ARLINGTON COUNTY, VIRGINIA

County Board Agenda Item
Meeting of September 26, 2009

DATE: September 16, 2009

SUBJECT: Authorization to procure services under the City of Alexandria's contract 09-00681 with CH2M Hill for a storm sewer capacity analysis and related stormwater management planning services.

C. M. RECOMMENDATIONS:

Authorize procurement of services under City of Alexandria contract 09-00681 with CH2M Hill for initial stormwater capacity modeling and related stormwater management planning services totaling up to $300,000 under the first Task Order, as well as up to $1.0 million in future expenditures for a county-wide storm sewer capacity analysis under this contract.

ISSUES: No issues were identified that would result from Arlington's procurement of stormwater modeling and related services through the contract awarded to CH2M Hill by the City of Alexandria.

SUMMARY: The purpose of the requested authorization is to procure services under City of Alexandria contract 09-00681 with CH2M Hill, dated January 8, 2009, for stormwater capacity modeling and related stormwater management planning services in support of an update of the County's adopted *Stormwater Master Plan*. This work is a critical component of the County's effort to create a comprehensive stormwater management program that addresses the replacement of aging or inadequate stormwater infrastructure as well as compliance with mandatory State and federal regulatory requirements designed to improve water quality.

BACKGROUND: Legacy land use and drainage decisions make stormwater and watershed management in urban areas like Arlington extremely challenging. Urban jurisdictions across the region and the country are dealing with similar challenges. Traditional drainage and flood protection work remains necessary in urban areas like Arlington given the high levels of impervious cover in the County, the extensive drainage network already in place, and the proximity of development to stream corridors and major storm sewer lines. Integration of traditional infrastructure needs with watershed management and environmental protection objectives and compliance requirements is the central challenge and focus of the County's stormwater management program.

County Manager: _____

County Attorney: _____

Staff: Jeff Harn, Department of Environmental Services

Arlington County's *Stormwater Master Plan* was adopted in 1996. A subsequent *Watershed Management Plan,* focusing primarily on stream protection issues, was adopted in 2001. Since that time the County's storm sewer infrastructure, mostly built during the 1940's and 1950's, has begun to deteriorate. Several catastrophic failures of corrugated steel culverts and storm sewer lines have occurred in recent years, resulting in threats to public safety, inconvenience to motorists during the repairs, and unanticipated capital costs totaling over $2 million. A major storm event in June 2006 also generated over 300 reports of property damage due to flooding. There has also been a steady increase in regulatory requirements affecting local stormwater management programs, due primarily to the intensive State and federal efforts to improve the health of the Chesapeake Bay. Mandatory regulatory requirements are expected to increase substantially when the County's Municipal Separate Storm Sewer System (MS4) permit is finally reissued by the Virginia Department of Conservation and Recreation during 2010.

These factors led to a decision by the County Board in April 2008 to implement a Sanitary District tax to provide a dedicated source of funding to create a comprehensive stormwater management program. This program works to ensure adequate system capacity to reduce the risk of stormwater damage to public health, safety, and property; reduce the impacts of new and existing urban development on Arlington streams, the Potomac River and the Chesapeake Bay; comply with State and Federal stormwater, water quality, and floodplain management regulations; and support the County's vision of sustainability.

The Stormwater Fund, which was created to manage the revenues from the Sanitary District tax, provides funding for planning, design, and construction of capital projects necessary to ensure an adequate, reliable storm drainage system to reduce the risk of flood damage. It also provides funding to ensure these systems are monitored and maintained to reduce the risk of failure and to ensure a long, useful life for stormwater facilities.

The Stormwater Fund also supports the County's watershed management programs and environmental compliance requirements to protect local streams, the Potomac River, and the Chesapeake Bay through a targeted stream restoration and stormwater quality retrofit program. And finally, the Stormwater Fund provides operational funding to provide the resources and staffing levels necessary to comply with all regulatory requirements.

Since adoption of the Sanitary District tax in 2008, this new funding has been applied towards several drainage improvement projects identified in the FY 2009 – FY 2014 Capital Improvement Program. Examples include design work for a project located at John Marshall Drive at Lee Highway and for the West Little Pimmit Run (Phase I) project near John Marshall Drive and 33rd Street North. Both of these locations experienced significant private property damage during the June 2006 flooding. In addition, construction of the Pimmit Run (Phase II) culvert and channel rehabilitation project at Williamsburg Boulevard is just getting underway. Additional planning and design work is also underway for the Pimmit Run (Phase III) project looking at environmental enhancements and watershed improvement opportunities in the portion of Pimmit Run downstream of Williamsburg Boulevard.

