

# Engineering



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

## Second Quarter Report, 2016

## Annis Road and Weeden Drive Pump Station Upgrades



The Annis Road Booster Pump Station provides 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 fire flow pumping capacity. Major mechanical and electrical upgrades including BC Hydro service connection are required to accommodate the additional fire pump.

Project was substantially completed by Norich Electric Ltd. in June 2016 while Associated Engineering provided required engineering services.

## 2016 Utilities Project

The project is a combination water main and sanitary sewer projects that have been combined to increase scope and economy of scale. The proposed water main installation will increase supply, fire flow capacity and improve water quality of the existing water system in the local area. The proposed sanitary sewer rehabilitation will replace aging infrastructure and improve system reliability.

The following table shows water main installations and sewer rehabilitation projects. The RFP stage for this \$1.3 million design build project is currently underway. The project is scheduled to be completed in April 2017.

| Name of Project                  | Description of Work                                              | Budget    |
|----------------------------------|------------------------------------------------------------------|-----------|
| Chilliwack River Road Water Main | Installation of 940m of 300mm ductile iron water main            | \$630,000 |
| Wellington Avenue Water Main     | Installation of 260m of 300mm ductile iron water main            | \$270,000 |
| Meadowbrook Drive Water Main     | Installation of 360m of 300mm ductile iron water main            | \$300,000 |
| Williams Street Sanitary Sewer   | Rehabilitation of eleven (11) sanitary sewer service connections | \$100,000 |

## 2016 Water and Sewer Combo Project

The project is a combination of one water main installation, one storm main installation and five sewer main upgrades throughout Chilliwack that have been combined to increase scope and economy of scale. The proposed water main installation will increase supply, fire flow capacity and improve water quality of the existing water system in the local area. The proposed sewer main replacements and upgrades will replace aging infrastructure and increase capacity to satisfy increased flow from new and future developments. The proposed storm main installation will convey storm water away from water supply production wells to protect the City's drinking water.

The following table shows water, storm and sewer main installation and upgrade projects.

| Name of Project                | Description of Work                                                                                                   | Contract Value |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------|
| Keith Wilson Road Water Main   | Installation of 1,195 meters of 300mm ductile iron water main                                                         | \$840,130      |
| Watson Road Storm Main         | Installation of 875 meters of 300mm & 600mm diameter storm main                                                       | \$808,389      |
| Watson Road Sanitary Main      | Installation of 25 meters of 450mm diameter sanitary trunk main                                                       | \$82,147       |
| Watson Road Paving Works       | Placement of 1,300 meters of level course and full road asphalt overlay                                               | \$315,384      |
| Evans Road Sanitary Main       | Installation of 140 meters of 250mm HDPE sanitary force main and 150 meters of 450mm sanitary trunk main              | \$348,242      |
| Vedder Road Sanitary Main      | Installation of 320 meters of 525mm diameter sanitary trunk main                                                      | \$643,364      |
| Cheam Avenue Sanitary Sewer    | Installation of 390 meters of 375mm diameter sanitary sewer and 215 meters of 450mm sanitary trunk main               | \$935,604      |
| Hodgins Avenue Sanitary Sewer  | Installation of approximately 30 meters of 200mm sanitary sewer and 355 meters of 375mm sanitary sewer                | \$746,777      |
| Hodgins Avenue Paving Works    | Placement of 520 meters of full road asphalt overlay including milling and reconstruction of Mary Street intersection | \$333,730      |
| Princess Avenue Sanitary Sewer | Installation of 85 meters of 150mm and 200mm sanitary sewer                                                           | \$89,957       |

The Sandpiper Contracting/Wedler Engineering Design Build team was selected as the successful proponent to complete the project at a cost of \$5,143,724. Detail design drawings are currently being completed in conjunction with construction work which is scheduled to start in July 2016. The overall project is scheduled to be completed in August 2017.

## 2016 Asphalt Rehabilitation and Shoulder Paving

Key-West Asphalt (333) Ltd has been awarded the Road Rehabilitation contract this year. The rehabilitation on Acorn Avenue is substantially complete and the shoulder construction work is underway on Industrial Way.



