



# **TEXAS WATER DEVELOPMENT BOARD**

## **Rural Water Assistance Fund**

PROGRAM GUIDANCE

MANUAL

—

**RWAF Loan Program**



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## GENERAL INFORMATION

### ***TWDB's Mission***

Texas Water Development Board's mission is to provide leadership, planning, technical services, financial assistance, information and education for water conservation and responsible development of water for Texas.

### ***Purpose of Program***

The Rural Water Assistance Funding (RWAFF) Program provides loans for construction of wastewater collection and treatment systems, and water supply and distribution systems.

### ***RWAFF Program Overview and Key elements***

The Texas Water Development Board (TWDB) administers the Rural Water Assistance Fund (RWAFF), created in 2001 by the 77th Texas Legislature. The RWAFF program is designed to assist rural water utilities to obtain low cost financing for water or water-related projects.

The TWDB offers attractive interest rate loans with short and long-term finance options at near tax exempt rates.

Loans may be made with an average maturity term that exceeds 20 years when average weighted maturity of the obligations does not exceed 120% of the average estimated useful life of the project.

Funding through this program gives an added benefit to Nonprofit Water Supply Corporations by making construction purchases qualify for a sales tax exemption.

Applications are processed on a first-come first-served basis, and receive Board approval consideration in the chronological order that the complete application is submitted.

Applicants must enter into a Loan Agreement Contract with the TWDB.

The program can finance the purchase, construction of, and improvements to wastewater treatment and sewer facilities, and water supply facilities.

This program offers the "Pre-Design Funding" option which allows the Applicant to apply for a funding commitment prior to completing the engineering feasibility studies and environmental assessments.

## GENERAL INFORMATION

### ***Purpose of Manual***

The purpose of this Program Guidance Manual is to provide the basic information, forms, and guidance that an Applicant needs to order to complete and application for financial assistance a successful wastewater/sewer or water service project.

This manual covers the Application, Planning, Design, Bidding, Construction and Audit phases and provides guidance to the Applicant and its consultants in meeting the TWDB's RWFAP Program rules, found in *TWDB Chapter 384 Rural Water Assistance Fund Rules*

### ***Project Management Overview***

Project Management increases the likelihood of successfully completing work efforts on time, within cost targets, with fewer claims, and meeting performance criteria to result in a successful construction project.

The key to good project management is to designate a project manager to represent the Applicant in overseeing all project-related activities, managing all elements and leading a team of specialists.

Successfully managing a project requires the balancing of eight essential elements:

- ◆ **Scope** - Define, perform and manage change in scope.
- ◆ **Quality** - Plan, control, improve and chart quality.
- ◆ **Cost** - Estimate, budget and control cost.
- ◆ **Procurement** - Plan and administer procurement.
- ◆ **Time** - Plan, estimate, define and control time schedule.
- ◆ **Risk** - Identify, assess, develop solutions, and control risk.
- ◆ **Human Resources** - Define roles and responsibilities, organize and build the management team.
- ◆ **Communications** - Create and maintain an environment for open communications.

The project manager leads a team of specialists who provide the administrative, technical, financial and legal support for the project. Team members typically include Applicant, Project Manager, Consulting Engineer, Construction Manager, Administrative Support, Technical Advisor, Resident Engineer, Inspector, Financial Advisor & Bond Counsel (if appropriate), Legal Advisor, and/or Authorized Representative.

### ***Correspondence***

The TWDB will assign your project an identification number, which will be used in the processing and tracking of project information. Applicants and their consultants can promote prompt TWDB processing by including appropriate project identification on all correspondence and deliveries. In the subject line of all correspondence, please indicate your Project Name, TWDB Project Number, and any assigned TWDB Loan Identification number.



## GENERAL INFORMATION

### ***TWDB / Organization and Key Personnel***

#### **Project Team**

##### **Team Leader**

Contact:

##### **Project Reviewer/Engineer**

Contact:

##### **Administrative Technician**

Contact:

##### **Financial Analyst**

Contact:

##### **Environmental Reviewer**

Contact:

##### **Attorney**

Contact:

##### **Contract Administration**

Contact:

##### **Audit & Funds Management**

Contact:

##### **Inspection & Field Support Services**

Contact: *Field Office Mgr.:*

Contact: *Field Office Inspector:*





## APPLICATION PHASE

### ***Preparing the Application for Financial Assistance***

Early in the application development phase, the Applicant representative should contact the TWDB staff (512-463-7853) to arrange for a Pre-Application Conference where the program and coordination needs can be explained. At this meeting the application components, include fiscal information, legal documents, assurances, eligibility documentation, and procurement documentation can be discussed in detail. The list of basic application content requirements (WRD-006E) are in the Guidance Section of this manual.

### ***Procurement of Professional Services and Construction***

Professionals are usually hired to help with application development and implementation of the project. The Applicant must comply with requirements in the procurement for “professional services”. Professional services such as: Financial Advisors and Consulting Engineers must be procured by the Applicant in accordance with Title 10 Chapter 2254 of the Texas Government Code (Professional Services Procurement Act). The TWDB staff can provide example notices and model consultant contract provisions upon request.

### ***Application Components***

A complete list of application requirements is contained in the guidance document *Rural Water Assistance Fund Financial Assistance Application Procedures, WRD-006E*. (See **TWDB Guidance**.) The application content must conform to the Chapter 384 and Chapter 363 Subchapter A rules. In general terms a complete application includes:

1. Financial Information about the Applicant and the project, including:
  - ◆ general information (names, addresses, project identification/budget/schedule);
  - ◆ fiscal information (description of debt, ability to repay, user charge rates, etc.); and
  - ◆ legal information (ordinances/resolutions, and contracts. Copies of consultant contracts for planning, design, construction and post-construction phase services must be submitted. If qualifying for pre-design funding, then the executed contract for the planning phase service must be provided as a minimum.)
2. Engineering feasibility information which identifies the proposed project components and locations, cost estimates, and schedules;
3. Environmental information which identifies impacts and any necessary mitigation; and
4. Water Conservation Plan, if required.



