

Appendix K: March 11, 2010 Meeting

Agenda

Minutes

Presentation: Federal Reservoir Permitting Process and Mitigation Determination, U.S. Corps of Engineers Staff

Presentation: Sulphur River Basin Feasibility Study by Marcia Hackett

Presentation: Texas Forestry Association by Charlie Gee

Presentation: Conservation in Region C by Alan Plummer

Presentation: Conservation and Reuse in Region C by Dan Hardin

STUDY COMMISSION ON REGION C WATER SUPPLY

OPEN PUBLIC MEETING

Thursday, March 11, 2010
10:00 A.M.

The Meeting will be held at:

University of Texas at Dallas
Eugene McDermott Library
McDermott Suite, 4th Floor
800 West Campbell Road
Richardson, Texas 75080

AGENDA

- I. Call to Order
- II. Welcome/Introduction
- III. Action Items for Consideration
 - a. Approval of Minutes of November 20, 2009 Meeting
- IV. Discussion Items
 - a. Presentation by USCOE concerning mitigation requirements of the United States Army Corp of Engineers relating to any new reservoir project, including identifying potential mitigation sites.
(SOW Task 4.1)
 - b. Presentation by USCOE concerning whether the mitigation burden may be shared by the Regions C and D Regional Water Planning areas in proportion to the allocation to each region, of water from any proposed reservoir project.
(SOW Task 5.1)
 - c. Presentation by USCOE concerning the purpose and benefits of completing the "Sulphur River Basin Feasibility Study"
(SOW Task 8.2)
 - d. Potential Impact to the Texas Forest Products Industry from reservoir Construction - Ron Huffman, Executive Vice President Texas Forestry Association
 - e. Present and discuss results of study completed for 2011 Region C Water Plan, focusing on current conservation efforts, issues related to measurement of effectiveness of specific measures, implementation rates, and recommendations for ongoing planning efforts.
(SOW Task 3.1).
 - f. Present and discuss results of study to determine the volume of water expected to be saved through conservation and reuse strategies to be implemented by municipal Water User Groups(WUG's) in Region C.
(SOW Task 3.2)
 - g. Present and discuss results of work to determine the remaining water demand for municipal WUG's which would be anticipated to be met from traditional ground and/or surface water sources, and the equivalent

gallons per day (GPCD) demand for water from those sources.
(SOW Task 3.3).

- h. Present and discuss the results of work to determine the amount of reduction in demand which would be necessary to further reduce the Region C GPCD to levels equivalent to the state average GPCD and to the Region D average GPCD.
(SOW Task 3.4)
- i. Present and discuss the analysis of the volumes of demand reduction calculated in e.(Task 3.4) above in relation to volumes associated with recommended and alternate strategies proposed to develop additional water supplies.
(SOW Task 3.5).

- V. Review status and progress of Contract Amendments with Texas Water Development Board (TWDB) and Espey Consultants, Inc.
- VI. Review Study Commission Timeline for completing requirements for Senate Bill (SB) 3
- VII. Discussion/Selection of Date, Time, and Location of Next Meeting
- VIII. Public Comment
- IX. Adjourn

Study Commission on Region C Water Supply
MINUTES OF AN OPEN PUBLIC MEETING
March 11, 2010

The Study Commission on Region C Water Supply (Study Commission) met in an open public meeting on Thursday, March 11, 2010, at 10:00 A.M.. The meeting was held in the McDermott Library at the University of Texas at Dallas in Richardson, Texas. Notice of the meeting was legally posted.

I. CALL TO ORDER

Senator Florence Shapiro called the meeting to order at approximately 10:05 A.M.

II. WELCOME/INTRODUCTION

The following members were in attendance:

The Honorable Florence Shapiro
The Honorable Stephen Frost

Mr. Thomas Duckert
Mr. Richard LeTourneau
Mr. Jim Parks

A representative for Senator Kevin Eltife, Travis Ransom, was in attendance. Texas Water Development Board (TWDB) staff included: Executive Director Kevin Ward, Dan Hardin and Temple McKinnon. David Harkins attended as a representative of Espey Consultants. Northeast Texas Municipal Water District Executive Director Walt Sears was also in attendance.

The registration lists signed by guests in attendance are attached.

III. ACTION ITEMS FOR CONSIDERATION

a. APPROVAL OF MINUTES OF NOVEMBER 20, 2009 MEETING

On a motion by Jim Parks and a second by Tom Duckert, the Study Commission unanimously adopted the minutes from the November 20, 2009, meeting.

IV. DISCUSSION ITEMS

- a. PRESENTATION BY USACE CONCERNING MITIGATION REQUIREMENTS OF THE UNITED STATES ARMY CORPS OF ENGINEERS RELATING TO ANY NEW RESERVOIR PROJECT, INCLUDING IDENTIFYING POTENTIAL MITIGATION SITES. (SOW TASK 4.1)

Meg Gaffney-Smith, Chief of the USACE Regulatory Branch, presented the Corps' approach to mitigation. Corps-approved mitigation is required for any project that involves unavoidable impacts to navigable waters in the United States. Ms. Gaffney-Smith emphasized that no absolute method for mitigation exists, because mitigation is project-specific.

In 2008, the Corps adopted a new rule regarding mitigation. The intent of the rule is to allow for more flexibility while meeting a "no net loss" of wetlands goal and balancing public interest. Mitigation is achieved by restoration, creation, enhancement or preservation of aquatic resources.

Formerly, mitigation was preferred to be "on-site" and "in-kind." Thus, the options for mitigation were limited in scope. The 2008 rule allows the Corps to make its permitting decisions based on the broader watershed, and focus on what mitigation solutions will provide the same ecological function within a watershed. The emphasis is on long term protection and monitoring.

Ms. Gaffney-Smith indicated that the key for any project will be the "mitigation sequence," where the project developer must avoid any adverse effects to wetlands, minimize impacts, and compensate any unavoidable impacts. The mitigation sequence increases the importance of continual communication with USACE throughout project planning and construction.

She also discussed the three sources of mitigation: permittee-responsible mitigation, mitigation banks and in-lieu-fee programs. Members of the Commission posed several questions about these sources, asking which would be appropriate for proposed reservoirs and reservoir expansions in North Texas. Stephen Brooks, Chief of the Fort Worth District's Regulatory Branch, also stated that the Corps has not yet permitted any large projects in Texas under the 2008 rule.

Members asked if the Corps has permitted a project requiring the replacement of a mitigation area like White Oak Creek. Jennifer Walker, Chief of the Permits Section of the Fort Worth District's Regulatory Branch, stated that USACE has not dealt with this issue on such a large scale.

- b. PRESENTATION BY USACE CONCERNING WHETHER THE MITIGATION BURDEN MAY BE SHARED BY THE REGIONS C AND D REGIONAL WATER PLANNING AREAS IN PROPORTION TO THE ALLOCATION TO EACH REGION, OF WATER FROM ANY PROPOSED RESERVOIR PROJECT. (SOW TASK 5.1)

Ms. Walker indicated that while Regions C and D can both contribute to a mitigation plan in any way they see fit, only the permit applicant is responsible for the mitigation. The Corps does not consider interlocal agreements.

c. PRESENTATION BY USACE CONCERNING THE PURPOSE AND BENEFITS OF COMPLETING THE "SULPHUR RIVER BASIN FEASIBILITY STUDY" (SOW TASK 8.2)

Marcia Hackett, Chief of the Fort Worth District's Civil Programs, presented the Commission with the history concerning the Sulphur River Basin Feasibility Study (Study).

Congress authorized the Study in 1998 in order to look at the opportunities, problems and needs in the Sulphur River Basin. The Study requires a 50-50 match between federal and non-federal partners, and so is subject to Congressional appropriation. Up to 100 percent of the local sponsor's share can be work-in-kind.

The Corps received Congressional appropriation in 1999 for a reconnaissance study, the purpose of which was to justify federal interest and to identify non-federal sponsors. At that time, no non-federal sponsors were identified. The reconnaissance study was certified in 2004.

The Corps identified planning objectives, problems and opportunities related to the Sulphur Basin in the reconnaissance study. The Corps identified several problems: flooding issues; additional water supply needs; the logjam; water quality degradation; and degradation of aquatic and bottomland habitats.

Planning objectives and opportunities identified include: develop potential water supplies; analyze potential additional reservoirs; reduce flood frequency and velocity; reduce channel cutting in the North Sulphur River; and improve habitats and water quality.

The Corps and the Sabine River Basin Authority (SRBA) signed a Feasibility Cost Share Agreement in 2005, establishing the SRBA as the non-federal partner.

Ms. Hackett concluded that the major impediment to the Study is Congressional appropriation, given that the cost estimate for the Study was \$9.5 Million in 2005. However, the watershed-wide Study offers several benefits to stakeholders in Regions C and D. It would allow for more informed decisions by establishing baseline conditions. It would allow for alternatives to be compared "apples to apples." The Study would give fair and equitable consideration to economical, social and environmental impacts. The Study would ultimately assist in documentation required for the 404 permitting of any future water supply project in the Basin.

Members discussed obtaining appropriations from Congress, and the timeline associated with appropriation and completion of the Study. The Corps

estimated that an annual appropriation from Congress of \$800,000 would be needed, and that the Study could take approximately 3.5 years to complete.

d. POTENTIAL IMPACT TO THE TEXAS FOREST PRODUCTS INDUSTRY FROM RESERVOIR CONSTRUCTION

Charlie Gee, Texas Logging Council Coordinator for the Texas Forestry Association, testified as to the impact of reservoirs on the construction industry. Mr. Gee presented the importance of the timber industry to East Texas and to Texas itself. The timber industry contributes \$19.4 Billion to the Texas economy, with \$33.6 Billion as the total industry output. The timber industry also employs 78,000 Texans directly.

Mr. Gee maintained that additional reservoirs are not the final answer because of lost economic opportunity and wildlife impact. Additionally, reservoir construction displaces people.

The members asked Mr. Gee to provide the Commission information on details relating to the timber industry in the Sulphur River Basin including: acreage, potential displacement, mills in Northeast Texas, and other relevant information. Representative Frost, Mr. Duckert and Mr. Gee agreed to get this information.

e. PRESENT AND DISCUSS RESULTS OF STUDY COMPLETED FOR 2011 REGION C WATER PLAN, FOCUSING ON CURRENT CONSERVATION EFFORTS, ISSUES RELATED TO MEASUREMENT OF EFFECTIVENESS OF SPECIFIC MEASURES, IMPLEMENTATION RATES, AND RECOMMENDATIONS FOR ONGOING PLANNING EFFORTS. (SOW TASK 3.1).

Alan Plummer, president of Alan Plummer and Associates and consultant for Region C Regional Water Planning Group, presented the reuse and conservation strategies implemented in Region C and identified in the 2011 regional planning process. Mr. Plummer identified conservation and reuse as key strategies for Region C.

Mr. Plummer spoke about the difficulties of using gallons per capita per day (GPCD) to compare cities and regions. No standard methodology is in place, and different users are not adequately broken down.

Mr. Plummer shared a comparison of regions' 2006 municipal per capita water use. Region C's municipal GPCD was the second highest in the state, and Region D's GPCD was the fourth highest. By contrast, Region C's total per capita water use was the lowest in the state, and Region D's total use was about average.

Mr. Plummer noted that these numbers do not account for the differences between residential and industrial use. He presented a normalized residential GPCD for major Texas cities in 2007. Dallas ranked the highest, at 92 GPCD for residential users. Houston, by contrast was at 69 GPCD for residential users. San Antonio's residential GPCD was 86.

Members asked several questions about how the normalized GPCDs were calculated, and why they are so different from GPCDs usually associated with cities. Mr. Plummer agreed to provide the Commission with the following information: the GPCD breakdown among all users in Texas and the method used by San Antonio to calculate its GPCD.

- f. PRESENT AND DISCUSS RESULTS OF STUDY TO DETERMINE THE VOLUME OF WATER EXPECTED TO BE SAVED THROUGH CONSERVATION AND REUSE STRATEGIES TO BE IMPLEMENTED BY MUNICIPAL WATER USER GROUPS(WUG'S) IN REGION C. (SOW TASK 3.2)

Mr. Plummer discussed conservation's role in Region C's regional water plan. Since 2006, Region C has advanced 5 major reuse projects. Another project is scheduled for completion in 2010. Regional coordination and agreements have been key in the development of these reuse projects.

2060 projections in Region C's proposed 2011 regional water plan show Region C ahead of the rest of the state in reuse. Mr. Plummer pointed out that in 2010, Region C's reuse was greater than 200,000 acre-feet per year. This number is expected to grow to 665,000 in 2060. The 2011 Region C plan also projects a 30-35 percent reduction in municipal demand.

Members asked Mr. Plummer to help identify what data should be collected to better pinpoint possible water savings.

- g. PRESENT AND DISCUSS RESULTS OF WORK TO DETERMINE THE REMAINING WATER DEMAND FOR MUNICIPAL WUG'S WHICH WOULD BE ANTICIPATED TO BE MET FROM TRADITIONAL GROUND AND/OR SURFACE WATER SOURCES, AND THE EQUIVALENT GALLONS PER DAY (GPCD) DEMAND FOR WATER FROM THOSE SOURCES. (SOW TASK 3.3).

Dan Hardin, Director of TWDB's Water Resource Planning division, presented data on municipal demand and need from traditional water resources. In 2007, Texas user demand by group broke down as: 60 percent for irrigation; 26 percent for municipal; and 8 percent for manufacturing.

TWDB data shows that Region C will be responsible for 47 percent of all municipal conservation in Texas by 2060. By 2030, Region C will have implemented most of its conservation and reuse strategies and will meet 1/3 of its municipal demand through these strategies.

- h. PRESENT AND DISCUSS THE RESULTS OF WORK TO DETERMINE THE AMOUNT OF REDUCTION IN DEMAND WHICH WOULD BE NECESSARY TO FURTHER REDUCE THE REGION C GPCD TO LEVELS EQUIVALENT TO THE STATE AVERAGE GPCD AND TO THE REGION D AVERAGE GPCD. (SOW TASK 3.4)

Mr. Hardin testified that if Region C's GPCD were equal to that of Region D, there would still be remaining municipal needs of 750,000 acre-feet per year in 2060. Reduced GPCD would be outstripped by population growth in 2030.

Projections for Region C show that Region C and Region D GPCD should be equal by 2030. Conservation and reuse will sustain Region C's water needs in the short term, but cannot keep up with population growth in the long term.

- i. PRESENT AND DISCUSS THE ANALYSIS OF THE VOLUMES OF DEMAND REDUCTION CALCULATED IN E.(TASK 3.4) ABOVE IN RELATION TO VOLUMES ASSOCIATED WITH RECOMMENDED AND ALTERNATE STRATEGIES PROPOSED TO DEVELOP ADDITIONAL WATER SUPPLIES. (SOW TASK 3.5).

The municipal water use formula is governed by statute, where GPCD is the average daily total of residential, commercial and institutional water use divided by total residential population. However, GPCD is often treated as if it only measured residential. TDWB has been gathering data in order to publish purely residential estimates.

Representative Frost questioned Mr. Hardin as to how the Water Board reviews regional water plans, and how it determines that Region C has done all it can do to implement conservation and reuse. Jim Parks noted that the Region C plan relies on Best Management Practices developed by the TWDB.

Kevin Ward, executive director of TWDB, clarified that the Water Board does not have the statutory authority to review whether a region can do more for conservation and reuse. Representative Frost asked if TWDB needed more control over regional plans, but Mr. Ward replied that the State does not have the data to do this.

- V. REVIEW STATUS AND PROGRESS OF CONTRACT AMENDMENTS WITH TEXAS WATER DEVELOPMENT BOARD (TWDB) AND ESPEY CONSULTANTS, INC.

Mr. Parks stated that the contract amendments and funding is complete for Espey and TWDB.

VI. REVIEW STUDY COMMISSION TIMELINE FOR COMPLETING REQUIREMENTS FOR SENATE BILL (SB) 3

Tom Duckert stated that the requirements should be complete in seven months time, in time for printing and distribution. The contract currently states that Phase I and II must be complete by May 26, 2009. Mr. Duckert and Mr. Parks will discuss the issue with Espey and TWDB to amend the timeline and contract. Richard LeTourneau requested that the Phase I report be kept a stand-alone document.

VII. DISCUSSION/SELECTION OF DATE, TIME, AND LOCATION OF NEXT MEETING

The members tentatively agreed to set the next Commission meeting on April 26, 2010, at a location to be determined in Region D.

VIII. PUBLIC COMMENT

Public comments were received from the following individuals:

- i. Michael Russell, Sabine Basin River Authority
- ii. Wayne Dial, City of Clarksville
- iii. Ann Rushing, Mayor, City of Clarksville
- iv. Max Shumake
- v. Janice Bezanson, Texas Conservation Alliance
- vi. David Corrigan, Dallas Regional Chamber
- vii. George Frost
- viii. Nancy Clements
- ix. Richard Lowerre, Caddo Lake Institute

IX. ADJOURN

There being no further business, the meeting of the Study Commission on Region C Water Supply adjourned at approximately 2:05 P.M.



SENATOR FLORENCE SHAPIRO
Co-Presiding Officer



REPRESENTATIVE STEPHEN FROST
Co-Presiding Officer

STUDY COMMISSION ON REGION C WATER SUPPLY

MCDERMOTT LIBRARY, UNIVERSITY OF TEXAS AT DALLAS, 800 CAMPBELL ROAD, RICHARDSON, TEXAS 75080

ATTENDANCE ROSTER

March 11, 2010

	PRINTED NAME	REPRESENTING	E-MAIL ADDRESS
1	ANTONIO VALMENDRA	ALIFF ASSA	TAMERIDAEHALFF@aol.com
2	Kew Johnson	Self	TKELW30HN@Yahoo.com
3	Diane Fontaine	Self- landowner	dconnor0811@tx.tvr.com
4	Wayne Owen	TRWD	
5	Jack Stevens	TRWD	
6	TINA PTAKE	TRWD	
7	Joy Barksdale	Dallas Regional Chamber	
8	Isais, Charlene, Victor Martinez	landowner	
9	Nancy Clements	landowner	nclements@aol.com
10	Molly C. Berridge	landowner	mollyc97@aol.com
11	Red Jackson	landowner	
12	PRESTON L. SPIRITS	WORKING LANDS	
13	Emile Fleming	landowner	Chamsoaw1234@aol.com
14	Max Shumaker	Supplier River Oversight Society	Max Shumaker@AOL.COM
15	John McConnell	McCleary Community	jdmcz@mt-vernon.com
16	Ruth Amble	SUTHER RIVER/SHAWNEE PRairie	74 Zibek Rd. Aubrey TX 75054
17	Robert Malena-Hughes	landowner	
18	CHARLES COLE	TX Logging Council	CHARLESGETT@aol.com
19	Allen Birdsong	Family	shifty2@ash.com
20	Shirley Shumaker	SOS	HollowayCrossing@aol.com

STUDY COMMISSION ON REGION C WATER SUPPLY

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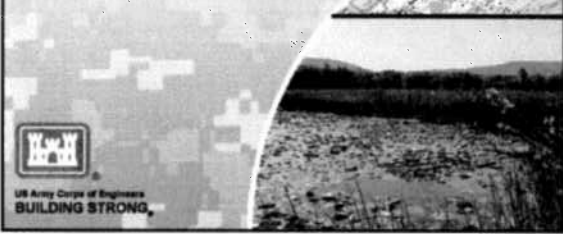
ATTENDANCE ROSTER

March 11, 2010

	PRINTED NAME	REPRESENTING	E-MAIL ADDRESS
1	Patricia Womack	SRBA	
2	Nancy Ross	SRBA	
3	David Neeley	SRBA	
4	Cliff Sunda	Landowner	cliff'sunda@yahoo.com
5	Chaeken Granberry	Landowner	
6	David Granberry	Landowner	
7	David Frost	"	
8	Ruth Frost	"	
9	Naney Clements	"	
10	Bessie Neal Heath	"	
11	Molly Berridge	"	
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Mitigation and Watershed Planning

Regulatory Community of Practice
HQUSACE
Washington, DC
March 2010



Mitigation

- What is mitigation?
 - ▶ Avoiding, minimizing, rectifying, reducing, or compensating for resource losses
- Why is it required for permits?
 - ▶ Ensure the permitted activity is in the public interest
 - ▶ Ensure compliance with the 404(b)(1) Guidelines
 - ▶ National Environmental Policy Act
 - Ensure impacts to human environment are not significant
 - ▶ Satisfy requirements of other laws
 - ▶ For general permits, ensure minimal adverse effects



Rules and Policies

- Corps mitigation policies
 - ▶ General mitigation policy at §320.4(r)
 - ▶ Nationwide permit mitigation policy at §330.1(e)(3)
- 2008 Mitigation Rule
 - ▶ 33 CFR part 332
 - ▶ Compensatory mitigation for impacts to aquatic resources
- 404(b)(1) Guidelines
 - ▶ 40 CFR part 230 - issued 1980, revised 2008
 - ▶ 1990 Mitigation MOA between Army and EPA



General Mitigation Policy

- 33 CFR 320.4(r) (1986)
- Addresses when compensatory mitigation is to be required in DA permits
- Applies to all regulatory authorities
 - ▶ Section 404 of the Clean Water Act
 - ▶ Sections 9 and 10 of the Rivers and Harbors Act
 - ▶ Section 103 of the Marine Protection, Research, and Sanctuaries Act



4

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General Mitigation Policy

- Three categories of mitigation:
 - ▶ Project modifications to minimize adverse project impacts
 - Modifications should be feasible (consider costs, constructability)
 - Project will still generally meet the applicant's purpose and needs
 - ▶ Satisfy applicable legal requirements
 - Compliance with 404(b)(1) Guidelines
 - Endangered Species Act
 - ▶ Ensure project is in the public interest



5

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General Mitigation Policy

- All compensatory mitigation will be for significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment
- All mitigation will be:
 - ▶ Directly related to the impacts of the proposal
 - ▶ Appropriate to the scope and degree of those impacts
 - ▶ Reasonably enforceable
- Use permit conditions to establish binding, enforceable mitigation requirements



6

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Nationwide Permit Mitigation Policy

- 33 CFR 330.1(e)(3) (1991)
- Mitigation can be used to ensure that the permitted activity results in minimal individual and cumulative adverse environmental effects
- Districts are to add activity-specific conditions to ensure that the mitigation will be accomplished
- If sufficient mitigation cannot be provided to ensure minimal adverse effects, activity not authorized by NWP
 - ▶ Applicant will be instructed on how to apply for an individual permit



404(b)(1) Guidelines

- Substantive criteria for evaluating discharges of dredged or fill material into waters of the United States (Section 404 of the CWA)
- Mitigation requirements found in:
 - ▶ 40 CFR part 230 (EPA Regulations)
 - ▶ 1990 Mitigation MOA
- Avoiding and minimizing impacts
- Cannot consider compensatory mitigation when making finding of "no significant degradation" (40 CFR 230.10(c))



1990 Mitigation MOA

- Applying mitigation provisions of 404(b)(1) Guidelines to §404 standard permits
- Simplified mitigation sequence to: avoid, minimize, compensate
- Compensatory mitigation not required for all permit actions
- §404 Program contributes to national goal of "no overall net loss" of wetlands
- Certain provisions of the 1990 Mitigation MOA have been superseded by the 2008 Mitigation Rule
 - ▶ On-site, in-kind preference replaced by environmental considerations (i.e., locate mitigation projects where they will succeed)



2008 Mitigation Rule

- Detailed standards and requirements for compensatory mitigation
- Addresses where and how compensatory mitigation is to be done
- Governs:
 - ▶ Mitigation banks
 - ▶ In-lieu fee programs
 - ▶ Permittee-responsible mitigation
- Mitigation credit: a gain in aquatic resource functions a mitigation project



10

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Types of Compensatory Mitigation Projects

- Restoration
 - ▶ Returning natural or historic functions to a degraded or former aquatic resource
- Establishment (creation)
 - ▶ Manipulate an upland site to develop an aquatic resource
- Enhancement
 - ▶ Manipulate an existing aquatic resource to increase one or more specific functions
- Preservation
 - ▶ Remove a threat to an existing aquatic resource



11

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Mitigation Bank

- One or more sites where resources (e.g., wetlands, streams) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits
- Sells compensatory mitigation credits to permittees
- Credits usually produced in advance of impacts
- Bank sponsor assumes responsibility for providing the mitigation
- Operation and use are governed by a mitigation banking instrument
- Commercial entity or a single user (e.g., State DOT)
- 450 mitigation banks as of 2005



12

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In-Lieu Fee Program

- Government or non-profit natural resource management entity
- Collects fees from permittees to do larger compensatory mitigation projects
- Credits usually produced after impacts
- Sponsor assumes responsibility for providing the mitigation
- Operation and use are governed by an in-lieu fee program instrument
- Sponsor must be governmental or non-profit natural resources management entity
- 46 in-lieu fee programs as of 2006



13

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Permittee-Responsible Mitigation

- An aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation
- Generally a single mitigation site to offset impacts caused by a permitted activity
- The permittee retains full responsibility



14

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General Principles

- Permit applicants are responsible for proposing an appropriate compensatory mitigation option
- Corps is decision-maker
 - ▶ Establishing compensatory mitigation requirements for DA permits
 - ▶ Approving mitigation banking or in-lieu fee program instruments
- If mitigation bank or in-lieu fee program is used, responsibility to provide compensatory mitigation is transferred to the sponsor when permittee secures credits



15

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Benefits of Mitigation Banks and In-Lieu Fee Programs

- Consolidated aquatic resource restoration, establishment, enhancement, and/or preservation projects
- Provide higher level of planning and scientific expertise
- Helps lessen risks and uncertainty for compensatory mitigation project success
- Allows more efficient compliance efforts
 - ▶ One large mitigation site vs. many small, scattered sites
- Helps streamline permit process
 - ▶ Reduces need to evaluate and approve individual permittee-responsible mitigation plans
 - ▶ District only needs to approve use of credits



16

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Location and Type of Compensation

- Preference hierarchy for mitigation options
 - ▶ Can be overridden by environmental considerations
- Mitigation bank credits
 - ▶ Help reduce risk and uncertainty
 - ▶ Credits usually further along in development
 - Approved instrument
 - Approved mitigation plan
 - Credits released as milestones achieved
- In-lieu fee program credits
 - ▶ Also help reduce risk and uncertainty
 - ▶ Projects often address high priority aquatic resource needs in a watershed
 - ▶ Consolidating mitigation projects



17

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Location and Type of Compensation

- Permittee responsible mitigation
 - ▶ Watershed approach
 - ▶ On-site and in-kind mitigation
 - ▶ Off-site and/or out-of-kind mitigation



18

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Amount of Compensatory Mitigation

- Amount of compensatory mitigation must be commensurate with permitted impacts
- Sufficient to replace lost aquatic resource functions, to the extent practicable
- Use functional assessments where possible
- Minimum 1:1 ratio if acres or linear feet used
- Higher ratios to account for:
 - ▶ Method of compensation
 - ▶ Likelihood of success (risk, difficulty)
 - ▶ Temporal losses
 - ▶ Distance between impact site and mitigation site
- Document rationale in permit file



19

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Watershed Approach

- Strategic site selection to improve or maintain watershed functions
- Consider likelihood for ecological success and sustainability, location in watershed, and practicability
- Use available watershed planning information
 - ▶ If it is appropriate for compensatory mitigation decision-making
- Level of information and analysis commensurate with the scope of permitted activity
- May use more than one site to provide compensatory mitigation for a permitted activity
 - ▶ On-site mitigation measures for water quality and quantity
 - ▶ Off-site mitigation that provides the desired aquatic resource type (habitat and other functions)
- Use of preservation, riparian areas, uplands



20

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Planning and Documentation

- Individual permits
 - ▶ Final compensatory mitigation plan must be approved prior to issuance of permit
 - ▶ If using mitigation bank or in-lieu fee program, permit must identify specific bank or ILF program
- General permits
 - ▶ May approve conceptual or detailed mitigation plan to meet general permit timeframes
 - ▶ Final mitigation plan must be approved before commencing work in waters of the U.S.
 - ▶ If using mitigation bank or in-lieu fee program, the specific bank or ILF program can be identified ahead of time, or be approved later



21

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Mitigation Banks and In-Lieu Fee Programs

- Must have an approved instrument signed by the Corps and sponsor
- Public review process before instrument can be approved
 - ▶ Public notice
 - ▶ Interagency Review Team
- Corps is decision-maker
- Approved mitigation plans with credit release schedules
- Corps approval required to release credits
- Ledgers for all credit transactions
- Suspension and/or termination of instrument if poor performance



WRDA 2007 Section 2036(a)

- Implementation guidance issued 31 Aug 09
- Conduct mitigation planning in a watershed context
 - ▶ Fish and wildlife mitigation
 - ▶ Wetland mitigation
- Improve quality and quantity of natural resources in the watershed
- Focuses on these mitigation plan components:
 - ▶ Monitoring the success of mitigation projects
 - ▶ Ecological success criteria
 - ▶ Land acquisition
 - ▶ Contingency planning for taking corrective actions to ensure ecological success
- Consultation with appropriate Federal agencies to assess ecological success of mitigation projects




WRDA 2007 Section 2036(c)

- Implementation guidance issued 6 Nov 08
- Wetlands mitigation for Civil Works projects
 - ▶ First consider the use of mitigation bank credits, if sufficient credits are available
 - ▶ Service area of the mitigation bank shall be, to the extent practicable, in the same watershed as the impacted habitat
 - ▶ If credits not in the same watershed, need to justify in project decision document the use of those credits
 - ▶ Other types of bank credits may be used
 - e.g., streams, riparian zones, and upland resources
 - ▶ Purchase of bank credits relieves Corps from monitoring responsibilities




Watershed Approach and Planning



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Watershed Approach and Planning

- Why is it important?
 - ▶ More effective management of water resources
 - ▶ Recognizes the interconnections among various environmental components in a system
 - Natural and constructed environments in the watershed
 - ▶ Aquatic resource functions and services affected by activities in uplands and waters




26

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Watershed Approach

- Change in regulatory program implementation
- Move from project-by-project review process to more holistic review process
 - ▶ Improve resource protection
 - ▶ Increase program efficiency and predictability for the regulated public
 - ▶ Help manage cumulative impacts
 - ▶ Better coordination and identification of issues
- Supported by advances in technology
 - ▶ Permit program databases
 - ▶ Geographic information systems
 - ▶ Information sharing among agencies and stakeholders



27

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Watershed Planning

- Collaborative process
 - ▶ Federal, Tribal, State and local governments, non-governmental organizations, stakeholders
- Multi-objective planning
 - ▶ Balance environmental protection with society's needs (e.g., economic development)
- Can add predictability and efficiency to regulatory program implementation
 - ▶ Establish and implement a plan that has been agreed to by participants
 - ▶ Requires commitment from participants



28

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Watershed Planning

- Regulatory Context
 - ▶ Special Area Management Plans
 - ▶ Advance Identification
 - ▶ Watershed approach to compensatory mitigation
- Products for Regulatory Program Implementation
 - ▶ Streamlined permit process
 - e.g., regional general permit
 - ▶ Implementing a watershed approach for compensatory mitigation
 - Identify potential restoration sites, watershed needs
 - ▶ Tool for cumulative impact management



29

BUILDING STRONG

Watershed Planning

- Establishment of goals and objectives is critical to success
- Need to keep on track towards completion
 - ▶ Avoid continuous "do loops"
 - ▶ Project management expertise is critical to keep efforts on track
- Focusing on goals and objectives typically drives other steps in the process
- Utilize available data, identify gaps, develop needed information
 - ▶ Water resources inventories
- Work with other Civil Works elements
 - ▶ Systems approach



30

BUILDING STRONG

Special Area Management Plans

- 1980 amendments to Coastal Zone Management Act
- Comprehensive plan for natural resource protection and reasonable economic growth
- Establishes policies, standards, and criteria to guide public and private uses of land and water
- Watershed or other geographic area
 - ▶ Coastal or inland areas
 - ▶ Often a smaller area (e.g., a town)
- Helps manage individual and cumulative environmental impacts
- Add predictability for development interests



31

BUILDING STRONG

Special Area Management Plans

- Criteria for identifying potential SAMPs
 - ▶ Area should be environmentally sensitive and under strong development pressure
 - ▶ Should be a local sponsoring agency
 - Represent local needs and interests
 - ▶ Full public involvement
 - ▶ All participants should agree to conclude SAMP with regulatory product
- Appropriate regulatory product:
 - ▶ Abbreviated permit process
 - Regional general permit
 - Section 404 Letter of Permission
 - ▶ Local or state restriction for undesirable activities
 - Individual permit review for those activities



32

BUILDING STRONG

Advance Identification

- Advance Identification of Disposal Sites
 - ▶ Process described in the 404(b)(1) Guidelines (§230.80)
- Covers a watershed or other geographic area
- Determine whether wetlands or other aquatic areas are suitable sites for discharges of dredged or fill material
- Consult with affected state
- Public notice
- Review all available water resources information
- Acts as a guide for decision-making
 - ▶ It is not advance permit approval or denial
 - ▶ Facilitate permit processing



33

BUILDING STRONG

Watershed Pilots

- Initiative under 2008 mitigation rule
- Collaboration between Federal, state, and local agencies
 - ▶ May also involve non-government organizations
- Regulatory and non-regulatory programs to improve natural resource protection in a watershed
 - ▶ Identify resources for protection or restoration
 - ▶ Sustain or improve watershed functioning



34

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Watershed Pilots

- Maryland Watershed Resources Registry (NAB)
- Sacramento County Aquatic Resources Inventory (SPK)
- Colorado Front Range (NWO)
- Sunrise River (MVP)
- Tennessee-The Nature Conservancy (LRN)
- Great Lakes-Wisconsin (MVP)



35

BUILDING STRONG

Questions?



36

BUILDING STRONG

Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval*

		Event	# of Days**		
Phase I		Optional Preliminary Review of Draft Prospectus	30		DE provides copies of draft prospectus to IRT and will provide comments back to the sponsor within 30 days.
	Sponsor Prepares and Submits Prospectus ~DE must notify sponsor of completeness w/in 30 days of submission~				
		Day 1**	Complete Prospectus Received by DE		
Phase II	Day 30	Public notice must be provided within 30 days of receipt of a complete prospectus	30		
	Day 60	30-Day Public Comment Period	30		
	Day 90	DE must provide the sponsor with an initial evaluation letter within 30 days of the end of the public comment period.	30	15	DE distributes comments to IRT members and sponsor within 15 days of the close of the public comment period.
Sponsor Considers Comments, Prepares and Submits Draft Instrument ~DE must notify sponsor of completeness w/in 30 days of submission~					
		Day 1	Complete Draft Instrument Received by IRT Members		
Phase III		30-day IRT comment period begins 5 days after DE distributes draft instrument to IRT members	30		
	Day 90	DE discusses comments with IRT and seeks to resolve issues ~ # of days variable~	60	90	Within 90 days of the receipt of a complete draft instrument by IRT members, the DE must notify the sponsor of the status of the IRT review.
Sponsor Prepares Final Instrument ~Sponsor provides copies to DE and all IRT members~					
		Day 1	Final Instrument Received by DE & IRT		
Phase IV	Day 30	DE must notify IRT members of intent to approve/not approve instrument within 30 days of receipt.	30	45	IRT members have 45 days from submission of final instrument to object to approval of the instrument and initiate the dispute resolution process.
		Remainder of time for initiation of dispute resolution process by IRT members	15		
	Day 45	INSTRUMENT APPROVED/NOT APPROVED, or DISPUTE RESOLUTION PROCESS INITIATED			

EPA/Corps draft 4/02/08

Total Required Federal Review (Phases II-IV): ≤225 Days

*Timeline also applies to amendments

**The timeline in this column uses the maximum number of days allowed for each phase.

**Compensatory Mitigation Rule
Timeline for Bank or ILF Instrument Dispute Resolution***

		# of days**		
Day 1**	Final Instrument Received by DE and IRT			
Day 30	DE must notify IRT members of intent to approve instrument within 30 days of receipt.	30	45	
Day 45	IRT members then have 15 days to notify DE and other IRT members of their objection by letter	15		
Day 75	If an objection is received, the DE must respond within 30 days	30	150	
Day 90	If not satisfied, IRT member may forward the issue to IRT Agency HQ*** for review****	15		
Day 110	Within 20 days, IRT Agency HQ may request further review by the Assistant Secretary of the Army, Civil Works	20		
Day 140	ASA(CW) has 30 days to review the draft instrument and advise the DE on how to proceed with the final action	30		
Day 150	Remainder of time for notification of the sponsor of the final decision	10		
				IRT members have 45 days from submission of final instrument to object to approval of the instrument and initiate the dispute resolution process.
				The DE's response must be sent to all IRT members, and may either indicate an intent to disapprove the instrument as a result of the objection, or provide a modified instrument that attempts to address the objection.
				IRT member must object within 15 days of the notification of intent from the DE. The DE must hold in abeyance the final action.
				The requesting IRT Agency HQ must also notify the ASA(CW) if further review will not be requested.
				The ASA(CW) must immediately notify requesting Agency HQ of the final decision.
				The DE must notify the sponsor of the final decision within 150 days of receipt of the final instrument.

*Timeline also applies to amendments.

**The timeline in this column uses the maximum number of days allowed for each phase.

***IRT Agency HQ refers to the Assistant Administrator for Water, U.S. EPA, the Assistant Secretary for Fish and Wildlife and Parks, U.S. FWS, or the Undersecretary for Oceans and Atmosphere, NOAA.

****While this step is available only to EPA, NOAA and FWS, other IRT members who do not agree with the DE's final decision do not have to sign the instrument or recognize the mitigation bank or in-lieu fee program for purposes of their own programs and authorities.

Total maximum time for dispute resolution process ≤ 150 days

~ EPA/Corps draft 4/02/08

CFR 40 Part 230 Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material

Subpart B--Compliance With the Guidelines

Sec. 230.10 Restrictions on discharge.

Note: Because other laws may apply to particular discharges and because the Corps of Engineers or State 404 agency may have additional procedural and substantive requirements, a discharge complying with the requirement of these Guidelines will not automatically receive a permit.

Although all requirements in Sec. 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities.

(a) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant, which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or sighting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge, which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

(4) For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these

NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

(5) To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management program, a section 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly.

(b) No discharge of dredged or fill material shall be permitted if it:

(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard;

(2) Violates any applicable toxic effluent standard or prohibition under section 307 of the Act;

(3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be a critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply, in lieu of this subparagraph;

(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

(c) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by subparts B and G, after consideration of subparts C through F, with special emphasis on the persistence and permanence of the effects outlined in those subparts. Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

(1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

(4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

(d) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps.

Sec. 230.11 Factual Determinations.

The permitting authority shall determine in writing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment in light of subparts C through F. Such factual determinations shall be used in Sec. 230.12 in making findings of compliance or non-compliance with the restrictions on discharge in Sec. 230.10. The evaluation and testing procedures described in Sec. 230.60 and Sec. 230.61 of subpart G shall be used as necessary to make, and shall be described in, such determination. The determinations of effects of each proposed discharge shall include the following:

(a) Physical substrate determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site, and any potential changes in substrate elevation and bottom contours, including changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material. The duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (Sec. 230.20) and actions to minimize impact (subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material.

(b) Water circulation, fluctuation, and salinity determinations. Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation. Consideration shall be given to water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics. Consideration shall also be given to the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime. Additional consideration of the possible loss of environmental values (Secs. 230.23 through 230.25) and actions to minimize impacts (subpart H), shall be used in making these determinations. Potential significant effects on the current patterns, water circulation, normal water fluctuation and salinity shall be evaluated on the basis of the proposed method, volume, location, and rate of discharge.

(c) Suspended particulate/turbidity determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, in terms of potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site. Consideration shall be given to the grain size of the material proposed for discharge, the shape and size of the plume of suspended particulates, the duration of the discharge and resulting plume and whether or not the potential changes will cause violations of applicable water quality standards. Consideration should also be given to the possible loss of environmental values (Sec. 230.21) and to actions for minimizing impacts (subpart H). Consideration shall include the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors on the movement of suspended particulates.

(d) Contaminant determinations. Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

(e) Aquatic ecosystem and organism determinations. Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities. Possible loss of environmental values (Sec. 230.31), and actions to minimize impacts (subpart H) shall be examined. Tests as described in Sec. 230.61 (Evaluation and Testing), may be required to provide information on the effect of the discharge material on communities, or populations of organisms expected to be exposed to it.

(f) Proposed disposal site determinations.

(1) Each disposal site shall be specified through the application of these Guidelines. The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of these Guidelines. In a few special cases under unique environmental conditions, where there is adequate justification to show that widespread dispersion by natural means will result in no significantly adverse environmental effects, the discharged material may be intended to be spread naturally in a very thin layer over a large area of the substrate rather than be contained within the disposal site.

(2) The permitting authority and the Regional Administrator shall consider the following factors in determining the acceptability of a proposed mixing zone:

- (i) Depth of water at the disposal site;
- (ii) Current velocity, direction, and variability at the disposal site;
- (iii) Degree of turbulence;
- (iv) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site;

- (v) Discharge vessel speed and direction, if appropriate;
- (vi) Rate of discharge;
- (vii) Ambient concentration of constituents of interest;
- (viii) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities;
- (ix) Number of discharge actions per unit of time;
- (x) Other factors of the disposal site that affect the rates and patterns of mixing.

(g) Determination of cumulative effects on the aquatic ecosystem.

(1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change, in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

(2) Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

(h) Determination of secondary effects on the aquatic ecosystem.

(1) Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities.

(2) Some examples of secondary effects on an aquatic ecosystem are fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff from residential or commercial developments on fill, and leachate and runoff from a sanitary landfill located in waters of the U.S. Activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands.

Sec. 230.12 Findings of compliance or non-compliance with the restrictions on discharge.

(a) On the basis of these Guidelines (subparts C through G) the proposed disposal sites for the discharge of dredged or fill material must be:

- (1) Specified as complying with the requirements of these Guidelines; or
- (2) Specified as complying with the requirements of these Guidelines with the inclusion of appropriate and practicable discharge conditions (see subpart H) to minimize pollution or adverse effects to the affected aquatic ecosystems; or
- (3) Specified as failing to comply with the requirements of these Guidelines where:

- (i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or
- (ii) The proposed discharge will result in significant degradation of the aquatic ecosystem under Sec. 230.10(b) or (c); or
- (iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or
- (iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

(b) Findings under this section shall be set forth in writing by the permitting authority for each proposed discharge and made available to the permit applicant. These findings shall include the factual determinations required by Sec. 230.11, and a brief explanation of any adaptation of these Guidelines to the activity under consideration. In the case of a General permit, such findings shall be prepared at the time of issuance of that permit rather than for each subsequent discharge under the authority of that permit.

Subpart C--Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Note: The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

Sec. 230.20 Substrate.

- (a) The substrate of the aquatic ecosystem underlies open waters of the United States and constitutes the surface of wetlands. It consists of organic and inorganic solid materials and includes water and other liquids or gases that fill the spaces between solid particles.
- (b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in varying degrees of change in the complex physical, chemical, and biological characteristics of the substrate. Discharges which alter substrate elevation or contours can result in changes in water circulation, depth, current pattern, water fluctuation and water temperature. Discharges may adversely affect bottom-dwelling organisms at the site by smothering immobile forms or forcing mobile forms to migrate. Benthic forms present prior to a discharge are unlikely to recolonize on the discharged material if it is very dissimilar from that of the discharge site. Erosion, slumping, or lateral displacement of surrounding bottom of such deposits can adversely affect areas of the substrate outside the perimeters of the disposal site by changing or destroying habitat. The bulk and composition of the discharged material and the location, method, and timing of discharges may all influence the degree of impact on the substrate.

Sec. 230.21 Suspended particulates/turbidity.

(a) Suspended particulates in the aquatic ecosystem consist of fine-grained mineral particles, usually smaller than silt, and organic particles. Suspended particulates may enter water bodies as a result of land runoff, flooding, vegetative and planktonic breakdown, resuspension of bottom sediments, and man's activities including dredging and filling. Particulates may remain suspended in the water column for variable periods of time as a result of such factors as agitation of the water mass, particulate specific gravity, particle shape, and physical and chemical properties of particle surfaces.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in greatly elevated levels of suspended particulates in the water column for varying lengths of time. These new levels may reduce light penetration and lower the rate of photosynthesis and the primary productivity of an aquatic area if they last long enough. Sight-dependent species may suffer reduced feeding ability leading to limited growth and lowered resistance to disease if high levels of suspended particulates persist. The biological and the chemical content of the suspended material may react with the dissolved oxygen in the water, which can result in oxygen depletion. Toxic metals and organics, pathogens, and viruses absorbed or adsorbed to fine-grained particulates in the material may become biologically available to organisms either in the water column or on the substrate. Significant increases in suspended particulate levels create turbid plumes which are highly visible and aesthetically displeasing. The extent and persistence of these adverse impacts caused by discharges depend upon the relative increase in suspended particulates above the amount occurring naturally, the duration of the higher levels, the current patterns, water level, and fluctuations present when such discharges occur, the volume, rate, and duration of the discharge, particulate deposition, and the seasonal timing of the discharge.

Sec. 230.22 Water.

(a) Water is the part of the aquatic ecosystem in which organic and inorganic constituents are dissolved and suspended. It constitutes part of the liquid phase and is contained by the substrate. Water forms part of a dynamic aquatic life-supporting system. Water clarity, nutrients and chemical content, physical and biological content, dissolved gas levels, pH, and temperature contribute to its life-sustaining capabilities.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can change the chemistry and the physical characteristics of the receiving water at a disposal site through the introduction of chemical constituents in suspended or dissolved form. Changes in the clarity, color, odor, and taste of water and the addition of contaminants can reduce or eliminate the suitability of water bodies for populations of aquatic organisms, and for human consumption, recreation, and aesthetics. The introduction of nutrients or organic material to the water column as a result of the discharge can lead to a high biochemical oxygen demand (BOD), which in turn can lead to reduced dissolved oxygen, thereby potentially affecting the survival of many aquatic organisms. Increases in nutrients can favor one group of organisms such as algae to the detriment of other more desirable types such as submerged aquatic vegetation, potentially causing adverse health effects, objectionable tastes and odors, and other problems.

Sec. 230.23 Current patterns and water circulation.

(a) Current patterns and water circulation are the physical movements of water in the aquatic ecosystem. Currents and circulation respond to natural forces as modified by basin shape and cover, physical and chemical characteristics of water strata and masses, and energy dissipating factors.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can modify current patterns and water circulation by obstructing flow, changing the direction or velocity of water flow, changing the direction or velocity of water flow and circulation, or otherwise changing the dimensions of a water body. As a result, adverse changes can occur in: Location, structure, and dynamics of aquatic communities; shoreline and substrate erosion and deposition rates; the deposition of suspended particulates; the rate and extent of mixing of dissolved and suspended components of the water body; and water stratification.