## Road Base Reinforcement

The contract for the road base reinforcement on Old Orchard Road was awarded to Surespan Construction Ltd in the amount of \$175,135.00. The project was completed in mid-June.



## Traffic Signal Video Detection

In preparation for planned paving on Vedder Road in 2016 and 2017 Econolite Autoscope video detection has been installed at the following intersections:

- Luckakuck Way
- Knight Road
- Stevenson Road

This new detection system will allow automated traffic counting and has the ability to transmit the data live once a communication network is established.

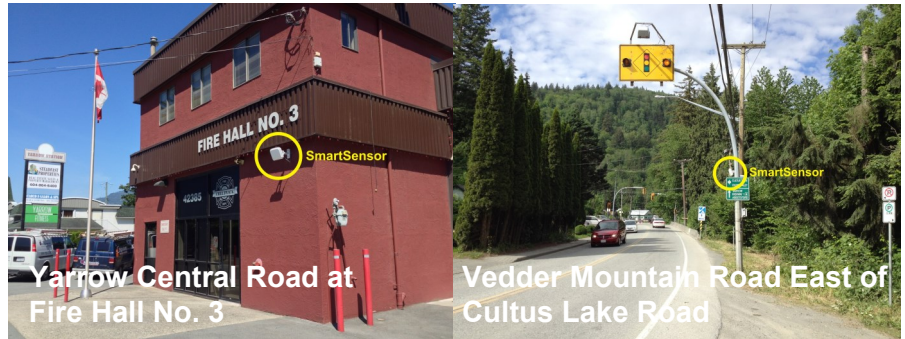
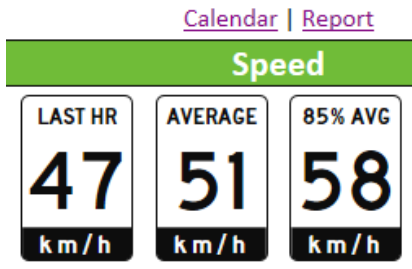


Future Econolite Data Module Screenshot



## Live Traffic Data

A radar based Wavetronix SmartSensor was commissioned at Fire Hall No. 3 on Yarrow Central Road and one on Vedder Mountain Road East of Cultus Lake Road in time to capture traffic volumes, speeds and vehicle types heading to Cultus Lake for the peak summer season. The sensor on Vedder Mountain Road will also help assess the volumes using the Vedder Bridge. These two devices are connected to the intranet to provide live traffic data and the data is archived for future reference and analysis.



## Safer School Travel

Both McCammon Elementary and Cheam Elementary moved closer to completing the Safer School Travel (SST) Program in the second quarter. Both schools completed the home surveys, traffic counts, site inspections, mapping exercise and stakeholder meetings. In the following months draft Best Walking Route Maps and Road Safety Plans will be developed and reviewed. The strong support and commitment of both of the school's administration teams, PACs and parents have allowed for quick and smooth progression through the SST stages; the completion of the program for both schools is anticipated in early Fall.



## Training

**FREE**  
Child Car Seat Check

**WHEN**  
Thursday,  
April 21, 2016

**TIME**  
3:00 - 4:15 p.m.

**LOCATION**  
5727 Tyson Road  
(Twin Rinks Arena -  
look for the traffic  
cones and car seat  
check signs in the  
parking lot)

**PRE-REGISTER**  
Registration is required. Please  
phone the City of Chilliwack -  
Engineering Department at  
604.793.2907. Last date to  
register is April 20, 2016

www.safercity.ca

Safer City initiated a training session with BCAA for its team members in order to expand our qualified child seat educators. As part of the final training a drop-in child seat check was offered to the public. Residents attended the drive thru and were assisted with the proper installation techniques for their child's car seat and also had their questions answered in regards to child seat safety. This was the first drop-in child seat check for the year with more being considered for the remainder of the year. We in B.C. benefit from one of the strongest child seat laws in the country. On average in B.C., 1400 children under the age of nine are injured and four are killed in motor vehicle crashes every year. When used correctly, research shows that seat belts and child car seats are the most effective tools in preventing injuries and deaths in car crashes.

