to ensure that customers are at least 2 metres apart from each other,
- installing plexiglass on the scale house windows,
- limiting the number of customers on site and
- temporarily not accepting cash (cash acceptance resumed in July).



Due to these control methods, and with residents spending more time at home doing spring cleaning, long lineups started to occur. As a result, flaggers were booked in for traffic control on weekends and other days as needed and notifications were placed on the City's website and social media pages requesting that customers avoid unnecessary trips to the landfill and that priority access may be given to commercial waste haulers. Two variable message boards containing similar language to the notifications were also set up on Bailey Road (one westbound and one eastbound) leading up to the landfill.



Bailey Landfill Horizontal Gas Collectors

To maximize the capture of landfill gas and comply with provincial requirements, expansions to the existing landfill gas system are required to be installed in conjunction with the fill plan. In April 2020, five horizontal gas collectors were installed in the east half of the West Cell. The Landfill Operating Contractor (Whissell Waste Solutions) carried out the project, with engineering services support from GHD Limited. Later this year, four additional horizontal gas collectors will be installed in the west half of the West Cell.



Christmas Tree Composting

The City's annual Curbside Christmas tree collection program started off the New Year with Emterra Environmental collecting trees from curbside customers for composting. Residents also dropped off 160 trees for free at the Parr Road Green Depot.

Combined, these two annual options provide Chilliwack residents with convenient ways to compost Christmas trees and help to reduce illegal dumping and burning.

Single-Use Items Business Consultation

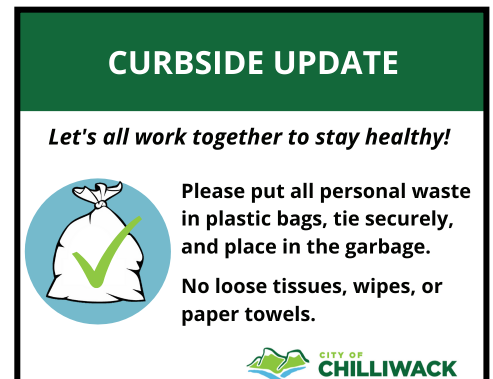
Consultation with businesses occurred in January and included an open house, workshop and online survey. Letters were mailed to 1,284 business licence holders in relevant licence categories informing them of the consultation process and providing information on how they could take part. Social media was also used to promote the business consultation process, and the Chilliwack Chamber of Commerce used its resources to notify members.

A total of 19 people participated in the open house and workshop from 14 organizations. The online survey garnered 20 responses. The open house allowed businesses to talk with staff and leave feedback on poster boards, while the workshop was a targeted exercise that led participants through a series of questions intended to identify their reliance on single-use items, as well as barriers and solutions for reducing their use. Feedback received from the business consultation in January 2020 and general public consultation in December 2019 will be taken into consideration as a Single-Use Item Reduction Strategy is developed.



COVID-19 Changes to the Curbside Collection Program

In response to COVID-19, changes were made to the Curbside Collection Program with the aim of improving safety for the collection crews. Residents were asked to bag all garbage and double bag any personal hygiene items such as masks, gloves, tissues, etc. Residents were also asked to refrain from disposing of their tissues, napkins and paper towels in Green Carts and instead place these items in their bagged garbage. Information about the program changes was shared with residents through newspaper and social media ads, the curbside webpage and the curbside app. Information tags are also left by the curbside collection crews to assist with resident education when non-compliant materials are encountered.



Winner of Sustainability Excellence Award



Every year, the City of Chilliwack sponsors the Sustainability Excellence Award as part of the Chilliwack Chamber of Commerce's Business Excellence Awards event. The winner of the 2019 Sustainability Excellence Award was All Things Being Eco.

All Things Being Eco won the award for refining and intensifying their commitment to reducing retail packaging, helping customers to reduce their waste and supporting a company and community culture for more sustainable living.

Invasive Species Management

The City's invasive species management efforts have broadened this year. Previously focusing solely on summertime Japanese Knotweed management throughout the City, year-round efforts are now made to manage poisonous Daphne Laurel (pictured on the right), invasive English Holly, Scotch Broom and European Fire Ants.



2020 Freshet

The 2020 freshet consisted of a number of Fraser River peak water levels as registered at the Mission gauge as follows:

- May 31 - 5.3m
- June 5 - 5.4m
- June 29 - 5.9m
- July 7 - 5.8m

The highest water level on the Fraser River occurred on June 29 and was recorded as being 5.9m at the Mission gauge.

The spring snowpack for the entire Fraser River basin was above normal (117% in March). Cooler than normal temperatures in May and June resulted in delayed snow melt which caused river levels to remain only slightly above normal as opposed to a rapid snow melt like we experienced in 2018. The graph below shows the 2020 river levels in comparison with the average and other significant event years. As of July 22 the level is tracking near 2012 levels which is above the long-term average. Given that the majority of snow melt has occurred and barring any significant rain events it is likely that the river level of June 29 will be this year's peak.

