SCOPE OF SERVICES

Solicitation Number: CLMP174
Project Name: 2015 Watershed Engineering Flood Mitigation Rotation List

PROJECT FOR:

CITY OF AUSTIN, WATERSHED PROTECTION DEPARTMENT, THROUGH ITS CONTRACT MANAGEMENT DEPARTMENT

PROJECT TITLE:

2015 WATERSHED ENGINEERING FLOOD MITIGATION ROTATION LIST

OBJECTIVES OF THE PROJECT:

The City of Austin (City) anticipates contracting with up to five (5) engineering firms for approximately 5 years, to provide flood hazard mitigation engineering services for the Watershed Protection Department.

The mission of the Watershed Protection Department (WPD) is to protect lives, property and the environment of our community by reducing the impact of flooding, erosion, and water pollution. WPD has identified and anticipates a number of engineering projects or Capital Improvement Program (CIP) Projects that will reduce the impact of flooding. The WPD categorizes flooding projects as creek (CF) and localized (LF). Creek flooding is flooding associated with creeks named in the Drainage Criteria Manual (DCM) or tributaries to those creeks. Localized flooding is flooding that generally occurs away from creeks. A typical example of localized flooding is found in subdivisions developed prior to the 1977 publication of the DCM where subdivisions were designed under different drainage criteria.

The engineering service needs for the WPD's Flood Hazard Mitigation mission are specialized and diverse. The selected firms are expected to have the personnel, technical knowledge and experience to provide planning, preliminary engineering, design and construction phase services as described below. The selected firmsare also encouraged to team with sub-consultants so that the professional entity has the ability to offer the broad range of water resource engineering expertise which may be required.

BACKGROUND:

The assignments from this rotation list would be for one or more phases on projects to address reduction of flood hazards. The assignments could be for either of two types of projects: 1) creek flood projects, which consist of reducing creek flood hazards for houses, commercial buildings and roadway crossings due to out of bank creek-overflows during extreme storm events such as regional detention basins, flood walls/levies, bridge/culvert flow capacity increases and stream channel enlargement, or 2) localized flood projects, which consist of reducing local flood hazards for houses, commercial buildings and roadways due to inadequate

or lacking storm drain systems, such as curb inlets, area inlets, storm drain pipe-networks, drainage ditch modifications, and small detention ponds. The assignments will vary in scope and schedule. Assignments may be requested which have a critical schedule or be of an emergency nature. Typically the size of projects that would be assigned have CIP construction cost estimates from about $500,000 to $10,000,000 for creek flood projects and even higher for complex localized flood projects.

The final scope of services for the project assignments will be developed with the selected consultants. For some projects the phases may be combined. Typical assignments may include:

- Planning, preliminary engineering, design and/or construction phase services for the upgrade, repair and rehabilitation of undersized low water crossings, culverts and bridges and associated upstream and downstream channel modifications.
- Planning, preliminary engineering, design and/or construction phase services for stormdrain improvements to address localized flooding problems that may include mitigation to address downstream impacts due to improved conveyance, and may include storm water quantity and quality treatment opportunities.
- Planning, preliminary engineering, design and/or construction phase services for channel modifications which may include stream bank stabilization and include the implementation of natural channel design techniques (Geomorphically Referenced River Engineering).
- Planning, preliminary engineering, design and/or construction phase services for flood-detention structures and associated storm water quality treatment opportunities.
- Assistance to the City in revising/updating FEMA flood insurance rate maps.
- Environmental, hydrologic and hydraulic assessment of proposed CIPs for compliance with City, State and/or Federal requirements.
- Evaluation of local flood conditions using innovative technologies such as but not limited to two dimensional modeling
- Evaluation of storm pipe condition assessments to make rehabilitation recommendations

The selected consultants, or their team members, shall have competency in the following software with the most current version or as specified below:

- Operating System: Microsoft Windows XP Professional SP2 (32-bit), Vista, Windows 7 or later version
- Office Productivity: Microsoft Office 2010 or later
- Document Imaging: Adobe Acrobat 9.0 or later
- GIS Packages: ESRI ArcGIS 10.2 or later
- GIS Extensions: Spatial Analyst 10.2 and 3D Analyst 10.2 or later version
- AutoCAD Civil 3D
- Hydrologic Model GIS Preprocessor: HEC-GeoHMS 10.2 or later
- Hydraulic Model GIS Preprocessor: HEC-GeoRAS 10.2 or later
- Hydrologic Model: HEC-HMS 4.0 or later
- Hydraulic Model: HEC-RAS 4.0 or later
- Bentley StormCAD
- Bentley CivilStorm

- Innovyze InfoWorks ICM or compatible software
- Microsoft Project (latest version, capable of conversion to older versions)

ANTICIPATED SERVICES:

In general, the City anticipates conducting the projects in phases as described below. For small projects, the planning, preliminary engineering and design phases may be combined. Other projects may have been identified in master planning work or identified through other planning efforts in which case the consultant's Phase I work may consist of updating project scopes and cost estimates. The final scope of services for each project assignment will be developed with the selected consultants and will be tailored for the specific project.

