CITY OF RICHMOND

REPORT TO COMMITTEE

To PWT - Aug 22, 2001

TO: Public Works and Transportation Committee **DATE:** July 23, 2001

FROM: Steve Ono, P.Eng. **FILE:** 6340-20 - R01404
Manager, Engineering Design & Construction

RE: **Approval of an Additional 2001 Watermain Replacement Project**

STAFF RECOMMENDATION

That $300,000 of excess water utility funding from 1998 Water Utility Bylaw #6911 be allocated to replace an additional 1.2 kilometres of asbestos cement watermain in 2001 for advancement of the Mores subdivision watermain replacement program.

Steve Ono, P.Eng.
Manager, Engineering Design & Construction

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Public Works - Water ..... Y ☑ N ☐	
Finance ..... Y ☑ N ☐	

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STAFF REPORT

ORIGIN

The program to replace 9 kilometres of ageing, maintenance intensive asbestos cement watermain in the Mores subdivision commenced in 2000 and is scheduled for completion by the end of 2005, subject to Council's yearly approval of funding for this program. In 2001, Council approved $475,000 for replacement of approximately 1.6 kilometres of asbestos cement watermains in the Mores subdivision under this program. City forces have completed this project well ahead of schedule at an estimated final cost of $400,000.

The purpose of this report is to obtain Council approval to advance the next phase of watermain replacement in the Mores subdivision.

ANALYSIS

In past years, typical asbestos cement watermain replacement costs within older subdivisions was approximately $500,000 for 1.6 kilometres or $312 per metre. In the 2001 Mores Watermain Replacement capital project, the final estimated cost for replacement of approximately 1.6 kilometres is $400,000 or $250 per metre, a 20% improvement over 3 years ago.

The improvement demonstrated by City forces is attributable to several factors:

1. Increased Proficiency

   As a result of the high volume of asbestos cement watermain replacement projects completed by City forces over the past three years, significant improvements have been realized because of the additional practice and experience. We anticipate similar or better production by City forces in future asbestos cement watermain replacement projects.

2. Innovation

   Reduced cost and minimal disturbance to residents has resulted from the use of new technologies and techniques such as:

   - directional drilling of watermain services;
   - vactor trucks and light equipment to minimize site disturbance during excavation;
   - new types of PVC pipe and fittings which require less labour to install; and
   - taking advantage of different machinery for backfilling trenches.

   The most productive innovation has been the directional drilling of watermain services. Road cuts for water service installations have been virtually eliminated, thereby minimizing impacts to asphalt pavement.

3. Team Building

   The sense of team built amongst staff has been tremendous and morale has increased. New ideas and suggestions are now raised by all staff. This has become a true team approach that has resulted in an improved working environment in addition to the financial benefits realized in replacing watermains.

In summary, there have been significant improvements to the methodologies used in replacing asbestos cement watermains. Photos of some of the innovative methodologies are included in the appendix.

For 2001, this has resulted in City forces completing their scheduled watermain replacement projects for the year two months in advance of the estimated completion date and well under budget. City forces are now available to undertake the next highest priority asbestos cement watermain replacement projects during the remaining 2001 construction season without impacting current maintenance levels. (See attached map)

This will serve to advance the Mores subdivision watermain replacement program. If current production levels continue, the Mores program may be complete by the end of 2003 provided that sufficient funding is allocated each year.

FINANCIAL IMPACT

1998 Water Utility Bylaw projects are complete and a balance of $306,090.62 remains unspent. Utilizing these funds for additional watermain replacement within the Mores subdivision will not have an impact on the current capital program.

By combining the remaining $75,000 in the 2001 Mores Watermain Replacement project with $300,000 from the 1998 Water Utility Bylaw, sufficient funds would be in place to advance watermain replacement within the Mores subdivision by one year.

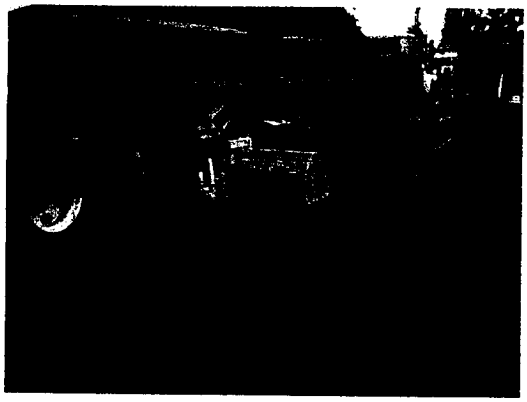
CONCLUSION

The City has completed its 2001 asbestos cement watermain replacement projects earlier than anticipated as a result of improved proficiency and innovations implemented this year. As all 1998 water utility projects are complete, we are recommending that the remaining funds be dedicated to advance the asbestos cement watermain replacement program in the Mores subdivision by City forces.

