



CITY OF RICHMOND

REPORT TO COMMITTEE

TO: Public Works and Transportation Committee

DATE: February 7, 2000

FROM: Jeff Day, P. Eng.
Director, Engineering

FILE: 6400-01

RE: Steveston Sanitary Sewer Rehabilitation By The Design-Build Approach

STAFF RECOMMENDATION

That sanitary sewer main rehabilitation in the Steveston area proceed utilising the Design/Build approach for project procurement.

Jeff Day, P. Eng.
Director, Engineering

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Sewers & Drainage	Y ☐ N ☐	

STAFF REPORT

ORIGIN

In recent years, Engineering staff have been inspecting the condition of the City's existing sanitary sewer pipes using Closed Circuit Television (CCTV) to view the interiors of the sewers. The inspection reveals that sewers in the Steveston area are in poor condition, but repair of many of these sewers may be expensive and difficult because they are located in the rear of developed lots. Accordingly, staff are considering undertaking these repairs using alternative strategies other than conventional open cut repair. In order to solicit proposals for alternative strategies from private industry experts, staff propose to undertake the Steveston sanitary sewer rehabilitation project by the Design/Build approach.

ANALYSIS

Conventional open cut construction for sanitary sewer rehabilitation may prove very expensive or disruptive to residents in the Steveston area because many of the sewer pipes may be in the rear of landscaped yards or under high water table. A strategy combining open cut, different sewer alignments, and/or alternative technologies for sewer construction may prove more cost effective and less disruptive than open cut sewer repairs alone. The alternative technologies may include several trenchless technologies including pipe bursting, directional drilling, micro-tunnelling, horizontal auger boring or sewer re-lining.

The traditional administrative approach to public works construction is to prepare an engineered design, and then to commission a construction crew, either a City crew or a contracted crew, to undertake construction based on the design. An alternative approach for project procurement is the Design/Build approach.

The Design/Build Approach

The Design/Build approach is an alternative procurement process for design and construction services. Instead of the traditional process where design engineers prepare contract documents and drawings for tender, the Design/Build approach solicits detailed proposals from pre-qualified proponent teams comprising designers and contractors to deliver a complete design and construction solution for the project. The shortlist of pre-qualified proponent teams (usually three teams) is selected, based on submission and evaluation of their credentials in response to a Request For Expressions of Interest (RFEI).

The pre-qualified proponent teams are provided with a Request for Proposal (RFP) by the Owner, the City of Richmond. The RFP outlines the scope of the project, the criteria to be used in selection of the successful proponent, the performance specifications required of the proponent in undertaking the project, and the form of agreement under which the project will proceed.

It is expected that the Design/Build approach will result in a project providing equal or better performance, at equal or lower cost, in equal or less time because combining designers and builders on a single proponent team motivates them to collaborate. Innovative designs which are also practical and cost-effective to build are the expected results. To realise the potential benefits of Design/Build, projects with high opportunity for innovation and alternatives should be selected.

Recent experiences of the Ministry of Transportation and Highways (MoTH) with the Johnson Mariner and Westview interchanges, and the District of Chilliwack with the Sewage Pump Station No. 10 and Promontory Reservoir projects indicate potential benefits in using the Design/Build approach. MoTH found Design/Build resulted in earlier project delivery at similar cost to the traditional approach, while Chilliwack found cost savings in addition to earlier project delivery.

The Steveston sanitary sewer rehabilitation project was selected for the Design/Build approach from Richmond's capital program because:

- The project can be contained within a defined area.
- There is scope for many alternative technologies and alignments for sewer construction which may minimise cost and disruption to neighbourhoods.
- The project results can be compared to conventional sewer construction in similar areas.
- Lessons learned on the project can be used for other similar sewer rehabilitation projects either by the Design/Build or conventional design/tender/construct approach.

It is important to note that the Design/Build approach does not necessarily result in the award of a contract to the lowest bidder, as is the norm for the traditional public tender. This is because different products, or performance may be offered by the proponents' Design/Build proposal. Accordingly, the review of each proposal by key staff in accordance with the criteria defined in the RFP is essential in selection of the most cost-effective and technically sound proposal. The selection process must consider long term maintenance and performance, as well as present day construction costs.

Upon Council's approval to proceed with the Design/Build process, staff will retain a consultant experienced in Design/Build to act as Owner's Engineer for preparation of the Design/Build RFEI, RFP and performance specifications.

This will be followed by issue of the RFEI, RFP, proposal evaluation, and potential award of a contract to a successful proponent subject to Council approval.

FINANCIAL IMPACT

The Steveston Sanitary Sewer rehabilitation project is estimated to cost \$1,087,000 and is included in the 2000 capital program. No other financial impact is anticipated.

CONCLUSION

The Steveston sanitary sewer rehabilitation project is an appropriate project to utilize the Design/Build approach because the project is well defined, work can be confined to specific areas, and there is ample opportunity for Design/Build teams to propose innovative, cost-effective alternative solutions with potential benefits, such as minimal disturbance to neighborhoods.

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