## APPLICATION PHASE

### ***Financial Assistance Application Information***

The financial assistance information consists of an original and eight (8) copies of the general, fiscal, and legal information. (See **TWDB Guidance: Rural Water Assistance Fund Financial Assistance Application Procedures, WRD-006E**, for specific details.)

### ***Engineering Information***

Applications for pre-design funding must include a preliminary engineering feasibility report which will include at minimum: a description and purpose of the project; area maps or drawings as necessary to fully locate the project area(s); a proposed project schedule; estimated project costs and budget including sources of funds; current and future populations and projected flows; alternatives considered; and a discussion of known permitting, social or environmental issues which may affect the alternatives considered and the implementation of the proposed project.

If not utilizing the Pre-design Funding then the engineering feasibility data consists of a Engineering Feasibility Plan containing the information specified in TWDB rules 31 TAC 363.13. The Applicant must submit five copies of an engineering feasibility report signed and sealed by a professional engineer registered in the State of Texas. The report, based on guidelines provided by the executive administrator, shall provide: description and purpose of the project; entities to be served and current and future population; the cost of the project; a description of innovative technology considered and reasons for the selection of the project proposed; sufficient information to evaluate the engineering feasibility; and maps and drawings as necessary to locate and describe the project area. The executive administrator may request additional information or data as necessary to evaluate the project. See **TWDB Guidance: Guidelines for the Preparation of SRF/WQEL Engineering Feasibility Reports ED-002**, and **Guidance on Preparing Engineering Feasibility Report for Water Supply Projects WRD-004**.

### ***Environmental Information***

Environmental information is developed consistent with TWDB rules 31 TAC 363.14. Applications for pre-design funding must include a discussion of known permitting, social or environmental issues which may affect the alternatives considered and the implementation of the proposed project. Following approval of the PDF Option, the applicant will prepare and coordinate an Environmental Assessment as the planning phase of the project is completed.

If not utilizing the pre-design funding option then the environmental information must include the appropriate documentation required by the agency rules in 363.14. The executive administrator may request additional information or data as necessary to evaluate the project. See **TWDB Guidance: Guidelines for the Preparation of Environmental Assessments (ED-001)** for the content of the assessment. Two copies must be submitted to TWDB. The environmental assessment process leads to an environmental finding which must be made by the TWDB's Executive Administrator prior to release of funds from escrow for design and construction of the proposed project. This finding will specify any environmental mitigation measures applicable to the design,

construction and/or operation and maintenance of the proposed facilities.

## APPLICATION PHASE

### ***Water Conservation Plan***

Applications for more than \$500,000 in funding must include evidence that an approved water conservation plan will be adopted prior to the release of loan funds

If not utilizing the pre-design funding option then two copies of a Water Conservation Plan (WCP) are to be submitted. The development of a Water Conservation Plan is normally accomplished during facility planning. An approved plan must be adopted by the Applicant and approved by TWDB before any funds can be released. If TWDB funding for facility planning has not been obtained then contact the TWDB Project Development Director for guidance on water conservation plans. See Water Project Information, WRD-253d, and Water Conservation Utility Profile, WRD-022, in the Forms section of this manual.

**NOTE:** Applicants are required to report annually on the implementation and status of the required water conservation program for a minimum of three years after the date of loan closing.

### ***Additional information***

The TWDB's executive administrator may require additional information in the application for financial assistance in order to properly determine project eligibility and risks.

### ***Timing for Submittal of Application***

An application for financial assistance should be submitted to the TWDB Director of Program and Policy Development for review at least six weeks prior to the date the TWDB's Board members will consider the application. The Board meets every third Wednesday of each month. The meeting schedule is available on TWDB Web site at <http://www.twdb.state.tx.us>.

### ***TWDB Processing of Application***

The TWDB staff performs a review of the application documents for administrative and technical issues. If the application is recommended for approval by the TWDB staff, it is placed on the TWDB Board meeting agenda no later than three weeks before a Board meeting. Board meetings are normally held every third Wednesday of each month. Applicant representatives are welcome to attend the Board meeting at which the request for funding will be considered; however, attendance is not mandatory.

## APPLICATION PHASE

### ***Post Commitment***

If the Board approves a financial assistance commitment, the TWDB will send a letter to the Applicant confirming commitment of funds for the project, including the amount of assistance and conditions of the commitment. The Board's commitment will be conditioned upon satisfaction of special and standard loan conditions. See **TWDB Forms**: *Resolution Standard Conditions for Tax Exempt Loans*, WRD-267, and *Resolution Standard Conditions for Taxable Loans*, WRD-276 for sample standard conditions.

Also required is an attorney's opinion letter regarding the legal validity and enforceability of the debt, if any, incurred by the political subdivision and evidenced by its bond and the related security instruments. This item must be submitted after a loan commitment is made. See **TWDB Guidance**; *Rural Water Assistance Fund Financial Assistance Application Procedures*, WRD-006E, and **TWDB Forms** for samples of these documents. They may need to be modified for individual projects.

Notes:

## PLANNING PHASE

If the project is funded under the Pre-Design Funding Option, then the Planning Phase consists of preparation of the Engineering Feasibility Report (EFR), (If a preliminary EFR was submitted at Application), Environmental Assessment (EA), and initial work required to obtain the project site, easements and necessary permits. Otherwise, these reports and work is accomplished during the application phase.