Sec. 230.24 Normal water fluctuations.

(a) Normal water fluctuations in a natural aquatic system consist of daily, seasonal, and annual tidal and flood fluctuations in water level. Biological and physical components of such a system are either attuned to or characterized by these periodic water fluctuations.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can alter the normal water-level fluctuation pattern of an area, resulting in prolonged periods of inundation, exaggerated extremes of high and low water, or a static, non-fluctuating water level. Such water level modifications may change salinity patterns, alter erosion or sedimentation rates, aggravate water temperature extremes, and upset the nutrient and dissolved oxygen balance of the aquatic ecosystem. In addition, these modifications can alter or destroy communities and populations of aquatic animals and vegetation, induce populations of nuisance organisms, modify habitat, reduce food supplies, restrict movement of aquatic fauna, destroy spawning areas, and change adjacent, upstream, and downstream areas.

Sec. 230.25 Salinity gradients.

(a) Salinity gradients form where salt water from the ocean meets and mixes with fresh water from land.

(b) Possible loss of environmental characteristics and values: Obstructions which divert or restrict flow of either fresh or salt water may change existing salinity gradients. For example, partial blocking of the entrance to an estuary or river mouth that significantly restricts the movement of the salt water into and out of that area can effectively lower the volume of salt water available for mixing within that estuary. The downstream migration of the salinity gradient can occur, displacing the maximum sedimentation zone and requiring salinity-dependent aquatic biota to adjust to the new conditions, move to new locations if possible, or perish. In the freshwater zone, discharge operations in the

upstream regions can have equally adverse impacts. A significant reduction in the volume of fresh water moving into an estuary below that which is considered normal can affect the location and type of mixing thereby changing the characteristic salinity patterns. The resulting changed circulation pattern can cause the upstream migration of the salinity gradient displacing the maximum sedimentation zone. This migration may affect those organisms that are adapted to freshwater environments. It may also affect municipal water supplies.

Note: Possible actions to minimize adverse impacts regarding site characteristics can be found in subpart H.

Subpart D--Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

Note: The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

Sec. 230.30 Threatened and endangered species.

(a) An endangered species is a plant or animal in danger of extinction throughout all or a significant portion of its range. A threatened species is one in danger of becoming an endangered species in the foreseeable future throughout all or a significant portion of its range. Listings of threatened and endangered species as well as critical habitats are maintained by some individual States and by the U.S. Fish and Wildlife Service of the Department of the Interior (codified annually at 50 CFR 17.11). The Department of Commerce has authority over some threatened and endangered marine mammals, fish and reptiles.

(b) Possible loss of values: The major potential impacts on threatened or endangered species from the discharge of dredged or fill material include:

(1) Covering or otherwise directly killing species;

(2) The impairment or destruction of habitat to which these species are limited.

Elements of the aquatic habitat which are particularly crucial to the continued survival of some threatened or endangered species include adequate good quality water, spawning and maturation areas, nesting areas, protective cover, adequate and reliable food supply, and resting areas for migratory species. Each of these elements can be adversely affected by changes in either the normal water conditions for clarity, chemical content, nutrient balance, dissolved oxygen, pH, temperature, salinity, current patterns, circulation and fluctuation, or the physical removal of habitat; and

(3) Facilitating incompatible activities.

(c) Where consultation with the Secretary of the Interior occurs under section 7 of the Endangered Species Act, the conclusions of the Secretary concerning the impact(s) of the

discharge on threatened and endangered species and their habitat shall be considered final.

Sec. 230.31 Fish, crustaceans, mollusks, and other aquatic organisms in the food web.

(a) Aquatic organisms in the food web include, but are not limited to, finfish, crustaceans, mollusks, insects, annelids, planktonic organisms, and the plants and animals on which they feed and depend upon for their needs. All forms and life stages of an organism, throughout its geographic range, are included in this category.

(b) Possible loss of values: The discharge of dredged or fill material can variously affect populations of fish, crustaceans, mollusks and other food web organisms through the release of contaminants which adversely affect adults, juveniles, larvae, or eggs, or result in the establishment or proliferation of an undesirable competitive species of plant or animal at the expense of the desired resident species. Suspended particulates settling on attached or buried eggs can smother the eggs by limiting or sealing off their exposure to oxygenated water. Discharge of dredged and fill material may result in the debilitation or death of sedentary organisms by smothering, exposure to chemical contaminants in dissolved or suspended form, exposure to high levels of suspended particulates, reduction in food supply, or alteration of the substrate upon which they are dependent. Mollusks are particularly sensitive to the discharge of material during periods of reproduction and growth and development due primarily to their limited mobility. They can be rendered unfit for human consumption by tainting, by production and accumulation of toxins, or by ingestion and retention of pathogenic organisms, viruses, heavy metals or persistent synthetic organic chemicals. The discharge of dredged or fill material can redirect, delay, or stop the reproductive and feeding movements of some species of fish and crustacean, thus preventing their aggregation in accustomed places such as spawning or nursery grounds and potentially leading to reduced populations. Reduction of detrital feeding species or other representatives of lower trophic levels can impair the flow of energy from primary consumers to higher trophic levels. The reduction or potential elimination of food chain organism populations decreases the overall productivity and nutrient export capability of the ecosystem.

Sec. 230.32 Other wildlife.

(a) Wildlife associated with aquatic ecosystems are resident and transient mammals, birds, reptiles, and amphibians.

(b) Possible loss of values: The discharge of dredged or fill material can result in the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient wildlife species associated with the aquatic ecosystem. These adverse impacts upon wildlife habitat may result from changes in water levels, water flow and circulation, salinity, chemical content, and substrate characteristics and elevation. Increased water turbidity can adversely affect wildlife species which rely upon sight to feed, and disrupt the respiration and feeding of certain aquatic wildlife and

food chain organisms. The availability of contaminants from the discharge of dredged or fill material may lead to the bioaccumulation of such contaminants in wildlife. Changes in such physical and chemical factors of the environment may favor the introduction of undesirable plant and animal species at the expense of resident species and communities. In some aquatic environments lowering plant and animal species diversity may disrupt the normal functions of the ecosystem and lead to reductions in overall biological productivity.

Note: Possible actions to minimize adverse impacts regarding characteristics of biological components of the aquatic ecosystem can be found in subpart H.

Subpart E--Potential Impacts on Special Aquatic Sites

Note: The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B. The definition of special aquatic sites is found in Sec. 230.3(q-1).

Sec. 230.40 Sanctuaries and refuges.

(a) Sanctuaries and refuges consist of areas designated under State and Federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.

(b) Possible loss of values: Sanctuaries and refuges may be affected by discharges of dredged or fill material which will:

- (1) Disrupt the breeding, spawning, migratory movements or other critical life requirements of resident or transient fish and wildlife resources;
- (2) Create unplanned, easy and incompatible human access to remote aquatic areas;
- (3) Create the need for frequent maintenance activity;
- (4) Result in the establishment of undesirable competitive species of plants and animals;
- (5) Change the balance of water and land areas needed to provide cover, food, and other fish and wildlife habitat requirements in a way that modifies sanctuary or refuge management practices;
- (6) Result in any of the other adverse impacts discussed in subparts C and D as they relate to a particular sanctuary or refuge.

Sec. 230.41 Wetlands.

(a)(1) Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

(2) Where wetlands are adjacent to open water, they generally constitute the transition to upland. The margin between wetland and open water can best be established by

specialists familiar with the local environment, particularly where emergent vegetation merges with submerged vegetation over a broad area in such places as the lateral margins of open water, headwaters, rainwater catch basins, and groundwater seeps. The landward margin of wetlands also can best be identified by specialists familiar with the local environment when vegetation from the two regions merges over a broad area.

(3) Wetland vegetation consists of plants that require saturated soils to survive (obligate wetland plants) as well as plants, including certain trees, that gain a competitive advantage over others because they can tolerate prolonged wet soil conditions and their competitors cannot. In addition to plant populations and communities, wetlands are delimited by hydrological and physical characteristics of the environment. These characteristics should be considered when information about them is needed to supplement information available about vegetation, or where wetland vegetation has been removed or is dormant.

(b) Possible loss of values: The discharge of dredged or fill material in wetlands is likely to damage or destroy habitat and adversely affect the biological productivity of wetlands ecosystems by smothering, by dewatering, by permanently flooding, or by altering substrate elevation or periodicity of water movement. The addition of dredged or fill material may destroy wetland vegetation or result in advancement of succession to dry land species. It may reduce or eliminate nutrient exchange by a reduction of the system's productivity, or by altering current patterns and velocities. Disruption or elimination of the wetland system can degrade water quality by obstructing circulation patterns that flush large expanses of wetland systems, by interfering with the filtration function of wetlands, or by changing the aquifer recharge capability of a wetland. Discharges can also change the wetland habitat value for fish and wildlife as discussed in subpart D. When disruptions in flow and circulation patterns occur, apparently minor loss of wetland acreage may result in major losses through secondary impacts. Discharging fill material in wetlands as part of municipal, industrial or recreational development may modify the capacity of wetlands to retain and store floodwaters and to serve as a buffer zone shielding upland areas from wave actions, storm damage and erosion.

Sec. 230.42 Mud flats.

(a) Mud flats are broad flat areas along the sea coast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may re-suspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either un-vegetated or vegetated only by algal mats.

(b) Possible loss of values: The discharge of dredged or fill material can cause changes in water circulation patterns which may permanently flood or dewater the mud flat or disrupt periodic inundation, resulting in an increase in the rate of erosion or accretion. Such changes can deplete or eliminate mud flat biota, foraging areas, and nursery areas. Changes in inundation patterns can affect the chemical and biological exchange and

decomposition process occurring on the mud flat and change the deposition of suspended material affecting the productivity of the area. Changes may reduce the mud flat's capacity to dissipate storm surge runoff.

Sec. 230.43 Vegetated shallows.

(a) Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes.

(b) Possible loss of values: The discharge of dredged or fill material can smother vegetation and benthic organisms. It may also create unsuitable conditions for their continued vigor by:

- (1) Changing water circulation patterns;
- (2) releasing nutrients that increase undesirable algal populations;
- (3) releasing chemicals that adversely affect plants and animals;
- (4) increasing turbidity levels, thereby reducing light penetration and hence photosynthesis; and
- (5) changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. The discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.

Sec. 230.44 Coral reefs.

(a) Coral reefs consist of the skeletal deposit, usually of calcareous or siliceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

(b) Possible loss of values: The discharge of dredged or fill material can adversely affect colonies of reef building organisms by burying them, by releasing contaminants such as hydrocarbons into the water column, by reducing light penetration through the water, and by increasing the level of suspended particulates. Coral organisms are extremely sensitive to even slight reductions in light penetration or increases in suspended particulates. These adverse effects will cause a loss of productive colonies which in turn provide habitat for many species of highly specialized aquatic organisms.

Sec. 230.45 Riffle and pool complexes.

(a) Steep gradient sections of streams are sometimes characterized by riffle and pool complexes. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a steaming

flow, a smooth surface, and a finer substrate. Riffle and pool complexes are particularly valuable habitat for fish and wildlife.

(b) Possible loss of values: Discharge of dredged or fill material can eliminate riffle and pool areas by displacement, hydrologic modification, or sedimentation. Activities which affect riffle and pool areas and especially riffle/pool ratios, may reduce the aeration and filtration capabilities at the discharge site and downstream, may reduce stream habitat diversity, and may retard repopulation of the disposal site and downstream waters through sedimentation and the creation of unsuitable habitat. The discharge of dredged or fill material which alters stream hydrology may cause scouring or sedimentation of riffles and pools. Sedimentation induced through hydrological modification or as a direct result of the deposition of unconsolidated dredged or fill material may clog riffle and pool areas, destroy habitats, and create anaerobic conditions. Eliminating pools and meanders by the discharge of dredged or fill material can reduce water holding capacity of streams and cause rapid runoff from a watershed. Rapid runoff can deliver large quantities of flood water in a short time to downstream areas resulting in the destruction of natural habitat, high property loss, and the need for further hydraulic modification.

Note: Possible actions to minimize adverse impacts on site or material characteristics can be found in subpart H.

Subpart F--Potential Effects on Human Use Characteristics

Note: The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

Sec. 230.50 Municipal and private water supplies.

(a) Municipal and private water supplies consist of surface water or ground water which is directed to the intake of a municipal or private water supply system.

(b) Possible loss of values: Discharges can affect the quality of water supplies with respect to color, taste, odor, chemical content and suspended particulate concentration, in such a way as to reduce the fitness of the water for consumption. Water can be rendered unpalatable or unhealthy by the addition of suspended particulates, viruses and pathogenic organisms, and dissolved materials. The expense of removing such substances before the water is delivered for consumption can be high. Discharges may also affect the quantity of water available for municipal and private water supplies. In addition, certain commonly used water treatment chemicals have the potential for combining with some suspended or dissolved substances from dredged or fill material to form other products that can have a toxic effect on consumers.

Sec. 230.51 Recreational and commercial fisheries.

(a) Recreational and commercial fisheries consist of harvestable fish, crustaceans, shellfish, and other aquatic organisms used by man.

(b) Possible loss of values: The discharge of dredged or fill materials can affect the suitability of recreational and commercial fishing grounds as habitat for populations of consumable aquatic organisms. Discharges can result in the chemical contamination of recreational or commercial fisheries. They may also interfere with the reproductive success of recreational and commercially important aquatic species through disruption of migration and spawning areas. The introduction of pollutants at critical times in their life cycle may directly reduce populations of commercially important aquatic organisms or indirectly reduce them by reducing organisms upon which they depend for food. Any of these impacts can be of short duration or prolonged, depending upon the physical and chemical impacts of the discharge and the biological availability of contaminants to aquatic organisms.

Sec. 230.52 Water-related recreation.

(a) Water-related recreation encompasses activities undertaken for amusement and relaxation. Activities encompass two broad categories of use: consumptive, e.g., harvesting resources by hunting and fishing; and non-consumptive, e.g. canoeing and sight-seeing.

(b) Possible loss of values: One of the more important direct impacts of dredged or fill disposal is to impair or destroy the resources, which support recreation activities. The disposal of dredged or fill material may adversely modify or destroy water use for recreation by changing turbidity, suspended particulates, temperature, dissolved oxygen, dissolved materials, toxic materials, pathogenic organisms, quality of habitat, and the aesthetic qualities of sight, taste, odor, and color.

Sec. 230.53 Aesthetics.

(a) Aesthetics associated with the aquatic ecosystem consist of the perception of beauty by one or a combination of the senses of sight, hearing, touch, and smell. Aesthetics of aquatic ecosystems apply to the quality of life enjoyed by the general public and property owners.

(b) Possible loss of values: The discharge of dredged or fill material can mar the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, inducing inappropriate development, encouraging unplanned and incompatible human access, and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The discharge of dredged or fill material can adversely affect the particular features, traits, or characteristics of an aquatic area which make it valuable to property owners. Activities which degrade water quality, disrupt natural substrate and vegetational characteristics, deny access to or visibility of the resource, or result in changes in odor, air quality, or noise levels may reduce the value of an aquatic area to private property owners.

Sec. 230.54 Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

(a) These preserves consist of areas designated under Federal and State laws or local ordinances to be managed for their aesthetic, educational, historical, recreational, or scientific value.

(b) Possible loss of values: The discharge of dredged or fill material into such areas may modify the aesthetic, educational, historical, recreational and/or scientific qualities thereby reducing or eliminating the uses for which such sites are set aside and managed.

Note: Possible actions to minimize adverse impacts regarding site or material characteristics can be found in subpart H.

Subpart G--Evaluation and Testing

Sec. 230.60 General evaluation of dredged or fill material.

The purpose of these evaluation procedures and the chemical and biological testing sequence outlined in Sec. 230.61 is to provide information to reach the determinations required by Sec. 230.11. Where the results of prior evaluations, chemical and biological tests, scientific research, and experience can provide information helpful in making a determination, these should be used. Such prior results may make new testing unnecessary. The information used shall be documented. Where the same information applies to more than one determination, it may be documented once and referenced in later determinations.

(a) If the evaluation under paragraph (b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material so composed is generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels. However, when such material is discolored or contains other indications that contaminants may be present, further inquiry should be made.

(b) The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants. Factors to be considered include but are not limited to:

(1) Potential routes of contaminants or contaminated sediments to the extraction site, based on hydrographic or other maps, aerial photography, or other materials that show watercourses, surface relief, proximity to tidal movement, private and public roads, location of buildings, municipal and industrial areas, and agricultural or forest lands.

(2) Pertinent results from tests previously carried out on the material at the extraction

site, or carried out on similar material for other permitted projects in the vicinity. Materials shall be considered similar if the sources of contamination, the physical configuration of the sites and the sediment composition of the materials are comparable, in light of water circulation and stratification, sediment accumulation and general sediment characteristics. Tests from other sites may be relied on only if no changes have occurred at the extraction sites to render the results irrelevant. (3) Any potential for significant introduction of persistent pesticides from land runoff or percolation;

(4) Any records of spills or disposal of petroleum products or substances designated as hazardous under section 311 of the Clean Water Act (See 40 CFR part 116);

(5) Information in Federal, State and local records indicating significant introduction of pollutants from industries, municipalities, or other sources, including types and amounts of waste materials discharged along the potential routes of contaminants to the extraction site; and

(6) Any possibility of the presence of substantial natural deposits of minerals or other substances which could be released to the aquatic environment in harmful quantities by man-induced discharge activities.

(c) To reach the determinations in Sec. 230.11 involving potential effects of the discharge on the characteristics of the disposal site, the narrative guidance in subparts C through F shall be used along with the general evaluation procedure in Sec. 230.60 and, if necessary, the chemical and biological testing sequence in Sec. 230.61. Where the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar, the fact that the material to be discharged may be a carrier of contaminants is not likely to result in degradation of the disposal site. In such circumstances, when dissolved material and suspended particulates can be controlled to prevent carrying pollutants to less contaminated areas, testing will not be required.

(d) Even if the Sec. 230.60(b) evaluation (previous tests, the presence of polluting industries and information about their discharge or runoff into waters of the U.S., bio-inventories, etc.) leads to the conclusion that there is a high probability that the material proposed for discharge is a carrier of contaminants, testing may not be necessary if constraints are available to reduce contamination to acceptable levels within the disposal site and to prevent contaminants from being transported beyond the boundaries of the disposal site, if such constraints are acceptable to the permitting authority and the Regional Administrator, and if the potential discharger is willing and able to implement such constraints. However, even if tests are not performed, the permitting authority must still determine the probable impact of the operation on the receiving aquatic ecosystem. Any decision not to test must be explained in the determinations made under Sec. 230.11. Sec. 230.61 Chemical, biological, and physical evaluation and testing.

Note: The Agency is today proposing revised testing guidelines. The evaluation and testing procedures in this section are based on the 1975 section 404(b)(1) interim final Guidelines and shall remain in effect until the revised testing guidelines are published as final regulations.

(a) No single test or approach can be applied in all cases to evaluate the effects of proposed discharges of dredged or fill materials. This section provides some guidance in determining which test and/or evaluation procedures are appropriate in a given case. Interim guidance to applicants concerning the applicability of specific approaches or procedures will be furnished by the permitting authority.

(b) Chemical-biological interactive effects. The principal concerns of discharge of dredged or fill material that contain contaminants are the potential effects on the water column and on communities of aquatic organisms.

(1) Evaluation of chemical-biological interactive effects. Dredged or fill material may be excluded from the evaluation procedures specified in paragraphs (b) (2) and (3) of this section if it is determined, on the basis of the evaluation in Sec. 230.60, that the likelihood of contamination by contaminants is acceptably low, unless the permitting authority, after evaluating and considering any comments received from the Regional Administrator, determines that these procedures are necessary. The Regional Administrator may require, on a case-by-case basis, testing approaches and procedures by stating what additional information is needed through further analyses and how the results of the analyses will be of value in evaluating potential environmental effects. If the General Evaluation indicates the presence of a sufficiently large number of chemicals to render impractical the identification of all contaminants by chemical testing, information may be obtained from bioassays in lieu of chemical tests.

(2) Water column effects.

(i) Sediments normally contain constituents that exist in various chemical forms and in various concentrations in several locations within the sediment. An elutriate test may be used to predict the effect on water quality due to release of contaminants from the sediment to the water column. However, in the case of fill material originating on land which may be a carrier of contaminants, a water leachate test is appropriate.

(ii) Major constituents to be analyzed in the elutriate are those deemed critical by the permitting authority, after evaluating and considering any comments received from the Regional Administrator, and considering results of the evaluation in Sec. 230.60. Elutriate concentrations should be compared to concentrations of the same constituents in water from the disposal site. Results should be evaluated in light of the volume and rate of the intended discharge, the type of discharge, the hydrodynamic regime at the disposal site, and other information relevant to the impact on water quality. The permitting authority should consider the mixing zone in evaluating water column effects. The permitting authority may specify bioassays when such procedures will be of value.

(3) Effects on benthos. The permitting authority may use an appropriate benthic bioassay (including bioaccumulation tests) when such procedures will be of value in assessing ecological effects and in establishing discharge conditions.

(c) Procedure for comparison of sites.

(1) When an inventory of the total concentration of contaminants would be of value in comparing sediment at the dredging site with sediment at the disposal site, the permitting authority may require a sediment chemical analysis. Markedly different concentrations of contaminants between the excavation and disposal sites may aid in making an environmental assessment of the proposed disposal operation. Such differences should be

interpreted in terms of the potential for harm as supported by any pertinent scientific literature.

(2) When an analysis of biological community structure will be of value to assess the potential for adverse environmental impact at the proposed disposal site, a comparison of the biological characteristics between the excavation and disposal sites may be required by the permitting authority. Biological indicator species may be useful in evaluating the existing degree of stress at both sites. Sensitive species representing community components colonizing various substrate types within the sites should be identified as possible bioassay organisms if tests for toxicity are required. Community structure studies should be performed only when they will be of value in determining discharge conditions. This is particularly applicable to large quantities of dredged material known to contain adverse quantities of toxic materials. Community studies should include benthic organisms such as microbiota and harvestable shellfish and finfish. Abundance, diversity, and distribution should be documented and correlated with substrate type and other appropriate physical and chemical environmental characteristics.

(d) Physical tests and evaluation. The effect of a discharge of dredged or fill material on physical substrate characteristics at the disposal site, as well as on the water circulation, fluctuation, salinity, and suspended particulates content there, is important in making factual determinations in Sec. 230.11. Where information on such effects is not otherwise available to make these factual determinations, the permitting authority shall require appropriate physical tests and evaluations as are justified and deemed necessary. Such tests may include sieve tests, settleability tests, compaction tests, mixing zone and suspended particulate plume determinations, and site assessments of water flow, circulation, and salinity characteristics.

Subpart H--Actions To Minimize Adverse Effects

Note: There are many actions which can be undertaken in response to Sec. 203.10(d) to minimize the adverse effects of discharges of dredged or fill material. Some of these, grouped by type of activity, are listed in this subpart.

Sec. 230.70 Actions concerning the location of the discharge.

The effects of the discharge can be minimized by the choice of the disposal site. Some of the ways to accomplish this are by:

- (a) Locating and confining the discharge to minimize smothering of organisms;
- (b) Designing the discharge to avoid a disruption of periodic water inundation patterns;
- (c) Selecting a disposal site that has been used previously for dredged material discharge;
- (d) Selecting a disposal site at which the substrate is composed of material similar to that being discharged, such as discharging sand on sand or mud on mud;

(e) Selecting the disposal site, the discharge point, and the method of discharge to minimize the extent of any plume;

(f) Designing the discharge of dredged or fill material to minimize or prevent the creation of standing bodies of water in areas of normally fluctuating water levels, and minimize or prevent the drainage of areas subject to such fluctuations.

Sec. 230.71 Actions concerning the material to be discharged.

The effects of a discharge can be minimized by treatment of, or limitations on the material itself, such as:

(a) Disposal of dredged material in such a manner that physiochemical conditions are maintained and the potency and availability of pollutants are reduced.

(b) Limiting the solid, liquid, and gaseous components of material to be discharged at a particular site;

(c) Adding treatment substances to the discharge material;

(d) Utilizing chemical flocculants to enhance the deposition of suspended particulates in diked disposal areas.

Sec. 230.72 Actions controlling the material after discharge.

The effects of the dredged or fill material after discharge may be controlled by:

(a) Selecting discharge methods and disposal sites where the potential for erosion, slumping or leaching of materials into the surrounding aquatic ecosystem will be reduced. These sites or methods include, but are not limited to:

(1) Using containment levees, sediment basins, and cover crops to reduce erosion;

(2) Using lined containment areas to reduce leaching where leaching of chemical constituents from the discharged material is expected to be a problem;

(b) Capping in-place contaminated material with clean material or selectively discharging the most contaminated material first to be capped with the remaining material;

(c) Maintaining and containing discharged material properly to prevent point and nonpoint sources of pollution;

(d) Timing the discharge to minimize impact, for instance during periods of unusual high water flows, wind, wave, and tidal actions.

Sec. 230.73 Actions affecting the method of dispersion.

The effects of a discharge can be minimized by the manner in which it is dispersed, such as:

- (a) Where environmentally desirable, distributing the dredged material widely in a thin layer at the disposal site to maintain natural substrate contours and elevation;
- (b) Orienting a dredged or fill material mound to minimize undesirable obstruction to the water current or circulation pattern, and utilizing natural bottom contours to minimize the size of the mound;
- (c) Using silt screens or other appropriate methods to confine suspended particulate/turbidity to a small area where settling or removal can occur;
- (d) Making use of currents and circulation patterns to mix, disperse and dilute the discharge;
- (e) Minimizing water column turbidity by using a submerged diffuser system. A similar effect can be accomplished by submerging pipeline discharges or otherwise releasing materials near the bottom;
- (f) Selecting sites or managing discharges to confine and minimize the release of suspended particulates to give decreased turbidity levels and to maintain light penetration for organisms;
- (g) Setting limitations on the amount of material to be discharged per unit of time or volume of receiving water.

Sec. 230.74 Actions related to technology.

Discharge technology should be adapted to the needs of each site. In determining whether the discharge operation sufficiently minimizes adverse environmental impacts, the applicant should consider:

- (a) Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material;
- (b) Employing appropriate maintenance and operation on equipment or machinery, including adequate training, staffing, and working procedures;
- (c) Using machinery and techniques that are especially designed to reduce damage to wetlands. This may include machines equipped with devices that scatter rather than mound excavated materials, machines with specially designed wheels or tracks, and the use of mats under heavy machines to reduce wetland surface compaction and rutting;

(d) Designing access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain circulation and faunal movement;

(e) Employing appropriate machinery and methods of transport of the material for discharge.

Sec. 230.75 Actions affecting plant and animal populations.

Minimization of adverse effects on populations of plants and animals can be achieved by:

(a) Avoiding changes in water current and circulation patterns which would interfere with the movement of animals;

(b) Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or animals;

(c) Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species;

(d) Using planning and construction practices to institute habitat development and restoration to produce a new or modified environmental state of higher ecological value by displacement of some or all of the existing environmental characteristics. Habitat development and restoration techniques can be used to minimize adverse impacts and to compensate for destroyed habitat. Use techniques that have been demonstrated to be effective in circumstances similar to those under consideration wherever possible. Where proposed development and restoration techniques have not yet advanced to the pilot demonstration stage, initiate their use on a small scale to allow corrective action if unanticipated adverse impacts occur;

(e) Timing discharge to avoid spawning or migration seasons and other biologically critical time periods;

(f) Avoiding the destruction of remnant natural sites within areas already affected by development.

Sec. 230.76 Actions affecting human use.

Minimization of adverse effects on human use potential may be achieved by:

(a) Selecting discharge sites and following discharge procedures to prevent or minimize any potential damage to the aesthetically pleasing features of the aquatic site (e.g. viewscapes), particularly with respect to water quality;

(b) Selecting disposal sites which are not valuable as natural aquatic areas;

- (c) Timing the discharge to avoid the seasons or periods when human recreational activity associated with the aquatic site is most important;
- (d) Following discharge procedures which avoid or minimize the disturbance of aesthetic features of an aquatic site or ecosystem;
- (e) Selecting sites that will not be detrimental or increase incompatible human activity, or require the need for frequent dredge or fill maintenance activity in remote fish and wildlife areas;
- (f) Locating the disposal site outside of the vicinity of a public water supply intake.

Sec. 230.77 Other actions.

- (a) In the case of fills, controlling runoff and other discharges from activities to be conducted on the fill;
- (b) In the case of dams, designing water releases to accommodate the needs of fish and wildlife;
- (c) In dredging projects funded by Federal agencies other than the Corps of Engineers, maintain desired water quality of the return discharge through agreement with the Federal funding authority on scientifically defensible pollutant concentration levels in addition to any applicable water quality standards;
- (d) When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

Subpart I--Planning To Shorten Permit Processing Time

Sec. 230.80 Advanced identification of disposal areas.

- (a) Consistent with these Guidelines, EPA and the permitting authority, on their own initiative or at the request of any other party and after consultation with any affected State that is not the permitting authority, may identify sites which will be considered as:
 - (1) Possible future disposal sites, including existing disposal sites and non-sensitive areas; or
 - (2) Areas generally unsuitable for disposal site specification;
- (b) The identification of any area as a possible future disposal site should not be deemed to constitute a permit for the discharge of dredged or fill material within such area or a specification of a disposal site. The identification of areas that generally will not be available for disposal site specification should not be deemed as prohibiting applications for permits to discharge dredged or fill material in such areas. Either type of

identification constitutes information to facilitate individual or General permit application and processing.

(c) An appropriate public notice of the proposed identification of such areas shall be issued;

(d) To provide the basis for advanced identification of disposal areas, and areas unsuitable for disposal, EPA and the permitting authority shall consider the likelihood that use of the area in question for dredged or fill material disposal will comply with these Guidelines. To facilitate this analysis, EPA and the permitting authority should review available water resources management data including data available from the public, other Federal and State agencies, and information from approved Coastal Zone Management programs and River Basin Plans;

(e) The permitting authority should maintain a public record of the identified areas and a written statement of the basis for identification.



**US Army Corps
of Engineers**



Compensatory Mitigation Rule:

Improving, Restoring, and Protecting the Nation's Wetlands and Streams

Questions and Answers

Q1: What is compensatory mitigation?

A1: The objective of the Clean Water Act (CWA) is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Toward achievement of this goal, the CWA prohibits the discharge of dredged or fill material into wetlands, streams, and other waters of the United States unless a permit issued by the U.S. Army Corps of Engineers (Corps) or approved State under CWA Section 404 authorizes such a discharge. When there is a proposed discharge, all appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions. The Corps (or approved state authority) is responsible for determining the appropriate form and amount of compensatory mitigation required. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation.

Q2: How is compensatory mitigation accomplished?

A2: Compensatory mitigation is typically accomplished through the following three ways:

1. **Mitigation Banks:** A permit applicant may obtain credits from a mitigation bank. A mitigation bank is a wetland, stream or other aquatic resource area that has been restored, established, enhanced, or preserved. This resource area is then set aside to compensate for future impacts to aquatic resources resulting from permitted activities. The value of a bank is determined by quantifying the aquatic resource functions restored, established, enhanced, and/or preserved in terms of "credits." Permittees, upon approval of regulatory agencies, can acquire these credits to meet their requirements for compensatory mitigation.
2. **In-Lieu Fee Mitigation:** A permit applicant may make a payment to an in-lieu fee program that will conduct wetland, stream or other aquatic resource restoration, creation, enhancement, or preservation activities. In-lieu fee programs are generally administered by government agencies or non-profit organizations that have established an agreement with the regulatory agencies to use in-lieu fee payments collected from permit applicants.

3. Permittee-Responsible Mitigation: A permittee may be required to provide compensatory mitigation through an aquatic resource restoration, establishment, enhancement and/or preservation activity. This compensatory mitigation may be provided at or adjacent the impact site (i.e., on-site mitigation) or at another location, usually within the same watershed as the permitted impact (i.e., off-site mitigation). The permittee retains responsibility for the implementation and success of the mitigation project.

Mitigation banks and in-lieu fee mitigation are forms of “third-party” compensation because a third party, the bank or in-lieu fee sponsor, assumes responsibility from the permittee for the implementation and success of the compensatory mitigation.

Q3: What does this final rule do?

A3: The new rule improves and consolidates existing regulations and guidance, to establish equivalent standards for all types of mitigation under the Clean Water Act Section 404 regulatory program. The new rule will also provide one set of regulations for compensatory mitigation, instead of the numerous separate guidance documents that have been in use up to now. This rule uses improved science and results-oriented standards to increase the quality and effectiveness of wetland and stream restoration and conservation practices. The rule does not change when compensatory mitigation is required, but it does change where and how it is required.

The rule establishes equivalent sets of standards that are based on better science, increased public participation, and innovative market-based tools. These equivalent standards take into account the inherent differences among mitigation banks, in-lieu fee programs, and permittee-responsible mitigation, in an effort to maximize the number of ecologically-successful compensatory mitigation projects that project proponents can use to offset their permitted losses of aquatic resources. We believe that this rule will substantially improve compensatory mitigation project performance and accountability.

Q4: What are the most significant changes required by this rule compared to previous mitigation practices.

A4: The most significant change required by the new rule is that compensation projects provided by all three compensation mechanisms (i.e., permittee-responsible compensatory mitigation, mitigation banks, and in-lieu fee mitigation) must have mitigation plans which include the same 12 fundamental components: objectives; site selection criteria; site protection instruments (e.g., conservation easements); baseline information (for impact and compensation sites); credit determination methodology; a mitigation work plan; a maintenance plan; ecological performance standards; monitoring requirements; a long-term management plan; an adaptive management plan; and financial assurances. This important change will dramatically improve the planning, implementation and management of all compensation projects and ensure more effective wetland and stream replacement projects.

Q5: Does the rule provide any criteria for deciding which compensatory mitigation options should be used?

A5: In order to reduce risk and uncertainty and help ensure that the required compensation is provided, the rule establishes a preference hierarchy for mitigation

options. The most preferred option is mitigation bank credits, which are usually in place before the activity is permitted. In-lieu fee program credits are second in the preference hierarchy, because they may involve larger, more ecologically valuable compensatory mitigation projects as compared to permittee-responsible mitigation. Permittee-responsible mitigation is the third option, with three possible circumstances: (1) conducted under a watershed approach, (2) on-site and in kind, and (3) off-site/out-of-kind. While on-site/in-kind mitigation approaches will continue to be evaluated, the rule acknowledges that there are circumstances where off-site or out-of-kind compensatory mitigation may be more beneficial for a watershed.

Q6: What are the goals of the final rule?

A6: The primary goals of this rule are to:

- Implement environmentally effective standards for compensatory mitigation that are based on best available science and incorporate key National Research Council (NRC) recommendations for improving the success of compensatory mitigation;
- Create a “level playing field” among the three compensatory mitigation mechanisms through equivalent standards and greater accountability, so that providers of timely, high-quality mitigation are preferred, because there is greater assurance that the compensatory mitigation will be successful;
- Increase the efficiency and predictability of the process of proposing compensatory mitigation and approving new mitigation banks and in-lieu fee programs; and
- Enhance public participation in compensatory mitigation decision-making.

Q7: Why is this rule being issued?

A7: The 2004 National Defense Authorization Act (PL 108-136) calls for the development of regulations, consistent with Section 404 of the Clean Water Act, that establish equivalent standards and criteria for mitigation banks, in-lieu fee programs and permittee-responsible mitigation.

Q8: Why does this rule encourage mitigation banking and in-lieu fee programs?

A8: Mitigation banks are a “performance-based” form of wetland and stream replacement because, unlike in-lieu fee mitigation and permittee-responsible mitigation, the tradable aquatic resource restoration credits generated by banks are tied to demonstrated achievement of project goals. Thus, the rule establishes a preference for the use of credits from mitigation banks when appropriate credits are available. The new rule encourages the use of mitigation banks and in-lieu fee programs over use of permittee-responsible mitigation because mitigation banks and in-lieu fee programs usually provide consolidated compensatory mitigation projects that have less risk and uncertainty. In its 2001 critique of wetland replacement practices, the NRC highlighted advantages of third-party compensation such as mitigation banks and in-lieu fee programs noting that:

- Mitigation banks and in-lieu fee programs use a multi-resource agency process that brings more expertise and collaboration into the planning, approval, and oversight of wetland restoration and protection projects; and
- Mitigation banks and in-lieu fee programs have less risk than permittee-responsible mitigation projects to achieve desired long-term outcomes and to provide wetlands, streams, and other aquatic habitats that are protected in perpetuity by organizations dedicated to resource conservation.

Q9: How does this rule treat in-lieu fee mitigation?

A9: The rule revises and improves the requirements for in-lieu fee programs in order to address concerns regarding their past performance and equivalency with the standards imposed on mitigation banks and permittee-responsible mitigation. These reforms are based to a large extent on existing practices of the most successful in-lieu fee programs currently operating. The reforms to improve accountability and performance include:

- 1) An advance planning requirement;
- 2) A cap on the number of advance credits that can be released for sale before an in-lieu fee project site is secured and a mitigation plan is approved;
- 3) Improved financial accounting requirements;
- 4) The same interagency/public review and ecological/administrative requirements as mitigation banks; and
- 5) Limiting in-lieu fee sponsors to government agencies and non-profit organizations.

Q10: How does this rule relate to the national goal of “No Net Loss” of wetlands in the Section 404 permit program?

A10: The rule is specifically designed to improve our ability to ensure no net loss of wetlands by addressing key recommendations associated with compensatory planning, monitoring, and long-term maintenance raised by the NRC in its 2001 report evaluating compensatory mitigation. The NRC report summarized many studies which suggested that compensatory mitigation practices were falling short of providing for “no net loss” of wetland quality and quantity.

Q11: Does the mitigation sequence (i.e., avoid, minimize, and compensate) still apply?

A11: Yes. The mitigation sequence established by the Clean Water Act Section 404(b)(1) Guidelines has been retained in this rule. Proposed impacts must be avoided to the maximum extent practicable; remaining unavoidable impacts must then be minimized, and finally compensated for to the extent appropriate and practicable. The final rule affirms the mitigation sequence and clarifies the criteria for appropriate measures to compensate for unavoidable losses.

Q12: Will applicants have more flexibility in selecting compensatory mitigation options as a result of the new rule?

A12: Yes. The rule clarifies the consideration of watershed-scale factors in the selection of appropriate mitigation sites. This clarification may increase the practical viability of mitigation proposals involving off-site or out-of-kind replacement that still provide appropriate aquatic resource replacement in ways that are beneficial to the watershed.

Compensatory mitigation options available to permittees include on-site mitigation, off-site mitigation, or a combination of on-site and off-site mitigation within the watershed. Off-site mitigation may be provided by mitigation banks or in-lieu fee programs, or through permittee-responsible mitigation. The Corps is the final decision-maker regarding whether a proposed compensatory mitigation option provides appropriate compensation for a Department of the Army permit.

Q13: Is mitigation still required to be “on-site” (i.e., located close to the impact) and “in-kind” (i.e., the replacement is of the same ecological type as the impacted resource)?

A13: Since 1990, there has been a general and flexible preference that mitigation should occur on-site and in-kind. This rule retains a flexible preference for in-kind mitigation however it replaces the on-site preference with a hierarchy that considers compensation options in the following order 1) use of credits from a mitigation bank, 2) use of credits from an in-lieu fee program, 3) permittee-responsible compensatory mitigation developed using a watershed approach, 4) on-site/in-kind permittee-responsible mitigation, and 5) off-site/out-of-kind permittee-responsible mitigation.

Q14: Does this rule encourage a watershed approach to compensatory mitigation decision-making as recommended by the National Research Council and the National Mitigation Action Plan?

A14: Yes, this rule states that, where appropriate and practicable, compensatory mitigation decisions should be made from a watershed perspective in which the type and location of compensatory mitigation follows from an analytically-based watershed assessment to assure that the proposed compensation furthers watershed goals. This assessment may take the form of a watershed plan, which typically involves an intensive regional planning effort involving many stakeholders. It may also be a less formal “watershed approach,” involving the analysis of data concerning regional environmental issues, efforts to inventory historic trends in aquatic resource condition, and the prioritization of aquatic resource restoration opportunities. Such an approach involves consultation with stakeholders, resource agencies and environmental experts as appropriate.

Q15: When does the new rule go into effect?

A15: The final rule goes into effect 60 days following publication in the Federal Register.

Q16: If I have already submitted a permit application, do I need to change my application or project to comply with the new rule?

A16: There will be a transition period from the current mitigation practices and procedures to those of the new rule. Permit applications received prior to the effective date will be processed in accordance with existing regulations and guidance. Permit applications received after the effective date of this rule will be subject to the new rule, unless the district engineer has made a written determination that applying these new rules to a particular project would result in a substantial hardship to a permit applicant. In such cases, the district engineer will consider whether the applicant can fully demonstrate that substantial resources have been expended or committed in reliance on previous guidance governing compensatory mitigation for DA permits.

Q17: Do existing mitigation banks and in-lieu fee programs need to be changed to satisfy the requirements of the new rule?

A17: Existing mitigation banks that were approved 90 days before publication of the rule in the Federal Register may continue to operate under the terms of their existing instruments. However, if an existing mitigation banking instrument is modified, or if a new mitigation bank is proposed, it must be consistent with the new rule.

Existing in-lieu fee programs that were approved 90 days before publication of the rule in the Federal Register may continue to operate under the terms of their existing instruments for a two-year period, but the Corps may grant an extension for up to three additional years. Any revisions made to the in-lieu-fee program instrument must be consistent with the new rule. An in-lieu fee project constructed under the terms of a previous instrument may continue to operate under the terms of that instrument indefinitely, as long as the Corps determines that the project is providing appropriate compensatory mitigation consistent with the terms of the rule.

Q18: How quickly would proposed mitigation banks and in-lieu fee programs be approved as a result of the new rule?

A18: A significant change is the establishment of specific evaluation and decision-making time frames for proposed new mitigation banks and in-lieu fee programs. The Corps is the final decision-maker for approving proposed mitigation banking or in-lieu fee program instruments, although it will receive input from Interagency Review Teams comprised of other federal, state, tribal, and local agencies. We expect that decisions on most mitigation banks and in-lieu fee programs would be made within 225 days or so of required federal agency review time, unless substantial concerns are raised or there is a need to address other issues, such as endangered species, historic properties, or tribal concerns. In cases where dispute resolution amongst the Corps and the team members is necessary, the review time is expected to take 330 days or so of required federal agency review time. The Corps can suspend or terminate instruments in cases of poor mitigation bank or in-lieu fee program performance.

Q19: Where can I get a copy of the new rule?

A19: You can find the new Compensatory Mitigation Rule in the Federal Register or online at: <http://www.usace.army.mil/cw/cecwo/reg/citizen.htm> or <http://www.epa.gov/wetlandsmitigation> . You can also send a request to David Olson at david.b.olson@usace.army.mil or to U.S. Army Corps of Engineers, 441 G Street NW, Washington, DC 20314; or Palmer Hough at hough.palmer@epa.gov or to U.S. Environmental Protection Agency, Wetlands Division (4502T), 1200 Pennsylvania Avenue, NW, Washington, DC 20460.



Federal Register

Thursday,
April 10, 2008

Part II

Department of Defense

Department of the Army, Corps of
Engineers
33 CFR Parts 325 and 332

Environmental Protection Agency

40 CFR Part 230
Compensatory Mitigation for Losses of
Aquatic Resources; Final Rule

DEPARTMENT OF DEFENSE**Department of the Army, Corps of Engineers****33 CFR Parts 325 and 332****ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 230**

[EPA-HQ-OW-2006-0020; FRL-8545-4]

RIN 0710-AA55

Compensatory Mitigation for Losses of Aquatic Resources

AGENCIES: U.S. Army Corps of Engineers, DoD; and Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The U.S. Army Corps of Engineers (the Corps) and the Environmental Protection Agency (EPA) are issuing regulations governing compensatory mitigation for activities authorized by permits issued by the Department of the Army. The regulations establish performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks, and in-lieu programs to improve the quality and success of compensatory mitigation projects for activities authorized by Department of the Army permits.

This rule improves the planning, implementation and management of compensatory mitigation projects by emphasizing a watershed approach in selecting compensatory mitigation project locations, requiring measurable, enforceable ecological performance standards and regular monitoring for all types of compensation and specifying the components of a complete compensatory mitigation plan, including assurances of long-term protection of compensation sites, financial assurances, and identification of the parties responsible for specific project tasks.

This rule applies equivalent standards to permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation to the maximum extent practicable. Since a mitigation bank must have an approved mitigation plan and other assurances in place before any of its credits can be used to offset permitted impacts, this rule establishes a preference for the use of mitigation bank credits, which reduces some of the risks and uncertainties associated with compensatory mitigation. This rule also significantly revises the requirements for in-lieu fee programs to address

concerns regarding their past performance and equivalency with the standards for mitigation banks and permittee-responsible compensatory mitigation.

DATES: The effective date is June 9, 2008.

ADDRESSES: Headquarters, U.S. Army Corps of Engineers, Operations and Regulatory Community of Practice, 441 G Street, NW., Washington, DC 20314-1000. Headquarters, U.S. Environmental Protection Agency, Wetlands Division, Mail code 4502T, 1200 Pennsylvania Ave, NW., Washington, DC 20460.

The Corps and EPA have established a docket for this action under Docket ID No. EPA-HQ-OW-2006-0020. All documents in the docket are listed on the <http://www.regulations.gov> web site. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through <http://www.regulations.gov> or in hard copy at the Water Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Water Docket is (202) 566-2426.

FOR FURTHER INFORMATION CONTACT: Mr. David Olson at 202-761-4922 or by e-mail at david.b.olson@usace.army.mil, or Mr. Palmer Hough at 202-566-1374 or by e-mail at hough.palmer@epa.gov. Additional information can also be found at the Corps Headquarters Regulatory Program webpage at: <http://www.usace.army.mil/cw/cecwo/reg/index.html> or the EPA compensatory mitigation webpage at: <http://www.epa.gov/wetlandsmitigation>.

SUPPLEMENTARY INFORMATION:

- I. Background
- II. General Comments and Responses
 - A. Overview
 - B. Most Frequently Raised Issues
 - 1. Section 404(b)(1) Guidelines
 - 2. Compensatory Mitigation Standards for Streams
 - 3. Discretionary Language
 - 4. Watershed Approach
 - 5. In-Lieu Fee Programs
 - C. Other General Comments
- III. In-Lieu Fee Programs
- IV. Compliance With Section 314 of the NDAA

- V. Organization of the Final Rule
- VI. Discussion of Specific Sections of the Final Rule
- VII. Administrative Requirements

I. Background

Compensatory mitigation involves actions taken to offset unavoidable adverse impacts to wetlands, streams and other aquatic resources authorized by Clean Water Act section 404 permits and other Department of the Army (DA) permits. As such, compensatory mitigation is a critical tool in helping the federal government to meet the longstanding national goal of "no net loss" of wetland acreage and function. For impacts authorized under section 404, compensatory mitigation is not considered until after all appropriate and practicable steps have been taken to first avoid and then minimize adverse impacts to the aquatic ecosystem pursuant to 40 CFR part 230 (i.e., the CWA Section 404(b)(1) Guidelines).

