

Lesson 10

CIVIL WORKS PROGRAM
DEVELOPMENT AND EXECUTION COURSE
LESSON NUMBER 10

4. CIVIL WORKS PROGRAM DEVELOPMENT

TOPIC: c. Program Development Concepts and Guidance: Part II

TIME ALLOTTED: 1-1/2 hours, including time for questions and answers

HANDOUTS: On Computer CD:

H-10-1 FINAL DRAFT Engineering Circular EC 11-2-193 Corps
of Engineers Civil Works Direct Program - Program
Development Guidance -Fiscal Year 2010

In Course Binder:

H-10-2 EXCERPTS from the Civil Works Strategic Plan and
The FY 09 Budget EC (EC 11-2-193)

H-10-3 EXCERPT. Increments Table from the ASA(CW) Transmittal
of Recommended Program to OMB dated 10 September 2007.

DETAILED OUTLINE

- A. INTRODUCTION
 - 1. Objective: To provide an understanding of the Corps Program Guidance and Development Process.
 - 2. Points to be covered:
 - a. Engineering Circular "The Budget EC".
 - b. Corps Development Process
 - c. Performance Measures.
- B. ENGINEERING CIRCULAR "THE BUDGET EC".
 - 1. Vocabulary Part I
 - 2. Parts
- C. CORPS DEVELOPMENT PROCESS
 - 1. Historical Process
 - 2. Current Process
 - a. By Function
 - b. By Business Line
- D. PERFORMANCE MEASURES
 - 1. Flood & Costal Storm Damage Reduction Example
 - 2. Vocabulary Part II
 - 3. Prioritizing by Increments
- E. QUIZ
- F. SUMMARY

Lesson 10

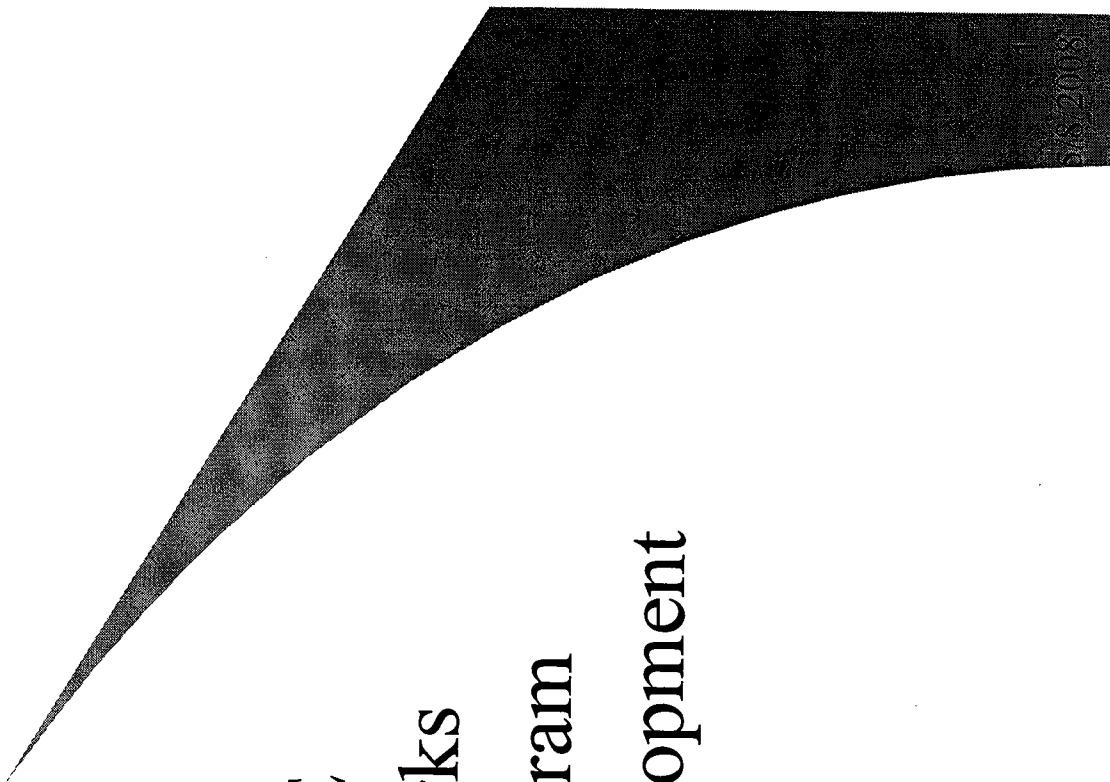
USACE

Civil Works

Direct Program

Program Development

Part II



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Introduction

- As discussed in Lesson 9, program development is the process by which work is defined and scheduled for execution.
- Again, “scheduled” means assignment of all necessary resources, including time, funding, manpower, land, plant, equipment, and material, for successful accomplishment of work.

