



To: Comox Valley Water Management Advisory Committee  
From: Sarah Morden, Defero-West Consulting  
Date: October 7, 2015  
Re: Status & Information Update: Sandwich Waterworks Conversion Study

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### **Purpose**

To update the Committee on information gathered to further consider Sandwich's request for approval, in principle, of a connection to the Comox Valley water supply system prior to the public consultation phase of the Sandwich Waterworks Conversion Study.

### **Background**

During its 2013 Annual General Meeting, the Sandwich Board of Trustees supported a resolution requesting the CVRD to initiate a study of the options and costs associated with converting to a regional district service. The main drivers of this request were:

1. The need to finalize an agreement with the City of Courtenay regarding how and when to sever the systems following the 2002 municipal boundary expansion (282 properties to switch to City water, 424 to remain within Sandwich); and,
2. the pending implementation of new provincial drinking water regulations pertaining to surface water, which will make one of the SWWD's three sources (the Courtenay River) unusable past 2017.

The Sandwich Waterworks Conversion Study commenced in June, 2014, led collaboratively by three consultants – Sarah Morden (Defero-West Consulting); Sherry Hurst (Leftside Partners Inc.) and Kate Berniaz (Urban Systems). Three options were identified by the consultants, and a comparative analysis was drafted (see updated Options Matrix attached). The options included:

Option 1 – Remain an independent Improvement District

Option 2 – convert to local water service area with connection to the Comox Valley Water Supply System. (requires approval by the Comox Valley water committee)

Option 3 – convert to local water service area with the CVRD assuming responsibility for the existing Sandwich water supply and distribution system (no connection to the Comox Valley Water Supply System)

The consultants met with the SWWD Board of Trustees in September, 2014 to discuss the options. Generally, Trustees felt the community would likely support Option 2, but they were concerned about presenting it as an option if the Comox Valley Water Committee could ultimately decline the request to connect to the system. Further, they felt that if the community couldn't be reasonably confident in an approval under Option 2, they would likely support remaining an independent improvement district over Option 3.

In October of 2014, the Sandwick Waterworks Improvement District posed the following question to the Comox Valley Water Management Advisory Committee:

*Is it possible for the Comox Valley Water Committee to consider for approval, in principle, a connection to the Comox Valley water supply system prior to public consultation with the Sandwick residents?*

At the time, the Committee identified three key areas where more information was required in order to consider Sandwick's request, including:

1. an infrastructure condition assessment of the Sandwick water system, including the feasibility of connecting to the regional water system, scope of work and cost estimates for conversion, along with anticipated costs for future upgrades;
2. examples of other flow-throughs on the regional water system and agreements, if applicable; and,
3. review of the connection charge amount given the area that is to remain within Sandwick will not be part of a boundary extension.

#### **Status & Information Update – October, 2015**

The information gaps identified by the Comox Valley Water Management Committee have now been fully addressed as follows:

##### Infrastructure Condition Assessment

An Infrastructure Condition Assessment was completed by Koers Engineering in October, 2015. A copy of their final report is attached. Funding for the assessment was provided, in part, through a \$10,000 provincial Infrastructure Planning Grant. The consultants reviewed system history, drawings, documentation, system design and operation information, and their report sets out a detailed set of recommendations and cost estimates that would be required to connect to the Comox Valley water system as well as future upgrade considerations. The Options Matrix has been updated based on the cost estimates and recommendations provided by Koers.

##### Flow-Throughs

CVRD engineering staff provided the City of Courtenay with a series of examples of other flow-throughs in the regional water system following the Committee meeting in October, 2014.

### Connection Charge

It was determined by CVRD and City of Courtenay staff that the Capital Cost Charge to connect to the regional water system (Bylaw 2350) should be revised to the full charge given that the area will not be subject to a boundary expansion – the revised amounts are \$3,086/unit for multi-family dwelling; \$3,702 for single family. The Options Matrix was updated accordingly.

### **Request**

It remains the preference of the Sandwick Trustees to narrow the options to two for public consultation – the ideal scenario being Options 1 (remain independent improvement district) and 2 (convert to local water service area with connection to the Comox Valley Water Supply System), eliminating Option 3 (convert to local water service area with the CVRD assuming responsibility for the existing Sandwick water supply and distribution system). With the information gaps now addressed, reconsideration of the following question is requested:

*Is it possible for the Comox Valley Water Committee to consider for approval, in principle, a connection to the Comox Valley water supply system prior to public consultation with the Sandwick residents?*

Similarly, it is requested that if there are any issues or concerns that would preclude CVWS connection approval, that Sandwick Trustees be made aware of those so that Option 2 can be eliminated prior to the public consultation process.

### **Next Steps**

#### *If the Request is Supported*

The consultants will work with Sandwick Trustees to finalize plans and prepare materials for public consultation. This process will likely include one or more interactive community conversation workshops, and the consultants will be in touch with the staff liaison at the Ministry of Community, Sport & Cultural Development to ensure the proposed methodology meets their Improvement District conversion guideline standards.