Compensatory mitigation can be carried out through four methods: the *restoration* of a previously-existing wetland or other aquatic site, the *enhancement* of an existing aquatic site's functions, the *establishment* (i.e., creation) of a new aquatic site, or the *preservation* of an existing aquatic site. There are three mechanisms for providing compensatory mitigation: *permittee-responsible compensatory mitigation*, *mitigation banks* and *in-lieu fee mitigation*. Permittee-responsible mitigation is the most traditional form of compensation and continues to represent the majority of compensation acreage provided each year. As its name implies, the permittee retains responsibility for ensuring that required compensation activities are completed and successful. Permittee-responsible mitigation can be located at or adjacent to the impact site (i.e., on-site compensatory mitigation) or at another location generally within the same watershed as the impact site (i.e., off-site compensatory mitigation).

Mitigation banks and in-lieu fee mitigation both involve off-site compensation activities generally conducted by a third party, a mitigation bank sponsor or in-lieu fee program sponsor. When a permittee's compensatory mitigation requirements are satisfied by a mitigation bank or in-lieu fee program, responsibility for ensuring that required compensation is completed and successful shifts from the permittee to the bank or in-lieu fee sponsor. Mitigation banks and in-lieu fee programs both conduct consolidated aquatic resource restoration, enhancement, establishment and preservation projects; however, under

current practice, there are several important differences between in-lieu fee programs and mitigation banks.

First, in-lieu fee programs are generally administered by state governments, local governments, or non-profit non-governmental organizations while mitigation banks are usually (though not always) operated for profit by private entities. Second, in-lieu fee programs rely on fees collected from permittees to initiate compensatory mitigation projects while mitigation banks usually rely on private investment for initial financing. Most importantly, mitigation banks must achieve certain milestones, including site selection, plan approval, and financial assurances, before they can sell credits, and generally sell a majority of their credits only after the physical development of compensation sites has begun. In contrast, in-lieu fee programs generally initiate compensatory mitigation projects only after collecting fees, and there has often been a substantial time lag between permitted impacts and implementation of compensatory mitigation projects. Additionally, in-lieu fee programs have not generally been required to provide the same financial assurances as mitigation banks. For all of these reasons, there is greater risk and uncertainty associated with in-lieu fee programs regarding the implementation of the compensatory mitigation project and its adequacy to compensate for lost functions and services.

As noted in the preamble for the March 2006 proposal, the majority of the existing guidance regarding compensatory mitigation and the use of these three mechanisms for providing compensation exists in a number of national guidance documents released by the Corps and EPA over the past seventeen years (sometimes in association with other federal agencies such as the U.S. Fish and Wildlife Service and the National Marine Fisheries Service). Since these guidance documents were developed at different times, and in different regulatory contexts, concerns have been raised regarding the consistent, predictable and equitable interpretation and application of these guidance documents. In November 2003, Congress called for the development of regulatory standards and criteria for the use of compensatory mitigation in the section 404 program.

Section 314 of the National Defense Authorization Act (NDAA) for Fiscal Year 2004 (section 314) requires the Secretary of the Army, acting through the Chief of Engineers, to issue regulations "establishing performance

standards and criteria for the use, consistent with section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344, also known as the Clean Water Act), of on-site, off-site, and in-lieu fee mitigation and mitigation banking as compensation for lost wetlands functions in permits issued by the Secretary of the Army under such section." This provision also requires that those regulations, to the maximum extent practicable, "maximize available credits and opportunities for mitigation, provide flexibility for regional variations in wetland conditions, functions and values, and apply equivalent standards and criteria to each type of compensatory mitigation."

In response to this directive, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (the agencies) published a proposed rule in Part II of the March 28, 2006, issue of the **Federal Register** (71 FR 15520), with a 60-day public comment period. As a result of several requests, the Corps and EPA extended the comment period by an additional 30 days. The comment period ended on June 30, 2006.

In the preamble to the March 2006 proposal, the agencies noted their decision, in light of their respective statutory roles in the section 404 program, to pursue this rulemaking as a joint effort between the Corps and EPA. The preamble also discussed the Corps's decision to develop these standards for all DA permits which could potentially require compensatory mitigation. Thus, in addition to Clean Water Act section 404 permits, these standards also apply to DA permits issued under sections 9 and 10 of the Rivers and Harbors Act of 1899. Finally, the preamble also discussed why these standards should apply to compensatory mitigation for impacts to streams and other open waters in addition to wetlands.

As discussed in the preamble to the March 2006 proposal, in 2001 the National Research Council (NRC) released a comprehensive evaluation of the effectiveness of wetlands compensatory mitigation required under section 404 of the Clean Water Act. This report noted concerns with some past wetland compensatory mitigation and provided recommendations for the federal agencies, states, and other parties to improve compensatory mitigation. This report was an important resource in the development of today's rule.

II. General Comments and Responses

In response to the proposed rule, approximately 12,000 comments were received, including about 850 distinct comments and 11,150 additional

substantially identical e-mails and letters. Comments were provided by regulated entities, the scientific community, non-governmental organizations, mitigation bankers, in-lieu fee program sponsors, state and local government agencies, and other members of the public.

A. Overview

Most of the distinct commenters said that this rule is a necessary addition to regulations for implementing the Corps Regulatory Program and some expressed appreciation that the rule incorporates stakeholder feedback and lessons learned. Many commenters expressed general support for the proposed rule because: (1) It will promote predictability and consistency in compensatory mitigation; (2) it will further effective partnerships with private sector mitigation banks; (3) it responds to concerns raised by those participating in the development of Mitigation Action Plan products; (4) many provisions of the rule are consistent with the 2005 Millennium Ecosystem Assessment; (5) it brings greater technical clarity to the process of determining appropriate mitigation; (6) it provides greater focus on accountability through measurable and enforceable ecological performance standards, monitoring, and management; (7) it fosters incorporation of aquatic ecosystem science into compensatory mitigation plans; and (8) it increases public participation in the compensatory mitigation process. Some of these commenters also suggested modifications to the proposed rule, which are discussed in more detail below.

Some commenters, including most of the form letters, opposed the proposed rule or suggested extensive revisions to increase the protection of aquatic resources. The issues most frequently raised, considering both the individual and form letters, were: (1) Interaction of the proposed rule with the existing requirements of the Section 404 (b)(1) Guidelines, (2) compensatory mitigation standards for streams, (3) the amount of discretionary language in the proposed rule, (4) use of the watershed approach for identifying mitigation projects, and (5) the proposed phase-out of in-lieu fee mitigation. These five major issues and our responses to them are discussed below in part II.B. Many other general issues were raised as well, and a number of these are discussed in part II.C. Additional detail, and responses to comments on specific rule provisions, are provided in part VI.

Corps of Engineers

33 CFR Chapter II

■ For the reasons stated in the preamble, the Corps amends 33 CFR chapter II as set forth below:

PART 325—PROCESSING OF DEPARTMENT OF THE ARMY PERMITS

■ 1. The authority citation for part 325 continues to read as follows:

Authority: 33 U.S.C. 401 *et seq.*; 33 U.S.C. 1344; 33 U.S.C. 1413.

■ 2. Amend § 325.1 by redesignating paragraphs (d)(7), (d)(8), and (d)(9) as paragraphs (d)(8), (d)(9), and (d)(10), respectively, and adding new paragraph (d)(7) as follows:

§ 325.1 Applications for permits.

* * * * *

(d) * * *

(7) For activities involving discharges of dredged or fill material into waters of the United States, the application must include a statement describing how impacts to waters of the United States are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts. (See § 332.4(b)(1) of this chapter.)

* * * * *

■ 3. Add part 332 to read as follows:

PART 332—COMPENSATORY MITIGATION FOR LOSSES OF AQUATIC RESOURCES

Sec.

- 332.1 Purpose and general considerations.
- 332.2 Definitions.
- 332.3 General compensatory mitigation requirements.
- 332.4 Planning and documentation.
- 332.5 Ecological performance standards.
- 332.6 Monitoring.
- 332.7 Management.
- 332.8 Mitigation banks and in-lieu fee programs.

Authority: 33 U.S.C. 401 *et seq.*; 33 U.S.C. 1344; and Pub. L. 108–136.

§ 332.1 Purpose and general considerations.

(a) *Purpose.* (1) The purpose of this part is to establish standards and criteria for the use of all types of compensatory mitigation, including on-site and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts to waters of the United States authorized through the issuance of

Department of the Army (DA) permits pursuant to section 404 of the Clean Water Act (33 U.S.C. 1344) and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, 403). This part implements section 314(b) of the 2004 National Defense Authorization Act (Pub. L. 108–136), which directs that the standards and criteria shall, to the maximum extent practicable, maximize available credits and opportunities for mitigation, provide for regional variations in wetland conditions, functions, and values, and apply equivalent standards and criteria to each type of compensatory mitigation. This part is intended to further clarify mitigation requirements established under U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (U.S. EPA) regulations at 33 CFR part 320 and 40 CFR part 230, respectively.

(2) This part has been jointly developed by the Secretary of the Army, acting through the Chief of Engineers, and the Administrator of the Environmental Protection Agency. From time to time guidance on interpreting and implementing this part may be prepared jointly by U.S. EPA and the Corps at the national or regional level. No modifications to the basic application, meaning, or intent of this part will be made without further joint rulemaking by the Secretary of the Army, acting through the Chief of Engineers and the Administrator of the Environmental Protection Agency, pursuant to the Administrative Procedure Act (5 U.S.C. 551 *et seq.*).

(b) *Applicability.* This part does not alter the regulations at § 320.4(r) of this title, which address the general mitigation requirements for DA permits. In particular, it does not alter the circumstances under which compensatory mitigation is required or the definitions of “waters of the United States” or “navigable waters of the United States,” which are provided at parts 328 and 329 of this chapter, respectively. Use of resources as compensatory mitigation that are not otherwise subject to regulation under section 404 of the Clean Water Act and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 does not in and of itself make them subject to such regulation.

(c) *Sequencing.* (1) Nothing in this section affects the requirement that all DA permits subject to section 404 of the Clean Water Act comply with applicable provisions of the Section 404(b)(1) Guidelines at 40 CFR part 230.

(2) Pursuant to these requirements, the district engineer will issue an individual section 404 permit only upon

a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines.

(3) Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines. During the 404(b)(1) Guidelines compliance analysis, the district engineer may determine that a DA permit for the proposed activity cannot be issued because of the lack of appropriate and practicable compensatory mitigation options.

(d) *Public interest.* Compensatory mitigation may also be required to ensure that an activity requiring authorization under section 404 of the Clean Water Act and/or sections 9 or 10 of the Rivers and Harbors Act of 1899 is not contrary to the public interest.

(e) *Accounting for regional variations.* Where appropriate, district engineers shall account for regional characteristics of aquatic resource types, functions and services when determining performance standards and monitoring requirements for compensatory mitigation projects.

(f) *Relationship to other guidance documents.* (1) This part applies instead of the “Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks,” which was issued on November 28, 1995, the “Federal Guidance on the Use of In-Lieu Fee Arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act,” which was issued on November 7, 2000, and Regulatory Guidance Letter 02–02, “Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899” which was issued on December 24, 2002. These guidance documents are no longer to be used as compensatory mitigation policy in the Corps Regulatory Program.

(2) In addition, this part also applies instead of the provisions relating to the amount, type, and location of compensatory mitigation projects.

including the use of preservation, in the February 6, 1990, Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency on the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines. All other provisions of this MOA remain in effect.

§ 332.2 Definitions.

For the purposes of this part, the following terms are defined:

Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems.

Advance credits means any credits of an approved in-lieu fee program that are available for sale prior to being fulfilled in accordance with an approved mitigation project plan. Advance credit sales require an approved in-lieu fee program instrument that meets all applicable requirements including a specific allocation of advance credits, by service area where applicable. The instrument must also contain a schedule for fulfillment of advance credit sales.

Buffer means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

Compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Compensatory mitigation project means compensatory mitigation implemented by the permittee as a requirement of a DA permit (i.e., permittee-responsible mitigation), or by

a mitigation bank or an in-lieu fee program.

Condition means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

Credit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.

DA means Department of the Army.

Days means calendar days.

Debit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

Fulfillment of advance credit sales of an in-lieu fee program means application of credits released in accordance with a credit release schedule in an approved mitigation project plan to satisfy the mitigation requirements represented by the advance credits. Only after any advance credit sales within a service area have been fulfilled through the application of released credits from an in-lieu fee project (in accordance with the credit release schedule for an approved mitigation project plan), may additional released credits from that project be sold or transferred to permittees. When advance credits are fulfilled, an equal number of new advance credits is restored to the program sponsor for sale or transfer to permit applicants.

Functional capacity means the degree to which an area of aquatic resource performs a specific function.

Functions means the physical, chemical, and biological processes that occur in ecosystems.

Impact means adverse effect.

In-kind means a resource of a similar structural and functional type to the impacted resource.

In-lieu fee program means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. However, the rules governing the operation and use of in-lieu fee programs are somewhat different from the rules governing operation and use of mitigation banks. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.

In-lieu fee program instrument means the legal document for the establishment, operation, and use of an in-lieu fee program.

Instrument means mitigation banking instrument or in-lieu fee program instrument.

Interagency Review Team (IRT) means an interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that reviews documentation for, and advises the district engineer on, the establishment and management of a mitigation bank or an in-lieu fee program.

Mitigation bank means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

Mitigation banking instrument means the legal document for the establishment, operation, and use of a mitigation bank.

Off-site means an area that is neither located on the same parcel of land as the impact site, nor on a parcel of land contiguous to the parcel containing the impact site.

On-site means an area located on the same parcel of land as the impact site,

or on a parcel of land contiguous to the impact site.

Out-of-kind means a resource of a different structural and functional type from the impacted resource.

Performance standards are observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Permittee-responsible mitigation means an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Reference aquatic resources are a set of aquatic resources that represent the full range of variability exhibited by a regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Release of credits means a determination by the district engineer, in consultation with the IRT, that credits associated with an approved mitigation plan are available for sale or transfer, or in the case of an in-lieu fee program, for fulfillment of advance credit sales. A proportion of projected credits for a specific mitigation bank or in-lieu fee project may be released upon approval of the mitigation plan, with additional credits released as milestones specified in the credit release schedule are achieved.

Restoration means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riparian areas are lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality.

Service area means the geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument.

Services mean the benefits that human populations receive from functions that occur in ecosystems.

Sponsor means any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program.

Standard permit means a standard, individual permit issued under the authority of section 404 of the Clean Water Act and/or sections 9 or 10 of the Rivers and Harbors Act of 1899.

Temporal loss is the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. When the compensatory mitigation project is initiated prior to, or concurrent with, the permitted impacts, the district engineer may determine that compensation for temporal loss is not necessary, unless the resource has a long development time.

Watershed means a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.

Watershed approach means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized by DA permits. The watershed approach may involve consideration of landscape scale, historic and potential aquatic

resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA permits.

Watershed plan means a plan developed by federal, tribal, state, and/or local government agencies or appropriate non-governmental organizations, in consultation with relevant stakeholders, for the specific goal of aquatic resource restoration, establishment, enhancement, and preservation. A watershed plan addresses aquatic resource conditions in the watershed, multiple stakeholder interests, and land uses. Watershed plans may also identify priority sites for aquatic resource restoration and protection. Examples of watershed plans include special area management plans, advance identification programs, and wetland management plans.

§ 332.3 General compensatory mitigation requirements.

(a) *General considerations.* (1) The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits. The district engineer must determine the compensatory mitigation to be required in a DA permit, based on what is practicable and capable of compensating for the aquatic resource functions that will be lost as a result of the permitted activity. When evaluating compensatory mitigation options, the district engineer will consider what would be environmentally preferable. In making this determination, the district engineer must assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project. In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success. Compensatory mitigation requirements must be commensurate with the amount and type of impact that is associated with a particular DA permit. Permit applicants are responsible for proposing an

appropriate compensatory mitigation option to offset unavoidable impacts.

(2) Compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances preservation. Restoration should generally be the first option considered because the likelihood of success is greater and the impacts to potentially ecologically important uplands are reduced compared to establishment, and the potential gains in terms of aquatic resource functions are greater, compared to enhancement and preservation.

(3) Compensatory mitigation projects may be sited on public or private lands. Credits for compensatory mitigation projects on public land must be based solely on aquatic resource functions provided by the compensatory mitigation project, over and above those provided by public programs already planned or in place. All compensatory mitigation projects must comply with the standards in this part, if they are to be used to provide compensatory mitigation for activities authorized by DA permits, regardless of whether they are sited on public or private lands and whether the sponsor is a governmental or private entity.

(b) *Type and location of compensatory mitigation.* (1) When considering options for successfully providing the required compensatory mitigation, the district engineer shall consider the type and location options in the order presented in paragraphs (b)(2) through (b)(6) of this section. In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses. When compensating for impacts to marine resources, the location of the compensatory mitigation site should be chosen to replace lost functions and services within the same marine ecological system (e.g., reef complex, littoral drift cell). Compensation for impacts to aquatic resources in coastal watersheds (watersheds that include a tidal water body) should also be located in a coastal watershed where practicable. Compensatory mitigation projects should not be located where they will increase risks to aviation by attracting

wildlife to areas where aircraft-wildlife strikes may occur (e.g., near airports).

(2) *Mitigation bank credits.* When permitted impacts are located within the service area of an approved mitigation bank, and the bank has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor. Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable. However, these same considerations may also be used to override this preference, where appropriate, as, for example, where an in-lieu fee program has released credits available from a specific approved in-lieu fee project, or a permittee-responsible project will restore an outstanding resource based on rigorous scientific and technical analysis.

(3) *In-lieu fee program credits.* Where permitted impacts are located within the service area of an approved in-lieu fee program, and the sponsor has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor. Where permitted impacts are not located in the service area of an approved mitigation bank, or the approved mitigation bank does not have the appropriate number and resource type of credits available to offset those impacts, in-lieu fee mitigation, if available, is generally preferable to permittee-responsible

mitigation. In-lieu fee projects typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. They also devote significant resources to identifying and addressing high-priority resource needs on a watershed scale, as reflected in their compensation planning framework. For these reasons, the district engineer should give preference to in-lieu fee program credits over permittee-responsible mitigation, where these considerations are applicable. However, as with the preference for mitigation bank credits, these same considerations may be used to override this preference where appropriate. Additionally, in cases where permittee-responsible mitigation is likely to successfully meet performance standards before advance credits secured from an in-lieu fee program are fulfilled, the district engineer should also give consideration to this factor in deciding between in-lieu fee mitigation and permittee-responsible mitigation.

(4) *Permittee-responsible mitigation under a watershed approach.* Where permitted impacts are not in the service area of an approved mitigation bank or in-lieu fee program that has the appropriate number and resource type of credits available, permittee-responsible mitigation is the only option. Where practicable and likely to be successful and sustainable, the resource type and location for the required permittee-responsible compensatory mitigation should be determined using the principles of a watershed approach as outlined in paragraph (c) of this section.

(5) *Permittee-responsible mitigation through on-site and in-kind mitigation.* In cases where a watershed approach is not practicable, the district engineer should consider opportunities to offset anticipated aquatic resource impacts by requiring on-site and in-kind compensatory mitigation. The district engineer must also consider the practicability of on-site compensatory mitigation and its compatibility with the proposed project.

(6) *Permittee-responsible mitigation through off-site and/or out-of-kind mitigation.* If, after considering opportunities for on-site, in-kind compensatory mitigation as provided in paragraph (b)(5) of this section, the district engineer determines that these compensatory mitigation opportunities are not practicable, are unlikely to compensate for the permitted impacts, or will be incompatible with the proposed project, and an alternative,

practicable off-site and/or out-of-kind mitigation opportunity is identified that has a greater likelihood of offsetting the permitted impacts or is environmentally preferable to on-site or in-kind mitigation, the district engineer should require that this alternative compensatory mitigation be provided.

(c) *Watershed approach to compensatory mitigation.* (1) The district engineer must use a watershed approach to establish compensatory mitigation requirements in DA permits to the extent appropriate and practicable. Where a watershed plan is available, the district engineer will determine whether the plan is appropriate for use in the watershed approach for compensatory mitigation. In cases where the district engineer determines that an appropriate watershed plan is available, the watershed approach should be based on that plan. Where no such plan is available, the watershed approach should be based on information provided by the project sponsor or available from other sources. The ultimate goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites.

(2) *Considerations.* (i) A watershed approach to compensatory mitigation considers the importance of landscape position and resource type of compensatory mitigation projects for the sustainability of aquatic resource functions within the watershed. Such an approach considers how the types and locations of compensatory mitigation projects will provide the desired aquatic resource functions, and will continue to function over time in a changing landscape. It also considers the habitat requirements of important species, habitat loss or conversion trends, sources of watershed impairment, and current development trends, as well as the requirements of other regulatory and non-regulatory programs that affect the watershed, such as storm water management or habitat conservation programs. It includes the protection and maintenance of terrestrial resources, such as non-wetland riparian areas and uplands, when those resources contribute to or improve the overall ecological functioning of aquatic resources in the watershed.

Compensatory mitigation requirements determined through the watershed approach should not focus exclusively on specific functions (e.g., water quality or habitat for certain species), but should provide, where practicable, the suite of functions typically provided by the affected aquatic resource.

(ii) Locational factors (e.g., hydrology, surrounding land use) are important to the success of compensatory mitigation for impacted habitat functions and may lead to siting of such mitigation away from the project area. However, consideration should also be given to functions and services (e.g., water quality, flood control, shoreline protection) that will likely need to be addressed at or near the areas impacted by the permitted impacts.

(iii) A watershed approach may include on-site compensatory mitigation, off-site compensatory mitigation (including mitigation banks or in-lieu fee programs), or a combination of on-site and off-site compensatory mitigation.

(iv) A watershed approach to compensatory mitigation should include, to the extent practicable, inventories of historic and existing aquatic resources, including identification of degraded aquatic resources, and identification of immediate and long-term aquatic resource needs within watersheds that can be met through permittee-responsible mitigation projects, mitigation banks, or in-lieu fee programs. Planning efforts should identify and prioritize aquatic resource restoration, establishment, and enhancement activities, and preservation of existing aquatic resources that are important for maintaining or improving ecological functions of the watershed. The identification and prioritization of resource needs should be as specific as possible, to enhance the usefulness of the approach in determining compensatory mitigation requirements.

(v) A watershed approach is not appropriate in areas where watershed boundaries do not exist, such as marine areas. In such cases, an appropriate spatial scale should be used to replace lost functions and services within the same ecological system (e.g., reef complex, littoral drift cell).

(3) *Information Needs.* (i) In the absence of a watershed plan determined by the district engineer under paragraph (c)(1) of this section to be appropriate for use in the watershed approach, the district engineer will use a watershed approach based on analysis of information regarding watershed conditions and needs, including potential sites for aquatic resource restoration activities and priorities for aquatic resource restoration and preservation. Such information includes: current trends in habitat loss or conversion; cumulative impacts of past development activities, current development trends, the presence and

needs of sensitive species; site conditions that favor or hinder the success of compensatory mitigation projects; and chronic environmental problems such as flooding or poor water quality.

(ii) This information may be available from sources such as wetland maps; soil surveys; U.S. Geological Survey topographic and hydrologic maps; aerial photographs; information on rare, endangered and threatened species and critical habitat; local ecological reports or studies; and other information sources that could be used to identify locations for suitable compensatory mitigation projects in the watershed.

(iii) The level of information and analysis needed to support a watershed approach must be commensurate with the scope and scale of the proposed impacts requiring a DA permit, as well as the functions lost as a result of those impacts.

(4) *Watershed scale.* The size of watershed addressed using a watershed approach should not be larger than is appropriate to ensure that the aquatic resources provided through compensation activities will effectively compensate for adverse environmental impacts resulting from activities authorized by DA permits. The district engineer should consider relevant environmental factors and appropriate locally developed standards and criteria when determining the appropriate watershed scale in guiding compensation activities.

(d) *Site selection.* (1) The compensatory mitigation project site must be ecologically suitable for providing the desired aquatic resource functions. In determining the ecological suitability of the compensatory mitigation project site, the district engineer must consider, to the extent practicable, the following factors:

(i) Hydrological conditions, soil characteristics, and other physical and chemical characteristics;

(ii) Watershed-scale features, such as aquatic habitat diversity, habitat connectivity, and other landscape scale functions;

(iii) The size and location of the compensatory mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features;

(iv) Compatibility with adjacent land uses and watershed management plans;

(v) Reasonably foreseeable effects the compensatory mitigation project will have on ecologically important aquatic or terrestrial resources (e.g., shallow sub-tidal habitat, mature forests), cultural sites, or habitat for federally-

state-listed threatened and endangered species; and

(vi) Other relevant factors including, but not limited to, development trends, anticipated land use changes, habitat status and trends, the relative locations of the impact and mitigation sites in the stream network, local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern), water quality goals, floodplain management goals, and the relative potential for chemical contamination of the aquatic resources.

(2) District engineers may require on-site, off-site, or a combination of on-site and off-site compensatory mitigation to replace permitted losses of aquatic resource functions and services.

(3) Applicants should propose compensation sites adjacent to existing aquatic resources or where aquatic resources previously existed.

(e) *Mitigation type.* (1) In general, in-kind mitigation is preferable to out-of-kind mitigation because it is most likely to compensate for the functions and services lost at the impact site. For example, tidal wetland compensatory mitigation projects are most likely to compensate for unavoidable impacts to tidal wetlands, while perennial stream compensatory mitigation projects are most likely to compensate for unavoidable impacts to perennial streams. Thus, except as provided in paragraph (e)(2) of this section, the required compensatory mitigation shall be of a similar type to the affected aquatic resource.

(2) If the district engineer determines, using the watershed approach in accordance with paragraph (c) of this section that out-of-kind compensatory mitigation will serve the aquatic resource needs of the watershed, the district engineer may authorize the use of such out-of-kind compensatory mitigation. The basis for authorization of out-of-kind compensatory mitigation must be documented in the administrative record for the permit action.

(3) For difficult-to-replace resources (e.g., bogs, fens, springs, streams, Atlantic white cedar swamps) if further avoidance and minimization is not practicable, the required compensation should be provided, if practicable, through in-kind rehabilitation, enhancement, or preservation since there is greater certainty that these methods of compensation will successfully offset permitted impacts.

(f) *Amount of compensatory mitigation.* (1) If the district engineer determines that compensatory

mitigation is necessary to offset unavoidable impacts to aquatic resources, the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used.

(2) The district engineer must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required replacement ratio must be documented in the administrative record for the permit action.

(3) If an in-lieu fee program will be used to provide the required compensatory mitigation, and the appropriate number and resource type of released credits are not available, the district engineer must require sufficient compensation to account for the risk and uncertainty associated with in-lieu fee projects that have not been implemented before the permitted impacts have occurred.

(g) *Use of mitigation banks and in-lieu fee programs.* Mitigation banks and in-lieu fee programs may be used to compensate for impacts to aquatic resources authorized by general permits and individual permits, including after-the-fact permits, in accordance with the preference hierarchy in paragraph (b) of this section.

(h) *Preservation.* (1) Preservation may be used to provide compensatory mitigation for activities authorized by DA permits when all the following criteria are met:

(i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed;

(ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability

of the watershed, the district engineer must use appropriate quantitative assessment tools, where available;

(iii) Preservation is determined by the district engineer to be appropriate and practicable;

(iv) The resources are under threat of destruction or adverse modifications; and

(v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).

(2) Where preservation is used to provide compensatory mitigation, to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities. This requirement may be waived by the district engineer where preservation has been identified as a high priority using a watershed approach described in paragraph (c) of this section, but compensation ratios shall be higher.

(i) *Buffers.* District engineers may require the restoration, establishment, enhancement, and preservation, as well as the maintenance, of riparian areas and/or buffers around aquatic resources where necessary to ensure the long-term viability of those resources. Buffers may also provide habitat or corridors necessary for the ecological functioning of aquatic resources. If buffers are required by the district engineer as part of the compensatory mitigation project, compensatory mitigation credit will be provided for those buffers.

(j) *Relationship to other federal, tribal, state, and local programs.* (1)

Compensatory mitigation projects for DA permits may also be used to satisfy the environmental requirements of other programs, such as tribal, state, or local wetlands regulatory programs, other federal programs such as the Surface Mining Control and Reclamation Act, Corps civil works projects, and Department of Defense military construction projects, consistent with the terms and requirements of these programs and subject to the following considerations:

(i) The compensatory mitigation project must include appropriate compensation required by the DA permit for unavoidable impacts to aquatic resources authorized by that permit.

(ii) Under no circumstances may the same credits be used to provide mitigation for more than one permitted activity. However, where appropriate, compensatory mitigation projects, including mitigation banks and in-lieu fee projects, may be designed to

holistically address requirements under multiple programs and authorities for the same activity.

(2) Except for projects undertaken by federal agencies, or where federal funding is specifically authorized to provide compensatory mitigation, federally-funded aquatic resource restoration or conservation projects undertaken for purposes other than compensatory mitigation, such as the Wetlands Reserve Program, Conservation Reserve Program, and Partners for Wildlife Program activities, cannot be used for the purpose of generating compensatory mitigation credits for activities authorized by DA permits. However, compensatory mitigation credits may be generated by activities undertaken in conjunction with, but supplemental to, such programs in order to maximize the overall ecological benefits of the restoration or conservation project.

(3) Compensatory mitigation projects may also be used to provide compensatory mitigation under the Endangered Species Act or for Habitat Conservation Plans, as long as they comply with the requirements of paragraph (j)(1) of this section.

(k) *Permit conditions.* (1) The compensatory mitigation requirements for a DA permit, including the amount and type of compensatory mitigation, must be clearly stated in the special conditions of the individual permit or general permit verification (see 33 CFR 325.4 and 330.6(a)). The special conditions must be enforceable.

(2) For an individual permit that requires permittee-responsible mitigation, the special conditions must:

- (i) Identify the party responsible for providing the compensatory mitigation;
- (ii) Incorporate, by reference, the final mitigation plan approved by the district engineer;
- (iii) State the objectives, performance standards, and monitoring required for the compensatory mitigation project, unless they are provided in the approved final mitigation plan; and
- (iv) Describe any required financial assurances or long-term management provisions for the compensatory mitigation project, unless they are specified in the approved final mitigation plan.

(3) For a general permit activity that requires permittee-responsible compensatory mitigation, the special conditions must describe the compensatory mitigation proposal, which may be either conceptual or detailed. The general permit verification must also include a special condition that states that the permittee cannot commence work in waters of the United

States until the district engineer approves the final mitigation plan, unless the district engineer determines that such a special condition is not practicable and not necessary to ensure timely completion of the required compensatory mitigation. To the extent appropriate and practicable, special conditions of the general permit verification should also address the requirements of paragraph (k)(2) of this section.

(4) If a mitigation bank or in-lieu fee program is used to provide the required compensatory mitigation, the special conditions must indicate whether a mitigation bank or in-lieu fee program will be used, and specify the number and resource type of credits the permittee is required to secure. In the case of an individual permit, the special condition must also identify the specific mitigation bank or in-lieu fee program that will be used. For general permit verifications, the special conditions may either identify the specific mitigation bank or in-lieu fee program, or state that the specific mitigation bank or in-lieu fee program used to provide the required compensatory mitigation must be approved by the district engineer before the credits are secured.

(l) *Party responsible for compensatory mitigation.* (1) For permittee-responsible mitigation, the special conditions of the DA permit must clearly indicate the party or parties responsible for the implementation, performance, and long-term management of the compensatory mitigation project.

(2) For mitigation banks and in-lieu fee programs, the instrument must clearly indicate the party or parties responsible for the implementation, performance, and long-term management of the compensatory mitigation project(s). The instrument must also contain a provision expressing the sponsor's agreement to assume responsibility for a permittee's compensatory mitigation requirements, once that permittee has secured the appropriate number and resource type of credits from the sponsor and the district engineer has received the documentation described in paragraph (l)(3) of this section.

(3) If use of a mitigation bank or in-lieu fee program is approved by the district engineer to provide part or all of the required compensatory mitigation for a DA permit, the permittee retains responsibility for providing the compensatory mitigation until the appropriate number and resource type of credits have been secured from a sponsor and the district engineer has received documentation that confirms that the sponsor has accepted the

responsibility for providing the required compensatory mitigation. This documentation may consist of a letter or form signed by the sponsor, with the permit number and a statement indicating the number and resource type of credits that have been secured from the sponsor. Copies of this documentation will be retained in the administrative records for both the permit and the instrument. If the sponsor fails to provide the required compensatory mitigation, the district engineer may pursue measures against the sponsor to ensure compliance.

(m) *Timing.* Implementation of the compensatory mitigation project shall be, to the maximum extent practicable, in advance of or concurrent with the activity causing the authorized impacts. The district engineer shall require, to the extent appropriate and practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity.

(n) *Financial assurances.* (1) The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards. In cases where an alternate mechanism is available to ensure a high level of confidence that the compensatory mitigation will be provided and maintained (e.g., a formal, documented commitment from a government agency or public authority) the district engineer may determine that financial assurances are not necessary for that compensatory mitigation project.

(2) The amount of the required financial assurances must be determined by the district engineer, in consultation with the project sponsor, and must be based on the size and complexity of the compensatory mitigation project, the degree of completion of the project at the time of project approval, the likelihood of success, the past performance of the project sponsor, and any other factors the district engineer deems appropriate. Financial assurances may be in the form of performance bonds, escrow accounts, casualty insurance, letters of credit, legislative appropriations for government sponsored projects, or other appropriate instruments, subject to the approval of the district engineer. The rationale for determining the amount of the required financial assurances must be documented in the administrative record for either the DA permit or the instrument. In determining the assurance amount, the district engineer shall consider the cost of providing

replacement mitigation, including costs for land acquisition, planning and engineering, legal fees, mobilization, construction, and monitoring.

(3) If financial assurances are required, the DA permit must include a special condition requiring the financial assurances to be in place prior to commencing the permitted activity.

(4) Financial assurances shall be phased out once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The DA permit or instrument must clearly specify the conditions under which the financial assurances are to be released to the permittee, sponsor, and/or other financial assurance provider, including, as appropriate, linkage to achievement of performance standards, adaptive management, or compliance with special conditions.

(5) A financial assurance must be in a form that ensures that the district engineer will receive notification at least 120 days in advance of any termination or revocation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the district engineer at least 120 days before the assurance is revoked or terminated.

(6) Financial assurances shall be payable at the direction of the district engineer to his designee or to a standby trust agreement. When a standby trust is used (e.g., with performance bonds or letters of credit) all amounts paid by the financial assurance provider shall be deposited directly into the standby trust fund for distribution by the trustee in accordance with the district engineer's instructions.

(o) *Compliance with applicable law.* The compensatory mitigation project must comply with all applicable federal, state, and local laws. The DA permit, mitigation banking instrument, or in-lieu fee program instrument must not require participation by the Corps or any other federal agency in project management, including receipt or management of financial assurances or long-term financing mechanisms, except as determined by the Corps or other agency to be consistent with its statutory authority, mission, and priorities.

§ 332.4 Planning and documentation.

(a) *Pre-application consultations.* Potential applicants for standard permits are encouraged to participate in pre-application meetings with the Corps and appropriate agencies to discuss potential mitigation requirements and information needs.

(b) *Public review and comment.* (1) For an activity that requires a standard DA permit pursuant to section 404 of the Clean Water Act, the public notice for the proposed activity must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for. This explanation shall address, to the extent that such information is provided in the mitigation statement required by § 325.1(d)(7) of this chapter, the proposed avoidance and minimization and the amount, type, and location of any proposed compensatory mitigation, including any out-of-kind compensation, or indicate an intention to use an approved mitigation bank or in-lieu fee program. The level of detail provided in the public notice must be commensurate with the scope and scale of the impacts. The notice shall not include information that the district engineer and the permittee believe should be kept confidential for business purposes, such as the exact location of a proposed mitigation site that has not yet been secured. The permittee must clearly identify any information being claimed as confidential in the mitigation statement when submitted. In such cases, the notice must still provide enough information to enable the public to provide meaningful comment on the proposed mitigation.

(2) For individual permits, district engineers must consider any timely comments and recommendations from other federal agencies; tribal, state, or local governments; and the public.

(3) For activities authorized by letters of permission or general permits, the review and approval process for compensatory mitigation proposals and plans must be conducted in accordance with the terms and conditions of those permits and applicable regulations including the applicable provisions of this part.

(c) *Mitigation plan.* (1) *Preparation and Approval.* (i) For individual permits, the permittee must prepare a draft mitigation plan and submit it to the district engineer for review. After addressing any comments provided by the district engineer, the permittee must prepare a final mitigation plan, which must be approved by the district engineer prior to issuing the individual permit. The approved final mitigation plan must be incorporated into the individual permit by reference. The final mitigation plan must include the items described in paragraphs (c)(2) through (c)(14) of this section, but the level of detail of the mitigation plan should be commensurate with the scale and scope of the impacts. As an

alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and the name of the specific mitigation bank or in-lieu fee program to be used.

(ii) For general permits, if compensatory mitigation is required, the district engineer may approve a conceptual or detailed compensatory mitigation plan to meet required time frames for general permit verifications, but a final mitigation plan incorporating the elements in paragraphs (c)(2) through (c)(14) of this section, at a level of detail commensurate with the scale and scope of the impacts, must be approved by the district engineer before the permittee commences work in waters of the United States. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and either the name of the specific mitigation bank or in-lieu fee program to be used or a statement indicating that a mitigation bank or in-lieu fee program will be used (contingent upon approval by the district engineer).

(iii) Mitigation banks and in-lieu fee programs must prepare a mitigation plan including the items in paragraphs (c)(2) through (c)(14) of this section for each separate compensatory mitigation project site. For mitigation banks and in-lieu fee programs, the preparation and approval process for mitigation plans is described in § 332.8.

(2) *Objectives.* A description of the resource type(s) and amount(s) that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed,

ecoregion, physiographic province, or other geographic area of interest.

(3) *Site selection.* A description of the factors considered during the site selection process. This should include consideration of watershed needs, on-site alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site. (See § 332.3(d).)

(4) *Site protection instrument.* A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site (see § 332.7(a)).

(5) *Baseline information.* A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site, not the mitigation bank or in-lieu fee project site.

(6) *Determination of credits.* A description of the number of credits to be provided, including a brief explanation of the rationale for this determination. (See § 332.3(f).)

(i) For permittee-responsible mitigation, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.

(ii) For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

(7) *Mitigation work plan.* Detailed written specifications and work descriptions for the compensatory mitigation project, including, but not limited to, the geographic boundaries of the project; construction methods,

timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

(8) *Maintenance plan.* A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

(9) *Performance standards.* Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives. (See § 332.5.)

(10) *Monitoring requirements.* A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included. (See § 332.6.)

(11) *Long-term management plan.* A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management. (See § 332.7(d).)

(12) *Adaptive management plan.* A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. (See § 332.7(c).)

(13) *Financial assurances.* A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards (see § 332.3(n)).

(14) *Other information.* The district engineer may require additional

information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.

§ 332.5 Ecological performance standards.

(a) The approved mitigation plan must contain performance standards that will be used to assess whether the project is achieving its objectives. Performance standards should relate to the objectives of the compensatory mitigation project, so that the project can be objectively evaluated to determine if it is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics (e.g., acres).

(b) Performance standards must be based on attributes that are objective and verifiable. Ecological performance standards must be based on the best available science that can be measured or assessed in a practicable manner. Performance standards may be based on variables or measures of functional capacity described in functional assessment methodologies, measurements of hydrology or other aquatic resource characteristics, and/or comparisons to reference aquatic resources of similar type and landscape position. The use of reference aquatic resources to establish performance standards will help ensure that those performance standards are reasonably achievable, by reflecting the range of variability exhibited by the regional class of aquatic resources as a result of natural processes and anthropogenic disturbances. Performance standards based on measurements of hydrology should take into consideration the hydrologic variability exhibited by reference aquatic resources, especially wetlands. Where practicable, performance standards should take into account the expected stages of the aquatic resource development process, in order to allow early identification of potential problems and appropriate adaptive management.

§ 332.6 Monitoring.

(a) *General.* (1) Monitoring the compensatory mitigation project site is necessary to determine if the project is meeting its performance standards, and to determine if measures are necessary to ensure that the compensatory mitigation project is accomplishing its objectives. The submission of monitoring reports to assess the development and condition of the compensatory mitigation project is required, but the content and level of detail for those monitoring reports must be commensurate with the scale and scope of the compensatory mitigation

project, as well as the compensatory mitigation project type. The mitigation plan must address the monitoring requirements for the compensatory mitigation project, including the parameters to be monitored, the length of the monitoring period, the party responsible for conducting the monitoring, the frequency for submitting monitoring reports to the district engineer, and the party responsible for submitting those monitoring reports to the district engineer.

(2) The district engineer may conduct site inspections on a regular basis (e.g., annually) during the monitoring period to evaluate mitigation site performance.

(b) *Monitoring period.* The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs). Following project implementation, the district engineer may reduce or waive the remaining monitoring requirements upon a determination that the compensatory mitigation project has achieved its performance standards. Conversely the district engineer may extend the original monitoring period upon a determination that performance standards have not been met or the compensatory mitigation project is not on track to meet them. The district engineer may also revise monitoring requirements when remediation and/or adaptive management is required.

(c) *Monitoring reports.* (1) The district engineer must determine the information to be included in monitoring reports. This information must be sufficient for the district engineer to determine how the compensatory mitigation project is progressing towards meeting its performance standards, and may include plans (such as as-built plans), maps, and photographs to illustrate site conditions. Monitoring reports may also include the results of functional, condition, or other assessments used to provide quantitative or qualitative measures of the functions provided by the compensatory mitigation project site.

(2) The permittee or sponsor is responsible for submitting monitoring reports in accordance with the special conditions of the DA permit or the terms of the instrument. Failure to submit monitoring reports in a timely manner may result in compliance action by the district engineer.

(3) Monitoring reports must be provided by the district engineer to interested federal, tribal, state, and local resource agencies, and the public, upon request.

§ 332.7 Management.

(a) *Site protection.* (1) The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms, as appropriate. Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations, or private land managers; the transfer of title to such entities; or by restrictive covenants. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans. When approving a method for long-term protection of non-government property other than transfer of title, the district engineer shall consider relevant legal constraints on the use of conservation easements and/or restrictive covenants in determining whether such mechanisms provide sufficient site protection. To provide sufficient site protection, a conservation easement or restrictive covenant should, where practicable, establish in an appropriate third party (e.g., governmental or non-profit resource management agency) the right to enforce site protections and provide the third party the resources necessary to monitor and enforce these site protections.

(2) The real estate instrument, management plan, or other mechanism providing long-term protection of the compensatory mitigation site must, to the extent appropriate and practicable, prohibit incompatible uses (e.g., clear cutting or mineral extraction) that might otherwise jeopardize the objectives of the compensatory mitigation project. Where appropriate, multiple instruments recognizing compatible uses (e.g., fishing or grazing rights) may be used.

(3) The real estate instrument, management plan, or other long-term protection mechanism must contain a provision requiring 60-day advance notification to the district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site.

(4) For compensatory mitigation projects on public lands, where federal facility management plans or integrated natural resources management plans are used to provide long-term protection, and changes in statute, regulation, or agency needs or mission results in an incompatible use on public lands originally set aside for compensatory mitigation, the public agency authorizing the incompatible use is responsible for providing alternative compensatory mitigation that is acceptable to the district engineer for any loss in functions resulting from the incompatible use.

(5) A real estate instrument, management plan, or other long-term protection mechanism used for site protection of permittee-responsible mitigation must be approved by the district engineer in advance of, or concurrent with, the activity causing the authorized impacts.

(b) *Sustainability.* Compensatory mitigation projects shall be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context will support long-term sustainability. Where active long-term management and maintenance are necessary to ensure long-term sustainability (e.g., prescribed burning, invasive species control, maintenance of water control structures, easement enforcement), the responsible party must provide for such management and maintenance. This includes the provision of long-term financing mechanisms where necessary. Where needed, the acquisition and protection of water rights must be secured and documented in the permit conditions or instrument.

(c) *Adaptive management.* (1) If the compensatory mitigation project cannot be constructed in accordance with the approved mitigation plans, the permittee or sponsor must notify the district engineer. A significant modification of the compensatory mitigation project requires approval from the district engineer.

(2) If monitoring or other information indicates that the compensatory mitigation project is not progressing towards meeting its performance standards as anticipated, the responsible party must notify the district engineer as soon as possible. The district engineer will evaluate and pursue measures to address deficiencies in the compensatory mitigation project. The district engineer will consider whether the compensatory mitigation project is

providing ecological benefits comparable to the original objectives of the compensatory mitigation project.

(3) The district engineer, in consultation with the responsible party (and other federal, tribal, state, and local agencies, as appropriate), will determine the appropriate measures. The measures may include site modifications, design changes, revisions to maintenance requirements, and revised monitoring requirements. The measures must be designed to ensure that the modified compensatory mitigation project provides aquatic resource functions comparable to those described in the mitigation plan objectives.

(4) Performance standards may be revised in accordance with adaptive management to account for measures taken to address deficiencies in the compensatory mitigation project. Performance standards may also be revised to reflect changes in management strategies and objectives if the new standards provide for ecological benefits that are comparable or superior to the approved compensatory mitigation project. No other revisions to performance standards will be allowed except in the case of natural disasters.

(d) *Long-term management.* (1) The permit conditions or instrument must identify the party responsible for ownership and all long-term management of the compensatory mitigation project. The permit conditions or instrument may contain provisions allowing the permittee or sponsor to transfer the long-term management responsibilities of the compensatory mitigation project site to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, after review and approval by the district engineer. The land stewardship entity need not be identified in the original permit or instrument, as long as the future transfer of long-term management responsibility is approved by the district engineer.

(2) A long-term management plan should include a description of long-term management needs, annual cost estimates for these needs, and identify the funding mechanism that will be used to meet those needs.

(3) Any provisions necessary for long-term financing must be addressed in the original permit or instrument. The district engineer may require provisions to address inflationary adjustments and other contingencies, as appropriate. Appropriate long-term financing mechanisms include non-wasting endowments, trusts, contractual arrangements with future responsible parties, and other appropriate financial

instruments. In cases where the long-term management entity is a public authority or government agency, that entity must provide a plan for the long-term financing of the site.

