

# Engineering



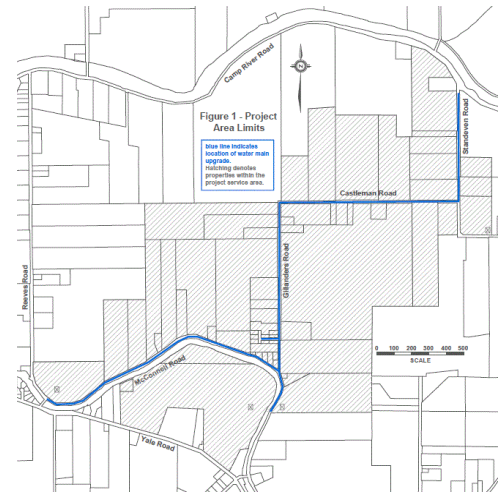
*Engineering is responsible for water and sewer, transportation and environmental services.*

## Second 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 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.

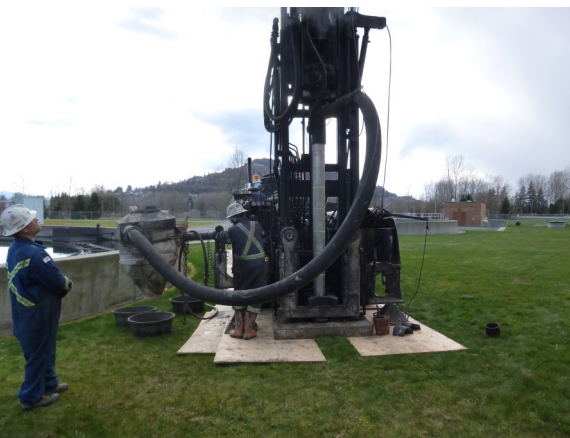
The proposed work includes installation of 4,510m of 200mm diameter DI water main to replace existing 75mm diameter CI and PVC water mains as well as 4,780m of new asphalt overlay and additional road rehabilitation work. Strohmaier's Excavating Ltd./Aplin & Martin Consultants Ltd. design build team was awarded the design and construction of the project and is now in the process of finalizing detail design work and procurement of materials. Construction of this \$1,957,000 project will commence early July with completion 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 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 now completed the detail design work and procurement of materials. The construction of this \$245,000 water main upgrade project is scheduled to begin in July and completed by middle of August 2014.

## 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. The design build delivery process for this \$9.5 million project is currently underway with the issue of RFEI package to selected three (3) proponents in April 2014. The RFP stage is scheduled to be concluded in summer of 2014 with a selection of design build team to complete the project. The project completion is scheduled for November 2015.



## 2012 North Chilliwack Water Main Upgrade

The project is a combination of four (4) water main replacements that have been combined to increase scope and economy of scale. The Sandpiper Contracting LLP./McElhanney Engineering Services Ltd. design build team completed the project successfully less than two months after the award. The following table shows the water main installation projects which were upgraded to increase capacity for fire flow and improve water quality.

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	\$113,500
Yates Street Water Main	Replacement of 270m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$141,500
Kipp Avenue Water Main	Replacement of 340m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$224,000
Corbould Street Water Main	Replacement of 335m of 100mm diameter cast iron water main with 200mm diameter ductile iron	\$185,000



## South Trunk Sewer Upgrade Phase 3

The existing South Trunk Sewer requires upgrade to ensure system reliability and to facilitate current and future flows. The project includes installation of 330m of 750mm diameter gravity sanitary sewer along Westview Avenue and Sunset Drive and 160m of 250mm gravity sanitary sewer along Newman Road. B&B Heavy Civil Construction Ltd./Associated Engineering Ltd. design build team is proceeding with the project. The project cost is \$1,181,100 and is scheduled to be completed by August 2014.



## Tyson Road Roundabouts Project Update

The \$1.2 million dollar Design-Build project awarded to the team of Martens Asphalt Ltd. /McElhanney Engineering Services Ltd. for the construction of roundabouts at Keith Wilson Road and Watson Road along the Tyson Road corridor proceeded into the road construction stage in June while BC Hydro and Telus utility relocations continued towards completion by the end of June. Hydrant relocations, drainage works, road widening and electrical streetlight ducting and bases were installed thru the month of June with Substantial Completion for the project scheduled for September 15th.



