

**CITY OF ALBANY
CITY COUNCIL AGENDA
STAFF REPORT**

Agenda Date: February 4, 2008
Reviewed by: *BP*

SUBJECT: Neilson Street Storm Drain project

REPORT BY: Ann Chaney, Community Development Director
Richard Cunningham, Public Works Manager
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STAFF RECOMMENDATION

1. That the City Council authorize the City Administrator to amend the consultant services contract with:

URS Corporation to:

- a) Prepare alternative plans for a Pilot Tube microtunneling project for this storm drain project, and prepare bid documents in the amount of \$36,921. Note: The purpose of this action would enable the City to Call for Bids for two alternative approaches with the intent of an award based upon the lowest bid for the selected option; and
- b) Provide construction, observation and review services in the amount of \$31,156.

Design, Community and Environment (DC&E) to:

Revise the administrative draft environmental document for this project to analyze environmental effects that may result from a Pilot Tube microtunneling project, in the amount of \$ 2,849.

2. That the City Council receive information regarding the funding shortfall. Staff will return at a subsequent meeting with a proposed funding plan and schedule that would involve borrowing \$2.4 million from the Statewide Community Infrastructure Program, or from another City of Albany fund or reserves with a repayment schedule.

BACKGROUND

The Upper Village Creek storm drain facilities are contained entirely within underground pipes and culverts. The pipes are for the most part located on private residential properties between City streets. The City does not have easements for access to, or maintenance of, the pipes that are located on private property other than from the inlets on City streets. Several pipelines are located beneath existing residences and accessory

buildings. Others lie in narrow side yards that are immediately adjacent to or, in some cases, beneath the footing foundations of existing residences. Several years ago, residents in the 1000 block of Curtis and Neilson Streets reported drainage problems that had become chronic during wet weather months.

The City's 1998 Watershed Management Plan (WMP) determined that these storm drain facilities do not have the capacity to convey a ten year storm, and that the pipes and culvert should be replaced with ones that ranged in diameter from 18 to 36 inches. Enlarging and repairing the Upper Village Creek system east of Key Route Blvd. was identified as *the number one priority project in the WMP*. The WMP also identified Marin Creek as the appropriate watershed to direct the drainage. However, after further studies following the adoption of the WMP, it was determined that the interim connection to Marin Creek would not be possible. Therefore the City Engineer began to investigate alternative drainage schemes to Codornices Creek.

In June 2006, Albany voters approved Measure F - 2006, which identified funding for the Neilson-Curtis Storm Drain project. This project is intended to resolve the drainage problems experienced by the Curtis Street and Neilson Street residents.

In order to move forward on the project, on September 18, 2006 the City Council approved an agreement with URS Corporation of Oakland to study alternatives and technical approaches for the construction of storm drain improvements in this area. The scope of the study included reviewing the storm drain alignment identified in the 1998 Watershed Management Plan (WMP), subsequent alignments prepared by the City Engineer, and an alternative route in Neilson Street that would involve deep excavation and/or tunneling.

In order to enable URS to improve and confirm the cost estimate for the installation of this storm drain, tests were needed to determine the nature and character of the soils. Therefore, in February 2007 the Council approved a proposal from DCM Engineering to drill and provide boring logs on Neilson Street. The borings would not only provide information on soils that would be encountered with a tunneling operation on this street, but also enable URS to formulate a recommendation and cost estimate for Council consideration.

On May 7, 2007 staff presented a report to Council on the URS study. Three technical memorandums, prepared by URS, that addressed the issues of where and how to install the Curtis-Neilson-Santa Fe storm drain, how much it would cost, and whether Codornices Creek had sufficient capacity to accommodate the drainage. These technical memorandums were attached to the May 7, 2007 staff report, and were identified as:

1. February 7, 2007 – Evaluation of Alignments and Technical Approaches
2. February 12, 2007 – Hydrology and Hydraulic Analyses
3. March 13, 2007 Comparative Cost Estimates for Cut and Cover, Guided Bore (Pilot Tube) and Microtunneling

On January 16, 2008, staff met with the residents directly affected by the existing storm drain conditions, and reviewed with them much of the information contained in this report.

DISCUSSION

The URS Memorandums of February 7, 2007 and March 13, 2007 recommend Study E as the preferred alternative, which proposes that a new storm drain pipeline be installed in the public right-of-way of Neilson Street between Albany Terrace and Codornices Creek by tunneling.

Study E proposed that the Upper Village Creek storm water runoff be collected at the intersection of Albany Terrace and Neilson and conveyed in a pipe in Neilson Street to Codornices Creek. This pipeline would be approximately 27 feet deep at the deepest point. This is considered to be too deep to be excavated by conventional trenching. This study proposes the installation of this pipeline be achieved by tunneling. Staff concurs.

The February 12, 2007 Memorandum from URS contained a Hydrologic and Hydraulic Analysis which showed the impact that the connection to Codornices Creek would have on the hydraulic grade line (water surface level) in the Village Creek system and in Codornices Creek. The study indicated that the flow in Codornices Creek would increase by approximately 8 inches at Neilson Street and that this rise in the water surface would decrease to approximately 2 inches at Santa Fe Avenue. The increase is less than 1% of the 10 year flow and is well within the capacities of the culverts at Curtis and at Santa Fe. Thus, the report concluded that Codornices Creek has sufficient capacity to accept the additional flow that will be introduced by the Neilson Street connection.