## Sheffield Way



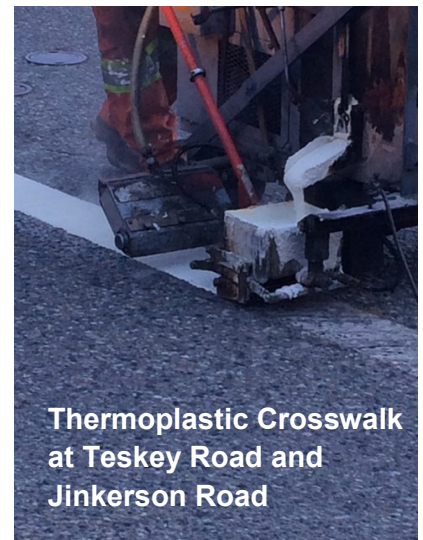
City staff received requests for speed reduction and crosswalk installation along Sheffield Way between Lake Drive and Silver Avenue. As a result of the inspection, staff determined that signage and roadmarking changes were recommended. These changes would be in the vicinity of the pathway connecting the Sardis Sports Fields and the Sardis Elementary School with the pathway to the neighborhoods of Lake Drive and the Sardis Park.

The existing school zone was converted to a 30km/h playground zone and a new painted and marked crosswalk was installed. This installation was supported by the partnership between the City and the ICBC Cost Sharing Program.

## Roadway Markings

Aardvark Pavement Marking Services has been working hard to complete the 2016 Roadway Marking contract and are 90% complete. The contractor has been installing road markings on over 450km of roadway including longline markings, crosswalks, arrows, stop bars, school zones, railway crossings and parking lines. Paint and thermoplastic products are applied to the roadway and include glass beading which helps improve the reflectivity of the material particularly during the evening or adverse weather conditions.

The work is scheduled during the evening hours in order to complete the contract efficiently and minimize delay to vehicular traffic. Roadway markings in conjunction with traffic control devices such as signage, assist drivers, pedestrians and cyclists navigating our roadways.



Thermoplastic Crosswalk  
at Teskey Road and  
Jinkerson Road

## Concrete Wheelchair Ramps



Before



After

Nine new concrete wheelchair ramps were installed at a number of locations around Chilliwack. The locations were either in close proximity to school routes or experience high pedestrian volumes with a strong focus on improving services to the physically challenged.



## Prest Road Roundabouts

The Design-Build Team of Jakes Construction and ISL Engineering completed the roundabouts at Prest Road / Bailey Road and Prest Road / Prairie Central Road in May.



## Vedder Bridge Replacement Design-Build Project

On April 19, 2016, Council accepted the proposal for the Vedder Bridge Replacement Design-Build Project from the lead proponent, Emil Anderson Construction Inc., in the amount of \$11,331,052 (plus applicable taxes) with Option 2 (Steel Arch) as the selected bridge type.

Detailed design continued thru the second quarter and construction will begin in September 2016, with substantial completion of the project by October 2017. The majority of work during the first 10 months of construction will be completed parallel to Vedder Road allowing traffic to continue as usual.





