

# Engineering



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

Fourth Quarter Report, 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 City has been awarded over \$6 million in green infrastructure funding by the Government of Canada and the Province to complete the project. Associated Engineering Ltd. (AE) have been awarded the contract for the preliminary design, development of design build documentation and Owner's Engineer services. AE is currently in the process of completing preliminary design package before commencing the development of the design build documentation package. This \$9 million project is scheduled for completion by early 2023.

## Wastewater Treatment Plant Primary Clarifier Emergency Repair Works

The existing primary clarifiers #1 & 2 at the Wastewater Treatment Plant were constructed in 1973. Several years later the tanks were covered with stainless steel plates and connected to the plant-wide odour control system to minimize foul air emission to the atmosphere. Over time corrosive hydrogen sulphide gas has caused extensive corrosion to the structural concrete, the steel weirs and structural steel beams that support the cover plates.

Authorization was given to hire Trittech / Stantec for the design and construction of the emergency repairs to primary clarifiers 1 and 2.

Trittech Group Ltd. / Stantec Consulting Ltd. completed the phase 1 testing and inspection work, the temporary repair work to the damaged weir and put the tanks back online. The team completed the detailed design work and is currently in the process of evaluating and finalizing a temporary alternate process system which is required to be in place to meet the effluent quality standards during the permanent repair work in phase 2. The permanent repair work is planned to commence under low flow scenario in the spring and scheduled to be completed in September 2021.



## Wastewater Treatment Plant Inlet Works Upgrade Project

The existing Wastewater Treatment Plant 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 to house 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
- a trucked septage receiving and screening station.



Tritech Group Ltd. / Stantec Consulting Ltd. design-build team have now completed the detailed design work, all underground utility and building infrastructure. Construction of the Inlet Works building is currently underway. This \$9.15 million design-build project is scheduled to be completed in June 2021.

## Vedder / Promontory / Prest Design-Build Project

### Vedder Road (Keith Wilson Road to Watson Road)

Improvements along Vedder Road will include the road widening to four travel lanes, a centre turning lane, bike lanes, sidewalks and streetlights on both sides of the corridor. Drainage, traffic signal, streetlighting and road widening works advanced during the fourth quarter and will continue into the new year while waiting on necessary BC Hydro and Telus utility pole relocations.



### Prest Road (Hwy No.1 to McGuire Road)



The improvements along Prest Road will include road widening to provide sufficient travel lane width, bike lanes, shoulders, replacement of Semiault Creek Bridge, along with the relocation of BC Hydro poles. BC Hydro started necessary utility pole relocation in the fourth quarter and will complete their works early in the new year. This will allow road widening and paving works to be advanced.

### Promontory Road (Vedder Elementary to Chester Drive)

Necessary Hydro and Telus utility relocations were advanced in the fourth quarter and are scheduled for completion in the new year. This will allow for final paving and line markings to be completed in early Spring 2021.





## Teskey-Spadina-Vedder Design-Build Project

### Teskey-Jinkerson Connector

Works will include one single-lane roundabout, approximately 250m of new road construction, storm main relocation, drainage works, streetlighting and trail connections. Detailed design was completed in the fourth quarter. Construction began at the end of the fourth quarter and is scheduled for completion in summer 2021.



### Vedder and South Sumas Intersection

The project includes traffic signal expansion and approximately 260m of road widening complete with paving, drainage, streetlights, curb and sidewalk. Detailed road and electrical design were advanced during the fourth quarter. Necessary BC Hydro/Telus pole relocation design will begin in the first quarter of 2021 and construction is scheduled for March to May 2022.



### Spadina Avenue (Ashwell to Corbould)

The project was completed in December 2020 and includes 175 parking stalls, 1 km of new paved vehicle and bike lanes, 2,500 sq. m of new landscaping and 126 new street trees and 31 new LED streetlights.

### 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. All project works were completed in the fourth quarter except final paving, which has been deferred until weather permits early in 2021.

## Asphalt Rehabilitation

The asphalt rehabilitation program continued in the fourth quarter with BA Blacktop substantially completing Castleman Road before low temperatures paused construction for the season.

Roadways with substantial completion are:

- No. 5 Road – Boundary to eastern EOP
- Fairfield Road – McSween to Kitchen
- Castleman Road – Standeven to Chapman
- Industrial Way – Progress to Old Orchard
- Bernard Avenue – Ashwell to Railway
- Keith Wilson Road – Tyson to Unsworth

Continuing in early spring as weather and temperatures permits:

- Crestwood, Leary, Haig – utility trench restoration
- Elk View Road – Huston to Lookout
- Elk View Road Reinforcement – Wincott to Payne



## Hack Brown / Prest / Five Corners Design-Build Project

### Prest / Chilliwack Central Road Roundabout

Jakes Construction Ltd. completed all project activities including placing the concrete curb, sidewalks, road widening, drainage improvements, streetlighting, final paving, line painting, signage and landscaping. The project was substantially completed by the middle of November.



