

Engineering



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

First Quarter Report, 2014



CITY OF
CHILLIWACK

Eastern Hillsides Balancing Reservoir

The project was to construct a balancing reservoir to stabilize the water system pressure in eastern Chilliwack. The reservoir will provide sufficient volume and elevation to maintain pressure throughout the peak water demand periods and ensure system reliability. The project was successfully completed by Timbro Contracting / Civic Consultants design build team in March 2014.



McConnell to Standeven Water Main Upgrade



In early 2013, local residences commenced a petition process to request that the City of Chilliwack install a new larger diameter water main in the area along McConnell, Gillanders, Hawthorne, Castleman and Standeven Roads to provide adequate fire hydrant protection. After reviewing the petition submitted by local area residents, preliminary design work was completed along with cost estimates to upgrade the existing water main and notified the local area residents with information such as total cost, the City's contribution and the individual home owner contribution along with a non-binding petition. In May 2013, the majority of benefiting property owners gave their consent to go ahead with water main upgrade

work based on preliminary cost information.

The proposed work includes installation of 4,510m of 200mm diameter DI water main to replace the existing 75mm diameter CI and PVC water mains as well as 4,780m of new asphalt overlay and additional road rehabilitation work. Strohmaier's Excavating Ltd./Aplin & Martin Consultants Ltd. was selected as the lead proponent to design and construct the project and Local Area Service petition is currently in progress. Construction of this design build project will commence only after the successful completion of Local Area Service petition process. The total project cost is \$1,957,000. If owners approve the project, completion is scheduled in late fall of 2014.

Sunset Drive Water Main Upgrade

Installation of 280m of 200mm diameter Ductile Iron water main on Sunset Drive from Westview Avenue to Hodgins Avenue has been identified to replace the existing 100mm Cast Iron water main to increase capacity for fire flow and improve water quality. This project is included under the South Trunk Sewer Upgrade project to increase scope and gain economy of scale. B & B Heavy Civil Construction Ltd./Associated Engineering Ltd. design build team is proceeding with the project and currently in the process of completing detail design work. The construction of this project is planning to be commenced in early summer and is scheduled to be completed in August 2014.

2014 North Chilliwack Water Main Upgrade

The following table shows the water main installation projects which have been identified to replace existing water mains and install new water mains to increase capacity for fire flow and improve water quality. The project is a combination of four (4) water main replacements that have been combined to increase scope and economy of scale. RFP stage for this design build project is currently in progress and the project is scheduled to be completed in September 2014.

Name of Project	Description of Work	Budget
Hillier Street Water Main	Replacement of 170m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$130,000
Yates Street Water Main	Replacement of 270m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$160,000
Kipp Avenue Water Main	Replacement of 340m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$250,000
Corbould Street Water Main	Replacement of 335m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$240,000

Biological Treatment System Expansion



The existing biological treatment system at the Wastewater Treatment Plant (WWTP) needs expansion to accommodate increased flows and loads due to growth as well as to meet discharge quality requirements in the future. Associated Engineering completed preliminary design work for the expanded biological treatment system phase 1 to achieve high quality effluent discharge in the future. The objective of this project is to construct a new Bioreactor Tank with associated equipment to increase WWTP capacity and to maintain regulatory effluent quality requirements. The design build delivery process for this \$9.5 million project commenced in February 2014

with the issue of RFEI package to select three (3) proponents to the RFP stage and ultimately select a design build team to complete upgrade work. The project is planned to be completed by end of October 2015.

South Trunk Sewer Upgrade Phase 3



The existing South Trunk Sewer Upgrade is required to ensure system reliability and to facilitate current and future anticipated flows. Project includes installation of 330m of 750mm diameter gravity sanitary sewer along Westview Avenue and Sunset Drive and 160m of 200mm gravity sanitary sewer along Newman Road. B&B Heavy Civil Construction Ltd./Associated Engineering Ltd. design build team is proceeding with the project and currently in the process of completing detail design work. The construction of this \$1,181,100 combine project is planning to be commenced in early summer and is scheduled to be completed in August 2014.

