

HJA Water Management Consulting

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To: Council, District of Oak Bay

From: J. A. (Jack) Hull, HJA Water Management Consulting, Project Manager

Date: June 8, 2016

Subject: Uplands Combined Sewer Separation Project – Supplementary Information

PROJECT OVERVIEW:

The provincial government's Municipal Wastewater Regulation requires all BC municipalities to have separate stormwater and sanitary sewer systems. Compliance with the provincial regulation is mandatory for the District of Oak Bay.

McElhanney, Project Engineers, brought forward six technical options:

- a new, deeper, gravity sanitary sewer system, the existing sewer would carry stormwater;
- a new, deeper gravity system for stormwater, the existing sewer would carry sanitary sewage;
- a low pressure sanitary system and existing sewer would carry stormwater;
- shallow gravity stormwater sewers, pumped where necessary, and existing sewer would carry sanitary sewage;
- a new shallow gravity sanitary sewer system, pumped where necessary, and existing sewer would carry stormwater;
- a new shallow gravity sanitary sewer system, community pump stations where necessary, and existing pipes would carry stormwater.

BACKGROUND:

Extensive public consultation and engagement on the merits and considerations of each option took place over a two month period last fall. Public feedback was collected at several open houses and through an online survey, and presented to Council at a dedicated Committee of the Whole meeting in February. To help Council narrow down the six options, it was determined that more information was necessary to inform a decision.

Council asked the project team to:

- Pursue MLA Dr. Weaver's offer to facilitate the presentation of the staged sewer separation implementation plan to the Minister of Environment; and advise the Capital Regional District of the District's approach to the Minister.
- Prepare a report about the effect of services installation on the mature tree canopy.
- Arrange an educational session on horizontal directional drilling.
- Prepare to conduct a survey of property owners on easements; report back to Council regarding the content of communications with easement holders.
- Undertake a geotechnical study of municipal property in the project area.

This report reviews the issues, makes recommendations on the findings, and identifies next steps.

Meeting with MLA Dr. Andrew Weaver and Minister of Environment, Mary Polak

In response to public requests to pursue with the Ministry of Environment a request for an exemption from the Municipal Wastewater Regulation (MWR) that requires the District of Oak Bay (the District) to eliminate the combined sewer in the Uplands neighbourhood, Council directed staff to set up a meeting with MLA Dr. Andrew Weaver to explore his interest in this request.

The Mayor, members of Council and representatives of property owners in the Uplands neighbourhood met with Dr. Weaver who stated clearly that he would not support a request to the Minister of Environment for an exemption from the MWR and strongly encouraged the District to proceed with the separation of the combined sewers. Dr. Weaver offered to facilitate a follow up meeting with the Minister of Environment to seek support for a staged project implementation approach being considered by the District to comply with the provincial government directive.

The meeting with the Minister was held on May 19, 2016. In attendance from the Ministry of Environment were Minister Mary Polak, the Deputy Minister, and the Assistant Deputy Minister. Attendees from Oak Bay included the Mayor, CAO, Project Manager, the Capital Regional District's (CRD) General Manager of Parks and Environmental Services and Dr. Weaver. The Mayor updated the Minister on progress to date on the sewer separation project and in particular the District's plan to separate the combined sewer in phases over the next 20 years, depending on funding. No objection was expressed to this phased approach. It was agreed that the District would work toward including the Oak Bay plan for sewer separation in the next amendment to the CRD's Core Area Liquid Waste Management Plan (possibly later this fall) rather than as a separate amendment request.

Protection of Mature Trees

At the May 16, 2016 Committee of the Whole staff presented a report entitled '*Uplands – Assessing Service Installs and Tree Damage*'. Out of the 91 properties where separate sanitary and stormwater sewers have been installed, only 2 properties show evidence of tree damage due to sewer pipe installation.

Staff recommend that during the construction phase of the sewer separation project, laterals be located so as to minimize potential risks to mature vegetation. This may include pipe installation using non-invasive methods such as horizontal directional drilling as appropriate.