## Public Engagement

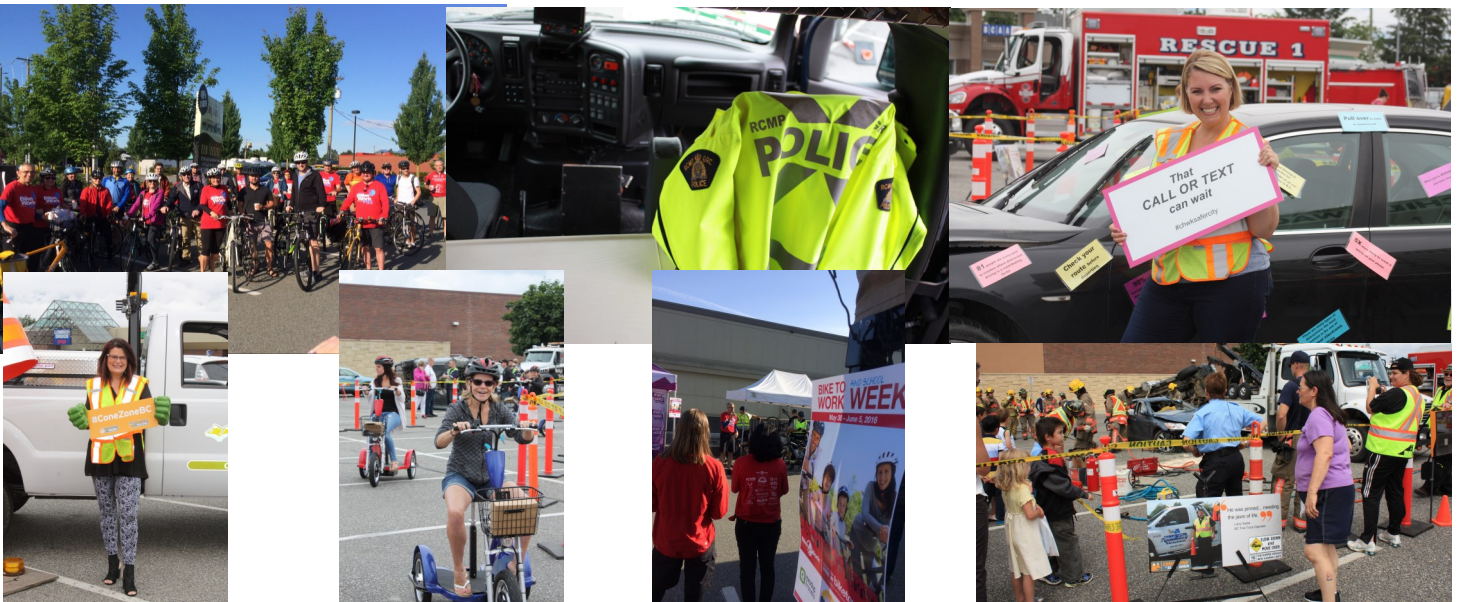
During the second quarter Safer City was busy with public engagement activities. A Roundabout Open House was held on May 4<sup>th</sup>; this open house is held to assist drivers in broadening their knowledge in regards to the rules of road for roundabouts. Visitors have an opportunity to view the many display boards showcasing our local roundabouts; speak with Engineering staff and the RCMP; and have their questions answered.

Safer City attended the RCMP Open House on May 11<sup>th</sup>; hundreds of visitors attended to have a chance to view RCMP equipment and vehicles; take detachment tours; learn about the many specialized units within the RCMP; and have the opportunity to speak with officers in both Red Surge and regular uniform. Safer City provided information on road safety to the visitors which also engaged a number of visitors into conversations regarding distracted driving, speeding and pedestrian safety.

The heavy rain did not keep visitors away from the annual Jump Start event at Canadian Tire on May 28<sup>th</sup>; Safer City provided an informational tent on road safety for the event. Visitors were eager to share their input regarding local road safety.

On May 30<sup>th</sup> Safer City offered a bike safety talk and bike safety equipment for the annual Bike To Work with the Mayor event. Dozens of cyclists joined in the ride on a beautiful sunny morning along the route from Sardis Senior Secondary School to the Safeway parking lot on Yale Road.

Safer City's annual Road Safety Day took place on June 25<sup>th</sup>. The event is in its 4<sup>th</sup> year and has grown each and every year. This year the theme of the event was awareness of Cone Zones and Slow Down & Move Over requirements. A course was set up for visitors to enjoy a ride on a 3-wheel Segway; through the road simulation course Traffic Control persons guided drivers through the course; road closures; signage and speed monitoring was also occurring. Riders had a great time navigating through the course. Additionally, there were 18 other organizations that share an interest in road safety dedicating their Saturday and resources to help educate visitors on the importance of all aspects of road safety (Chilliwack Fire Department, CVSE, WorkSafeBC, BCAS, RCMP, Speed Watch, First Canada, StarFM, Mainroad Group's Cone Zone, ICBC, Wally's Towing, Streetwise Traffic Controllers, CN Police, Fraser Valley Brain Injury, Sport Chek, Chilliwack Ford, Emil Anderson Construction and Sardis Panago Pizza). With much appreciation, Safer City would like to recognize Cottonwood Mall for all of their assistance and generosity in allowing this valuable community event to take place in their parking lot.





