

**RECORD OF DECISION
REGIONAL ENVIRONMENTAL IMPACT STATEMENT
TRINITY RIVER AND TRIBUTARIES**

I. Introduction

Since its early history, the U.S. Army Corps of Engineers has played an important role in the development of the nation's water resources. Originally, this involved construction of harbor fortifications and coastal defenses. Later duties included the improvement of waterways to provide avenues of commerce and reduce flood hazards. An important part of its mission today is the protection of the nation's waterways through the administration of the Regulatory Program. The Corps is directed by Congress under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) to regulate all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States. Section 9 (33 USC 401) directs the Corps to regulate the construction of any dam or dike across a navigable water of the United States. The intent of these laws is to protect the navigable capacity of waters important to interstate commerce.

Additionally, the Corps is directed by Congress under Section 404 of the Clean Water Act (33 USC 1344) to regulate the discharge of dredged and fill material into all waters of the United States, including adjacent wetlands. The intent of this law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution, and to restore and maintain their chemical, physical, and biological integrity. Because the District Engineer's decision to issue or deny a permit under these laws is a significant Federal Action, various other statutes, principally Public Law 91-190 (the National Environmental Policy Act, or NEPA) come into play. Among other things, NEPA requires the consideration of the direct, indirect, and cumulative impacts of an action (40 CFR 1508.25(C)).

Late in 1984 and early in 1985, it became apparent that numerous unrelated development projects were being proposed along the Trinity River and its tributaries in Dallas, Denton, and Tarrant Counties, Texas. Most involved modification of the river channel and/or flood plain in some form or another, and most required a Corps of Engineers permit as a result. Because, individually or cumulatively, these projects were felt to have the potential to compromise the existing protection afforded to flood plain residents, because of perceived impacts to wetlands and other natural resources, and because of competing public demands for other uses of the river channel and flood plain, the District Engineer determined that it was necessary to develop a regional perspective in order to properly evaluate the impacts of individual permit decisions in accordance with the spirit and intent of NEPA and other applicable laws.

The Draft Regional Environmental Impact Statement (EIS), published in May 1986, analyzed a number of scenarios which were specifically designed to identify possible, significant cumulative impacts associated with different permitting strategies for the Trinity River flood plain. In addition to developing a baseline condition, it examined three groups of conditions based on a) maximizing environmental quality, b) ultimate implementation of the

Federal Emergency Management Agency's (FEMA) minimum criteria for the flood insurance program, and c) maximizing economic development.

The results of the Draft Regional EIS indicated strongly that there are potential cumulative impacts associated with individual flood plain development projects which are both measurable and significant. Additionally, the Draft Regional EIS indicated that the permitting approach adopted by the Corps of Engineers had the potential to have significantly different impacts on a number of regional parameters, especially flood hazards. Even though the analyses were not complete, and the public comment on the Draft Regional EIS indicated that there was much work to follow, the implications to the ongoing Regulatory Program could not be overlooked. In response to this, the Corps formulated a set of interim criteria to be in effect until the Record of Decision was rendered.

Many of the comments received on the Draft Regional EIS indicated that the slate of alternatives analyzed did not represent a realistic approach to regulatory strategies. In many cases, the predicted results were publicly unacceptable. Two important examples include the overtopping of the Dallas Floodway levees under two of the scenarios, and a substantial downstream shift in the Dissolved Oxygen "sag" resulting in noncompliance with State Water Quality Standards in the reach below the Trinidad gage. After careful analysis of the public and agency input, several new scenarios were formulated for analysis in the Final Regional EIS.

In addition to updating the baseline, three scenarios, representing the same three broad categories that had been previously addressed, were developed. Many people suggested that the Maximum Development scenarios analyzed in the Draft Regional EIS were too extreme, either because they conflicted with an ongoing project, or because levees were physically impractical in some portions of the flood plain. In response to this criticism, we agreed to replace them with a "Composite Future" scenario. Each city was tasked to provide the North Central Texas Council of Governments (NCTCOG) a delineation of the "most likely" limits of maximum encroachment within their jurisdiction. NCTCOG compiled each city's individual prediction and presented the resultant set of maps to local staffs and local elected officials before providing them to the Corps for analysis.

The Modified Floodway scenario of the Final Regional EIS replaced the floodway-based scenarios of the Draft Regional EIS as a representative compromise between maximum (realistic) development and maximum (realistic) environmental quality. In this scenario, the Corps defined the geographic limits of a drainageway incorporating the FEMA concept with significant technical variations. For the third scenario, the Corps revised and represented a Maximum Environmental Quality scenario, hydraulically identical to the revised baseline because it incorporated no additional flood plain projects except water quality, recreation, and wildlife enhancements. Of the scenarios, or alternatives, examined in the Final Regional EIS, this is the environmentally preferred alternative.