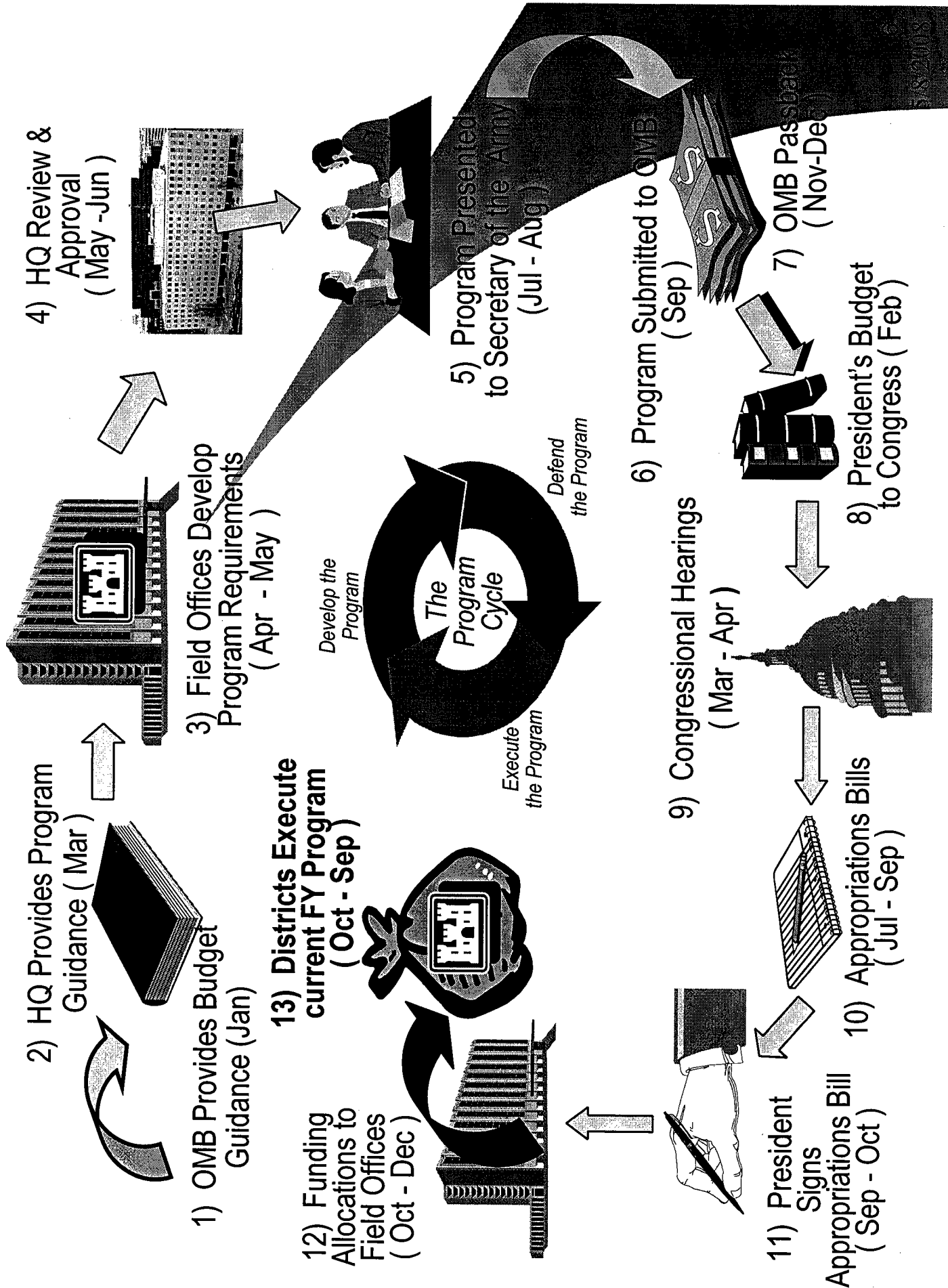
Agenda

- In this lesson we will cover:
 - The general CWDP development process;
 - The players and their roles in the process; and
 - The process, involving development, by “Business Line,” and by “systems approach.”

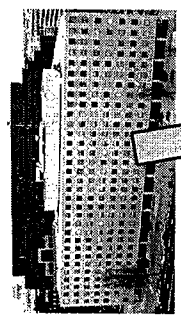
Overview

- For any given cycle, development of the CWDP occurs over a period of about 32 months:
 - beginning in the Executive Branch with resolution of “passback” for PY-1, and proceeding through the Executive Branch, with submission of the President’s Budget to Congress;
 - proceeding through the Legislative Branch, with congressional appropriations for PY; and
 - ending with agreement of Congress and the President and the resulting signing of the appropriations into law.

