



ARLINGTON COUNTY, VIRGINIA

County Board Agenda Item Meeting of October 13, 2007

DATE: September 17, 2007

SUBJECT: Approve Amendment No. 18 to Agreement No. 85-95 to provide additional geotechnical investigation for the Arlington Boulevard (State Route #50) crossing of the Potomac Interceptor Sanitary Sewer Improvements Project.

C. M. RECOMMENDATIONS:

1. Approve Amendment No. 18 to Agreement No. 85-95 between Camp, Dresser and McKee, Inc. and the County Board to provide additional geotechnical investigation for the Arlington Boulevard (State Route #50) crossing of the Potomac Interceptor (“PI”) Sanitary Sewer Improvements project in the amount of \$28,200, and authorize additional funds in the amount of \$2,820 as a contingency for any additional services within the scope of the Amendment. The total Amendment authorization is therefore \$31,020.
2. Authorize the Purchasing Agent to execute the contract documents, subject to review by the County Attorney.

ISSUE: None.

SUMMARY: Amendment No. 18 to Agreement No. 85-95 is to provide additional geotechnical investigation for the Arlington Boulevard (State Route #50) crossing of the Potomac Interceptor Sanitary Sewer Improvements project in order to minimize risks associated with unforeseen subsurface conditions.

BACKGROUND: The 1992 Arlington County Sanitary Sewer System Master Plan recommended the Potomac Interceptor Sanitary Sewer Improvements Project, which consisted of a parallel relief main to improve the capacity deficiency in the existing trunk main. In 1995, the Department of Public Works (DPW) advertised a Request for Proposal for the Preliminary Engineering, Final Design and Construction Management Services to be performed on three separate projects located within different sewersheds as identified in the Master Plan. These projects were the Potomac Interceptor Sanitary Sewer Improvements (through Arlington

County Manager: _____
County Attorney: _____
Staff: Jerry Kuo, Department of Environmental Services

National Cemetery), the Four Mile Run Gravity and Relief Sanitary Sewer (Water Pollution Control Plant to I-66) and the Fairlington Sanitary Sewer (31st Street South and I-395 crossing).

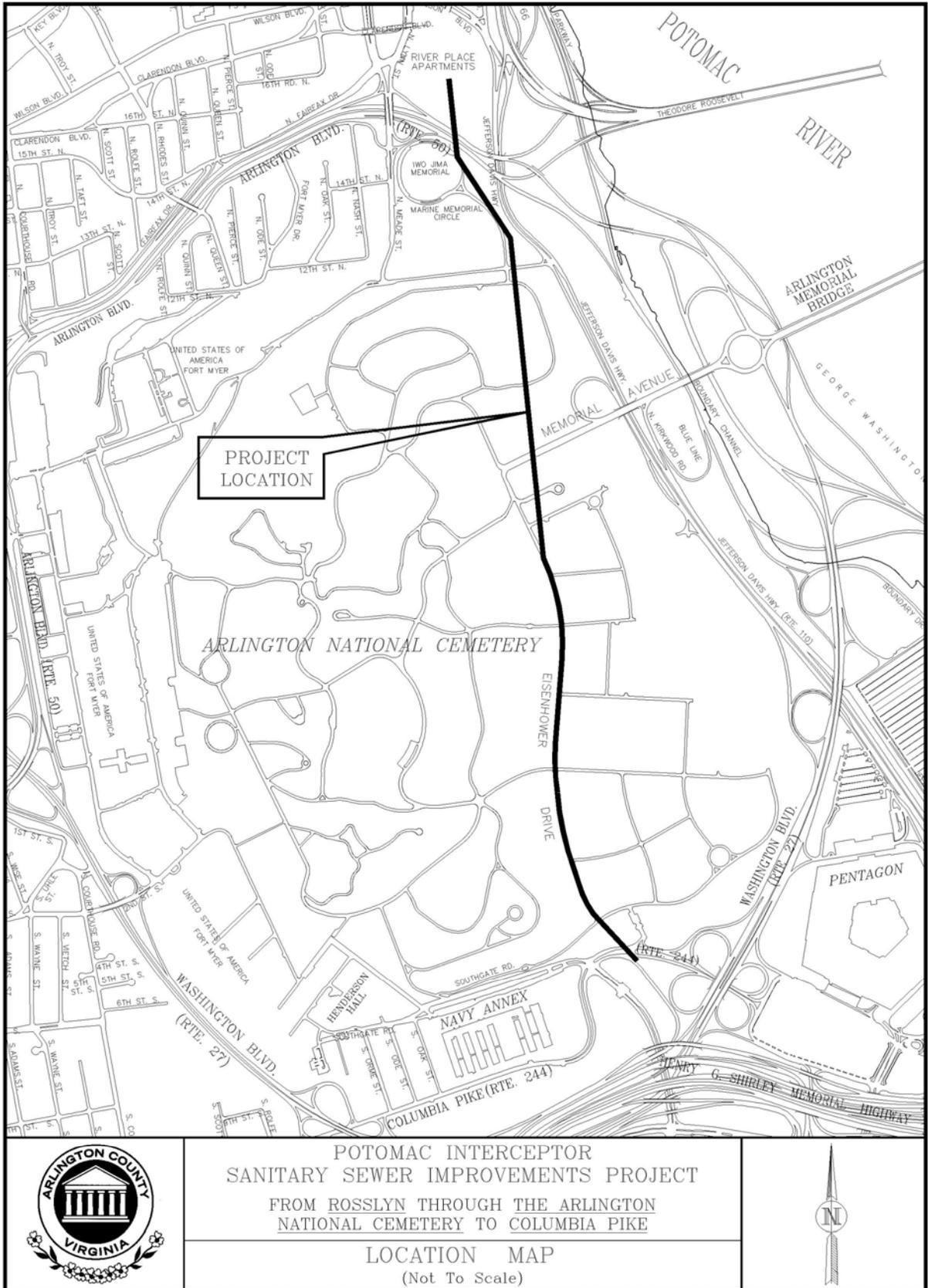
From the proposals received under RFP No. 85-95, an Advisory Selection Committee recommended that Camp, Dresser and McKee, Inc. (“CDM”) be awarded a contract to perform the work. With the approval of the County Board, the contract was awarded to CDM. DPW staff divided the entire project into three phases in order to better establish the scope of work for each stage of the project and control the cost. The contract of \$123,123 for Phase 1 under Agreement No. 85-95 was awarded by the County Board on January 20, 1996, to CDM. The work performed by CDM during this phase was to create a numerical model of the existing flow and the anticipated future flow within the above-mentioned three sanitary sewer trunk mains. With a carefully calibrated model, staff could simulate the sanitary sewer systems of interest under various conditions to specifically define the scope of deficiencies in the systems. Work in phase 2 of the project focused on Preliminary Engineering required to formulate proper solutions to those system deficiencies identified under Phase 1. Phase 3 consists of final design and construction services for the project.