(4) For permittee-responsible mitigation, any long-term financing mechanisms must be approved in advance of the activity causing the authorized impacts.

§ 332.8 Mitigation banks and in-lieu fee programs.

(a) *General considerations.* (1) All mitigation banks and in-lieu fee programs must have an approved instrument signed by the sponsor and the district engineer prior to being used to provide compensatory mitigation for DA permits.

(2) To the maximum extent practicable, mitigation banks and in-lieu fee project sites must be planned and designed to be self-sustaining over time, but some active management and maintenance may be required to ensure their long-term viability and sustainability. Examples of acceptable management activities include maintaining fire-dependent habitat communities in the absence of natural fire and controlling invasive exotic plant species.

(3) All mitigation banks and in-lieu fee programs must comply with the standards in this part, if they are to be used to provide compensatory mitigation for activities authorized by DA permits, regardless of whether they are sited on public or private lands and whether the sponsor is a governmental or private entity.

(b) *Interagency Review Team.* (1) The district engineer will establish an Interagency Review Team (IRT) to review documentation for the establishment and management of mitigation banks and in-lieu fee programs. The district engineer or his designated representative serves as Chair of the IRT. In cases where a mitigation bank or in-lieu fee program is proposed to satisfy the requirements of another federal, tribal, state, or local program, in addition to compensatory mitigation requirements of DA permits, it may be appropriate for the administering agency to serve as co-Chair of the IRT.

(2) In addition to the Corps, representatives from the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, NOAA Fisheries, the Natural Resources Conservation Service, and other federal agencies, as appropriate, may participate in the IRT. The IRT may also include representatives from tribal, state, and local regulatory and resource

agencies, where such agencies have authorities and/or mandates directly affecting, or affected by, the establishment, operation, or use of the mitigation bank or in-lieu fee program. The district engineer will seek to include all public agencies with a substantive interest in the establishment of the mitigation bank or in-lieu fee program on the IRT, but retains final authority over its composition.

(3) The primary role of the IRT is to facilitate the establishment of mitigation banks or in-lieu fee programs through the development of mitigation banking or in-lieu fee program instruments. The IRT will review the prospectus, instrument, and other appropriate documents and provide comments to the district engineer. The district engineer and the IRT should use a watershed approach to the extent practicable in reviewing proposed mitigation banks and in-lieu fee programs. Members of the IRT may also sign the instrument, if they so choose. By signing the instrument, the IRT members indicate their agreement with the terms of the instrument. As an alternative, a member of the IRT may submit a letter expressing concurrence with the instrument. The IRT will also advise the district engineer in assessing monitoring reports, recommending remedial or adaptive management measures, approving credit releases, and approving modifications to an instrument. In order to ensure timely processing of instruments and other documentation, comments from IRT members must be received by the district engineer within the time limits specified in this section. Comments received after these deadlines will only be considered at the discretion of the district engineer to the extent that doing so does not jeopardize the deadlines for district engineer action.

(4) The district engineer will give full consideration to any timely comments and advice of the IRT. The district engineer alone retains final authority for approval of the instrument in cases where the mitigation bank or in-lieu fee program is used to satisfy compensatory mitigation requirements of DA permits.

(5) *MOAs with other agencies.* The district engineer and members of the IRT may enter into a memorandum of agreement (MOA) with any other federal, state or local government agency to perform all or some of the IRT review functions described in this section. Such MOAs must include provisions for appropriate federal oversight of the review process. The district engineer retains sole authority for final approval of instruments and

other documentation required under this section.

(c) *Compensation planning framework for in-lieu fee programs.* (1) The approved instrument for an in-lieu fee program must include a compensation planning framework that will be used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities. The compensation planning framework must support a watershed approach to compensatory mitigation. All specific projects used to provide compensation for DA permits must be consistent with the approved compensation planning framework. Modifications to the framework must be approved as a significant modification to the instrument by the district engineer, after consultation with the IRT.

(2) The compensation planning framework must contain the following elements:

(i) The geographic service area(s), including a watershed-based rationale for the delineation of each service area;

(ii) A description of the threats to aquatic resources in the service area(s), including how the in-lieu fee program will help offset impacts resulting from those threats;

(iii) An analysis of historic aquatic resource loss in the service area(s);

(iv) An analysis of current aquatic resource conditions in the service area(s), supported by an appropriate level of field documentation;

(v) A statement of aquatic resource goals and objectives for each service area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide;

(vi) A prioritization strategy for selecting and implementing compensatory mitigation activities;

(vii) An explanation of how any preservation objectives identified in paragraph (c)(2)(v) of this section and addressed in the prioritization strategy in paragraph (c)(2)(vi) satisfy the criteria for use of preservation in § 332.3(h);

(viii) A description of any public and private stakeholder involvement in plan development and implementation, including, where appropriate, coordination with federal, state, tribal and local aquatic resource management and regulatory authorities;

(ix) A description of the long-term protection and management strategies for activities conducted by the in-lieu fee program sponsor;

(x) A strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives in paragraph (c)(2)(v) of this

section, including a process for revising the planning framework as necessary; and

(xi) Any other information deemed necessary for effective compensation planning by the district engineer.

(3) The level of detail necessary for the compensation planning framework is at the discretion of the district engineer, and will take into account the characteristics of the service area(s) and the scope of the program. As part of the in-lieu fee program instrument, the compensation planning framework will be reviewed by the IRT, and will be a major factor in the district engineer's decision on whether to approve the instrument.

(d) *Review process.* (1) The sponsor is responsible for preparing all documentation associated with establishment of the mitigation bank or in-lieu fee program, including the prospectus, instrument, and other appropriate documents, such as mitigation plans for a mitigation bank. The prospectus provides an overview of the proposed mitigation bank or in-lieu fee program and serves as the basis for public and initial IRT comment. For a mitigation bank, the mitigation plan, as described in § 332.4(c), provides detailed plans and specifications for the mitigation bank site. For in-lieu fee programs, mitigation plans will be prepared as in-lieu fee project sites are identified after the instrument has been approved and the in-lieu fee program becomes operational. The instrument provides the authorization for the mitigation bank or in-lieu fee program to provide credits to be used as compensatory mitigation for DA permits.

(2) *Prospectus.* The prospectus must provide a summary of the information regarding the proposed mitigation bank or in-lieu fee program, at a sufficient level of detail to support informed public and IRT comment. The review process begins when the sponsor submits a complete prospectus to the district engineer. For modifications of approved instruments, submittal of a new prospectus is not required; instead, the sponsor must submit a written request for an instrument modification accompanied by appropriate documentation. The district engineer must notify the sponsor within 30 days whether or not a submitted prospectus is complete. A complete prospectus includes the following information:

(i) The objectives of the proposed mitigation bank or in-lieu fee program.

(ii) How the mitigation bank or in-lieu fee program will be established and operated.

(iii) The proposed service area.

(iv) The general need for and technical feasibility of the proposed mitigation bank or in-lieu fee program.

(v) The proposed ownership arrangements and long-term management strategy for the mitigation bank or in-lieu fee project sites.

(vi) The qualifications of the sponsor to successfully complete the type(s) of mitigation project(s) proposed, including information describing any past such activities by the sponsor.

(vii) For a proposed mitigation bank, the prospectus must also address:

(A) The ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the bank site and how that site will support the planned types of aquatic resources and functions; and

(B) Assurance of sufficient water rights to support the long-term sustainability of the mitigation bank.

(viii) For a proposed in-lieu fee program, the prospectus must also include:

(A) The compensation planning framework (see paragraph (c) of this section); and

(B) A description of the in-lieu fee program account required by paragraph (i) of this section.

(3) *Preliminary review of prospectus.* Prior to submitting a prospectus, the sponsor may elect to submit a draft prospectus to the district engineer for comment and consultation. The district engineer will provide copies of the draft prospectus to the IRT and will provide comments back to the sponsor within 30 days. Any comments from IRT members will also be forwarded to the sponsor. This preliminary review is optional but is strongly recommended. It is intended to identify potential issues early so that the sponsor may attempt to address those issues prior to the start of the formal review process.

(4) *Public review and comment.*

Within 30 days of receipt of a complete prospectus or an instrument modification request that will be processed in accordance with paragraph (g)(1) of this section, the district engineer will provide public notice of the proposed mitigation bank or in-lieu fee program, in accordance with the public notice procedures at 33 CFR 325.3. The public notice must, at a minimum, include a summary of the prospectus and indicate that the full prospectus is available to the public for review upon request. For modifications of approved instruments, the public notice must instead summarize, and make available to the public upon request, whatever documentation is appropriate for the modification (e.g., a

new or revised mitigation plan). The comment period for public notice will be 30 days, unless the district engineer determines that a longer comment period is appropriate. The district engineer will notify the sponsor if the comment period is extended beyond 30 days, including an explanation of why the longer comment period is necessary. Copies of all comments received in response to the public notice must be distributed to the other IRT members and to the sponsor within 15 days of the close of the public comment period. The district engineer and IRT members may also provide comments to the sponsor at this time, and copies of any such comments will also be distributed to all IRT members. If the construction of a mitigation bank or an in-lieu fee program project requires a DA permit, the public notice requirement may be satisfied through the public notice provisions of the permit processing procedures, provided all of the relevant information is provided.

(5) *Initial evaluation.* (i) After the end of the comment period, the district engineer will review the comments received in response to the public notice, and make a written initial evaluation as to the potential of the proposed mitigation bank or in-lieu fee program to provide compensatory mitigation for activities authorized by DA permits. This initial evaluation letter must be provided to the sponsor within 30 days of the end of the public notice comment period.

(ii) If the district engineer determines that the proposed mitigation bank or in-lieu fee program has potential for providing appropriate compensatory mitigation for activities authorized by DA permits, the initial evaluation letter will inform the sponsor that he/she may proceed with preparation of the draft instrument (see paragraph (d)(6) of this section).

(iii) If the district engineer determines that the proposed mitigation bank or in-lieu fee program does not have potential for providing appropriate compensatory mitigation for DA permits, the initial evaluation letter must discuss the reasons for that determination. The sponsor may revise the prospectus to address the district engineer's concerns, and submit the revised prospectus to the district engineer. If the sponsor submits a revised prospectus, a revised public notice will be issued in accordance with paragraph (d)(4) of this section.

(iv) This initial evaluation procedure does not apply to proposed modifications of approved instruments.

(6) *Draft instrument.* (i) After considering comments from the district engineer, the IRT, and the public, if the

sponsor chooses to proceed with establishment of the mitigation bank or in-lieu fee program, he must prepare a draft instrument and submit it to the district engineer. In the case of an instrument modification, the sponsor must prepare a draft amendment (e.g., a specific instrument provision, a new or modified mitigation plan), and submit it to the district engineer. The district engineer must notify the sponsor within 30 days of receipt, whether the draft instrument or amendment is complete. If the draft instrument or amendment is incomplete, the district engineer will request from the sponsor the information necessary to make the draft instrument or amendment complete. Once any additional information is submitted, the district engineer must notify the sponsor as soon as he determines that the draft instrument or amendment is complete. The draft instrument must be based on the prospectus and must describe in detail the physical and legal characteristics of the mitigation bank or in-lieu fee program and how it will be established and operated.

(ii) For mitigation banks and in-lieu fee programs, the draft instrument must include the following information:

(A) A description of the proposed geographic service area of the mitigation bank or in-lieu fee program. The service area is the watershed, ecoregion, physiographic province, and/or other geographic area within which the mitigation bank or in-lieu fee program is authorized to provide compensatory mitigation required by DA permits. The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. For example, in urban areas, a U.S. Geological Survey 8-digit hydrologic unit code (HUC) watershed or a smaller watershed may be an appropriate service area. In rural areas, several contiguous 8-digit HUCs or a 6-digit HUC watershed may be an appropriate service area. Delineation of the service area must also consider any locally-developed standards and criteria that may be applicable. The economic viability of the mitigation bank or in-lieu fee program may also be considered in determining the size of the service area. The basis for the proposed service area must be documented in the instrument. An in-lieu fee program or umbrella mitigation banking instrument may have multiple service areas governed by its instrument (e.g., each watershed within a state or Corps district may be a separate service area under the instrument); however, all

impacts and compensatory mitigation must be accounted for by service area;

(B) Accounting procedures;

(C) A provision stating that legal responsibility for providing the compensatory mitigation lies with the sponsor once a permittee secures credits from the sponsor;

(D) Default and closure provisions;

(E) Reporting protocols; and

(F) Any other information deemed necessary by the district engineer.

(iii) For a mitigation bank, a complete draft instrument must include the following additional information:

(A) Mitigation plans that include all applicable items listed in § 332.4(c)(2) through (14); and

(B) A credit release schedule, which is tied to achievement of specific milestones. All credit releases must be approved by the district engineer, in consultation with the IRT, based on a determination that required milestones have been achieved. The district engineer, in consultation with the IRT, may modify the credit release schedule, including reducing the number of available credits or suspending credit sales or transfers altogether, where necessary to ensure that all credit sales or transfers remain tied to compensatory mitigation projects with a high likelihood of meeting performance standards;

(iv) For an in-lieu fee program, a complete draft instrument must include the following additional information:

(A) The compensation planning framework (see paragraph (c) of this section);

(B) Specification of the initial allocation of advance credits (see paragraph (n) of this section) and a draft fee schedule for these credits, by service area, including an explanation of the basis for the allocation and draft fee schedule;

(C) A methodology for determining future project-specific credits and fees; and

(D) A description of the in-lieu fee program account required by paragraph (i) of this section.

(7) *IRT review.* Upon receipt of notification by the district engineer that the draft instrument or amendment is complete, the sponsor must provide the district engineer with a sufficient number of copies of the draft instrument or amendment to distribute to the IRT members. The district engineer will promptly distribute copies of the draft instrument or amendment to the IRT members for a 30-day comment period. The 30-day comment period begins 5 days after the district engineer distributes the copies of the draft instrument or amendment to the IRT.

Following the comment period, the district engineer will discuss any comments with the appropriate agencies and with the sponsor. The district engineer will seek to resolve issues using a consensus based approach, to the extent practicable, while still meeting the decision-making time frames specified in this section. Within 90 days of receipt of the complete draft instrument or amendment by the IRT members, the district engineer must notify the sponsor of the status of the IRT review. Specifically, the district engineer must indicate to the sponsor if the draft instrument or amendment is generally acceptable and what changes, if any, are needed. If there are significant unresolved concerns that may lead to a formal objection from one or more IRT members to the final instrument or amendment, the district engineer will indicate the nature of those concerns.

(8) *Final instrument.* The sponsor must submit a final instrument to the district engineer for approval, with supporting documentation that explains how the final instrument addresses the comments provided by the IRT. For modifications of approved instruments, the sponsor must submit a final amendment to the district engineer for approval, with supporting documentation that explains how the final amendment addresses the comments provided by the IRT. The final instrument or amendment must be provided directly by the sponsor to all members of the IRT. Within 30 days of receipt of the final instrument or amendment, the district engineer will notify the IRT members whether or not he intends to approve the instrument or amendment. If no IRT member objects, by initiating the dispute resolution process in paragraph (e) of this section within 45 days of receipt of the final instrument or amendment, the district engineer will notify the sponsor of his final decision and, if the instrument or amendment is approved, arrange for it to be signed by the appropriate parties. If any IRT member initiates the dispute resolution process, the district engineer will notify the sponsor. Following conclusion of the dispute resolution process, the district engineer will notify the sponsor of his final decision, and if the instrument or amendment is approved, arrange for it to be signed by the appropriate parties. For mitigation banks, the final instrument must contain the information items listed in paragraphs (d)(6)(ii), and (iii) of this section. For in-lieu fee programs, the final instrument must contain the

(d)(6)(ii) and (iv) of this section. For the modification of an approved instrument, the amendment must contain appropriate information, as determined by the district engineer. The final instrument or amendment must be made available to the public upon request.

(e) *Dispute resolution process.* (1) Within 15 days of receipt of the district engineer's notification of intent to approve an instrument or amendment, the Regional Administrator of the U.S. EPA, the Regional Director of the U.S. Fish and Wildlife Service, the Regional Director of the National Marine Fisheries Service, and/or other senior officials of agencies represented on the IRT may notify the district engineer and other IRT members by letter if they object to the approval of the proposed final instrument or amendment. This letter must include an explanation of the basis for the objection and, where feasible, offer recommendations for resolving the objections. If the district engineer does not receive any objections within this time period, he may proceed to final action on the instrument or amendment.

(2) The district engineer must respond to the objection within 30 days of receipt of the letter. The district engineer's response may indicate an intent to disapprove the instrument or amendment as a result of the objection, an intent to approve the instrument or amendment despite the objection, or may provide a modified instrument or amendment that attempts to address the objection. The district engineer's response must be provided to all IRT members.

(3) Within 15 days of receipt of the district engineer's response, if the Regional Administrator or Regional Director is not satisfied with the response he may forward the issue to the Assistant Administrator for Water of the U.S. EPA, the Assistant Secretary for Fish and Wildlife and Parks of the U.S. FWS, or the Undersecretary for Oceans and Atmosphere of NOAA, as appropriate, for review and must notify the district engineer by letter via electronic mail or facsimile machine (with copies to all IRT members) that the issue has been forwarded for Headquarters review. This step is available only to the IRT members representing these three federal agencies, however other IRT members who do not agree with the district engineer's final decision do not have to sign the instrument or amendment or recognize the mitigation bank or in-lieu fee program for purposes of their own programs and authorities. If an IRT member other than the one filing the original objection has a new objection

based on the district engineer's response, he may use the first step in this procedure (paragraph (e)(1) of this section) to provide that objection to the district engineer.

(4) If the issue has not been forwarded to the objecting agency's Headquarters, then the district engineer may proceed with final action on the instrument or amendment. If the issue has been forwarded to the objecting agency's Headquarters, the district engineer must hold in abeyance the final action on the instrument or amendment, pending Headquarters level review described below.

(5) Within 20 days from the date of the letter requesting Headquarters level review, the Assistant Administrator for Water, the Assistant Secretary for Fish and Wildlife and Parks, or the Undersecretary for Oceans and Atmosphere must either notify the Assistant Secretary of the Army (Civil Works) (ASA(CW)) that further review will not be requested, or request that the ASA(CW) review the final instrument or amendment.

(6) Within 30 days of receipt of the letter from the objecting agency's Headquarters request for ASA(CW)'s review of the final instrument, the ASA(CW), through the Director of Civil Works, must review the draft instrument or amendment and advise the district engineer on how to proceed with final action on that instrument or amendment. The ASA(CW) must immediately notify the Assistant Administrator for Water, the Assistant Secretary for Fish and Wildlife and Parks, and/or the Undersecretary for Oceans and Atmosphere of the final decision.

(7) In cases where the dispute resolution procedure is used, the district engineer must notify the sponsor of his final decision within 150 days of receipt of the final instrument or amendment.

(f) *Extension of deadlines.* (1) The deadlines in paragraphs (d) and (e) of this section may be extended by the district engineer at his sole discretion in cases where:

(i) Compliance with other applicable laws, such as consultation under section 7 of the Endangered Species Act or section 106 of the National Historic Preservation Act, is required;

(ii) It is necessary to conduct government-to-government consultation with Indian tribes;

(iii) Timely submittal of information necessary for the review of the proposed mitigation bank or in-lieu fee program or the proposed modification of an approved instrument is not accomplished by the sponsor; or

(iv) Information that is essential to the district engineer's decision cannot be reasonably obtained within the specified time frame.

(2) In such cases, the district engineer must promptly notify the sponsor in writing of the extension and the reason for it. Such extensions shall be for the minimum time necessary to resolve the issue necessitating the extension.

(g) *Modification of instruments.* (1) *Approval of an amendment to an approved instrument.* Modification of an approved instrument, including the addition and approval of umbrella mitigation bank sites or in-lieu fee project sites or expansions of previously approved mitigation bank or in-lieu fee project sites, must follow the appropriate procedures in paragraph (d) of this section, unless the district engineer determines that the streamlined review process described in paragraph (g)(2) of this section is warranted.

(2) *Streamlined review process.* The streamlined modification review process may be used for the following modifications of instruments: changes reflecting adaptive management of the mitigation bank or in-lieu fee program, credit releases, changes in credit releases and credit release schedules, and changes that the district engineer determines are not significant. If the district engineer determines that the streamlined review process is warranted, he must notify the IRT members and the sponsor of this determination and provide them with copies of the proposed modification. IRT members and the sponsor have 30 days to notify the district engineer if they have concerns with the proposed modification. If IRT members or the sponsor notify the district engineer of such concerns, the district engineer shall attempt to resolve those concerns. Within 60 days of providing the proposed modification to the IRT, the district engineer must notify the IRT members of his intent to approve or disapprove the proposed modification. If no IRT member objects, by initiating the dispute resolution process in paragraph (e) of this section, within 15 days of receipt of this notification, the district engineer will notify the sponsor of his final decision and, if the modification is approved, arrange for it to be signed by the appropriate parties. If any IRT member initiates the dispute resolution process, the district engineer will so notify the sponsor. Following conclusion of the dispute resolution process, the district engineer will notify the sponsor of his final decision, and if the modification is approved, arrange

for it to be signed by the appropriate parties.

(h) *Umbrella mitigation banking instruments.* A single mitigation banking instrument may provide for future authorization of additional mitigation bank sites. As additional sites are selected, they must be included in the mitigation banking instrument as modifications, using the procedures in paragraph (g)(1) of this section. Credit withdrawal from the additional bank sites shall be consistent with paragraph (m) of this section.

(i) *In-lieu fee program account.* (1) The in-lieu fee program sponsor must establish a program account after the instrument is approved by the district engineer, prior to accepting any fees from permittees. If the sponsor accepts funds from entities other than permittees, those funds must be kept in separate accounts. The program account must be established at a financial institution that is a member of the Federal Deposit Insurance Corporation. All interests and earnings accruing to the program account must remain in that account for use by the in-lieu fee program for the purposes of providing compensatory mitigation for DA permits. The program account may only be used for the selection, design, acquisition, implementation, and management of in-lieu fee compensatory mitigation projects, except for a small percentage (as determined by the district engineer in consultation with the IRT and specified in the instrument) that can be used for administrative costs.

(2) The sponsor must submit proposed in-lieu fee projects to the district engineer for funding approval. Disbursements from the program account may only be made upon receipt of written authorization from the district engineer, after the district engineer has consulted with the IRT. The terms of the program account must specify that the district engineer has the authority to direct those funds to alternative compensatory mitigation projects in cases where the sponsor does not provide compensatory mitigation in accordance with the time frame specified in paragraph (n)(4) of this section.

(3) The sponsor must provide annual reports to the district engineer and the IRT. The annual reports must include the following information:

- (i) All income received, disbursements, and interest earned by the program account;
- (ii) A list of all permits for which in-lieu fee program funds were accepted. This list shall include: The Corps permit number (or the state permit number if

there is no corresponding Corps permit number, in cases of state programmatic general permits or other regional general permits), the service area in which the authorized impacts are located, the amount of authorized impacts, the amount of required compensatory mitigation, the amount paid to the in-lieu fee program, and the date the funds were received from the permittee;

(iii) A description of in-lieu fee program expenditures from the account, such as the costs of land acquisition, planning, construction, monitoring, maintenance, contingencies, adaptive management, and administration;

(iv) The balance of advance credits and released credits at the end of the report period for each service area; and

(v) Any other information required by the district engineer.

(4) The district engineer may audit the records pertaining to the program account. All books, accounts, reports, files, and other records relating to the in-lieu fee program account shall be available at reasonable times for inspection and audit by the district engineer.

(j) *In-lieu fee project approval.* (1) As in-lieu fee project sites are identified and secured, the sponsor must submit mitigation plans to the district engineer that include all applicable items listed in § 332.4(c)(2) through (14). The mitigation plan must also include a credit release schedule consistent with paragraph (o)(8) of this section that is tied to achievement of specific performance standards. The review and approval of in-lieu fee projects will be conducted in accordance with the procedures in paragraph (g)(1) of this section, as modifications of the in-lieu fee program instrument. This includes compensatory mitigation projects conducted by another party on behalf of the sponsor through requests for proposals and awarding of contracts.

(2) If a DA permit is required for an in-lieu fee project, the permit should not be issued until all relevant provisions of the mitigation plan have been substantively determined, to ensure that the DA permit accurately reflects all relevant provisions of the approved mitigation plan, such as performance standards.

(k) *Coordination of mitigation banking instruments and DA permit issuance.* In cases where initial establishment of the mitigation bank, or the development of a new project site under an umbrella banking instrument, involves activities requiring DA authorization, the permit should not be issued until all relevant provisions of the mitigation plan have been substantively determined. This is to

ensure that the DA permit accurately reflects all relevant provisions of the final instrument, such as performance standards.

(l) *Project implementation.* (1) The sponsor must have an approved instrument prior to collecting funds from permittees to satisfy compensatory mitigation requirements for DA permits.

(2) Authorization to sell credits to satisfy compensatory mitigation requirements in DA permits is contingent on compliance with all of the terms of the instrument. This includes constructing a mitigation bank or in-lieu fee project in accordance with the mitigation plan approved by the district engineer and incorporated by reference in the instrument. If the aquatic resource restoration, establishment, enhancement, and/or preservation activities cannot be implemented in accordance with the approved mitigation plan, the district engineer must consult with the sponsor and the IRT to consider modifications to the instrument, including adaptive management, revisions to the credit release schedule, and alternatives for providing compensatory mitigation to satisfy any credits that have already been sold.

(3) An in-lieu fee program sponsor is responsible for the implementation, long-term management, and any required remediation of the restoration, establishment, enhancement, and/or preservation activities, even though those activities may be conducted by other parties through requests for proposals or other contracting mechanisms.

(m) *Credit withdrawal from mitigation banks.* The mitigation banking instrument may allow for an initial debiting of a percentage of the total credits projected at mitigation bank maturity, provided the following conditions are satisfied: the mitigation banking instrument and mitigation plan have been approved, the mitigation bank site has been secured, appropriate financial assurances have been established, and any other requirements determined to be necessary by the district engineer have been fulfilled. The mitigation banking instrument must provide a schedule for additional credit releases as appropriate milestones are achieved (see paragraph (o)(8) of this section). Implementation of the approved mitigation plan shall be initiated no later than the first full growing season after the date of the first credit transaction.

(n) *Advance credits for in-lieu fee programs.* (1) The in-lieu fee program instrument may make a limited number of advance credits available to

permittees when the instrument is approved. The number of advance credits will be determined by the district engineer, in consultation with the IRT, and will be specified for each service area in the instrument. The number of advance credits will be based on the following considerations:

(i) The compensation planning framework;

(ii) The sponsor's past performance for implementing aquatic resource restoration, establishment, enhancement, and/or preservation activities in the proposed service area or other areas; and

(iii) The projected financing necessary to begin planning and implementation of in-lieu fee projects.

(2) To determine the appropriate number of advance credits for a particular service area, the district engineer may require the sponsor to provide confidential supporting information that will not be made available to the general public. Examples of confidential supporting information may include prospective in-lieu fee project sites.

(3) As released credits are produced by in-lieu fee projects, they must be used to fulfill any advance credits that have already been provided within the project service area before any remaining released credits can be sold or transferred to permittees. Once previously provided advance credits have been fulfilled, an equal number of advance credits is re-allocated to the sponsor for sale or transfer to fulfill new mitigation requirements, consistent with the terms of the instrument. The number of advance credits available to the sponsor at any given time to sell or transfer to permittees in a given service area is equal to the number of advance credits specified in the instrument, minus any that have already been provided but not yet fulfilled.

(4) Land acquisition and initial physical and biological improvements must be completed by the third full growing season after the first advance credit in that service area is secured by a permittee, unless the district engineer determines that more or less time is needed to plan and implement an in-lieu fee project. If the district engineer determines that there is a compensatory mitigation deficit in a specific service area by the third growing season after the first advance credit in that service area is sold, and determines that it would not be in the public interest to allow the sponsor additional time to plan and implement an in-lieu fee project, the district engineer must direct the sponsor to disburse funds from the in-lieu fee program account to provide

alternative compensatory mitigation to fulfill those compensation obligations.

(5) The sponsor is responsible for complying with the terms of the in-lieu fee program instrument. If the district engineer determines, as a result of review of annual reports on the operation of the in-lieu fee program (see paragraphs (p)(2) and (q)(1) of this section), that it is not performing in compliance with its instrument, the district engineer will take appropriate action, which may include suspension of credit sales, to ensure compliance with the in-lieu fee program instrument (see paragraph (o)(10) of this section). Permittees that secured credits from the in-lieu fee program are not responsible for in-lieu fee program compliance.

(o) *Determining credits.* (1) *Units of measure.* The principal units for credits and debits are acres, linear feet, functional assessment units, or other suitable metrics of particular resource types. Functional assessment units or other suitable metrics may be linked to acres or linear feet.

(2) *Assessment.* Where practicable, an appropriate assessment method (e.g., hydrogeomorphic approach to wetlands functional assessment, index of biological integrity) or other suitable metric must be used to assess and describe the aquatic resource types that will be restored, established, enhanced and/or preserved by the mitigation bank or in-lieu fee project.

(3) *Credit production.* The number of credits must reflect the difference between pre- and post-compensatory mitigation project site conditions, as determined by a functional or condition assessment or other suitable metric.

(4) *Credit value.* Once a credit is debited (sold or transferred to a permittee), its value cannot change.

(5) *Credit costs.* (i) The cost of compensatory mitigation credits provided by a mitigation bank or in-lieu fee program is determined by the sponsor.

(ii) For in-lieu fee programs, the cost per unit of credit must include the expected costs associated with the restoration, establishment, enhancement, and/or preservation of aquatic resources in that service area. These costs must be based on full cost accounting, and include, as appropriate, expenses such as land acquisition, project planning and design, construction, plant materials, labor, legal fees, monitoring, and remediation or adaptive management activities, as well as administration of the in-lieu fee program. The cost per unit credit must also take into account contingency costs appropriate to the stage of project planning, including uncertainties in

construction and real estate expenses. The cost per unit of credit must also take into account the resources necessary for the long-term management and protection of the in-lieu fee project. In addition, the cost per unit credit must include financial assurances that are necessary to ensure successful completion of in-lieu fee projects.

(6) *Credits provided by preservation.* These credits should be specified as acres, linear feet, or other suitable metrics of preservation of a particular resource type. In determining the compensatory mitigation requirements for DA permits using mitigation banks or in-lieu fee programs, the district engineer should apply a higher mitigation ratio if the requirements are to be met through the use of preservation credits. In determining this higher ratio, the district engineer must consider the relative importance of both the impacted and the preserved aquatic resources in sustaining watershed functions.

(7) *Credits provided by riparian areas, buffers, and uplands.* These credits should be specified as acres, linear feet, or other suitable metrics of riparian area, buffer, and uplands, respectively. Non-aquatic resources can only be used as compensatory mitigation for impacts to aquatic resources authorized by DA permits when those resources are essential to maintaining the ecological viability of adjoining aquatic resources. In determining the compensatory mitigation requirements for DA permits using mitigation banks and in-lieu fee programs, the district engineer may authorize the use of riparian area, buffer, and/or upland credits if he determines that these areas are essential to sustaining aquatic resource functions in the watershed and are the most appropriate compensation for the authorized impacts.

(8) *Credit release schedule.* (i) *General considerations.* Release of credits must be tied to performance-based milestones (e.g., construction, planting, establishment of specified plant and animal communities). The credit release schedule should reserve a significant share of the total credits for release only after full achievement of ecological performance standards. When determining the credit release schedule, factors to be considered may include, but are not limited to: The method of providing compensatory mitigation credits (e.g., restoration), the likelihood of success, the nature and amount of work needed to generate the credits, and the aquatic resource type(s) and function(s) to be provided by the mitigation bank or in-lieu fee project. The district engineer will determine the

credit release schedule, including the share to be released only after full achievement of performance standards, after consulting with the IRT. Once released, credits may only be used to satisfy compensatory mitigation requirements of a DA permit if the use of credits for a specific permit has been approved by the district engineer.

(ii) For single-site mitigation banks, the terms of the credit release schedule must be specified in the mitigation banking instrument. The credit release schedule may provide for an initial debiting of a limited number of credits once the instrument is approved and other appropriate milestones are achieved (see paragraph (m) of this section).

(iii) For in-lieu fee projects and umbrella mitigation bank sites, the terms of the credit release schedule must be specified in the approved mitigation plan. When an in-lieu fee project or umbrella mitigation bank site is implemented and is achieving the performance-based milestones specified in the credit release schedule, credits are generated in accordance with the credit release schedule for the approved mitigation plan. If the in-lieu fee project or umbrella mitigation bank site does not achieve those performance-based milestones, the district engineer may modify the credit release schedule, including reducing the number of credits.

(9) *Credit release approval.* Credit releases for mitigation banks and in-lieu fee projects must be approved by the district engineer. In order for credits to be released, the sponsor must submit documentation to the district engineer demonstrating that the appropriate milestones for credit release have been achieved and requesting the release. The district engineer will provide copies of this documentation to the IRT members for review. IRT members must provide any comments to the district engineer within 15 days of receiving this documentation. However, if the district engineer determines that a site visit is necessary, IRT members must provide any comments to the district engineer within 15 days of the site visit. The district engineer must schedule the site visit so that it occurs as soon as it is practicable, but the site visit may be delayed by seasonal considerations that affect the ability of the district engineer and the IRT to assess whether the applicable credit release milestones have been achieved. After full consideration of any comments received, the district engineer will determine whether the milestones have been achieved and the credits can be released. The district engineer shall

make a decision within 30 days of the end of that comment period, and notify the sponsor and the IRT.

(10) *Suspension and termination.* If the district engineer determines that the mitigation bank or in-lieu fee program is not meeting performance standards or complying with the terms of the instrument, appropriate action will be taken. Such actions may include, but are not limited to, suspending credit sales, adaptive management, decreasing available credits, utilizing financial assurances, and terminating the instrument.

(p) *Accounting procedures.* (1) For mitigation banks, the instrument must contain a provision requiring the sponsor to establish and maintain a ledger to account for all credit transactions. Each time an approved credit transaction occurs, the sponsor must notify the district engineer.

(2) For in-lieu fee programs, the instrument must contain a provision requiring the sponsor to establish and maintain an annual report ledger in accordance with paragraph (i)(3) of this section, as well as individual ledgers that track the production of released credits for each in-lieu fee project.

(q) *Reporting.* (1) *Ledger account.* The sponsor must compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The ledger report must be submitted to the district engineer, who will distribute copies to the IRT members. The ledger report is part of the administrative record for the mitigation bank or in-lieu fee program. The district engineer will make the ledger report available to the public upon request.

(2) *Monitoring reports.* The sponsor is responsible for monitoring the mitigation bank site or the in-lieu fee project site in accordance with the approved monitoring requirements to determine the level of success and identify problems requiring remedial action or adaptive management measures. Monitoring must be conducted in accordance with the requirements in § 332.6, and at time intervals appropriate for the particular project type and until such time that the district engineer, in consultation with the IRT, has determined that the performance standards have been attained. The instrument must include requirements for periodic monitoring reports to be submitted to the district engineer, who will provide copies to other IRT members.

(3) *Financial assurance and long-term management funding report.* The district engineer may require the sponsor to provide an annual report showing beginning and ending balances, including deposits into and any withdrawals from, the accounts providing funds for financial assurances and long-term management activities. The report should also include information on the amount of required financial assurances and the status of those assurances, including their potential expiration.

(r) *Use of credits.* Except as provided below, all activities authorized by DA permits are eligible, at the discretion of the district engineer, to use mitigation banks or in-lieu fee programs to fulfill compensatory mitigation requirements for DA permits. The district engineer will determine the number and type(s) of credits required to compensate for the authorized impacts. Permit applicants may propose to use a particular mitigation bank or in-lieu fee program to provide the required compensatory mitigation. In such cases, the sponsor must provide the permit applicant with a statement of credit availability. The district engineer must review the permit applicant's compensatory mitigation proposal, and notify the applicant of his determination regarding the acceptability of using that mitigation bank or in-lieu fee program.

(s) *IRT concerns with use of credits.* If, in the view of a member of the IRT, an issued permit or series of issued permits raises concerns about how credits from a particular mitigation bank or in-lieu fee program are being used to satisfy compensatory mitigation requirements (including concerns about whether credit use is consistent with the terms of the instrument), the IRT member may notify the district engineer in writing of the concern. The district engineer shall promptly consult with the IRT to address the concern. Resolution of the concern is at the discretion of the district engineer, consistent with applicable statutes, regulations, and policies regarding compensatory mitigation requirements for DA permits. Nothing in this section limits the authorities designated to IRT agencies under existing statutes or regulations.

(t) *Site protection.* (1) For mitigation bank sites, real estate instruments, management plans, or other long-term mechanisms used for site protection must be finalized before any credits can be released.

(2) For in-lieu fee project sites, real estate instruments, management plans, or other long-term protection mechanisms used for site protection

must be finalized before advance credits can become released credits.

(u) *Long-term management.* (1) The legal mechanisms and the party responsible for the long-term management and the protection of the mitigation bank site must be documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation plans. The responsible party should make adequate provisions for the operation, maintenance, and long-term management of the compensatory mitigation project site. The long-term management plan should include a description of long-term management needs and identify the funding mechanism that will be used to meet those needs.

(2) The instrument may contain provisions for the sponsor to transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager.

(3) The instrument or approved mitigation plan must address the financial arrangements and timing of any necessary transfer of long-term management funds to the steward.

(4) Where needed, the acquisition and protection of water rights should be secured and documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation site plan.

(v) *Grandfathering of existing instruments.* (1) *Mitigation banking instruments.* All mitigation banking instruments approved on or after July 9, 2008 must meet the requirements of this part. Mitigation banks approved prior to July 9, 2008 may continue to operate under the terms of their existing instruments. However, any modification to such a mitigation banking instrument on or after July 9, 2008, including authorization of additional sites under an umbrella mitigation banking instrument, expansion of an existing site, or addition of a different type of resource credits (e.g., stream credits to a wetland bank) must be consistent with the terms of this part.

(2) *In-lieu fee program instruments.* All in-lieu fee program instruments approved on or after July 9, 2008 must meet the requirements of this part. In-lieu fee programs operating under instruments approved prior to July 9, 2008 may continue to operate under those instruments for two years after the effective date of this rule, after which time they must meet the requirements of this part, unless the district engineer determines that circumstances warrant

an extension of up to three additional years. The district engineer must consult with the IRT before approving such extensions. Any revisions made to the in-lieu fee program instrument on or after July 9, 2008 must be consistent with the terms of this part. Any approved project for which construction was completed under the terms of a previously approved instrument may continue to operate indefinitely under those terms if the district engineer determines that the project is providing appropriate mitigation substantially consistent with the terms of this part.

Dated: March 28, 2008.

John Paul Woodley, Jr.,

*Assistant Secretary of the Army, (Civil Works),
Department of the Army.*

Environmental Protection Agency

40 CFR Chapter I

■ For the reasons stated in the preamble, the Environmental Protection Agency amends 40 CFR part 230 as set forth below:

PART 230—SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL

■ 1. The authority citation for part 230 continues to read as follows:

Authority: Secs. 404(b) and 501(a) of the Clean Water Act of 1977 (33 U.S.C. 1344(b) and 1361(a)).

§ 230.12 [Amended]

■ 2. In § 230.12(a)(2) remove the reference “subpart H” and add in its place the reference “subparts H and J”.

Subpart H—[Amended]

■ 3. In subpart H the Note following the subpart heading is amended by adding a sentence to the end to read as follows:

Subpart H—Actions To Minimize Adverse Effects

Note: * * * Additional criteria for compensation measures are provided in subpart J of this part.

■ 4. In § 230.75 add a new sentence after the second sentence in paragraph (d) to read as follows:

§ 230.75 Actions affecting plant and animal populations.

* * * * *

(d) * * * Additional criteria for compensation measures are provided in subpart J of this part. * * *

* * * * *

■ 5. Add Subpart J to part 230 to read as follows:

Subpart J—Compensatory Mitigation for Losses of Aquatic Resources

Sec.

- 230.91 Purpose and general considerations.
- 230.92 Definitions.
- 230.93 General compensatory mitigation requirements.
- 230.94 Planning and documentation.
- 230.95 Ecological performance standards.
- 230.96 Monitoring.
- 230.97 Management.
- 230.98 Mitigation banks and in-lieu fee programs.

Subpart J—Compensatory Mitigation for Losses of Aquatic Resources**§ 230.91 Purpose and general considerations.**

(a) *Purpose.* (1) The purpose of this subpart is to establish standards and criteria for the use of all types of compensatory mitigation, including on-site and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts to waters of the United States authorized through the issuance of permits by the U.S. Army Corps of Engineers (Corps) pursuant to section 404 of the Clean Water Act (33 U.S.C. 1344). This subpart implements section 314(b) of the 2004 National Defense Authorization Act (Pub. L. 108–136), which directs that the standards and criteria shall, to the maximum extent practicable, maximize available credits and opportunities for mitigation, provide for regional variations in wetland conditions, functions, and values, and apply equivalent standards and criteria to each type of compensatory mitigation. This subpart is intended to further clarify mitigation requirements established under the Corps and EPA regulations at 33 CFR part 320 and this part, respectively.

(2) This subpart has been jointly developed by the Secretary of the Army, acting through the Chief of Engineers, and the Administrator of the Environmental Protection Agency. From time to time guidance on interpreting and implementing this subpart may be prepared jointly by EPA and the Corps at the national or regional level. No modifications to the basic application, meaning, or intent of this subpart will be made without further joint rulemaking by the Secretary of the Army, acting through the Chief of Engineers and the Administrator of the Environmental Protection Agency, pursuant to the Administrative Procedure Act (5 U.S.C. 551 *et seq.*).

(b) *Applicability.* This subpart does not alter the circumstances under which compensatory mitigation is required or the definition of “waters of the United States,” which is provided at § 230.3(s).

Use of resources as compensatory mitigation that are not otherwise subject to regulation under section 404 of the Clean Water Act does not in and of itself make them subject to such regulation.

(c) *Sequencing.* (1) Nothing in this section affects the requirement that all DA permits subject to section 404 of the Clean Water Act comply with applicable provisions of this part.

(2) Pursuant to these requirements, the district engineer will issue an individual section 404 permit only upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines.

(3) Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines. During the 404(b)(1) Guidelines compliance analysis, the district engineer may determine that a DA permit for the proposed activity cannot be issued because of the lack of appropriate and practicable compensatory mitigation options.

(d) *Accounting for regional variations.* Where appropriate, district engineers shall account for regional characteristics of aquatic resource types, functions and services when determining performance standards and monitoring requirements for compensatory mitigation projects.

(e) *Relationship to other guidance documents.* (1) This subpart applies instead of the “Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks,” which was issued on November 28, 1995, the “Federal Guidance on the Use of In-Lieu Fee Arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act,” which was issued on November 7, 2000, and Regulatory Guidance Letter 02–02, “Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899” which was issued on December 24, 2002. These guidance documents are no longer to be

used as compensatory mitigation policy in the Corps Regulatory Program.

(2) In addition, this subpart also applies instead of the provisions relating to the amount, type, and location of compensatory mitigation projects, including the use of preservation, in the February 6, 1990, Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency on the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines. All other provisions of this MOA remain in effect.

§ 230.92 Definitions.

For the purposes of this subpart, the following terms are defined:

Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems.

Advance credits means any credits of an approved in-lieu fee program that are available for sale prior to being fulfilled in accordance with an approved mitigation project plan. Advance credit sales require an approved in-lieu fee program instrument that meets all applicable requirements including a specific allocation of advance credits, by service area where applicable. The instrument must also contain a schedule for fulfillment of advance credit sales.

Buffer means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

Compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and

practicable avoidance and minimization has been achieved.

Compensatory mitigation project means compensatory mitigation implemented by the permittee as a requirement of a DA permit (i.e., permittee-responsible mitigation), or by a mitigation bank or an in-lieu fee program.

Condition means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

Credit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.

DA means Department of the Army.

Days means calendar days.

Debit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

Fulfillment of advance credit sales of an in-lieu fee program means application of credits released in accordance with a credit release schedule in an approved mitigation project plan to satisfy the mitigation requirements represented by the advance credits. Only after any advance credit sales within a service area have been fulfilled through the application of released credits from an in-lieu fee project (in accordance with the credit release schedule for an approved mitigation project plan), may additional released credits from that project be sold or transferred to permittees. When advance credits are fulfilled, an equal number of new advance credits is

restored to the program sponsor for sale or transfer to permit applicants.

Functional capacity means the degree to which an area of aquatic resource performs a specific function.

Functions means the physical, chemical, and biological processes that occur in ecosystems.

Impact means adverse effect.

In-kind means a resource of a similar structural and functional type to the impacted resource.

In-lieu fee program means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. However, the rules governing the operation and use of in-lieu fee programs are somewhat different from the rules governing operation and use of mitigation banks. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.

In-lieu fee program instrument means the legal document for the establishment, operation, and use of an in-lieu fee program.

Instrument means mitigation banking instrument or in-lieu fee program instrument.

Interagency Review Team (IRT) means an interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that reviews documentation for, and advises the district engineer on, the establishment and management of a mitigation bank or an in-lieu fee program.

Mitigation bank means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

Mitigation banking instrument means the legal document for the establishment, operation, and use of a mitigation bank.

Off-site means an area that is neither located on the same parcel of land as the

impact site, nor on a parcel of land contiguous to the parcel containing the impact site.

On-site means an area located on the same parcel of land as the impact site, or on a parcel of land contiguous to the impact site.

Out-of-kind means a resource of a different structural and functional type from the impacted resource.

Performance standards are observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Permittee-responsible mitigation means an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Reference aquatic resources are a set of aquatic resources that represent the full range of variability exhibited by a regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Release of credits means a determination by the district engineer, in consultation with the IRT, that credits associated with an approved mitigation plan are available for sale or transfer, or in the case of an in-lieu fee program, for fulfillment of advance credit sales. A proportion of projected credits for a specific mitigation bank or in-lieu fee project may be released upon

approval of the mitigation plan, with additional credits released as milestones specified in the credit release schedule are achieved.

Restoration means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riparian areas are lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality.

Service area means the geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument.

Services mean the benefits that human populations receive from functions that occur in ecosystems.

Sponsor means any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program.

Standard permit means a standard, individual permit issued under the authority of section 404 of the Clean Water Act.

Temporal loss is the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. When the compensatory mitigation project is initiated prior to, or concurrent with, the permitted impacts, the district engineer may determine that compensation for temporal loss is not necessary, unless the resource has a long development time.

Watershed means a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.

Watershed approach means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized

by DA permits. The watershed approach may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA permits.