The WPD strives to maximize opportunities and to minimize negative impacts for all of its primary missions (local flooding, creek flooding, erosion and water quality). Departmental objectives are accomplished for WPD CIPs through a formal process instituted by WPD. CIP designs and construction methods must be evaluated and modified as needed to eliminate, minimize or mitigate environmental and adverse hydrologic and hydraulic impacts. The process requires coordinating the recommendations and cost estimates for the proposed project with staff members of the Mission Integration and Prioritization (MIP) team during project planning, and throughout the preliminary engineering, design, construction and post-construction phases. The process will also require coordination with the WPD Value Engineering Team.

All submitted reports shall include a description of the firm's QA/QC process and a statement from the consultant project officer that the report and associated deliverables have undergone a thorough quality assurance/quality control review.

Tasks may include, but are not limited to:

- Developing new geo-referenced hydrologic models (HEC-HMS) for the project for both existing and fully-developed land-use conditions for selected storm frequencies.
- Developing new geo-referenced hydraulic models (HEC-RAS) for the project for both existing and fully-developed land-use conditions for selected storm frequencies.
- Developing new geo-referenced stormdrain models (Bentley and Innovyze) for the project for both existing and/or fully-developed land-use conditions for selected storm frequencies.
- Identifying and reporting the number of structures, yards, and roadways predicted to be impacted by flooding using a 2D computer model.

Phase I: Preliminary Engineering

For each assignment, the selected engineering firm shall review available data and planning studies on which the project need was established, and perform necessary engineering studies and calculations to produce a Preliminary Engineering Report (PER) for the City. In some cases it may require reviewing and assisting WPD finalize an in-house PER. The PER should include economically feasible alternatives which (1) mitigate the flood hazards; (2) evaluate potential environmental and hydraulic constraints; (3) identify utility conflicts and federal, state, and local permit requirements; (4) identify difficulties that may be encountered, and the need for permit variances; (5) provide a geospatially accurate depiction of the alternatives; (6) provide

geospatially identified required easements and staging areas; (7) if deemed cost beneficial provide an alternative that mitigates flooding even when provides a level of service less than established in the Drainage Criteria Manual and (8) include a detailed opinion of probable cost using the City's bid form 300U format. The opinion of probable cost must approximate all soft and hard costs for the proposed project.

In addition, the selected consultants shall determine and recommend additional data collection (for the final design phase) necessary to prepare the final construction bid documents.

Phase II: Design Phase

The selected consultants shall, upon approval of scope proposal and specific written authorization, conduct or otherwise acquire: any specified activities within the scope related to planning; the necessary field surveys, field notes and sketches for easements; geotechnical field investigations, laboratory assessment and reports; environmental assessment; utility coordination; and peripheral investigations for final design. The selected consultants shall also prepare the design calculations and contract documents, acquire the necessary permits, and assist the City during the bid and award phase.

Data generation, collection, or review requirements may include but are not limited to: existing conceptual plans, preliminary studies and opinions of probable cost, related projects, geotechnical investigations, storm water conveyance system sizing, surveying, HEC-HMS hydrologic computer models, HEC-RAS hydraulic computer models, StormCAD or CivilStorm hydraulic computer/storm drain design computer models, Innovyze ICM 2D computer model or compatible software for stormdrain and open channel analysis and design, in-stream sediment load characterization and transport models, geomorphic assessments, easement requirement investigations, environmental considerations, site constraints, safety, alternative construction materials and methods, government-agency permitting requirements, construction costs of the alternatives, and other necessary or related considerations as may be determined as authorized during the scope of services refinement. The engineer shall prepare and submit a Phase II report (design report) documenting their evaluations, studies, opinion of probable cost, recommendations and the rationale behind design decisions. The report will include an executive summary.

The selected consultants shall prepare final detailed contract documents, including plan drawings, specifications (utilizing City of Austin standards or develop a specification if a standard does not exist), front-end documents and bid form 300U for the construction of the proposed project improvements as approved by the City of Austin. The selected consultants shall be responsible for applying and obtaining agency approvals and permits necessary for the construction of the project. The selected consultants shall also assist the City in advertising the project for bids and developing construction contract(s), which may include preparing addendums based on questions received from potential construction bidders.

Phase III: Bid Phase

The selected firm shall also assist the City in advertising the project and developing construction contract(s). This includes coordinating the City's project manager by attending pre-bid conferences, answering questions to bidders and issuing addendum.