Following the workshop, the consultants will prepare a final report identifying the results of study and the public consultation, a preferred option and a proposed course of action. It is anticipated that consultation would occur in early 2016, and that the Final Report would follow shortly after..

#### *If the Request Cannot be Supported*

The consultants will work with Sandwick Trustees to determine how best to proceed – it is anticipated (based on the discussion of the options in September, 2014) that they would require additional support to evaluate the remaining options and prepare for public consultation. The consultants would work with Trustees and the Ministry staff liaison to determine the most appropriate method of consultation, which may vary from what is described above depending on the viability of the remaining options. It is

reasonable to expect that an extra 3-4 weeks may be required in this scenario, most likely extending the timelines for the submission of the Final Report into March, 2016.

Attachments:

- Options Matrix and Current Situation Report
- Infrastructure Condition Assessment by Koers Engineering dated October, 2015

# Sandwick Waterworks District Conversion Study

## Options Matrix

### 1.0 Purpose

This report builds on the information presented in the “Current Situation Assessment” as provided to the Comox Valley Regional District (CVRD) by the consultants in July 2014. The purpose of this document is to identify and analyze the options for a long-term solution for the provision of safe, reliable and accessible drinking/potable water to the portion of the Sandwick Waterworks District not within City of Courtenay boundaries.

#### **QUICK FACTS** (please refer to *Current Situation Assessment* for more details):

- The Sandwick Waterworks District (SWWD) was incorporated in 1960 as an improvement district. At that time, it was located wholly in what is presently Electoral Area ‘B’ (Lazo North) in the CVRD.
- In November of 2002, the boundaries of the City of Courtenay were extended to include a portion of the Sandwick Waterworks District (SWWD).
- In accordance with Supplementary Letters Patent pertaining to the boundary expansion, the City and SWWD must enter into an agreement regarding water supply and distribution for the properties taken within the municipal boundaries. All SWWD assets and liabilities within the extended City limits are to be transferred to the City of Courtenay with the exception of those required to maintain the integrity of the water supply system for Sandwick, and land held in fee simple ownership by SWWD. An agreement has been drafted, but remains “on hold”.
- SWWD currently supplies approximately 424 water service connections in Electoral Area ‘B’ (the remainder of SWWD not within City boundaries), as well as 282 connections within the City of Courtenay.
- The SWWD obtains water from three sources – one surface source (Courtenay River) and two groundwater wells (Dingwall Road and Mitchell Road). The river intake and the Dingwall Road well are located within the City. The Mitchell Road well is in Electoral Area ‘B’.
- The SWWD has been notified by the Vancouver Island Health Authority that the *Drinking Water Protection Act* and regulations will require additional treatment of the surface source (Courtenay River) by 2017 if it is to remain in use.
- During its 2013 Annual General Meeting, the SWWD Board of Directors supported a resolution requesting the CVRD to initiate a study of the options and costs associated with converting to a regional district service, or a “water local service area”.
- SWWD Board members interviewed for this study expressed a general feeling that plans have been “on hold” since the City’s boundary expansion. They see that this situation is coming to a head and they either need an end date for the Improvement District or they are going to have to locate and establish a new water source(s).

## 2.0 Information Gaps

This section addresses the “information gaps” identified in the *Current Situation* report.

Question	Comments
What are the estimated costs of finding and drilling a new groundwater source(s)?	<p>According to Koers Engineering, \$300,000 to \$600,000 per well or higher. Development of a well depends on a number of factors including:</p> <ul style="list-style-type: none"> <li>• drilling and proving out a test well,</li> <li>• drilling and developing a production well,</li> <li>• obtaining approval from the Ministry of Health and MoE to develop a new groundwater well for potable water use,</li> <li>• designing a pump, pumphouse and control system</li> <li>• determining if a standby emergency power generator is required</li> <li>• extent of infrastructure required to connect the well into the existing water system,</li> <li>• whether water treatment is required at the well.</li> </ul> <p>Sandwick believes they can drill for less, approximately \$100,000 to \$150,000 based on cost estimates they have obtained within the past few years.</p>
Is the City even willing to consider continued use of the Dingwall Road well and construction of a supply main?	Yes – SWWD would be able to access the Dingwall Rd well and river intake if they remain an Improvement District.
How many new sources would be required to replace the supply currently yielded from both the Courtenay River and the Dingwall Rd well?	For the purposes of this study, assume 3-5 depending on capacity. If capacity were similar to the existing wells (between 5-6 liters per second), then a total of 3 wells would be required to meet the current average day demand outlined in the Koers report (11.3 lps) and 5-6 wells would be required to meet maximum day demand (27.4 lps) – Sandwick noted maximum day demand was calculated using 1998 data, which was selected because spring and summer average rainfall was notably lower, resulting in high water usage. They estimate that given more recent/average consumption data, 1-2 wells would be required, particularly if water meters were introduced to reduce consumption.
What is the impact, if any, of the <i>Water Sustainability Act</i> on SWWD if it were to remain an Improvement District and drill new wells?	The legislation has been introduced, but the regulations have yet to be written. Regulations will be completed in approximately two years. It is expected there will be new licensing and regulatory requirements for ground water.
Is any of the AC piping of pressure class 100?	This is unknown. Koers Engineering recommends a budget of \$400 to \$500 per meter of pipe to be replaced to cover development of detailed design drawings, obtaining Ministry of Health approval for watermain construction, tendering, and construction services. This assumes the existing AC mains can be abandoned in place and would not include replacement of water service connections from the main to the property lines or water meters. The consultants have allowed a <b>contingency</b> of \$150,000 - this would cover replacement of 20% of the existing pipes within Sandwick, which total approximately 15km.