## Earth Month



Activities focused on waste reduction and environmental conservation were once again well received by the community during our annual “Earth Month” events in April.

### Roadside Clean-Ups:

A total of 20 non-profit groups collected 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:

For those in our community who do not have the means to load or transport bulky waste, 4 volunteer groups arranged to collect the items by donation. The groups collected over 16 tonnes of material which was responsibly recycled, composted, or disposed of.

### Adopt a River Event:

184 volunteers from the community and the adopting groups spread out along the banks of the Vedder/Chilliwack River on April 16 to help clean up litter and camping supplies left behind by others. Coordinated by the Chilliwack Vedder River Cleanup Society, the volunteers collected 2.5 tonnes of waste during this year's first of two Adopt a River clean-ups. Various materials including clean wood, tires, and metal were diverted for recycling before the remainder of material was responsibly disposed of at the Bailey Landfill.



### Scrap Metal Recycling: 50 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, 564 loads were received, totaling 50 tonnes. This is an increase of approximately 8 tonnes over last year!

### Semi-Annual City-Wide Garage Sale

215 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.

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



288 students from ten 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.

## 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.

During the 2016 challenge, the City received 570 ballot entries from residents who biked, walked, bused, carpoled etc. for their commute from May 30 to June 12. This year's prize bike was a Kona Dew valued at \$600 which was kindly donated by Vedder Mountain Bike Co. with a contribution from the City of Chilliwack.

This year's winner, Julia Czubernat, bikes to work most days as a sustainable alternative instead of using her car! Julia can now commute on her brand new Kona Dew to beat the traffic and help reduce air pollution.



## Shred-A-Thon and Food Drive



The June 6 Shred-A-Thon & Food Drive was the most successful event to date, collecting over \$4,000 cash and 1,300 items of food 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 3 of this year.