### Five Corners

Improvements on Wellington Avenue, Yale Road and Young Road were completed by Jakes Construction Ltd. Improvements included streetlight installation, final paving, line painting, signage, sidewalk, island concrete curbing and stamped concrete, all landscaping works and commissioning of a new traffic signal system. The overall project was substantially completed in December 2020.

### Hack-Brown Road Realignment

Jakes Construction Ltd. completed the installation of the Hack-brown Road culvert, creek restoration works and partially completed the roadwork portion of Hack-brown Road realignment. The City and the contractor are working with the Ministry of Transportation and Infrastructure to finalize the design package for the Annis Road widening and the new intersection work. The new intersection work, which includes the Annis Road widening, as well as base and final paving of the Hack-brown Road re-alignment portion, are planned to be completed by October 2021.



## LED Streetlighting – Phase 1

In the fourth quarter, electrical design works were completed for the LED streetlight retrofit north of Highway 1 (Phase 1). Construction north of Highway 1 is scheduled to be completed by mid June 2021.

## Rectangular Rapid Flashing Beacon Installations

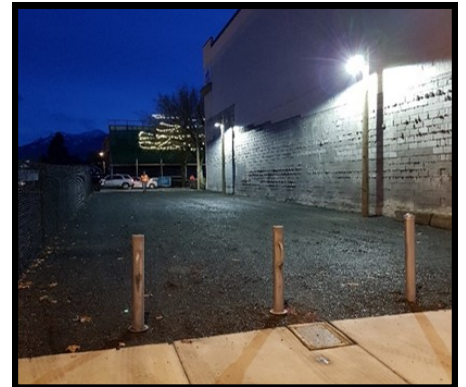


The 20 locations for rectangular rapid flashing beacon crosswalk improvements saw the signal pole bases installed and civil works commence in the fourth quarter. Signal pole delivery delays pushed the completion date to the end of February 2021.



## Downtown Pathway Lighting

M. Dickey and Sons in collaboration with the Engineering and Operations Departments completed temporary pathway lighting between Yale Road and the Victoria Avenue City parking lot. This lighting was installed in early December to illuminate the pathway for shoppers and merchants during the holiday season.



## Asphalt Crack Sealing



Crack sealing is an important measure to maximize the lifespan of roadways throughout the city and reduce future maintenance costs for residents. The City awarded the annual crack sealing program to Federal Joint Sealing Company of Canada Ltd. who will be working in the spring to seal hundreds of cracks on roadways throughout the city.

## Filming

Several films were shot in Chilliwack in the fourth quarter bringing holiday joy and “snow” downtown in October. Chronicle Mysteries 5, a Glenbrook Christmas, and Christmas Comes Twice worked with Engineering, CEPCO and the City to turn downtown into Hollywood north.



## Chilliwack Safety Fair

The annual Chilliwack Safety Fair, co-hosted by Safer City and the Chilliwack Fire Department, was held in October. With safety at top of mind during the pandemic, the event was converted to a drive-thru event and held in the parking lot at Home Depot. Multiple stakeholders provided booths to showcase their safety expertise all in an effort to expand public safety knowledge throughout the community.

The new drive-thru format was well received by this year’s visitors. The team is actively looking to expand the 2021 drive-thru Safety Fair to include additional vendors and active scenarios. This will provide an expanded visitor experience while showcasing a variety of safety topics with local experts.



## School Zone End Tabs



In partnership with ICBC, the installation of school zone end tabs occurred in 10 school zones as a pilot project. The tabs indicate the end of the school zone encouraging drivers to adhere to the 30 km/h zone until they have reached the end of the zone. This pilot is a bright and reflective enhancement to the pilot project zones as the Motor Vehicle Act already indicates that the back of the sign (school zone or playground zone) on the opposite side of the road is the indicator of the end of the zone.

As a reminder, Chilliwack school zones are in effect on school days from 7:30 a.m. to 5 p.m. Watch for the new signs in the following school zones:



- Bernard Elementary
- Central Elementary
- East Chilliwack Elementary
- Greendale Elementary
- McCammon Elementary
- Strathcona Elementary
- Tyson Elementary
- Unsworth Elementary
- Vedder Elementary
- Watson Elementary

## Habitat Enhancement

### Tree Planting

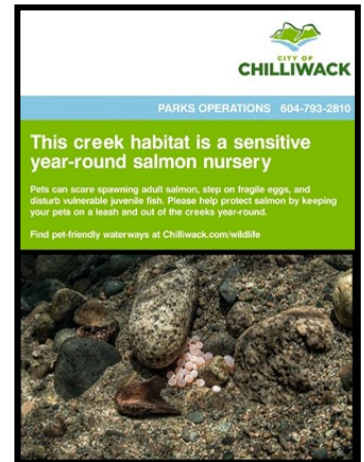
As natural tree and shrub planting continued in the fourth quarter, an annual total of over 1,200m of stream banks were restored or enhanced for wildlife habitat throughout Chilliwack in 2020.