Question	Comments
Would conversion to a regional district service change the fire flow requirements?	Ministry has advised: fire flow requirements are based on the diameter of the pipe and flow per second, so the structure of the jurisdiction providing the service does not appear to be a factor. Replacement of watermains to meet design fire flow requirements is included in Koers' recommended long-term improvements.
# of water service connections in Area 'B'	The SWWD is reported to service 657 lots, for which there are an estimated 706 service connections. Of these, 424 connections (60% of the total) are located outside the City of Courtenay municipal boundary and within the area that will remain in Sandwick.
What is the City's estimated timeline for finalizing the agreement and severing from the SWWD system?	The City is awaiting a decision by the SWWD regarding potential conversion to a regional district service before finalizing the agreement.

The following information was also confirmed subsequent to the Current Situation report:

- The conversion of the Sandwick Water Works into a regional district service with connection to the Comox Valley Water System would require the approval of the Comox Valley Water Committee. If the Committee does not approve the service, the CVRD Board of Directors could consider assuming responsibility for the existing system using Sandwick's water sources, as opposed to connection with the Comox Valley Water System.
- As outlined, if the river intake is to be used beyond 2017, water treatment infrastructure is required. Sandwick Trustees anticipated the cost of such infrastructure to be in excess of \$1million. According to Koers Engineering, the cost of the water treatment infrastructure is very difficult to estimate and depends upon the treatment process, which requires water quality testing over at least one year, followed by a review of treatment options and pilot testing. The initial treatment options assessment work would cost an estimated \$50,000-\$80,000, not including the actual water treatment infrastructure that is ultimately selected.

## 3.0 Options

This section provides an overview and comparison of the options available to the Sandwich Waterworks District.

### 3.1 Options Defined

There are a number of options for the future of the Sandwich Waterworks District. The consultants reviewed the governance and water supply components and identified different configurations. Some options were dismissed before a more thorough evaluation, including:

- The City of Courtenay has confirmed that the municipality has no intent to pursue any further boundary expansions to take in the remainder of the Sandwich Waterworks District.
- The municipality is not interested in providing water to the SWWD through bulk water purchase, but will allow CVRD water to flow through their pipes into a regional district service area.
- Continued use of the river intake beyond 2017 due to cost prohibitive water treatment infrastructure requirements.
- Koers Engineering had identified that a supply main could be constructed to convey water from both the river intake and Dingwall Rd well to Sandwich – these sources are located in relatively close proximity, approximately 2-3km from the Sandwich boundary. This pipeline would cost an estimated \$607,000. With the dismissal of the river intake as cost prohibitive, this pipeline becomes unfeasible. Therefore, the two options that would involve continued use of Sandwich’s sources (Option 1 and Option 3 below) include the estimated cost of establishing 3-5 new wells within the Sandwich area to replace both the river intake and the Dingwall Road well.

The options that have been included in the analysis are:

#### **Option 1 - Remain an independent Improvement District**

*This option involves:*

- *City severing from the system;*
- *Remainder of SWWD would continue to function as an Improvement District;*
- *Water supply from the Mitchell Road well, and either 3-5 new wells using Koers’ calculations based on 1998 consumption OR 1-2 new wells using Sandwich’s more recent/average consumption data (See Section 2.0 for explanation) to replace the river intake and Dingwall Road well (see dismissed options above);*
- *Governance decisions and operation/maintenance/upgrading of the system would remain the responsibility of the Sandwich Board of Trustees, as elected by ratepayers;*
- *Funding would continue through annual user fees (toll rates), as set by the Board of Trustees. Provincial grants are not available to the SWWD.*

**Option 2 - Convert to a regional district “Local Water Service Area” with connection to the Comox Valley Water System.**

