



City Council Meeting Agenda
March 11, 2004 Meeting

Agenda Item#: _____

Department: Public Works

Resolution / Ordinance # _____

Agenda Item:

Authorize a Professional Services Contract to Develop Phase I of a Drainage Master Plan

RECOMMENDATION:

- Award a contract for drainage master planning to Halff Associates in the amount of \$99,500.

DESCRIPTION/JUSTIFICATION:

The two most important drainage-related projects in the approved 5-year CIP are a preliminary engineering study to address flooding in the Dickey St. neighborhood and a Drainage Master Plan. The Drainage Master Plan has an anticipated cost of \$180,000, half of which was supposed to come from a flood planning grant from the Texas Water Development Board (TWDB). Staff applied for a TWDB grant and recently learned that the City of Taylor was not going to receive funding in this year's grant program. (See attached letter from TWDB.)

Staff and Halff Associates have developed a backup plan to begin drainage master planning and reserve some of the City's appropriated drainage funds as matching funds for a second flood planning grant application to the TWDB in December 2004. This 1st phase of drainage planning would consist of the following elements:

- Preliminary engineering study for the Dickey St. area
- Drainage Utility Fee assessment
- Hydrologic study of Taylor

A detailed scope of work for this contract is attached. The future phase(s) of the Drainage Master Plan would include an inventory of existing stream corridors and drainage structures, hydraulic analysis of the floodplains, identification of potential solutions for flooding and structural problems, and updates to the Federal Emergency Management Administration's (FEMA) floodplain maps.

FINANCIAL/BUDGET:

Halff Associates has proposed to conduct the 1st phase of drainage-related studies for \$99,500. There are a total of \$174,271 allocated from 1998 G.O. bonds for the Dickey St. preliminary engineering study, the Drainage Master Plan, and an update to Bull Branch's floodplain map around the new North Dr. bridge. If the 1st phase were authorized, \$74,771 would remain to be used as matching funds for a 2nd flood planning grant application to the TWDB in December 2004. It appears at the current time that a grant award of approximately \$75,000 to \$100,000 will be needed to complete the Drainage Master Plan.

Department Head: _____ **Date:** _____

City Manager: _____ **Date:** _____



TEXAS WATER DEVELOPMENT BOARD



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February 26, 2004

Mr. Casey Sledge, P. E.
City of Taylor
400 Porter Street
Taylor, Texas 76574

Re: Texas Water Development Board's Research and Planning Fund, Fiscal Year 2004,
Texas Register Document # TRD-200306058, Flood Protection Planning Grants

Dear Mr. Sledge:

The Board's staff has completed their evaluation of the eleven applications received in response to the above referenced RFA. Unfortunately, your application did not rank high enough to be recommended for funding.

A funding recommendation for five of the eleven applications was made at the February 17, 2004 Board meeting. Please contact Mr. Gilbert Ward at (512) 463-6418 if you have any questions concerning Board consideration of your submittal.

Sincerely,

Phyllis Thomas
Contract Administration Division

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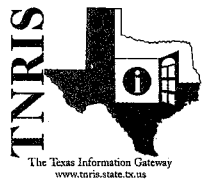


EXHIBIT "A" OF ATTACHMENT "A"

SCOPE OF WORK

Storm Drainage Master Plan - Phase I

City of Taylor, Texas

Project Study Objectives - To provide the City of Taylor with technical data for decision-making to help analyze existing flooding problems, evaluate alternatives to reduce flood damages, and research/evaluate funding sources for the study and planning of future drainage improvements. The project study shall include the following work items:

- Drainage Utility Fee
- Hydrological Study
- Drainage Study of Dickey Street Neighborhood
- Application for TWDB Flood Protection Planning Study Grant for FY05

Assumptions for Study Plan:

- The City will provide digital 3D 2-foot contour interval topographic mapping. Mapping shall be utilized to develop a base map of watershed boundaries (within the city), storm drainage networks, floodplains, and etc.
- Hydraulic analyses will primarily be based on the City's 2-foot contour interval topographic maps.
- The City will provide copies of aerial photos, maps, previous studies, flood damage records, drainage complaint files, available "as-built" plans (bridges, culverts, fill projects, utilities, and etc.), and other pertinent data.

I. DRAINAGE UTILITY FEE ASSESSMENT

A. Data Collection

1. Meet with the City of Taylor Staff to confirm objectives of study
2. Obtain copies of available City data base of property ownership, land use, zoning, impervious coverage, residential and commercial units, and other pertinent data.
3. Research and obtain information from other agencies such as County Appraisal District
4. Define legal context
5. Identify funding requirements (proposed uses of fee funds)
6. Determine billing system restraints

B. Informal Survey of Cities

1. Conduct an inventory of Drainage Utility Programs in other regional cities
 - a. Methods of applying utility fees
 - b. Amount of fee per unit charged

- c. Anecdotal experience regarding special circumstances or unforeseen problems
 - d. Billing integration
 - e. Organizational costs
2. Compile Drainage Utility Program inventory and summarize
- C. Drainage Utility Fee Projections
1. Estimate billing units for Taylor at feasibility level (estimated dwelling units, nonresidential acreage, impervious cover)
 2. Apply range of fees (from city survey) to estimate potential revenues
 3. Compare range of potential revenues to funding requirements
- D. Report Feasibility of Drainage Utility
1. Adequacy of data
 2. Organizational and initial study costs
 3. Implementation plan
 4. Potential revenues vs. funding needs
 5. Billing integration feasibility and requirements
 6. Meet with City Manager's office to discuss results of study