### School Presentations

COVID-19 restrictions limited the ability for staff to engage directly with students this year. Staff adjusted by hosting outdoor, distanced education sessions for teachers to learn about local ecology and how to stewards natural spaces. In turn, teachers spread their new knowledge to their classes, multiplying the positive effects.

### Pet Impact Education

Environmental Services collaborated with the Operations Department to create signs discussing the impacts pets can have to sensitive fish habitat. Three more of these signs were installed in key spots where pets often entered salmon habitat.



## Major Appliance Recycling Roundtable Program



Starting on October 1, the City joined the BC Major Appliance Recycling Roundtable (MARR) program as a collection site for end-of-life major household appliances. Under this program, an individual who purchases a major household appliance pays an Administrative Program Fee (APF) at the time of purchase, and paying that fee allows the individual to bring the appliance to a registered collection site free of charge at the end of its life. MARR pays the City for each unit that is collected.

## Waste Reduction Month

Every year in October, the City hosts Household Hazardous Waste Day and other environmental events as part of Waste Reduction Month.

### Household Hazardous Waste Day

Household Hazardous Waste Day was held on Saturday, October 3, 2020 at the parking lot of the City’s Operations Centre on Luckakuck Way.

Residents from Chilliwack and six surrounding communities and electoral areas participate in this annual event through a cost-sharing arrangement with the Fraser Valley Regional District (FVRD). This popular event is an opportunity for residents to drop off their household hazardous waste materials for proper disposal or recycling free of charge (donations to the Salvation Army were welcomed). Common items that were dropped off included paints, adhesives, fire extinguishers, waste oil and household cleaners.



Event summary:

- Customer count: approximately 552, a significantly higher turnout than other years
- Contractors: Terrapure Environmental Solutions, Product Care Recycling (Chilliwack Bottle Depot) and Schnitzer Steel (Viper Fuels)
- Donations to Salvation Army Food Bank: approximately \$3,141 and 850 lbs. of food
- Amount of hazardous waste collected: 13 metric tonnes plus 17,000 litres

### Free Scrap Metal Recycling



Residents were permitted to drop off scrap metal at the Bailey Landfill free of charge throughout the entire month of October. A total of 43 metric tonnes of scrap metal from 570 loads was collected. All of the scrap metal is transported to a processing facility owned by Schnitzer Steel and is ultimately shipped to end markets to be recycled into new products.

### Pumpkin Composting

Residents brought 150 Halloween pumpkins to the Parr Road Green Depot in 2020, in addition to those placed in Green Carts as part of the City’s compostables collection program. The pumpkin composting initiative reminds and encourages residents to divert their organic waste from the landfill.



### Illegal Dumping Reduction



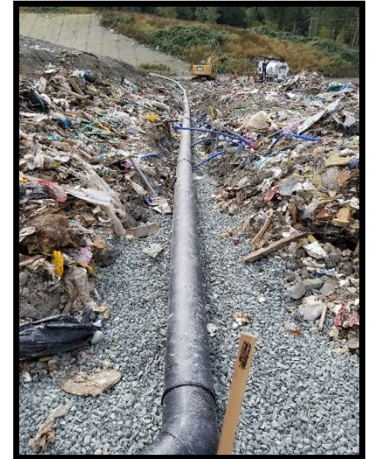
The City continued to support COVID-friendly small cleanups of illegally dumped materials. Free tipping passes are provided to volunteers so the material to be disposed of responsibly at Bailey Landfill.

Throughout November, Environmental Services and Communications ran a newspaper campaign highlighting the average disposal costs of common items found illegally dumped. The ads and information were well received and helped residents realize it is often free or cheaper than anticipated to responsibly dispose of items.



## Landfill Gas System Expansion

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. Four horizontal gas collectors were installed in the west half of the West Cell in the fall of 2020. These gas collectors, in addition to five others that were installed in the east half of the West Cell in the spring of 2020, were then tied into the existing landfill gas system. The Landfill Operating Contractor (Whissell Waste Solutions) carried out the project, with engineering services support from GHD Limited.



## Single-Use Item Reduction Strategy

A comprehensive Single-Use Item Reduction Strategy was adopted by Council in December 2020, following consultation with residents and businesses the previous winter. The City’s strategy builds upon announcements made at the provincial and federal levels to regulate many common single-use items that are provided at the point of sale.

- Plastic retail bags, straws (except for those for accessibility needs) and utensils, as well as foam cups and containers will be banned;
- Minimum fees will be applied to paper bags and drink cups; and
- Fibre-based utensils and paper straws will only be made available upon request, along with bendable plastic straws required for accessibility needs.

Work will continue in 2021 with the development of a Single-Use Item Reduction Bylaw.

