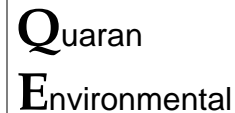


RDCO Area “East” Liquid Waste Management Plan *Options*

Public Information Meetings Sep 30 and Oct 1, 2008

Tim Forty, P.Eng., Quaran Environmental
Jan Enns, MA, Jan Enns Communications



RDCO Area “East” LWMP

What have we done so far?

- ◆ Completed Stage 1 !
 - ◆ Identified the LWMP areas
 - ◆ Identified issues and concerns
 - ◆ Identified possible options to resolve the issues and concerns
- ◆ Developing Stage 2
 - ◆ Costs and pros and cons developed for each option
 - ◆ The AC reviewed all the options and selected their “preferred solutions”

Objective For This Meeting

To provide information to help you decide how you want to manage Liquid Wastes (Sewage) in RDCO Area "East"

The options, or Preferred Solutions, recommended by the AC are included in this presentation

Cost Estimate Accuracy

- ◆ LWMP (Costs are rough estimates)
 - ◆ 20 -25% contingency
- ◆ Preliminary Design
 - ◆ 15-20% contingency
- ◆ Predesign
 - ◆ 10-15% contingency
- ◆ Final Design
 - ◆ 5-10% contingency

Cost
Estimate
Accuracy

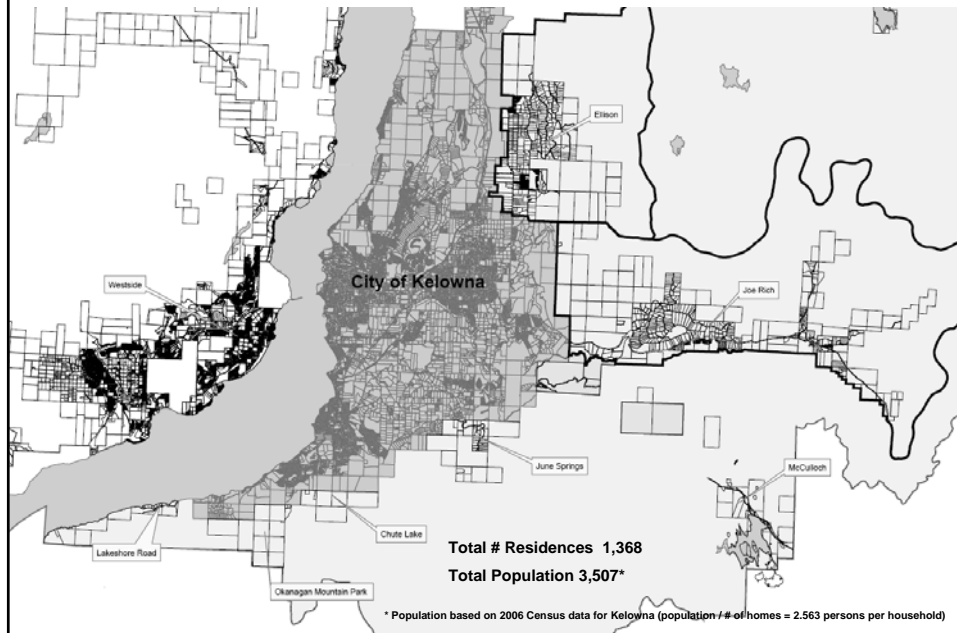
Lesser



Greater

Note: A community will need to recognize a problem exists and ask the RDCO for assistance to resolve it. Implementation will require people to request assistance *OR* for Health to mandate it.

LWMP Area



The Advisory Committee's Preferred Solutions

Specific Solutions:

With No Changes

Recommended By AC

Preferred Solutions with no changes

Serviced by sewer

- ♦ #4 Sunset Ranch (already serviced by the City)

Continue to utilize septic tank tile field systems

- ♦ #18 June Springs
- ♦ #19 McCulloch
- ♦ #20 Chute Lake & OK Mountain Park
- ♦ #21 Southern Tip of Lakeshore Road

Area Wide Solutions:

Recommended By AC

Preferred Solution #0

Status Quo: Leave everything as it is

Cost: No Change, no additional cost implications

Current

- ♦ Everyone currently served by septic tanks, or collection and treatment systems continues on in the same fashion (O&M)
- ♦ New lots using on-site disposal must be 1 Ha or larger in area (*OBWB & MCS - Ministry of Community Services*)
- ♦ New home construction would use septic tanks or existing systems if in a serviced subdivision