The extensive coordination and public involvement characteristic of the Regional EIS process continued during the comment period on the Final Regional EIS, which extended from its release on October 22, 1987, through January 31, 1988. During this period, I held a public meeting at Lamar High School at

which eleven people submitted statements. My staff attended in excess of twenty meetings with local government staffs, public agencies, and citizen groups. In addition, sixty-six written comments on the Final Regional EIS were received.

II. Discussion of Issues and Factors

Most of the formal public comment and discussion with local governments centered on three general issues: the appropriate level of flood protection (100-year vs. SPF), the level of accuracy of the hydraulic and hydrologic analyses displayed in the Regional EIS, and the issue of equity as it pertains to governmental regulation. "Benefits" and "Costs" of an action, whether it be a proposed project or a proposed regulation, do not always occur to the same group of people, let alone in the same order of magnitude. The definition of the "public interest" which is at the heart of the Regional EIS calls for an assessment of the tradeoffs inherent between public demands for enhanced environmental quality in the river corridor and for its use for needed public facilities, and economic development and the rights of private landowners.

A major consensus achieved through the review of the Final Regional EIS is that additional regional increases in flood hazards for either the 100-year or Standard Project Flood are undesirable, and that the thrust of flood plain management, in the short term, should be to stabilize the flood hazard at existing levels through regulation. Future efforts on the part of both the Corps and local organizations may be required to reduce flood hazard over the long term.

The Regional EIS is probably the most comprehensive such study done in the United States. It has highlighted the need for planning for the region and cooperation among the governmental entities along the Trinity River corridor to achieve quality development. The document was developed for the sole purpose of establishing a permitting strategy for the Trinity River and its tributaries. It does not contain a technical baseline that will remain current over time and is not to be used as a design document. Design decisions requiring water surface predictions based on critical storm centerings, and which are sensitive to valley storage computations, must be based on detailed site-specific engineering analyses. Other site-specific public or private flood control management decisions should likewise be based on current technical analyses. Further, flood insurance data must be obtained from the FEMA and not from the Regional EIS.

Neither the Regional EIS nor this Record of Decision encroaches upon the responsibility of design engineers or the authority of local governments. The Regional EIS, its public review, and this Record of Decision serve only to establish and document the "best overall public interest" as it applies to the Trinity River and its tributaries. It remains the responsibility of design engineers to perform competent work in accordance with professional design practices. Permit applicants which proposed flood plain modifications and/or site-specific flood control structures will need to satisfy review agencies as to the reasonableness of design assumptions.

Throughout the development of this Record of Decision, the Corps has worked closely with the NCTCOG to insure consistency with their COMMON VISION program. The criteria listed below for the West Fork, Elm Fork, and Main Stem are consistent with the Statement of Principles for Common Permit Criteria sub-

mitted by the Steering Committee of local government officials. Because of the massiveness of this undertaking and the importance of its impact on future growth, the comments from the cities and other governmental entities have been carefully considered.

III. Decision

Based on my consideration of the data developed and presented in both the Draft and Final Regional EIS's and my careful consideration of all public input, I have determined that, for the purposes of the Regional EIS study area, my Regulatory Program will be henceforth based on the following criteria. The baseline to be used in analyzing permit applications will be the most current hydraulic and hydrologic model of the specific site in question. The burden of proof of compliance with these criteria rests with the permit applicant. Variance from the criteria would be made only if public interest factors not accounted for in the Regional EIS overwhelmingly indicate that the "best overall public interest" is served by allowing such variance.

A. Hydraulic Impacts--Projects within the SPF Flood Plain of the Elm Fork, West Fork, and Main Stem. The following maximum allowable hydraulic impacts will be satisfied, using reasonable judgment based on the degree of accuracy of the evaluation, and using cross sections and land elevations which are representative of the reaches under consideration:

1. No rise in the 100-year or SPF elevation for the proposed condition will be allowed.
2. The maximum allowable loss in storage capacity for 100-year and SPF discharges will be 0% and 5% respectively.
3. Alterations of the flood plain may not create or increase an erosive water velocity on-or off-site.
4. The flood plain may be altered only to the extent permitted by equal conveyance reduction on both sides of the channel.

B. Hydraulic Impacts--Tributary Projects. For tributaries with drainage areas less than 10 square miles, valley storage reductions of up to 15% and 20% for the 100-year and Standard Project Floods, respectively, will be allowed. For tributaries with intermediately-sized drainage areas (10 square miles to 100 square miles), the maximum valley storage reduction allowed will fall between 0% and 15% for the 100-year flood and 5% and 20% for the Standard project Flood. Increases in water surface elevations for the 100-year flood will be limited to approximately zero feet. Increases in water surface elevations for the Standard Project Flood will be limited to those which do not cause significant additional flooding or damage to others. Projects involving tributary streams with drainage areas in excess of 100 square miles will be required to meet the same criteria as main stem projects (see "A" above).

