# Jeff Churchill

From:	Yuval Sofer <yuvalsofer@gmail.com></yuvalsofer@gmail.com>
Sent:	Friday, November 30, 2012 6:50 PM
То:	Jeff Churchill; Planning Commission
Cc:	Robert Zeinemann
Subject:	lot 8 connection to CoR sewer line
Attachments:	Yuval2009-03-5.pdf - Adobe Acrobat Pro.pdf

Hi Jeff,

In response to DEYOUNG CAROLYN daughter appearance in opposition for proposal in last meeting, I wanted to provide a clarification for the record, as she is obviously interested in a sewer connection:

1. The proposal approval would actually enable her property a connection to Kirkland. Her property is just north to 73rd where the Kirkland sewer line turns west, but our <u>engineering analyses from 2009 suggest her</u> <u>property could adjoin Kirkland sewer connection</u>. Please see highlighted in yellow in the attached NBE report.

2. as discussed DEYOUNG was misinformed on Kirkland position, following by Rob Jammerman comment before he recollected the research history, and confirming his support. I hope my last emailed provided clarity this subject.

I've met Carolyn today, we discussed at length, and provided her with this report and other details she was not aware of on regarding connection feasibility, and I believe she is now better informed to decide on supporting the proposal.

That puts at 11 the number of Redmond properties that would be able to immediately connect to Kirkland line, and in support of the proposal.

In the next few days you will receive support letter from other property owners between 70th and 73rd streets.

Hope this helps,

Thanks, Yuval

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#### **Civil Engineering**



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March 5, 2009

Yuval Sofer Rose Hill Heights Development LLC 646 108th Avenue SE Bellevue, WA 98004

### RE: Rose Hill Community Development 7300 & 7306 132<sup>nd</sup> Avenue NE Sewer Feasibility

Dear Yuval,

This report summarizes an analysis of sewer service to the area that includes the proposed Rose Hill Community Development. The area of analysis comprises 16 parcels east of 132<sup>nd</sup> Avenue NE between NE 70<sup>th</sup> Street and NE 75<sup>th</sup> Street. The properties, formerly in unincorporated King County, border on the City of Kirkland and were recently annexed into the City of Redmond. The properties are developed as single-family residential and dispose of sewage through on-site septic systems. One exception is 7024 132<sup>nd</sup> Avenue NE (Lot 15 of the plat of Rose Hill Heights) which is connected to the City of Kirkland sewer.

The analysis included review of topographic survey by Mead Gillman and Associates, review of the City of Redmond sewer plan, review of City of Kirkland record drawings, and a site inspection. Four options for sewer service were identified and are discussed below.

### **Option 1 – Redmond Comprehensive Plan**

The current City of Redmond comprehensive plan proposes to extend the City of Redmond sewer system to serve the 16 parcels. The proposal includes construction of a new sewer main from an existing manhole near the intersection of 134<sup>th</sup> Avenue NE and NE 75<sup>th</sup> Street. The sewer would be extended west along NE 75<sup>th</sup> Street then south along 132<sup>nd</sup> Avenue NE. The new construction would include about 1,900 lineal feet of new sewer main.

Side sewers would extend to each parcel from the new sewer main and would cross a 24-inch water main that exists on the east side on  $132^{nd}$  Avenue NE. The depth of the water

main varies and is about 5.5 feet deep near NE 75<sup>th</sup> Street, 8.0 feet deep near NE 73<sup>rd</sup> Street and 7.0 feet deep near NE 70<sup>th</sup> Street. The side sewers can generally cross above the water main and still provide adequate gravity flow and soil cover due to the terrain slope of the properties. The northern three properties however have flat to adverse terrain and front a shallower section of water main. Therefore the new sewer main in 132<sup>nd</sup> Avenue NE would need to be at about 10 feet deep nearer to NE 75<sup>th</sup> Street to allow the side sewers to cross under the water main.

The advantage of this plan is that the new Redmond properties would be served by a Redmond sewer.

