# Corporate Report

**NO: R291**

**COUNCIL DATE: December 6, 2004**

## REGULAR COUNCIL

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| TO: | **Mayor & Council** | DATE: | **December 1, 2004** |
| FROM: | **General Manager, Engineering** | FILE: | **5250-00** |
| SUBJECT: | **Utility Service Connection Replacement at time of Building Reconstruction/Major Renovation** | | |

### RECOMMENDATION

1. That Council approve the practice of requiring that utility service connections older than 30 years be replaced when the lot is being redeveloped, or when an existing building is renovated with construction value over $100,000.

2. That staff bring forward the necessary changes to the Utility By-laws for recommendation.

### INTENT

To establish a City practice of requiring new water, sewer, and storm drainage service connections whenever a property is being developed, redeveloped or a major renovation is taking place.

### BACKGROUND

Pipe materials have dramatically changed over the last fifty years with new materials introduced in the past 30 years that last significantly longer compared to other less resistant materials that were installed in the past. Concrete and vitrified clay pipes were used commonly in the first half of the twentieth century for sewer. Asbestos Cement (AC) pipe has been used for both water and sewer in the fifties, sixties and early seventies until it was not longer used because of the health hazard concern with the pipe workers. No-Corrode pipe, made of a bituminous fibre material, was introduced during the Second World War when resources were scarce, and was commonly used in the Lower Mainland for sewer connections in the fifties and early sixties. A number of these older sewer connections, primarily the No-Corrode ones, have collapsed and caused sewer back-ups in recent years as they have reached the end of their life span.

In 2004, the City initiated a contract to replace a number of the No-Corrode sewer connections in one of the older areas in the City.

### DISCUSSION

Last year, the City issued over 2,500 permits for demolishing and rebuilding houses on existing lots. Approximately half of these homes had service connections that were made of non-suitable material, or were older than 30 years.

The older pipe materials mentioned above have a design life span ranging from 30 years to 50 years. The older pipe materials were installed in the 1950s, 60s, and early 70s. In the mid-1970s new more durable materials (primarily PVC pipe) became available and moved into general usage. Consequently, the connections using the older materials are now reaching the end of their service life. Using an age of 30 years as the trigger for requiring a replacement service will deal with the issue of service life and capture the point-in-time when material specifications changed.

The most appropriate and cost effective time to replace the service connections is when the lot is redeveloped or when a major renovation costing more than $100,000 is being carried out on an existing building. If this is not done, the new internal plumbing for the new building will be connected to an old service connection with a relatively short service life remaining with a future liability for the City and a risk to the new homeowner.

**Options for Replacement**

To avoid the liability and inconvenience of the service connection collapsing during the lifespan of the new house, two options are available:

1. Require the proponent to replace the connection at the time of rebuilding the house. This option will cost the builder approximately $5,000, $4,000 and $2,000 per substandard connection for sewer, storm and water respectively.

2. The utilities replace the connection at the time of rebuilding the house. This option could cost the utility $11,000,000/year, effectively doubling City utility costs and increasing the utility rates by up to 32%.

Failure to replace these connections at the time of house rebuilding will place additional burden on the utility in future years for eventual replacement, as well as inconvenience for our customers by potentially exposing them to backups or loss of service and the disruption of future construction with associated damage to front yard and boulevard landscaping. The total cost to replace all older connections as they reach the end of their lifespan is projected at $240 million.

Many Cities have similar requirements, and the following table summarizes them:

| City | Criteria for Replacement | Water | Sewer | Storm |
|---|---|---|---|---|
| Vancouver | Older than 19 years | Yes | Yes | Yes |
| North Vancouver | Older than 20 years and $50,000 Renovations | Yes | Yes | Yes |
| West Vancouver | Older than 29 years | Yes | Partial | No |
| Delta | Older than 25 years | Yes | Yes | Yes |
| New Westminster | All demolitions | No | Yes | Yes |
| Coquitlam | | N/A | Yes | N/A |

To minimize risk for future homeowners, staff have been recommending to builders to reconstruct the storm connection when they are found to be substandard. All developers have been following this recommendation to safeguard their projects and clients.

In summary, the rationale for replacing old substandard service connections are:

- All pipe materials have a finite life span;
- Best and most cost-effective time to replace service connection is when the lot is being redeveloped or the house reconstructed;
- Some previously used pipe materials are inferior or non-suitable, i.e., No-Corrode pipe, Clay or AC pipe and Galvanized Iron water pipe;
- If ignored, these 23,000 connections represent a future City utility liability of over $240 million;

- Most customers understand the rationale for this requirement when they are making a significant investment into a new home; and
- Requiring the property owner/builder to reconstruct the utility connection better reflects user pay and avoids passing on the burden to other existing users that have paid for a suitable connection.

**CONCLUSION**

We recommend that utility service connections older than 30 years be replaced when the lot is redeveloped or when an existing building is renovated with construction value costing more than $100,000.

Paul Ham, P.Eng.
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