Phase IV: Construction Phase

Project construction phase professional services may be provided by the selected consultants. The City reserves the option to provide construction phase professional and site-observation services for all or portions of the projects using its own resources. However, if authorized by the City, the selected consultants shall furnish construction phase services. These services might include, but not necessarily be limited to, the following: periodic visits to the job site to generally review the progress and character of the work being performed, review of the contractor's pay requests for completed work, review and approval of project submittals, preparation of designs required for change orders, change directives or field orders, providing clarification of any of the contract documents to the Contractor as needed, conducting project reviews with the contractor and the City, providing assistance to the City in negotiating change orders or claims with the contractor, and the preparation of record drawings of the completed facilities (in electronic format with a "hard" copy).

The selected consultants may also, upon specific written authorization, provide on-site observation by experienced personnel, including soils and material testing.

Technical Assistance and Training

The selected consultants shall provide technical assistance in the review and development of 2-dimensional modeling. These services may include the review of InfoWorks ICM, XPSWMM 2D or similar models. The services also may include development of 2-dimensional InfoWorks ICM models for closed systems, open channels and integrated open and closed systems.

The selected consultants shall provide training opportunities to WPD staff to better coordinate modeling techniques and standardization of newer modeling software. Training scope may be included on a project specific basis or on a more general basis as determined by WPD.

PROPOSED SCHEDULE:

Assignment durations may vary between few months and up to 2-3 years depending on a project, its complexity, and the phases of work needed.

The task authorizations of the anticipated agreements shall include schedules of performance by the selected firms and payment milestones. Timely execution of work is an essential element of the anticipated agreements. Monthly progress meetings will be held during Phase I and Phase II services and the selected firms will provide a project status update including, but not limited to, the work completed for the previous month, work anticipated for the next month, and critical issues requiring resolution for the project to remain on schedule. The

selected consultants will provide a meeting summary including any action items and an updated schedule if appropriate.

COST ESTIMATE:

The total maximum cumulative contract amount available for engineering services under the proposed service agreements is $10,000,000. It is anticipated that the City will select up to five (5) firms, with a total maximum authorization amount of $2,000,000 each.

The City anticipates that this maximum contract amount will be assigned within five years. Assignments will be made under several professional services agreements until the maximum cumulative contract amount is reached. It is anticipated that the selected firms will be compensated under contracts for varying amounts depending on the rotating job assignment.

MAJOR AND OTHER SCOPES OF WORK:

Below is a list of the major scopes of work that the City has identified for this project***. *There must be representation for all major scopes of work listed in the prime's statement of qualifications. The experience of the firms listed to perform the Major Scopes of Work, whether a subconsultant or prime firm, will be evaluated under Consideration Item 6 – Major Scopes of Work – Comparable Project Experience.*** In addition, the City has identified Other Scopes of work that MAY materialize during the course of the project. The City does not guarantee that the scopes listed under Other Scopes of work will materialize on this contract. If the prime consultant intends to enter into a subconsulting agreement on a scope of work not listed below, the prime consultant is required to contact SMBR and request an updated availability list of certified firms in each of the scopes of work for which the prime consultant intends to utilize a subconsultant.

*** Major Scopes of Work**

- Civil Engineering
- Environmental Engineering
- Structural Engineering
- Surveying Services
- Geotechnical Engineering (Soils)

Other Scopes of Work

- Land Development and Planning/Engineering
- GIS Services

Notes:

- Construction Inspection and Public Information and Communications are **NOT** a subconsultant opportunity on this rotation list. These services will be performed in-house or under a separate contract, if needed, and will be determined when project assignment is made.

- Participation at the prime or subconsultant level may create a conflict of interest and thus necessitate exclusion from any contracts resulting from the work performed in the design phase.

- If the City determines that a conflict of interest exists at the prime or subconsultant level, the City reserves the right to replace/remove the prime or instruct the prime consultant to remove the subconsultant with the conflict of interest and to instruct the prime consultant to seek a post-award change to the prime consultant's compliance plan as described in City Code § 2-9B-23. Such substitutions will be dealt with on a case-by-case basis and will be considered for approval by Small and Minority Business Resources (SMBR) in the usual course of business. The City's decision to remove a prime or subconsultant because of a conflict of interest shall be final.

- A consultant performance evaluation will be performed on all professional services contracts. This evaluation will be conducted at the end of each Preliminary, Design and Construction phase, or at assignment completion for those projects with no distinct phases (i.e., surveying, SUE services, etc.).

- For Subproject assignments that include construction activities performed by the CONSULTANT or Subconsultants, workers shall be paid not less than the prevailing wage rates, as referenced in Section 00830. Link: http://www.austintexas.gov/page/bid-docs