The scope of work for each individual project under the Agreement 85-95 has evolved since the award of the contract for Phase 1. Consequently, there have been 17 amendments issued for the Agreement No. 85-95 in relation to various aspects of those three separate projects. Amendments No. 3, No. 5, No. 8-10, No. 12-13, No. 14 and No. 16-17 were approved in association with the Potomac Interceptor Sanitary Sewer Improvements project. Amendment No. 11 was approved for the billing rates adjustment for the year 2003 and the remaining six amendments were approved for the Four Mile Run Gravity and Relief Sanitary Sewer and the Fairlington Sanitary Sewer projects.

DISCUSSION: Approximately 1,130 linear feet of the proposed sanitary sewer pipeline will be installed either within the Arlington Boulevard (State Route #50) right-of-way or in the vicinity of a steep and high roadway embankment along Jefferson Davis Highway (State Route #110) near the northern end of the PI project. Traditional cut and cover methods of installing pipeline are not feasible for this segment of the project due to constraints imposed by the Virginia Department of Transportation (“VDOT”) and the NPS. Therefore, after evaluating the suitability of several trenchless construction methods, CDM has recommended that a method known as microtunneling be used at this location. The microtunneling method works well in a relatively uniform subsurface condition; however, the risks associated with microtunneling grow exponentially if unforeseen complex subsurface conditions are encountered during construction. A higher rate of risks also means a higher cost for construction. With an available profile of the subsurface conditions along the pipeline where microtunneling is going to be used, engineers will be able to prepare construction specifications and bid documents that better mitigate risk. To develop a better profile of the subsurface conditions requires a sufficient number of soil borings within the limits of construction. The original geotechnical investigation performed in 1999 for the PI project contained soil borings that were as evenly spaced as possible along the alignment of the proposed pipeline with best practices in mind at that time. Nevertheless, the soil borings from this original geotechnical investigation were not sufficient to develop an adequate profile of the subsurface conditions that was crucial in identifying the potential risks for microtunneling. CDM proposed that five additional soil borings be obtained from the project

site and the retrieved subsurface materials be analyzed for their respective engineering properties. The locations of these additional soil borings were carefully chosen in order to adequately supplement the subsurface information to the original geotechnical investigation.

FISCAL IMPACT: Funds for the Potomac Interceptor Sanitary Sewer Improvements project have been previously appropriated in the Utilities Construction Fund. The total authorization of \$31,020 for Amendment No. 18 that consists of an estimated amount of \$28,200 plus a contingency of \$2,820 will bring the total contract award for Agreement No. 85-95 to \$2,047,243. Sufficient funds are available for this Amendment in a designated account number 519.43544.SA20.0339.



POTOMAC INTERCEPTOR
 SANITARY SEWER IMPROVEMENTS PROJECT
 FROM ROSSLYN THROUGH THE ARLINGTON
 NATIONAL CEMETERY TO COLUMBIA PIKE

LOCATION MAP
 (Not To Scale)

