

## **Appendix G:**

**OAK BAY I&I WORK:  
2018 to mid-2019**

## **SUMMARY OF I&I WORK FOR OAK BAY**

**2018/2019 (end of June)**

### **Sanitary Sewer**

#### **Capital Projects**

In 2018, used trenchless technology (CIPP) on a total of 1,648.5m of old vitrified sewer. Some of 2018 lining work carried over into 2019:

- 39m of 200mm Sewer pipe Nottingham Road
- 107m of 200mm Sewer pipe Nottingham Road
- 124.9m of 150mm Sewer pipe on Oakdowne Road
- 98.1m of 200mm Sewer pipe lane between Cadboro Bay Rd & Eastdowne
- 98.4m of 200mm Sewer pipe lane between Cadboro Bay Rd & Eastdowne
- 77.7m of 150mm Sewer pipe Hazel Street
- 138.4m of 200mm Sewer pipe on Beaverbrooke
- 148m of 200mm Sewer pipe on Florence
- 101.9m of 200mm Sewer pipe on Haultain
- 78.3m of 200mm Sewer Pipe on McLaren
- 106.2m of 200mm Sewer pipe on McNeil
- 114.2m of 200mm Sewer pipe on Heron
- 88.2m of 200mm Sewer pipe on Newport
- 51.7m of 200mm Sewer pipe on Woodhouse
- 81.5m of 200mm Sewer pipe on Dryfe
- 73.1m of 200mm Sewer pipe on Lincoln
- 120.9m of 200mm Sewer pipe on St Patrick

#### **Subdivisions/Large Development - Contractor's work**

- 644 Beach Subdivision: Extended 31m of 200mm diameter new storm main and installed new storm manhole for subdivision. Neighboring property connected to storm main. Lined approximately 76m of 150mm sewer. Removed old sewer lamp hole and installed new sewer manhole. Lined about 90m of 150mm sewer. Shared 150mm sewer and 150mm storm laterals to mains (5 houses in subdivision)
- 1605 York Place: Installed 50m of new 250mm storm main and new drain MH. Common sewer main on private easement was pipe burst. New sewer manhole and new Oak Bay (approximately 2.5m sewer main installed to CRD's north east trunk. New storm lateral and new sewer services for 2 lots.

#### **Ongoing Programs**

- 2018: CCTV program (year 3 of a 5-year sewer program)
  - Contractor flushed/cleaned 13.8km of sanitary sewer mains
  - Contractor televised 13.8 km of sanitary sewer mains.
  - KWL completed 2018 condition assessment and prioritized the replacement/rehabilitation of sewer main.
- Public Works completed 12-month and 6-month flushing program

## **General Service applications/dye testing policy**

- Ongoing policy and practice to cap old sewer services at the main when new house relocates sewer service
- Ongoing policy to dye-test storm drains before most plumbing/building permits issued
- 2018: 52 storm dye tests completed by Public Works and 19 cross connections discovered; of those 19 cross connections, 8 houses were separated with new storm and sewer laterals via replacements of existing system or new storm lateral installations.
- As of July 2019: 58 storm dye tests completed by Public Works and 8 cross connections discovered.
- 18 sewer lateral dye tests completed by Public Works
- Dye-tested approximately 150m of sewer mains in the Thorpe area, found 2 cross connections (sewer into storm), of those 2 cross connections, 1 house replaced both sewer and storm lateral
- 2018 permits: services installed or yet to be installed
  - 21 new houses with new sewer and storm services installed
  - 2 buildings with combined sewer replaced with separate sewer and storm laterals
  - 7 buildings that replaced sewer and storm laterals
  - 8 buildings that replaced the sewer lateral
  - 5 buildings that replaced the storm lateral
  - 73 inspection chambers
- 2019 permits (January to end of June): Services installed or yet to be installed
  - 10 new houses with new sewer & storm services installed
  - 6 buildings with combined sewer replaced with separate sewer & storm laterals
  - 3 buildings that replaced sewer and storm laterals
  - 2 buildings that replaced the sewer lateral
  - 3 buildings that replaced the storm lateral
  - 43 inspection chambers

## **Studies/Investigations**

- 2019: Oak Bay retained KWL to develop a hydraulic computer model and perform modeling analysis for the Windsor sanitary sewer catchment in the District. This technical memorandum summarized the methodologies used and assumptions made in the development of the sanitary sewer model, as well as findings from the hydraulic modeling analysis. The calibrated existing condition forms the basis for future development scenarios.
- Undertaking partial analysis of Oak Bay's sewer system with new development. Oak Bay is researching and working towards acquiring a sewer master plan and sewer model.
- A developer has televised the sewer main on Linkleas Road as part of a proposed subdivision development (from 602 Newport, along Linkleas to Central). Pipe condition assessments were undertaken and pipe will be replaced to PVC if subdivision is approved.
- A developer has televised the sewer main adjacent to 19 King George Terrace as part of a proposed subdivision development. Pipe condition assessments were undertaken and pipe will be replaced with PVC if subdivision is approved.
- 2018: CRD in collaboration with Oak Bay smoke testing McNeill sewer catchment
- 2018: CRD in collaboration with Oak Bay smoke testing Bowker sewer catchment