### Loan Closing and Release of Funds for Planning

After loan commitment, the following prerequisites for closing and final release should be submitted to the TWDB's Team Leader before the loan can be closed and funds released for planning:

#### Prerequisites:

- ◆ If a Promissory Note secures the loan, then an executed Loan Agreement with the TWDB must be provided. Also required is an attorney's opinion letter regarding the legal validity and enforceability of the debt incurred by the rural political subdivision and evidenced by its bond or promissory note and the related security instruments. See **TWDB Forms** for samples of these documents. Note that they may need to be modified for individual projects;
- ◆ Legal and fiscal information (**See items below**), and an estimated closing date;
- ◆ 45 days prior to adoption of the bond ordinance/resolution or approval of a promissory note and loan agreement by the Applicant governing body, the Applicant Bond Counsel or Legal Counsel, as the case maybe, should submit to the TWDB for approval:
  - < A draft of the Bond Counsel's opinion (for a bond) or draft Attorney's opinion letter (for a loan agreement) stating that the unqualified opinion of the attorney is that the financial assistance will be to construct a facility for furnishing water as defined in Sec. 142 of the Internal Revenue Code of 1986 (the Code) and otherwise satisfies the requirements of the Code;
  - < A draft of the No-Arbitrage Certificate relating to this debt;
  - < A draft of the proposed bond ordinance or resolution that includes the Covenants Regarding Tax-Exemption (**See TWDB Forms**); and
  - < A draft of the escrow agreement (if utilizing the Predesign Funding Option).
  - < For Non-Profit Water Supply Corporations and Non-Profit Sewer Service Corporations:
    - (a.) a draft deed of trust and security agreement encumbering the real property and the water and wastewater system of the rural political subdivision;
    - (b.) a mortgagee's title policy insuring the interest of the Board in the encumbered real property in the amount of the note will be required to secure the bond or promissory note; and





## PLANNING PHASE

(c.) an attorney's opinion letter regarding the legal validity and enforceability of the debt incurred by the rural political subdivision and evidenced by its bond or promissory note and the related security instruments shall also be required;

- ◆ If the loan is for more than \$500,000, evidence of an approved Water Conservation plan and an adopted ordinance or resolution (2 copies of each);
- ◆ Any remaining (not previously submitted) engineering contracts;
- ◆ Any contracts by which the Applicant purchases, sells, or otherwise obtains or provides water or sewage services. Prior to executing new contracts, the Applicant should submit such contracts in draft form to the TWDB for approval;
- ◆ A Sufficiency of Funds Statement, which is a letter requesting loan closing, release of funds for bond issuance costs and planning phase funds, and states that the Applicant has "*sufficient*" funds to construct the project. A current budget of costs and sources of funds should also be attached; and
- ◆ Evidence of compliance with all loan closing requirements set forth in the Board's commitment resolution.

After the above information has been approved by the TWDB staff, the Applicants governing body should adopt the bond ordinance/or resolution or promissory note and loan agreement and forward a certified copy to the TWDB. At this time the Audit and Funds Manager will schedule a closing date.

### Submittals at Closing:

- ◆ Unqualified approving opinion of the Attorney General of Texas;
- ◆ Certification from the Comptroller of Public Accounts that such debt has been registered in that office; and
- ◆ Final versions of the Legal and Fiscal Documents listed under **Closing-Prerequisites**.

### **Engineering Feasibility Report (EFR)**

The loan from the TWDB is based on the scope of work as outlined in the EFR. If a water supply /distribution project is being proposed The EFR should include the information outlined in *Guidelines for the Preparation of RWAFF Engineering Feasibility Reports, (See TWDB Guidance)*. If a sewage collection/treatment project is being proposed the EFR should include the information outlined in *Guidelines for the Preparation of SRF/WQEL Engineering Feasibility Report ED-002*. Five copies of the report(s) should be sent to the TWDB Project Reviewer/Engineer.

## PLANNING PHASE

The EFR should be bound and sealed by a professional engineer registered in Texas. These reports contain the design calculations and other information necessary to evaluate compliance with 30 TAC *Chapter 290 Rules, Water Hygiene, Chapter 317 Design Criteria for Sewerage Systems, Chapter 309 Domestic Wastewater Effluent Limitation and Plant Siting, Chapter 312 Sludge Use, Disposal and Transportation, and Chapter 332 Composting*, as appropriate.

The EFR should include the following basic information:

- ◆ Description and purpose of the project;
- ◆ Entities to be served and future population;
- ◆ Cost of the project;
- ◆ A description of innovative and conventional alternatives considered and reasons for the selection of the project proposed;
- ◆ Sufficient information to evaluate the project's engineering feasibility;
- ◆ Maps and drawings as necessary to locate and describe the project area;
- ◆ Water Rights Permits, if applicable;
- ◆ Water Supply Contracts, if applicable; and
- ◆ Additional information as necessary to explain the feasibility of the project.

### ***Environmental Assessment (EA)***

The EA should contain the information described in ED-001 *Guidelines for the Preparation of Environmental Assessments (See TWDB Guidance)* and should be submitted to the TWDB Environmental Reviewer.

Depending on the degree of potential for environmental impacts, the Applicant may elect to use one of the following three levels of review:

- ◆ **Categorical Exclusion** - This process is used for projects which involve no significant environmental impacts. Based on preliminary project information, (project description, maps and description of any known environmental problems), Board staff will provide notice to environmental regulatory agencies and exclude the project from further review. No additional submittals or coordination will be required of the Applicant.
- ◆ **Mid Level Review** - This process is used for projects that have potential significant environmental impacts which are limited in scope or are readily handled. Based on preliminary information, Board staff will provide notice to regulatory agencies which appear to be unaffected and either Board staff or the Applicant will coordinate with affected regulatory agencies. Additional information, as required by the affected agencies only, will be needed for this level of review. A comprehensive environmental assessment will not be required, unless issues cannot be resolved, or significant new issues are identified.