Watershed plan means a plan developed by federal, tribal, state, and/or local government agencies or appropriate non-governmental organizations, in consultation with relevant stakeholders, for the specific goal of aquatic resource restoration, establishment, enhancement, and preservation. A watershed plan addresses aquatic resource conditions in the watershed, multiple stakeholder interests, and land uses. Watershed plans may also identify priority sites for aquatic resource restoration and protection. Examples of watershed plans include special area management plans, advance identification programs, and wetland management plans.

§ 230.93 General compensatory mitigation requirements.

(a) *General considerations.* (1) The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits. The district engineer must determine the compensatory mitigation to be required in a DA permit, based on what is practicable and capable of compensating for the aquatic resource functions that will be lost as a result of the permitted activity. When evaluating compensatory mitigation options, the district engineer will consider what would be environmentally preferable. In making this determination, the district engineer must assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project. In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success. Compensatory mitigation requirements must be commensurate with the amount and type of impact that

is associated with a particular DA permit. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts.

(2) Compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances preservation. Restoration should generally be the first option considered because the likelihood of success is greater and the impacts to potentially ecologically important uplands are reduced compared to establishment, and the potential gains in terms of aquatic resource functions are greater, compared to enhancement and preservation.

(3) Compensatory mitigation projects may be sited on public or private lands. Credits for compensatory mitigation projects on public land must be based solely on aquatic resource functions provided by the compensatory mitigation project, over and above those provided by public programs already planned or in place. All compensatory mitigation projects must comply with the standards in this part, if they are to be used to provide compensatory mitigation for activities authorized by DA permits, regardless of whether they are sited on public or private lands and whether the sponsor is a governmental or private entity.

(b) *Type and location of compensatory mitigation.* (1) When considering options for successfully providing the required compensatory mitigation, the district engineer shall consider the type and location options in the order presented in paragraphs (b)(2) through (b)(6) of this section. In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses. When compensating for impacts to marine resources, the location of the compensatory mitigation site should be chosen to replace lost functions and services within the same marine ecological system (e.g., reef complex, littoral drift cell). Compensation for impacts to aquatic resources in coastal watersheds (watersheds that include a tidal water body) should also be located in a coastal watershed where practicable. Compensatory mitigation projects

should not be located where they will increase risks to aviation by attracting wildlife to areas where aircraft-wildlife strikes may occur (e.g., near airports).

(2) *Mitigation bank credits.* When permitted impacts are located within the service area of an approved mitigation bank, and the bank has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor. Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable. However, these same considerations may also be used to override this preference, where appropriate, as, for example, where an in-lieu fee program has released credits available from a specific approved in-lieu fee project, or a permittee-responsible project will restore an outstanding resource based on rigorous scientific and technical analysis.

(3) *In-lieu fee program credits.* Where permitted impacts are located within the service area of an approved in-lieu fee program, and the sponsor has the appropriate number and resource type of credits available, the permittee's compensatory mitigation requirements may be met by securing those credits from the sponsor. Where permitted impacts are not located in the service area of an approved mitigation bank, or the approved mitigation bank does not have the appropriate number and resource type of credits available to offset those impacts, in-lieu fee

mitigation, if available, is generally preferable to permittee-responsible mitigation. In-lieu fee projects typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. They also devote significant resources to identifying and addressing high-priority resource needs on a watershed scale, as reflected in their compensation planning framework. For these reasons, the district engineer should give preference to in-lieu fee program credits over permittee-responsible mitigation, where these considerations are applicable. However, as with the preference for mitigation bank credits, these same considerations may be used to override this preference where appropriate. Additionally, in cases where permittee-responsible mitigation is likely to successfully meet performance standards before advance credits secured from an in-lieu fee program are fulfilled, the district engineer should also give consideration to this factor in deciding between in-lieu fee mitigation and permittee-responsible mitigation.

(4) *Permittee-responsible mitigation under a watershed approach.* Where permitted impacts are not in the service area of an approved mitigation bank or in-lieu fee program that has the appropriate number and resource type of credits available, permittee-responsible mitigation is the only option. Where practicable and likely to be successful and sustainable, the resource type and location for the required permittee-responsible compensatory mitigation should be determined using the principles of a watershed approach as outlined in paragraph (c) of this section.

(5) *Permittee-responsible mitigation through on-site and in-kind mitigation.* In cases where a watershed approach is not practicable, the district engineer should consider opportunities to offset anticipated aquatic resource impacts by requiring on-site and in-kind compensatory mitigation. The district engineer must also consider the practicability of on-site compensatory mitigation and its compatibility with the proposed project.

(6) *Permittee-responsible mitigation through off-site and/or out-of-kind mitigation.* If, after considering opportunities for on-site, in-kind compensatory mitigation as provided in paragraph (b)(5) of this section, the district engineer determines that these compensatory mitigation opportunities are not practicable, are unlikely to compensate for the permitted impacts,

or will be incompatible with the proposed project, and an alternative, practicable off-site and/or out-of-kind mitigation opportunity is identified that has a greater likelihood of offsetting the permitted impacts or is environmentally preferable to on-site or in-kind mitigation, the district engineer should require that this alternative compensatory mitigation be provided.

(c) *Watershed approach to compensatory mitigation.* (1) The district engineer must use a watershed approach to establish compensatory mitigation requirements in DA permits to the extent appropriate and practicable. Where a watershed plan is available, the district engineer will determine whether the plan is appropriate for use in the watershed approach for compensatory mitigation. In cases where the district engineer determines that an appropriate watershed plan is available, the watershed approach should be based on that plan. Where no such plan is available, the watershed approach should be based on information provided by the project sponsor or available from other sources. The ultimate goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites.

(2) *Considerations.* (i) A watershed approach to compensatory mitigation considers the importance of landscape position and resource type of compensatory mitigation projects for the sustainability of aquatic resource functions within the watershed. Such an approach considers how the types and locations of compensatory mitigation projects will provide the desired aquatic resource functions, and will continue to function over time in a changing landscape. It also considers the habitat requirements of important species, habitat loss or conversion trends, sources of watershed impairment, and current development trends, as well as the requirements of other regulatory and non-regulatory programs that affect the watershed, such as storm water management or habitat conservation programs. It includes the protection and maintenance of terrestrial resources, such as non-wetland riparian areas and uplands, when those resources contribute to or improve the overall ecological functioning of aquatic resources in the watershed. Compensatory mitigation requirements determined through the watershed approach should not focus exclusively on specific functions (e.g., water quality or habitat for certain species), but should provide, where practicable, the

suite of functions typically provided by the affected aquatic resource.

(ii) Locational factors (e.g., hydrology, surrounding land use) are important to the success of compensatory mitigation for impacted habitat functions and may lead to siting of such mitigation away from the project area. However, consideration should also be given to functions and services (e.g., water quality, flood control, shoreline protection) that will likely need to be addressed at or near the areas impacted by the permitted impacts.

(iii) A watershed approach may include on-site compensatory mitigation, off-site compensatory mitigation (including mitigation banks or in-lieu fee programs), or a combination of on-site and off-site compensatory mitigation.

(iv) A watershed approach to compensatory mitigation should include, to the extent practicable, inventories of historic and existing aquatic resources, including identification of degraded aquatic resources, and identification of immediate and long-term aquatic resource needs within watersheds that can be met through permittee-responsible mitigation projects, mitigation banks, or in-lieu fee programs. Planning efforts should identify and prioritize aquatic resource restoration, establishment, and enhancement activities, and preservation of existing aquatic resources that are important for maintaining or improving ecological functions of the watershed. The identification and prioritization of resource needs should be as specific as possible, to enhance the usefulness of the approach in determining compensatory mitigation requirements.

(v) A watershed approach is not appropriate in areas where watershed boundaries do not exist, such as marine areas. In such cases, an appropriate spatial scale should be used to replace lost functions and services within the same ecological system (e.g., reef complex, littoral drift cell).

(3) *Information Needs.* (i) In the absence of a watershed plan determined by the district engineer under paragraph (c)(1) of this section to be appropriate for use in the watershed approach, the district engineer will use a watershed approach based on analysis of information regarding watershed conditions and needs, including potential sites for aquatic resource restoration activities and priorities for aquatic resource restoration and preservation. Such information includes: Current trends in habitat loss or conversion; cumulative impacts of

past development activities, current development trends, the presence and needs of sensitive species; site conditions that favor or hinder the success of compensatory mitigation projects; and chronic environmental problems such as flooding or poor water quality.

(ii) This information may be available from sources such as wetland maps; soil surveys; U.S. Geological Survey topographic and hydrologic maps; aerial photographs; information on rare, endangered and threatened species and critical habitat; local ecological reports or studies; and other information sources that could be used to identify locations for suitable compensatory mitigation projects in the watershed.

(iii) The level of information and analysis needed to support a watershed approach must be commensurate with the scope and scale of the proposed impacts requiring a DA permit, as well as the functions lost as a result of those impacts.

(4) *Watershed Scale.* The size of watershed addressed using a watershed approach should not be larger than is appropriate to ensure that the aquatic resources provided through compensation activities will effectively compensate for adverse environmental impacts resulting from activities authorized by DA permits. The district engineer should consider relevant environmental factors and appropriate locally-developed standards and criteria when determining the appropriate watershed scale in guiding compensation activities.

(d) *Site selection.* (1) The compensatory mitigation project site must be ecologically suitable for providing the desired aquatic resource functions. In determining the ecological suitability of the compensatory mitigation project site, the district engineer must consider, to the extent practicable, the following factors:

(i) Hydrological conditions, soil characteristics, and other physical and chemical characteristics;

(ii) Watershed-scale features, such as aquatic habitat diversity, habitat connectivity, and other landscape scale functions;

(iii) The size and location of the compensatory mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features;

(iv) Compatibility with adjacent land uses and watershed management plans;

(v) Reasonably foreseeable effects the compensatory mitigation project will have on ecologically important aquatic or terrestrial resources (e.g., shallow sub-tidal habitat, mature forests),

cultural sites, or habitat for federally- or state-listed threatened and endangered species; and

(vi) Other relevant factors including, but not limited to, development trends, anticipated land use changes, habitat status and trends, the relative locations of the impact and mitigation sites in the stream network, local or regional goals for the restoration or protection of particular habitat types or functions (e.g., re-establishment of habitat corridors or habitat for species of concern), water quality goals, floodplain management goals, and the relative potential for chemical contamination of the aquatic resources.

(2) District engineers may require on-site, off-site, or a combination of on-site and off-site compensatory mitigation to replace permitted losses of aquatic resource functions and services.

(3) Applicants should propose compensation sites adjacent to existing aquatic resources or where aquatic resources previously existed.

(e) *Mitigation type.* (1) In general, in-kind mitigation is preferable to out-of-kind mitigation because it is most likely to compensate for the functions and services lost at the impact site. For example, tidal wetland compensatory mitigation projects are most likely to compensate for unavoidable impacts to tidal wetlands, while perennial stream compensatory mitigation projects are most likely to compensate for unavoidable impacts to perennial streams. Thus, except as provided in paragraph (e)(2) of this section, the required compensatory mitigation shall be of a similar type to the affected aquatic resource.

(2) If the district engineer determines, using the watershed approach in accordance with paragraph (c) of this section that out-of-kind compensatory mitigation will serve the aquatic resource needs of the watershed, the district engineer may authorize the use of such out-of-kind compensatory mitigation. The basis for authorization of out-of-kind compensatory mitigation must be documented in the administrative record for the permit action.

(3) For difficult-to-replace resources (e.g., bogs, fens, springs, streams, Atlantic white cedar swamps) if further avoidance and minimization is not practicable, the required compensation should be provided, if practicable, through in-kind rehabilitation, enhancement, or preservation since there is greater certainty that these methods of compensation will successfully offset permitted impacts.

(f) *Amount of compensatory mitigation.* (1) If the district engineer

determines that compensatory mitigation is necessary to offset unavoidable impacts to aquatic resources, the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used.

(2) The district engineer must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required replacement ratio must be documented in the administrative record for the permit action.

(3) If an in-lieu fee program will be used to provide the required compensatory mitigation, and the appropriate number and resource type of released credits are not available, the district engineer must require sufficient compensation to account for the risk and uncertainty associated with in-lieu fee projects that have not been implemented before the permitted impacts have occurred.

(g) *Use of mitigation banks and in-lieu fee programs.* Mitigation banks and in-lieu fee programs may be used to compensate for impacts to aquatic resources authorized by general permits and individual permits, including after-the-fact permits, in accordance with the preference hierarchy in paragraph (b) of this section. Mitigation banks and in-lieu fee programs may also be used to satisfy requirements arising out of an enforcement action, such as supplemental environmental projects.

(h) *Preservation.* (1) Preservation may be used to provide compensatory mitigation for activities authorized by DA permits when all the following criteria are met:

(i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed;

(ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available;

(iii) Preservation is determined by the district engineer to be appropriate and practicable;

(iv) The resources are under threat of destruction or adverse modifications; and

(v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).

(2) Where preservation is used to provide compensatory mitigation, to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities. This requirement may be waived by the district engineer where preservation has been identified as a high priority using a watershed approach described in paragraph (c) of this section, but compensation ratios shall be higher.

(i) *Buffers.* District engineers may require the restoration, establishment, enhancement, and preservation, as well as the maintenance, of riparian areas and/or buffers around aquatic resources where necessary to ensure the long-term viability of those resources. Buffers may also provide habitat or corridors necessary for the ecological functioning of aquatic resources. If buffers are required by the district engineer as part of the compensatory mitigation project, compensatory mitigation credit will be provided for those buffers.

(j) *Relationship to other federal, tribal, state, and local programs.* (1) Compensatory mitigation projects for DA permits may also be used to satisfy the environmental requirements of other programs, such as tribal, state, or local wetlands regulatory programs, other federal programs such as the Surface Mining Control and Reclamation Act, Corps civil works projects, and Department of Defense military construction projects, consistent with the terms and requirements of these programs and subject to the following considerations:

(i) The compensatory mitigation project must include appropriate compensation required by the DA permit for unavoidable impacts to aquatic resources authorized by that permit.

(ii) Under no circumstances may the same credits be used to provide

mitigation for more than one permitted activity. However, where appropriate, compensatory mitigation projects, including mitigation banks and in-lieu fee projects, may be designed to holistically address requirements under multiple programs and authorities for the same activity.

(2) Except for projects undertaken by federal agencies, or where federal funding is specifically authorized to provide compensatory mitigation, federally-funded aquatic resource restoration or conservation projects undertaken for purposes other than compensatory mitigation, such as the Wetlands Reserve Program, Conservation Reserve Program, and Partners for Wildlife Program activities, cannot be used for the purpose of generating compensatory mitigation credits for activities authorized by DA permits. However, compensatory mitigation credits may be generated by activities undertaken in conjunction with, but supplemental to, such programs in order to maximize the overall ecological benefits of the restoration or conservation project.

(3) Compensatory mitigation projects may also be used to provide compensatory mitigation under the Endangered Species Act or for Habitat Conservation Plans, as long as they comply with the requirements of paragraph (j)(1) of this section.

(k) *Permit conditions.* (1) The compensatory mitigation requirements for a DA permit, including the amount and type of compensatory mitigation, must be clearly stated in the special conditions of the individual permit or general permit verification (see 33 CFR 325.4 and 330.6(a)). The special conditions must be enforceable.

(2) For an individual permit that requires permittee-responsible mitigation, the special conditions must:

(i) Identify the party responsible for providing the compensatory mitigation;

(ii) Incorporate, by reference, the final mitigation plan approved by the district engineer;

(iii) State the objectives, performance standards, and monitoring required for the compensatory mitigation project, unless they are provided in the approved final mitigation plan; and

(iv) Describe any required financial assurances or long-term management provisions for the compensatory mitigation project, unless they are specified in the approved final mitigation plan.

(3) For a general permit activity that requires permittee-responsible compensatory mitigation, the special conditions must describe the compensatory mitigation proposal.

which may be either conceptual or detailed. The general permit verification must also include a special condition that states that the permittee cannot commence work in waters of the United States until the district engineer approves the final mitigation plan, unless the district engineer determines that such a special condition is not practicable and not necessary to ensure timely completion of the required compensatory mitigation. To the extent appropriate and practicable, special conditions of the general permit verification should also address the requirements of paragraph (k)(2) of this section.

(4) If a mitigation bank or in-lieu fee program is used to provide the required compensatory mitigation, the special conditions must indicate whether a mitigation bank or in-lieu fee program will be used, and specify the number and resource type of credits the permittee is required to secure. In the case of an individual permit, the special condition must also identify the specific mitigation bank or in-lieu fee program that will be used. For general permit verifications, the special conditions may either identify the specific mitigation bank or in-lieu fee program, or state that the specific mitigation bank or in-lieu fee program used to provide the required compensatory mitigation must be approved by the district engineer before the credits are secured.

(1) *Party responsible for compensatory mitigation.* (1) For permittee-responsible mitigation, the special conditions of the DA permit must clearly indicate the party or parties responsible for the implementation, performance, and long-term management of the compensatory mitigation project.

(2) For mitigation banks and in-lieu fee programs, the instrument must clearly indicate the party or parties responsible for the implementation, performance, and long-term management of the compensatory mitigation project(s). The instrument must also contain a provision expressing the sponsor's agreement to assume responsibility for a permittee's compensatory mitigation requirements, once that permittee has secured the appropriate number and resource type of credits from the sponsor and the district engineer has received the documentation described in paragraph (l)(3) of this section.

(3) If use of a mitigation bank or in-lieu fee program is approved by the district engineer to provide part or all of the required compensatory mitigation for a DA permit, the permittee retains responsibility for providing the compensatory mitigation until the

appropriate number and resource type of credits have been secured from a sponsor and the district engineer has received documentation that confirms that the sponsor has accepted the responsibility for providing the required compensatory mitigation. This documentation may consist of a letter or form signed by the sponsor, with the permit number and a statement indicating the number and resource type of credits that have been secured from the sponsor. Copies of this documentation will be retained in the administrative records for both the permit and the instrument. If the sponsor fails to provide the required compensatory mitigation, the district engineer may pursue measures against the sponsor to ensure compliance.

(m) *Timing.* Implementation of the compensatory mitigation project shall be, to the maximum extent practicable, in advance of or concurrent with the activity causing the authorized impacts. The district engineer shall require, to the extent appropriate and practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity.

(n) *Financial assurances.* (1) The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards. In cases where an alternate mechanism is available to ensure a high level of confidence that the compensatory mitigation will be provided and maintained (e.g., a formal, documented commitment from a government agency or public authority) the district engineer may determine that financial assurances are not necessary for that compensatory mitigation project.

(2) The amount of the required financial assurances must be determined by the district engineer, in consultation with the project sponsor, and must be based on the size and complexity of the compensatory mitigation project, the degree of completion of the project at the time of project approval, the likelihood of success, the past performance of the project sponsor, and any other factors the district engineer deems appropriate. Financial assurances may be in the form of performance bonds, escrow accounts, casualty insurance, letters of credit, legislative appropriations for government sponsored projects, or other appropriate instruments, subject to the approval of the district engineer. The rationale for determining the amount of the required financial assurances must

be documented in the administrative record for either the DA permit or the instrument. In determining the assurance amount, the district engineer shall consider the cost of providing replacement mitigation, including costs for land acquisition, planning and engineering, legal fees, mobilization, construction, and monitoring.

(3) If financial assurances are required, the DA permit must include a special condition requiring the financial assurances to be in place prior to commencing the permitted activity.

(4) Financial assurances shall be phased out once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The DA permit or instrument must clearly specify the conditions under which the financial assurances are to be released to the permittee, sponsor, and/or other financial assurance provider, including, as appropriate, linkage to achievement of performance standards, adaptive management, or compliance with special conditions.

(5) A financial assurance must be in a form that ensures that the district engineer will receive notification at least 120 days in advance of any termination or revocation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the district engineer at least 120 days before the assurance is revoked or terminated.

(6) Financial assurances shall be payable at the direction of the district engineer to his designee or to a standby trust agreement. When a standby trust is used (e.g., with performance bonds or letters of credit) all amounts paid by the financial assurance provider shall be deposited directly into the standby trust fund for distribution by the trustee in accordance with the district engineer's instructions.

(o) *Compliance with applicable law.* The compensatory mitigation project must comply with all applicable federal, state, and local laws. The DA permit, mitigation banking instrument, or in-lieu fee program instrument must not require participation by the Corps or any other federal agency in project management, including receipt or management of financial assurances or long-term financing mechanisms, except as determined by the Corps or other agency to be consistent with its statutory authority, mission, and priorities.

§ 230.94 Planning and documentation.

(a) *Pre-application consultations.* Potential applicants for standard

permits are encouraged to participate in pre-application meetings with the Corps and appropriate agencies to discuss potential mitigation requirements and information needs.

(b) *Public review and comment.* (1) For an activity that requires a standard DA permit pursuant to section 404 of the Clean Water Act, the public notice for the proposed activity must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for. This explanation shall address, to the extent that such information is provided in the mitigation statement required by 33 CFR 325.1(d)(7), the proposed avoidance and minimization and the amount, type, and location of any proposed compensatory mitigation, including any out-of-kind compensation, or indicate an intention to use an approved mitigation bank or in-lieu fee program. The level of detail provided in the public notice must be commensurate with the scope and scale of the impacts. The notice shall not include information that the district engineer and the permittee believe should be kept confidential for business purposes, such as the exact location of a proposed mitigation site that has not yet been secured. The permittee must clearly identify any information being claimed as confidential in the mitigation statement when submitted. In such cases, the notice must still provide enough information to enable the public to provide meaningful comment on the proposed mitigation.

(2) For individual permits, district engineers must consider any timely comments and recommendations from other federal agencies; tribal, state, or local governments; and the public.

(3) For activities authorized by letters of permission or general permits, the review and approval process for compensatory mitigation proposals and plans must be conducted in accordance with the terms and conditions of those permits and applicable regulations including the applicable provisions of this part.

(c) *Mitigation plan.* (1) *Preparation and Approval.* (i) For individual permits, the permittee must prepare a draft mitigation plan and submit it to the district engineer for review. After addressing any comments provided by the district engineer, the permittee must prepare a final mitigation plan, which must be approved by the district engineer prior to issuing the individual permit. The approved final mitigation plan must be incorporated into the individual permit by reference. The final mitigation plan must include the items described in paragraphs (c)(2)

through (c)(14) of this section, but the level of detail of the mitigation plan should be commensurate with the scale and scope of the impacts. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and the name of the specific mitigation bank or in-lieu fee program to be used.

(ii) For general permits, if compensatory mitigation is required, the district engineer may approve a conceptual or detailed compensatory mitigation plan to meet required time frames for general permit verifications, but a final mitigation plan incorporating the elements in paragraphs (c)(2) through (c)(14) of this section, at a level of detail commensurate with the scale and scope of the impacts, must be approved by the district engineer before the permittee commences work in waters of the United States. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and either the name of the specific mitigation bank or in-lieu fee program to be used or a statement indicating that a mitigation bank or in-lieu fee program will be used (contingent upon approval by the district engineer).

(iii) Mitigation banks and in-lieu fee programs must prepare a mitigation plan including the items in paragraphs (c)(2) through (c)(14) of this section for each separate compensatory mitigation project site. For mitigation banks and in-lieu fee programs, the preparation and approval process for mitigation plans is described in § 230.98.

(2) *Objectives.* A description of the resource type(s) and amount(s) that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which

the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.

(3) *Site selection.* A description of the factors considered during the site selection process. This should include consideration of watershed needs, on-site alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site. (See § 230.93(d).)

(4) *Site protection instrument.* A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site (see § 230.97(a)).

(5) *Baseline information.* A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site, not the mitigation bank or in-lieu fee project site.

(6) *Determination of credits.* A description of the number of credits to be provided, including a brief explanation of the rationale for this determination. (See § 230.93(f).)

(i) For permittee-responsible mitigation, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.

(ii) For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

(7) *Mitigation work plan.* Detailed written specifications and work descriptions for the compensatory

mitigation project, including, but not limited to, the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

(8) *Maintenance plan.* A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

(9) *Performance standards.* Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives. (See § 230.95.)

(10) *Monitoring requirements.* A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included. (See § 230.96.)

(11) *Long-term management plan.* A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management. (See § 230.97(d).)

(12) *Adaptive management plan.* A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. (See § 230.97(c).)

(13) *Financial assurances.* A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully

completed, in accordance with its performance standards (see § 230.93(n)).

(14) *Other information.* The district engineer may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.

§ 230.95 Ecological performance standards.

(a) The approved mitigation plan must contain performance standards that will be used to assess whether the project is achieving its objectives. Performance standards should relate to the objectives of the compensatory mitigation project, so that the project can be objectively evaluated to determine if it is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics (e.g., acres).

(b) Performance standards must be based on attributes that are objective and verifiable. Ecological performance standards must be based on the best available science that can be measured or assessed in a practicable manner. Performance standards may be based on variables or measures of functional capacity described in functional assessment methodologies, measurements of hydrology or other aquatic resource characteristics, and/or comparisons to reference aquatic resources of similar type and landscape position. The use of reference aquatic resources to establish performance standards will help ensure that those performance standards are reasonably achievable, by reflecting the range of variability exhibited by the regional class of aquatic resources as a result of natural processes and anthropogenic disturbances. Performance standards based on measurements of hydrology should take into consideration the hydrologic variability exhibited by reference aquatic resources, especially wetlands. Where practicable, performance standards should take into account the expected stages of the aquatic resource development process, in order to allow early identification of potential problems and appropriate adaptive management.

§ 230.96 Monitoring.

(a) *General.* (1) Monitoring the compensatory mitigation project site is necessary to determine if the project is meeting its performance standards, and to determine if measures are necessary to ensure that the compensatory mitigation project is accomplishing its objectives. The submission of monitoring reports to assess the development and condition of the

compensatory mitigation project is required, but the content and level of detail for those monitoring reports must be commensurate with the scale and scope of the compensatory mitigation project, as well as the compensatory mitigation project type. The mitigation plan must address the monitoring requirements for the compensatory mitigation project, including the parameters to be monitored, the length of the monitoring period, the party responsible for conducting the monitoring, the frequency for submitting monitoring reports to the district engineer, and the party responsible for submitting those monitoring reports to the district engineer.

(2) The district engineer may conduct site inspections on a regular basis (e.g., annually) during the monitoring period to evaluate mitigation site performance.

(b) *Monitoring period.* The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs). Following project implementation, the district engineer may reduce or waive the remaining monitoring requirements upon a determination that the compensatory mitigation project has achieved its performance standards. Conversely the district engineer may extend the original monitoring period upon a determination that performance standards have not been met or the compensatory mitigation project is not on track to meet them. The district engineer may also revise monitoring requirements when remediation and/or adaptive management is required.

(c) *Monitoring reports.* (1) The district engineer must determine the information to be included in monitoring reports. This information must be sufficient for the district engineer to determine how the compensatory mitigation project is progressing towards meeting its performance standards, and may include plans (such as as-built plans), maps, and photographs to illustrate site conditions. Monitoring reports may also include the results of functional, condition, or other assessments used to provide quantitative or qualitative measures of the functions provided by the compensatory mitigation project site.

(2) The permittee or sponsor is responsible for submitting monitoring reports in accordance with the special conditions of the DA permit or the terms

of the instrument. Failure to submit monitoring reports in a timely manner may result in compliance action by the district engineer.

(3) Monitoring reports must be provided by the district engineer to interested federal, tribal, state, and local resource agencies, and the public, upon request.

§ 230.97 Management.

(a) *Site protection.* (1) The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms, as appropriate. Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations, or private land managers; the transfer of title to such entities; or by restrictive covenants. For government property, long-term protection may be provided through federal facility management plans or integrated natural resources management plans. When approving a method for long-term protection of non-government property other than transfer of title, the district engineer shall consider relevant legal constraints on the use of conservation easements and/or restrictive covenants in determining whether such mechanisms provide sufficient site protection. To provide sufficient site protection, a conservation easement or restrictive covenant should, where practicable, establish in an appropriate third party (e.g., governmental or non-profit resource management agency) the right to enforce site protections and provide the third party the resources necessary to monitor and enforce these site protections.

(2) The real estate instrument, management plan, or other mechanism providing long-term protection of the compensatory mitigation site must, to the extent appropriate and practicable, prohibit incompatible uses (e.g., clear cutting or mineral extraction) that might otherwise jeopardize the objectives of the compensatory mitigation project. Where appropriate, multiple instruments recognizing compatible uses (e.g., fishing or grazing rights) may be used.

(3) The real estate instrument, management plan, or other long-term protection mechanism must contain a provision requiring 60-day advance notification to the district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection

mechanism, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site.

(4) For compensatory mitigation projects on public lands, where Federal facility management plans or integrated natural resources management plans are used to provide long-term protection, and changes in statute, regulation, or agency needs or mission results in an incompatible use on public lands originally set aside for compensatory mitigation, the public agency authorizing the incompatible use is responsible for providing alternative compensatory mitigation that is acceptable to the district engineer for any loss in functions resulting from the incompatible use.

(5) A real estate instrument, management plan, or other long-term protection mechanism used for site protection of permittee-responsible mitigation must be approved by the district engineer in advance of, or concurrent with, the activity causing the authorized impacts.

(b) *Sustainability.* Compensatory mitigation projects shall be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context will support long-term sustainability. Where active long-term management and maintenance are necessary to ensure long-term sustainability (e.g., prescribed burning, invasive species control, maintenance of water control structures, easement enforcement), the responsible party must provide for such management and maintenance. This includes the provision of long-term financing mechanisms where necessary. Where needed, the acquisition and protection of water rights must be secured and documented in the permit conditions or instrument.

(c) *Adaptive management.* (1) If the compensatory mitigation project cannot be constructed in accordance with the approved mitigation plans, the permittee or sponsor must notify the district engineer. A significant modification of the compensatory mitigation project requires approval from the district engineer.

(2) If monitoring or other information indicates that the compensatory mitigation project is not progressing towards meeting its performance standards as anticipated, the responsible party must notify the district engineer as soon as possible. The district engineer will evaluate and pursue measures to

address deficiencies in the compensatory mitigation project. The district engineer will consider whether the compensatory mitigation project is providing ecological benefits comparable to the original objectives of the compensatory mitigation project.

(3) The district engineer, in consultation with the responsible party (and other federal, tribal, state, and local agencies, as appropriate), will determine the appropriate measures. The measures may include site modifications, design changes, revisions to maintenance requirements, and revised monitoring requirements. The measures must be designed to ensure that the modified compensatory mitigation project provides aquatic resource functions comparable to those described in the mitigation plan objectives.

(4) Performance standards may be revised in accordance with adaptive management to account for measures taken to address deficiencies in the compensatory mitigation project. Performance standards may also be revised to reflect changes in management strategies and objectives if the new standards provide for ecological benefits that are comparable or superior to the approved compensatory mitigation project. No other revisions to performance standards will be allowed except in the case of natural disasters.

(d) *Long-term management.* (1) The permit conditions or instrument must identify the party responsible for ownership and all long-term management of the compensatory mitigation project. The permit conditions or instrument may contain provisions allowing the permittee or sponsor to transfer the long-term management responsibilities of the compensatory mitigation project site to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager, after review and approval by the district engineer. The land stewardship entity need not be identified in the original permit or instrument, as long as the future transfer of long-term management responsibility is approved by the district engineer.

(2) A long-term management plan should include a description of long-term management needs, annual cost estimates for these needs, and identify the funding mechanism that will be used to meet those needs.

(3) Any provisions necessary for long-term financing must be addressed in the original permit or instrument. The district engineer may require provisions to address inflationary adjustments and other contingencies, as appropriate. Appropriate long-term financing

mechanisms include non-wasting endowments, trusts, contractual arrangements with future responsible parties, and other appropriate financial instruments. In cases where the long-term management entity is a public authority or government agency, that entity must provide a plan for the long-term financing of the site.

(4) For permittee-responsible mitigation, any long-term financing mechanisms must be approved in advance of the activity causing the authorized impacts.

§ 230.98 Mitigation banks and in-lieu fee programs.

(a) *General considerations.* (1) All mitigation banks and in-lieu fee programs must have an approved instrument signed by the sponsor and the district engineer prior to being used to provide compensatory mitigation for DA permits.

(2) To the maximum extent practicable, mitigation banks and in-lieu fee project sites must be planned and designed to be self-sustaining over time, but some active management and maintenance may be required to ensure their long-term viability and sustainability. Examples of acceptable management activities include maintaining fire dependent habitat communities in the absence of natural fire and controlling invasive exotic plant species.

(3) All mitigation banks and in-lieu fee programs must comply with the standards in this part, if they are to be used to provide compensatory mitigation for activities authorized by DA permits, regardless of whether they are sited on public or private lands and whether the sponsor is a governmental or private entity.

(b) *Interagency Review Team.* (1) The district engineer will establish an Interagency Review Team (IRT) to review documentation for the establishment and management of mitigation banks and in-lieu fee programs. The district engineer or his designated representative serves as Chair of the IRT. In cases where a mitigation bank or in-lieu fee program is proposed to satisfy the requirements of another federal, tribal, state, or local program, in addition to compensatory mitigation requirements of DA permits, it may be appropriate for the administering agency to serve as co-Chair of the IRT.

(2) In addition to the Corps, representatives from the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, NOAA Fisheries, the Natural Resources Conservation Service, and other federal

agencies, as appropriate, may participate in the IRT. The IRT may also include representatives from tribal, state, and local regulatory and resource agencies, where such agencies have authorities and/or mandates directly affecting, or affected by, the establishment, operation, or use of the mitigation bank or in-lieu fee program. The district engineer will seek to include all public agencies with a substantive interest in the establishment of the mitigation bank or in-lieu fee program on the IRT, but retains final authority over its composition.

(3) The primary role of the IRT is to facilitate the establishment of mitigation banks or in-lieu fee programs through the development of mitigation banking or in-lieu fee program instruments. The IRT will review the prospectus, instrument, and other appropriate documents and provide comments to the district engineer. The district engineer and the IRT should use a watershed approach to the extent practicable in reviewing proposed mitigation banks and in-lieu fee programs. Members of the IRT may also sign the instrument, if they so choose. By signing the instrument, the IRT members indicate their agreement with the terms of the instrument. As an alternative, a member of the IRT may submit a letter expressing concurrence with the instrument. The IRT will also advise the district engineer in assessing monitoring reports, recommending remedial or adaptive management measures, approving credit releases, and approving modifications to an instrument. In order to ensure timely processing of instruments and other documentation, comments from IRT members must be received by the district engineer within the time limits specified in this section. Comments received after these deadlines will only be considered at the discretion of the district engineer to the extent that doing so does not jeopardize the deadlines for district engineer action.

(4) The district engineer will give full consideration to any timely comments and advice of the IRT. The district engineer alone retains final authority for approval of the instrument in cases where the mitigation bank or in-lieu fee program is used to satisfy compensatory mitigation requirements of DA permits.

(5) *MOAs with other agencies.* The district engineer and members of the IRT may enter into a memorandum of agreement (MOA) with any other federal, state or local government agency to perform all or some of the IRT review functions described in this section. Such MOAs must include provisions for appropriate federal

oversight of the review process. The district engineer retains sole authority for final approval of instruments and other documentation required under this section.

(c) *Compensation planning framework for in-lieu fee programs.* (1) The approved instrument for an in-lieu fee program must include a compensation planning framework that will be used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities. The compensation planning framework must support a watershed approach to compensatory mitigation. All specific projects used to provide compensation for DA permits must be consistent with the approved compensation planning framework. Modifications to the framework must be approved as a significant modification to the instrument by the district engineer, after consultation with the IRT.

(2) The compensation planning framework must contain the following elements:

(i) The geographic service area(s), including a watershed-based rationale for the delineation of each service area;

(ii) A description of the threats to aquatic resources in the service area(s), including how the in-lieu fee program will help offset impacts resulting from those threats;

(iii) An analysis of historic aquatic resource loss in the service area(s);

(iv) An analysis of current aquatic resource conditions in the service area(s), supported by an appropriate level of field documentation;

(v) A statement of aquatic resource goals and objectives for each service area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide;

(vi) A prioritization strategy for selecting and implementing compensatory mitigation activities;

(vii) An explanation of how any preservation objectives identified in paragraph (c)(2)(v) of this section and addressed in the prioritization strategy in paragraph (c)(2)(vi) satisfy the criteria for use of preservation in § 230.93(h);

(viii) A description of any public and private stakeholder involvement in plan development and implementation, including, where appropriate, coordination with federal, state, tribal and local aquatic resource management and regulatory authorities;

(ix) A description of the long-term protection and management strategies for activities conducted by the in-lieu fee program sponsor;

(x) A strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives in paragraph (c)(2)(v) of this section, including a process for revising the planning framework as necessary; and

(xi) Any other information deemed necessary for effective compensation planning by the district engineer.

(3) The level of detail necessary for the compensation planning framework is at the discretion of the district engineer, and will take into account the characteristics of the service area(s) and the scope of the program. As part of the in-lieu fee program instrument, the compensation planning framework will be reviewed by the IRT, and will be a major factor in the district engineer's decision on whether to approve the instrument.

(d) *Review process.* (1) The sponsor is responsible for preparing all documentation associated with establishment of the mitigation bank or in-lieu fee program, including the prospectus, instrument, and other appropriate documents, such as mitigation plans for a mitigation bank. The prospectus provides an overview of the proposed mitigation bank or in-lieu fee program and serves as the basis for public and initial IRT comment. For a mitigation bank, the mitigation plan, as described in § 230.94(c), provides detailed plans and specifications for the mitigation bank site. For in-lieu fee programs, mitigation plans will be prepared as in-lieu fee project sites are identified after the instrument has been approved and the in-lieu fee program becomes operational. The instrument provides the authorization for the mitigation bank or in-lieu fee program to provide credits to be used as compensatory mitigation for DA permits.

(2) *Prospectus.* The prospectus must provide a summary of the information regarding the proposed mitigation bank or in-lieu fee program, at a sufficient level of detail to support informed public and IRT comment. The review process begins when the sponsor submits a complete prospectus to the district engineer. For modifications of approved instruments, submittal of a new prospectus is not required; instead, the sponsor must submit a written request for an instrument modification accompanied by appropriate documentation. The district engineer must notify the sponsor within 30 days whether or not a submitted prospectus is complete. A complete prospectus includes the following information:

(i) The objectives of the proposed mitigation bank or in-lieu fee program.

(ii) How the mitigation bank or in-lieu fee program will be established and operated.

(iii) The proposed service area.

(iv) The general need for and technical feasibility of the proposed mitigation bank or in-lieu fee program.

(v) The proposed ownership arrangements and long-term management strategy for the mitigation bank or in-lieu fee project sites.

(vi) The qualifications of the sponsor to successfully complete the type(s) of mitigation project(s) proposed, including information describing any past such activities by the sponsor.

(vii) For a proposed mitigation bank, the prospectus must also address:

(A) The ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the bank site and how that site will support the planned types of aquatic resources and functions; and

(B) Assurance of sufficient water rights to support the long-term sustainability of the mitigation bank.

(viii) For a proposed in-lieu fee program, the prospectus must also include:

(A) The compensation planning framework (see paragraph (c) of this section); and

(B) A description of the in-lieu fee program account required by paragraph (i) of this section.

(3) *Preliminary review of prospectus.* Prior to submitting a prospectus, the sponsor may elect to submit a draft prospectus to the district engineer for comment and consultation. The district engineer will provide copies of the draft prospectus to the IRT and will provide comments back to the sponsor within 30 days. Any comments from IRT members will also be forwarded to the sponsor. This preliminary review is optional but is strongly recommended. It is intended to identify potential issues early so that the sponsor may attempt to address those issues prior to the start of the formal review process.

(4) *Public review and comment.* Within 30 days of receipt of a complete prospectus or an instrument modification request that will be processed in accordance with paragraph (g)(1) of this section, the district engineer will provide public notice of the proposed mitigation bank or in-lieu fee program, in accordance with the public notice procedures at 33 CFR 325.3. The public notice must, at a minimum, include a summary of the prospectus and indicate that the full prospectus is available to the public for review upon request. For modifications of approved instruments, the public

notice must instead summarize, and make available to the public upon request, whatever documentation is appropriate for the modification (e.g., a new or revised mitigation plan). The comment period for public notice will be 30 days, unless the district engineer determines that a longer comment period is appropriate. The district engineer will notify the sponsor if the comment period is extended beyond 30 days, including an explanation of why the longer comment period is necessary. Copies of all comments received in response to the public notice must be distributed to the other IRT members and to the sponsor within 15 days of the close of the public comment period. The district engineer and IRT members may also provide comments to the sponsor at this time, and copies of any such comments will also be distributed to all IRT members. If the construction of a mitigation bank or an in-lieu fee program project requires a DA permit, the public notice requirement may be satisfied through the public notice provisions of the permit processing procedures, provided all of the relevant information is provided.

(5) *Initial evaluation.* (i) After the end of the comment period, the district engineer will review the comments received in response to the public notice, and make a written initial evaluation as to the potential of the proposed mitigation bank or in-lieu fee program to provide compensatory mitigation for activities authorized by DA permits. This initial evaluation letter must be provided to the sponsor within 30 days of the end of the public notice comment period.

(ii) If the district engineer determines that the proposed mitigation bank or in-lieu fee program has potential for providing appropriate compensatory mitigation for activities authorized by DA permits, the initial evaluation letter will inform the sponsor that he/she may proceed with preparation of the draft instrument (see paragraph (d)(6) of this section).

(iii) If the district engineer determines that the proposed mitigation bank or in-lieu fee program does not have potential for providing appropriate compensatory mitigation for DA permits, the initial evaluation letter must discuss the reasons for that determination. The sponsor may revise the prospectus to address the district engineer's concerns, and submit the revised prospectus to the district engineer. If the sponsor submits a revised prospectus, a revised public notice will be issued in accordance with paragraph (d)(4) of this section.

(iv) This initial evaluation procedure does not apply to proposed modifications of approved instruments.

(6) *Draft instrument.* (i) After considering comments from the district engineer, the IRT, and the public, if the sponsor chooses to proceed with establishment of the mitigation bank or in-lieu fee program, he must prepare a draft instrument and submit it to the district engineer. In the case of an instrument modification, the sponsor must prepare a draft amendment (e.g., a specific instrument provision, a new or modified mitigation plan), and submit it to the district engineer. The district engineer must notify the sponsor within 30 days of receipt, whether the draft instrument or amendment is complete. If the draft instrument or amendment is incomplete, the district engineer will request from the sponsor the information necessary to make the draft instrument or amendment complete. Once any additional information is submitted, the district engineer must notify the sponsor as soon as he determines that the draft instrument or amendment is complete. The draft instrument must be based on the prospectus and must describe in detail the physical and legal characteristics of the mitigation bank or in-lieu fee program and how it will be established and operated.

(ii) For mitigation banks and in-lieu fee programs, the draft instrument must include the following information:

(A) A description of the proposed geographic service area of the mitigation bank or in-lieu fee program. The service area is the watershed, ecoregion, physiographic province, and/or other geographic area within which the mitigation bank or in-lieu fee program is authorized to provide compensatory mitigation required by DA permits. The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. For example, in urban areas, a U.S. Geological Survey 8-digit hydrologic unit code (HUC) watershed or a smaller watershed may be an appropriate service area. In rural areas, several contiguous 8-digit HUCs or a 6-digit HUC watershed may be an appropriate service area. Delineation of the service area must also consider any locally-developed standards and criteria that may be applicable. The economic viability of the mitigation bank or in-lieu fee program may also be considered in determining the size of the service area. The basis for the proposed service area must be documented in the instrument. An in-lieu fee program or umbrella mitigation banking instrument

may have multiple service areas governed by its instrument (e.g., each watershed within a State or Corps district may be a separate service area under the instrument); however, all impacts and compensatory mitigation must be accounted for by service area;

(B) Accounting procedures;

(C) A provision stating that legal responsibility for providing the compensatory mitigation lies with the sponsor once a permittee secures credits from the sponsor;

(D) Default and closure provisions;

(E) Reporting protocols; and

(F) Any other information deemed necessary by the district engineer.

(iii) For a mitigation bank, a complete draft instrument must include the following additional information:

(A) Mitigation plans that include all applicable items listed in § 230.94(c)(2) through (14); and

(B) A credit release schedule, which is tied to achievement of specific milestones. All credit releases must be approved by the district engineer, in consultation with the IRT, based on a determination that required milestones have been achieved. The district engineer, in consultation with the IRT, may modify the credit release schedule, including reducing the number of available credits or suspending credit sales or transfers altogether, where necessary to ensure that all credits sales or transfers remain tied to compensatory mitigation projects with a high likelihood of meeting performance standards;

(iv) For an in-lieu fee program, a complete draft instrument must include the following additional information:

(A) The compensation planning framework (see paragraph (c) of this section);

(B) Specification of the initial allocation of advance credits (see paragraph (n) of this section) and a draft fee schedule for these credits, by service area, including an explanation of the basis for the allocation and draft fee schedule;

(C) A methodology for determining future project-specific credits and fees; and

(D) A description of the in-lieu fee program account required by paragraph (i) of this section.

(7) *IRT review.* Upon receipt of notification by the district engineer that the draft instrument or amendment is complete, the sponsor must provide the district engineer with a sufficient number of copies of the draft instrument or amendment to distribute to the IRT members. The district engineer will promptly distribute copies of the draft instrument or amendment to the IRT

members for a 30 day comment period. The 30-day comment period begins 5 days after the district engineer distributes the copies of the draft instrument or amendment to the IRT. Following the comment period, the district engineer will discuss any comments with the appropriate agencies and with the sponsor. The district engineer will seek to resolve issues using a consensus based approach, to the extent practicable, while still meeting the decision-making time frames specified in this section. Within 90 days of receipt of the complete draft instrument or amendment by the IRT members, the district engineer must notify the sponsor of the status of the IRT review. Specifically, the district engineer must indicate to the sponsor if the draft instrument or amendment is generally acceptable and what changes, if any, are needed. If there are significant unresolved concerns that may lead to a formal objection from one or more IRT members to the final instrument or amendment, the district engineer will indicate the nature of those concerns.

(8) *Final instrument.* The sponsor must submit a final instrument to the district engineer for approval, with supporting documentation that explains how the final instrument addresses the comments provided by the IRT. For modifications of approved instruments, the sponsor must submit a final amendment to the district engineer for approval, with supporting documentation that explains how the final amendment addresses the comments provided by the IRT. The final instrument or amendment must be provided directly by the sponsor to all members of the IRT. Within 30 days of receipt of the final instrument or amendment, the district engineer will notify the IRT members whether or not he intends to approve the instrument or amendment. If no IRT member objects, by initiating the dispute resolution process in paragraph (e) of this section within 45 days of receipt of the final instrument or amendment, the district engineer will notify the sponsor of his final decision and, if the instrument or amendment is approved, arrange for it to be signed by the appropriate parties. If any IRT member initiates the dispute resolution process, the district engineer will notify the sponsor. Following conclusion of the dispute resolution process, the district engineer will notify the sponsor of his final decision, and if the instrument or amendment is approved, arrange for it to be signed by the appropriate parties. For mitigation banks, the final instrument must contain

the information items listed in paragraphs (d)(6)(ii), and (iii) of this section. For in-lieu fee programs, the final instrument must contain the information items listed in paragraphs (d)(6)(ii) and (iv) of this section. For the modification of an approved instrument, the amendment must contain appropriate information, as determined by the district engineer. The final instrument or amendment must be made available to the public upon request.