Horizontal Directional Drilling (HDD)

At the May 16, 2016 Committee of the Whole meeting, Council received an educational presentation on HDD. Mr. David O'Sullivan President of PW TRENCHLESS CONSTRUCTION INC. presented an overview of the various trenchless technologies including: cured in place pipe rehabilitation; slip lining; pipe jacking; pipe bursting; and horizontal directional drilling.

Mr. O'Sullivan's presentation focussed on the application of HDD in relation to the Uplands Sewer Separation project. He addressed space requirements for the HDD rig and the entrance

and exit slopes, and the geotechnical conditions in Uplands area. He shared the following observations:

- Cobbles were evident in the subsurface soils which would make maintaining line and level of the drill virtually impossible;
- Absence of local HDD contractors would add additional costs to the project.
- Possible use of HDD on private property may be appropriate for the construction of pressurized, small diameter sewer lateral connections from the property line to the house in specific locations where line and level are not critical.
- Use of HDD for sewer laterals may also minimize potential damage to landscaping and mature trees.

Mr. O'Sullivan's presentation indicated that while HDD may have some application on private property, HDD is neither a technically nor a financially feasible solution for the District to consider as part of the Uplands Combined Sewer Separation project on municipal land.

With the information presented, staff recommend that the use of HDD for the new sewer installation not be considered.

Survey of Property Owners on Easements:

Excluding the use of easements was one of the project assumptions made by McElhanney in defining the technical options for separating the combined stormwater and sanitary sewer system in the Uplands.

Through the public engagement, some impacted property owners asked Council to reconsider the utilization of the existing easements in the solution to potentially mitigate the requirement for either a sanitary or stormwater pump installation.

In response to a Council resolution, staff embarked on a review of the easements in the Uplands to determine impacts and responsibilities for the District.

Easements:

The Uplands neighbourhood has evolved over the past 100 years, and over that period of time, sequential easement documents were developed reflecting varying requirements. Upon preliminary review, the District does appear, under the existing easement agreements, to have the right to install a second pipe within the easement areas; however, this is subject to there being sufficient space available.

As previously presented to Council, key to making a decision are the dimensions of the existing century-old easements. Existing easements are 5 feet and 10 feet wide - not sufficiently wide to install a second pipe without significant impact on private property. A new wider easement would have to be negotiated with one or both property owners abutting an easement depending on the location of the existing pipe within the easement. The wider easements would have to be cleared to permit construction. (Refer to Attachment 1).

Also as previously presented to Council, the existing easements contain mature tree, hedges, stone walls, driveways etc. Restoration of the new wider easements could represent a

significant cost increase to the District such that construction in the easements would be more expensive than in the roadways. (Refer to Attachment 2).

Given the need to negotiate additional easements, the financial and environmental cost of clearing and restoring the easements, it is recommended that no further consideration be given to the use of easements for the sewer separation project.

Geotechnical Study:

At the May 24 Council meeting, Council approved the award of a \$36,351 contract to WSP Canada Inc. to undertake a geotechnical study on municipal property in the Uplands neighbourhood. Data collected in June will help further inform McElhanney's final report and recommendation to Council on the option for the separation of the combined sewer. WSP Canada, based in Victoria, will present their report at an upcoming Council meeting. Notification of the commencement of this work is on the District website.

ONGOING PROJECT WORK:

- **Storm Water Management Plan**

As part of a District-wide stormwater management plan, properties on the waterfront which have historically directed stormwater runoff by pipe to the shoreline will be considered as part of this comprehensive planning process.

NEXT STEPS:

- **McElhanney's Final Report – Technical Option Recommendation**

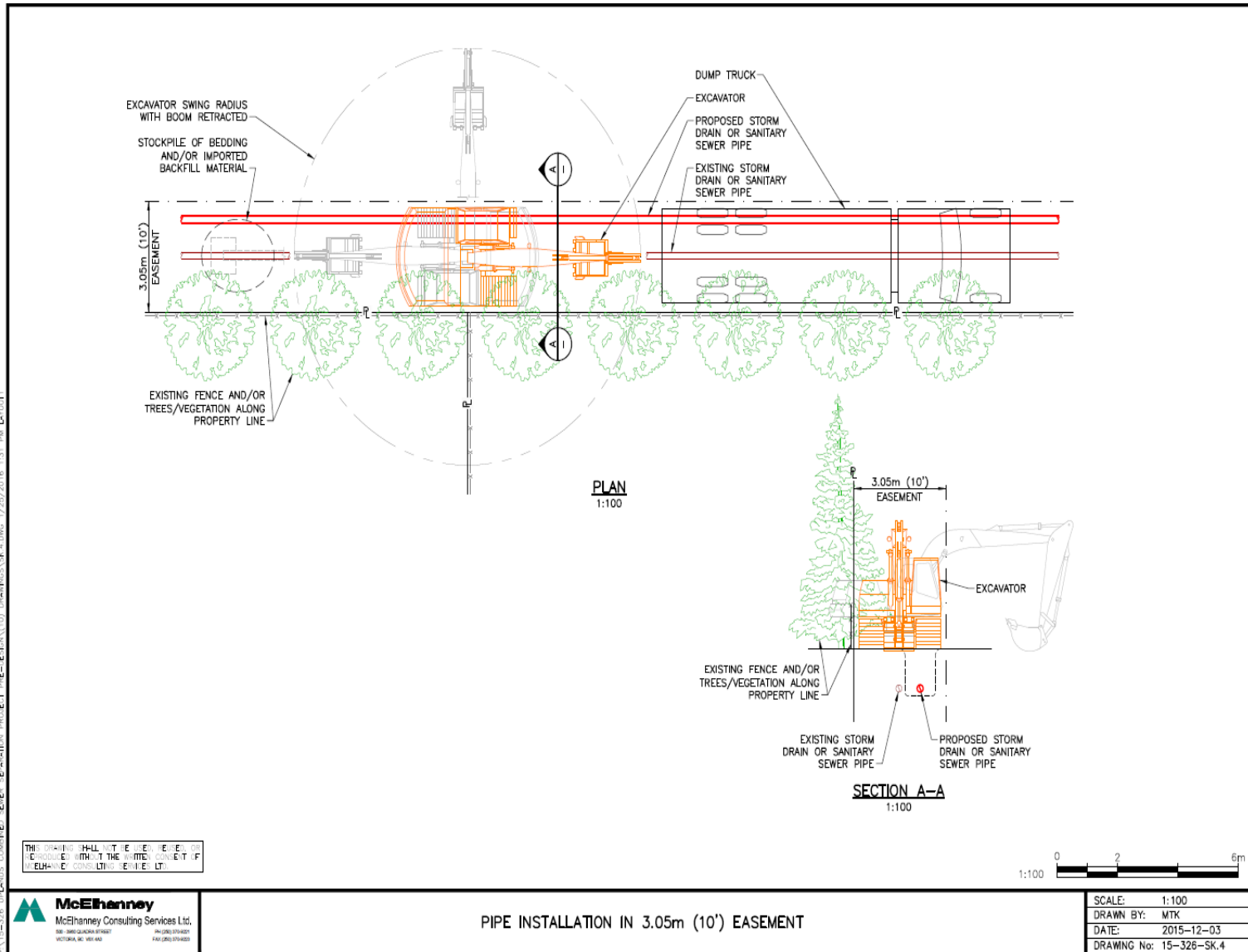
On completion of the geotechnical investigation, McElhanney will submit their final report taking into consideration the findings of the geotechnical investigation. This final report will be presented to Council in the fall with a summary of all the considerations and investigations leading to a recommended option for separating the Uplands combined sewer for Council decision.

SUMMARY OF RECOMMENDATIONS:

1. It is recommended that the District work towards providing a sewer separation plan with a phased approach for consideration in the next amendment to the Capital Regional District's Core Area Liquid Waste Management Plan.
2. It is recommended that, at the time of construction, property owners be consulted on the location of sewer lateral connections to the new sewer, to minimize the risk to mature trees and other vegetation.
3. It is recommended that no further consideration be given to the use of horizontal directional drilling for the new sewer installation on municipal property, with the exception of small diameter lateral connections from property lines as appropriate.
4. It is recommended that no further consideration be given to the use of easements for the sewer separation project; and further, that a survey of property owners on easements is no longer necessary.

ATTACHMENT 1

Pipe Installation in 3.05m (10 foot) Easement



ATTACHMENT 2

Views of Typical Easements in the Uplands