A consultant, Design, Community & Environment (DC&E), was retained by the City to prepare an initial study of environmental significance for the project. Following a decision by the City Council on an alternate microtunneling approach, a Notice of Intent to file a Negative Declaration will be mailed to relevant property owners and public agencies, and the document will be available for a 30-day public review period. Prior to a Call for Bids for this project, the City Council will need to approve the Negative Declaration, after the 30-day review period.

The March 5, 2007 Memorandum provided a cost comparison for Cut and Cover, Guided Bore (Pilot Tube) and Microtunneling. The Pilot Tube process was estimated to cost \$1.49 million and will take an estimated 4 months to complete. The Microtunneling process is estimated to cost approximately \$2.1 million and will take an estimated 3 months to complete. The Cut and Cover alternatives prove to be more expensive than either the microtunneling or the Pilot Tube options.

During the May 7, 2007 City Council meeting, a member of the public recommended that the sewer line located in this portion of Neilson Street be replaced at this time because it is in failing condition. The Council asked staff to consider this proposal. Therefore, the existing sewer line was televised and found to be in poor condition. Although it is not

imperative to replace the sewer line at this time, sections of it will need to be relocated to accommodate the new storm drain shafts.

URS has completed the plans, specifications and estimates for a Microtunneling (MT) approach to the Neilson storm drain project. Plans have also been completed for possible replacement of the sanitary sewer in this portion of Neilson Street.

ANALYSIS

Because the cost estimates for this project have increased, staff believes it may be worthwhile to have an alternative set of plans prepared using the Pilot Tube Microtunneling (PTMT) approach. Thus, for subsequent bid package purposes, contractors would submit bids for an Alternate 1 (MT approach), and an Alternate 2 (PTMT approach). As discussed above, the inclusion or exclusion of replacing the sanitary sewer in Neilson Street could also be an alternate for bidding purposes, thereby having four bid schedules: Alt. 1 (MT base bid); Alt. 1A (MT plus sanitary sewer); Alt. 2 (PTMT base bid); and Alt. 2A (PTMT plus sanitary sewer). Because either approach will accomplish the goal of relieving the chronic drainage condition in the 1000 block of Curtis and Neilson streets, the City could consider the lowest base bid received. Staff and the consultant will then recommend to Council an award with or without the sewer project, depending on funds available.

Thus, one of the questions before the City Council at this time is whether to authorize preparation of alternate plans using the Pilot Tube Microtunneling (PTMT) approach. If the answer is yes, URS will proceed in preparing such plans, estimates. Staff would then return to Council to authorize a Call for Bids.

Based on prior URS reports, key differences between the MT and PTMT approaches include:

MT - Microtunneling (or pipe jacking) would proceed in a straight line between each new shaft.

- Number of shafts: 4 shafts
- Pipe size: 30 inch pipe
- Number of months to complete: 3 months
- Cost estimate as of March 2007: \$2.1 million

PTMT - Pilot Tube (or guided bore) microtunneling approach whereby a technician “guides” the tunneling equipment based on soil conditions, obstructions, etc.

- Numbers of shafts: 7 shafts
- Pipe size: 24 inch pipe
- Number of months to complete: 4 months
- Cost estimate as of March 2007: \$1.49 million

Note: Shafts are necessary to provide access points into the new storm drain for maintenance purposes.

Plans showing the Microtunneling (MT) approach have been included with this staff report. These plans also call for the replacement of the sanitary sewer mains and lower laterals on the impacted sections of Neilson Street with this project. The Engineer's estimate of the costs for this project is now as follows:

	Storm Drain	Sanitary Sewer
Estimated Costs: Microtunneling (MT)		
Construction	\$ 2,912,843.17	\$ 354,176.83
Contingency	\$ 291,284.32	\$ 35,417.68
Total Construction	\$ 3,204,127.49	\$ 389,594.51
Engineering	\$ 480,619.12	\$ 58,439.18
Total Project	\$ 3,684,746.62	\$ 448,033.68

If URS is given authorization to prepare alternate plans for the Pilot Tube (PTMT) microtunneling, a similar table to the one above will be prepared for that alternative approach and included in a subsequent staff report.

FINANCIAL IMPACT

An estimate of the project costs and the revenue sources are attached. Funding for the storm drain project is from Measure F-2006, which was passed in June 2006. The annual tax generates approximately \$ 825,000 per year. Given the most recent estimate of \$3,684,746 for the Curtis - Neilson Storm Drain, approximately 4.5 years of tax revenue will be required to fund this project.

The City will need to borrow \$1.6 million this summer in order to fund this project, with repayment coming from future Measure F – 2006 revenues. Staff will return with a recommended loan mechanism, whether from other City funds or an outside source.

The attached table shows revenues from Measure F – 2006, and current and future expenses for the Neilson Storm Drain project. Expenses for the 2007-08 include \$300,000 for the 2007 paving project. Funding for the sewer project is from the Sewer Fund.

CONCLUSION

Although the project cost has escalated since the estimates in May of 2007, staff continues to recommend that a storm drain be installed in Neilson Street using tunneling methods. Chronic drainage conditions have persisted in this area, which was identified in 1998 as being the number one priority project in the Watershed Management Plan.

Staff further recommends that URS be directed to prepare alternate plans using the Pilot Tube Microtunneling (PTMT) approach, and that the contract with URS be amended to enable them to provide construction, observation and review services on the project.

Attachments

1. Project plan schematic
2. URS Scope of Work
3. Neilson Street Storm Drain Cash Flow Measure F - 2006