*This option involves:*

- *City severing from the system;*
- *Remainder of SWWD would convert to a regional district service as a “Local Water Service Area”;*
- *Water supply via the Comox Valley Water System<sup>1</sup>;*
- *System modification near Wentworth Road to provide the required connection to the CVWS, with distribution through existing piping;*
- *Sandwick Waterworks District would no longer exist, and existing sources would be decommissioned;*
- *Comox Valley Water Committee (Area ‘B’ Director is a member) would determine all policy related to **water supply** for the local water service area, providing advice and recommendations to the CVRD Board of Directors where the Committee cannot undertake the required actions (ex. adopting bylaws or entering contracts);*
- *The CVRD’s Electoral Area Services (EAS) Committee would determine all policy related to **water distribution** for the local service area.*
- *Opportunity for an interim committee made up of SWWD Trustees to aid in the transition by providing input/advice to EAS Committee regarding distribution.*
- *CVRD would be responsible for ongoing operations, maintenance and capital upgrades of the system, funded through annual user fees/charges and government grants, as applicable.*

**Option 3 - Convert to a regional district “Local Water Service Area”; CVRD assumes responsibility for the existing SWWD water system – no connection to the Comox Valley Water System.**

*This option involves:*

- *City severing from the system;*
- *Remainder of SWWD would convert to a regional district service as a “Local Water Service Area”;*
- *CVRD would assume responsibility for Sandwick’s existing sources and distribution system, as well as the establishment of 3-5 new wells to replace the river intake and Dingwall Road well (see dismissed options above);*
- *Sandwick Waterworks District would no longer exist;*
- *an advisory committee made up of SWWD Trustees (similar to the Royston Advisory Select Committee) would provide advice regarding both supply and distribution to the Electoral Area Services Committee or CVRD Board of Directors;*
- *CVRD would be responsible for ongoing operations, maintenance and capital upgrades of the system, funded through annual user fees/charges and government grants, as applicable.*

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<sup>1</sup>Requires approval by the Comox Valley Water Committee

**Table 1: OPERATIONS**

	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
<b>Water Source(s)</b>	Mitchell Road well, plus 3-5 new wells based on Koers' calculations or 1-2 new wells based on Sandwick's calculations.	CVRD bulk water from East Courtenay Reservoir, via Puntledge River, origin is Comox Lake (Koers Engineering recommendation)	Mitchell Road well, plus 3-5 new wells based on Koers' calculations.
<b>System Modifications (Class D estimates)</b>	<p>1.1 Establish new wells  <b>Koers data:</b> 3-5 new wells; allow range between \$300,000 x 3 and \$600,000 x 5  <b>Sandwick data:</b> 1-2 new wells; allow between \$100,000 x 1 and \$150,000 x 2</p> <p>1.2 Construct mains to connect with SWWD system – sample sites are within metres of existing pipelines. (allow \$40,000 for up to 100m if using Sandwick's data – Koers' estimates included this item)</p> <p>1.3 Isolate the City and SWWD distribution systems<sup>2</sup> (\$25,000)</p> <p>1.4 Decommission river intake &amp; Dingwall Rd well; install cap to abandon the main between the pump station and intersection of Hwy 19a and Suffield. (\$45,000)</p> <p>1.5 Connect properties fronting Wentworth Rd and Cotton Rd that are within the SWWD, but are serviced by mains that are to become part of the City's system. (\$40,000)</p>	<p>2.1 Install a bulk flow meter at City of Courtenay boundary south of Exeter (\$75,000)</p> <p>2.2 Install a bulk flow meter at Hwy 19A north of Cotton Rd (\$75,000)</p> <p>2.3 Abandon bolted steel reservoir and Mitchell Rd booster pump station (\$5,000)</p> <p>2.4 Remove check valves and open closed valves at various locations (\$5,000)</p> <p>2.5 Decommission Mitchell Rd well, Huband Rd well and Dingwall Rd well and remove buildings (\$32,000)</p> <p>2.6 Decommission Courtenay River Intake Pump station and remove building (\$30,000)</p> <p>2.7 Upgrade the existing watermain southeast of Meadowbrook. (\$60,000)</p> <p>2.8 Connect watermain on Exeter to the watermain on Wentworth (\$25,000)</p>	<p>3.1 Establish 3-5 new wells using SWWDs sample sites if possible. (allow range between \$300,000 x 3 and \$600,000 x 5)</p> <p>3.2 Construct mains to connect with SWWD system – sample sites are within metres of existing pipelines. (Koers' estimates for new wells includes this item)</p> <p>3.3 Isolate the City and SWWD distribution systems (\$25,000)</p> <p>3.4 Decommission river intake &amp; Dingwall Rd well; install cap to abandon the main between the pump station and intersection of Hwy 19a and Suffield. (\$45,000)</p> <p>3.5 Connect properties fronting Wentworth Rd and Cotton Rd that are within the SWWD, but are serviced by mains that are to become part of the City's system. (\$40,000)</p>

<sup>2</sup> To isolate the City & SWWD systems:

1. Install a closed valve on the 150mm dia. Main crossing Highway 19A near Cotton Road. \$15,000
2. Install a closed valve on the 100mm dia. Main on Wentworth Road south of Exeter Plc. Near City boundary \$5,000
3. Install a cap on the 200mm dia. Main on Wentworth Road south of Exeter Place at the City boundary. \$5,000