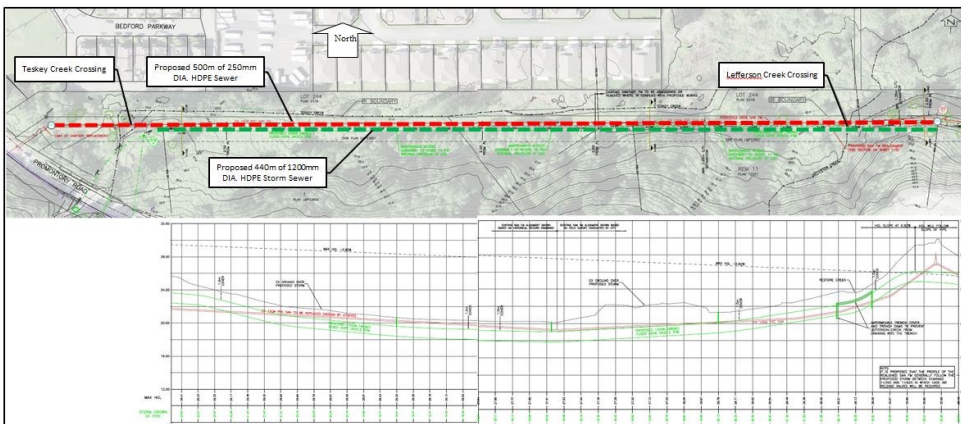
## Mill Street Reconstruction

The reconstruction of Mill Street was completed in April by Strohmaier's Excavating Ltd. in advance of the Mayor's Ribbon Cutting Event held May 3, 2014. Chilliwack's Downtown Plan guided the vision for Mill Street, which now includes a wider sidewalk on the west side of the street to facilitate sidewalk cafes and street trees. Work commenced on January 27, 2014 and in addition to the road, sidewalk and street lighting improvements upgrades to sanitary and storm sewers, water mains, and electrical were completed.



## Bailey Sanitary Force Main Upgrade - Storm Sewer Phase 1

The Bailey Sanitary Forcemain Upgrade / Storm Sewer Phase 1 Project includes approximately 500m of 250mm diameter sanitary forcemain and 440m of 1200mm diameter storm sewer. Proposals were received on June 18<sup>th</sup> for this Design-Build project from Sandpiper Contracting LLP / McElhanney Engineering Ltd., B & B Heavy Civil Construction Ltd. / Associated Engineering and Targa Contracting (2013) Ltd. / Wedler Engineering LLP. The successful proponent will be notified July 16<sup>th</sup> with construction scheduled for August and September.





## Public Engagement Events

The Safer City team was busy with a number of public engagement events.

Canadian Tire's annual "Jump Start" event brought out many visitors to the Canadian Tire parking lot where they interacted with a number of emergency services personnel and community groups. Jumpstart is a program that assists children who are between the ages of 4 to 18 with costs for sports and physical activity programming. The national program has helped over 762,000 children across the country participate in sport. Safer City focused on road safety for children at the event as they are one of the most vulnerable road users in the community.

The Safety Village located on the grounds at Fairfield Island Park held an Open House on May 31<sup>st</sup> to celebrate the opening of their Hazard House. Families had the opportunity to walk through the grounds, view the Hazard House and interact with emergency services workers and road safety professionals. The Safety Village committee is considering future Open Houses as they work towards raising the profile of their facility.

The second annual "Road Safety Day" was held in mid-June. The event was held in the Sears parking lot at Cottonwood Mall. Nearly 400 people attended and enjoyed displays, conversations and hands-on experience from the following Safer City team members and supporters:

- Safer City
- ICBC
- RCMP Traffic Unit and Auxiliaries
- Wally's Autobody & Towing
- Sport Check
- MADD Canada
- CN Rail
- IRSU— Fraser Valley Integrated Road Safety Unit (Child Seat Checks)
- CVSE – Commercial Vehicle Safety Enforcement
- Triton Transport Ltd.
- Fire Department
- Speed Watch
- Kal-Tire
- Star FM
- WorkSafe



Mayor Gaetz and Council members attended throughout the day to announce door prize winners.

Feedback from onsite surveys showed that the theme of 'road safety' was well received and also provided opportunity for the Safer City team to reflect on areas of concern from the public. The team looks forward to expanding the event for next year.

## Safer School Travel Program

Little Mountain Elementary is the most recent school to participate in the Safer School Travel (SST) Program that Safer City offers. The SST team has been established and the team looks forward to entering into the first phase of the program in late September. The program will include home surveys, traffic counts, walkabouts, Stakeholder meetings, and an Action Plan. Implementation of the final program will take the team well into 2015.

