

Section 1 Introduction

1.1 Background

For more than four decades, the Texas Water Development Board (TWDB) has been responsible for developing and updating the Texas State Water Plan in cooperation with other state agencies and numerous regional, local, and private interests across the State (Figure 1.1-1). Approximately 100 potential reservoirs have been identified or recommended in the various State Water Plans completed during this period and many more reservoir sites have been considered by state or federal agencies, river authorities, and others. While some of these reservoirs have been constructed, many remain under consideration today as demands for reliable surface water supplies for municipal, industrial, steam-electric power generation, and other purposes continue to grow.

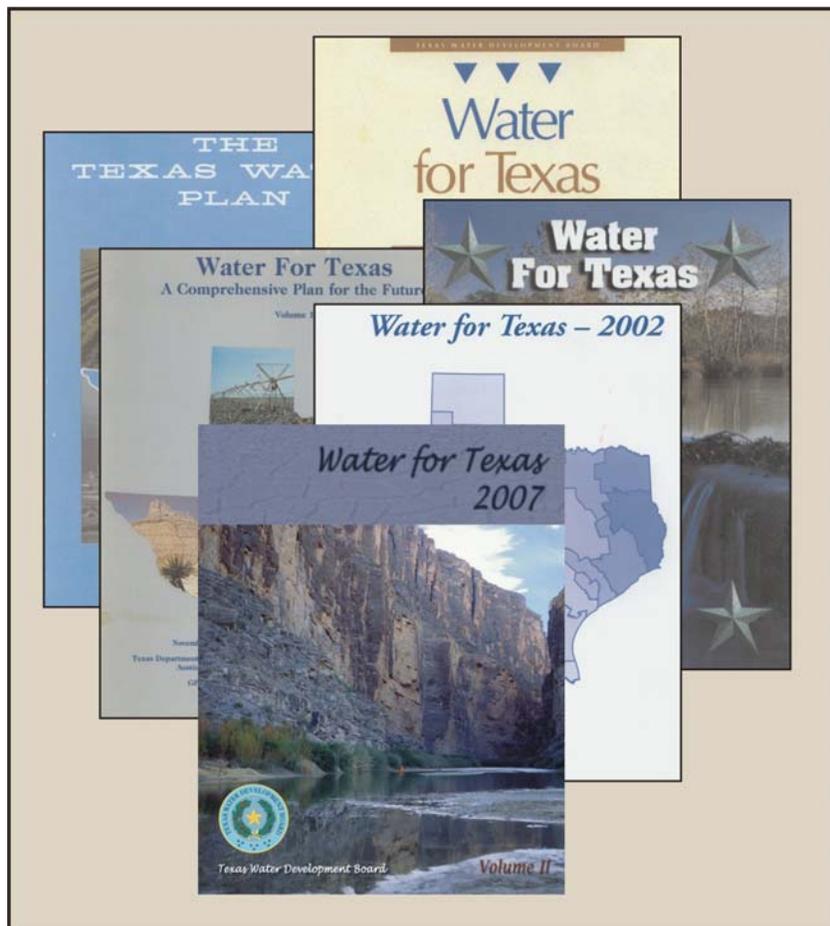


Figure 1.1-1. State Water Plans

In the 2007 State Water Plan, the TWDB has recommended that the Legislature consider 17 major reservoir sites identified by Regional Water Planning Groups for protection by designation as unique reservoir sites. The Texas Water Code provides that *the legislature may designate a site of unique value for the construction of a reservoir* [Section 16.051(f)(2)] and that *a state agency or political subdivision of the state may not obtain a fee title or an easement that would significantly prevent the construction of a reservoir on a site designated by the legislature under Subsection (f) of this section* [Section 16.051(g)(2)]. Lack of such designation has allowed state, federal, or local governments or private entities to take actions that have significantly impacted the feasibility of constructing reservoirs at some sites. A recent example of such an action is the unilateral establishment of the Neches River National Wildlife Refuge by the U.S. Fish & Wildlife Service on the site of the only new reservoir planned by the City of Dallas in the next 50 years and included in the 2007 State Water Plan.