- 2018: CRD, in collaboration with Oak Bay, smoke testing Harling Sewer catchment.
- Dye testing sewer mains in Bowker Catchment for cross contamination: Approximately 100m of sanitary sewer main on Beach Drive
- Will be inviting three engineering firms to submit proposals to provide a sewer model for the Eastdowne Catchment.
- 2018/2019 Investigating/surveying/recording sewer manholes as part of our Asset Management program

### **Repairs/Maintenance**

- 1621 Prospect : removed sewer off CRD's main on Broom Road and installed sewer lateral to Oak Bay's main on Beach Drive
- July 2018: Public Works crews replaced a small catch basin with a larger catch basin on Allenby
- August 16, 2018. Quimper: Owner commented that storm drain system tied into sewer system on private property. This was an old combined system, confirmed that owner had a storm lateral but that storm water was escaping the storm main and entering the sewer main further downstream. PW investigated and repaired section of storm main and sewer main.
- Sewer main repairs spring 2019:
  - section of 150mm sanitary sewer on Oakdowne between MH 5379 & MH 5361
  - section of 200mm pipe on Heron between MH 5662 & MH 5624
  - section of 200mm pipe on Beaverbrook between MH 6240 & MH 6211
  - two sections of 200mm pipe on McNeil between MH 6157 & MH 6120
  - section of 200mm pipe on McLaren between MH 7045 & MH 6299
- Brighton sewer main: Property in Victoria had sewer lateral reconnected to main. Lateral appeared to have dropped off.

## **Storm**

### **Capital Projects**

- St Patrick storm drain replacement:
  - replaced 285m of storm main pipe
  - replaced 5 manholes
  - replaced 5 new catch basins
  - installed 3 new catch basins with new PVC leads
  - installed 4 new storm drain laterals to replace cross connections in 4 houses
  - capped 8 old sanitary service connections
  - installed 2 new PVC sanitary sewer connections

### **Subdivision/Development work done by Contractors or Public Works**

- 644 Beach Subdivision. Extended 31m of 200mm diameter new storm main and installed new storm manhole for subdivision. Neighboring property connected to storm main. New 150mm common storm lateral to mains (5 houses in subdivision)
- 1605 York Place. Installed 50m of new 250mm storm main and new drain MH. New storm laterals for 2 lots.

### **Ongoing Programs**

- 2018: CCTV program (year 3 of a 10 year storm program)
  - Contractor flushed/cleaned 7.32 km of storm mains
  - Contractor televised 7.32 km of storm main
- KWL completed 2018 assessment and prioritized the replacement/rehabilitation of storm main.
- 2018: 7 catch basins replaced
- 2018 MH program: 1 storm drain manholes replaced

### **General Service applications/dye testing policy**

- See Sewer section for shared information

### **Studies/Investigation**

- 2018: Partial storm modelling for 19 King George Terrace Subdivision. Existing 150mm storm main undersized and required upgrading.
- A developer has televised the west and east storm main on Linkleas Road as part of a proposed subdivision development (from 602 Newport to Central). Pipe condition assessments were undertaken and pipe will be replaced to PVC if subdivision is approved.
- Will be inviting three engineering firms to submit proposals to provide a storm model for the North & South Estevan Storm Catchment.
- 2018 Investigating/surveying/recording storm manholes as part of our Asset Management program
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## **Storm Management Systems**

- 1701 Beach Drive: Glenlyon Norfolk School storm management system with rain gardens and overflow to ocean

## **Repairs/Maintenance**

- In 2018, while CRD was undertaking sewer main work at Estevan & Beach, an approximately 10m section of collapsed storm main was replaced.
- In 2018, replaced about 7m of 200mm SD main when installing services for 2777 Dewdney.
- In fall of 2018, cleared about 121m of drainage ditch on Dorset Avenue. The ditch is located along the south boundary of Uplands Park. Since storm water in a manhole upstream of the ditch was stagnant, Parks pruned shrubs and trees back from ditch while public works cleared ditch of debris buildup
- In 2019, approximately 117m of 200mm concrete storm main on Brighton Avenue between Monterey and Hampshire was replaced after discovering the storm main was badly deteriorated during lateral installations for two new houses. A new manhole was also installed
- 2019 2 catch basins leads replaced (Brighton)