Note: May represent the first phase of a selected option

Preferred Solution #0

Status Quo: Leave everything as it is

Pros

- ♦ No additional cost
- ♦ Can form part of the interim solution for areas that do not currently have waste water issues

Preferred Solution #0

Status Quo: Leave everything as it is

Cons

- ♦ Nothing changes
- ♦ May not on its own resolve environmental issues
- ♦ No future planning

Preferred Solution #1

Public Education Programs

Cost: Small additional cost, \$26,000 / yr (\$17/parcel / yr) **Short term**

- ♦ Maintain status quo but reduce health and environmental impacts by developing public education programs:
 - ♦ Optimal septic tank operation and maintenance
 - ♦ Water conservation
 - ♦ Source control

Includes: Yearly mail-outs, promotions, website updating. Includes RDCO staff time, site visits, community meetings etc. Tracking septic tank pump-outs

Note: This cost applies to EVERYONE in the LWMP area

Preferred Solution #1

Public Education Programs

Pros

- ♦ Inexpensive, costs distributed over entire LWMP Area
- ♦ Should result in extended on-site system life
 - ♦ Replacement costs can be \$10,000 to \$25,000 or more
- ♦ Should delay need for sewer service
- ♦ Proactive and keeps public eye on the environment
- ♦ Includes septic tank survey component
- ♦ Implementation simple and quick

Preferred Solution #1

Public Education Programs

Cons

- ♦ Additional cost
- ♦ Relies on public to recognize that it is in their best interest to take the message to heart
- ♦ Probably not eligible for grants

Preferred Solution #2

Bylaws

Cost: Small additional cost, \$15,000 / yr (\$10 / parcel / yr)

- ♦ Maintain status quo but reduce health and environmental impacts by developing, implementing and enforcing bylaws:
 - ♦ Mandatory septic tank pump-out program Long term
 - ♦ Mandatory water conservation Long term
 - ♦ Mandatory source control Long term
 - ♦ Mandatory turnover of new STPs to RDCO Short term

Includes: Enhanced septic tank pump-out tracking

Note: This cost applies to EVERYONE in the LWMP area

Preferred Solution #2

Bylaws

Pros

- ♦ Inexpensive
- ♦ Implement fourth bylaw immediately
- ♦ Implement first three bylaws only if educational programs fail to produce satisfactory results
- ♦ Protects human health and the environment

Preferred Solution #2

Bylaws

Cons

- ♦ Additional cost
- ♦ Requires enforcement personnel to be effective
- ♦ Forces compliance as it is mandatory
- ♦ Probably not eligible for grants

Preferred Solution #3

Monitoring

Cost: Small additional cost, \$10,000 yr (\$7 / parcel / yr) Short term

- ♦ Establish a monitoring program to determine the health and environmental impacts from development in the LWMP area

Includes: Monitoring streams and wells and recording baseline data for trend determination. Actual monitoring programs need to be developed after consultation with environmental specialists such as hydrologists to determine location, sampling frequency, parameters to be monitored etc.

Note: This cost applies to EVERYONE in the LWMP area

Preferred Solution #3

Monitoring

Pros

- ♦ Inexpensive
- ♦ Probably eligible for grants
- ♦ Provides status of the environment in each area
- ♦ Indicates when and/or if a sewer system or other remedial measures are required