II. HYDROLOGIC STUDY

A. Data Collection

1. Meet with City of Taylor Staff to confirm objectives of study and obtain available plans, flood photos, digital topography, previous studies, and other pertinent data.
2. Obtain hydrologic data from other agencies such as Soil Conservation Service (Williamson County soil survey maps, flood control studies, aerial photos, computer models) TxDOT (Highway plans, topography, drainage calculations, etc.), Corps of Engineers and FEMA (Flood data, topographic mapping, hydrologic/hydraulic computer models, and other related data).
3. Visit project site for field (visual) inspection of existing drainage features within the Taylor City boundary.

B. Hydrologic Modeling

1. Develop a detailed drainage area map with sub-watershed boundaries at key locations (design points). Watershed boundaries shall be determined using USGS quadrangles and supplemented with the City's new topography.
2. Compile existing and future land use maps and coordinate with the City of Taylor.
3. Compile soil classifications, utilizing available soil surveys.
4. Compute hydrologic parameters (includes classification of hydrologic soils, existing and future land uses, etc.).
5. Obtain depth-duration frequency precipitation data utilizing the USGS report 98-4044.
6. Prepare detailed HEC-HMS hydrologic computer model of the study watershed.

7. Compute peak flood discharges for the existing (2002) and future urbanized 5-,10-, 25-, 50-, 100- and 500-year flood frequencies.
 8. Compare results with previous studies.
- C. Hydrologic Report/Documentation
1. Prepare Report of Procedures, Results, and Recommendations.
 2. Issue Draft Report for staff review.
 3. Incorporate revisions to Final Report.

III. DICKEY STREET DRAINAGE

A. Data Collection

1. Meet with the City of Taylor Staff to confirm objectives of study and obtain copies of available plans, flood photos, digital topography, previous studies, other pertinent data, and to confirm limits of the Dickey Street study.
2. Visit project site to identify, locate, and inventory the existing storm drainage system.
3. Field survey trunk-line flowlines of known manholes, inlets, outfalls, typical street cross sections, and etc. at crucial locations.
4. Develop an "as-built" base map of the existing storm drainage system illustrating the size, location, and flow direction of pipe network based on known manholes and inlets.

B. Storm Drainage Analysis of the Existing System

1. Prepare drainage area delineation map with sub-watershed boundaries at junction points with laterals/inlets
2. Compute hydrologic parameters
3. Develop storm drain network model utilizing record design plans.
4. Compute capacity of existing streets and underground storm drainage networks. Note, all street and storm drainage pipe locations, elevations, grades, and sizes will be determined from information provided by the City of Taylor, City topography, and limited field surveys.

C. Storm Drainage Analysis of Improvements.

1. Analyze proposed improvements to accommodate the 100-year flood within the proposed storm drain system, the existing street R.O.W. and/or existing/proposed drainage easements for the systems analyzed.
2. Prepare preliminary quantities and estimates of probable cost to implement conceptual plan(s).
3. Prepare illustrations of proposed improvements.
4. Prioritize proposed improvement projects for future CIP funding.

D. Report/Documentation

1. Prepare Report of Procedures, Results, and Recommendations.
2. Issue Draft Report for staff review.
3. Incorporate revisions to Final Report.
4. Deliver three (3) copies of Final Report to the City of Taylor.

IV. TWDB FLOOD PROTECTION GRANT (FY05)

- A. Meet with the City of Taylor to confirm objectives and schedules for the submittal of a Grant Application to the Texas Water Development Board (TWDB).
- B. Coordinate closely with City staff to prepare the grant application. Typical information to be provided by the City will include: records of historical flooding, current unemployment rate, per capita income, population of Taylor, population residing within the 100-year floodplain, record of previous drainage studies, source of topographic mapping, value of City "in-kind" contributions, and written assurances (including Council Resolution).
- C. Prepare Grant Application and submit to TWDB in October 2004.
- D. Coordinate with TWDB during the grant evaluation/award period. Note, it is anticipated that advertisement for TWDB Flood Protection Planning Grants will be in September/October 2004 (FY04). There is a 3 month selection process and an additional 2 months for award. Thus, the successful applicants would receive notice of receipt in Feb or March 2005.

EXHIBIT "B" OF ATTACHMENT "A"

FEE SUMMARY

Drainage Utility Fee Assessment	\$11,200
Hydrological Study	\$32,500
Drainage Study of Dickey Street Neighborhood.....	\$52,800
TWDB Grant Application for FY05	\$500
Direct Costs (Printing, Reproduction, etc)	\$2,500
TOTAL FEE	\$99,500

EXHIBIT "C" OF ATTACHMENT "A"

SCHEDULE - The estimated time schedule for the aforementioned tasks is as follows:

Drainage Utility Fee Assessment (from NTP)	60 days
Hydrological Study (from NTP)	90 days
Drainage Study of Dickey Street Neighborhood (from completion of Hydrology).....	120 days
TWDB Grant Application for FY05	October 2004
Total Calendar Days (from notice-to-proceed and receipt of aerial topography)	270 days