Related Capital Considerations	<p>LONGER TERM</p> <ul style="list-style-type: none"> <li>According to Koers Engineering, 30 of Sandwick's distribution mains should be replaced between 2026 and 2036, at a current (2015) estimated cost of \$4,096,905. They note that the remainder will require replacement between 2037 and 2070 and estimate an additional \$2,168,890.</li> </ul>	<p>SHORT TERM:</p> <ul style="list-style-type: none"> <li>Water meters would need to be installed at all SWWD properties in keeping with the CVRD's mandatory metering program @ average cost of \$1,200 per meter. (424 required)</li> <li>It is not known whether any AC100 piping below the 50m contour exists in the system; any resulting pressure increases from connection to CVWS could trigger a need to replace; allow for contingency of \$150,000.</li> </ul> <p>LONGER TERM</p> <ul style="list-style-type: none"> <li>According to Koers Engineering, 30 of Sandwick's distribution mains should be replaced between 2026 and 2036, at a current (2015) estimated cost of \$4,096,905. They note that the remainder will require replacement between 2037 and 2070 and estimate an additional \$2,168,890.</li> <li>Currently, peak hour pressure meets the minimum pressure requirements, so the Mitchell Road pump station would not be required. If demands in the distribution system increase above 30lps, future works may be required to maintain the required 40psi pressure.</li> </ul>	<p>SHORT TERM</p> <ul style="list-style-type: none"> <li>Water meters would need to be installed at all SWWD properties in keeping with the CVRD's mandatory metering program @ average cost of \$1,200 per meter. (424 required)</li> </ul> <p>LONGER TERM</p> <ul style="list-style-type: none"> <li>According to Koers Engineering, 30 of Sandwick's distribution mains should be replaced between 2026 and 2036, at a current (2015) estimated cost of \$4,096,905. They note that the remainder will require replacement between 2037 and 2070 and estimate an additional \$2,168,890.</li> </ul>
Responsibility for Operations	<p>Responsibility for operations and administration would remain with SWWD (currently performed by three on-call maintenance staff (including two Trustees), a part-time Administrator and part-time Administrative Assistant).</p>	<p>Responsibility for operations and administration would be transferred to CVRD staff. Anticipated increases &amp; costs are discussed under Table 4: Human Resources.</p>	<p>Responsibility for operations and administration would be transferred to CVRD staff. Anticipated increases &amp; costs are discussed under Table 4: Human Resources.</p>

	<p><i>New licensing requirements are expected to be introduced under the Water Sustainability Act regulations in approx. 2 years – this may increase the amount of work and technical expertise involved in operating wells.</i></p> <p><i>Treatment takes place at well pump houses, which would continue under this option.</i></p>		<p><i>New licensing requirements are expected to be introduced under the Water Sustainability Act regulations in approximately 2 years – this may increase the amount of work and technical expertise involved in operating wells.</i></p> <p><i>Treatment takes place at well pump houses, which would continue under this option.</i></p>
<p><i>Treatment</i></p>		<p><i>Treatment would be centralized at existing CVWS reservoirs, pump stations, chlorination facility.</i></p>	

<b>Table 2: FINANCIAL</b>			
	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
<i>Estimated Cost of System Modifications</i>	<p>New Wells estimates:  <b>Koers data:</b> 3-5 new wells; ranging between \$1,050,000 to \$3,150,000  <b>Sandwick data:</b> 1-2 new wells; ranging between \$100,000 and \$300,000</p> <p>Remainder of estimated modifications (See Table 1): \$150,000</p>	<p>Estimate of all system modifications: \$307,000 (See Table 1)</p>	<p>New Wells estimate:            3-5 new wells; ranging between \$1,050,000 to \$3,150,000</p> <p>Remainder of estimated modifications (see Table 1): \$110,000</p>
<i>Financial Responsibility for System Modifications</i>	<p>Potential for City to cost share to isolate/sewer systems (\$25,000 item cost); remaining items likely SWWD's responsibility unless otherwise negotiated.</p>	<p>Potential for City to cost share installation of bulk flow meter at City boundary (\$75,000); remaining items likely CVRD's responsibility unless otherwise negotiated – costs billed to Sandwick residents as part of the revenue required to provide the service.</p> <p>CVRD would be eligible for a small restructure assistance grant from the Ministry, approximately \$10,000 upon conversion</p>	<p>Potential for City to cost share to isolate/sewer systems (\$25,000 item cost); remaining items likely CVRD's responsibility unless otherwise negotiated - costs billed to Sandwick residents as part of the revenue required to provide the service.</p> <p>CVRD would be eligible for a small restructure assistance grant from the Ministry, approximately \$10,000 upon conversion</p>
<i>Fees &amp; Charges</i>	<p>Flat rate fee structure. May pay annually (10% discount applies) or quarterly.</p> <p>2015 single family residential rate: \$505 per annum, 15% reduction for seniors. At a minimum, fees would need to increase approximately 30% (\$656.50 for single family residential) to make up for the 282 former ratepayers that will be switched over to City water. <b>System modifications would likely require further increases.</b></p>	<p>Metered fee structure. Billed quarterly.</p> <p>Determination of rates for Sandwick would require full assessment of revenue required for the service. If similar to other local CVWS service areas, current monthly minimum for single family residential in CVWS (\$22.17) includes 15m<sup>3</sup>. Tiered rates for consumption over 15m<sup>3</sup>. Lowest possible annual rate is \$266.04.</p>	<p>Metered fee structure. Billed quarterly.</p> <p>Determination of rates would require full assessment of revenue required for the service. System modifications would likely require rates to be <b>higher</b> than Royston's, where the current monthly minimum for single family residential is \$24.80, and additional tiered rates apply depending on usage beginning with 0-25m<sup>3</sup> at .83/m<sup>3</sup></p>