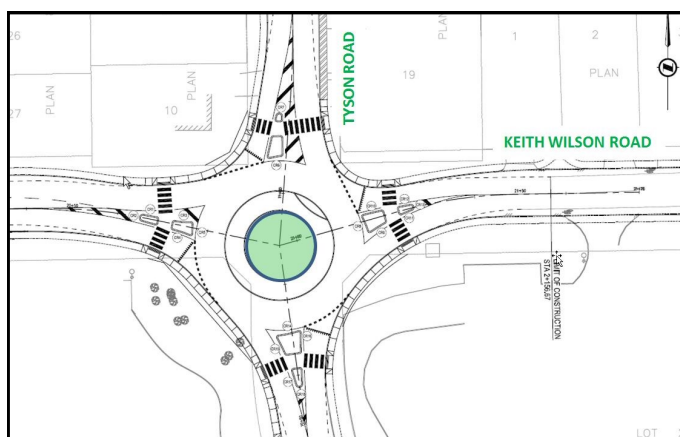
Mill Street Project Update

The Mill Street Upgrade project was awarded to Strohmaier's Excavating Ltd. and commenced construction on January 27th. All underground utility works have been completed along with the construction of concrete curbs. The road was opened to one-way traffic on the new base lift of asphalt on March 21st. Concrete sidewalks are scheduled to be poured the first week of April with the installation of street trees and ornamental street lights to follow. Although there has been inclement weather during this Winter construction project the Substantial Completion for this project is scheduled for April 23rd in advance of a Grand Opening event scheduled for May 3rd.

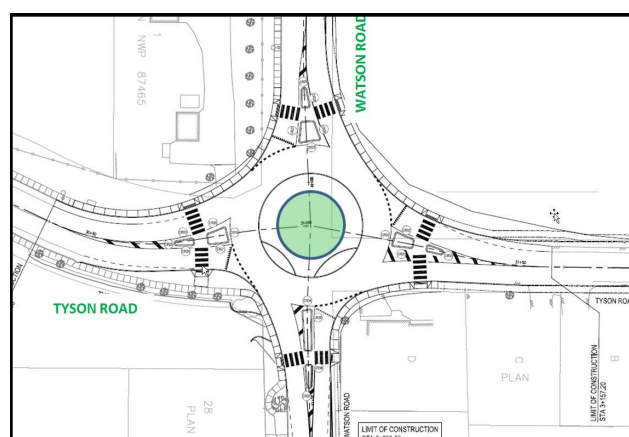


Tyson Road Roundabouts

The \$1.2 million dollar Design-Build project has been progressing through the 50% and 95% design submissions from the team of Martens Asphalt Ltd. /McElhanney Engineering Services Ltd. for the construction of modern roundabouts at Keith Wilson Road and Watson Road along the Tyson Road corridor. BC Hydro and Telus utility relocations have begun and will continue into May. Intersection works are scheduled to begin on June 9th with Substantial Completion for the project by September 15th.



Tyson Road—Keith Wilson Road



Tyson Road—Watson Road

Concrete Works Program



three schools and links Stevenson Road to South Sumas Road.

The City of Chilliwack has awarded the Concrete Works Tender to 651432 BC Ltd. (Universal Contracting) for the construction of storm sewer, curb and gutter, sidewalk and street lighting on the west side of Reid Road from

Redwood Avenue to South Sumas Road. This is a continuation of the project that saw the completion of Reid Road from Stevenson Road to Redwood Avenue in 2013.

We anticipate construction to begin in April 2014 and to be completed in August.

