

# Engineering



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

## Third Quarter Report, 2019

## Mechanical Systems Replacement Project

The project is a combination of four sanitary pump station (SPS) upgrades and one pressure reducing valve (PRV) upgrade throughout Chilliwack that have been combined to increase scope and economy of scale. The SPS 5, 6 and 7 replacements are to increase pump station capacity to meet future flow conditions. The SPS 10 upgrade is to meet future flow conditions and to improve operational reliability. The Goldspring PRV is to upgrade the PRV station to continue to meet current WorkSafeBC standards and to improve operational reliability.



The Timbro Contracting Ltd./Onsite Engineering Ltd. design-build team completed the replacement of SPS 6 in early 2019, SPS 5 in May, SPS 10 in August, and commissioned SPS 7 and the Goldspring PRV in September and early October respectively, with the latter two projects still requiring final site restoration and deficiency correction. This \$2.8 million project is on schedule to be substantially completed by the end of October 2019.

The following table shows water and sewer infrastructure upgrade projects:

Name of Project	Description of Work	Contract Value	Project Status
Upgrade SPS 5	Complete replacement of Sanitary Pump Station	\$744,000	Completed Jan. 2019
Upgrade SPS 6	Complete replacement of Sanitary Pump Station	\$832,000	Completed May 2019
Upgrade SPS 7	Complete replacement of Sanitary Pump Station	\$792,000	Completed Sep. 2019
Goldspring PRV	Complete replacement of Pressure Reducing Valve station	\$240,000	Construction commenced
SPS 10 2 <sup>nd</sup> Submersible Pump	Installation of second submersible pump	\$176,000	Completed Aug. 2019

## Well #5 Pilot Testing Study



This study is needed to determine the treatment requirements to ensure that Well #5 can be brought online while providing continuous stabilized water of acceptable quality that meets discharge parameters.

Well pumping commenced in late July 2018, after obtaining necessary approval from the Province, and continued until the end of July 2019 to collect one year of data to determine groundwater quality variations. The pilot testing phase of the project began in late March and completed successfully in early May. The results of the pilot will be used to evaluate options for treating

the groundwater. Associated Engineering is providing the consulting services for this \$250,000 project, and the project will be completed in the fall of 2019.

## 2019 Utilities Upgrade Project

The project is a combination of six water main installations, two sewer main upgrades and one storm sewer main upgrade throughout Chilliwack. The project also includes one pressure reducing valve (PRV) installation and a landfill gas collection system. These upgrades have been combined to increase scope and economy of scale. The water main installations will increase supply and fire flow capacity, and improve the water quality in the local area. The sewer main replacements and upgrades will replace aging infrastructure and increase capacity to satisfy increased flow from new and future developments. The storm sewer main upgrade will replace aging infrastructure and increase capacity to satisfy increased flow from downtown developments. The new Jinkerson PRV station will facilitate current and future development activities in the area. The Bailey Landfill gas system will improve landfill gas collection.

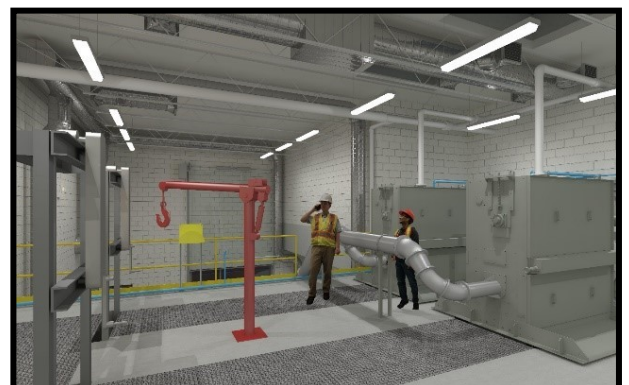
The Timbro Contracting Ltd./Onsite Engineering Ltd. design-build team have completed the design and construction of the Banford Road watermain installation, as well as the South Sumas Road gravity sanitary sewer main with the exception of some minor final paving areas. Timbro Contracting/Onsite Engineering are continuing with design development for the remaining project areas while completing construction project areas. Construction of the Lewis Avenue watermain upgrade will begin in mid-October 2019. The \$3.85 million overall project is scheduled to be completed in September 2020.