		<p>Water meters: average of approx. \$1200 per meter, 424 required (may be able to access grants, but not guaranteed)</p> <p>Capital Cost Charge to connect to CVWS (Bylaw 2350): \$3,086/unit for multi-family dwelling; \$3,702 for single family. Total residential CIC charges estimated at \$1,565,946.</p> <p>Annual parcel tax levied to assist with funding future capital works – estimate \$250 per parcel, per year.</p>	<p>Water meters: average of approx. \$1200 per meter, 424 required (may be able to access grants, but not guaranteed)</p> <p>Annual parcel tax levied to assist with funding future capital works – estimate \$250 per parcel, per year.</p>
Grant Funding	As an Improvement District, SWWD is <b>not eligible</b> for provincial/federal infrastructure grant programs.	CVRD is eligible for provincial/federal infrastructure grant programs.	CVRD is eligible for provincial/federal infrastructure programs.

<b>Table 3: GOVERNANCE</b>			
	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
Governance	Sandwich Improvement District Board of Trustees	<p>Comox Valley Water Committee (Area 'B' Director is a member) would determine all policy related to <b>water supply</b> for the local water service area.</p> <p>The CVRD's Electoral Area Services (EAS) Committee (Area 'B' Director is a member) would determine all policy related to <b>water distribution</b> for the local service area.</p> <p>Opportunity for an interim committee made up of SWWD Trustees to aid in the transition by providing input/advice to EAS Committee regarding distribution.</p>	<p>Advisory committee of the CVRD Board of Directors (anticipated) similar to Royston's and likely comprised of SWWD Trustees and Area 'B' Director. Mandate to provide advice to Electoral Area Services Committee or CVRD Board of Directors on <b>water supply and distribution</b> to the Sandwick water system.</p>

<b>Table 4: HUMAN RESOURCES</b>			
	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
<b>Staffing</b>	<p><i>CURRENT: The Improvement District employs one part-time Administrator, one part-time Administrative Assistant and three on-call maintenance staff (including two Trustees). Two summer students are hired to assist with maintenance. Total wages and benefits paid in 2014: \$89,216</i></p> <p><b>IMPACT:</b></p> <ul style="list-style-type: none"> <li>- Depending on the number of new wells required, increased maintenance staffing may be required.</li> <li>- Depending on the requirements for Water Sustainability Act, assistance may be required.</li> </ul>	<p><i>CURRENT: Management- GM of Engineering; Senior Manager of Water &amp; Wastewater; Manager of Water Services plus staff of Water Services department.</i></p> <p><b>IMPACT:</b></p> <ul style="list-style-type: none"> <li>- Facilities are already in operation; increase to Water Department staff estimated at 0.5 FTE (\$40,000/yr)</li> <li>- Consulting services &amp; I/T staff time to convert utility data and ensure compliance with capital asset accounting. Allow \$20,000 (one time).</li> <li>- Additional administration for billing/collections and customer support services. Allow \$20,000 annually.</li> <li>- Internal Support Services (per CVRD policy) – allow \$15,000 annually.</li> </ul>	<p><i>CURRENT: Management- GM of Engineering; Senior Manager of Water &amp; Wastewater; Manager of Water Services plus staff of Water Services department.</i></p> <p><b>IMPACT:</b></p> <ul style="list-style-type: none"> <li>- CVRD Water Services department would assume new responsibilities - operating the 3-5 new wells. Increase to Water Department staff estimated at 1.0 FTE (\$80,000/yr)</li> <li>- Consulting services &amp; I/T staff time to convert utility data and ensure compliance with capital asset accounting. Allow \$20,000.</li> <li>- Additional administration for billing/collections, customer support services and Committee support (meeting coordination, agendas, minutes, actions arising, reporting, etc). Allow \$35,000 annually.</li> <li>- Internal Support Services (per CVRD policy) – allow \$15,000 annually.</li> </ul>
<b>Staffing Costs</b>	<p>Responsibility for hiring, training and compensating staff would remain the responsibility of SWWD. Costs would be shared amongst Sandwick residents (minus the 282 properties switching to City water), and included in annual user fees.</p>	<p>All staff involved with the Comox Valley Water System are employees of the CVRD. Costs would be calculated as part of the revenue required to provide water to each local water service area, and included in annual user fees.</p>	<p>Under this option, responsibility for hiring, training and compensating staff to operate the Sandwick Water System would be transferred to the CVRD. Costs would be calculated as part of the revenue required to provide water to each local water service area, and included in annual user fees.</p>