This program provides the community with sidewalks in areas of pedestrian need increasing safety particularly for children and the elderly. In addition they provide connectivity between existing sidewalk links and access for the disabled. Reid Road is a great candidate in that it is surrounded by



Roadway Reflectors



Sealtec Industries Ltd. has been awarded the contract for roadway reflectors installation from April 1st – 30th, 2014. These reflectors help the driver identify centerline and lane lines especially on days with adverse weather conditions. Roadways to received reflectors include Vedder Road, Yale Road, Vedder Mountain Road, Luckakuck Way, Promontory Road, Chilliwack Mountain Road, Grandview Drive, Bracken Drive, Old Orchard Road, Elkview Road, Ryder Lake Road, Extrom Road, Thornton Road and Ballam Road.

2014 Asphalt Rehabilitation and Shoulder Paving

The low bidder for the Asphalt Rehabilitation & Shoulder Paving program was Keywest Asphalt.

The base asphalt rehabilitation work is planned on the following roads:

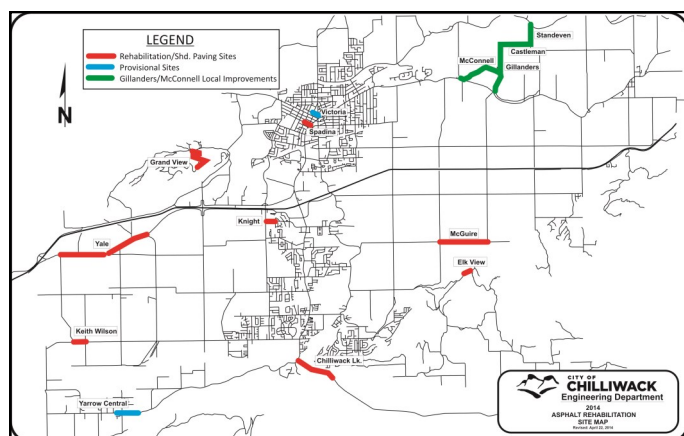
Tender Base

On	From	To	Amount
McGuire	Banford	Gibson	\$173,000
Grand View	Primrose	Chilliwack Mtn.	\$146,500
Spadina	Mary	Yale	\$61,000
Keith Wilson	Chadsey	Blackburn	\$71,000
Knight	Evans	Garnet	\$47,500
Yale	Chadsey	Adams	\$255,000
Yale	Adams	Hopedale	\$237,500
Chilliwack Lake	Vedder	City Boundary	\$110,000
Chilliwack Lake (shoulder paving)	Vedder	City Boundary	\$132,500
TOTAL			\$1,234,000

Overlays may be conducted on the following roads subject to available funding:

Tender Provisional

On	From	To	Amount
Victoria	College	Young	\$72,000
Yarrow Central	Wilson	RRX	\$95,000
Snow plough resistant centerline markers			\$31,950
Contingency			\$100,000



Proposed Asphalt Rehabilitation and Shoulder Paving Sites

Thornton Road Fill Failure



On March 10th, following a week of significant rainfall totaling about 130mm, the slippage of a section of Thornton Road that was already being monitored, accelerated resulting in the need to close the uphill lane as shown in the photo below. Geotechnical testing is underway and the engineer will propose a reconstruction strategy shortly.

Traffic Signal Emergency Pre-Emption



Emergency vehicle pre-emption equipment was installed at the intersection of Broadway and Chilliwack Central Road. In total we have 29 traffic signals that offer Fire Department vehicles signal pre-emption. Sites for installation are recommended by the Fire Department based on traffic congestion along primary response routes.

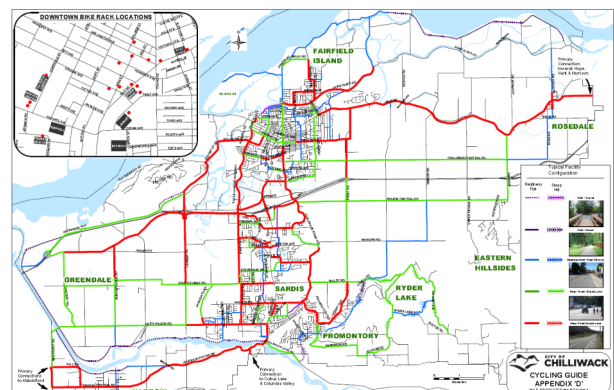
Bicycle Transportation Plan Update

Bicycle Transportation Plan

2014 - 2024



The Bicycle Transportation Working Group completed the update and Transportation Advisory Committee voiced support at their March 27th meeting. Staff will be seeking Council adoption of the plan at their May 6th meeting. The updated plan provides information about existing bicycle facilities integrated with the Parks trail system. In addition to the maps illustrating the existing facilities the updated plan includes a description and map of our proposed facilities and routes. To assist staff with annual additions to the bike lane system, the new plan provides prioritization recommendations.

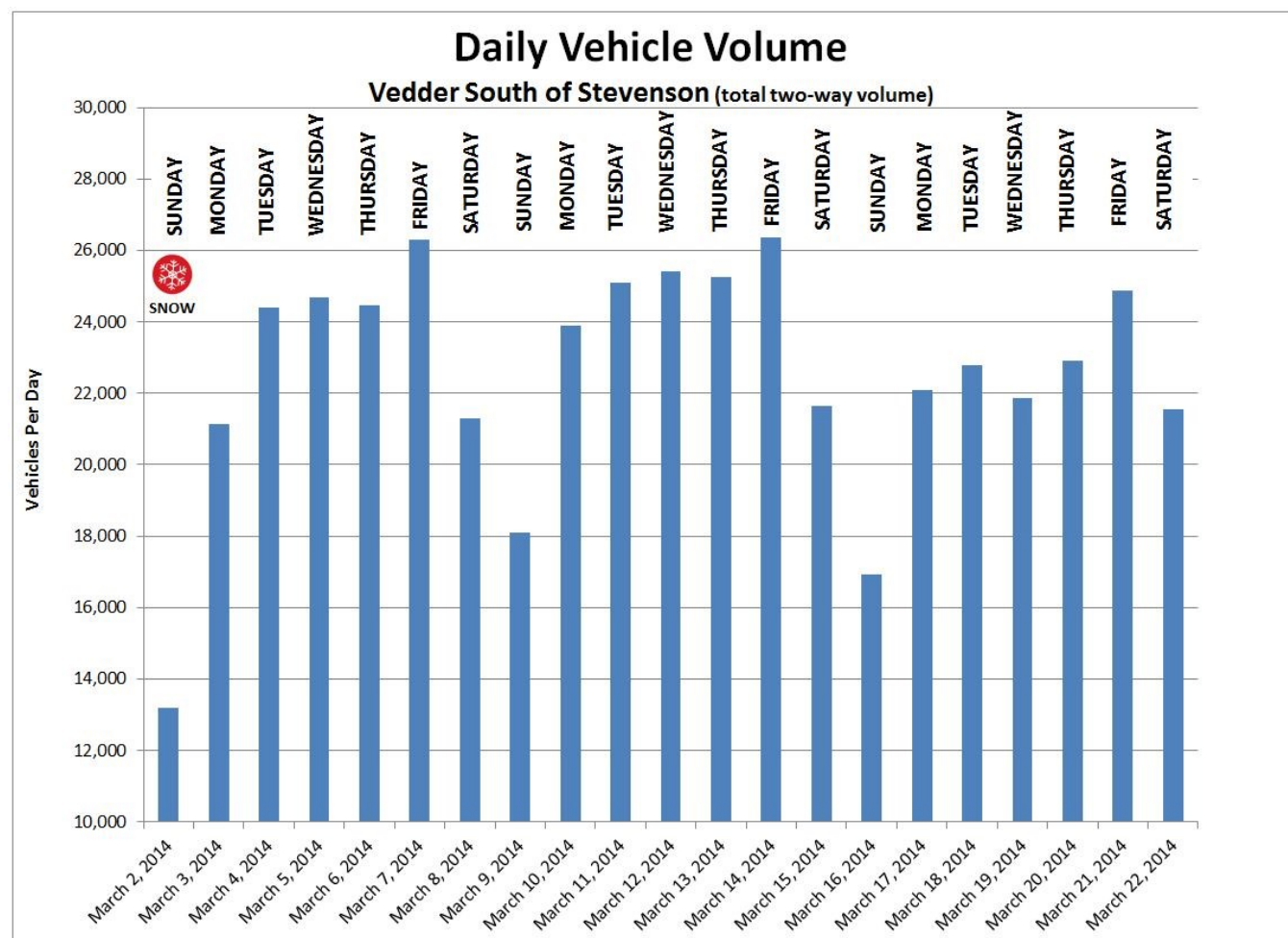


Radar Vehicle Data System

In early February the Wavetronix “Smart Sensor” radar based vehicle classifier was installed on Vedder Road south of Stevenson Road. It has the ability to simultaneously log the direction, speed, vehicle type and headway gap between vehicles in all four lanes. It is connected by cell modem to allow quick data downloads from the office.



Typical graphic output for speed and volume is demonstrated in the two graphs below:



Roundabout Open House



The annual “*Roundabout Open House*” was held on February 19, 2014 at the Evergreen Hall. Safer City hosted the event with support from 4 Engineering Staff and 2 RCMP Traffic Officers. Throughout the evening 77 visitors attended to gain knowledge and leave their comments about Roundabouts. There were visitors from Chilliwack, Victoria, Harrison Hot Springs, Harrison Mills, Agassiz and Cultus Lake.

Visitors enjoyed displays for the roundabout at Evans Road as well as the upcoming roundabouts at Keith Wilson Rd at Tyson Road; Watson Road at Tyson Road; and Prest Road. To encourage further education, handouts were provided to all visitors.

The positive feedback received at the Open House has initiated a follow-up Open House later this year.



Distracted Driving Project

The Safer City team continues to make distracted driving one of the primary focuses throughout the year. During a multi-agency focused project in the first quarter of 2014, a variety of driving offences were found which resulted in over 30 violation tickets being issued. Distracted driving makes drivers 23 more times likely to have a crash; the Safer City team reminds all drivers to “Be the Example; Keep Your Mind On The Road”.



Bailey Landfill Design-Build Project

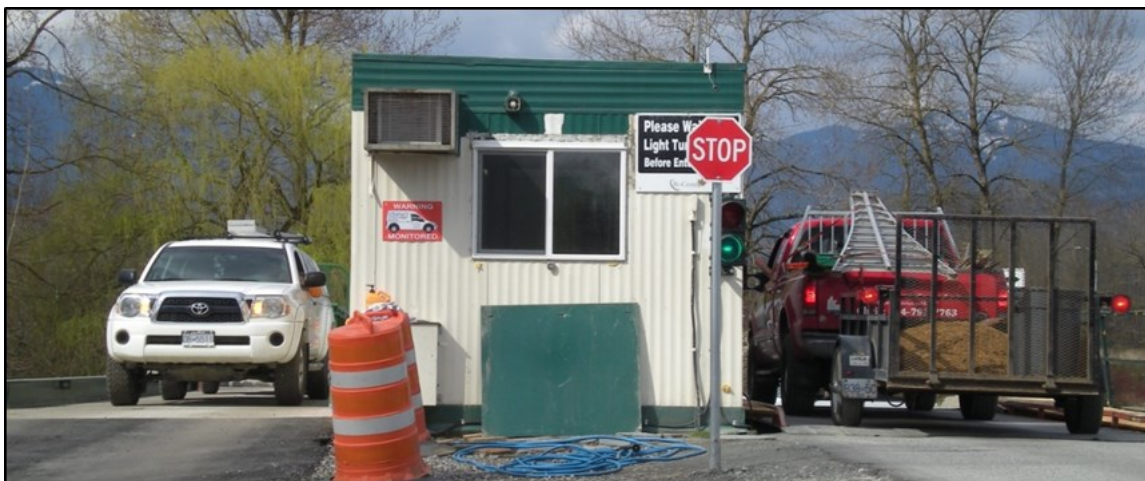
The \$6.4 million capital project which includes the final phase of the expansion cell, a new landfill gas extraction system and a new leachate lift station reached substantial completion in this quarter. The lift station has been operational since February 15th. The landfill expansion is complete and will provide a solid waste disposal option for decades to come.



