

# Engineering



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

## Second Quarter Report, 2015

## McConnell to Standeven Water Main Upgrade



The construction of McConnell to Standeven water main upgrade Local Area Service project commenced in May 2014 after completing the Local Area Service petition process. The project includes installation of 4,510m of 200mm diameter water main to provide adequate fire protection and reliable water supply, as well as 4,780m of new asphalt overlay and additional road rehabilitation work to improve drivability and safety. Strohmaier's Excavating Ltd./Aplin & Martin Consultants Ltd. design build team successfully completed this \$2.0 million project in June 2015.

## Annis Road and Weeden Drive Pump Station Upgrades

The Annis Road Booster Pump Station provide water service to the Falls development in the Eastern Hillside area. Currently, it has reached its capacity due to the on-going development activities. Major mechanical and electrical upgrades including high capacity pumps are required to facilitate future growth in the area.

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 are required to accommodate the additional fire pump. Associated Engineering completed detailed design work for both pump stations upgrade.



This combined project was awarded to Norich Electric Ltd. after successfully completing the tendering process in May 2015. The construction of the project is scheduled to be completed by the end of October 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. AECOM completed the detailed design work of the project which consists of supply and installation of a dual fuel boiler complete with corresponding mechanical and electrical appurtenances. The RFP process for this supply and installation of boiler project is currently underway to select a contractor to complete this \$500,000 project to be completed by the end of October 2015.



## Ford-Nevin Water Main Installation



The Rosedale area of East Chilliwack is experiencing low water pressure and water quality issues. Water model analysis completed 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 consisted of installation of approximately 2,430 m of 200mm diameter watermain and appurtenances. This \$880,000 project was successfully completed by Sandpiper Contracting LLP. / Wedler Engineering LLP. design build team in June 2015.

## Camp River Road Water Main Installation

Camp River Road between Reeves Road and Standeven Road requires road rehabilitation works to improve the condition of the failing roadway. The performance review of the Camp River Road water main revealed that the 60 year old cast iron water main was prone to frequent breakages and should be replaced to avoid road repair work in the future and to improve water quality and reliability of the existing water supply in the local area.

The project consists of approximately 2,780m of water main installation along Camp River Road from Reeves Road to Standeven Road South and approximately 2,750 meters of asphalt level course and full road asphalt overlay to a maximum width attainable within the restrictions of private property, geometry, heritage trees and river bank. The project was awarded to Jakes Construction / ISL Engineering & Land Services Ltd design build team after successful completion of RFP process. Construction of this \$1.25 million project is scheduled to be completed by the end of September 2015.



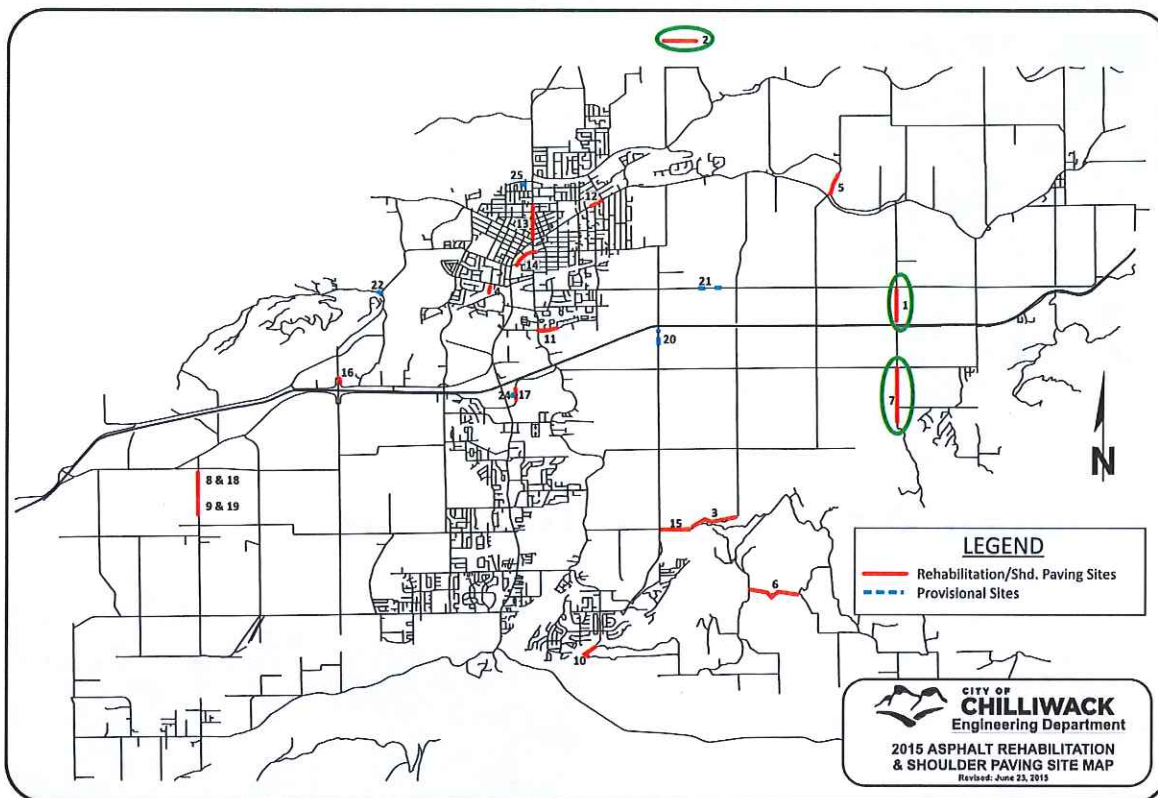
## Biological Treatment System Expansion Phase 1