## 2014 Asphalt Rehabilitation and Shoulder Paving

Asphalt rehabilitation work is now complete on the following roads:

On	From	To	Description
Grand View	Primrose	Chilliwack Mountain	Overlay
Keith Wilson	Chadsey	Blackburn	Base Reinforce and Pave
Knight	Evans	Garnet	Mill and Pave
Yale	Chadsey	Hopedale	Overlay
Victoria	College	Young	Partial Reconstruct and Pave

Overlays will be completed on the following roads by early September:

On	From	To	Description
McGuire	Banford	Gibson	Overlay
Spadina	Mary	Yale	Mill and Pave
Chilliwack Lake	Vedder	City Boundary	Overlay and Shoulder Paving
Yarrow Central	Wilson	RRX	Overlay



## Thornton Road Reconstruction

Tenders for the reconstruction and reinforcement of Thornton Road were received and Kan-Arm Contracting Ltd. was the low bidder. They will commence construction in mid-July and be done by mid-August.

## Roadway Markings

Scottish Line Marking was awarded the contract to repaint the “long” lines and place thermoplastic for worn stop bars and crosswalks. They are expected to commence work within the first few weeks of July.

## Vedder Road Pedestrian Signals and Traffic Signal Upgrades

Quotations were received for both projects and Fraser City Installations Ltd. was the low bidder. All work under these two programs will be complete by the end of August.

The pedestrian signals will be installed at the intersection of Vedder and Storey/Gaetz and Vedder at Alder.

Traffic Signal Upgrades will include the following:

ON	AT	DESCRIPTION
Vedder	Thomas	Audible, Countdown Signals & Pedestrian Button Improvement
Yale	Airport	Countdown Signals
Yale	Hocking	Countdown Signals
Luckakuck	Topaz	Audible and Countdown Signals
Young	Airport	Audible and Countdown Signals
Vedder	Watson	UPS
Yale	Airport	Pole Replacement - South West Corner
Yale	Menzies	Pole Replacement - South East Corner

## Concrete Works



Universal Contracting is nearing completion on the Reid Road sidewalk project. This project is the second phase, completing the pedestrian connection from South Sumas Road north to Stevenson Road. This new sidewalk link is valuable for students of elementary, middle and secondary schools in the neighbourhood.



## Earth Month

The City organized “Earth Month” in April 2014, which included several events and activities centered on waste reduction and recycling. Once again the program was a big success with great public participation.

### Community Clean-Ups: Over 30 Tonnes of Waste Collected by Volunteers!

A number of clean-up events took place throughout the community in April, with the City of Chilliwack providing supplies and free disposal of materials collected.

**Roadside Clean-Ups:** 45 non-profit groups picked up garbage, recyclables and green waste by the sides of City roads, removing over 5 tonnes of litter.



Chilliwack Sea Cadets



Chilliwack 4-H Dog Club

**Residential Pick-Ups:** 4 volunteer groups went to local residences to transport large, bulkier items to the Bailey Landfill for disposal or recycling and green waste to the Parr Road Green Depot for composting, with a total of over 13 tonnes.

**Fraser River Clean-Up:** Mattresses, boat hulls, metal safes, and household garbage were among the 9 tonnes of waste removed from the Fraser River near Gill Road on April 5. The event saw anglers, ATV riders, 4X4 groups and concerned citizens gather to push, pull, and drag the dumped waste to garbage and metal recycling bins. The volunteers were treated to a BBQ lunch by the event organizers: Fraser Riverkeeper, Rotz Disposal, and Woodtone.

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**Vedder Mountain Clean-Up:** Trail users united on April 13 to remove 1 tonne of waste from Vedder Mountain. The area sees use from hikers, mountain bikers, ATV riders, equestrian users and dirt bikers and is stewarded by the Vedder Mountain Trails Association, who organizes the annual clean-up events.

## ***Scrap Metal Recycling: 34 tonnes of metal diverted***

Scrap metal was received for free at the Bailey Landfill during the month of April. In total, 417 loads were received, totaling 34 tonnes.

## ***Semi-Annual City-Wide Garage Sale***

248 residences registered for the popular spring City-wide garage sale this year. Residents were given the option of registering online to have their address listed both on the City website and in the local paper. A summary of the types of items available for sale at each participating residence was also made available to the public. This initiative supports our reuse and recycle goals at little cost to the public.