<p><b>Customer Experience</b></p>	<p>Very little impact on interactions with the public initially – SWWD would carry on, billings/communications would remain largely unchanged. The personal and somewhat flexible structure of the SWWD would continue (i.e. rate reductions for seniors, locally elected Trustees managing the system, etc).</p>	<p>Transfer of operations to the CVRD. All related billings and public communications would come through the regional district. Communications and customer service may be more formalized and structured than SWWD residents are used to.</p>	<p>Transfer of operations to the CVRD. All related billings and public communications would come through the regional district. Communications and customer service may be more formalized and structured than SWWD residents are used to.</p>
<p><b>Community Connection</b></p>	<p>Access to decision makers and opportunities for community input is direct and local – neighbours speaking to neighbours.</p>	<p>Could be perceived as “most removed” from the local community in terms of decision making – decisions would be made by the Comox Valley Water Committee and/or regional district Board.</p>	<p>Local input to the decision-making process would be possible through an Advisory Committee – Sandwick Trustees or other local representatives could be involved in the committee.</p>
<p><b>Community Involvement</b></p>	<p>Opportunities for direct involvement under this option are high; however, as the existing Board of Trustees retires, replacement Trustees with the required expertise from the local area will be required to manage the system – this may be a challenge based on low turnouts at SWWD meetings and recent AGMs.</p>	<p>The community would have the lowest amount of opportunities for direct involvement under this option: management of the CVWS system is overseen by the Comox Valley Water Committee (Area B Director is a member) and the CVRD Water Services Department, which includes certified professional engineers and technical staff.</p>	<p>This option involves a medium level of opportunities for direct involvement: management of the system would be overseen by the regional Board of Directors (with input from a Sandwick Advisory Committee) and the CVRD Water Services Department, which includes certified professional engineers and technical staff.</p>

<b>Table 5: LEGAL</b>			
	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
<b>Regulatory/ Legal Framework</b>	<p><b>Drinking Water Protection Act</b> (BC Ministry of Health)</p> <p><b>Inspection / Monitoring</b> (Vancouver Island Health Authority)</p> <p><b>Governance</b> - Local Government Act / SWWWD Constitution &amp; Bylaws</p> <p><b>Operations / Fees &amp; Charges</b> – SWWWD Bylaws</p> <p><b>Water Licencing</b> (BC Ministry of Environment)</p> <p><b>Water Sustainability Act</b> adopted 2014 – new regulations expected in 2015/2016</p>	<p><b>Drinking Water Protection Act</b> (BC Ministry of Health)</p> <p><b>Inspection / Monitoring</b> (Vancouver Island Health Authority)</p> <p><b>Governance</b> – Local Government Act</p> <p><b>Operations / Fees &amp; Charges</b> - CVRD Bylaws</p> <p><b>Water Licencing</b> (BC Ministry of Environment &amp; BC Hydro)</p> <p><b>Water Sustainability Act</b> adopted 2014 – new regulations expected in 2015/2016</p>	<p><b>Drinking Water Protection Act</b> (BC Ministry of Health)</p> <p><b>Inspection / Monitoring</b> (Vancouver Island Health Authority)</p> <p><b>Governance</b> – Local Government Act</p> <p><b>Operations / Fees &amp; Charges</b> - CVRD Bylaws</p> <p><b>Water Licencing</b> (BC Ministry of Environment)</p> <p><b>Water Sustainability Act</b> adopted 2014 – new regulations expected in 2015/2016</p>
<b>Risk Areas</b>	<p>Establishing new well sources takes time, and requires approval of private landowners, which SWWWD already finds challenging. Finding and establishing the new well sources required for this option could be very difficult.</p> <p>SWWWD relies heavily on its Trustees and a small staff team – the capacity of the organization to maintain long-term operations is of general concern, particularly given increasing costs and complexity of operating drinking water systems.</p> <p>The modifications required for this option would likely consume most, if not all of SWWWD's cash reserves. SWWWD does have the power to borrow, but is not eligible for infrastructure grants.</p>	<p>Comox Valley Water Committee may not ultimately approve connection to the Comox Valley Water System.</p> <p>The Comox Valley Water System is currently on water restrictions – would the addition of the Sandwick area present any supply concerns?</p>	<p>Establishing new well sources takes time, and requires approval of private landowners, which SWWWD already finds challenging. Finding and establishing the new well sources required for this option could be very difficult.</p> <p>Risk of contamination can increase with the number of sources – this option involves 4-6 different well sources (Mitchell Rd plus 3-5 new sources).</p>