The gas extraction system has been operational since March 10th. Conestoga Rovers and Associates has a two year operating contract to maintain and operate the landfill gas facility. The flare is designed to create higher combustion temperatures which equates to more efficient destruction of landfill gases. The extraction system confirms the community's commitments to cleaner air.

Modernizing Parr Road Green Depot

BioCentral, the new operator of the Parr Road Green Depot, is taking great strides to modernize the site. Vehicles are now weighed-in on one scale and weighed-out on a separate second scale improving traffic flow and reducing wait times. Also, each customer is now handed a Radio Frequency Identification (RFID) tag that tracks their vehicle through the site. The tags communicate the material type and net weight to the billing system for faster and more accurate payment. Further, by chipping deposited materials on site, BioCentral is now able to ship more tonnage per truck greatly reducing their transportation air emissions and carbon footprint. Lastly, just in time for spring, soil products are once again for sale at the Parr Road Green Depot.



Curbside Collection Program - Christmas Tree Composting

Our successful and popular curbside Christmas tree collection campaign started off the New Year. Christmas trees were collected at curbside or dropped off at Parr Road Green Depot by residents for free. Additionally, trees were chipped by Rim Tree Services at Minter Country Garden in exchange for donations of cash or food for the Salvation Army. Combined, these annual programs provide Chilliwack residents with convenient ways to compost Christmas trees and help to reduce illegal dumping and burning.



Community Clean-up

Close to 50 volunteers from Chilliwack Community Services cleaned up the banks of the Fraser River near Old Orchard Road on March 18, 2014. This riparian area is often abused and is now cleaned annually by this dedicated group. The City of Chilliwack supported their efforts by providing free tipping at the landfill for the nearly 2,000kg of garbage they collected. Further, Public Works picked up and recycled 400kg of metal the group had gathered. With a little assistance from the City, groups like this are helping to keep Chilliwack clean, safe, and beautiful.



Flood Protection

Snowpack Report and Freshet Preparations

The BC River Forecast Centre has issued the April 1st snowpack report:

Upper Fraser:	136% of normal	Nechako:	80% of normal
Middle Fraser:	96% of normal	North Thompson:	97% of normal
Lower Fraser:	83% of normal	South Thompson:	105% of normal

Typically the peak of the snow accumulation season in BC occurs in the middle of April with a transition from accumulation to snow melt at higher elevations. Therefore the April 1st snow survey data is a good reflection of the overall seasonal snow pack that is available for melt during freshet.

In the Fraser basin, high snow pack levels in the upper headwaters are moderated by near-normal and below normal snow packs in other major tributaries. The overall Fraser River basin index for April

1st is 99% of normal. The forecasted peak flow for the Fraser River at Hope, based on typical spring temperatures and rainfall, is 8600 m³/s, or approximately the 2-year flow or mean annual peak. This compares to peak flows at Hope of approximately 10,000 m³/s in 2013 and 11,700 m³/s in 2012.

Seasonal weather during the snow melt season is a critical factor in determining whether or not flooding will occur. Adverse weather, including extreme heat or extreme precipitation, can cause flooding in years with normal, or even below normal snow packs. City staff are undertaking routine annual freshet preparations and will continue to monitor snowpack's, weather conditions and river levels in the coming months.



Vedder River Gravel Management



Preparations are underway for the 2014 Vedder River gravel management program. River surveys and hydraulic modeling are complete, and environmental planning is in progress. Removal sites will be confirmed by the Vedder River Management Area Committee in early May. Removals will take place during the Fisheries work window from mid-July to mid-September.

Wing Dyke Realignment



Work is substantially complete on realigning a section of the Wing Dyke on Island 22 to provide additional setback from the eroding bank line. The construction was carried out by Walters Bulldozing 1994 Ltd with Golder Associates Ltd. providing engineering services.