## ***School Workshops: Educating the Youth!***

Seven classrooms received workshops on recycling and composting (total 178 students). The classes were primarily Grades 2-6. This program remains very popular and there was a wait-list this year.

### **Recycling Basics**



What can you recycle in Chilliwack?  
How is it done? What happens to your recycling and what does it get made into?

## ***Stream-side Restoration:***



On April 25 the City of Chilliwack coordinated the restoration of stream-side habitat at the Parr Road Green Depot. BioCentral, the operator of the Parr Road Green Depot, kindly donated the equipment to prepare the site, soil to facilitate the planting, as well as the large woody debris to make the new habitat more complex. The Fraser Valley Watersheds Coalition generously donated over \$2,000 worth of native vegetation. Volunteers from Target got their hands dirty planting over 260 of the native trees and shrubs as well as removing over 250kg of garbage from

the site.

## ***Shred-A-Thon and Food Drive:***



The June 7 Shred-A-Thon & Food Drive collected over \$2,000 cash and 550 kg of food donations for the Salvation Army from residents taking advantage of the free document shredding service. The successful event was hosted by Shred-It, Emterra, and Cottonwood Mall. The next Shred-A-Thon & Food Drive will be held on December 6.

## Invasive Japanese Knotweed Management:



Japanese Knotweed is amongst the most difficult plants to control. It is currently spreading along waterways and roadsides throughout the Lower Mainland, and can cause significant damage to infrastructure. In response, the Environmental Services Department has collaborated with Operations and GIS to map and manage Japanese Knotweed within Chilliwack.

Mowing and weed-whacking can significantly contribute to the plant's spread. To mitigate

this, Environmental Services worked with the Operations Department as well as the City's shoulder mowing contractor on plant identification and methods to avoid spreading Japanese Knotweed. To date, all known patches have been avoided by the mower and City crews. Herbicide trials have also been carried out by City crews on some Knotweed patches along the dyking system. In partnership with the Fraser Valley Regional District herbicide trials on multiple patches along roadsides in Ryder Lake are also underway. The trials carried out to date are showing signs of successful management, but repeat treatments are required.

## Green Commuter Challenge:



The City's annual Green Commuter Challenge is designed to encourage residents to leave their cars at home and use a more sustainable form of transportation for their commute.

The 2014 challenge encouraged 404 participants to bike, walk, bus, carpool etc. for their commute from May 26 to June 8. This year's prize bike was a Kona Dew valued at \$489 which was kindly donated by Jack's Cycle with a contribution from the City of Chilliwack.

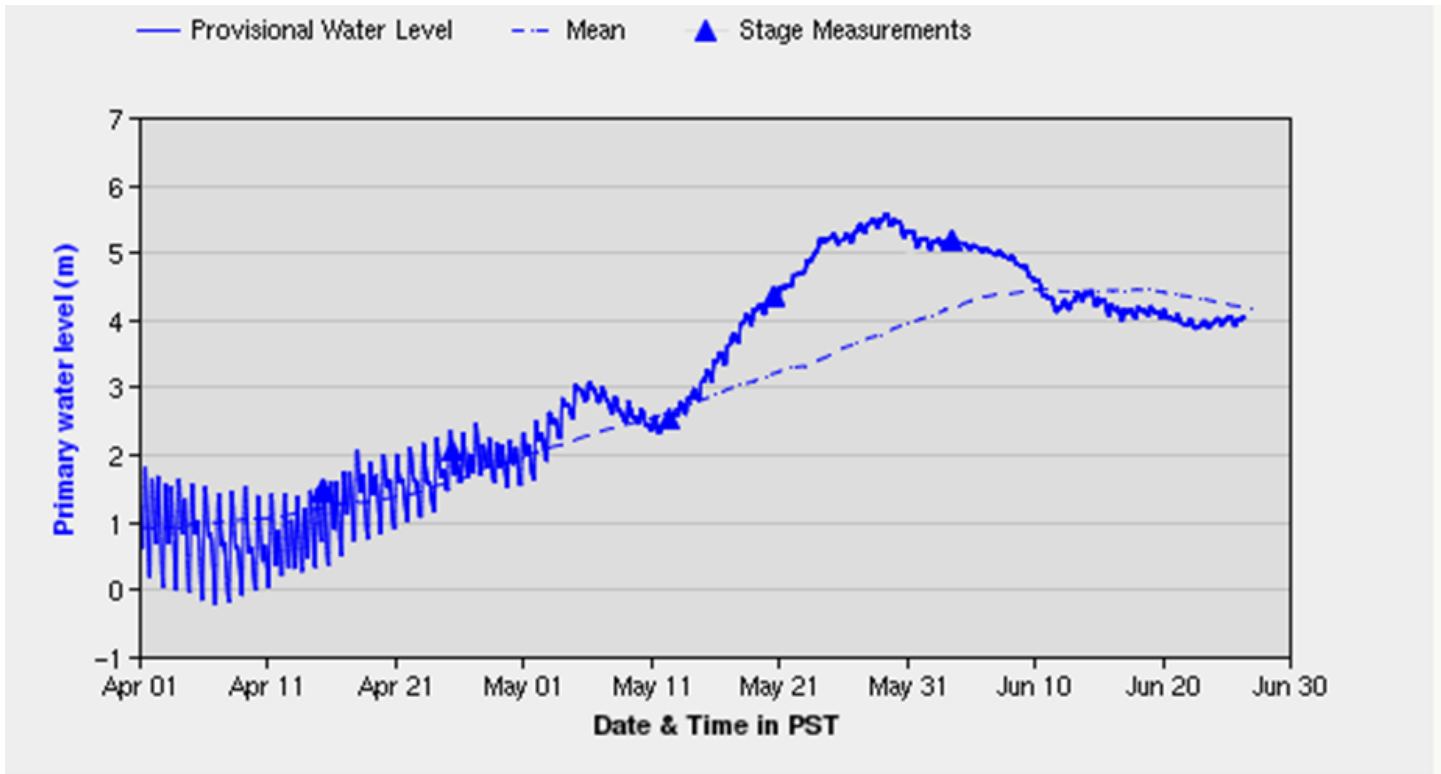
This year's winner, Catherine Martin, cycles 7km to work most days to keep physically active instead of using her car! Catherine can now commute on her brand new Kona Dew to beat the traffic and help reduce air pollution.