	<p><i>Risk of contamination can increase with the number of sources – this option involves multiple well sites.</i></p>		
<p><b>Liability</b></p>	<p><i>Having to borrow to finance the required modifications (if required) would increase SWWD's debt ratio (currently they have no debt) and impact their overall financial position.</i></p> <p>Replacement of water mains to meet design fire flow requirements is included in Koers' recommended long-term improvements.</p>	<p><i>The consultants have initiated discussions with the Ministry to determine if conversion to a regional district service would change the fire flow requirements.</i></p> <p><i>Update Sept 12/14: fire flow requirements are based on the diameter of the pipe and flow per second, so the structure of the jurisdiction providing the service does not appear to be a factor. Replacement of water mains to meet design fire flow requirements is included in Koers' recommended long-term improvements.</i></p>	<p><i>The consultants have initiated discussions with the Ministry to determine if conversion to a regional district service would change the fire flow requirements.</i></p> <p><i>Update Sept 12/14: fire flow requirements are based on the diameter of the pipe and flow per second, so the structure of the jurisdiction providing the service does not appear to be a factor. Replacement of water mains to meet design fire flow requirements is included in Koers' recommended long-term improvements.</i></p> <p><i>This option may require borrowing to finance the required modifications.</i></p>

<b>Table 6: SUMMARY OF FINANCIAL IMPACTS</b>			
	<b>Option 1 – Remain an Improvement District</b>	<b>Option 2 – Convert to Local Water Service Area; connection to Comox Valley Water System</b>	<b>Option 3 – Convert to Local Water Service Area; CVRD assumes responsibility for existing system</b>
<b>System Modifications</b>	<p>New Wells Estimates:  <b>Koers data:</b> 3-5 new wells; ranging between \$1,050,000 to \$3,150,000  <b>Sandwick data:</b> 1-2 new wells; ranging between \$100,000 and \$300,000</p> <p>Remainder of Estimated Modifications (See Table 1): \$150,000</p>	<p>Estimate of all modifications: \$307,000 (see Table 1)</p> <p>AC100 piping replacement contingency (if these pipes exist below the 50m contour in the system and won't withstand pressure increase) - \$150,000.</p>	<p>New Wells Estimate:            3-5 new wells; ranging between \$1,050,000 to \$3,150,000</p> <p>Remainder of Estimated Modifications (see Table 1): \$110,000</p>
<b>Fees &amp; Charges</b>	<p>\$505/ year as of 2015, this would need to increase by at least 30% to cover the loss of 282 ratepayers.</p> <p>Additional increases and/or borrowing may be necessary to finance new wells/system modifications.</p>	<p>if similar to other local CVWS service areas, lowest possible annual metered rate for a single family residential property is \$266.04 – final determination would require full assessment of revenue required.</p> <p>Annual parcel tax estimated at \$250/year to assist with funding for future capital improvements.</p> <p>Water meters – average approx. \$1200/property. (424 required)</p> <p>Capital Cost Charge (one-time) to join CVWS system. (\$3,086/unit for multi-family dwelling; \$3,702 for single family) Total residential CIC charts estimated at \$1,565,946.</p>	<p>if similar to other Royston, lowest possible annual metered rate for a single family residential property is \$297.60 – final determination would require full assessment of revenue required.</p> <p>Annual parcel tax estimated at \$250/year to assist with funding for future capital improvements.</p> <p>Water meters – average approx. \$1200/property (424 required)</p>
<b>Staffing</b>	<p>Total wages &amp; benefits in 2014: \$89,216</p> <p>Required increases: unknown, if any</p>	<p>Water Dept – estimate .5 FTE increase (\$40,000/yr)            Admin – initial conversion \$20,000            Billing/collections – allow \$20,000/yr            Support Services (per policy) – allow \$15,000/yr</p>	<p>Water Dept – estimate 1.0 FTE increase (\$80,000)            Admin – initial conversion \$20,000            Billing/collections/Committee – allow \$35,000/yr            Support Services (per policy) – allow \$15,000/yr</p>

<p><b>Related/Future Capital Considerations</b></p>	<p>Koers estimates \$4,096,905 for pipe replacement between 2026 and 2036; and \$2,168,890 for replacements between 2037 and 2070.</p>	<p>Koers estimates \$4,096,905 for pipe replacement between 2026 and 2036; and \$2,168,890 for replacements between 2037 and 2070.</p>	<p>Koers estimates \$4,096,905 for pipe replacement between 2026 and 2036; and \$2,168,890 for replacements between 2037 and 2070.</p>
<p><b>Grant Funding</b></p>	<p>As an Improvement District, SWWD is <b>not eligible</b> for provincial/federal infrastructure grant programs.</p>	<p>CVRD is eligible for provincial/federal infrastructure grant programs; provincial restructure assistance grant of approx. \$10,000 upon conversion.</p>	<p>CVRD is eligible for provincial/federal infrastructure programs; provincial restructure assistance grant of approx. \$10,000 upon conversion.</p>

