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Agenda Item #10
REPORT #JWDC 2014 - 08

**REPORT TO JUAN DE FUCA WATER DISTRIBUTION COMMISSION
MEETING OF TUESDAY, APRIL 1, 2014**

SUBJECT FIVE-YEAR FIRE FLOW UPGRADE PROGRAM – 2013 (YEAR 2) PROGRAM SUMMARY AND 2014 (YEAR 3) PROGRAM UPDATE

ISSUE

This report provides a summary of the 2013 Fire Flow Upgrade Program, a five-year program initiated in 2012, and an update on the 2014 program.

BACKGROUND

Fire Flow Upgrade Program – 2013 Project Summary

The five-year Fire Flow Upgrade Program was approved by the Juan de Fuca Water Distribution Commission in 2011 for the purpose of improving the distribution system's ability to provide flows in accordance with Fire Underwriters Survey (FUS) recommendations. The approved program budget is \$1,880,000 per year for design and construction. Further to the March 2013 report to the Commission outlining the planned 2013 projects, the following and Attachment 1, provide a summary of the 2013 program and completed upgrades:

1. A total of 1,925 metres of water mains were designed and constructed at a cost of \$1,516,229. Variances in the constructed lengths and budget are explained below:
 - a. The Setchfield Avenue project was cancelled after conducting an analysis which concluded that the upgrade was no longer required to achieve fire flows as a result of a check valve installation on the system at a nearby location.
 - b. The Rocky Point Road project was cancelled as a result of reassessing required fire flows based on a rural fire flow demand standard, which are being achieved with the current distribution system.
 - c. The Sooke Road (Ayum Creek crossing) project requires specialized work and environmental approvals and has been deferred until the contract work can be tendered.
 - d. The Langvista Drive project was not fully built as a result of insufficient overall budget. The remaining length will be added to other 2014 work on Langvista.
2. Water main designs were completed utilizing both Capital Regional District (CRD) engineering staff and engineering consultants. All water main installation was completed by CRD crews.
3. Construction costs were higher than estimated primarily as a result of:
 - a. Asphalt paving requirements and restoration limits due to project locations and municipal requirements.
 - b. Excessive amounts of trench rock drilling, blasting and removal, particularly on the Triangle Mountain, Goldie Road and Andover Road projects.

Fire Flow Upgrade Program – 2014 Project Update

The 2014 (year 3) program also has a budget of \$1,880,000 for design and construction and includes the projects shown in Table 2 (Attachment 2).

The projects on Sooke Road, Ludlow Road and Ayum Road have been deferred. It is possible that pump station upgrades in this area will accomplish the same results without the need to replace these pipes, but a detailed modelling exercise is being conducted to confirm this. The results of the modelling and confirmation of the need to continue with these projects to provide fire flows will be reported to the Commission at the June Commission meeting. All of the other projects are expected to be completed this year.

CONCLUSION

The CRD replaced 1,925 metres of water mains in 2013 under the Five-Year Fire Flow Upgrade Program at a cost of \$1,516,229. Designs for the planned 2014 projects are underway with construction expected to be completed by 2014 year end.

RECOMMENDATION

That the Juan de Fuca Water Distribution Commission receive the staff report for information.

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SM:TR:mm

Table 1: 2013 Five-Year Fire Flow Upgrade Projects

Municipality	Road Name	Proposed Length (m)	Actual Length (m)	Pipe Diameter (mm)	Notes
Colwood	Sunheights Dr	74	74	300	
	Blue Sky Pl	194	194	200	
	Fulton Rd	238	238	200	
	Bexhill Rd	325	325	250	
	Bexhill Pl	153	153	200	
Langford	Langvista Dr	243	130	200	To be completed in additional phases
	Bellamy Rd	37	37	200	
	Goldie Ave	145	145	200	
	Gourman Pl	151	151	200	
	Setchfield Ave	240	0	200	Cancelled – no longer necessary
Sooke	Sooke Rd/Ayum Ck	55	0	200	Unique work/creek crossing - deferred
	Andover Rd	478	478	200	
Metchosin	Rocky Point Rd	500	0	300	Cancelled – no longer necessary
Totals		2833	1925		

Table 2: 2014 Five-Year Fire Flow Upgrade Projects

Municipality/ EA	Road Name	Length (m)	Notes
JDF EA	Winslow Rd	652	Design underway
Metchosin	Clapham Dr	536	Design begins in May
Sooke	Sooke Rd	13	Deferred pending review of firelows in this area
	Ludlow Rd	632	Deferred pending review of firelows in this area
	Ayum Rd	58	Deferred pending review of firelows in this area
Langford	Langvista Dr	350	Design complete
	Jeanine Dr	422	Design underway
	Mill Hill Rd	163	Design underway
Total		2826	