The goal of the *Stormwater Master Plan* update is to provide a comprehensive framework for stormwater infrastructure maintenance and replacement, as well as a coordinated strategy to set

priorities for stream restoration and stormwater retrofit needs based on the community's environmental values. The benefit will be a stormwater management program that provides timely, cost-effective maintenance and replacement of aging stormwater infrastructure to ensure public health and safety and comply with all regulatory requirements. The update will also reflect a state-of-the-art approach to watershed management that looks for opportunities to address both stormwater quantity and quality where feasible and cost-effective.

DISCUSSION: The City of Alexandria contract 09-00681 with CH2M Hill, dated January 8, 2009, is a task-order based contract to conduct a storm sewer capacity analysis. The contract lists examples of the types of work it authorizes, including:

i) an evaluation of local historical rainfall data and a benchmarking comparison of stormwater infrastructure design criteria used in the region;
ii) an evaluation of the impacts of global climate change on future storm intensity, duration, and frequency;
iii) flooding and related impacts caused by projected sea level rise;
iv) hydrologic and hydraulic modeling of the storm sewer network to identify capacity constraints;
v) field verification of key stormwater infrastructure parameters required for modeling purposes (e.g., depth, slope, condition, etc.) and to update of the County's GIS stormwater network database;
vi) assistance with community education and outreach efforts during the *Stormwater Master Plan* update process; and,
vii) various optional stormwater planning and analysis tasks are also identified in the scope of work that may be included in future task orders when appropriate.

The Purchasing Office has determined that the type of work that staff wishes CH2M Hill to perform in the County is authorized by Alexandria's contract. The contract term extends until January 7, 2014.

Under Virginia Purchasing regulations, local governments may procure services under any valid local government contract with an applicable scope of work. Our confidence in CH2M Hill's demonstrated reputation and technical expertise, as well as the company's cost-effective service delivery, led staff to recommend this approach. We have also been working closely with the City of Alexandria on regional stormwater and environmental restoration issues throughout the ongoing Four Mile Run Restoration Study. This contracting approach has the additional advantage of enabling staff to continue to focus on management and implementation of current stormwater management projects, rather than spending time on a lengthy new procurement effort.

The requested appropriation will fund key technical work necessary to proceed with a planned update of the County's *Stormwater Master Plan*. This work will be done on a parallel track with two other key efforts that will provide the foundation for the updated Plan:

- Stream inventory work that began in September 2009 under a contract amendment with Vanasse Hangen Brustlin, Inc., authorized by the County Board in June 2009; and,

- Comprehensive watershed retrofit plans for each of the County's subwatersheds under a contract with the Center for Watershed Protection (CWP), a leading watershed management and planning organization in the country. CWP is currently in the process of completing the first retrofit plan under this contract for the Little Pimmit Run watershed.

Together, these technical efforts will provide comprehensive information about the existing storm sewer network capacity, the condition of the County's stream network, and the potential to retrofit the storm sewer network to remove stormwater pollutants. When completed, this work will help identify and prioritize potential future capital expenditures for storm sewer capacity, stream restoration, and stormwater quality retrofit projects and serve as the basis for establishing cost estimates and realistic implementation schedules.

The data from these studies will provide critical information that residents and other stakeholders must have in order to evaluate the full range of stormwater management issues facing the County. These issues will be addressed during the broad community outreach and education effort that will begin during 2010. The final *Stormwater Master Plan* will integrate the County's stormwater and watershed management programs and policies while recognizing the distinct challenges and needs of both programs. This effort will result in a long-range planning framework to address both current and future drainage and flood protection needs, watershed management initiatives, and environmental compliance objectives and requirements, while also supporting the County's vision of sustainability.

FISCAL IMPACT: Funding was identified in the FY 2010 budget to support the technical modeling and analysis work that will be incorporated into the planned update of the *Stormwater Master Plan*. Funds for this work are available from the Stormwater Fund (321.47211).

The initial Task Order is estimated to cost up to $300,000 to conduct a comprehensive storm sewer capacity analysis pilot study in the Crossman Run subwatershed. This pilot study area was selected because it is an area with known flooding problems, including the June 2006 storm event. This detailed capacity analysis will provide the modeling necessary to characterize the extent of the drainage problems in this area and to develop conceptual design solutions to reduce the risk of future flooding. Given the flooding history in the Crossman Run subwatershed, preliminary funding for future storm sewer improvements in this area have been submitted in the adopted FY 2009 – FY 2014 Capital Improvement Program.

The results of the pilot study conducted under the first task order will be used to refine the schedule and estimate of costs to complete the storm sewer capacity analyses for the remaining drainage areas throughout the County. The preliminary estimate provided by the consultant to provide storm sewer capacity modeling and associated field work for the entire County is approximately $1.3 million. Funds are available in the Stormwater Fund to support this level of effort.