(e) *Dispute resolution process.* (1) Within 15 days of receipt of the district engineer's notification of intent to approve an instrument or amendment, the Regional Administrator of the U.S. EPA, the Regional Director of the U.S. Fish and Wildlife Service, the Regional Director of the National Marine Fisheries Service, and/or other senior officials of agencies represented on the IRT may notify the district engineer and other IRT members by letter if they object to the approval of the proposed final instrument or amendment. This letter must include an explanation of the basis for the objection and, where feasible, offer recommendations for resolving the objections. If the district engineer does not receive any objections within this time period, he may proceed to final action on the instrument or amendment.

(2) The district engineer must respond to the objection within 30 days of receipt of the letter. The district engineer's response may indicate an intent to disapprove the instrument or amendment as a result of the objection, an intent to approve the instrument or amendment despite the objection, or may provide a modified instrument or amendment that attempts to address the objection. The district engineer's response must be provided to all IRT members.

(3) Within 15 days of receipt of the district engineer's response, if the Regional Administrator or Regional Director is not satisfied with the response he may forward the issue to the Assistant Administrator for Water of the U.S. EPA, the Assistant Secretary for Fish and Wildlife and Parks of the U.S. FWS, or the Undersecretary for Oceans and Atmosphere of NOAA, as appropriate, for review and must notify the district engineer by letter via electronic mail or facsimile machine (with copies to all IRT members) that the issue has been forwarded for Headquarters review. This step is available only to the IRT members representing these three federal agencies, however, other IRT members who do not agree with the district engineer's final decision do not have to sign the instrument or amendment or

recognize the mitigation bank or in-lieu fee program for purposes of their own programs and authorities. If an IRT member other than the one filing the original objection has a new objection based on the district engineer's response, he may use the first step in this procedure (paragraph (e)(1) of this section) to provide that objection to the district engineer.

(4) If the issue has not been forwarded to the objecting agency's Headquarters, then the district engineer may proceed with final action on the instrument or amendment. If the issue has been forwarded to the objecting agency's Headquarters, the district engineer must hold in abeyance the final action on the instrument or amendment, pending Headquarters level review described below.

(5) Within 20 days from the date of the letter requesting Headquarters level review, the Assistant Administrator for Water, the Assistant Secretary for Fish and Wildlife and Parks, or the Undersecretary for Oceans and Atmosphere must either notify the Assistant Secretary of the Army (Civil Works) (ASA(CW)) that further review will not be requested, or request that the ASA(CW) review the final instrument or amendment.

(6) Within 30 days of receipt of the letter from the objecting agency's Headquarters request for ASA(CW)'s review of the final instrument, the ASA(CW), through the Director of Civil Works, must review the draft instrument or amendment and advise the district engineer on how to proceed with final action on that instrument or amendment. The ASA(CW) must immediately notify the Assistant Administrator for Water, the Assistant Secretary for Fish and Wildlife and Parks, and/or the Undersecretary for Oceans and Atmosphere of the final decision.

(7) In cases where the dispute resolution procedure is used, the district engineer must notify the sponsor of his final decision within 150 days of receipt of the final instrument or amendment.

(f) *Extension of deadlines.* (1) The deadlines in paragraphs (d) and (e) of this section may be extended by the district engineer at his sole discretion in cases where:

(i) Compliance with other applicable laws, such as consultation under section 7 of the Endangered Species Act or section 106 of the National Historic Preservation Act, is required;

(ii) It is necessary to conduct government-to-government consultation with Indian tribes;

(iii) Timely submittal of information necessary for the review of the proposed

mitigation bank or in-lieu fee program or the proposed modification of an approved instrument is not accomplished by the sponsor; or

(iv) Information that is essential to the district engineer's decision cannot be reasonably obtained within the specified time frame.

(2) In such cases, the district engineer must promptly notify the sponsor in writing of the extension and the reason for it. Such extensions shall be for the minimum time necessary to resolve the issue necessitating the extension.

(g) *Modification of instruments.* (1) *Approval of an amendment to an approved instrument.* Modification of an approved instrument, including the addition and approval of umbrella mitigation bank sites or in-lieu fee project sites or expansions of previously approved mitigation bank or in-lieu fee project sites, must follow the appropriate procedures in paragraph (d) of this section, unless the district engineer determines that the streamlined review process described in paragraph (g)(2) of this section is warranted.

(2) *Streamlined review process.* The streamlined modification review process may be used for the following modifications of instruments: changes reflecting adaptive management of the mitigation bank or in-lieu fee program, credit releases, changes in credit releases and credit release schedules, and changes that the district engineer determines are not significant. If the district engineer determines that the streamlined review process is warranted, he must notify the IRT members and the sponsor of this determination and provide them with copies of the proposed modification. IRT members and the sponsor have 30 days to notify the district engineer if they have concerns with the proposed modification. If IRT members or the sponsor notify the district engineer of such concerns, the district engineer shall attempt to resolve those concerns. Within 60 days of providing the proposed modification to the IRT, the district engineer must notify the IRT members of his intent to approve or disapprove the proposed modification. If no IRT member objects, by initiating the dispute resolution process in paragraph (e) of this section, within 15 days of receipt of this notification, the district engineer will notify the sponsor of his final decision and, if the modification is approved, arrange for it to be signed by the appropriate parties. If any IRT member initiates the dispute resolution process, the district engineer will so notify the sponsor. Following conclusion of the dispute resolution

process, the district engineer will notify the sponsor of his final decision, and if the modification is approved, arrange for it to be signed by the appropriate parties.

(h) *Umbrella mitigation banking instruments.* A single mitigation banking instrument may provide for future authorization of additional mitigation bank sites. As additional sites are selected, they must be included in the mitigation banking instrument as modifications, using the procedures in paragraph (g)(1) of this section. Credit withdrawal from the additional bank sites shall be consistent with paragraph (m) of this section.

(i) *In-lieu fee program account.* (1) The in-lieu fee program sponsor must establish a program account after the instrument is approved by the district engineer, prior to accepting any fees from permittees. If the sponsor accepts funds from entities other than permittees, those funds must be kept in separate accounts. The program account must be established at a financial institution that is a member of the Federal Deposit Insurance Corporation. All interests and earnings accruing to the program account must remain in that account for use by the in-lieu fee program for the purposes of providing compensatory mitigation for DA permits. The program account may only be used for the selection, design, acquisition, implementation, and management of in-lieu fee compensatory mitigation projects, except for a small percentage (as determined by the district engineer in consultation with the IRT and specified in the instrument) that can be used for administrative costs.

(2) The sponsor must submit proposed in-lieu fee projects to the district engineer for funding approval. Disbursements from the program account may only be made upon receipt of written authorization from the district engineer, after the district engineer has consulted with the IRT. The terms of the program account must specify that the district engineer has the authority to direct those funds to alternative compensatory mitigation projects in cases where the sponsor does not provide compensatory mitigation in accordance with the time frame specified in paragraph (n)(4) of this section.

(3) The sponsor must provide annual reports to the district engineer and the IRT. The annual reports must include the following information:

(i) All income received, disbursements, and interest earned by the program account;

(ii) A list of all permits for which in-lieu fee program funds were accepted. This list shall include: the Corps permit number (or the state permit number if there is no corresponding Corps permit number, in cases of state programmatic general permits or other regional general permits), the service area in which the authorized impacts are located, the amount of authorized impacts, the amount of required compensatory mitigation, the amount paid to the in-lieu fee program, and the date the funds were received from the permittee;

(iii) A description of in-lieu fee program expenditures from the account, such as the costs of land acquisition, planning, construction, monitoring, maintenance, contingencies, adaptive management, and administration;

(iv) The balance of advance credits and released credits at the end of the report period for each service area; and

(v) Any other information required by the district engineer.

(4) The district engineer may audit the records pertaining to the program account. All books, accounts, reports, files, and other records relating to the in-lieu fee program account shall be available at reasonable times for inspection and audit by the district engineer.

(j) *In-lieu fee project approval.* (1) As in-lieu fee project sites are identified and secured, the sponsor must submit mitigation plans to the district engineer that include all applicable items listed in § 230.94(c)(2) through (14). The mitigation plan must also include a credit release schedule consistent with paragraph (o)(8) of this section that is tied to achievement of specific performance standards. The review and approval of in-lieu fee projects will be conducted in accordance with the procedures in paragraph (g)(1) of this section, as modifications of the in-lieu fee program instrument. This includes compensatory mitigation projects conducted by another party on behalf of the sponsor through requests for proposals and awarding of contracts.

(2) If a DA permit is required for an in-lieu fee project, the permit should not be issued until all relevant provisions of the mitigation plan have been substantively determined, to ensure that the DA permit accurately reflects all relevant provisions of the approved mitigation plan, such as performance standards.

(k) *Coordination of mitigation banking instruments and DA permit issuance.* In cases where initial establishment of the mitigation bank, or the development of a new project site under an umbrella banking instrument, involves activities requiring DA

authorization, the permit should not be issued until all relevant provisions of the mitigation plan have been substantively determined. This is to ensure that the DA permit accurately reflects all relevant provisions of the final instrument, such as performance standards.

(l) *Project implementation.* (1) The sponsor must have an approved instrument prior to collecting funds from permittees to satisfy compensatory mitigation requirements for DA permits.

(2) Authorization to sell credits to satisfy compensatory mitigation requirements in DA permits is contingent on compliance with all of the terms of the instrument. This includes constructing a mitigation bank or in-lieu fee project in accordance with the mitigation plan approved by the district engineer and incorporated by reference in the instrument. If the aquatic resource restoration, establishment, enhancement, and/or preservation activities cannot be implemented in accordance with the approved mitigation plan, the district engineer must consult with the sponsor and the IRT to consider modifications to the instrument, including adaptive management, revisions to the credit release schedule, and alternatives for providing compensatory mitigation to satisfy any credits that have already been sold.

(3) An in-lieu fee program sponsor is responsible for the implementation, long-term management, and any required remediation of the restoration, establishment, enhancement, and/or preservation activities, even though those activities may be conducted by other parties through requests for proposals or other contracting mechanisms.

(m) *Credit withdrawal from mitigation banks.* The mitigation banking instrument may allow for an initial debiting of a percentage of the total credits projected at mitigation bank maturity, provided the following conditions are satisfied: the mitigation banking instrument and mitigation plan have been approved, the mitigation bank site has been secured, appropriate financial assurances have been established, and any other requirements determined to be necessary by the district engineer have been fulfilled. The mitigation banking instrument must provide a schedule for additional credit releases as appropriate milestones are achieved (see paragraph (o)(8) of this section). Implementation of the approved mitigation plan shall be initiated no later than the first full growing season after the date of the first credit transaction.

(n) *Advance credits for in-lieu fee programs.* (1) The in-lieu fee program instrument may make a limited number of advance credits available to permittees when the instrument is approved. The number of advance credits will be determined by the district engineer, in consultation with the IRT, and will be specified for each service area in the instrument. The number of advance credits will be based on the following considerations:

(i) The compensation planning framework;

(ii) The sponsor's past performance for implementing aquatic resource restoration, establishment, enhancement, and/or preservation activities in the proposed service area or other areas; and

(iii) The projected financing necessary to begin planning and implementation of in-lieu fee projects.

(2) To determine the appropriate number of advance credits for a particular service area, the district engineer may require the sponsor to provide confidential supporting information that will not be made available to the general public. Examples of confidential supporting information may include prospective in-lieu fee project sites.

(3) As released credits are produced by in-lieu fee projects, they must be used to fulfill any advance credits that have already been provided within the project service area before any remaining released credits can be sold or transferred to permittees. Once previously provided advance credits have been fulfilled, an equal number of advance credits is re-allocated to the sponsor for sale or transfer to fulfill new mitigation requirements, consistent with the terms of the instrument. The number of advance credits available to the sponsor at any given time to sell or transfer to permittees in a given service area is equal to the number of advance credits specified in the instrument, minus any that have already been provided but not yet fulfilled.

(4) Land acquisition and initial physical and biological improvements must be completed by the third full growing season after the first advance credit in that service area is secured by a permittee, unless the district engineer determines that more or less time is needed to plan and implement an in-lieu fee project. If the district engineer determines that there is a compensatory mitigation deficit in a specific service area by the third growing season after the first advance credit in that service area is sold, and determines that it would not be in the public interest to allow the sponsor additional time to

plan and implement an in-lieu fee project, the district engineer must direct the sponsor to disburse funds from the in-lieu fee program account to provide alternative compensatory mitigation to fulfill those compensation obligations.

(5) The sponsor is responsible for complying with the terms of the in-lieu fee program instrument. If the district engineer determines, as a result of review of annual reports on the operation of the in-lieu fee program (see paragraphs (p)(2) and (q)(1) of this section), that it is not performing in compliance with its instrument, the district engineer will take appropriate action, which may include suspension of credit sales, to ensure compliance with the in-lieu fee program instrument (see paragraph (o)(10) of this section). Permittees that secured credits from the in-lieu fee program are not responsible for in-lieu fee program compliance.

(o) *Determining credits.* (1) *Units of measure.* The principal units for credits and debits are acres, linear feet, functional assessment units, or other suitable metrics of particular resource types. Functional assessment units or other suitable metrics may be linked to acres or linear feet.

(2) *Assessment.* Where practicable, an appropriate assessment method (e.g., hydrogeomorphic approach to wetlands functional assessment, index of biological integrity) or other suitable metric must be used to assess and describe the aquatic resource types that will be restored, established, enhanced and/or preserved by the mitigation bank or in-lieu fee project.

(3) *Credit production.* The number of credits must reflect the difference between pre- and post-compensatory mitigation project site conditions, as determined by a functional or condition assessment or other suitable metric.

(4) *Credit value.* Once a credit is debited (sold or transferred to a permittee), its value cannot change.

(5) *Credit costs.* (i) The cost of compensatory mitigation credits provided by a mitigation bank or in-lieu fee program is determined by the sponsor.

(ii) For in-lieu fee programs, the cost per unit of credit must include the expected costs associated with the restoration, establishment, enhancement, and/or preservation of aquatic resources in that service area. These costs must be based on full cost accounting, and include, as appropriate, expenses such as land acquisition, project planning and design, construction, plant materials, labor, legal fees, monitoring, and remediation or adaptive management activities, as well as administration of the in-lieu fee

program. The cost per unit credit must also take into account contingency costs appropriate to the stage of project planning, including uncertainties in construction and real estate expenses. The cost per unit of credit must also take into account the resources necessary for the long-term management and protection of the in-lieu fee project. In addition, the cost per unit credit must include financial assurances that are necessary to ensure successful completion of in-lieu fee projects.

(6) *Credits provided by preservation.* These credits should be specified as acres, linear feet, or other suitable metrics of preservation of a particular resource type. In determining the compensatory mitigation requirements for DA permits using mitigation banks or in-lieu fee programs, the district engineer should apply a higher mitigation ratio if the requirements are to be met through the use of preservation credits. In determining this higher ratio, the district engineer must consider the relative importance of both the impacted and the preserved aquatic resources in sustaining watershed functions.

(7) *Credits provided by riparian areas, buffers, and uplands.* These credits should be specified as acres, linear feet, or other suitable metrics of riparian area, buffer, and uplands respectively. Non-aquatic resources can only be used as compensatory mitigation for impacts to aquatic resources authorized by DA permits when those resources are essential to maintaining the ecological viability of adjoining aquatic resources. In determining the compensatory mitigation requirements for DA permits using mitigation banks and in-lieu fee programs, the district engineer may authorize the use of riparian area, buffer, and/or upland credits if he determines that these areas are essential to sustaining aquatic resource functions in the watershed and are the most appropriate compensation for the authorized impacts.

(8) *Credit release schedule.* (i) *General considerations.* Release of credits must be tied to performance based milestones (e.g., construction, planting, establishment of specified plant and animal communities). The credit release schedule should reserve a significant share of the total credits for release only after full achievement of ecological performance standards. When determining the credit release schedule, factors to be considered may include, but are not limited to: The method of providing compensatory mitigation credits (e.g., restoration), the likelihood of success, the nature and amount of work needed to generate the credits, and

the aquatic resource type(s) and function(s) to be provided by the mitigation bank or in-lieu fee project. The district engineer will determine the credit release schedule, including the share to be released only after full achievement of performance standards, after consulting with the IRT. Once released, credits may only be used to satisfy compensatory mitigation requirements of a DA permit if the use of credits for a specific permit has been approved by the district engineer.

(ii) For single-site mitigation banks, the terms of the credit release schedule must be specified in the mitigation banking instrument. The credit release schedule may provide for an initial debiting of a limited number of credits once the instrument is approved and other appropriate milestones are achieved (see paragraph (m) of this section).

(iii) For in-lieu fee projects and umbrella mitigation bank sites, the terms of the credit release schedule must be specified in the approved mitigation plan. When an in-lieu fee project or umbrella mitigation bank site is implemented and is achieving the performance-based milestones specified in the credit release schedule, credits are generated in accordance with the credit release schedule for the approved mitigation plan. If the in-lieu fee project or umbrella mitigation bank site does not achieve those performance-based milestones, the district engineer may modify the credit release schedule, including reducing the number of credits.

(9) *Credit release approval.* Credit releases for mitigation banks and in-lieu fee projects must be approved by the district engineer. In order for credits to be released, the sponsor must submit documentation to the district engineer demonstrating that the appropriate milestones for credit release have been achieved and requesting the release. The district engineer will provide copies of this documentation to the IRT members for review. IRT members must provide any comments to the district engineer within 15 days of receiving this documentation. However, if the district engineer determines that a site visit is necessary, IRT members must provide any comments to the district engineer within 15 days of the site visit. The district engineer must schedule the site visit so that it occurs as soon as it is practicable, but the site visit may be delayed by seasonal considerations that affect the ability of the district engineer and the IRT to assess whether the applicable credit release milestones have been achieved. After full consideration of any comments

received, the district engineer will determine whether the milestones have been achieved and the credits can be released. The district engineer shall make a decision within 30 days of the end of that comment period, and notify the sponsor and the IRT.

(10) *Suspension and termination.* If the district engineer determines that the mitigation bank or in-lieu fee program is not meeting performance standards or complying with the terms of the instrument, appropriate action will be taken. Such actions may include, but are not limited to, suspending credit sales, adaptive management, decreasing available credits, utilizing financial assurances, and terminating the instrument.

(p) *Accounting procedures.* (1) For mitigation banks, the instrument must contain a provision requiring the sponsor to establish and maintain a ledger to account for all credit transactions. Each time an approved credit transaction occurs, the sponsor must notify the district engineer.

(2) For in-lieu fee programs, the instrument must contain a provision requiring the sponsor to establish and maintain an annual report ledger in accordance with paragraph (i)(3) of this section, as well as individual ledgers that track the production of released credits for each in-lieu fee project.

(q) *Reporting.* (1) *Ledger account.* The sponsor must compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended). The ledger report must be submitted to the district engineer, who will distribute copies to the IRT members. The ledger report is part of the administrative record for the mitigation bank or in-lieu fee program. The district engineer will make the ledger report available to the public upon request.

(2) *Monitoring reports.* The sponsor is responsible for monitoring the mitigation bank site or the in-lieu fee project site in accordance with the approved monitoring requirements to determine the level of success and identify problems requiring remedial action or adaptive management measures. Monitoring must be conducted in accordance with the requirements in § 230.96, and at time intervals appropriate for the particular project type and until such time that the district engineer, in consultation with the IRT, has determined that the performance standards have been attained. The instrument must include

requirements for periodic monitoring reports to be submitted to the district engineer, who will provide copies to other IRT members.

(3) *Financial assurance and long-term management funding report.* The district engineer may require the sponsor to provide an annual report showing beginning and ending balances, including deposits into and any withdrawals from, the accounts providing funds for financial assurances and long-term management activities. The report should also include information on the amount of required financial assurances and the status of those assurances, including their potential expiration.

(r) *Use of credits.* Except as provided below, all activities authorized by DA permits are eligible, at the discretion of the district engineer, to use mitigation banks or in-lieu fee programs to fulfill compensatory mitigation requirements for DA permits. The district engineer will determine the number and type(s) of credits required to compensate for the authorized impacts. Permit applicants may propose to use a particular mitigation bank or in-lieu fee program to provide the required compensatory mitigation. In such cases, the sponsor must provide the permit applicant with a statement of credit availability. The district engineer must review the permit applicant's compensatory mitigation proposal, and notify the applicant of his determination regarding the acceptability of using that mitigation bank or in-lieu fee program.

(s) *IRT concerns with use of credits.* If, in the view of a member of the IRT, an issued permit or series of issued permits raises concerns about how credits from a particular mitigation bank or in-lieu fee program are being used to satisfy compensatory mitigation requirements (including concerns about whether credit use is consistent with the terms of the instrument), the IRT member may notify the district engineer in writing of the concern. The district engineer shall promptly consult with the IRT to address the concern. Resolution of the concern is at the discretion of the district engineer, consistent with applicable statutes, regulations, and policies regarding compensatory mitigation requirements for DA permits. Nothing in this section limits the authorities designated to IRT agencies under existing statutes or regulations.

(t) *Site protection.* (1) For mitigation bank sites, real estate instruments, management plans, or other long-term mechanisms used for site protection must be finalized before any credits can be released.

(2) For in-lieu fee project sites, real estate instruments, management plans, or other long-term protection mechanisms used for site protection must be finalized before advance credits can become released credits.

(u) *Long-term management.* (1) The legal mechanisms and the party responsible for the long-term management and the protection of the mitigation bank site must be documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation plans. The responsible party should make adequate provisions for the operation, maintenance, and long-term management of the compensatory mitigation project site. The long-term management plan should include a description of long-term management needs and identify the funding mechanism that will be used to meet those needs.

(2) The instrument may contain provisions for the sponsor to transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager.

(3) The instrument or approved mitigation plan must address the financial arrangements and timing of any necessary transfer of long-term management funds to the steward.

(4) Where needed, the acquisition and protection of water rights should be secured and documented in the instrument or, in the case of umbrella mitigation banking instruments and in-lieu fee programs, the approved mitigation site plan.

(v) *Grandfathering of existing instruments.* (1) *Mitigation banking instruments.* All mitigation banking instruments approved on or after July 9, 2008 must meet the requirements of this part. Mitigation banks approved prior to July 9, 2008 may continue to operate under the terms of their existing instruments. However, any modification to such a mitigation banking instrument on or after July 9, 2008, including authorization of additional sites under an umbrella mitigation banking instrument, expansion of an existing site, or addition of a different type of resource credits (e.g., stream credits to a wetland bank) must be consistent with the terms of this part.

(2) *In-lieu fee program instruments.* All in-lieu fee program instruments

approved on or after July 9, 2008 must meet the requirements of this part. In-lieu fee programs operating under instruments approved prior to July 9, 2008 may continue to operate under those instruments for two years after the effective date of this rule, after which time they must meet the requirements of this part, unless the district engineer determines that circumstances warrant an extension of up to three additional years. The district engineer must consult with the IRT before approving such extensions. Any revisions made to the in-lieu-fee program instrument on or after July 9, 2008 must be consistent with the terms of this part. Any approved project for which construction was completed under the terms of a previously approved instrument may continue to operate indefinitely under those terms if the district engineer determines that the project is providing appropriate mitigation substantially consistent with the terms of this part.

Dated: March 28, 2008.

Stephen L. Johnson,

Administrator, U.S. Environmental Protection Agency.

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US Army Corps
of Engineers®

REGULATORY GUIDANCE LETTER

No. 02-2

Date: December 24, 2002

SUBJECT: Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899

1. Purpose and Applicability:

a. Purpose: Under existing law the Corps requires compensatory mitigation to replace aquatic resource functions unavoidably lost or adversely affected by authorized activities. This Regulatory Guidance Letter (RGL) clarifies and supports the national policy for “no overall net loss” of wetlands and reinforces the Corps commitment to protect waters of the United States, including wetlands. Permittees must provide appropriate and practicable mitigation for authorized impacts to aquatic resources in accordance with the laws and regulations. Relevant laws, regulations, and guidance are listed in Appendix A. This guidance does not modify existing mitigation policies, regulations, or guidance. However, it does supercede RGL 01-1 that was issued October 31, 2001. Districts will consider the requirements of other Federal programs when implementing this guidance.

b. Applicability: This guidance applies to all compensatory mitigation proposals associated with permit applications submitted for approval after this date.

2. General Considerations: Districts will use watershed and ecosystem approaches when determining compensatory mitigation requirements, consider the resource needs of the watersheds where impacts will occur, and also consider the resource needs of neighboring watersheds. When evaluating compensatory mitigation plans, Districts should consider the operational guidelines developed by the National Research Council (2001) for creating or restoring ecologically self-sustaining wetlands. These operational guidelines, which are in Appendix B, will be provided to applicants who must implement compensatory mitigation projects.

a. Watershed Approach: A watershed-based approach to aquatic resource protection considers entire systems and their constituent parts. Districts will recognize the authorities of, and rely on the expertise of, tribal, state, local, and other Federal resource management programs. During the permit evaluation process, Districts will coordinate with these entities and take into account zoning regulations, regional council and metropolitan planning organization initiatives, special area management planning initiatives, and other factors of local public interest. Watersheds will be identified, for accounting purposes, using the U.S. Geologic Survey’s Hydrologic Unit Codes. Finally, applicants will be encouraged to provide compensatory mitigation projects that

include a mix of habitats such as open water, wetlands, and adjacent uplands. When viewed from a watershed perspective, such projects often provide a greater variety of functions.

b. Consistency and Compatibility. Districts will coordinate proposed mitigation plans with tribes, states, local governments, and other Federal agencies consistent with existing laws, regulation, and policy guidance to ensure that applicants' mitigation plans are consistent with watershed needs and compatible with adjacent land uses. Districts will evaluate applicants' mitigation proposals giving full consideration to comments and recommendations from tribes, states, local governments, and other Federal agencies. Districts may coordinate on a case-by-case basis during the application evaluation process, or on programmatic basis to promote consistent and timely decision making.

c. Impacts and Compensation: Army regulations require appropriate and practicable compensatory mitigation to replace functional losses to aquatic resources, including wetlands. Districts will determine what level of mitigation is "appropriate" based upon the functions lost or adversely affected as a result of impacts to aquatic resources. When determining "practicability," Districts will consider the availability of suitable locations, constructibility, overall costs, technical requirements, and logistics. There may be instances where permit decisions do not meet the "no overall net loss of wetlands" goal because compensatory mitigation would be impracticable, or would only achieve inconsequential reductions in impacts. Consequently, the "no overall net loss of wetlands goal" may not be achieved for each and every permit action, although all Districts will strive to achieve this goal on a cumulative basis, and the Corps will achieve the goal programmatically.

d. Measuring Impacts and Compensatory Mitigation. The Corps has traditionally used acres as the standard measure for determining impacts and required mitigation for wetlands and other aquatic resources, primarily because useful functional assessment methods were not available. However, Districts are encouraged to increase their reliance on functional assessment methods. Districts will determine, on a case-by-case basis, whether to use a functional assessment or acreage surrogates for determining mitigation and for describing authorized impacts. Districts will use the same approach to determine losses (debits) and gains (credits) in terms of amounts, types, and location(s) for describing both impacts and compensatory mitigation.

1. Functional Assessment: The objective is to offset environmental losses resulting from authorized activities. The ecological characteristics of aquatic sites are unique. Therefore, when possible, Districts should use a functional assessment by qualified professionals to determine impacts and compensatory mitigation requirements. Districts should determine functional scores using aquatic site assessment techniques generally accepted by experts in the field or the best professional judgment of Federal, tribal, and state agency representatives, fully considering ecological functions included in the 404 (b)(1) Guidelines. When a District uses a functional assessment method, e.g., a Hydrogeomorphic Assessment or Wetland Rapid Assessment Procedure, the District will make the method available to applicants for planning mitigation.

2. **Functional Replacement:** For wetlands, the objective is to provide, at a minimum, one-to-one functional replacement, i.e., no net loss of functions, with an adequate margin of safety to reflect anticipated success. Focusing on the replacement of the functions provided by a wetland, rather than only calculation of acreage impacted or restored, will in most cases provide a more accurate and effective way to achieve the environmental performance objectives of the no net loss policy. In some cases, replacing the functions provided by one wetland area can be achieved by another, smaller wetland; in other cases, a larger replacement wetland may be needed to replace the functions of the wetland impacted by development. Thus, for example, on an acreage basis, the ratio should be greater than one-to-one where the impacted functions are demonstrably high and the replacement wetlands are of lower function. Conversely, the ratio may be less than one-to-one where the functions associated with the area being impacted are demonstrably low and the replacement wetlands are of higher function.

3. **Functional Changes:** Districts may account for functional changes by recording them as site-specific debits and credits as defined below.

a.) **Credit:** A unit of measure, e.g., a functional capacity unit in the Hydrogeomorphic Assessment Method, representing the gain of aquatic function at a compensatory mitigation site; the measure of function is typically indexed to the number of acres of resource restored, established, enhanced, or protected as compensatory mitigation.

b.) **Debit:** A unit of measure, e.g., a functional capacity unit in the Hydrogeomorphic Assessment Method, representing the loss of aquatic function at a project site; the measure of function is typically indexed to the number of acres impacted by issuance of the permit.

4. **Acreage Surrogate:** In the absence of more definitive information on the functions of a specific wetland site, a minimum one-to-one acreage replacement may be used as a reasonable surrogate for no net loss of functions. For example, information on functions might be lacking for enforcement actions that generate after-the-fact permits or when there is no appropriate method to evaluate functions. When Districts require one-to-one acreage replacement, they will inform applicants of specific amounts and types of required mitigation. Districts will provide rationales for acreage replacement and identify the factors considered when the required mitigation differs from the one-to-one acreage surrogate.

5. **Streams.** Districts should require compensatory mitigation projects for streams to replace stream functions where sufficient functional assessment is feasible. However, where functional assessment is not practical, mitigation projects for streams should generally replace linear feet of stream on a one-to-one basis. Districts will evaluate such surrogate proposals carefully because experience has shown that stream compensation measures are not always practicable, constructible, or ecologically desirable.

e. **Wetland Project Types:** Although the following definitions were developed to characterize wetland projects, the principles they reflect may also be useful for decisions on other aquatic resource projects.

1. **Establishment (Creation):** The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site, where a wetland did not previously exist. Establishment results in a gain in wetland acres.

2. **Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into:

a.) **Re-establishment:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres.

b.) **Rehabilitation:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres.

3. **Enhancement:** The manipulation of the physical, chemical, or biological characteristics of a wetland (undisturbed or degraded) site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in wetland function(s) and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. This term includes activities commonly associated with enhancement, management, manipulation, and directed alteration.

4. **Protection/Maintenance (Preservation):** The removal of a threat to, or preventing the decline of, wetland conditions by an action in or near a wetland. This term includes the purchase of land or easements, repairing water control structures or fences, or structural protection such as repairing a barrier island. This term also includes activities commonly associated with the term preservation. Preservation does not result in a gain of wetland acres and will be used only in exceptional circumstances.

f. **Preservation Credit:** Districts may give compensatory mitigation credit when existing wetlands, or other aquatic resources are preserved in conjunction with establishment, restoration, and enhancement activities. However, Districts should only consider credit when the preserved resources will augment the functions of newly established, restored, or enhanced aquatic resources. Such augmentation may be reflected in the amount of credit attributed to the entire mitigation project. In exceptional circumstances, the preservation of existing wetlands or other aquatic resources may be authorized as the sole basis for generating credits as mitigation projects. Natural wetlands provide numerous ecological benefits that restored wetlands cannot provide immediately and may provide more practicable long-term ecological benefits. If preservation alone is proposed as mitigation, Districts will consider whether the wetlands or other aquatic resources: 1) perform

important physical, chemical or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and, 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided. The existence of a demonstrable threat will be based on clear evidence of destructive land use changes that are consistent with local and regional (i.e., watershed) land use trends, and that are not the consequence of actions under the permit applicant's control.

g. On-site and Off-site Mitigation: Districts may require on-site, off-site, or a combination of on-site and off-site mitigation to maintain wetland functional levels within watersheds. Mitigation should be required, when practicable, in areas adjacent or contiguous to the discharge site (on-site compensatory mitigation). On-site mitigation generally compensates for locally important functions, e.g., local flood control functions or unusual wildlife habitat. However, off-site mitigation may be used when there is no practicable opportunity for on-site mitigation, or when off-site mitigation provides more watershed benefit than on-site mitigation, e.g., is of greater ecological importance to the region of impact. Off-site mitigation will be in the same geographic area, i.e., in close proximity to the authorized impacts and, to the extent practicable, in the same watershed. In choosing between on-site or off-site compensatory mitigation, Districts will consider: 1) likelihood for success; 2) ecological sustainability; 3) practicability of long-term monitoring and maintenance or operation and maintenance; and, 4) relative costs of mitigation alternatives.

h. In-kind and Out-of-kind Mitigation: Districts may require in-kind, out-of-kind, or a combination of in-kind and out-of-kind, compensatory mitigation to achieve functional replacement within surrounding watersheds. In-kind compensation for a wetland loss involves replacement of a wetland area by establishing, restoring, enhancing, or protecting and maintaining a wetland area of the same physical and functional type. In-kind replacement generally is required when the impacted resource is locally important. Out-of-kind compensation for a wetland loss involves replacement of a wetland area by establishing, restoring, enhancing, or protecting and maintaining an aquatic resource of different physical and functional type. Out-of-kind mitigation is appropriate when it is practicable and provides more environmental or watershed benefit than in-kind compensation (e.g., of greater ecological importance to the region of impact).

i. Buffers: Districts may require that compensatory mitigation for projects in wetlands or other aquatic resources include the establishment and maintenance of buffers to ensure that the overall mitigation project performs as expected. Buffers are upland or riparian areas that separate wetlands or other aquatic resources from developed areas and agricultural lands. Buffers typically consist of native plant communities (i.e., indigenous species) that reflect the local landscape and ecology. Buffers enhance or provide a variety of aquatic habitat functions including habitat for wildlife and other organisms, runoff filtration, moderation of water temperature changes, and detritus for aquatic food webs. Additional guidance regarding the appropriate use of buffers as a component of compensatory mitigation is forthcoming.

1. Upland Areas: Under limited circumstances, Districts may give credit for inclusion of upland areas within a compensatory mitigation project to the degree that the protection and management of such areas is an enhancement of aquatic functions and increases the overall ecological functioning

of the mitigation site, or of other aquatic resources within the watershed (see Federal Mitigation Banking Guidance and Nationwide Permit General Condition 19). Such enhancement may be reflected in the amount of credit attributed to the mitigation project. Districts will evaluate and document the manner and extent to which upland areas augment the functions of wetland or other aquatic resources. The establishment of buffers in upland areas may only be authorized as mitigation if the District determines that this is best for the aquatic environment on a watershed basis. In making this determination, Districts will consider whether the wetlands or other aquatic resources being buffered: 1) perform important physical, chemical, or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided.

2. Riparian Areas: Districts may give credit for inclusion of riparian areas within a compensatory mitigation project to the degree that the protection and management of such areas is an enhancement of aquatic functions and increases the overall ecological functioning of the mitigation site, or of other aquatic resources within the watershed. Such enhancement may be reflected in the amount of credit attributed to the mitigation project. Districts will evaluate and document the manner and extent to which riparian areas augment the functions of streams or other aquatic resources. The establishment of buffers in riparian areas may only be authorized as mitigation if the District determines that this is best for the aquatic environment on a watershed basis. In making this determination, Districts will consider whether the streams or other aquatic resources being buffered: 1) perform important physical, chemical, or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided.

j. Compensatory Mitigation Alternatives: Permit applicants may propose the use of mitigation banks, in-lieu fee arrangements, or separate activity-specific projects.

k. Public Review and Comment:

1. Individual Permits: Proposed compensatory mitigation will be made available for public review and comment, consistent with the form (mitigation bank, in-lieu fee arrangement, or separate activity-specific compensatory mitigation project) of proposed compensation. Although, as a matter of regulation at 33 CFR 325.1 (d)(9), compensatory mitigation plans are not required before the Corps can issue a public notice, Districts should encourage applicants, during pre-application consultation, to provide mitigation plans with applications to facilitate timely and effective review. Public Notices should indicate the form of proposed compensatory mitigation and include information on components of the compensatory mitigation plan. If mitigation plans are available, synopses may be included in Public Notices and the complete plans made available for inspection at District offices. If mitigation plans are available and reproducible, Districts will forward copies to Federal, tribal, and state resource agencies. Districts should not delay issuing Public Notices when mitigation plans are not submitted with otherwise complete applications proposing impacts to aquatic resources.

2. **General Permits:** Requests for nationwide and regional general permit verifications are not subject to public notice and comment. However, general permit compensatory mitigation provisions or requirements are published for public comment at the time general permits are proposed for issuance or reissuance. Additional review of case-specific mitigation plans should be consistent with the conditions of the Nationwide or Regional Permit. Public review and comment should be provided for proposed mitigation banks and in-lieu-fee arrangements consistent with the Banking Guidance and In-lieu-fee Guidance provisions.

l. Permit Special Conditions: Districts will include in individual permits, and general permit verifications that contain a wetland compensatory mitigation requirement, special conditions that identify: 1) the party(s) responsible for meeting any or all components of compensatory mitigation requirements; 2) performance standards for determining compliance; and, 3) other requirements such as financial assurances, real estate assurances, monitoring programs, and the provisions for short and long-term maintenance of the mitigation site. Special conditions may include, by reference, the compensatory mitigation plan, monitoring requirements and a contingency mitigation plan. Permittees are responsible for assuring that activity-specific compensatory mitigation projects are implemented successfully and protected over the long-term. If mitigation banks or in-lieu fee arrangements are used to provide the mitigation, the party(s) identified as responsible for administering those facets of the bank or the in-lieu fee arrangement become liable for implementation and performance.

m. Timing of Mitigation Construction: Construction should be concurrent with authorized impacts to the extent practicable. Advance or concurrent mitigation can reduce temporal losses of aquatic functions and facilitate compliance. In some circumstances it may be acceptable to allow impacts to aquatic resources to occur before accomplishing compensatory mitigation, for example, in cases where construction of the authorized activity would disturb or harm on site compensatory mitigation work or where a simple restoration project is required. Some Federal-aid highway projects have legal and contractual requirements regarding the timing of mitigation that conflict with the policy to accomplish advance or concurrent mitigation. For compensatory mitigation involving in-lieu-fee arrangements or mitigation banks, the guidance applicable to those forms of mitigation should be followed with respect to timing of mitigation site development. After-the-fact mitigation may also be required for permits issued in emergencies or from an enforcement action.

n. Compensatory Mitigation Accomplished After Overall Project Construction: In general, when impacts to aquatic resources are authorized before mitigation is initiated, Districts will require: 1) a Corps-approved mitigation plan; 2) a secured mitigation project site; 3) appropriate financial assurances in place; and, 4) legally protected, adequate water rights where necessary. Initial physical and biological improvements in the mitigation plan generally should be completed no later than the first full growing season following the impacts from authorized activities. If beginning the initial improvements within that time frame is not practicable, then other measures that mitigate for the consequences of temporal losses should be included in the mitigation plan.

o. General Permits: For activities authorized by general permits, Districts may recommend consolidated compensatory mitigation projects such as mitigation banks and in-lieu fee programs where such sources of compensatory mitigation are available. Consolidated mitigation facilitates a watershed approach to mitigating impacts to waters of the United States. For regional general permits associated with Special Area Management Plans or other types of watershed plans, the District may also recommend the use of mitigation banks or in-lieu-fee arrangements, consistent with the guidance for those forms of compensation.

3. Compensatory Mitigation Plans: Districts will strive to discuss compensatory mitigation proposals with applicants during pre-application consultation. If this does not occur, the scope and specificity of proposed compensatory mitigation plans merely represent the applicant's view of what is necessary, a view that may not be acceptable to the Corps or other governmental authorities. At the earliest opportunity, Districts will advise applicants of the mitigation sequencing requirements of the Section 404(b)(1) Guidelines, or what is required for general permits. Compensation is the last step in the sequencing requirements of the Section 404 (b)(1) Guidelines. Thus, for standard permit applications, Districts should not require detailed compensatory mitigation plans until they have established the unavoidable impact. In all circumstances, the level of information provided regarding mitigation should be commensurate with the potential impact to aquatic resources, consistent with the guidance from Regulatory Guidance Letter 93-2 on the appropriate level of analysis for compliance with the Section 404 (b)(1) Guidelines. Districts will identify for applicants the pertinent factors for this determination (e.g., watershed considerations, local or state requirements, uncertainty, out-of-kind compensation, protection and maintenance requirements, etc.). Districts also will identify for applicants the rationale to be used (e.g., best professional judgment, Hydrogeomorphic Assessment Method, Wetland Rapid Assessment Procedure, etc.) for determining allowable impact and required compensatory mitigation. Applicants will be encouraged to submit appropriate compensatory mitigation proposals with individual permit applications or general permit pre-construction notices. The components listed below form the basis for development of compensatory mitigation plans.

a. Baseline Information: As part of the permit decision Districts will include approved, written compensatory mitigation plans describing the location, size, type, functions and amount of impact to aquatic and other resources, as well as the resources in the mitigation project. In addition, they should describe the size, e.g., acreage of wetlands, length and width of streams, elevations of existing ground at the mitigation site, historic and existing hydrology, stream substrate and soil conditions, and timing of the mitigation. Baseline information may include quantitative sampling data on the physical, chemical, and biological characteristics of the aquatic resources at both the proposed mitigation site and the impact site. This documentation will support the compensatory mitigation requirement.

b. Goals and Objectives: Compensatory mitigation plans should discuss environmental goals and objectives, the aquatic resource type(s), e.g., hydrogeomorphic (HGM) regional wetland subclass, Rosgen stream type, Cowardin classification, and functions that will be impacted by the authorized work, and the aquatic resource type(s) and functions proposed at the compensatory

mitigation site(s). For example, for impacts to tidal fringe wetlands the mitigation goal may be to replace lost finfish and shellfish habitat, lost estuarine habitat, or lost water quality functions associated with tidal backwater flooding. The objective statement should describe the amount, i.e., acres, linear feet, or functional changes, of aquatic habitat that the authorized work will impact and the amount of compensatory mitigation needed to offset those impacts, by aquatic resource type.

c. Site Selection: Compensatory mitigation plans should describe the factors considered during the site selection process and plan formulation including, but not limited to:

1. **Watershed Considerations:** Mitigation plans should describe how the site chosen for a mitigation project contributes to the specific aquatic resource needs of the impacted watershed. A compensatory mitigation project generally should be in the same watershed. The further removed geographically that the mitigation is, the greater is the need to demonstrate that the proposed mitigation will reasonably offset authorized impacts.

2. **Practicability:** The mitigation plan should describe site selection in terms of cost, existing technology, and logistics.

3. **Air Traffic:** Compensatory mitigation projects that have the potential to attract waterfowl and other bird species that might pose a threat to aircraft will be sited consistent with the Federal Aviation Administration Advisory Circular on Hazardous Wildlife Attractants on or near Airports (AC No: 150/5200-33, 5/1/97).

d. Mitigation Work Plan: Compensatory mitigation work plans should contain written specifications and work descriptions, including, but not limited to: 1) boundaries of proposed restoration, establishment, enhancement, or preserved areas (e.g., maps and drawings); 2) construction methods, timing and sequence; 3) source of water supply and connections to existing waters and proximity to uplands; 4) native vegetation proposed for planting; 5) allowances for natural regeneration from an existing seed bank or planting; 6) plans for control of exotic invasive vegetation; 7) elevation(s) and slope(s) of the proposed mitigation area to ensure they conform with required elevation and hydrologic requirements, if practicable, for target plant species; 8) erosion control measures; 9) stream or other open water geomorphology and features such as riffles and pools, bends, deflectors, etc.; and 10) a plan outlining site management and maintenance.

e. Performance Standards: Compensatory mitigation plans will contain written performance standards for assessing whether mitigation is achieving planned goals. Performance standards will become part of individual permits as special conditions and be used for performance monitoring. Project performance evaluations will be performed by the Corps, as specified in the permits or special conditions, based upon monitoring reports. Adaptive management activities may be required to adjust to unforeseen or changing circumstances, and responsible parties may be required to adjust mitigation projects or rectify deficiencies. The project performance evaluations will be used to determine whether the environmental benefits or "credit(s)" for the entire project equal or exceed the environmental impact(s) or "debit(s)" of authorized activities. Performance standards for compensatory mitigation sites will be based on quantitative or qualitative

characteristics that can be practicably measured. The performance standards will be indicators that demonstrate that the mitigation is developing or has developed into the desired habitat. Performance standards will vary by geographic region and aquatic habitat type, and may be developed through interagency coordination at the regional level. Performance standards for wetlands can be derived from the criteria in the 1987 Corps of Engineers Wetlands Delineation Manual, such as the duration of soil saturation required to meet the wetland hydrology criterion, or variables and associated functional capacity indices in hydrogeomorphic assessment method regional guidebooks. Performance standards may also be based on reference wetlands.

f. Project Success: Compensatory mitigation plans will identify all parties responsible for compliance with the mitigation plan and their role in the mitigation project. The special conditions for the permit will identify these responsibilities as required above. Restoration projects provide the greatest potential for success in terms of functional compensation; however, each type has utility and may be used for compensatory mitigation.

g. Site Protection: Compensatory mitigation plans should include a written description of the legal means for protecting mitigation area(s), and permits will be conditioned accordingly. The wetlands, uplands, riparian areas, or other aquatic resources in a mitigation project should be permanently protected, in most cases, with appropriate real estate instruments, e.g., conservation easements, deed restrictions, transfer of title to Federal or state resource agencies or non-profit conservation organizations. Generally, conservation easements held by tribal, state or local governments, other Federal agencies, or non-governmental groups, such as land trusts, are preferable to deed restrictions. Homeowners' associations should be used for these purposes only in exceptional circumstances, such as when the association is responsible for community open spaces with restrictive covenants. Districts may require third party monitoring if necessary to ensure permanent protection. In no case will the real estate instrument require a Corps official's signature. Also, Districts will not approve a requirement that results in the Federal government holding deed restrictions on properties, or that contains real estate provisions committing Corps Districts to any interest in the property in question, unless proper statutory authority is identified that authorizes such an arrangement.

h. Contingency Plan: Compensatory mitigation plans should include contingency plans for unanticipated site conditions or changes. For example, contingency plans may identify financial assurance mechanisms that could be used to implement remedial measures to correct unexpected problems. Additionally, contingency plans will allow for modifications to performance standards if mitigation projects are meeting compensatory mitigation goals, but in unanticipated ways. Finally, contingency plans could address the circumstances that might result in no enforcement or remedial action if forces beyond the control of responsible parties adversely impact mitigation sites. In any case, Districts will determine the course of action to be taken in the event of unexpected conditions based on the goals and objectives for the mitigation project, the performance standards, and the provisions of the contingency plan.

i. Monitoring and Long-term Management: Compensatory mitigation plans will identify the party(s) responsible for accomplishing, maintaining, and monitoring the mitigation. Districts

will require monitoring plans with a reporting frequency sufficient for an inspector to determine compliance with performance standards and to identify remedial action. Monitoring will be required for an adequate period of time, normally 5 to 10 years, to ensure the project meets performance standards. Corps permits will require permanent compensatory mitigation unless otherwise noted in the special conditions of the permit. Districts may take enforcement action even after the identified monitoring period, if there has been a violation.

j. Financial Assurances: Compensatory mitigation plans will identify the party responsible for providing and managing any financial assurances and contingency funds set aside for remedial measures to ensure mitigation success. This includes identifying the party that will provide for long-term management and protection of the mitigation project. Financial assurances should be commensurate with the level of impact and the level of compensatory mitigation required. Permit conditions for minimal and low impact projects are generally sufficient for enforcing performance standards and requiring compliance, without the requirement of additional financial assurances. Financial assurances should be sufficient to cover contingency actions such as a default by the responsible party, or a failure to meet performance standards. District Engineers will generally emphasize financial assurances when the authorized impacts occur prior to successful completion of the mitigation, to include the monitoring period. Financial assurances may be in the form of performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, legislatively enacted dedicated funds for government operated banks or other approved instruments. Such assurances may be phased-out or reduced, once the project has been demonstrated functionally mature and self-sustaining in accordance with performance standards.