## PLANNING PHASE

- ◆ **Full Review** - This process is used for projects with potential for extensive environmental impacts that are not readily avoided or mitigated or would involve a public controversy relating to environmental or social impacts. A comprehensive environmental assessment would be required. The Applicant coordinates with the affected regulatory agencies on the draft environmental assessment.

### ***Water Rights***

Section 15.955(c) of the Texas Water Code requires that before the TWDB can deliver construction funds to an Applicant proposing water development, the Applicant must supply information from which the Executive Administrator can make a written finding that the Applicant will have sufficient water rights to appropriate and use water the project will provide.

### ***Underground Water Rights***

If utilizing groundwater sources, the Applicant should submit to the TWDB Project Reviewer/Engineer an *Underground Water Rights Questionnaire* and an *Underground Water Rights Affidavit*. **(See TWDB Forms).**

- ◆ *Underground Water Rights Questionnaire* (WRD-208a) - The Applicant should complete The Questionnaire.
- ◆ *Underground Water Rights Affidavit* (WRD-208b) - An officer of a local title company should complete the Affidavit.

After review and approval of the required documentation, the Executive Administrator will issue a certification.

### ***Surface Water Rights***

If the project includes development of surface water, then the applicant is to provide evidence that it has the necessary water rights to appropriate and use the water the project will provide, or that it has a supply contract with the water rights owner for an adequate water supply over the life of the loan.

Notes:

## DESIGN PHASE

The Design Phase consists of final modifications (if necessary) to the EFR, and preparation of the Plans & Specifications. Acquisition of the site and easements and issuance of all permits should also have been completed.

### ***Release of Funds for Design***

The following items should be submitted to the TWDB's Team Leader prior to authorization for the release of funds from escrow:

- ◆ A TWDB approved Engineering Feasibility Report;
- ◆ An approved Environmental Assessment (environmental clearance issued by the TWDB Executive Administrator);
- ◆ An engineering contract for design phase services;
- ◆ A description of force account work planned, if any design work is to be done by the Applicant;
- ◆ A proposed budget for the design work, if it differs from the project budget submitted previously for the loan commitment and a *Sufficiency of Funds Statement*;
- ◆ A proposed schedule for completion of the design work, if it differs from the schedule completed for the loan commitment; and
- ◆ Depending on the project, obtaining applicable permits may be required before design funds are released.

After the above information is complete, the Project Reviewer/Engineer will issue a memo to the TWDB's Fiscal Services Division authorizing the release of funds for design. The actual release of funds is arranged by the TWDB's Fiscal Services Division and the Applicant's Financial Advisor or Authorized Representative.

Note: Design work previously completed can be reimbursed as long as it is within the scope of the project approved in the loan commitment and meets all terms and conditions of environmental and engineering approvals.

## DESIGN PHASE

### **Permits**

The Applicant or consulting engineer should apply early for all permits required for the project, usually near the end of the facility planning phase. If the Applicant or consulting engineer anticipate, or are advised, that permits may be required for the project, actions should be taken to secure such permits as soon as practicable prior to completion of plans and specifications and advertising for construction bids.

Permits typically include the following:

- ◆ Railroad crossing permits. Both overhead and underground permits usually take a long time to secure.
- ◆ Highway crossings and right-of-way permits. If these are to be obtained by the contractor then the contract documents should address this.
- ◆ Corp of Engineers, Wetlands, and Section 404 permits. These permits may take a long time to obtain.
- ◆ Drainage/Flood permits.
- ◆ Removal or disturbance of sand, shell, gravel or marl from stream beds Sand, Shell and Gravel Permits. (Texas Parks and Wildlife Department 31 TAC 69.101 - 69.121)
- ◆ Permits and reviews required by local building and utility departments.
- ◆ Electric Permits. If required, make sure a new or upgraded power supply to the facility is provided in time to avoid delaying the contractor.
- ◆ Amended Certificate of Convenience and Necessity, if applicable (Normally required with the application).
- ◆ Waste Discharge Permit. If a wastewater discharge permit is required, the Consulting Engineer should submit an application to the Texas Commission on Environmental Quality (TCEQ). Contact the Permit Applications Unit in Watershed Management at 512-289-1000. This permit should be obtained before substantial work on the design is undertaken.
- ◆ plans and specifications are submitted for review by the TWDB. A copy of the final permit should be sent to the TWDB project reviewer.

## DESIGN PHASE

### ***Land Acquisition, Buffer Zones, Right of Ways, and Easements***

Land and easements acquisition needs should be addressed early in the planning phase. It is recommended that you follow the acquisition principles and procedures in the *Uniform Relocation and Real Property Acquisition Policies Act of 1970*, PL 912-646. The Applicant should submit a *Site Certificate*, ED-101 (See TWDB Forms), or evidence of authority to acquire the site before advertising for bids.

### **Acquisition of Land**

Land acquisition should be completed in advance of design or as soon as possible to avoid redesign of the project. Before committing to purchase land, the Applicant should perform an initial site assessment (conforming to ASTM standard E1527-97) to verify that hazardous waste contamination of the site has not occurred. As a minimum, document existing and prior uses of the site and conduct a survey for unusual soil discoloration, vegetation anomalies, and odors from the property and adjacent properties. Conduct a more detailed assessment if the initial assessment indicates potential for hazardous material contamination.

### **Buffer Zones**

TCEQ regulations require buffer zones around all new wastewater treatment plants and any new units of a renovated wastewater treatment plant. All buffer zone areas must be purchased unless a variance from the buffer zone requirement may be requested and obtained from the TCEQ with the Applicant's permit application. Generally, either a deed-recorded restrictive easement or a plan for noise and odor abatement is required if a variance is requested from the buffer zone requirement. The deed-recorded easement or the plan for noise and odor abatement will be required before funds are released for construction. This issue should be addressed in the Engineering Feasibility Plan, but can be resolved in the design phase. Further details may be requested by the TWDB project reviewer during the review of plans and specifications in the design phase.