Preferred Solution #3

Monitoring

Cons

- Additional cost
- Requires ongoing monitoring program and data review

Specific
Solutions

Specific Solutions

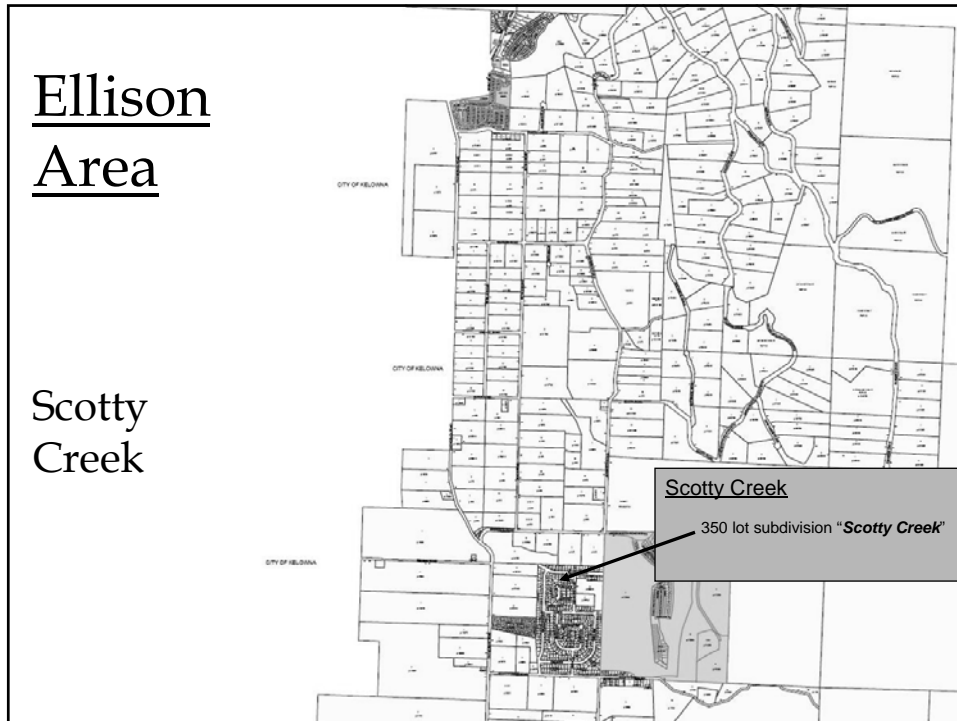
- ♦ Currently, there are no known sewage issues in any of the specific areas
- ♦ The “Preferred Solutions” shown below represent the Advisory Committee’s recommended approach IF and when sewage waste issues or problems should develop

Specific Solutions

- ♦ The ramifications and the costs involved underscore the need for support for the Area Wide Solutions which should delay the need for implementation of these area specific solutions
 - ♦ Sewer service for an area would only proceed if the citizens of that area petitioned the RDCO (or the City of Kelowna) for assistance or public health or environmental issues should arise that require the Medical Health Officer or the Minister of Environment to order that an area be sewerred

Ellison Area

Scotty
Creek



Preferred Solution #7

Scotty Creek serviced by City

Cost: \$4,643,000, (\$720 + O&M \$320 / lot/yr)

Short term

- ◆ Scotty Creek could petition the City of Kelowna for sewer service
 - ◆ City DCC per connection (\$4,675)
 - ◆ Local collection system which connects to City trunk main which runs through Scotty Creek area
 - ◆ Current City policy requires that Scotty Creek join the City in order to receive sewer service

Note: Scotty Creek has 345 residences and is currently at full build-out with no additional residences able to be constructed

Preferred Solution #7

Scotty Creek serviced by City

Pros

- ♦ Capacity designed into Sunset Ranch trunk
- ♦ Lower cost than septic system replacement
- ♦ Resolves sewage related environmental and health issues
- ♦ Eligible for MFA Loans
- ♦ Eligible for grant funding
 - ♦ All capital costs except City DCC are eligible: Cost about \$720/parcel /yr for 20 years