Perhaps the most certain means of ensuring protection for unique reservoir sites is acquisition of the properties necessary for the reservoir projects, holding such properties in the public trust, and preventing conversion or uses of the properties for purposes ultimately precluding future reservoir development. Reservoir site acquisition must be considered in the context of compensatory ecological resource protection and preservation for mitigation of valuable ecological resources lost to permanent inundation. Hence, this research project includes land cover classification for reservoir sites potentially included in an acquisition program. Most importantly, this research project includes development and application of technical resources and matrix screening processes necessary to provide recommendations as to the most appropriate reservoir sites for State protection and/or acquisition.

1.2 Authorization and Objectives

The reservoir site acquisition study summarized in this report was authorized by the TWDB through Contract No. 0604830615 effective April 17, 2006. The primary objective of the study is selection of reservoir sites most appropriate for protection and/or acquisition by the State of Texas in order to provide for future development of essential surface water supplies. Major tasks leading to accomplishment of this objective, along with the section of this report in which pertinent information can be found, are listed as follows and summarized in Figure 1.2-1:

- (1) Research and data compilation for about 150 potential reservoir projects (Section 2);
- (2) Adoption of screening criteria and application of a matrix screening process resulting in the selection of 16 reservoir sites for technical evaluation (Section 2);
- (3) Application of geographic information system (GIS) techniques for definition and mapping of reservoir sites including elevation-area-capacity relationships, potential conflicts, and land cover classification (Section 3);
- (4) Assessment of reservoir firm yield available under drought of record conditions subject to senior water rights and provisions for environmental flow needs (Section 3);
- (5) Estimation of costs associated with dams and appurtenant structures, major relocations, and acquisition of reservoir and mitigation lands (Section 3); and
- (6) Recommendation of reservoir sites for protection and/or acquisition (Section 4).

Although the primary objective of this study is selection of reservoir sites most appropriate for protection, it is understood that such protection as may be afforded by the Legislature is not intended to circumvent the planning and permitting processes through which any major reservoir project must meet the requirements of applicable law prior to implementation. It is further understood that designation of reservoir sites recommended herein as unique, and even acquisition of these sites, does not preclude the planning, permitting, and construction of major reservoirs at alternative sites.

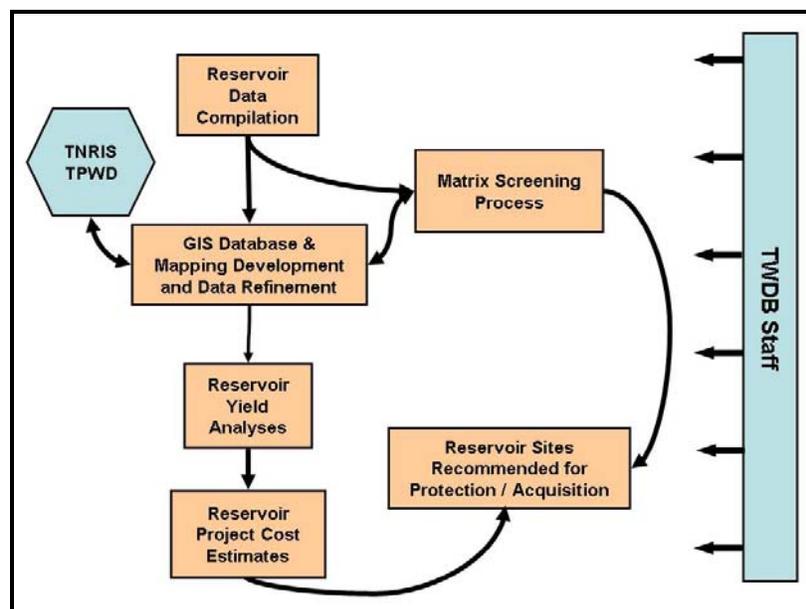


Figure 1.2-1. Reservoir Site Acquisition Study Tasks

(This page intentionally left blank.)