Financial assurances for third party mitigation should be consistent with existing guidance (e.g., Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, and the Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act). The District will determine project success, and the need to use financial assurances to carry out remedial measures, in accordance with the project performance standards.

4. Duration. This guidance remains effective unless revised or rescinded.

FOR THE COMMANDER:



Handwritten signature of Robert H. Griffin, Major General, U.S. Army, Director of Civil Works.

Encl

ROBERT H. GRIFFIN
Major General, U.S. Army
Director of Civil Works

Appendix A: Authorities

This RGL is issued in accordance with the following statutes, regulations, and policies. It is intended to clarify provisions within these existing authorities and does not establish new requirements.

- a. Clean Water Act Section 404 [33 USC 1344].
- b. Rivers and Harbors Act of 1899 Section 10 [33 USC 403 et seq.].
- c. Environmental Protection Agency, Section 404(b)(1) Guidelines [40 CFR Part 230]. Guidelines for Specification of Disposal Sites for Dredged or Fill Material.
- d. Department of the Army, Section 404 Permit Regulations [33 CFR Parts 320-331]. Policies for evaluating permit applications to discharge dredged or fill material.
- e. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines [February 6, 1990].
- f. Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks [November 28, 1995].
- g. Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act [November 7, 2000]
- h. Title XII of the Food Security Act of 1985 as amended by the Farm Security and Rural Investment Act of 2002 [16 USC 3801 et seq.].
- i. National Environmental Policy Act [42 USC 4321 et seq.], including the Council on Environmental Quality's implementing regulations [40 CFR Parts 1500-1508].
- j. Fish and Wildlife Coordination Act [16 USC 661 et seq.].
- k. Fish and Wildlife Service Mitigation Policy [46 FR pages 7644-7663, 1981].
- l. Magnuson Fishery Conservation and Management Act [16 USC 1801 et seq.].
- m. National Marine Fisheries Service Habitat Conservation Policy [48 FR pages 53142-53147, 1983].
- n. The Transportation Equity Act for the 21st Century (TEA-21)
- o. Federal Aviation Administration Advisory Circular on Hazardous Wildlife Attracts on or near Airports (AC No: 150/5200-33, 5/1/97)
- p. Endangered Species Act of 1973, as amended [16 U.S.C. 1531 et seq.]
- q. Migratory Bird Treaty Act [16 U.S.C. 703 et seq.]
- r. Issuance of Nationwide Permits [67 FR 2020-2095, January 15, 2002]

Appendix B

Taken from *Operational Guidelines for Creating or Restoring Self-Sustaining Wetlands*, National Research Council 'Compensating for Wetland Losses Under The Clean Water Act,' June 2001 (Chapter 7, pp. 123-128).

1. *Consider the hydrogeomorphic and ecological landscape and climate.* Whenever possible locate the mitigation site in a setting of comparable landscape position and hydrogeomorphic class. Do not generate atypical "hydrogeomorphic hybrids"; instead, duplicate the features of reference wetlands or enhance connectivity with natural upland landscape elements (Gwin et al. 1999).

Regulatory agency personnel should provide a landscape setting characterization of both the wetland to be developed and, using comparable descriptors, the proposed mitigation site. Consider conducting a cumulative impact analysis at the landscape level based on templates for wetland development (Bedford 1999). Landscapes have natural patterns that maximize the value and function of individual habitats. For example, isolated wetlands function in ways that are quite different from wetlands adjacent to rivers. A forested wetland island, created in an otherwise grassy or agricultural landscape, will support species that are different from those in a forested wetland in a large forest tract. For wildlife and fisheries enhancement, determine if the wetland site is along ecological corridors such as migratory flyways or spawning runs. Constraints also include landscape factors. Shoreline and coastal wetlands adjacent to heavy wave action have historically high erosion rates or highly erodible soils, and often heavy boat wakes. Placement of wetlands in these locations may require shoreline armoring and other protective engineered structures that are contrary to the mitigation goals and at cross-purposes to the desired functions

Even though catastrophic events cannot be prevented, a fundamental factor in mitigation plan design should be how well the site will respond to natural disturbances that are likely to occur. Floods, droughts, muskrats, geese, and storms are expected natural disturbances and should be accommodated in mitigation designs rather than feared. Natural ecosystems generally recover rapidly from natural disturbances to which they are adapted. The design should aim to restore a series of natural processes at the mitigation sites to ensure that resilience will have been achieved.

2. *Adopt a dynamic landscape perspective.* Consider both current and future watershed hydrology and wetland location. Take into account surrounding land use and future plans for the land. Select sites that are, and will continue to be, resistant to disturbance from the surrounding landscape, such as preserving large buffers and connectivity to other wetlands. Build on existing wetland and upland systems. If possible, locate the mitigation site to take advantage of refuges, buffers, green spaces, and other preserved elements of the landscape. Design a system that utilizes natural processes and energies, such as the potential energy of streams as natural subsidies to the system. Flooding rivers and tides transport great quantities of water, nutrients, and organic matter in relatively short time periods, subsidizing the wetlands open to these flows as well as the adjacent rivers, lakes, and estuaries.

3. *Restore or develop naturally variable hydrological conditions.* Promote naturally variable hydrology, with emphasis on enabling fluctuations in water flow and level, and duration and frequency of change, representative of other comparable wetlands in the same landscape setting. Preferably, natural hydrology should be allowed to become reestablished rather than finessed through active engineering devices to mimic a natural hydroperiod. When restoration is not an option, favor the use of passive devices that have a higher likelihood to sustain the desired hydroperiod over long term. Try to avoid designing a system dependent on water-control structures or other artificial infrastructure that must be maintained in perpetuity in order for wetland hydrology to meet the specified design. In situations where direct (in-kind) replacement is desired, candidate mitigation sites should have the same basic hydrological attributes as the impacted site.

Hydrology should be inspected during flood seasons and heavy rains, and the annual and extreme-event flooding histories of the site should be reviewed as closely as possible. A detailed hydrological study of the site should be undertaken, including a determination of the potential interaction of groundwater with the proposed wetland. Without flooding or saturated soils, for at least part of the growing season, a wetland will not develop. Similarly, a site that is too wet will not support the desired biodiversity. The tidal cycle and stages are important to the hydrology of coastal wetlands.

4. *Whenever possible, choose wetland restoration over creation.* Select sites where wetlands previously existed or where nearby wetlands still exist. Restoration of wetlands has been observed to be more feasible and sustainable than creation of wetlands. In restored sites the proper substrate may be present, seed sources may be on-site or nearby, and the appropriate hydrological conditions may exist or may be more easily restored.

The U.S. Army Corps of Engineers (Corps) and Environmental Protection Agency (EPA) Mitigation Memorandum of Agreement states that, "because the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, restoration should be the first option considered" (Fed. Regist. 60(Nov. 28):58605). The Florida Department of Environmental Regulation (FDER 1991a) recommends an emphasis on restoration first, then enhancement, and, finally, creation as a last resort. Morgan and Roberts (1999) recommend encouraging the use of more restoration and less creation.

5. *Avoid over-engineered structures in the wetland's design.* Design the system for minimal maintenance. Set initial conditions and let the system develop. Natural systems should be planned to accommodate biological systems. The system of plants, animals, microbes, substrate, and water flows should be developed for self-maintenance and self-design. Whenever possible, avoid manipulating wetland processes using approaches that require continual maintenance. Avoid hydraulic control structures and other engineered structures that are vulnerable to chronic failure and require maintenance and replacement. If necessary to design in structures, such as to prevent erosion until the wetland has developed soil stability, do so using natural features, such as large woody debris. Be aware that more specific habitat designs and planting will be required where rare and endangered species are among the specific restoration targets.

Whenever feasible, use natural recruitment sources for more resilient vegetation establishment. Some systems, especially estuarine wetlands, are rapidly colonized, and natural recruitment is often equivalent or superior to plantings (Dawe et al. 2000). Try to take advantage of native seed banks, and use soil and plant material salvage whenever possible. Consider planting mature plants as supplemental rather than required, with the decision depending on early results from natural recruitment and invasive species occurrence. Evaluate on-site and nearby seed banks to ascertain their viability and response to hydrological conditions. When plant introduction is necessary to promote soil stability and prevent invasive species, the vegetation selected must be appropriate to the site rather than forced to fit external pressures for an ancillary purpose (e.g., preferred wildlife food source or habitat).

6. *Pay particular attention to appropriate planting elevation, depth, soil type, and seasonal timing.* When the introduction of species is necessary, select appropriate genotypes. Genetic differences within species can affect wetland restoration outcomes, as found by Seliskar (1995), who planted cordgrass (*Spartina alterniflora*) from Georgia, Delaware, and Massachusetts into a tidal wetland restoration site in Delaware. Different genotypes displayed differences in stem density, stem height, below-ground biomass, rooting depth, decomposition rate, and carbohydrate allocation. Beneath the plantings, there were differences in edaphic chlorophyll and invertebrates.

Many sites are deemed compliant once the vegetation community becomes established. If a site is still being irrigated or recently stopped being irrigated, the vegetation might not survive. In other cases, plants that are dependent on surface-water input might not have developed deep root systems. When the surface-water input is stopped, the plants decline and eventually die, leaving the mitigation site in poor condition after the Corps has certified the project as compliant.

7. *Provide appropriately heterogeneous topography.* The need to promote specific hydroperiods to support specific wetland plants and animals means that appropriate elevations and topographic variations must be present in restoration and creation sites. Slight differences in topography (e.g., micro- and meso-scale variations and presence and absence of drainage connections) can alter the timing, frequency, amplitude, and duration of inundation. In the case of some less-studied, restored wetland types, there is little scientific or technical information on natural microtopography (e.g., what causes strings and flarks in patterned fens or how hummocks in fens control local nutrient dynamics and species assemblages and subsurface hydrology are poorly known). In all cases, but especially those with minimal scientific and technical background, the proposed development wetland or appropriate example(s) of the target wetland type should provide a model template for incorporating microtopography.

Plan for elevations that are appropriate to plant and animal communities that are reflected in adjacent or close-by natural systems. In tidal systems, be aware of local variations in tidal flooding regime (e.g., due to freshwater flow and local controls on circulation) that might affect flooding duration and frequency.

8. *Pay attention to subsurface conditions, including soil and sediment geochemistry and physics, groundwater quantity and quality, and infaunal communities.* Inspect and characterize the

soils in some detail to determine their permeability, texture, and stratigraphy. Highly permeable soils are not likely to support a wetland unless water inflow rates or water tables are high.

Characterize the general chemical structure and variability of soils, surface water, groundwater, and tides. Even if the wetland is being created or restored primarily for wildlife enhancement, chemicals in the soil and water may be significant, either for wetland productivity or bioaccumulation of toxic materials. At a minimum, these should include chemical attributes that control critical geochemical or biological processes, such as pH, redox, nutrients (nitrogen and phosphorus species), organic content and suspended matter.

9. *Consider complications associated with creation or restoration in seriously degraded or disturbed sites.* A seriously degraded wetland, surrounded by an extensively developed landscape, may achieve its maximal function only as an impaired system that requires active management to support natural processes and native species (NRC 1992). It should be recognized, however, that the functional performance of some degraded sites may be optimized by mitigation, and these considerations should be included if the goal of the mitigation is water- or sediment-quality improvement, promotion of rare or endangered species, or other objectives best served by locating a wetland in a disturbed landscape position. Disturbance that is intense, unnatural, or rare can promote extensive invasion by exotic species or at least delay the natural rates of redevelopment. Reintroducing natural hydrology with minimal excavation of soils often promotes alternative pathways of wetland development. It is often advantageous to preserve the integrity of native soils and to avoid deep grading of substrates that may destroy natural below-ground processes and facilitate exotic species colonization (Zedler 1996).

10. *Conduct early monitoring as part of adaptive management.* Develop a thorough monitoring plan as part of an adaptive management program that provides early indication of potential problems and direction for correction actions. The monitoring of wetland structure, processes, and function from the onset of wetland restoration or creation can indicate potential problems. Process monitoring (e.g., water-level fluctuations, sediment accretion and erosion, plant flowering, and bird nesting) is particularly important because it will likely identify the source of a problem and how it can be remedied. Monitoring and control of nonindigenous species should be a part of any effective adaptive management program. Assessment of wetland performance must be integrated with adaptive management. Both require understanding the processes that drive the structure and characteristics of a developing wetland. Simply documenting the structure (vegetation, sediments, fauna, and nutrients) will not provide the knowledge and guidance required to make adaptive "corrections" when adverse conditions are discovered. Although wetland development may take years to decades, process-based monitoring might provide more sensitive early indicators of whether a mitigation site is proceeding along an appropriate trajectory.

**MEMORANDUM OF AGREEMENT
BETWEEN
The Department of the Army
AND
The Environmental Protection Agency
CONCERNING
THE DETERMINATION OF MITIGATION UNDER THE CLEAN WATER ACT SECTION
404(b)(1) GUIDELINES**

I. PURPOSE

The United States Environmental Protection Agency (EPA) and the United States Department of the Army (Army) hereby articulate the policy and procedures to be used in the determination of the type and level of mitigation necessary to demonstrate compliance with the Clean Water Act (CWA) Section 404(b)(1) Guidelines ("Guidelines"). This Memorandum of Agreement (MOA) expresses the explicit intent of the Army and EPA to implement the objective of the CWA to restore and maintain the chemical, physical and biological integrity of the Nation's waters, including wetlands. This MOA is specifically limited to the Section 404 Regulatory Program and is written to provide guidance for agency field personnel on the type and level of mitigation which demonstrates compliance with requirements in the Guidelines. The policies and procedures discussed herein are consistent with current Section 404 regulatory practices and are provided in response to questions that have been raised about how the Guidelines are implemented. The MOA does not change the substantive requirements of the Guidelines. It is intended to provide guidance regarding the exercise of discretion under the Guidelines.

Although the Guidelines are clearly applicable to all discharges of dredged or fill material, including general permits and Corps of Engineers (Corps) civil works projects, this MOA focuses on standard permits (33 CFR325(b)(1)).¹ This focus is intended solely to reflect the unique procedural aspects associated with the review of standard permits, and does not obviate the need for other regulated activities to comply fully with the Guidelines. EPA and Army will seek to develop supplemental guidance for other regulated activities consistent with the policies and principles established in this document.

This MOA provides guidance to Corps and EPA personnel for implementing the Guidelines and must be adhered to when considering mitigation requirements for standard permit applications. The Corps will use this MOA when making its determinations of compliance with the Guidelines with respect to mitigation for standard permit applications. EPA will use this MOA in developing its position on compliance with the Guidelines for proposed discharges and will reflect this MOA when commenting on standard permit applications.

II. POLICY

- A. The Council on Environmental Quality (CEQ) has defined mitigation in its regulations at 40 CFR 1508.20 to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts. The Guidelines establish environmental criteria which must be met for activities to be permitted under Section 404.² The type of mitigation enumerated

by CEQ are compatible with the requirements of the Guidelines; however, as a practical matter, they can be combined to form three general types: avoidance, minimization and compensatory mitigation. The remainder of this MOA will speak in terms of these general types of mitigation.

- B. The Clean Water Act and the Guidelines set forth a goal of restoring and maintaining existing aquatic resources. The Corps will strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, will strive to achieve a goal of no overall net loss of values and functions. In focusing the goal on no overall net loss to wetlands only, EPA and Army have explicitly recognized the special significance of the nation's wetlands resources. This special recognition of wetlands resources does not in any manner diminish the value of other waters of the United States, which are often of high value. All waters of the United States, such as streams, rivers, lakes, etc., will be accorded the full measure of protection under the Guidelines, including the requirements for appropriate and practicable mitigation. The determination of what level of mitigation constitutes "appropriate" mitigation is based solely on the values and functions of the aquatic resource that will be impacted. "Practicable" is defined at Section 230.3(q) of the Guidelines.³ However, the level of mitigation determined to be appropriate and practicable under Section 230.10(d) may lead to individual permit decisions which do not fully meet this goal because the mitigation measures necessary to meet this goal are not feasible, not practicable, or would accomplish only inconsequential reductions in impacts. Consequently, it is recognized that no net loss of wetlands functions and values may not be achieved in each and every permit action. However, it remains a goal of the Section 404 regulatory program to contribute to the national goal of no overall net loss of the nation's remaining wetlands base. EPA and Army are committed to working with others through the Administration's interagency task force and other avenues to help achieve this national goal.
- C. In evaluating standard Section 404 permit applications, as a practical matter, information on all facets of a project, including potential mitigation, is typically gathered and reviewed at the same time. The Corps, except as indicated below, first makes a determination that potential impact have been avoided to the maximum extent practicable; remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts, and, finally, compensate for aquatic resource values. This sequence is considered satisfied where the proposed mitigation is in accordance with specific provisions of a Corps and EPA approved comprehensive plan that ensures compliance with the compensation requirements of the Section 404(b)(1) Guidelines (examples of such comprehensive plans may include Special Area Management Plans, Advanced Identification areas (Section 230.80) and State Coastal Zone Management Plans). It may be appropriate to deviate from the sequence when EPA and the Corps agree the proposed discharge is necessary to avoid environmental harm (e.g. to protect a natural aquatic community from saltwater intrusion, chemical contamination, or other deleterious physical or chemical impacts), or EPA and the Corps agree that the proposed discharge can reasonably be expected to result in environmental gain or insignificant environmental losses.

In determining "appropriate and practicable" measures to offset unavoidable impact, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. The Corps will give full consideration to the views of the resource agencies when making this determination.

1. Avoidance.⁴ Section 230.10(a) allows permit issuance for only the least environmentally damaging practicable alternative.⁵ The thrust of this section on alternatives is avoidance of impacts. Section

230.10(a) requires that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. In addition, Section 230.10(a)(3) sets forth rebuttable presumptions that 1) alternatives for non-water dependent activities that do not involve special aquatic sites⁶ are available and 2) alternatives that do not involve special aquatic sites have less adverse impact on the aquatic environment. Compensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a).

2. Minimization. Section 230.10(d) states that appropriate and practicable steps to minimize the adverse impacts will be required through project modifications and permit conditions. Subpart H of the Guidelines describes several (but not all) means of minimizing impacts of an activity.
3. Compensatory Mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands) should be undertaken when practicable, in areas adjacent or continuous to the discharge site (on-site compensatory mitigation). If on-site compensatory mitigation is not practicable, off-site compensatory mitigation should be undertaken in the same geographic area if practicable (i.e., in close proximity and, to the extent possible, the same watershed). In determining compensatory mitigation, the functional values lost by the resource to be impacted must be considered. Generally, in-kind compensatory mitigation is preferable to out-of-kind. There is continued uncertainty regarding the success of wetland creation or other habitat development. Therefore, in determining the nature and extent of habitat development of this type, careful consideration should be given to its likelihood of success. Because the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, restoration should be the first option considered.

In the situation where the Corps is evaluating a project where a permit issued by another agency requires compensatory mitigation, the Corps may consider that mitigation as part of the overall application for purposes of public notice, but avoidance and minimization shall still be sought.

Mitigation banking may be an acceptable form of compensatory mitigation under specific criteria designed to ensure an environmentally successful bank. Where a mitigation bank has been approved by EPA and the Corps for purposes of providing compensatory mitigation for specific identified projects, use of that mitigation bank for those particular projects is considered as meeting the objective of Section II.C.3 of this MOA, regardless of the practicability of other forms of compensatory mitigation. Additional guidance on mitigation banking will be provided. Simple purchase or "preservation" of existing wetlands resources may in only exceptional circumstances be accepted as compensatory mitigation. EPA and Army will develop specific guidance for preservation in the context of compensatory mitigation at a later date.

III. OTHER PROCEDURES

- A. Potential applicants for major projects should be encouraged to arrange pre-application meetings with the Corps and appropriate federal, state, or Indian tribal, and local authorities to determine requirements and documentation required for proposed permit evaluations. As a result of such meetings, the applicant often revises a proposal to avoid or minimize adverse impacts after

developing an understanding of the Guidelines requirements by which a future Section 404 permit decision will be made, in addition to gaining understanding of other state or tribal, or local requirements. Compliance with other statutes, requirements and reviews, such as NEPA and the Corps public interest review, may not in and of themselves satisfy the requirements prescribed in the Guidelines.

- B. In achieving the goals of the CWA, the Corps will strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources. Measures which can accomplish this can be identified only through resource assessments tailored to the site performed by qualified professionals because ecological characteristics of each aquatic site are unique. Functional values should be assessed by applying aquatic site assessment techniques generally recognized by experts in the field and/or the best professional judgment of federal and state agency representatives, provided such assessments fully consider ecological functions included in the Guidelines. The objective of mitigation for unavoidable impacts is to offset environmental losses. Additionally for wetlands, such mitigation should provide, at a minimum, one for one functional replacement (i.e., no net loss of values), with an adequate margin of safety to reflect the expected degree of success associated with the mitigation plan, recognizing that this minimum requirement may not be appropriate and practicable and thus may not be relevant in all cases, as discussed in Section II.B of this MOA.⁷ In the absence of more definitive information on the functions and values of specific wetland sites, a minimum of 1 to 1 acreage replacement may be used as a reasonable surrogate for no net loss of functions and values. However, this ratio may be greater where the functional values of the area being impacted are demonstrably high and the replacement wetlands are of lower functional value or the likelihood of success of the mitigation project is low. Conversely, the ration may be less than 1 to 1 for areas where the functional values associated with the area being impacted are demonstrably low and the likelihood of success associated with the mitigation proposal is high.
- C. The Guidelines are the environmental standards for Section 404 permit issuance under the CWA. Aspects of a proposed project may be affected through a determination of requirements needed to comply with the Guidelines to achieve these CWA environmental goals.
- D. Monitoring is an important aspect of mitigation, especially in areas of scientific uncertainty. Monitoring should be directed toward determining whether permit conditions are complied with and whether the purpose intended to be served by the conditions are actually achieved. Any time it is determined that a permittee is in non-compliance with the mitigation requirements of the permit, the Corps will take action in accordance with 33 CFR Part 326. Monitoring should not be required for purposes other than these, although information for other uses may accrue from the monitoring requirements. For projects to be permitted involving mitigation with higher levels of scientific uncertainty, such as some forms of compensatory mitigation, long term monitoring, reporting and potential remedial action should be required. This can be required of the applicant through permit conditions.
- E. Mitigation requirements shall be conditions of standard Section 404 permits. Army regulations authorize mitigation requirements to be added as special conditions to an Army permit to satisfy legal requirements (e.g. conditions necessary to satisfy the Guidelines) [33 CFR 325.4(a)]. This ensures legal enforceability of the mitigation conditions and enhances the level of compliance. If the mitigation plan necessary to ensure compliance with the Guidelines is not reasonable implementable or enforceable, the permit shall be denied.

- F. Nothing in this document, is intended to diminish, modify or otherwise affect the statutory or regulatory authorities of the agencies involved. Furthermore, formal policy guidance on or interpretation of this document shall be issued jointly.
- G. This MOA shall take affect on February 8, 1990, and will apply to those completed standard permit applications which are received on or after that date. This MOA may be modified or revoked by agreement of both parties, or revoked by either party alone upon six (6) months written notice.

Robert W. Page /s/
Assistant Secretary of the Army, Civil Works
February 6, 1990

LaJuna S. Wilcher /s/
Assistant Administrator for Water, U.S. Environmental Protection Agency
February 6, 1990

¹ Standard permits are those individual permits which have been processed through application of the Corps public interest review procedures (33 CFR 325) and EPA's Section 404(b)(1) Guidelines, including public notice and receipt of comments. Standard permits do not include letters of permission, regional permits, nationwide permits, or programmatic permits.

²(except where Section 404(b)(2) applies).

³ Section 230.3(q) of the Guidelines reads as follows: " The term practicable means available and capable of being done after taking into consideration *cost, existing technology, and logistics in light of overall project purposes.*" (Emphasis supplied.)

⁴Avoidance as used in Section 404(b)(1) Guidelines and this MOA does not include compensatory mitigation.

⁵It is important to recognize that there are circumstances where the impacts of the project are so significant that even if alternatives are not available, the discharge may not be permitted regardless of the compensatory mitigation proposed (40 CFR 230.10(c)).

⁶Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs and riffle pool complexes.

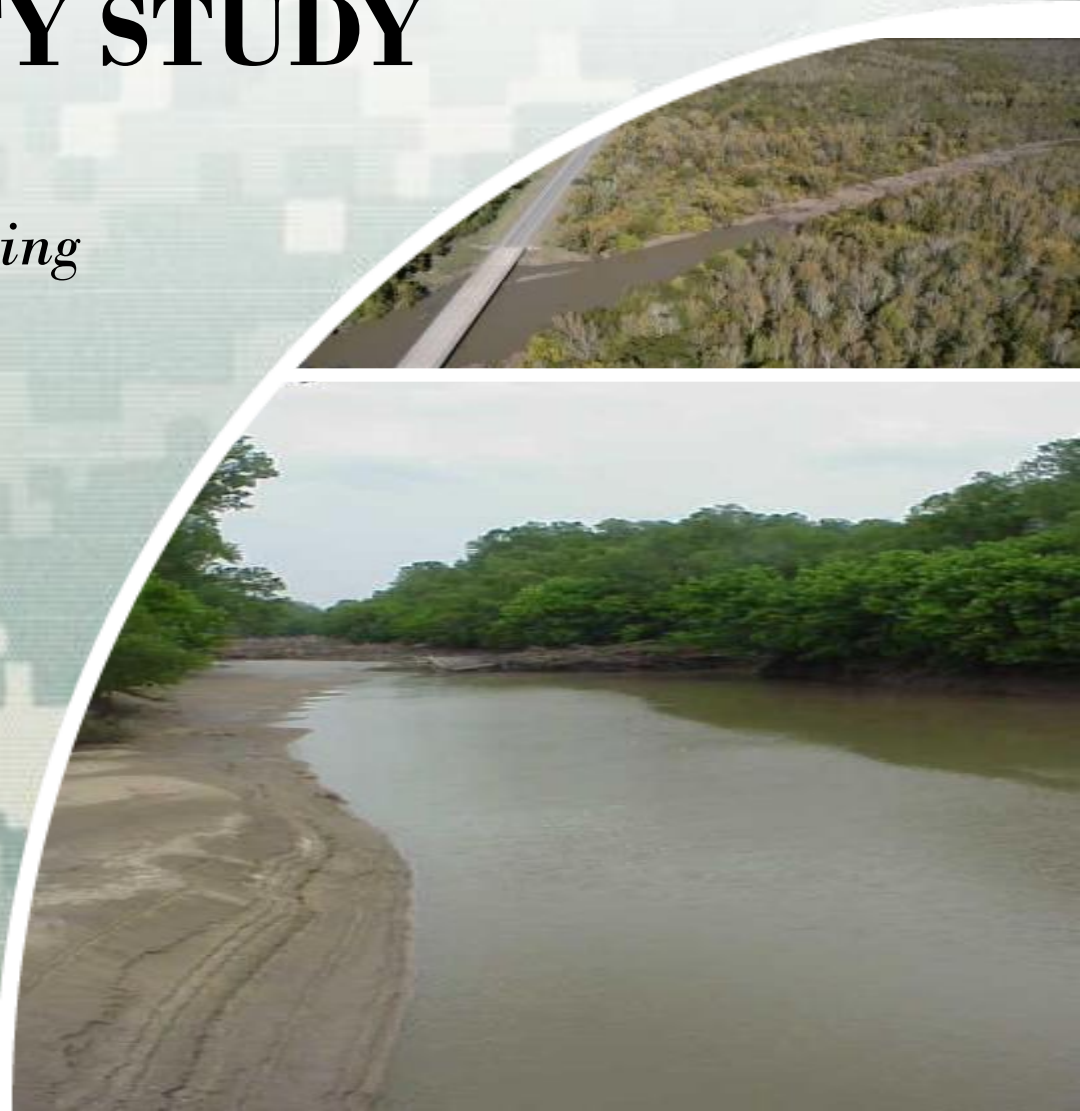
⁷ For example, there are certain areas where, due to hydrological conditions, the technology for restoration or creation of wetlands may not be available at present, or may otherwise be impracticable. In addition, avoidance, minimization, and compensatory mitigation may not be practicable where there is a high proportion of land which is wetlands. EPA and Army, at present, are discussing with representatives of the oil industry, the potential for a program of accelerated rehabilitation of abandoned oil facilities on the North Slope to serve as a vehicle for satisfying necessary compensation requirements.

SULPHUR RIVER BASIN FEASIBILITY STUDY

*Study Commission Meeting
March 11, 2010*



US Army Corps of Engineers
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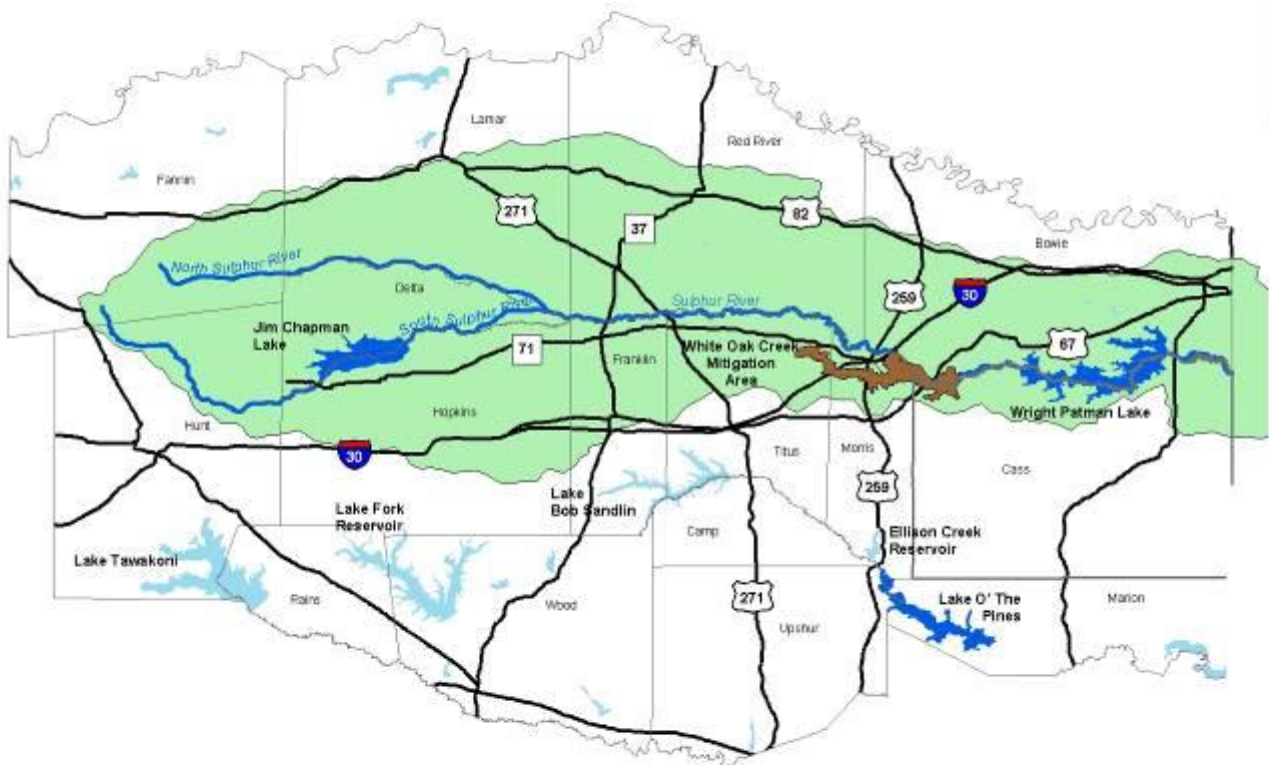
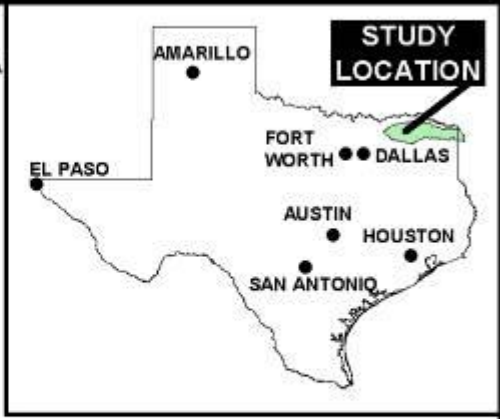
U. S. Army Corps of Engineers

Missions

- **Primary Missions**
 - *Flood Damage Reduction*
 - *Ecosystem Restoration*
 - *Navigation*

- **Secondary Missions**
 - *Water Supply*
 - *Hydropower*
 - *Water Quality*
 - *Recreation*





RED RIVER AND TRIBUTARIES, TEXAS
SULPHUR RIVER ENVIRONMENTAL
RESTORATION, TEXAS
1 JANUARY 2004
U.S. ARMY ENGINEER DISTRICT, FORT WORTH, TEXAS
SOUTHWESTERN DIVISION

WATERSHED STUDY

- **Reconnaissance Study**
 - *Letter of Intent – November 18, 2003*
 - *Report Submitted – February 27, 2004*
 - *Report Certified – April 15, 2004*
- **Feasibility Study**
 - ***Phase I***
 - *Existing / Future Without-Project Conditions*
 - *Feasibility Scoping Meeting (FSM)*
 - ***Phase II***
 - *Plan Formulation / Select Recommended Plan*
 - *Alternative Formulation Briefing (AFB)*
 - ***Phase III***
 - *Feasibility Report and Integrated EIS*
 - *Submit Report for Approval / Authorization*



WATERSHED STUDY

■ Problems

- *Logjam downstream of State Highway 37*
- *Degradation of aquatic and bottomland habitat*
 - *Loss of reliable water regime in original meanders and oxbows on the North Sulphur River*
 - *Continual deposition of sediment*
- *Erosive action caused by increased flow velocities on North Sulphur River threatens structural integrity of nine bridges*
- *Periodic breaching and overtopping of agricultural levees*
 - *Costly repairs and pumping costs*
 - *Loss of productivity*
- *Degradation of water quality*
- *Need for additional water supply in regions outside basin*











WATERSHED STUDY

■ Planning Objectives

- *Restore and/or preserve high quality riparian and aquatic habitat*
- *Develop additional water supply*
 - *maximize yield of reallocation and/or operation modifications of existing Corps reservoirs*
 - *analyze and evaluate potential of other existing reservoirs*
 - *analyze and evaluate potential new supply reservoirs*
- *Reduce channel cutting in North Sulphur River*
- *Reduce flood hazards and associated flood damages*



WATERSHED STUDY

■ Opportunities

- *Restoration of high quality aquatic and bottomland hardwood habitat*
- *Habitat improvement of existing resources*
- *Reduction of flow velocities on North Sulphur River to minimize erosive action and subsequent sedimentation*
- *Development of additional water supply*
- *Reduction of flood frequency, depth and duration of inundation, and flood damages caused by logjam*



WATERSHED STUDY

- **Feasibility Cost Share Agreement (FCSA)**
 - *Agreement between Government and Sulphur River Basin Authority – executed on 24 February 2005*
 - *Does not obligate either party to implementation of a project*
 - *Government support for project authorization and implementing funds depends on outcome of study and whether proposed solution is consistent with economic and environmental principles and guidelines*
 - *Cost share for study is 50/50; up to 100% of local sponsor's share can be work-in-kind*
 - *FCSA based on Project Management Plan; both can be modified as study progresses*
 - *Coordinated study management; both parties represented on an Executive Committee and Study Management Team*



WATERSHED STUDY

■ Potential benefits of study

- *Documentation of existing conditions within the watershed derived from science-based environmental and engineering surveys*
- *Establishment of baseline conditions and development of applicable models necessary to identify, analyze and evaluate viable alternatives*
- *Watershed documentation and models would allow water resource managers to make more informed decisions*
- *Development and documentation of mitigation requirements for each viable alternative per policy guidance and regulation*
- *Analyzation and evaluation of alternatives based on comparison of annualized first costs, including costs associated with real estate, construction, mitigation, etc.*
- *Fair and equitable consideration of benefits and costs, as well as other economic, environmental and social impacts of viable alternatives*
- *Documentation of environmental impacts and completion of an integrated Environmental Impact Statement as part of the Feasibility Report which clears Section 404 and Section 401 permitting requirements, etc. for recommended plan*



CONTACT INFORMATION

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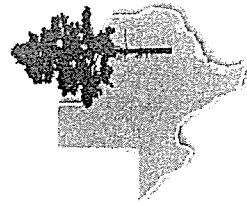
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Marvin Nichols Reservoir

Study Commission on Region C Water Supply
Sulfur Springs, TX



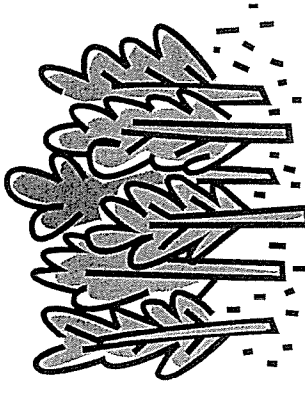
TEXAS FORESTRY
ASSOCIATION

Presented by Charlie Gee
March 11, 2010



TFA's Concerns

- Loss of valuable timberland
- Loss of bottomland hardwood
- Loss of future economic development opportunities in rural areas
- Impact of Mitigation on landowners
- Landowners not being adequately compensated for future lost production



Current Economic Contributions

- The wood-based industry is in the top 10 manufacturing sectors in the state
- Forestry is the #1 or #2 employer in 2/3's of the counties in East Texas
- Forestry directly contributes \$19.4 billion of industry output to the State's economy
- The total economic impact in 2007 was \$33.6 billion in industry outputs
- Directly employs over 78,000 Texans with a payroll of over \$4.4 billion + indirect = 166,071 jobs and \$8.6 billion in labor income

Forest Industry Classification

- Forestry
- Logging
- Primary solid wood products
- Secondary solid wood products
- Primary paper & paperboard products
- Secondary paper & paperboard products

Economic Impact of the Northeast Texas Forest Sector, 2007

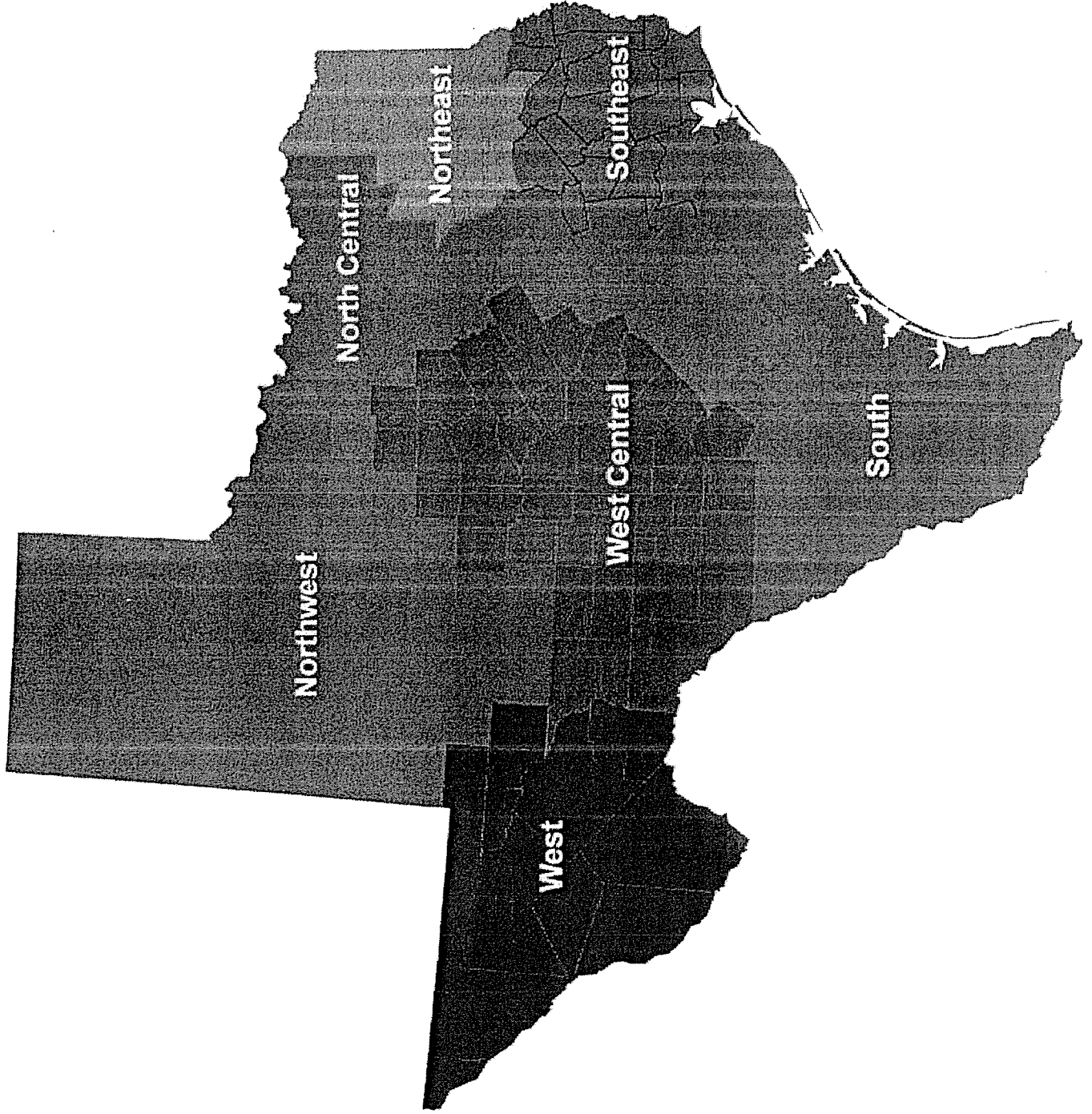
Direct Impact

- 2.1 billion industry output
- 9,072 job with payroll of \$388 million

Total Impact

- 3.6 billion industry output
- 19,777 jobs with payroll of \$770 million





Economic Impact by Regions in the State Outside of East Texas

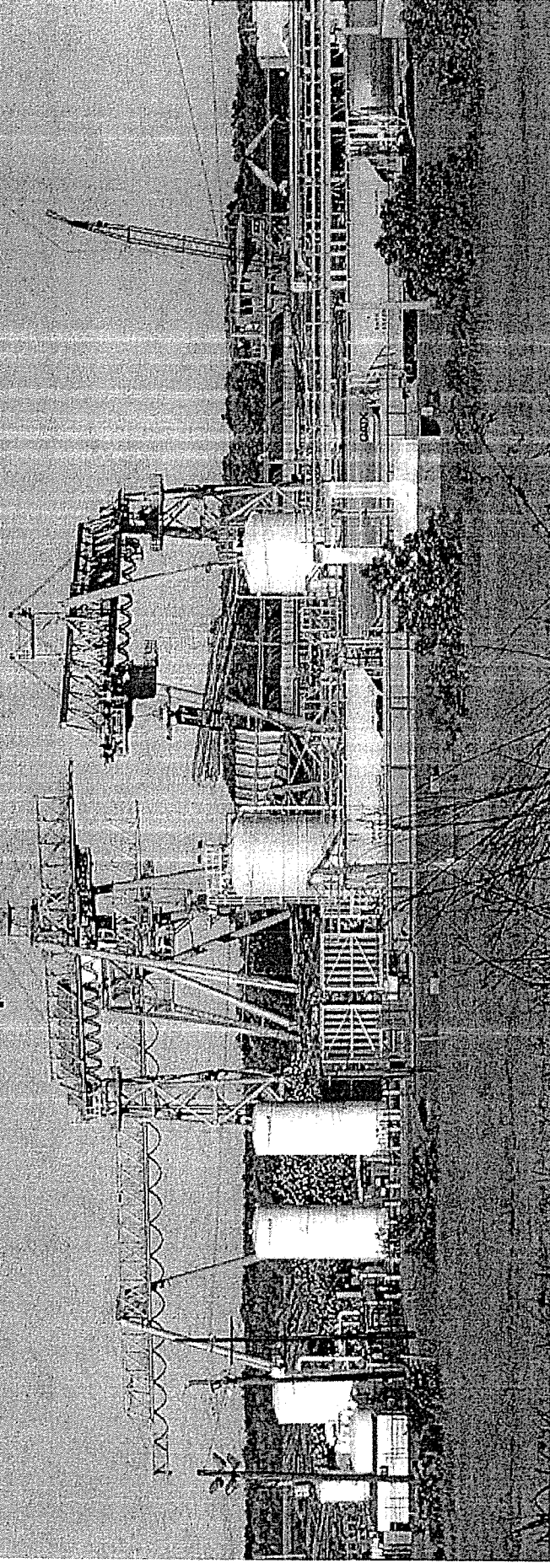
- North Central – 31,653 jobs - \$1.9 b in Labor
- Northwest – 2,037 jobs - \$89 m in Labor
- South – 3,215 jobs - \$137 m in Labor
- West – 1,933 jobs - \$94 m in Labor
- West Central – 13,089 jobs - \$638 in Labor

Economic Impact of Logging

What does a mill mean to the logging profession?

