

# Engineering



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

## Fourth Quarter Report, 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 from McConnell to Standeven to provide adequate fire hydrant protection. After going through the Local Area Service petition process, 81.3% of benefiting property owners gave their consent to go ahead with water main upgrade work as a Local Area Service in May 2014.

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. design build team has completed the water main installation work, and could not complete asphalt overlay due to unfavorable fall weather conditions. The remaining paving portion of the project is planned to be completed in the spring of 2015 when favorable weather conditions return.



## Annis Road Pump Station Upgrade

The Annis Road Booster Pump Station was originally constructed in 2004 as a closed water distribution system to provide water service to the Falls development in the Eastern Hillside area and subsequently connected to Falls reservoir in 2010. Currently, it has reached its capacity due to on-going development activities and requires pumps and electrical system upgrade to increase its capacity. Associated Engineering was hired to provide project engineering services for the project which consists of replacement of pumps, installation of pump controls and associated appurtenances and is currently in the final stage of design. The construction portion of this \$250,000 project is scheduled to commence in early 2015 with a completion date set by the end of June 2015.



## Weeden Drive Booster Pump Station



The Weeden Drive booster pump station serves a high elevation residential area of Promontory. The pump station requires an upgrade to provide backup fire flow pumping capacity. Major mechanical and electrical upgrades including BC Hydro service connection will be required to accommodate the additional fire pump. Associated Engineering was hired to provide project engineering services for the project which consists of installation of back-up fire pump, electrical controls, new BC Hydro connection and associated appurtenances and has currently completed the detailed design work. The construction portion of this \$150,000 project is scheduled to commence in early 2015 with a completion date set by the end of June 2015 pending

BC Hydro service connection completion.



## Ford-Nevin Water Main Installation

The Rosedale area of East Chilliwack is experiencing low water pressure and water quality issues due to its location and low turnover in the area. Water system analysis identified that water main looping from Chilliwack Central Road to Nevin Road through Ford Road will improve water quality in the area and increase fire flow for Rosedale Middle School and commercial / industrial properties in Rosedale. The project consists of installation of approximately 2,400 m of 200mm diameter watermain and appurtenances. The RFP process is for this design build project set to begin in early 2015 and the project is scheduled to be completed in the summer of 2015.



## Biological Treatment System Expansion Phase 1

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. The objective of this project is to construct a new Bioreactor Tank with associated equipment, a splitter Box and a third Clarifier to increase WWTP capacity and to maintain regulatory effluent quality requirements. The design build delivery process for this \$7.5 million project was successfully completed in October by selecting and awarding the contract to the design-build team of NAC Constructors Ltd. / Opus DaytonKnight Ltd. Currently, the team is proceeding with the detailed design work, while construction is expected to begin early in January 2015, and completed by the end of November 2015.



## Digester Gas Boiler Installation



The Wastewater Treatment Plant Sludge digestion process was recently upgraded by constructing a third Digester along with a boiler room to house two (2) dual fuel bio-gas boilers and associated mechanical and electrical equipment. Currently, one (1) 491 KW hot water dual fuel boiler complete with corresponding blower, circular pumps, plumbing and controls have been installed as part of Digester #3 Project and provision has been made at the new boiler building to install the second dual fuel boiler in the future to provide redundancy and continue to safely manage the city's wastewater effluent discharge quality. AECOM was selected to provide engineering services for the project which consists of supply and installation of a dual fuel boiler complete with corresponding mechanical and electrical appurtenances and

currently is in the process of finalizing detailed design work. The construction portion of this \$500,000 project is scheduled to commence in early spring of 2015 with a completion date set by the end of July 2015.

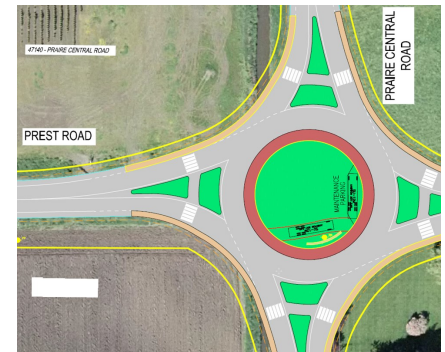
## 2014 Culvert Inspection Program

The City of Chilliwack engaged Omega Engineering to complete an inspection program of the 36 largest culverts. Inspections were completed this Fall by a qualified inspection engineer to visually inspect each of the culverts. The report provided outlines the inspection procedure, findings, and recommendations for prioritizing replacement.