## 2014 Fraser River Freshet

The Fraser River peaked slightly earlier than normal this year due to a hot spell in mid-May. Water levels reached a peak of 5.6 metres at the Mission Gauge on May 29, which is about 1.5 metres higher than the historical average water level for that time of year.

Mission Gauge 2014



Based on information from the BC River Forecast Centre, notifications regarding potential flooding were delivered to some properties in the unprotected floodplain areas around Carey Point as a precaution.



The Carey Point private berm was breached on May 30 and caused flooding to the agricultural fields for approximately 10 days until the water receded.

## Collinson Pump Station Upgrade

The City of Chilliwack has received 1/3 Federal and 1/3 Provincial grant funding in the amount of \$1,666,666 under the Building Canada Fund for Flood Protection for the \$2,500,000 Collinson Pump Station upgrade project.

The upgrades proposed for the station include replacing the existing pumps and related internal piping, motors, controls, electrical systems and providing back-up power supply. As the proposed motor upgrade will have a significant increase in horsepower, an upgrade to the existing electrical service at the pump station will be required. The pump station upgrade will be designed to handle a 1:100 year rainfall event. The current pump capacity of  $2.7\text{m}^3/\text{s}$  will be increased to approximately  $5.8\text{m}^3/\text{s}$ .

The project design has commenced, and pump-motor and generator procurement will occur in 2014 with installation and an estimated completion date of mid-2015.

## Old Orchard Road Sheet Piles and Road Repair

Slope failure along the edge of Old Orchard Road occurred mid February 2014. Rock armoring was placed along the slope in an attempt to stabilize the area and prevent further slope failure. Levelton Consultants Ltd. was retained by the City to carry out a geotechnical investigation to determine the cause of the failure and provide recommendations for repair. Based on the results of the Levelton assessment, the most likely cause of initial slope failure was the loss of toe support caused by erosion of the river bank and soft underlying soils. The Levelton report recommended that the most appropriate method for reinforcing the soil was the installation of a sheet pile wall aligned parallel to the road.

The City prepared a tender document to obtain pricing for repair and received two bids. City Council awarded the tender for the “Old Orchard Road – Sheet Piles and Road Repair” to Kan-Arm Contracting Ltd. in the amount of \$164,994.73 plus applicable taxes at the regular Council meeting of May 6<sup>th</sup>.

Construction of 38 linear metres of steel sheet piles and road reconstruction began May 12<sup>th</sup> and was substantially complete and open to traffic by May 23<sup>rd</sup>, just ahead of the Fraser River rising water levels. Levelton consultants provided field inspection services and have provided a summary geotechnical report on the construction.