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. NAC Constructors Ltd. / Opus DaytonKnight Ltd. design build team is currently proceeding with the construction work of this \$7.5 million project to be completed by the end of December 2015.



## 2015 Asphalt Rehabilitation and Shoulder Paving



GTB Construction Ltd. (a division of Keywest Asphalt) has been awarded the contract.

The Asphalt Rehabilitation Program will use 14,420 tonnes of asphalt to repave 10 kilometers of road.

The sites shown circled in green on the following map are now substantially complete.

ROADS	LIMITS	TONNES	LENGTH	WIDTH
Upper Prairie Road	South end of pavement to Chilliwack Central	808	700	3,420
Ballam Road	McSween to Kitchen	1,018	875	4,310
Lindell Road	Bailey to Banford	1,382	980	5,850
Edward	South end of pavement to Bernard	270	170	1,369
Gillanders	Yale to south of McConnell	473	350	2,250
Ryder Lake Road	Extrom to Huston	1,289	1,100	5,455
Upper Prairie Road	South end of pavement to Prairie Central	1,646	1,100	6,270
Sumas Prairie	Adams to #6905	335	420	3,005
Sumas Prairie	#6905 to north of Elementary School	450	490	3,430
Thornton	Sparrow to Sylvan	390	375	2,400
Airport Road	Young to Cessna (West)	1,031	408	5,822
Yale	At Broadway	361	156	2,250
Young	Yale to Lewis	857	760	6,853
First	Cheam to east of Young	1,015	425	7,730
Bailey	Prest to Lindell	871	660	3,548
Yale	At Lickman	137	N/A	820
Luckakuck	Northbound left lane in front of Superstore	113	200	720
Prest	South of Trans-Canada Highway	286	150	1,553
Chilliwack Central	Prest to Banford	79	100	400
Chilliwack Mtn Road	At Schweyey	95	N/A	700
Boundary	Keith Wilson to Care Home	482	700	2,450
Candow	At Cawley Lane	68	78	350





## Chilliwack Transit – Rider's Guide Signs

New sign assemblies, powder coated bright green to match the buses, have been fabricated to display on-street transit schedule information and will be installed at 12 high-use bus stop locations shortly.



## FVX Transit

The Fraser Valley Express (FVX) commenced service on April 6, 2015. While this system is primarily the responsibility of BC Transit and the FVRD, the City of Chilliwack built new stops at the Park & Ride on Yale Road and improved several other stops that will be serviced by the FVX system within the City.



New Transit Shelter and Crosswalk at Park and Ride on Yale Road near Lickman Road



## Crosswalk Installations



Watson at Miller—new curb, gutter, sidewalk and crosswalk

Due to increasing conflicts between pedestrian and vehicle traffic associated with urban development in the area, concrete ramps were built and marked crosswalks placed on Watson at Miller.