C. Cumulative Impacts. The upstream, adjacent, and downstream effects of the applicant's proposal will be considered. The proposal will be reviewed on the assumption that adjacent projects will be allowed to have an equitable chance to be built, such that the cumulative impacts of both will not exceed the common criteria.

D. Design Level of Flood Protection. The engineering analysis will include the effects of the applicant's proposal on the 100-year and Standard

Project Floods and should demonstrate meeting FEMA, Texas Water Commission, and local criteria, as well as Corps, for both flood events.

1. For levees protecting urban development, the minimum design criterion for the top of levee is the SPF plus 4.0, unless a relief system can be designed which will prevent catastrophic failure of the levee system.

2. For fills, the minimum design criterion is the 100-year elevation, see above, plus one foot.

E. Borrow Areas. The excavation of "borrow" areas to elevations lower than the bottom elevation of the stream is generally hydrologically undesirable. The volume of such excavations, above the elevation to which the area can be kept drained, can be considered in hydrologic storage computations.

F. Preservation of Adjacent Project Storage. The applicant will be required to respect the valley storage provided by adjacent projects by ensuring that their hydraulic connection to the river is maintained. If the project blocks the hydraulic connection of the adjacent project, then the applicant will be required to provide additional valley storage to offset the loss caused by the blockage of the hydraulic connection.

G. Special Aquatic Sites. Value-for-value replacement of special aquatic sites (i.e. wetlands, pool and riffle complexes, mud flats, etc.) impacted by non-water dependent proposals will be required.

These criteria will be used by the Corps for the express purpose of evaluating new permit applications received subsequent to the effective date. They will not be used to reevaluate any flood plain project already constructed or permitted. They apply to permit applications from public agencies as well as private sector applications. In addition to the criteria discussed above, the following guidelines will be used by my staff in evaluating permit applications:

A. Runoff. Site drainage systems should minimize potential erosion and sedimentation problems both on site and in receiving water bodies.

B. Habitat Mitigation. A standardized, habitat-based evaluation method should be used to evaluate the impacts of the applicant's proposal to fish and wildlife resources. Guidelines for the quality and quantity of mitigation are as follows:

1. Category 2 resources--habitat of high value which is scarce, or is becoming scarce in the ecoregion--no net loss of habitat value. Category 2 resources in the study area include vegetated shallows, riffle and pool complexes, and riparian forests, as well as wetlands (see above for mitigation of wetlands). A buffer strip of natural vegetation 100' feet wide on each side of the channel for main area projects, and 50' feet for tributaries, should be maintained.

2. Category 3 resources--habitat of medium-to-high value that is relatively abundant in the ecoregion--no net loss of habitat value while minimizing the loss of the habitat type. (This means to reduce the loss of the habitat and compensate the remainder of loss of habitat value by creation or improvement of other Category 2 or 3 resources.) Category 3 resources in the study area include deep water, native rangeland, upland forests, and upland

shrubland.

3. Category 4 resources--habitat of low-to-medium value--mitigation should be to minimize the loss of habitat value, which can be accomplished by avoidance or improving other habitat types. Category 4 resources in the study area include cropland and improved pasture.

C. Cultural Resources. Cultural resources, including prehistoric and historic sites, will be identified and evaluated according to National Register of Historic Placer Criteria. Identification procedures may involve literature review, pedestrian survey, and excavation to identify buried cultural materials. Sites which are eligible for inclusion in the National Register of Historic Places will be treated by measures which range from avoidance, to preservation in place, to mitigation through excavation.

D. Other Regional Needs and Plans. Consideration will be given when evaluating permit applications of the proposal's impact on regional facilities which have been identified as important through the Regional EIS process. These include, but are not limited to, a linear hike/bike system linking large flood plain parks throughout the Metroplex, the Trinity Tollway, and sites for regional stormwater detention basins. (Specific locations and plans for these facilities will continue to evolve through coordination with NCTCOG and local governments.) Applicants will be urged to design projects which do not preclude future implementation of these regional assets.

It is my conclusion that the criteria and guidelines set forth above represent the best available definition of the "overall public interest," taking into account the rights of individual landowners and the direct, indirect, and cumulative impacts of individual actions under by purview. Further, I conclude that these policies represent all the practical means known to me to avoid or minimize environmental harm within that framework. This document will therefore provide the specific framework within which we will operate the Fort Worth District's Regulatory Program within the Regional EIS study area.

/Signed/

JOHN E. SCHAUFELBERGER
Colonel, Corps of Engineers
District Engineer

Date: *April 29, 1988*