### ***Design Phase Submittals***

The Applicant or consulting engineer should submit the following items to the TWDB project reviewer:

- ◆ The final wastewater discharge permit, if applicable (1 copy);
- ◆ The Site map showing buffer zones, if applicable (1 copy);
- ◆ The purchase or lease agreements for land required for the project (1 copy)
- ◆ A complete set of Plans and Specifications (3 copies for initial review, 4 copies of final version for approval). (See Plans and Specifications later in this chapter for more information);

## DESIGN PHASE

- ◆ The Geotechnical Report, if available (2 copies);
- ◆ Final Engineering Design Report [See Final Engineering Design Report later in this chapter for more information);
- ◆ A *Site Certificate*, ED-101 (See **TWDB Forms**) signed by the Applicant's representative. (1 copy);
- ◆ If applicable, Section 404 or Section 10 permits from Corps of Engineers. (Apply as early as possible because these permits may take a long time to obtain);
- ◆ If applicable, removal or disturbance of sand, shell, gravel or marl from stream beds Sand, Shell and Gravel Permits from the Texas Parks and Wildlife Department; and
- ◆ If applicable, permits to alter state lands, including tidally influenced coastal areas, from the General Land Office

### ***Texas Commission on Environmental Quality (TCEQ) Standards***

TCEQ design criteria and water hygiene rules should be followed in the design of all work affecting water quality standards in the state. The TWDB has been delegated the responsibility of performing the Water Hygiene Rule review usually performed by TCEQ for a water project funded by TWDB. The TWDB has statutory authority to perform the design criteria review on wastewater plants and collection systems. A requirement of this review is for the Applicant's Consulting Engineer to prepare and submit a *Final Engineering Design Report*, WRD-024, (See **TWDB Guidance**) and plans and specifications for review.

TCEQ rules include:

- ◆ 30 TAC Chapter 309 *Domestic Effluent Wastewater Limitation and Plant Siting*;
- ◆ 30 TAC Chapter 312 *Sludge Use, Disposal and Transportation*;
- ◆ 30 TAC Chapter 332 *Composting*,
- ◆ 30 TAC Chapter 317 Rules, *Design Criteria* (wastewater); and
- ◆ 30 TAC Chapter 290 Rules, *Public Drinking Water*



## DESIGN PHASE

### ***Final Engineering Design Report (FEDR)***

This report contains the design calculations and other information necessary on wastewater projects to evaluate compliance with TCEQ's Chapter 317, Design Criteria for Sewerage Systems. It is not necessary to repeat information that was previously presented in the Engineering Feasibility Report and has not changed since then. The additional design information must be bound and have the seal of a professional engineer who is licensed to practice in the state of Texas.

For additional guidance and examples of items required in the FEDR, a *Final Engineering Design Report Checklist*, WRD- 024, is provided. (See **TWDB Guidance**).

**NOTE:** All engineering reports, plans and specifications will be compared to the Engineering Feasibility Report. Major changes, revisions, and amendments should be immediately brought to TWDB's attention. Amendments to the EFR may require revisions to the Environmental Assessment or other environmental documentation submitted for the project.

### ***Plans and Specifications***

The Applicant should submit three (3) copies of the plans and specifications for initial review. Ultimately four (4) final copies of the plans and specifications will be needed for the TWDB approval. The plans and specifications should be bound and sealed by a professional engineer registered in Texas. All engineering reports and plans & specifications will be compared to the EFR. Major changes, revisions and amendments should be immediately brought to TWDB's attention. Amendments to the EFR may require revisions to the Environmental Assessment (EA). Significant changes to the project scope that occur after a loan commitment is made may require Board approval.

In addition to compliance with the TCEQ's *Chapter 290, 308, 317 and other Rules*, the plans and specifications will be checked for completeness, consistency, biddability and constructability, and provisions for environmental concerns.

Plans and Specifications should include the following:

- ◆ *Excerpts from the Texas Water Code (See TWDB Guidance)*. This document is distributed to all Applicant and Consulting Engineers to assist the Applicant with complying with certain statutes and regulations which specifically relate to the TWDB's loan programs. Supplemental provisions that can meet the Water Code and other statutory requirements are included in Supplemental Conditions for the State Loan Projects (See **TWDB Forms**: ED-004g.) These conditions along with any necessary provisions should be incorporated into the other General and Special Conditions that are normally in the construction contract documents.

- ◆ *Contractor's Act of Assurance (See TWDB Forms)*;

## DESIGN PHASE

- ◆ *Contractor's Act of Assurance Resolution (See TWDB Forms);*
- ◆ Current local prevailing Wage Rates;
- ◆ Emergency discovery conditions for Archeological and Endangered Species; (**See TWDB Forms: Supplemental Conditions**);
- ◆ TWDB-provided language for the Invitation to Bid (**See Bidding Phase**): and
- ◆ Any special conditions resulting from the environmental assessment process.

Notes:

## BIDDING PHASE

Competitive bidding is a widely used method of obtaining and selecting contractors for construction projects. Typically, the use of competitive bidding is mandated by law or regulation. This mandate recognizes that competitive bidding provides value to the taxpayers and fairness in the placement of major sums of taxpayer funded work.

### **Legal Requirements**

The Applicant and Consulting Engineer must comply with *Vernon's Local Government Code on Competitive Bidding Requirements, Chapter 252, Subchapter B or Chapter 49 of The Water Code, as applicable*. We recommend that you consult your legal counsel if you have any uncertainty regarding specific bidding laws. Water Supply Corporations are generally expected to competitively bid construction work in the same manner as municipalities.

### **Invitation to Bid**

The Invitation to Bid (or Instructions to Bidders) is typically a short document summarizing key information about the project. Its purpose is to attract bidders, announce the bidding schedule for the project and give sufficient information for prospective bidders to determine whether they should obtain copies of the bidding documents.