## Road Safety Day

The second annual "Road Safety Day" was held in mid-June. The event was held in the Sears parking lot at Cottonwood Mall. Nearly 300 people attended and enjoyed displays, conversations and hands-on experience from the following Safer City team members and supporters:

- Safer City
- Alexa's Bus
- Sport Check
- RCMP
- BC Transit
- CN Rail
- Fire Department
- IRSU – Fraser Valley Integrated Road Safety Unit (Child Seat Checks)
- CVSE – Commercial Vehicle Safety Enforcement
- Wally's Autobody and Towing
- Vedder Transport
- Triton Transport Ltd.
- Speed Watch
- Kal-Tire
- Star FM

Council attended throughout the day to announce the winners of a number of 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.



## Roundabout Open House



The annual "Roundabout Open House" was held on April 9<sup>th</sup> at the Evergreen Hall. Safer City hosted the event with support from 4 Engineering Staff and 1 RCMP Traffic Officer. Throughout the evening visitors gained knowledge and left their comments about local Roundabouts. Visitors enjoyed displays of the roundabout at Evans Road as well as the two single-lane roundabouts at Keith Wilson Road at Tyson Road; Watson Road at Tyson Road; additionally, information for the upcoming roundabout planned for Prest Road were shared. 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 in the fall of this year.

## Commercial Vehicle Inspections



Safer City partnered with representatives from the Ministry of Transportation and Infrastructure's Commercial Vehicle Safety and Enforcement Branch (CVSE), WorkSafe BC, and RCMP for a 2-day project. The commercial vehicles were checked to confirm their compliancy with applicable safety legislation at locations within the City of Chilliwack. Even though this initiative resulted in violation tickets of commercial vehicles, the public is reminded that it is important to remember the overwhelming majority of vehicles are being operated in a professional manner.



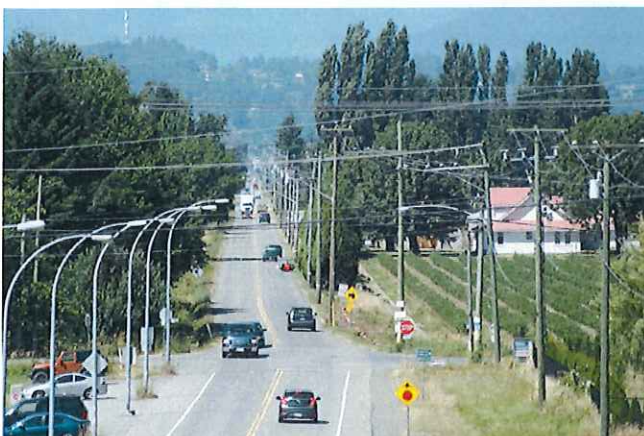
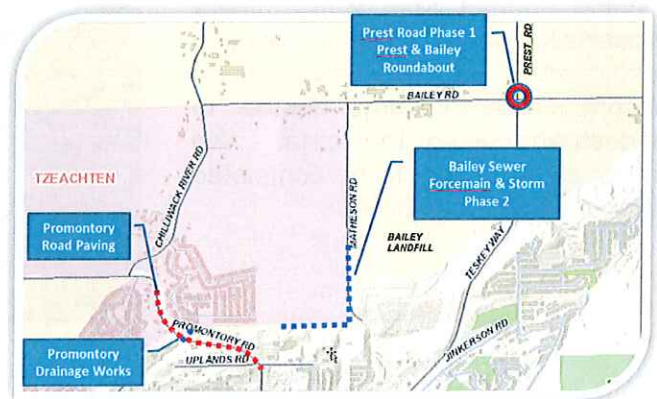
## Vedder Bridge Replacement



On July 10<sup>th</sup> the City's "Vedder Bridge Replacement Project" was chosen to receive Federal and Provincial funding through the New Building Canada Fund – Small Communities program to advance this \$12.5 million dollar project. The current bridge was constructed in 1947, is deficient in clearance above flood waters, and does not meet current day lane width standards. Through this project, the City of Chilliwack will replace the Vedder Bridge with a new bridge that includes wider travel lanes and shoulders along with two multi-use pathways to accommodate two-way pedestrian and cyclist traffic. In addition, the approaching roads and the adjacent intersection will be upgraded with a single-lane roundabout to provide greater travel capacity and improved safety.