## Wastewater Treatment Plant Inlet Works Upgrade Project

The existing Wastewater Treatment Plant (WWTP) inlet works, originally constructed in 1973, need expansion to accommodate increased flows and loads due to growth in the city. The objective of this project is to upgrade the WWTP inlet works to meet current and future capacity to service the increase in sewered population for the next 30 years. The project includes the new Inlet Works Building, which contains efficient and high-performance screening units including screenings processing, a high-performance induced vortex grit removal system and allocated space for a future truck septage receiving and screening station.

This \$8.11 million design-build project was awarded to Trittech Group Ltd. / Stantec Consulting Ltd. and the contract execution and design development are underway. The project is scheduled to be completed in February 2021.



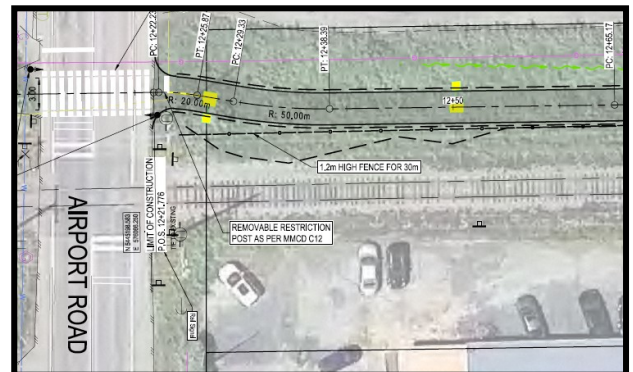
## Lickman Interchange Project

Final paving, line markings and signage works were completed for the Lickman Interchange Project during the third quarter.



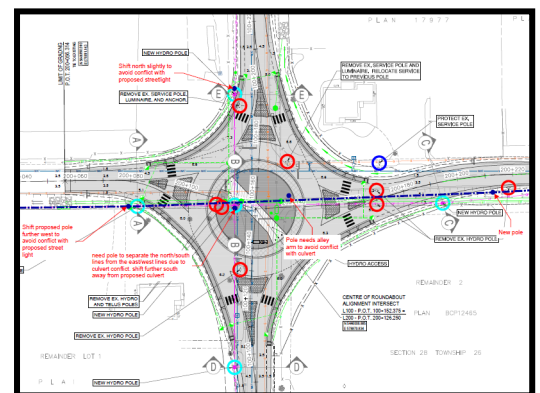
## Valley Rail Trail North Extension

Survey and 50% design were completed in the second quarter to obtain construction pricing. Council authorized completion of detailed design and construction by Eurovia BC Construction. The work is scheduled to be completed by Spring 2020.



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

Detailed design including coordination with BC Hydro/Telus for pole relocations at the Prest and Chilliwack Central roundabout occurred during the third quarter. The Webster sidewalk project advanced to construction with new curb, sidewalk and street lights in September and October. The Hack Brown realignment and Five Corners project are scheduled for construction in 2020.



## Asphalt Rehabilitation Program

Evans Road asphalt rehabilitation from the Trans-Canada Highway to Stevenson Road has now been substantially completed. This project involved sections of curb, gutter and sidewalk replacement, base repairs to the BC Hydro trench and other areas of asphalt deterioration, and finally asphalt overlay. One particular area which experienced long-term settlement saw the reinforcement of the water main with joint restraints, removal of peat material and installation of lightweight aggregate fill. The project reached completion ahead of schedule and final road markings and delineators were installed all prior to the start of the new school year.



Evans Road

The 2019 Asphalt Rehabilitation Program is progressing with All Roads Construction. Roads that have reached substantial completion are:

- Banford Road – CN Railway to Yale Road
- Extrom Road – Sherlaw Road to Ryder Lake Road
- Old Orchard Road – 260m north of Industrial Way
- Matheson Road – from Bailey Road to the weigh scale entrance



Extrom Road



Matheson Road

Roads currently in progress are:

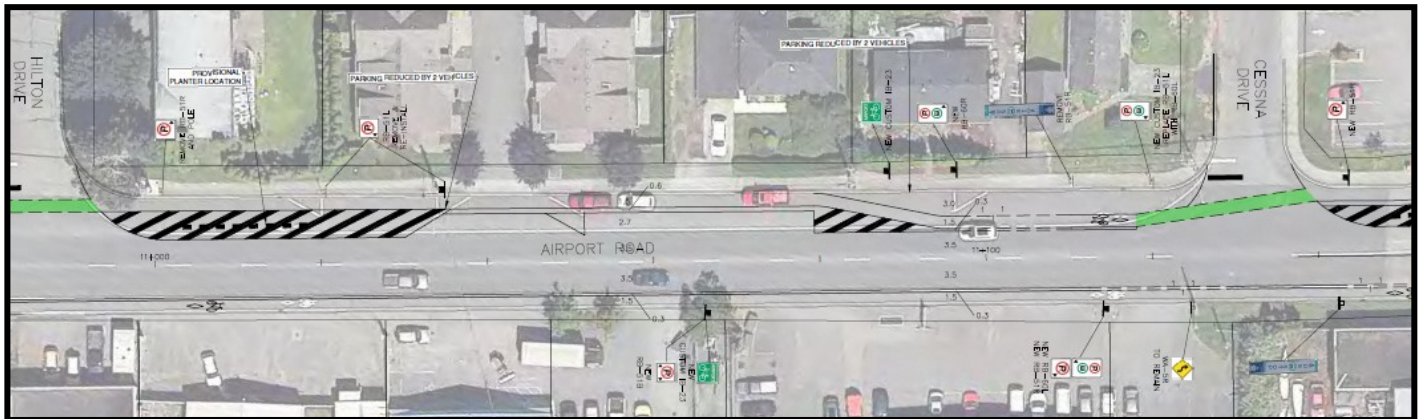
- Elk View Road – geotechnical reinforcement and paving south of Wincott Road
- Progress Way – Lickman Road to Industrial Way
- Castleman Road – Chapman Road to McGrath Road



Elk View Road

## Cycle Vision

Two Cycle Vision projects are in final design stages and are scheduled to be constructed early spring of 2020 as weather permits. Spruce-Britton-Sheffield and Airport-Broadway bike lane facilities are planned. These roadways will see improved bike lane infrastructure with a combination of painted buffered bike lanes, adjusted on-street parking lanes for bike protection, delineators/planters in critical areas, green MMA road paint for conflict zones and improved signage. Additionally there will be some road widening to allow the retention of some on-street parking. The timing of these changes will coincide with planned asphalt rehabilitation of the roadways.



## Traffic Counts and Roadway Reflectors

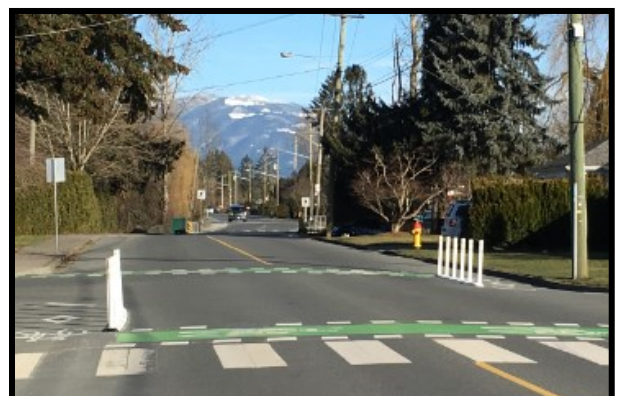
The 2019 annual programs for traffic counts and roadway reflectors have now been completed.

## Delineators

Several areas have been identified where installation of delineators would increase safety for vehicles, pedestrians and cyclists.

Installation of delineators has been completed or is in progress in the following areas:

- Watson Elementary
- Vedder Road, north of Keith Wilson Road
- Sunrise Drive at Sunburst Place
- Young Road, north and south of Hocking Avenue/Southlands Drive
- Ashwell Road at Spadina Avenue



## Safer City Projects

### Back to School

During this year's Back to School enforcement and education project, the Safer City team attended 18 schools enforcing and educating drivers on 30 km/h school zones. The local business community donated advertising space on their roadside advertising boards in an effort to collectively raise awareness that school was back in session; many of the businesses kept the messaging up into the month of October. School zone safety reminders were also provided through social media, website tips, newspaper and radio ads. School bus safety was also highlighted through a full page reminder in the Fall/Winter edition of the Leisure Guide.