## Prest Road Roundabouts Project Update

In the fourth quarter property negotiations continued with owners to acquire the necessary land on the four corners of the two intersections of Prest Rd / Bailey Rd and Prest Rd / Prairie Central Rd. Preliminary design with BC Hydro was finalized to allow relocation of existing poles and overhead infrastructure within the roundabout button. Standards for BC Hydro operation/maintenance access and vehicle safety were established for use in the 2015 Design-Build contract.



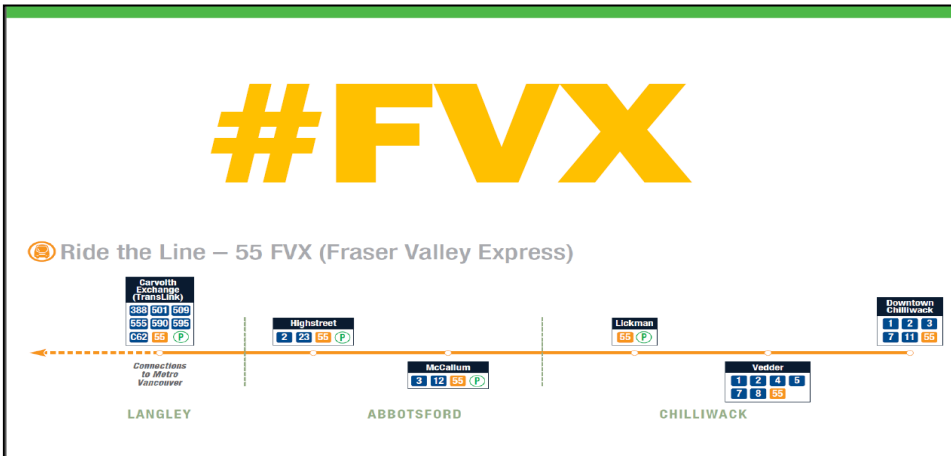
## Vedder Bridge Replacement

The City of Chilliwack engaged Parsons Engineering to prepare the Business Case necessary for the application for funding from the BC New Building Canada Fund – Small Communities program for the “Vedder Bridge Replacement Project”. The Vedder Bridge was built in 1947, is aging, has a high level of traffic congestion, and does not meet current day standards. The City is proposing to replace this bridge, at a new alignment just downstream from the existing bridge, and upgrade the road approaches to provide greater travel capacity and improved safety.





## Fraser Valley Express (FVX)



Preparations for the April 6, 2015 start of the Fraser Valley Express (FVX) are well underway. Pads have been installed at the Park & Ride lot on Yale Road near Lickman Road.

## Transit Bay Paving



Three transit bays were paved to ensure the buses are able to get fully off the road to pick up passengers and improve safety and site cleanliness for riders.



## Transit Shelter Expansion



We are assessing options for the installation of approximately 10 new shelters in 2015. Shelter locations along the #1 Vedder route are being considered to improve rider comfort at our busiest locations.



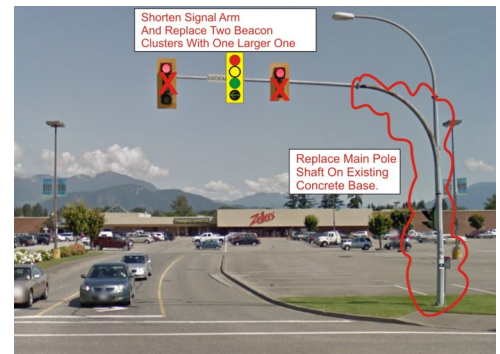
## Vedder at Keith Wilson – Eastbound Left-Turn Signal

Complaints regarding eastbound left turning vehicles not yielding to oncoming traffic or pedestrians on the north leg of the intersection prompted an intersection review. It was confirmed that an eastbound left turn phase was warranted. He signed improvement work was completed December 15th.