Preferred Solution #7

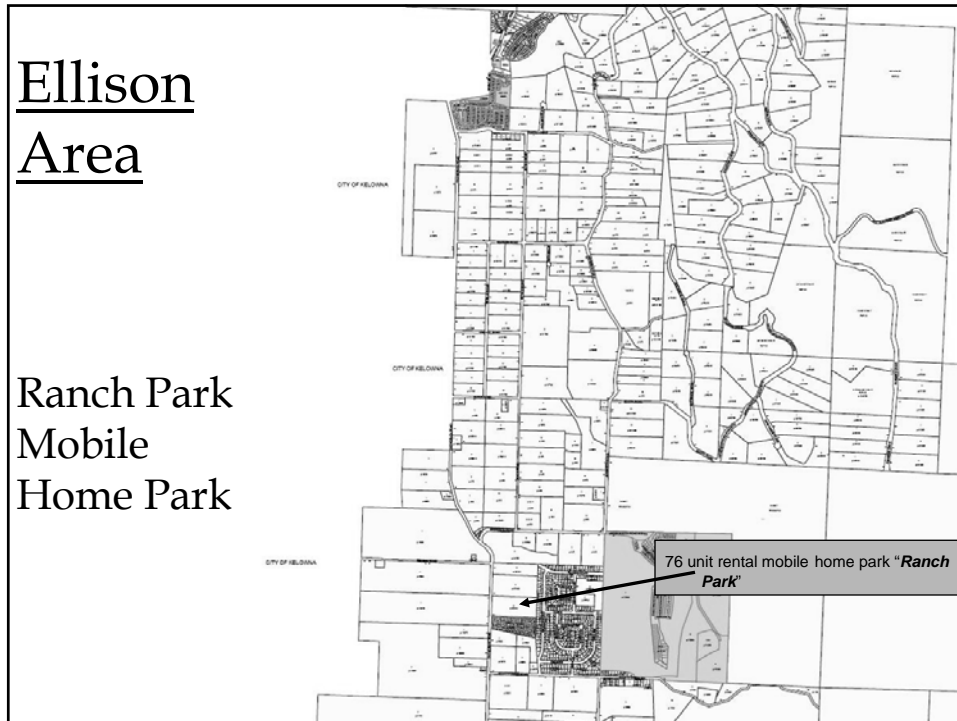
Scotty Creek serviced by City

Cons

- ♦ None

Ellison Area

Ranch Park
Mobile
Home Park



Preferred Solution #10

Ranch Park serviced by City

Cost: \$655,000 (\$520 + O&M \$320 / unit / yr)

Short term

- ♦ Ranch Park could petition the City of Kelowna for sewer service
 - ♦ City DCC per connection (\$4,675)
 - ♦ Local collection system which connects to City trunk main*
 - ♦ Current City policy requires that Ranch Park join the City in order to receive sewer service

Note: Ranch Park is a privately owned 76 unit mobile home park. Costs passed on as part of pad rental. Grant probable* for connection to trunk. MHP internal sewage collection system ineligible for grants*

Preferred Solution #10

Ranch Park serviced by City

Pros

- ♦ Capacity designed into Sunset Ranch trunk
- ♦ Lower cost than septic system replacement
- ♦ Resolves sewage related environmental and health issues
- ♦ Gravity connection from MHP to City sewer would be eligible for grant funding assistance
 - ♦ City DCC + internal collection system connecting to city trunk, would cost about \$750 / unit / yr for 20 years
 - ♦ With 2/3 grant funding for off site costs this drops to about \$520 / unit / yr for 20 years

Preferred Solution #10

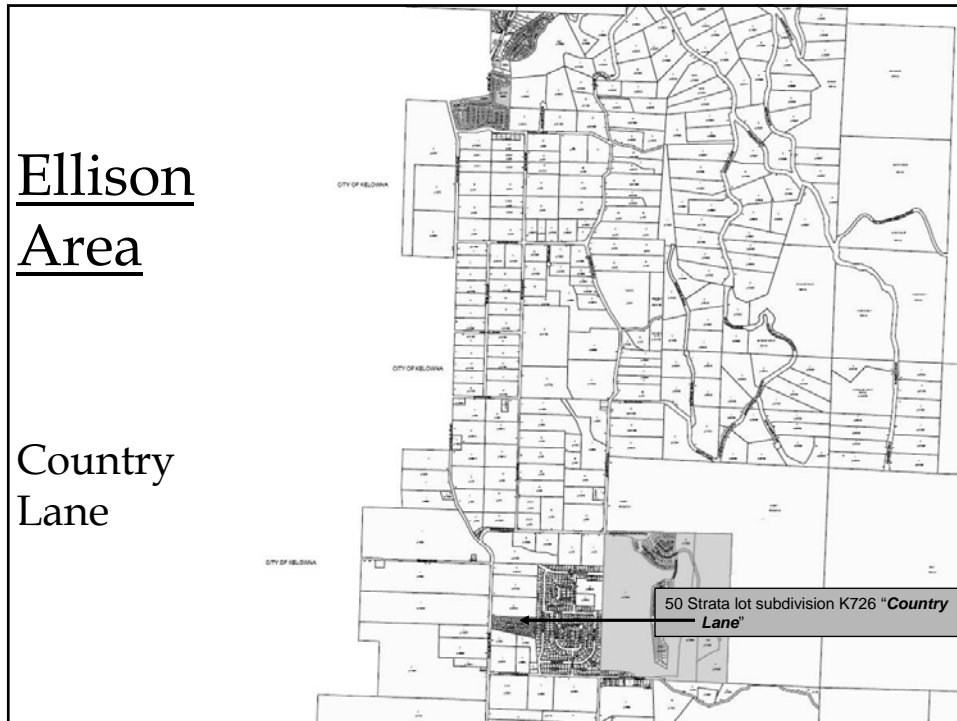
Ranch Park serviced by City

Cons

- ♦ None

Ellison Area

Country
Lane



Preferred Solution #12a

Country Lane serviced by City

Cost: \$533,750 (\$930 + O&M \$320 / lot / yr)*

Short term

- ♦ Country Lane could petition the City of Kelowna for sewer service
 - ♦ City DCC per connection (\$4,675)
 - ♦ Local collection system which connects to City trunk main
 - ♦ Current City policy requires that Country Lane join the City in order to receive sewer service

Note: Country Lane has 50 strata lot residences and is currently at full build-out with no additional residences able to be constructed.

Strata internal local sewage collection system ineligible for grants*

Preferred Solution #12a

Country Lane serviced by City

Pros

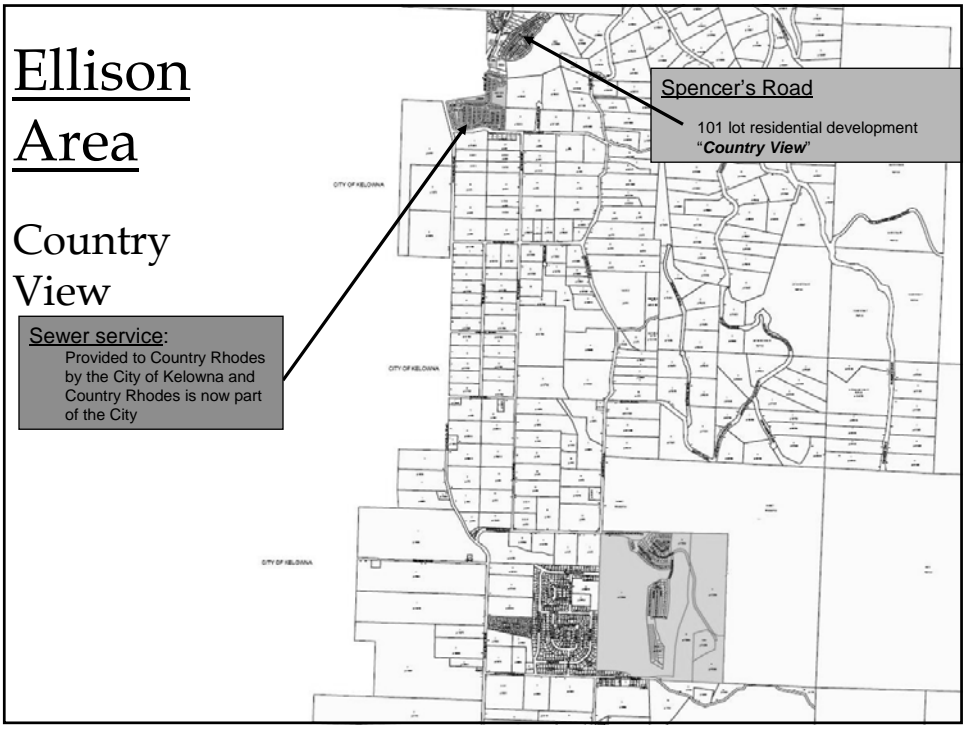
- ♦ Capacity designed into Sunset Ranch trunk
- ♦ Lower cost than septic system replacement
- ♦ Resolves sewage related environmental and health issues
- ♦ Eligible for MFA Loans
- ♦ Gravity connection from strata to City sewer would be eligible for grant funding assistance
 - ♦ City DCC + internal collection system connecting to city trunk, about \$930 / unit / yr for 20 years

Preferred Solution #12a

Country Lane serviced by City

Cons

- ♦ None



Preferred Solution #13

Country View serviced by City

Cost: \$1,230,000 (\$1,060 + O&M \$320 / lot / yr)* **Short term**

- ◆ Country View could petition the City of Kelowna for sewer service
 - ◆ City DCC per connection (\$4,675)
 - ◆ Internal local collection system, and
 - ◆ Connection to City trunk main
 - ◆ Country View must join the City as boundary expansion is required to receive sewer service

Note: Country View is a 101 lot strata development at full build-out. Septic systems are shared between 2 homes. Strata Council has imposed regular pump out requirements to minimize failures
 *Strata internal local sewage collection system ineligible for grants

Preferred Solution #13

Country View serviced by City

Pros

- ♦ Close to City sewer line
- ♦ Lower cost than septic system replacement
- ♦ Resolves sewage related environmental and health issues
- ♦ Eligible for MFA Loans
- ♦ Eligible for grants
 - ♦ City DCC + internal collection system connecting to city trunk, \$1,060 / parcel / yr for 20 years (Off site connection costs not broken out but would be eligible for 2/3 grant funding)

Preferred Solution #13

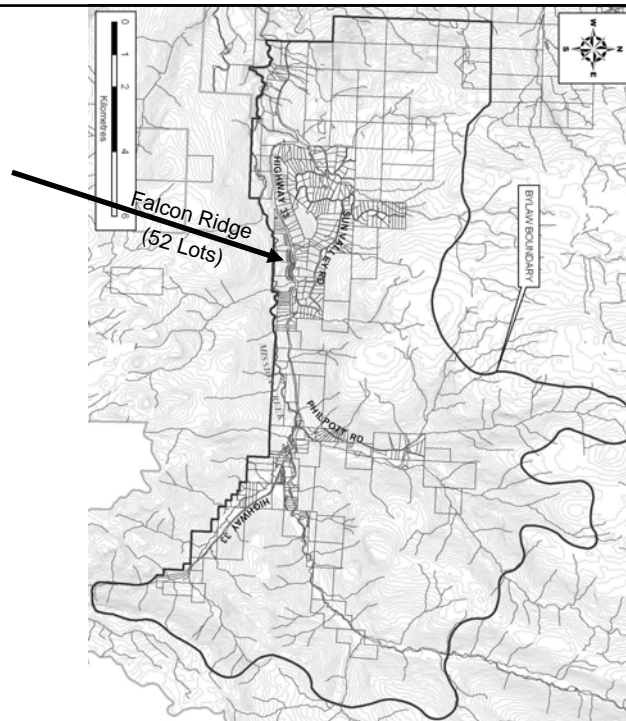
Country View serviced by City

Cons

- ♦ None

Joe Rich Area

Falcon Ridge



Preferred Solution #16

Falcon Ridge serviced by RDCO

Cost: \$2,080,000 (\$1,160 + O&M \$120 / lot / yr)

Very Long term

- ♦ Falcon Ridge could have sewer service (Septic system) provided by the RDCO
 - ♦ Collection system, lift station and trunk sewer
 - ♦ Septic treatment facility with infiltration for effluent dispersal

Note: Falcon Ridge is a 52 lot small lot subdivision with 51 homes currently constructed

Preferred Solution #16

Falcon Ridge serviced by RDCO

Pros

- ♦ Initially relies on Preferred Solutions 0 through 3
- ♦ Provides a solution if drinking water contamination concerns should become an issue
- ♦ Eligible for MFA Loans
- ♦ Eligible for grants
 - ♦ With 2/3 grant cost is \$1,160 /lot /yr for 20 years
- ♦ May be eligible for hardship grant
 - ♦ up to 75% of project cost
 - ♦ With 75% grant cost is \$870 /lot /year for 20 years

Preferred Solution #16

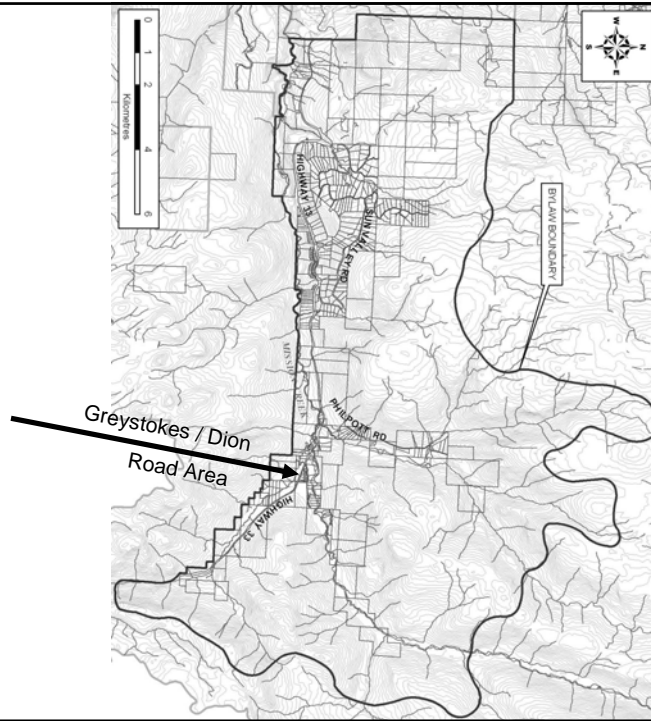
Falcon Ridge serviced by RDCO

Cons

- ♦ Community septic system does not provide the same level of treatment as an STP
 - ♦ Is quite expensive at about \$40,000 /lot
- ♦ On lot connection to sewer system will cost extra
- ♦ It may be difficult to find a suitable site for a tile field due to topography and poor soils
- ♦ Compliance with the Municipal Sewage Regulation may be a challenge due to difficult local soil conditions

Joe Rich Area

Greystokes /
Dion Road
Area



Preferred Solution #17

Greystokes/Dion Rd serviced by RDCO

Cost: \$1,300,000 (\$1,720 + O&M \$120 / lot / yr)*

Very Long term

- ♦ Greystokes/Dion Road Area could have sewer service (Septic system) provided by the RDCO
 - ♦ Collection system, lift station and trunk sewer
 - ♦ Septic treatment facility with infiltration for effluent dispersal

Note: Greystokes / Dion Road Area is a 22 lot small lot subdivision with 21 homes currently constructed. (No known environmental or health issues)

Preferred Solution #17

Greystokes/Dion Rd serviced by RDCO

Pros

- ♦ Initially relies on Preferred Solutions 0 through 3
- ♦ Provides a solution if drinking water contamination concerns should become an issue
- ♦ Eligible for MFA Loans
- ♦ Eligible for grants
 - ♦ With 2/3 grant cost is about \$1,720 /lot /yr for 20 years
- ♦ May be eligible for hardship grant
 - ♦ up to 75% of project cost
 - ♦ With 75% grant cost is about \$1,290 /lot /yr for 20 years

Preferred Solution #17

Greystokes/Dion Rd serviced by RDCO

Cons

- ♦ Community septic system does not provide the same level of treatment as an STP
- ♦ Cost is very high at about \$59,100 per lot

Preferred Solution #23

Stormwater

Cost: A "Needs study" must be conducted to identify further work that is required Long term

- ◆ Stormwater management in the plan area

Note: Stormwater management is not under study in this LWMP due to cost considerations BUT a commitment is recommended to ensure that stormwater issues are addressed

Preferred Solution #23

Stormwater

Pros

- ◆ Studies have been done that need to be reviewed for relevance to the plan area
- ◆ Existing RDCO stormwater management policies apply to new subdivisions
- ◆ Issues arising from the above can be addressed as necessary

Cons

- ◆ Lack of funding precludes inclusion of stormwater management in this LWMP

Preferred Solution #24

Agricultural Wastewater

Cost: None, as this issue is already being managed and if public education is needed it could be included in the proposed program for little additional cost Current

- ♦ Agricultural wastewater management in the plan area

Note: Agricultural wastewater management is already occurring in the LWMP area although the general public may be unaware of the procedures that must be followed. Intensive agriculture (Feed lots) has been identified as an issue that needs to be addressed

Preferred Solution #24

Agricultural Wastewater

Pros

- ♦ The issue is already being managed and there are protocols in place
 - ♦ Public education could be added to other programs for minimal extra cost to inform the public of the procedures for addressing agricultural issues

Cons

- ♦ The general public may be unaware that agricultural wastewater is already being managed

Additional Presentations

The options not supported by the AC are available, upon request, in a second presentation

Details for each of the “No-change” options are available, upon request, in a third presentation

What can I do?

Feedback on Options

The Advisory Committee has been working to provide an insight into what they believe is the best solution for the management of liquid wastes for each area within the Central Okanagan East LWMP boundaries. We need your input.

Please complete the questionnaire!

A Reminder!

LWMP Overview Summary

- ♦ A LWMP is a tool which allows the citizens of a community to understand the issues in their community, with respect to wastewater, and assists them in selecting the best option for the resolution of those issues
- ♦ A LWMP belongs to the community which developed it
- ♦ The job of the consultants *and* RDCO staff is to ASSIST in developing the LWMP, by providing clear, understandable, technical *and* cost information

Wrap-up!

- ♦ Questions?

For Further Information

- ♦ RDCO website www.regionaldistrict.com
- ♦ Telephone RDCO Engineering Services at (250)469-6327
- ♦ Or email lwmp@cord.bc.ca