### School Bus Safety Videos

Due to public enquiries and concerns raised regarding safety around school buses, the Safer City team decided to prepare a short video series for public education for the 2019 Back to School season. The strong partnership and cost sharing with Chilliwack School District No. 33 enabled the Safer City team to move quickly to secure a local production company, Dock Visual Media. The first safety video was released at the start of the Back to School season. The videos will be released throughout the school year in an effort to keep school bus safety top of mind for drivers.



### Rail Safety Campaign

Thanks to a grant from Transport Canada for 2019-2020 Rail Safety Improvement Funding the City launched a rail safety campaign starting with Rail Safety Week. Chilliwack has 27 at-grade crossing locations within its municipal boundaries; 15 are designated CN and 12 are designated SRY. The project involves education and awareness outreach through local marketing efforts including radio advertisements, newspaper advertisements, posters and rack card campaigns, public engagement events, community facility electronic display boards, travelling billboards and corridor ownership.



## Fall City-Wide Garage Sale

The semi-annual City-Wide Garage Sale took place on September 21. This event, which promotes waste reduction through reuse, continues to be a community favourite with over 100 residences taking part.

Garage sale hosts with leftover items were encouraged to donate them to local charities or thrift stores to keep them out of the landfill.



## Adopt-a-River



The BC Rivers Day Adopt-A-River event took place on September 22. Approximately 250 volunteers came out to help clean up the Chilliwack/Vedder River, removing 4.5 tonnes of garbage and recyclables. The City provides funding assistance to the Chilliwack-Vedder River Cleanup Society to organize the events.

An Environmental Services staff member was on-hand to assist in the cleanup and promote the City's other environmental programs.

## Street Can Replacement

Four companies submitted proposals in response to the Street Can Provision Request for Proposals, which closed on July 17. Several different models will be trialed over the fall and winter before selecting a container to replace the existing street cans in the downtown area and at bus stops.





## Salmon Habitat Enhancement

Two classes of middle school students recently planted clusters of trees along Dunville Creek to improve habitat for Coho salmon. Staff were on hand to coordinate and assist.



## Hooge Road Salmon Rearing Pond Construction

A new salmon rearing pond adjacent to the Vedder River was created near the Hooge Road parking lot by the Fraser Valley Watersheds Coalition in partnership with the Fisheries and Oceans Resource Restoration Unit (DFO), and funders. The City assisted with acquisition of large woody debris, facilitation, trail closures, and community notifications.













## Coho Overwintering Pond Construction

A new overwintering pond was created for Coho salmon in Wilson Park in Yarrow. The space provides calm water for juvenile fish to seek refuge during strong winter flows on Stewart Creek. The project was completed by the City's Operations and Environmental Services Departments, the Fraser Valley Watersheds Coalition, the Fisheries and Oceans Resource Restoration Unit (DFO) and funders.



## Nature Education

Staff coordinated an outdoor classroom session for the Chilliwack Society for Community Living summer program. A hands-on presentation about local wildlife was followed by a nature scavenger hunt aiming to get kids to slow down and appreciate intricacies of our natural spaces.

 Sharp Rock	 Leaf	 Twig	 Soil	 Seed	 Cone
 Smooth Rock	 Leaf - Lobed	 Moss	 Tree Bark	Your choice	Your choice

## Orchard Slough Check Dam

Northwest Hydraulic Consultants completed the engineering design work in early 2019. The construction portion was tendered through public procurement in March 2019. Seven bids were received with Cutline Contracting Ltd. submitting the successful bid and being awarded the contract. Construction work was completed during the summer environmental work window of August and September, with the final contract value in the amount of \$106,000.



This project was funded as part of the \$750,000 grant through the Union of BC Municipalities (UBCM) to complete Fraser River Erosion protection under the Community Emergency Preparedness Fund (CEPF).