What does a mill mean to forest landowners?

Lumber mill – Paper mill – OSB mill-Biomass Mill

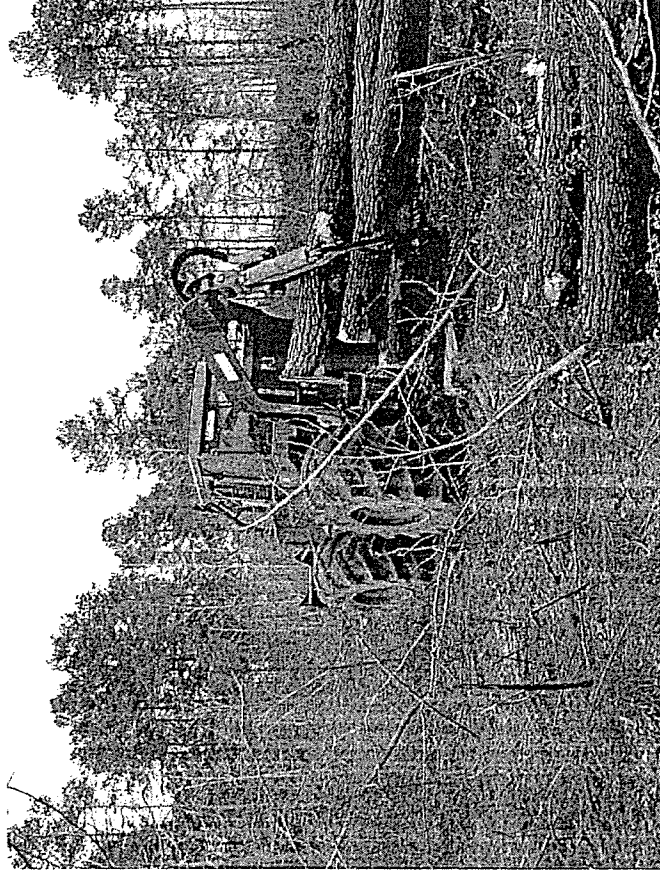


Logging Jobs

Based on 100 loads
of logs/day

One 10-person crew
= 10 loads/day

Requires 10 crews
or 100 jobs/100
loads

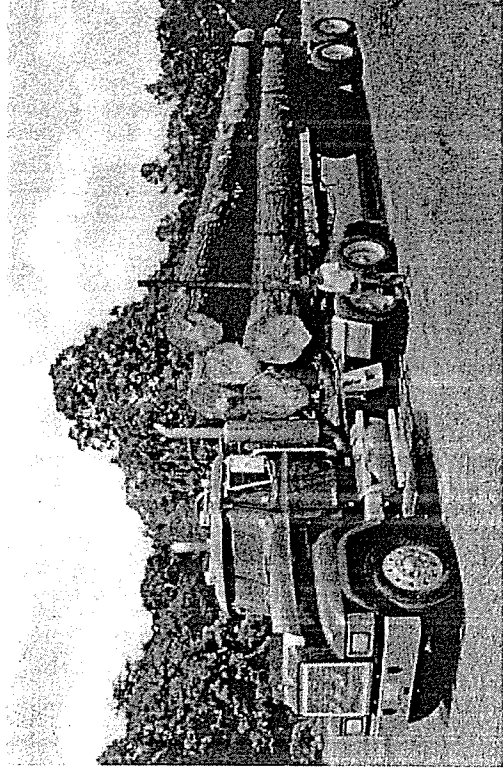


Equipment

- 2 Skidders; 1 Shear; 1 Loader-Delimiter; 1 Loader; 3 trucks & Trailers = investment of \$1.2 m/crew or \$12m/10 crews
- Equipment upgrade is anticipated every 5-7 years
- Maintenance = (depends on age of equipment) runs \$2,000 - \$3,000/month
- One crew will use approximately 700+ gals of diesel per day = \$2,000/day - \$52,000/month

Annual Timber Values

- Average load on a truck is 26 tons
- Products – Pine Sawlogs/Chip N Saw/Pulpwood
 - Hardwood Sawlogs/Pulpwood/Ties
- Delivered values Pine Pulpwood – Pine Sawlogs ranges from \$6,500/10 loads/day to \$15,000+/10 loads/day



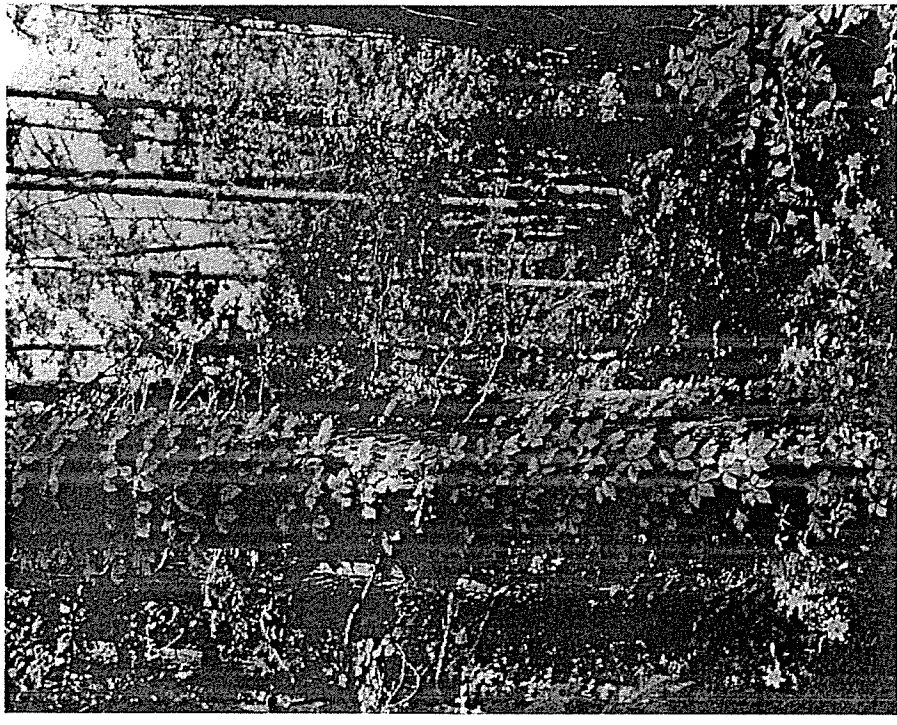
Summary - Economic Impact

- One mill that averages 100 loads/day
- Includes labor, maintenance, fuel, logs, insurance, fees etc
- Returns over \$110,000 per day to the local economy



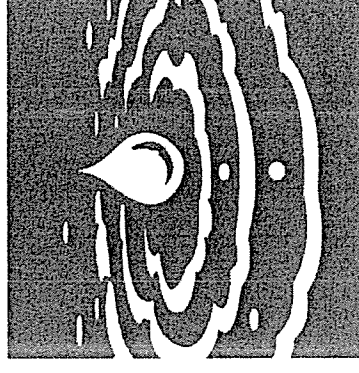
Future Reservoirs

- TFA's position is that building Reservoirs is not the final answer to the future water availability issue
 - Lost economic opportunities for rural TX
 - Impacts the future timber resource and wildlife habitat
 - Reservoirs have a shelf life



Considerations

- Fully utilize existing reservoirs – i.e.: consider options of increasing water level at Wright-Patman Lake
- Water Conservation measures taken to include re-use of grey water for lawns and other non-drinking applications.
- Maintenance of water supply lines
- Increase use of desalination projects



Mitigation

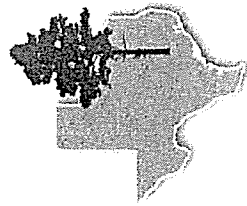
- Mitigation of future reservoirs will restrict and place economic hardships on private landowners
- Incentives need to be implemented at the Federal and State levels to encourage the future use of rural lands so they can be managed for economic development opportunities.
- Water Regions outside of the affected Region should share in the mitigation needs

Eminent Domain

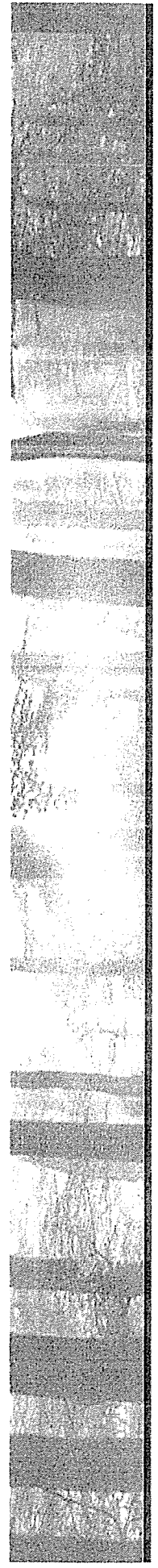
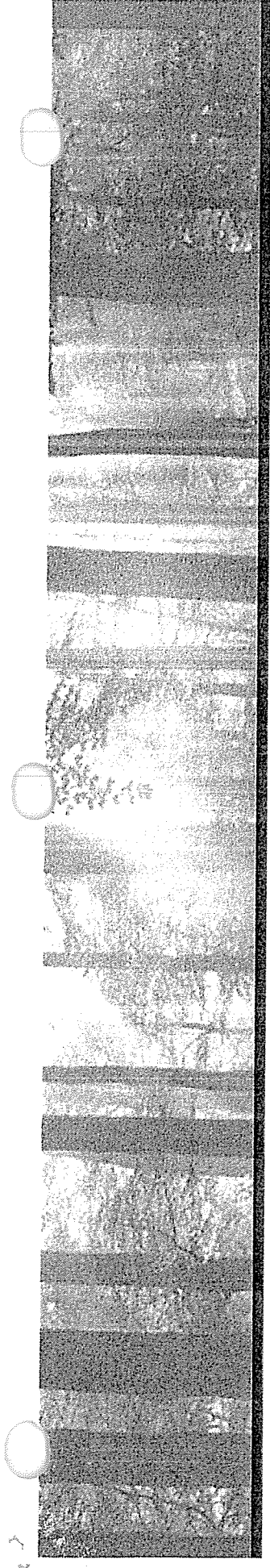
- Landowners need to be compensated for future losses
- Landowners should be compensated annually with rental payments leading up to and during construction of future reservoirs
- Landowners should receive future royalty fees



Thank You!



TEXAS FORESTRY
ASSOCIATION





Current Water Conservation (Task 3.1)

Alan H. Plummer, Jr., P.E., BCEE



Agenda

- Introductory comments
- Issues relative to measurement of conservation
- Current conservation and reuse efforts
- Recommendations for ongoing planning efforts

Introduction

- Water conservation, including reuse, has been established as a major water management strategy for Region C
- Strategies have been implemented that have significantly contributed to relative water demand reductions throughout the region

Issues Relative to Measurement of Conservation

Regional/Local Comparisons: GPCD Calculation Factors

■ Water Usage Volume

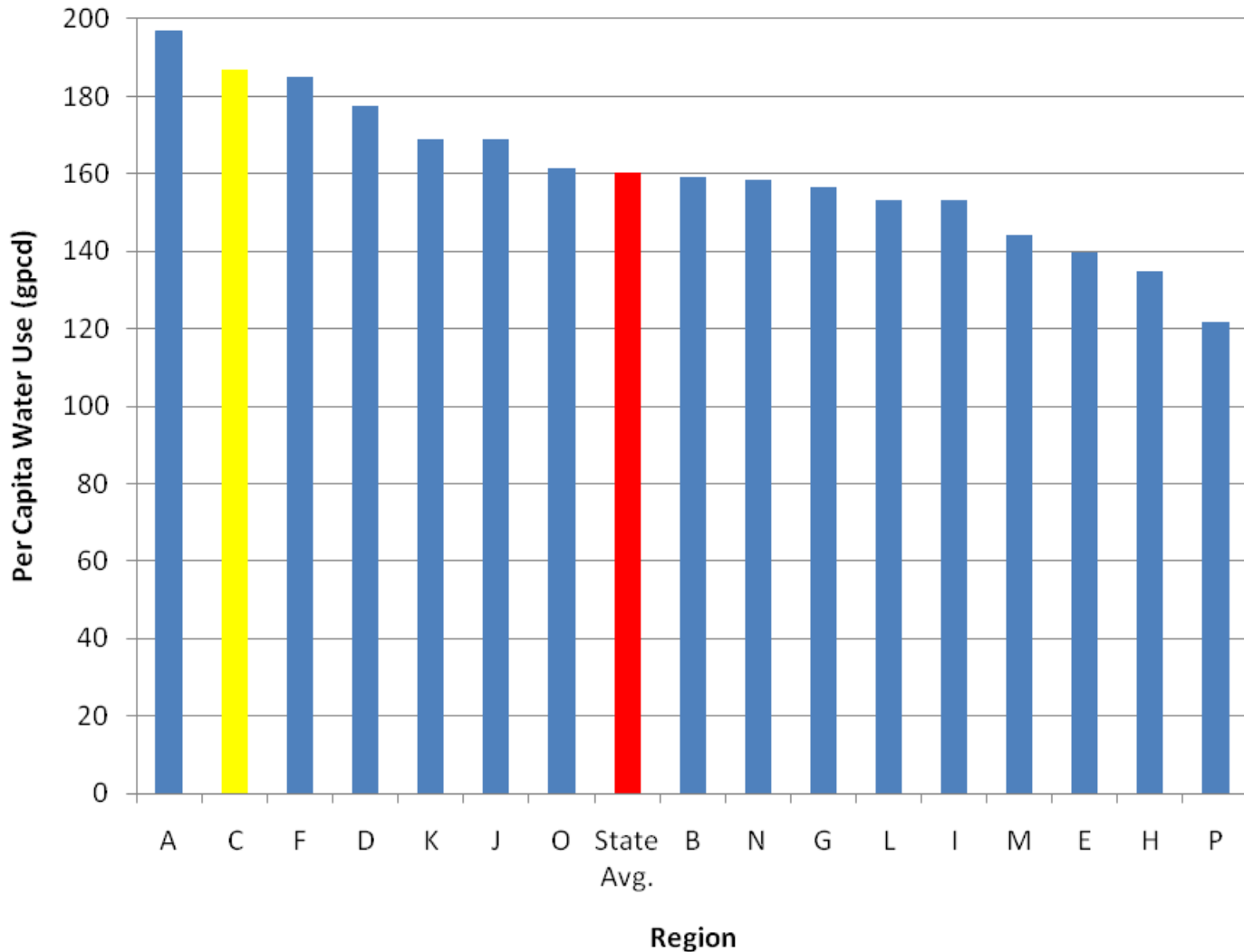
Population Related Usage	Water Use Accounting
Single Family Residential	Regional Economic Condition
Multifamily Residential	Climate
Commercial Water Usage	Availability of Water Supply
Institutional Water Usage	Self-Supplied Users
Recreational/Public Water Usage	Water Pricing
Active Conservation Programs	Amount of Reuse/Recycle

Service Area Population	Commuter Influx
Accuracy of Population Count	Growth vs. Mature Cities
Timeliness of Data	Regional Economic Condition

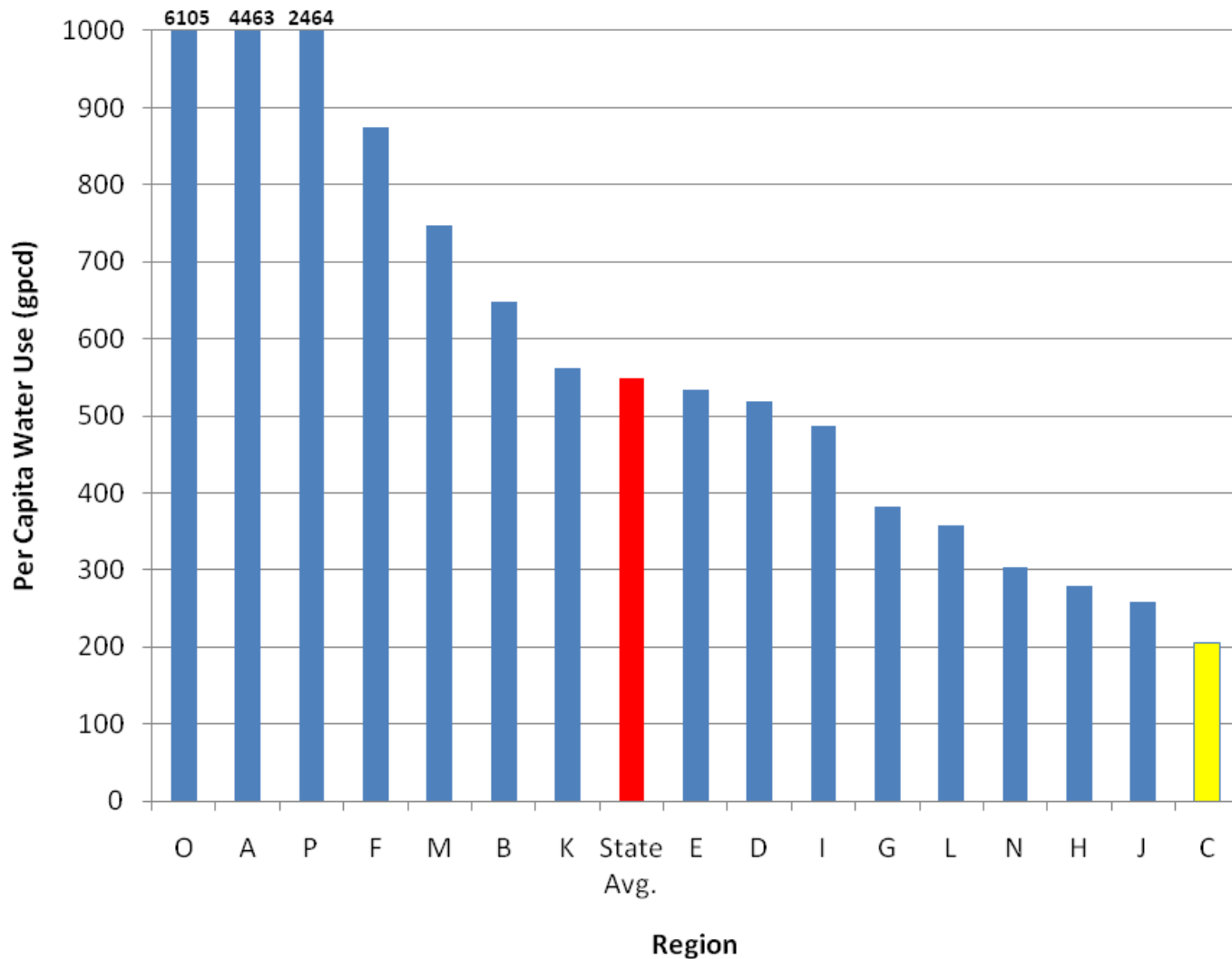
Conservation Measurement Issues

- Calculation techniques and input data differ between entities
- Water Conservation Advisory Council recommendations
 - Develop methodology, metrics, and standards to measure and report water conservation and water conservation implementation
 - Develop specific guidelines for calculating GPCD
 - Do not use total GPCD for comparisons

2006 Municipal Per Capita Water Use by Region

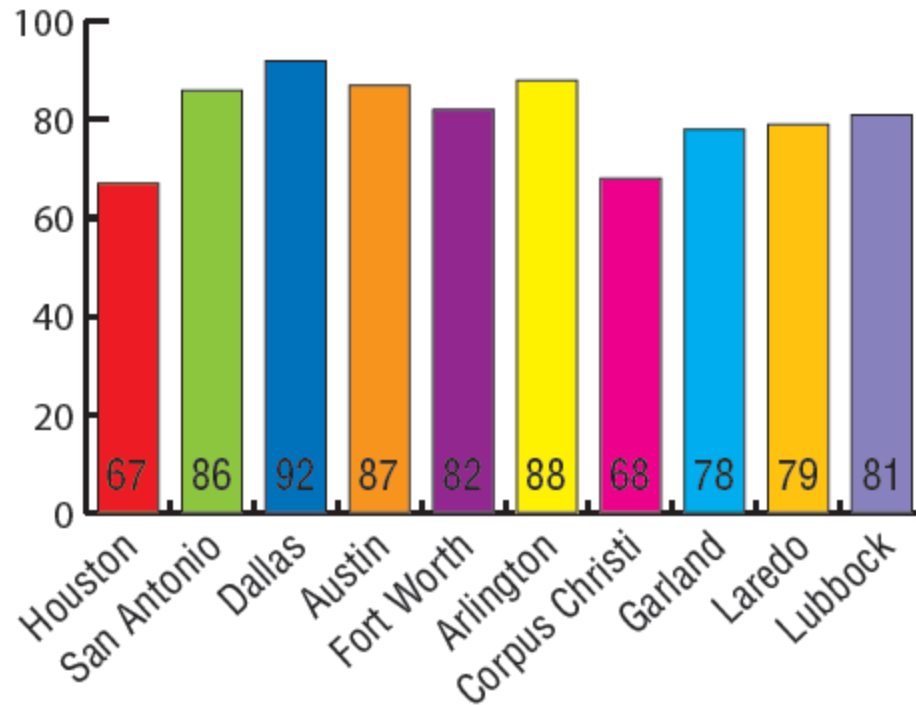


2006 Total Per Capita Water Use by Region



Normalized GPCD Comparison Major Texas Cities – 2007

**Per Capita Residential Water Use
in Major Texas Cities**



Current Conservation and Reuse Efforts

Region C Water Conservation Progress

- Significant public awareness campaign
- Time of day irrigation restrictions
- Low flow toilet rebate programs
- Public/school education programs
- Water waste prohibition ordinances
- Increasing block water price structures
- Residential water audits offered at discount/free cost
- Municipal/systemwide water audits

Region C Water Reuse Progress

- Region C Plan includes significant reuse projects to meet water demands for
 - Augmentation of potable supply
 - Electrical power generation
 - Irrigation (i.e., golf courses) and other nonpotable needs
- A number of entities have developed water reuse plans

Recommendations

- Continue coordinated public education activities
- Continue strategies recommended in Region C Plan
- Participate and support development of standardized metrics and approach to calculating GPCD.
 - Measurement of savings
 - Provide water planners with information necessary to make decisions regarding cost-effective measures
 - Water planners to measure performance (tool to measure effectiveness)



Conservation and Reuse Water Savings (Task 3.2)

Alan H. Plummer, Jr., P.E., BCEE
Alan Plummer and Associates



Agenda

- Introductory Comments
- Region C – Reuse Activities
- Region C – Water Conservation Activities
- Region C – Expected Water Savings
- Summary

Reuse Activities

Region C Water Reuse Progress

■ Major Reuse Advancements Since 2006 Plan

■ Key reuse activities

- TRWD's Richland Chambers Reuse Water Supply
- NTMWD's East Fork Raw Water Supply
- Upper Trinity Regional Water District – Lake Lewisville Water Supply
- Trinity River Authority return flow permits
- Dallas return flow contracts

■ *Projects under Construction*

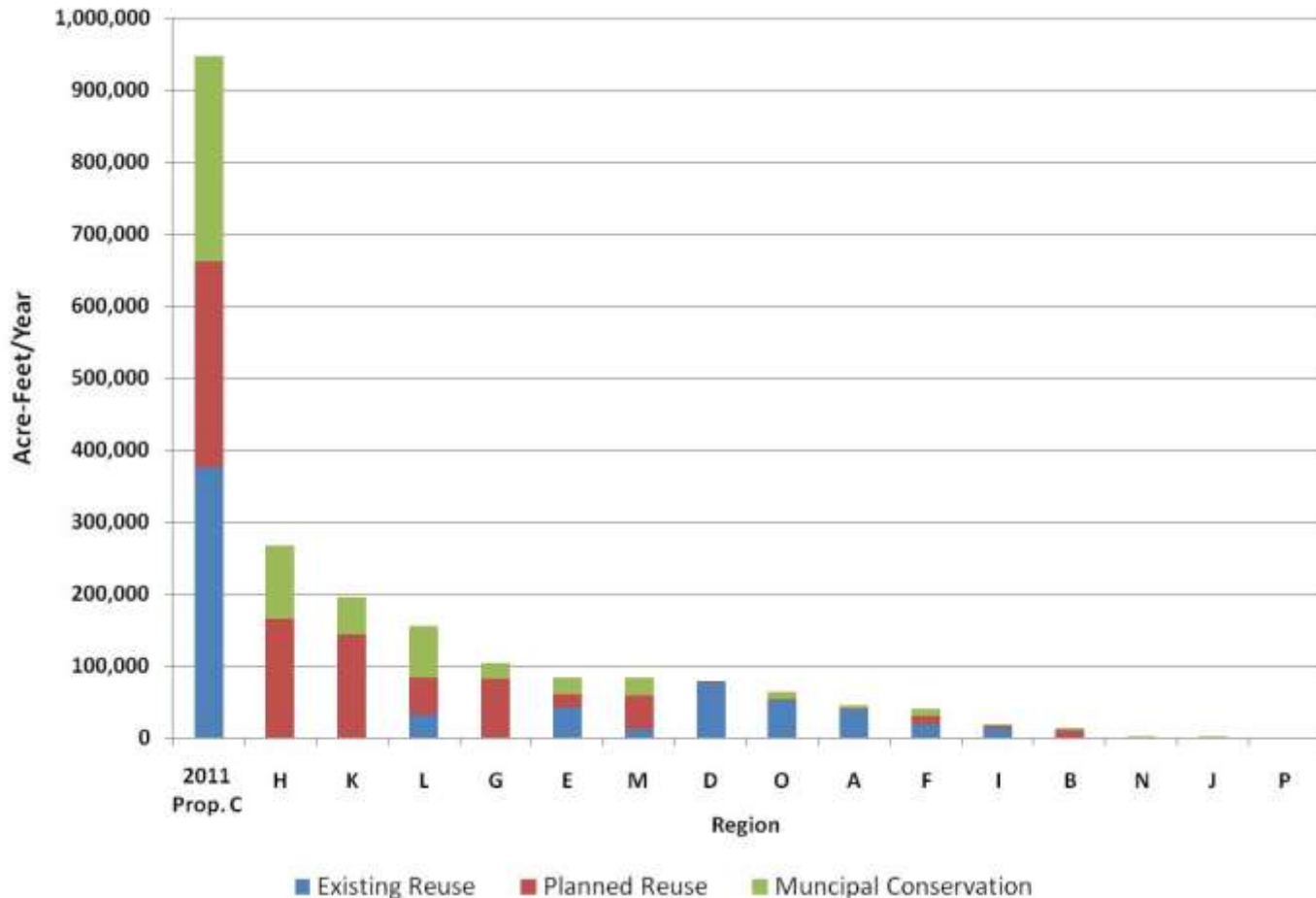
- *Fort Worth Village Creek Reclaimed Water Delivery System (startup anticipated by end of 2010)*



Region C Water Reuse

■ Region C Ahead of Rest of State in Reuse

2007 State Water Plan - 2060 Projections



Region C Water Reuse Progress

Region C reuse represents major water supply

- Greater than 200,000 acre-feet/year of existing reuse available to Region C in 2010 ⁽¹⁾
- Reuse (existing and planned) anticipated to grow to almost 665,000 acre-feet by 2060 ⁽¹⁾

⁽¹⁾ Based on projections developed during 2009.





Water Conservation Activities

Region C Water Conservation

Progress - Conservation Measurement Issues

- Quantification of water conservation savings achieved is difficult
 - Appropriate data are not always collected and not consistently utilized
 - Long timeframes required to model water demand fluctuations
- Normalized comparisons of GPCD, between utilities or regions are difficult to make accurately

Region C Conservation Savings Measurement Approach

- Consider implementation of water conservation measures as being significant even though accurate savings cannot be calculated
- Consider calculated municipal GPCD, recognizing limitations, for assessing relative water savings

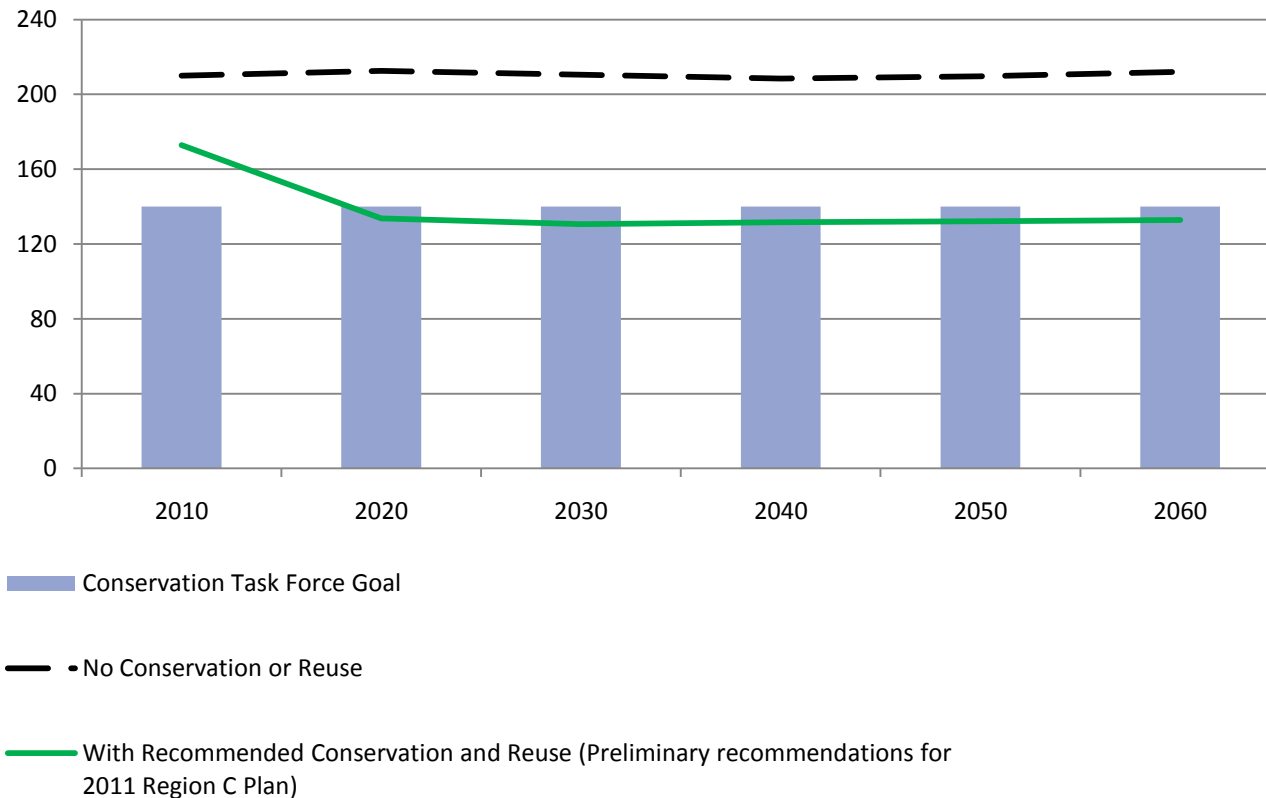
Region C Water Conservation Progress

- Region C has experienced regionwide implementation of water conservation strategies
- Basic and additional strategies
 - Various strategies selected for implementation by different municipalities
- Key strategies employed
 - Regional coordination for public awareness
 - Growing implementation of time of day irrigation restrictions
 - Water Conservation Symposium (3rd Annual)

Region C Updated 2011 Municipal GPCD

Condition	Projections (municipal gpcd)					
	2010	2020	2030	2040	2050	2060
No Conservation or Reuse	210	213	210	208	210	212
With Recommended Conservation and Reuse	173	134	130	132	132	133

Region C Municipal GPCD Projections







Expected Water Savings

Region C Expected Water Savings (Preliminary 2011 Region C Plan)

- Municipal GPCD Reduction⁽¹⁾

2010	210 GPCD
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2060	133 GPCD
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- Reduction of municipal water demand

Reduction = 30 to 35%

(1) Based on preliminary recommendations of conservation measures, including reuse, being considered by Region C Regional Planning Group.

Summary

- Region C leader in the state in reuse
- Region C water conservation implemented strategies are effective
- Region C implemented and planned water conservation measures, including reuse, projected to reduce water demands from slightly greater than 200 gpcd to about 130 gpcd (preliminary 2011 Region C Plan)

Impacts of Municipal Conservation and Reuse Strategies in Region C

Dan Hardin

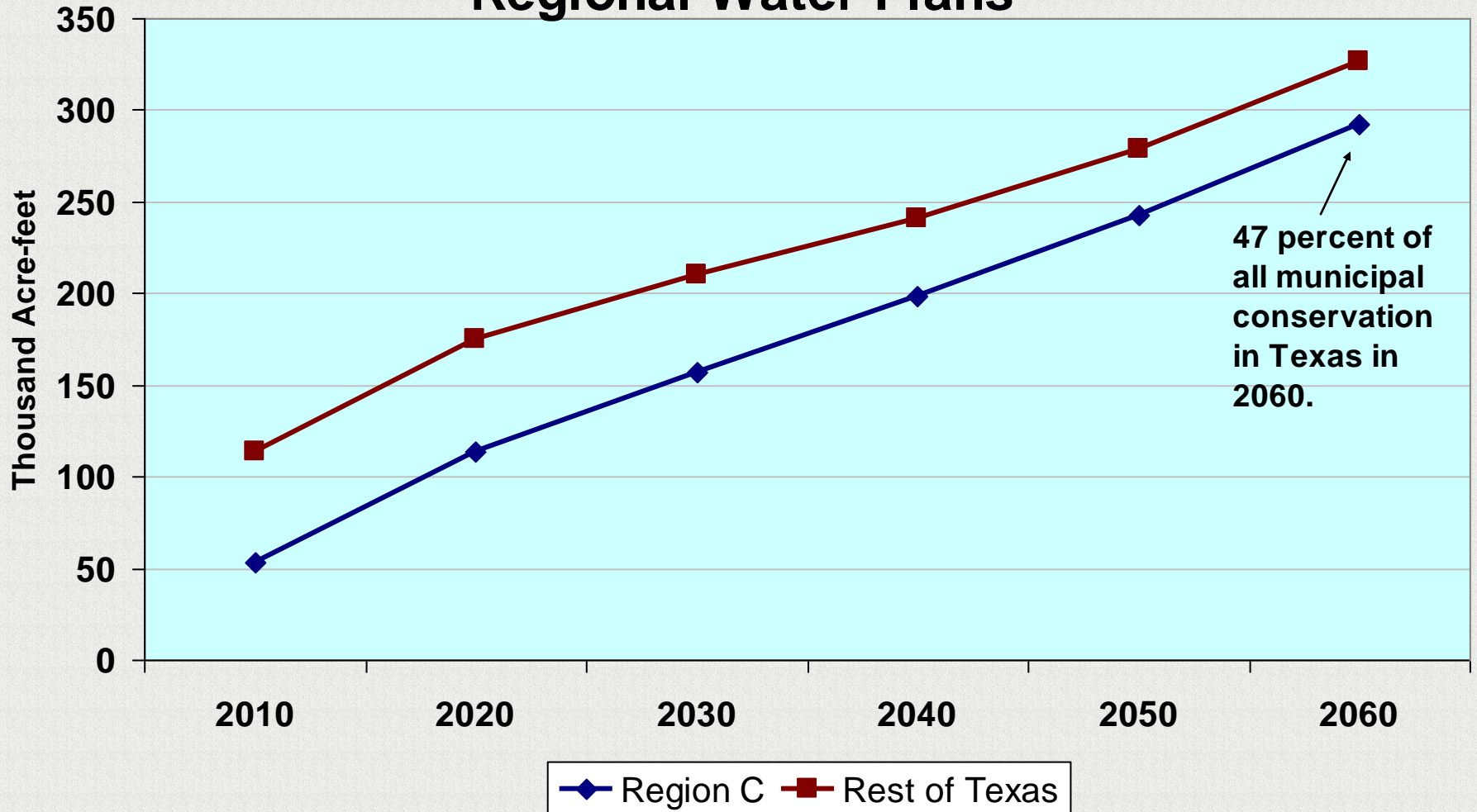
Director, Water Resource Planning
Texas Water Development Board

Senate Bill 3

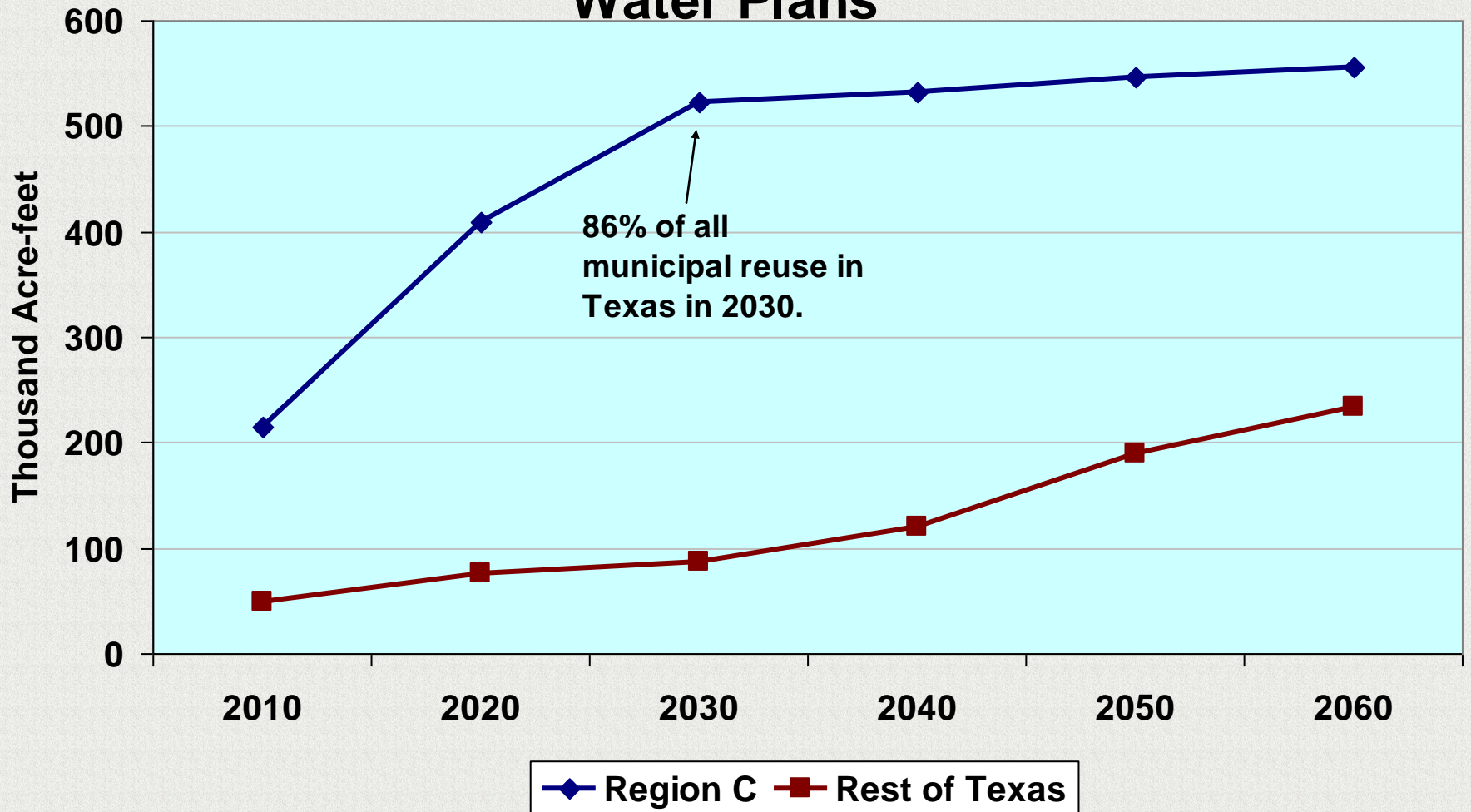
“The Study Commission shall:”

(3) determine whether water demand in the Region C Regional Water Planning Area may be reduced through additional conservation and reuse measures so as to postpone the need for additional water supplies

Volume Expected to be Saved Through Municipal Conservation Strategies, 2006 Regional Water Plans



Volume Expected to be Saved Through Municipal Reuse Strategies, 2006 Regional Water Plans



By 2030, Region C expects to meet 33% of its municipal demand through conservation and reuse strategies.

Gallons per capita per day

- Measure of municipal water use, defined as the average daily total of residential *plus* commercial *plus* institutional water use, divided by total resident population.
- Water is used at home *and* at place of work.

• In 2007:	Dallas	San Antonio
Total GPCD	240	150
Residential GPCD	92	86

Influences on Gallons per capita per day

- All other things equal, GPCD will be higher in regions/cities where the daytime population is augmented by commuters who live in a different region/city.
 - Dallas adds 290,000 net commuters on a daily basis (23% of the population), San Antonio adds less than 50,000 (3.8% of the population)
 - In the western counties of Region D (Delta, Hopkins, Hunt, Lamar, Rains, Van Zandt, Wood), 22% of the total workforce commuted to a job in Region C (2006 data).

Planning Regions ranked by Municipal GPCD, 2000

- P 133
- **D 141**
- L 149
- H 157
- I 160
- M 164
- B 165
- N 165
- K 168
- O 172
- G 174
- E 176
- F 198
- **C 203**
- J 205
- A 214

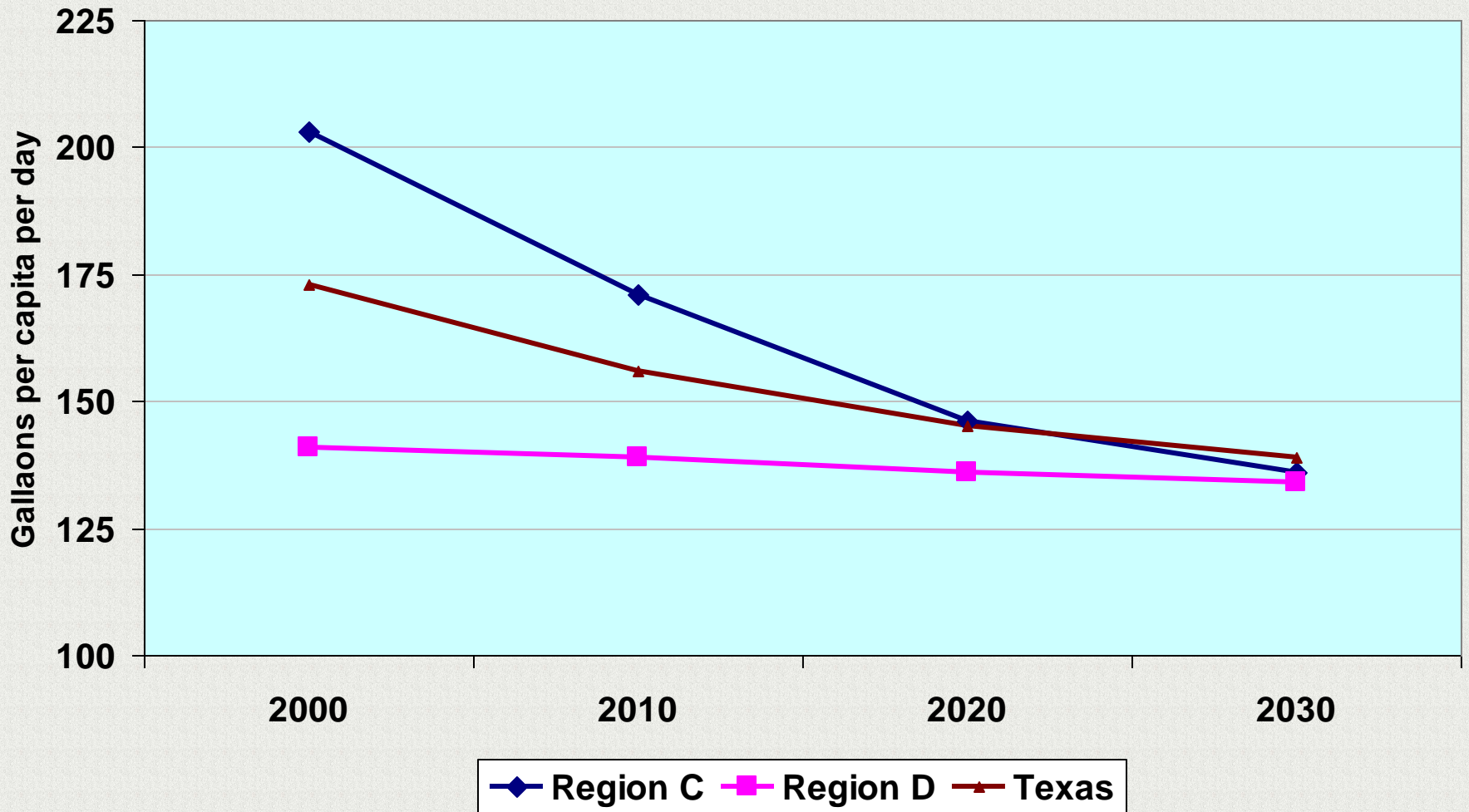
Current Progress Toward GPCD Goals

	Region C	Region D
Estimated GPCD, 2000	203	141
Projected GPCD, 2010 (after conservation & reuse)	171	139
Actual GPCD, 2007	172	150

Planning Regions ranked by Municipal GPCD, 2030 (after savings from conservation and reuse strategies)

- P 123
- L 127
- E 128
- K 129
- **D 134**
- **C 136**
- H 137
- M 142
- I 146
- G 154
- N 155
- O 156
- B 157
- A 169
- F 171
- J 176

Municipal GPCD - After Conservation and Reuse Water Management Strategies



Is More Conservation Enough?

- Would additional conservation by Region C be sufficient to eliminate all municipal needs?
- *Needs – Projected water demands in excess of existing supplies that would be physically and legally available during a repeat of the drought of record.*

Contribution of Conservation and Reuse to Region C Municipal Needs

	Municipal Needs	Conservation and Reuse	Remaining Needs
2010	291,008	268,264	22,744
2020	578,142	522,919	55,223
2030	829,235	678,715	150,520
2040	1,082,239	730,054	352,185
2050	1,380,144	788,689	591,455
2060	1,737,037	848,379	888,658

Further Savings if Region C GPCD Equal to Region D

	Remaining Needs	Additional Savings, "Equal" GPCD	Still Remaining Needs
2010	22,744	237,481	
2020	55,223	89,235	
2030	150,520	20,373	130,147
2040	352,185	34,434	317,751
2050	591,455	77,693	513,762
2060	888,658	146,603	742,055

What Part of Remaining Needs Could be Met if Region C GPCD was Equal to Region D GPCD?

- 2030 – 13.5%
- 2040 – 9.8%
- 2050 – 13.1%
- 2060 – 16.5%

Even if Region C's GPCD were reduced to the same level as Region D, there would be remaining unmet municipal needs in Region C of nearly 750,000 acre-feet in 2060.