On projects receiving TWDB financial assistance the following statements or equivalents should be included in the Contract Documents under the appropriate sections:

- ◆ "This contract is contingent upon release of funds from the Texas Water Development Board."
- ◆ "Any contract or contracts awarded under this Invitation for Bids are expected to be funded in part by a loan from the Texas Water Development Board. Neither the State of Texas nor any of its departments, agencies, or employees is or will be a party to this Invitation for Bids or any resulting contract."

### **Advertising**

Authorization from TWDB project reviewer should be obtained prior to advertising bids. Before advertising, the Applicant or engineering consultant should have obtained the following:

- ◆ The TWDB approval of plans and specifications.
- ◆ The Waste discharge permit from the TCEQ, if applicable.
- ◆ The acquisition of all needed project sites certified to TWDB on Site Certificate; ED-101 (see TWDB Forms).

## BIDDING PHASE

- ◆ A resident inspection proposal clearance from TWDB including contract, inspector's name, relevant inspection experience, and organizational reporting structure. For more specific details refer to *Guidelines for Inspector Qualifications*, ED-005 (See **TWDB Guidance**).
- ◆ All other permits and authorizations required by federal, state and local agencies.

The Applicant should give special consideration to the notice requirements of state law on competitive bidding. The following are two important provisions of this law.

The notice should be published once a week for two consecutive weeks in a newspaper published in the municipality.

The date of the first publication should be before the 14th day before the date set to open the bids; however, we recommend a longer advertising period of 30 days to allow contractors sufficient time to assemble their bid.

### **Addenda**

Addenda are written or graphic documents intended to clarify, revise, add to or delete from the original documents. It is important that the bidding documents require bidders to acknowledge receipt of all addenda with their bids. The acknowledgment ensures that all bidders are bidding on the same effort.

Three (3) copies of the addenda should be submitted to TWDB concurrent with issuance to Bidders. The TWDB Project Reviewer/Engineer will review and approve addenda prior to authorization to award.

To ensure that all bidders are bidding on the same effort, addenda should be issued in an expeditious manner to all document holders of record. If addenda cannot be issued to bidders 4 days in advance of bid opening, a brief postponement of the bid opening may be justified.

### **Prebid Conference**

Prebid conferences are useful to familiarize prospective bidders with the site and scope of the work on projects.

TWDB's Field Office staff should be notified concurrent with Bidders of the time, date and place of the prebid conference. Procedures to follow at the prebid conference should be established ahead of time.

It is advisable that no oral statements be made at the conference which cannot be appropriately reduced to written form in subsequent addenda.

## BIDDING PHASE

### ***Bid Opening***

Procedures to follow at the bid opening should be established ahead of time and be coordinated with the Instructions to Bidders. The TWDB Project Reviewer/Engineer should be notified concurrent with Bidders of the time, date and place of the bid opening.

### ***Bid & Bidder Evaluation***

After the bids have been opened and tabulated, the Owner and Consulting Engineer should evaluate the bids and bidders to make certain decisions with respect to award of the contract.

Bidder evaluation is generally based on responsibility. Responsibility criteria typically consist of the following:

- ◆ Financial resources;
- ◆ Experience, organization and equipment;
- ◆ Ability to comply with required performance schedule, taking into account all existing commitments; and
- ◆ Satisfactory record of performance, integrity, judgment and skills.

Bid evaluation is generally based on responsiveness. Responsiveness is the conformity with all material conditions of the invitation. The underlying purpose for the insistence on responsive bids is that all bidders should stand on an equal footing, so that the integrity of the competitive bidding system may be maintained.

### ***Bidding Documents***

Bid Documents Submittals - The TWDB Project Reviewer/Engineer should receive the following information and documents as soon as possible after bid opening and before execution of the construction contract.

- ◆ Tabulation of bids;
- ◆ Proposal of the lowest responsive responsible bidder with proof of Bid Bond, or other Bid Security;
- ◆ Certified copy of advertisement for bids (if less than three (3) bids received);
- ◆ Consulting Engineer's recommendation to Applicant for award;

- ◆ Explanation for any rejected bids or otherwise disqualified bidders;

## BIDDING PHASE

- ◆ *Site Certificate* or evidence of authority to acquire the site (if not already submitted). (See **TWDB Forms**);
- ◆ Underground Water Right *Questionnaire* and *Affidavit* (if not already submitted). (See **TWDB Forms**); and
- ◆ Qualifications and experience of the inspection staff.
  - The approximate amount of time the inspector(s) will be on site.
  - An organization chart which specifies all persons involved in the construction phase decision making process and the chain of command. For more specific details refer to ED-5 *Guideline for Inspector Qualifications* (See **TWDB Guidance**).

### **Contingent Award and Execution of Construction Contract**

After receiving and reviewing the information identified as bid document submittals, the TWDB Project Reviewer/Engineer will authorize the Applicant (by phone) to contingently award the construction contract followed by a letter. The Applicant and consulting engineer will execute the contract in cooperation with the construction contractor. The Applicant will submit the following information and documents to the TWDB project reviewer as soon as possible after contract award and prior to TWDB sending the Applicant a letter concurring in the award of the contract and authorizing the issuance of the Notice to Proceed. See **TWDB Guidance for Checklist on Bid Documents and Executed Contract Documents**, ED-250.