A disadvantage of the plan is that it would result in about 600 feet of parallel Kirkland and Redmond sewers, an obvious inefficiency. Both sewers would be in the west half of the right-of-way so as to maintain separation from the existing water main. Construction in  $132^{nd}$  Avenue NE, a collector arterial, would also be disruptive to traffic and would require a full-street overlay.

The estimated construction cost for this option including side sewers is \$591,000.

# **Option 2**

This option makes use of existing Kirkland sewers to serve most of the parcels. The existing sewer in 132<sup>nd</sup> Avenue NE would serve nine of the parcels, and five parcels would be served by an extension of the Kirkland sewer from NE 74<sup>th</sup> Street. The two parcels that front onto NE 75<sup>th</sup> Street would be served by an extension of the Redmond sewer. The total length of new sewer main would be about 1,060 feet.

The advantages of the option are the reduced disruption to  $132^{nd}$  Avenue NE and avoidance of installing Redmond sewer in Kirkland right-of-way. More than half the lots would readily connect to the existing Kirkland sewer in the fronting road. One lot, 7024  $132^{nd}$  Avenue NE, has already been connected to the Kirkland sewer since 2002.

A disadvantage is that the sewer extended from NE 74<sup>th</sup> Street would be shallow; only about 3.5 to 4.0 feet deep. At least three of the five lots served by the sewer extension may require either lot fill or private pump systems.

The estimated construction cost for this option including side sewers is \$408,000.

# Option 3

Option 3 is similar to Option 2 except that the City or Redmond sewer is extended into  $132^{nd}$  Avenue NE to collect the five northern parcels that do not already front the existing sewer. Under this scenario nine parcels connect to the Kirkland sewer and seven to the Redmond sewer. The total length of new sewer main is about 1,180 feet.

This option would result in more disruption to 132<sup>nd</sup> Avenue NE that Option 2; 430 feet of

sewer in that road as compared to 250 feet. An advantage would be that the sewer could be constructed deeper than for Option 2 and would more readily facilitate gravity flow for the northern lots of the study area.

The existing Kirkland sewer cannot be effectively extended north from the manhole at the intersection of 132<sup>nd</sup> Avenue NE and NE 73<sup>rd</sup> Street because it is shallow at that location. The depth of the manhole is 4.2 feet. It could, however, be possible to construct a small extension to serve 7324 132<sup>nd</sup> Avenue NE (Lot 8) if that lot desires a connection prior to the extension of the Redmond system.

The estimated construction cost for this option including side sewers is \$449,000.

### **Option 4**

Option 4 makes use of a 30-foot wide elongated parcel that abuts the east boundary of the study area. Under this option a City of Redmond sewer main is extended south inside the strip of land from a new main in NE 75<sup>th</sup> Street. 580 feet of sewer would be constructed in NE 75<sup>th</sup> Street and 1,080 feet under private property.

All parcels would be connected to the Redmond sewer system except that 7024 132<sup>nd</sup> Avenue would continue its connection to the Kirkland sewer. The most southwest parcel, 13202 NE 70<sup>th</sup> Street, would connect to an existing sewer in NE 75<sup>th</sup> Street, although it may require a pump.

A disadvantage of this option is that it would require either the purchase of the strip of land (0.8 acres) or the purchase of an easement. The terrain slope also works against this option as 12 of the parcels adjacent the new sewer slope downwards to the west away from the sewer. The grade drop from east to west along the length of the properties varies up to about 10 feet. The strip of land is situated on a topographic ridge. The sewer would require installation at a depth of about 16 feet to serve the properties and each property would require a backflow preventor.

The estimated construction cost for this option including side sewers is \$256,000. The cost does not include purchase of the land. There would also be an additional cost to the home owners to connect to the deep side sewers.

### Conclusion

Option 3 which includes dividing the service between the Cities of Kirkland and Redmond is considered the most favorable option. This option avoids the inefficiencies of duplicate sewer systems by making use of the existing sewer infrastructure. The extension of the Redmond sewer is desirable to ensure gravity flow to the north seven parcels and the south nine parcels can connect directly to Kirkland sewer.

Please call me if you have any questions.

Very Truly Yours,

# NICK BOSSOFF ENGINEERING

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Nick Bossoff, P.E. Civil Engineer