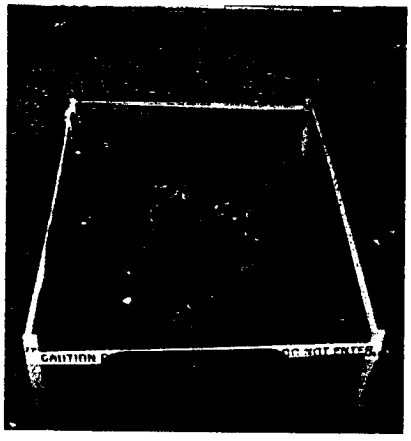
Robert Gonzalez, P.Eng.
Project Engineer

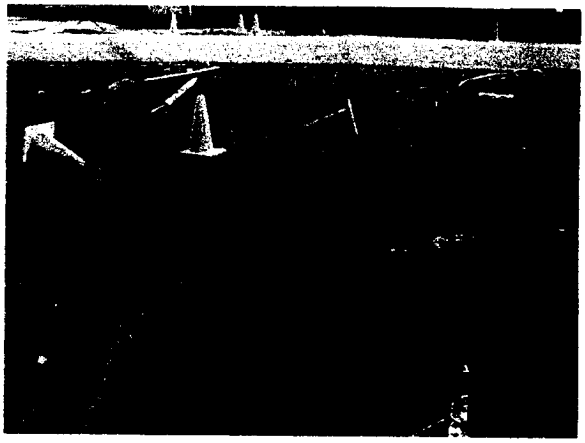
RG:rg

APPENDIX A
Innovations Photos

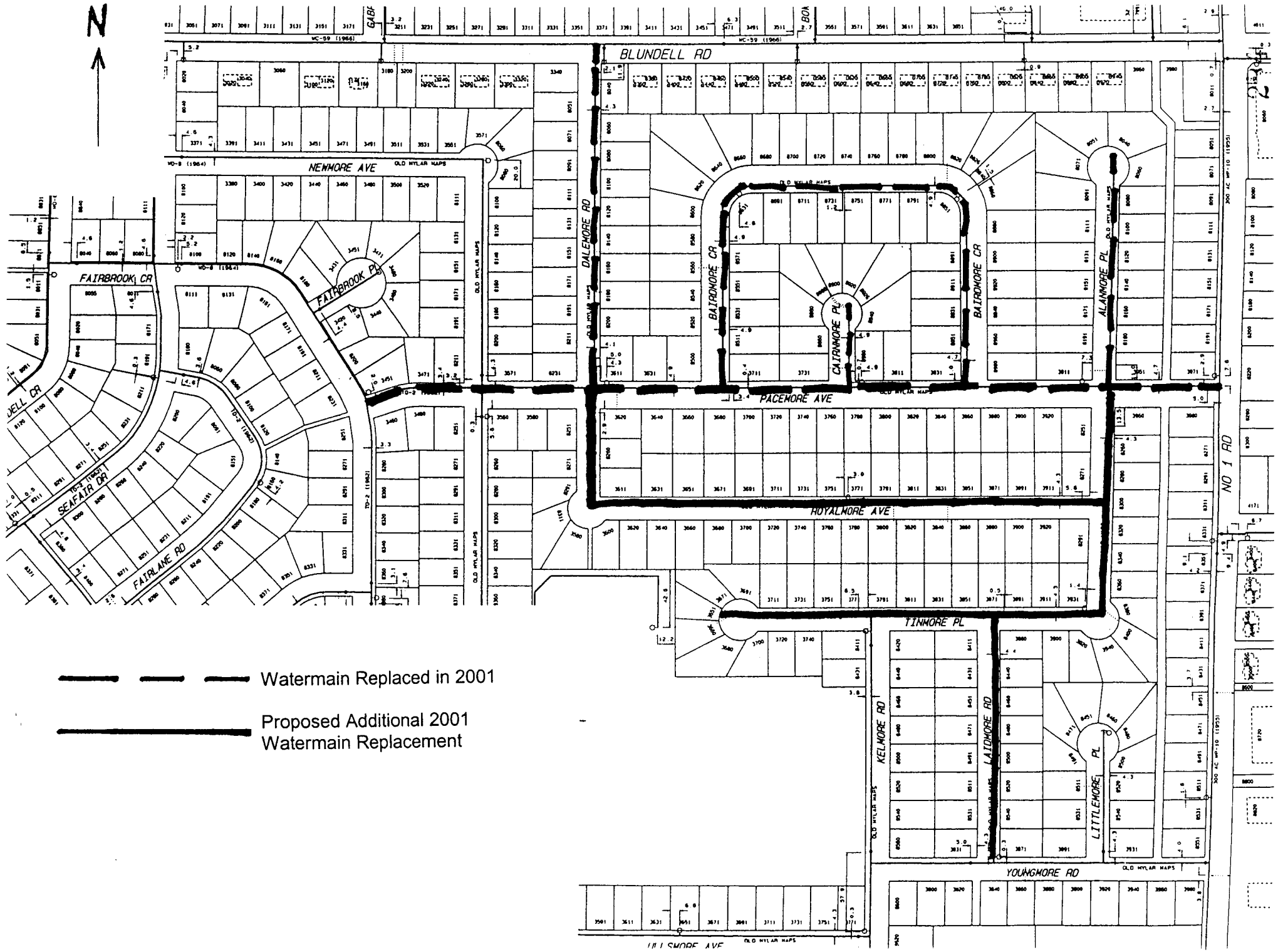


Contracted Sidewinder Truck – Used for quick and easy trench backfill





Vactor Trucks are used to suck soil from neat trenches leaving tree roots and existing utilities intact – note little disturbance to surroundings and roadway.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BLUNDELL RD
NEWMORE AVE
DALEMORE RD
BAIRDMORE CR
CAIRNMORE PL
ALANMORE PL
PACEMORE AVE
HOYALMORE AVE
TINMORE PL
FAIRBROOK CR
FAIRBROOK PL
SEAFAIR DR
FAIRLANE RD
KELMORE RD
LAIDMORE RD
LITTLEMORE PL
YOUNGMORE RD
NO 1 RD
OLD MYLAR MAPS
Watermain Replaced in 2001
Proposed Additional 2001
Watermain Replacement