Submit one copy of a bound fully executed construction contract documents. The submitted documents should include the following:

- ◆ Executed construction contract documents (2) copies, including the following:
  - Payment and Performance Bonds;
  - Excerpts from the Texas Water Code;
  - Contract Agreement;
  - Proof of Insurance;
  - *Contractor's Act of Assurance*, (See **TWDB Forms**); and
  - *Contractor's Act of Assurance Resolution*, (See **TWDB Forms**).
- ◆ Sufficiency of Funds Statement (a letter) describing the revised/current budget and all sources and uses of funds.
- ◆ Proposal for inspecting the project, demonstrating how the work will be adequately inspected, including:

## **BIDDING PHASE**

### ***Preparing for Loan Closing***

During the bidding phase the Applicant should also be preparing for the loan closing that will occur during the construction phase. This may include:

- ◆ coordinating budgets with the Applicant's Bond Counsel, Financial Advisor and Consulting Engineer
- ◆ drafting/reviewing final bond resolutions and ordinances, or, as applicable, loan agreement and promissory notes
- ◆ scheduling and issuing public notices on approval actions by the Applicant's governing body.



Notes:

## CONSTRUCTION PHASE

It is in the best interest of the Applicant to ensure that all prerequisites are in place prior to initiating construction and that construction is performed in accordance with the approved contract documents. The goals are to avoid disputes over program eligibility or contractor payments and to get the facility that the Applicant paid to have designed and constructed.

### ***Release of Funds for Construction***

Construction funds will be released after bid documents and award documents have been approved by TWDB's Project Reviewer/Engineer

### ***Preconstruction Conference***

A preconstruction conference should be conducted for each significant construction contract. TWDB field office staff should be invited and notified of the time, date, and place.

### ***Notice to Proceed***

After approval of contingently executed contract documents, TWDB will authorize the issuance of a Notice to Proceed and the TWDB Field Representative and Project Reviewer/Engineer should receive a copy of the notice.

### ***TWDB Access & Inspection***

Access to the project and any records related to it should be provided to TWDB personnel. The Applicant's bond resolution/ordinance or loan agreement is contingent on constructing the facility in accordance with the contract documents approved by the TWDB.

- ◆ Inspections - The TWDB will make monthly scheduled and unscheduled inspections. The primary purpose of our inspections is to keep the TWDB informed of the construction phase activities and progress of each contract.
- ◆ Reports - TWDB Inspection reports will be made available to the Applicant and the Consulting Engineer. The report and inspections are not intended to relieve the Applicant of the responsibility to provide adequate on-site inspection and engineering review to determine acceptability of the work and compliance with the contract documents.

## CONSTRUCTION PHASE

### Applicant Inspection

The Applicant should provide adequate inspection of the project under the supervision of a registered professional engineer and require the Engineer's assurance that the work is being performed in a satisfactory manner in accordance with the plans and specifications.

Adequate inspection of construction work should be provided by qualified inspectors. (See **TWDB Guidance** for *Inspector Qualifications, ED-005*.)

- ◆ Give consideration to the number and nature of contracts which will be active at the same time when planning the inspection schedule.
- ◆ Require a thorough daily log of activities. The Applicant should receive copies of the daily log to review construction progress and problems and to protect your interests should disputes arise. (See **TWDB Guidance** for *Inspector's Daily Report*.)
- ◆ Make sure that all required testing is conducted, observed and documented. Be familiar with the testing and payment provisions in the specifications. If possible, it is a good idea to withhold payment for all or a portion of a pay item until all testing has been completed and is acceptable. Testing is a protection of the Applicant's investment, and the cost is relatively small. Do not hesitate to test any item you question.
- ◆ Require the contractor to submit a schedule and update it as necessary. To avoid claims, accept, but don't approve, construction schedules, especially if they indicate completion prior to the approved contract completion date.
- ◆ Verify pay requests and invoices before making payment to the Contractor.
- ◆ Verify Contractor compliance with OSHA regulations for excavation safety. In addition, State law requires that the contract documents include safety provisions with excavation protection in accordance with OSHA standards as a pay item. As with any bid item, performance of work in accordance with the contract documents should be verified before payment. Reference *OSHA Safety and Health Standards (29 CFR 1926/1910)*.

## CONSTRUCTION PHASE

### ***Contractor Claims***

Awareness, documentation & communication will aid in prevention & resolution of contractor claims. **Loan money may not be eligible for increased costs due to claims.**

Common causes of claims:

- ◆ Defects in the contract documents.
- ◆ Differing site conditions.
- ◆ Inadequate construction inspection and/or direction from multiple sources.
- ◆ Failure to promptly and fairly address contractor claims, grievances, requests for time extensions, or other problems.
- ◆ Warranty problems.

Claims prevention:

- ◆ Conduct or attend monthly meetings with the contractor and Consulting Engineer; discuss any unresolved disputes and document the discussions.
- ◆ Discuss the project with your consultant and review daily logs or monthly summaries of progress.
- ◆ Maintain fully documented records of all aspects of work, including pay requests, requests for change orders, disputes, inspector's logs, test results and correspondence from the contractor and Consulting Engineer.
- ◆ Provide a timely response to contractor requests for direction, clarification and changes in work.
- ◆ Review specifications for arbitration requirements and be aware of what rights each party has in disputes.
- ◆ Review how the warranty is addressed in the specifications.
- ◆ If warranty provisions are not clear in the specifications, discuss them at the preconstruction conference and clarify them in writing at the beginning of the job. Agree to a warranty start date for individual pieces of equipment for phased startup, or for the entire job.
- ◆ Put acceptance of the project or of each segment of the project in writing and address the warranty in that document.

## CONSTRUCTION PHASE

### **Retainage**

Generally a minimum of 5% retainage is required by law on all state-loan-funded projects.

- ◆ The amount, deposit and investment requirements for retainage are unique to each construction project. If there is any uncertainty with regarding specific situations, the Applicant's legal counsel should be consulted.
- ◆ Retainage should not be released or reduced below 5% without the consent of the TWDB. A Certificate of Approval will be issued by the TWDB when each contract is finalized. This certificate authorizes release of retainage.

### **Change Orders**

The construction contract is between the Applicant and the Contractor, and any change orders signed by these two parties become part of that contract, regardless of TWDB funding eligibility or participation. The TWDB needs to review and approve all change orders.