## 2015 Design-Build Combination Project (Prest, Promontory, Bailey)

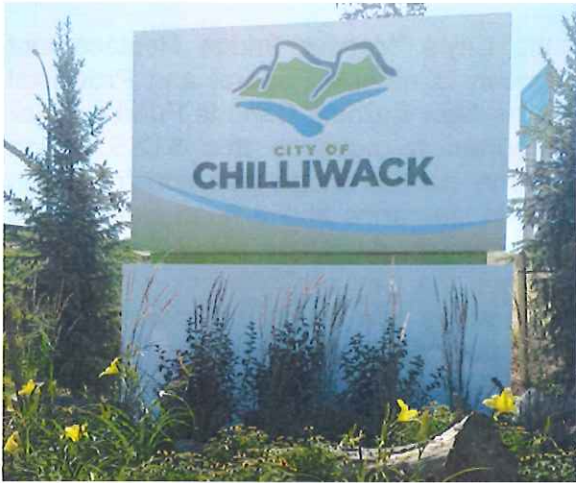
On July 7<sup>th</sup> the \$4.2 million dollar 2015 Design-Build Combination Project (Prest, Promontory, Bailey) was awarded to the team of Jakes Construction / ISL Engineering. This project includes: Prest Road Roundabouts, Bailey Sanitary Forcemain / Storm main Phase 2, Promontory Road Paving and culvert replacements at Promontory Road, Keith Wilson Road, Ford Road, Prairie Central Road and Marble Hill Road. The proposal from the lead proponent included a Construction Sequencing Plan and Traffic Management Plan that demonstrated how the proposed works on Promontory Road and Prest Road will be staggered to minimize impact to the residents of the Promontory hillside.



During the second quarter, pruning and tree removal was completed along Prest Road to allow for BC Hydro pole relocations necessary for Prest Road widening and roundabout construction at the intersections of Prest Rd / Bailey Rd and Prest Rd / Prairie Central Rd. BC Hydro and Telus relocations will take place over the next few months while drainage and roadworks are scheduled to start in August.



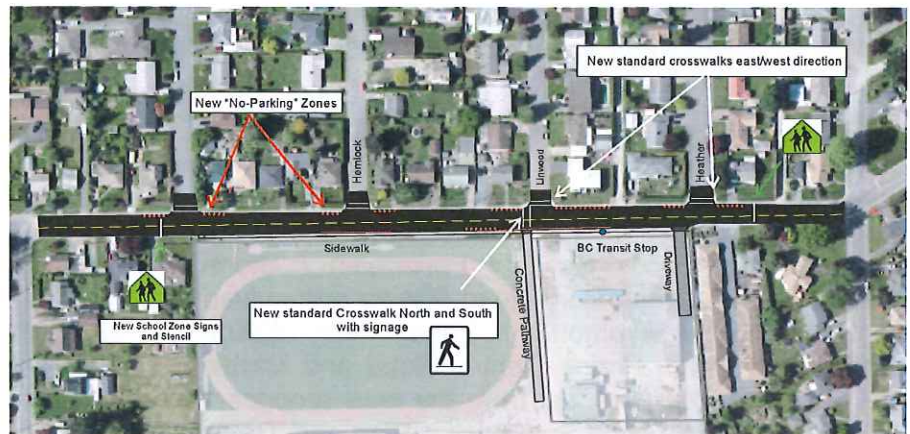
## Chilliwack Signs



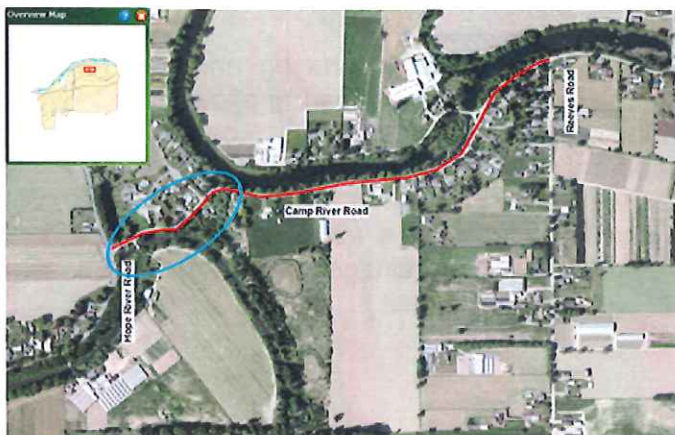
Chilliwack signs have been installed along the Trans –Canada Highway at the Vedder Interchange these past few months. City Parks Department did a fantastic job of landscaping the area surrounding the sign with natural wood, rocks and vegetation. Knight Signs have now completed all elements of the sign project.

## Improvements to Portage Avenue

Improvements are also coming this summer to Portage Avenue between Williams and Hazel with the joint funding support from ICBC. New crosswalks, school zone and parking restrictions will be installed to accommodate the large number of pedestrians using the area. We anticipate this work to be completed prior to September 2015.



## Improvements to Camp River Road



A recent traffic review was conducted for Camp River Road east of Hope River Road. As a result of the review an number of changes will be implemented this summer with the help of ICBC funding. These changes include the installation of shoulder roadway markings, centerline reflectors, changes to signage and addition of delineators. Changes should be completed by September 2015.



## Earth Month

The annual "Earth Month" events in April 2015 were once again a success, including a variety of activities focused on waste reduction and environmental conservation.

### ***Community Spring Clean-Ups: Over 12 tonnes of material collected by volunteers!***

A number of clean-up events took place throughout the community in April and early May, with the City providing volunteer groups with clean-up supplies and free tipping permits to dispose of collected material at the Bailey Landfill and Parr Road Green Depot.

Roadside Clean-Ups: A total of 25 non-profit groups picked up garbage, recyclables, and green waste along the sides of City roads. Approximately 1 tonne of material was collected between all of the organizations.

Residential Pick-Ups: There were 4 volunteer groups that arranged pick-ups by donation with local residents to pick up and transport large, bulkier items to the Bailey Landfill for disposal or recycling, and green waste to the Parr Road Green Depot for composting. Each group was assigned an area within the City and residents were able to contact the appropriate organization directly, based on their address. A total of over 11 tonnes of material was collected.



**Chilliwack 4-H Dog Club**



Adopt a River Event: 175 volunteers from the community and the adopting groups spread out along the banks of the Vedder/Chilliwack River on April 18 to help clean up litter and camping supplies left behind by others. Coordinated by the Chilliwack Vedder River Cleanup Society, the volunteers collected 3 tonnes of waste during this year's first of two Adopt a River clean-ups. Wood, metal, tires, etc. were diverted for recycling before the remainder of material was responsibly disposed of at the Bailey Landfill.

### ***Scrap Metal Recycling: 42 tonnes of metal diverted***

Scrap metal was received for free at the Bailey Landfill during the month of April. The metal is removed offsite on a regular basis by a contractor for recycling. In total, 501 loads were received, totaling 42 tonnes. This is an increase of approximately 8 tonnes over last year!

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

237 residences registered for the popular spring City-wide garage sale this year. Residents were given the option of registering their home or housing complex 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 location was also made available to the public. In addition, the City website directs participants to a list of organizations in which they can take their leftover useable clothing and household items after the sale. This semi-annual initiative supports our reuse and recycle goals at little cost to the public.

## City Facilities Waste Diversion Review 2015

In preparation for the introduction of an organics collection program for the City of Chilliwack, Environmental Services is carrying out a review of waste diversion practices at City-owned facilities. City facilities have had recycling programs in place for years, and this review is being conducted to identify opportunities to further increase diversion of recyclables and start diverting organics.





### ***Elementary School Presentations: Educating Chilliwack's Youth!***

228 students from eight different elementary schools received presentations on recycling, garbage, and composting as part of Earth Month. After the interactive presentations, the students were able to craft their own compost piles from provided props, while others played team games to determine what materials are recyclable in Chilliwack. As these popular presentations book up in hours each year, this initiative may be expanded from eight sessions to twelve sessions in the fall for Waste Reduction Month.



### **Browne Creek Wetlands**



Staff from Environmental Services helped the Fraser Valley Young Naturalists Club install 21 nesting boxes they had built and decorated for tree swallows, wood ducks, and bats at the Browne Creek Wetlands near the Vedder River. Riparian vegetation was also planted by the volunteers along newly created salmon rearing and spawning channels.

Environmental Services staff also toured a grade four class from Yarrow Elementary around the new Browne Creek Wetlands during the Grand Opening on May 14, 2015. To augment their current curriculum, the students were able to experience first-hand the many different types of habitats along the newly created salmon spawning channels. The students also observed the newly placed swallow boxes as well as a live demonstration of fish trapping and identification.



### **European Fire Ant Information Session**



The City hosted a public information session about European Fire Ants (EFAs) on April 22, 2015. The event was well attended, with over 100 residents showing up to learn about EFAs from Dr. Robert Higgins, an entomologist with Thompson Rivers University, who has been leading the research on EFAs.

Information presented included how to avoid spreading EFAs and various control methods that are being tested. Staff from VanDusen Botanical Garden also attended the meeting, to share information on the control trials they have carried out, and the success they achieved with a permethrin product. A video of Dr. Higgins' presentation is available at [www.chilliwack.com/fireants](http://www.chilliwack.com/fireants).



## Protect Our Drinking Water Signs



As part of the City's groundwater protection efforts, three of the aging "Protect Our Drinking Water" signs have been replaced and one new sign added. The signs are strategically positioned on main travel roads within the Sardis-Vedder area to inform commuters that they are about to enter a sensitive drinking water aquifer zone. All of the City's drinking water supply (except Yarrow) comes from the high-quality Sardis-Vedder Aquifer. The signs have been given a fresh look and educate the public about the importance of properly managing hazardous materials to prevent groundwater contamination.

## Storm Drain Marking

The City recently expanded its storm drain marking program to include the yellow fish program formerly overseen by volunteers for Fisheries and Oceans Canada. Most storm drains north of the highway drain to watercourses, while many of the storm drains south of the highway drain into the Sardis-Vedder Aquifer. The yellow fish in Chilliwack, and blue tap symbols in Sardis, are reminders that "only rain should go down the drain."

Storm drain marking kits are available for loan from the Environmental Services Department. Members of the Fraser Valley Young Naturalists and the TCS Rosedale Scouts recently painted 80 storm drains in Chilliwack with yellow fish symbols.



## 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. 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.

During the 2015 challenge, the City received 517 bike ballot entries from residents who biked, walked, bused, carpooled etc. for their commute from May 25 to June 7. This year's prize bike was a Giant Sedona valued at \$419 which was kindly donated by PedalSport with a contribution from the City of Chilliwack.

This year's winner, Karen Howey, walks to work most days to keep physically active instead of using her car! Karen can now commute on her brand new Giant Sedona to beat the traffic and help reduce air pollution.



**CITY OF  
CHILLIWACK**



## Collinson Pump Station Upgrade Project



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.

Construction by Gerry Enns Contracting Ltd. is on schedule with the new electrical building nearing completion by the end of June including installation of the generator and Motor Control Center

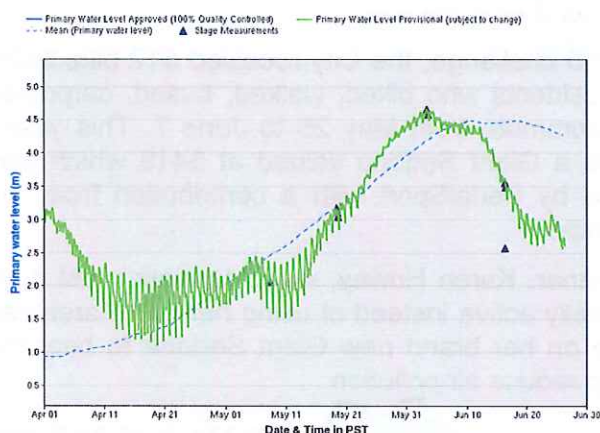
electrical equipment. New pumps and motors will be installed over the next few months with connection to the new 600V underground hydro service. The project is scheduled for completion in the fall of 2015 and will almost double the pumping capacity of this station, which serves the Greendale area.

## East Dyke (Young Road) Upgrade Project

The East Dyke (Young Road) Upgrade Project budget is \$2.34 million, with a 1/3 cost sharing arrangement among the City and senior governments. Construction by the design build team of Martens Asphalt/McElhanney began mid-March 2015. The storm sewer has been extended between Avalon Avenue and Larter Avenue to provide improved drainage for areas with pre-existing drainage issues. The portion of Young Road between Cartmell Road and Larter Avenue was raised approximately 0.9m, to finished elevation, and received a base lift of asphalt to 10m wide on June 12. The portion of road between Larter Avenue and Hope River Road commenced in late-June. Driveway and landscaping restoration began in May and will continue over the next few months. Substantial completion is expected for early fall 2015.



## Fraser River Freshet



Rapid melt of the province's snow pack in May has left very little snow across the province as of mid-June. The BC Ministry of Forests, Lands and Natural Resource Operations advises that snow basin indices range from 0% to 20% of normal, with a provincial average of snow observations of 5% of normal. The Fraser River peaked at approximately 4.6 metres at the Mission gauge on June 3, 2015. The 4.6m peak was near historical average peak levels, but it occurred earlier than normal and water levels then declined very quickly.