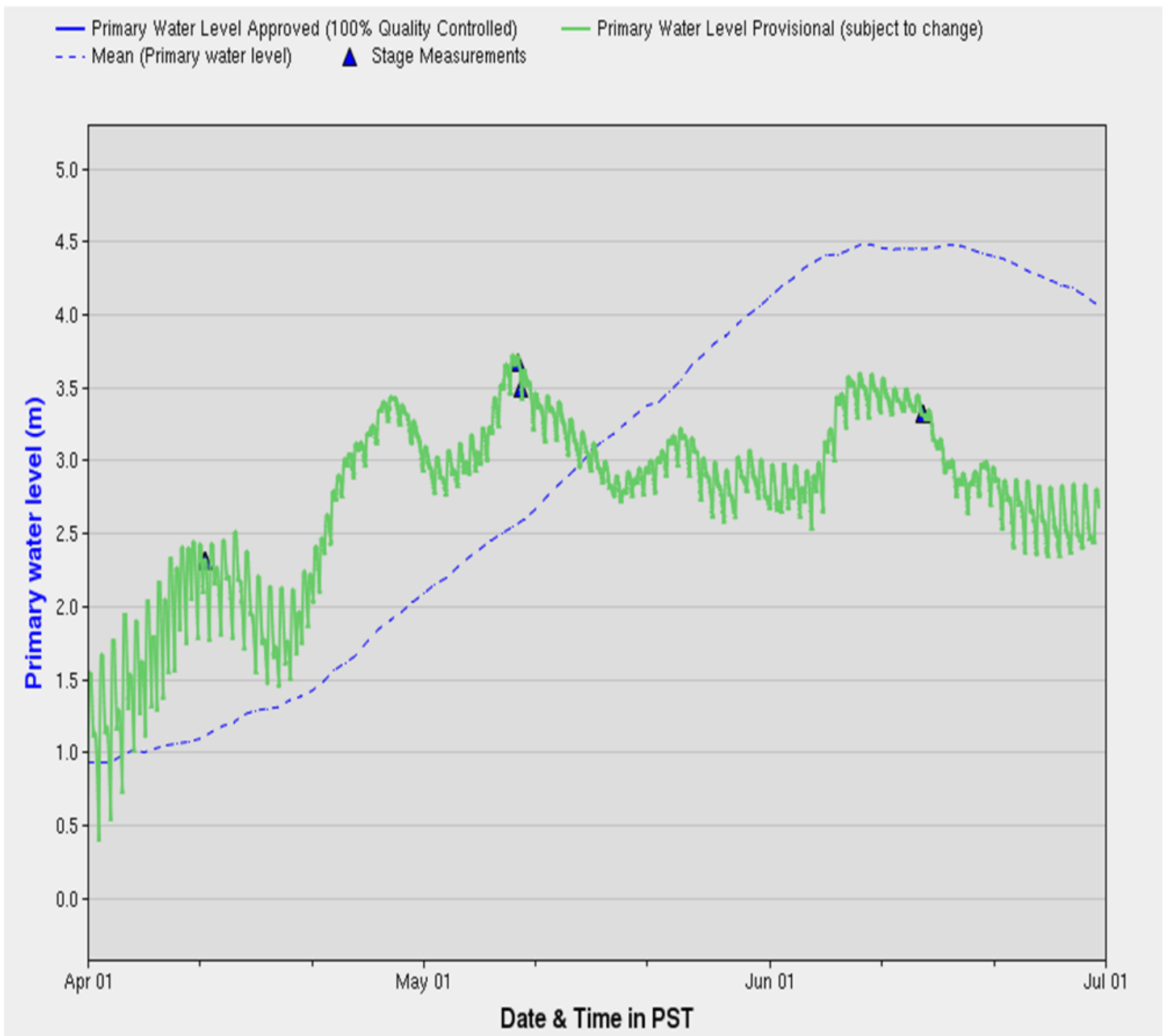


## Fraser River Freshet

Low snow basin indices for mid-June reflect the early season melt that happened this spring. Based on historic automated snow weather station data collected by the Province of BC, conditions this year on June 15<sup>th</sup> are more typical of early-July conditions, indicating that this season's melt continues to be about a month ahead of normal.

Most rivers in BC have experienced their peak levels for the year, unless an extreme rainfall event occurs in late-June or early-July. The Fraser River at the Mission gauge appears to have reached peak freshet level on May 8<sup>th</sup> at an elevation of 3.73m. This is well below the average 4.5m elevation and well ahead of the average mid-June timing for peak level.

*Sketch below elevations at Mission gauge from Apr 1 to Jun 30 2016.*



## Town Dyke Preliminary Design

The Town dyke project is a necessary part of planned improvements to our 50 km of dyke in order to meet the dyke standards set by the Provincial Government. Provincial legislation designates the City of Chilliwack as the local Dyking Authority responsible for the dyke system. The City has been upgrading the Fraser River dykes over the past number of years and has completed the portion between the Rosedale Bridge and Hope Slough. The Town dyke is the next critical component in a multi-phased program.

As part of our ongoing responsibility to protect the greater community from flood risk, the City has begun to assess design options to upgrade the Town dyke. The firm of Urban Systems Ltd. has been retained as the engineering design consultant to carry out the preliminary design. The scope of work includes the portion of dyke between Young Road and Chilliwack Mountain as shown below in RED.

Skwah First Nation will undertake its own independent study to look at flood protection for its land. The City will continue to dialogue with Skwah First Nation on potential collaborative solutions and alignment opportunities.

Public meetings were held on June 28 at the Neighbourhood Learning Center (one in the afternoon and one in the evening) to provide a presentation and overview of the project and obtain public input prior to design options being generated. While there was some discussion on the overall flood protection system to set context, the focus of this neighbourhood meeting was intended to specifically discuss flood protection along the Rotary Trail portion of the system between Young Road and the north east limit of Skwah FN lands.

Additional information is available on the City website at: <http://www.chilliwack.com/main/page.cfm?id=2608>