## Luckakuck at Mall access – Pole Replacement and Load Reduction

Analysis has confirmed the northbound and southbound signal poles are overloaded so the signal arms will be shortened and the dual signal indications will be amalgamated into one larger beacon cluster. The work is expected to be completed by the end of January.



## Thornton Slide



A slope failure at #46782 Thornton Road required a full road closure for a day and a half to armour the slope, place erosion control blankets and install a headwall at the culvert inlet.





## Trans-Canada Highway Signage

Two of the four signs have now been installed along the Trans-Canada Highway welcoming people to the City of Chilliwack. Knight Signs is currently fabricating the two remaining smaller signs that when complete will be placed at the Vedder Interchange. Landscaping will be provided by City crews once installation is complete. We anticipate completion of early spring.



## Sardis Rail Trail

McElhanney Consulting Services has completed the final preliminary design for the Sardis Rail Trail. The work has been forwarded to the three main stakeholders for review and discussion. The City anticipates moving forward with consultation in 2015 and construction in 2016.



## 2015 Staff Retreat

Engineering and Operations 2015 Staff Retreat was another great success this year with Engineering, Environment, Operations and Parks coming together to discuss proposed projects for the coming year. Congratulations to Richard Fortin and Shelley Grigg winning photo of the year 2015.



## Back to School

One of the largest projects the Safer City team undertakes each year is the “Back to School” enforcement and education project. This year 18 school zones were visited by the team with organized set ups. The project was delayed until October due to the school year starting later; it began on October 20<sup>th</sup> and ran on school days until October 30<sup>th</sup>. Speed Watch volunteers and the RCMP participated in the projects.

The Safer City team mobilized magnetic signage with school zone reminders on the tailgates of many City of Chilliwack vehicles as well as the Speed Watch van. Additionally, Safer City ran local radio and newspaper ads reminding drivers that school was back in session. The team also reached out to local businesses asking for their support by displaying “Back To School” reminder messages on their electronic or static roadside advertising boards. In total, 22 businesses agreed to display a number of safety messages. The team found that the support of these businesses had a direct effect on driver behaviour in local school zones. We applaud the following businesses for their support and use of their valuable advertising space:

- Pioneer Building Supplies
- O'Connor Dodge Chrysler Jeep
- Mertin Hyundai
- Home Hardware/Fortin's Auto
- Fraser Valley Tireland
- Vedder River Inn
- Little Mountain Greenhouse
- Tzeachten Hall
- Eze Rent-It Centre
- The Wave
- Apple Auto Glass
- Canadian Tire
- Chances
- Cottonwood Mall
- Hofstede's Country Barn
- Shandhar Hut
- Mertin Nissan
- Chilliwack Alliance Church
- Dairy Queen
- Mertin Chevrolet
- Minter Country Garden
- McDonald's



## School Zone Signage

In partnership with Bernard Elementary, the Safer City team is running a pilot project on a new type of school signage for the community. Early feedback from the installation is proving to be positive and the new sign panels are catching the eye of drivers. The new lime green panels are installed on both school zone signs in the Bernard Elementary school zone. A running list of other interested schools has been created and will become a part of the evaluation in the consideration for future installation locations.



## Kindness Crew



The Safer City team joined forces with Star FM and Royal LePage for a “Kindness Crew” project to reward good driver behaviour in the school zone of East Chilliwack Elementary. Two students from East Chilliwack Elementary, Star FM, realtors from Royal LePage, the RCMP and Engineering staff all welcomed ‘good drivers’ during their morning commutes. Drivers received a gift certificate for a local business, a cup of hot coffee with a keep sake ceramic mug and a huge ‘thank you’ from the students for obeying the posted speed limit. Future deployments are anticipated for 2015.



## Household Hazardous Waste Day

Household Hazardous Waste Day was held on Saturday, October 4, 2014, at the Public Works Yard. This annual event is an opportunity for Chilliwack residents to drop off their household hazardous waste materials for proper disposal or recycling free of charge.