TWDB reviews and approves change orders for the following:

- ◆ Eligibility of funding;
- ◆ Compliance with TCEQ rules;
- ◆ Environmental Determination;
- ◆ whether there is a change of scope of the project which requires action by the TWDB;
- ◆ whether a variance from Chapter 317, Design Criteria Rules requires action by TCEQ;
- ◆ whether a change order resulting in a change of scope of the project may require action by the TWDB;
- ◆ A change order requiring a variance from Chapter 290, Rules, Water Hygiene may require action by TCEQ. and
- ◆ conditions that may warrant a change order:
  - Changes in project scope;
  - Errors and omissions in the contract documents;
  - Changes instituted by regulatory agencies;

**CONSTRUCTION PHASE**

- Design changes; and
- Factors affecting time of completion.

Following are recommendations on handling and expediting change orders:

- ◆ Investigate site conditions and contract language to determine if a change is necessary.
- ◆ Document the reason for the change.
- ◆ Respond promptly to the Contractor's requests for changes, or initiate your changes as soon as possible to avoid claims for delays.
- ◆ Obtain independent estimates of the cost of the change (plus or minus) at least from the Contractor and the Consulting Engineer and negotiate a fair price. Keep records of the estimates and negotiations.
- ◆ Address time extensions (or lack thereof) for each item of work.

assistance -- The TWDB field inspector will track change orders at each inspection and will be available to discuss potential changes.

- ◆ Call the TWDB Project Reviewer/Engineer at any stage to obtain a preliminary determination of eligibility and availability of funds. However, final determination cannot be made until the signed change order and documentation have been received by the TWDB.
- ◆ Submit the change order with all supporting data to the TWDB's Review Engineer for a TWDB eligibility determination, as soon as it has been enacted.

of Submittal -- The TWDB will review fully executed change orders. Change orders should address the following:

- ◆ Scope of change;
- ◆ Justification for the change;
- ◆ Effect the change has on cost of the project; and
- ◆ Effect the change has on the time schedule.

## CONSTRUCTION PHASE

### ***Project Records***

It is in the Applicant's interest to keep an organized system of documentation for the project. See **TWDB Guidance: *Project Files & Construction Records***, WRD-017. See **TWDB Forms: *Construction Fund Project Ledger Form***, WRD-230, ***Property Log Form***, WRD-227, and ***Property Card Form***, WRD-228.

### ***Operations***

The following are staffing guidelines for your project:

- ◆ Hire and train operating personnel during the construction phase. The people who will run the facility should be available during the later stages of construction and start-up and, if possible, should have some input into the O&M manual.
- ◆ Operating personnel should visit the project during construction, but should be warned to give no direction to the Contractor. However, their comments and suggestions should be forwarded to the Consulting Engineer for consideration.
- ◆ Training prior to acceptance of the facility should include review of the Operation and Maintenance manual and, if possible, on-site training by supplier's representatives during start-up.
- ◆ Staffing should be in accordance with the Operation and Maintenance manual.

### ***Operation & Maintenance Manuals***

Preparation of an O&M manual is encouraged and is an eligible use of TWDB funds. The TWDB staff will make a cursory review of any manual prepared in order to assist the Applicant in receiving a quality O&M manual.

## CONSTRUCTION PHASE

### ***TWDB Closeout Submittals***

The following information and documents should be submitted to the TWDB Project Reviewer/Engineer prior to TWDB issuance of a Certificate of Approval and authorization of release of final retainage.

- ◆ A copy of the Contractor's final payment estimate and any outstanding Change Orders;
- ◆ An affidavit by the contractor that all bills have been paid;
- ◆ Notice of Completion, commencing the one year warranty period;
- ◆ Consulting Engineer's certification to the Applicant that the project has been completed and that the work was constructed in accordance with the plans and specifications;
- ◆ Acceptance of the work under this contract by the Applicant in the form of a written resolution or other formal action; and
- ◆ As-built or Record Drawings.

### ***Post Construction***

The Board has an interest in the continuing performance of the facility for the life of the loan.

- ◆ TWDB representatives may make a visit to the facility during the one year warranty period to assist the Applicant in reviewing performance, operations and maintenance.
- ◆ If requested by the Applicant, TWDB will conduct First Year Operations Assistance visits to assist the Applicant in evaluating the facility.
- ◆ TWDB's Audit Staff will monitor the Applicant for the life of the loan to ensure compliance with the bond indenture.
- ◆ TWDB will monitor the implementation of the Applicant's water conservation plan. The water conservation plan required by the board commitment should remain in effect until all financial obligations to the TWDB have been satisfied. Applicants of financial assistance of greater than \$500,000 are required to report annually on the implementation and status of the required water conservation program for a minimum of three years after the date of loan closing.
- ◆ TWDB staff will monitor compliance with any special environmental mitigation measures, as appropriate.



Notes:

## AUDIT PHASE

The Audit Staff of TWDB is responsible for monitoring the Applicant's financial stability and compliance from the first receipt of funds until final bond interest payment. The Audit staff is available to come to the Applicant's location to assist in financial compliance matters. (See **TWDB Guidance** for *Finance-Related Legal and Contractual Requirements*).

### **Major Goal**

The Audit staffs goal is to provide the TWDB with reasonable assurances that all grant and loan recipients use their assistance funds in accordance with applicable laws, regulations, and contractual provisions.

### **Loan Monitoring**

The Audit Staff monitors loan activities, including annual financial stability reviews of every entity in the TWDB's portfolio. In addition, the audit staff makes monthly or quarterly stability reviews of selected borrowers and provides on-site assistance and monitoring visits.

### **Project Monitoring**

Project monitoring activities include financial compliance reviews, final accounting examinations and the review and resolution of federal single audits.

Notes: