



**REPORT TO FULFORD WATER SERVICE COMMITTEE  
MEETING OF FRIDAY, 15 JUNE 2007**

---

**SUBJECT      INFORMATION ON OPPORTUNITY TO EXTEND THE FULFORD WATER SERVICE  
AREA TO INCLUDE CEDARS OF TUAM WATER SERVICE**

**PURPOSE**

To present for the consideration of the committee details of an investigation into the interconnection of the Cedars of Tuam water service to the Fulford water system by way of underwater pipeline and to then merge the two water services together as one.

**BACKGROUND**

The Capital Regional District (CRD) Cedars of Tuam water service lies on the southerly edge of Fulford Harbour. The water district is comprised of 16 residential units which draw water from a single low producing groundwater well. The CRD has made application for, and received an infrastructure grant from the Province of BC to develop an additional water source as the current well has failed during late summer on more than one occasion. CRD staff have been negotiating with local property owners for development of a new well, but so far have been unable to secure a suitable drill site. Staff have looked at alternatives, including desalination, but have rejected same owing to high operating cost. As an option, engineers priced out a small diameter water supply line from the Fulford system and believe that, subject to water availability and acceptance by the Fulford water Service committee, the option would be technically feasible.

**DESIGN**

The maximum flow of water necessary to satisfy the needs of the Cedars of Tuam system are likely to be less than 1 l/sec (5 gallons/minute). The water connection at the Fulford end would be from existing treated water main likely at the end of Morningside Road. The new line would run to the waters edge via Ministry of Transportation right of way. The underwater portion would consist of two small diameter (40mm) poly lines weighted, following a route established by underwater survey. The lines would daylight again to a road right of way, then to the water main system on Roland Road. The water tank at Cedars of Tuam would remain in service to provide daily flow balancing, storage for fire protection and as an emergency supply should one or both supply lines be severed. The current well for Cedars of Tuam would likely be mothballed, to be activated in emergency conditions. In future, should additional groundwater supply be developed on the Cedars side of the harbour, the lines could back feed the Fulford system. The cost of construction of the interconnect would be born by the Cedars of Tuam water service area, however depending on how the merger of service areas is completed, the debt costs for the project may be shared by Fulford.

**FINANCIAL IMPACT - SERVICE AREA MERGE**

There were three models reviewed to connect Cedars of Tuam to Fulford water system:

1. Cedars of Tuam funds debt for construction, purchases water from Fulford.
2. Cedars of Tuam funds debt for construction, Fulford extends boundary to include Cedars for purposes of operation.
3. Cedars and Fulford service areas merge to one.

**Fulford Water Services Committee – 15 June 2007**  
**Re: Fulford/Cedars of Tuam Water**  
**Page 2**

A financial comparison of the three models is presented following:

Model	Annual Ops Cedars	Annual Debt Cedars	Annual Ops Fulford	Annual Debt Fulford	Benefit Cedars?	Benefit Fulford
2007	\$963	\$152	\$660	\$631.68	n/a	n/a
1	\$1,390	\$152	\$596	\$631.68	+ \$427	- \$64
2	\$733	\$152	\$733	\$631.68	- \$230	+ \$6
3	\$733	\$494	\$733	\$494	+ \$112	- \$143.68

**Assumptions:**

Benefit shown is per user or per parcel  
Extra cost to operate Cedars over Fulford, 2008 = \$10,800  
Fulford annual debt = \$52510  
Cedars annual debt = \$2,430  
Fulford 2008 Operations = \$85,470  
User fees exclude consumption revenue, estimated at \$6,670

**FINANCIAL BENEFIT TO FULFORD**

There is no particular benefit to Fulford under Options 2, but there is a measurable benefit of \$64 as a reduction to the user fee under Option 2 and \$143.68 as a reduction to a parcel owner/user under option 3.

There would be no reason for Cedars of Tuam to consider Option 1 as supportable. There is a benefit to Cedars under option 2. The extra cost for Cedars of Tuam to obtain water under option 3 would be less than \$10 per month.

**WATER AVAILABILITY**

The biggest single issue to supply of water to Cedars of Tuam from the Fulford system is water availability. The Fulford water licence at present allows for the withdrawal of 318 m<sup>3</sup>/day or 70,000 gallons per day. The current system, being mostly un-metered, requires the demand to be estimated rather than tabulated. Current demand, based on 2005 data, would be in the order of 116.6m<sup>3</sup>/day or 25,652 gallons per day. Losses on the system, based on 2006 data, would appear to add a further 35m<sup>3</sup>/day or 7,718 gallons per day. As system metering is proposed, it is likely that losses can be managed with daily consumption reduced again to 2005 levels. On this basis, the available water for use by Fulford for future expansion, at present consumption rates, would amount to a further 200m<sup>3</sup>/day or 44,300 g/day average.

There are currently 104 connections to the system, 95 residential and 8 commercial. Assuming commercial usage continues at similar rates to today, 200m<sup>3</sup>/day average usage would permit a further 275 residential units being added to the system, given the current residential usage amounts to about 164 g/day or 745 l/day. This is a simple calculation indicating total system usage for an average day and in reality the consumption will peak during summer months such that to remain within the daily withdrawal rater for the licence, the total number of units would likely be scaled back considerably.

The water area has some larger blocks of land, which in future might be subdivided to provide additional connections to the system, and density within the current properties connected to the system might also vary in future, however it is likely the bulk of new connections added to the system would be from outside of the current boundaries of the water district. The recent exercise conducted by the Islands Trust regarding future visions for Fulford suggested the village area would likely grow, bounded ultimately by the level of servicing available.

At this time, it would appear there is ample capacity within the Fulford system to provide for a connection to Cedars of Tuam, especially as the residential use for that subdivision has historically been much lower than Fulford.

### **ALTERNATIVES**

The committee could elect not to entertain the project to interconnect the two systems, or could support the concept in principle, and request staff to evaluate more closely the implications of supplying water to the Cedars of Tuam district and bring together the two water service committees for further dialogue.

### **FINANCIAL IMPLICATIONS**

Preliminary analysis suggests there would be a benefit to Fulford residents if the two areas were joined but primarily through the sharing of their debt costs by the additional properties making up the Cedars of Tuam water area.

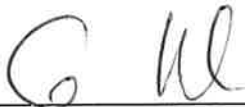
### **SUMMARY/CONCLUSIONS**

Staff have been trying to address a lack of water situation for the Cedars of Tuam water service across Fulford Harbour from the Fulford water service area. One of the options considered by staff would involve supply of water to Cedars of Tuam from the Fulford water area. The proposal would likely require the two water services to merge, with a financial benefit to Fulford and a cost increase to Cedars of Tuam users. Given the options available to the small water utility, the increase may be seen as acceptable. Fulford has adequate supply of water at present to service the other area, but the servicing of future properties outside of the current boundary, but within the Fulford village planning area, would be reduced by the interconnection. Staff seek direction from the committee as to whether any further effort should be expended on the option, or whether staff should advise the Cedars of Tuam Water Service committee that Fulford does not wish to entertain such an expansion at this time.

### **RECOMMENDATION**

That the Fulford Water Service committee:

1. accept this report for information;
2. advise staff whether or not the project is worthy of further discussion and investigation; and
3. advise staff whether the Fulford Water Service committee wishes to meet with the Cedars of Tuam Water Service committee to discuss the project further.

  
\_\_\_\_\_  
Gary Hendren, ASCT  
Local Services Engineering Coordinator

GH:ls