Newalta was the prime contractor for the event and they collected 6,935 kg of hazardous waste ranging from waste oil to adhesives. Chilliwack Bottle Depot staff also attended the event on behalf of Product Care (a non-profit Provincial Stewardship Program) and they collected a large volume of paint products, aerosols, pesticides, and dry cell batteries. The total vehicle count for the event was 207.

The number of participating residents and volume of material dropped off have decreased substantially over the past decade (earlier events received over 30,000 kg of hazardous waste from over 500 vehicles). The reduction is likely due to increased awareness of free year-round disposal options, such as the Chilliwack and Sardis Bottle Depots. Given the reduced demand, the potential to transition Household Hazardous Waste Day into a biennial event will be reviewed.



## Shred-a-Thon

The Shred-a-Thon event on December 6, 2014 was another huge success! Chilliwack residents donated 1,500 food items and \$3,350 to the Salvation Army Food Bank while having their confidential documents shredded. A special thank you to Emterra for organizing the event and matching the first \$1,000 of community donations for a combined total of \$4,350 – the largest total of all Shred-a-Thon events so far! The event was made possible through generous contributions from Shred-It, Cottonwood Mall, Emterra Environmental, and Chilliwack residents.



## Waste Reduction Month

In addition to Household Hazardous Waste Day, the City organized other environmental related events throughout the month of October to promote the sustainable use of resources as a way of life in our community. These programs included:

- **Elementary School Recycling Presentations** – An environmental educator from the Abbotsford Community Services Foundation spent an hour in 8 Chilliwack classrooms promoting waste conscious topics such as recycling and composting. The program reached a total number of 204 students in grades 3-6 and has been in high demand since its commencement in 2006.
- **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 32 tonnes of scrap metal from 456 loads was brought in for recycling.
- **Consumer Tips** – 23 local businesses provided waste reduction tips during the month of October by placing shelf cards throughout their retail stores, which identified environmentally-friendly product options and indicated where consumers were able to recycle products that they purchased from the store once they had been used up or no longer needed.

### Reduce Your Waste!

**A helpful tip:**

**Buying a new car battery? Don't forget to recycle your old one!**

*Lead-acid batteries can be returned to the Chilliwack & Sardis Bottle Depots or the Recycling Depot at the Bailey Landfill.*

For more information on reducing household waste  
call Environmental Services at 604.793.2907  
or visit our website: [www.chilliwack.com/environment](http://www.chilliwack.com/environment)





## Pumpkin Composting



496 Halloween pumpkins were brought to the Parr Road Green Depot for composting by BioCentral. Residents dropped off up to six pumpkins per family for free as a way to encourage composting and divert organics from the landfill. Curbside residents could also place pumpkins with their Yard Trimmings for free collection.



## Collinson Pump Station

The Province announced in early 2014 that the City of Chilliwack application for grant funding under the Building Canada Fund – Flood Protection Program was approved in the amount of \$2.5 million with 2/3 contribution from the Federal and Provincial governments.

Based on a preliminary design by Urban Systems Ltd., the City of Chilliwack is in the process of procuring the following material supply (approved by Council September 2, November 4, and December 16, 2014 respectively):

- Two 450Hp Pump & Motor assemblies      \$ 549,855
- Standby Generator      \$ 83,700
- Motor Control Centre electrical equipment \$ 189,782



BC Hydro is in the process of designing and providing a quote to install a new 600 Volt hydro service from Keith Wilson Road to the Pump Station location. The remaining work will be packaged into a final contract for the construction of the electrical building and installation of the City-supplied equipment. The final contract is in the Request for Qualification stage, with the Request for Proposal (RFP) stage scheduled for January 21 – February 18 and Proposal acceptance on March 2, 2015. Construction is expected to commence on March 31, 2015 with substantial completion by October 1, 2015.

## Snowpack Report



The BC River Forecast Centre issued the first snowpack report for the 2014-15 winter season. As of January 1, 2015, most of the snowpack within the Fraser River watershed was below normal:

Upper Fraser:	88% of normal	Nechako:	90% of normal
Middle Fraser:	82% of normal	North Thompson:	96% of normal
Lower Fraser:	49% of normal	South Thompson:	68% of normal

The snowpack normally does not reach full accumulation until mid-April and will continue to be monitored as part of the City's annual freshet preparedness procedures.