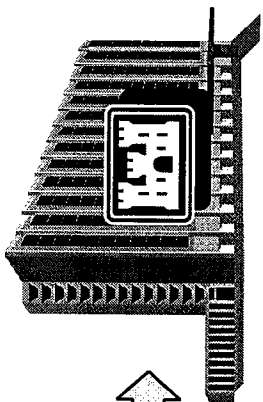
PROGRAM AND FUNDING TIMETABLE																																								
Calendar Year	2006			2007			2008			2009			2010																											
Month	FY 06			FY 07			FY 08			FY 08			FY 10																											
Fiscal Year	FY 06			FY 07			FY 08			FY 08			FY 10																											
	C	N	D	J	F	M	A	M	J	J	A	S	C	N	D	J	F	M	A	M	J	J	A	S	C	N	D	J	F	M	A	M	J	J	A	S	C	N	D	
	Current FY																																							
	FY 08 PROGRAM																																							
	DEVELOP										DEFEND										EXECUTE																			
	FY 09 PROGRAM																																							
	DEVELOP										DEFEND										EXECUTE																			
	FY 10 PROGRAM																																							
	DEVELOP										DEFEND										EXECUTE																			
	Budget Cycle = 32 Calendar Months																																							
Program Year	PY-3										PY-2										PY-1										PY									
	PY = CFY+2																																							
	NOW																																							



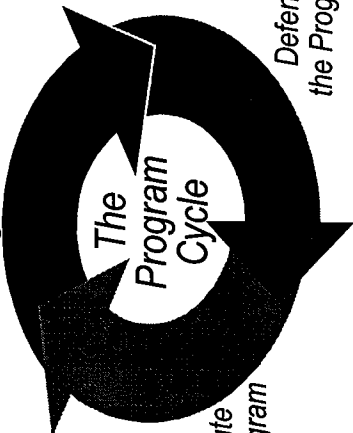
4) HQ Review & Approval (May - Jun)



3) Field Offices Develop Program Requirements (Apr - May)



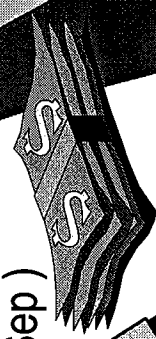
Develop the Program



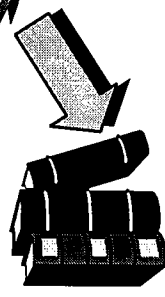
5) Program Presented to Secretary of the Army (Jul - Aug)



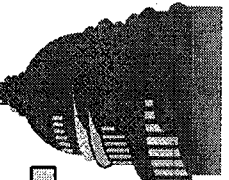
6) Program Submitted to OMB (Sep)



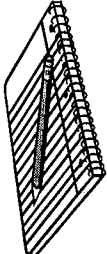
7) OMB Passes Budget (Nov - Dec)



8) President's Budget to Congress (Feb)



9) Congressional Hearings (Mar - Apr)

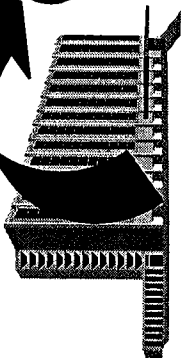


10) Appropriations Bills (Jul - Sep)

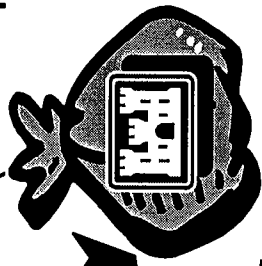


11) President Signs Appropriations Bill (Sep - Oct)

12) Funding Allocations to Field Offices (Oct - Dec)



13) Districts Execute current FY Program (Oct - Sep)



Overview (cont'd)

- During the program development process HQ consolidates and prioritizes the budget in two official versions of the recommended program for the Executive Branch – Army's and OMB's.
- Within the Legislative Branch there are, 3 principal versions, specifically, those of the
 - House,
 - Senate, and
 - Conferees.

Overview (cont'd)

- The mutually agreed upon version of Congress and the President, becomes the actual CWDP for any given year.

Vocabulary -- Part 1

- **Purpose** – one of 8 purposes that Congress has authorized the Corps to address through CWDP projects.
- **Regional System** - generally, an area in which water and related land resources might be managed to serve multiple purposes in order to provide comprehensive integrated solutions.
- **Regional System Approach** – view that service to all purposes based on proportional importance is preferable to service to single purposes, to the exclusion of others, in water resources development and management.

Vocabulary -- Part 1 (cont'd)

- **Business Line** – one of 8 programs of the CWDP, each one designed to serve just one of the 8 purposes that Congress has authorized the Corps to address through CWDP projects, e. g., flood protection.
- **Business Line Manager** – person responsible for management, including program development, of one of the 8 Business Lines.

Vocabulary – Part 1 (cont'd)

- **Function** – a specialty or related specialties of work, e. g., investigations, which cut(s) across any or all purposes.
- **Functional Program** – a program of the CWDP, designed to accomplish a specific function, e. g., investigations.
- **Functional Program Manager** – person responsible for management of one of the functional programs.

FY09 CWDP Development

Guidance

- **Engineer Circular (EC) 11-2-187** (<http://www.usace.army.mil/inet/functions/cw/cecwb/index.html>) provides guidance for development and submission to OMB of the CWDP for FY09.
- The EC applies to all headquarters elements, major subordinate commands (MSCs), districts, and field support activities having CWDP responsibilities.
- This guidance departs significantly from previous guidance.

FY08 CWDP Development Guidance

(cont'd)

- The EC comprises 3 parts:
 - Main Part, providing overall guidance;
 - Appendices I - VIII, providing guidance for development of each of the 8 Business Lines:
 - Emergency Management (EM);
 - Environment (EN);
 - Flood and Coastal Storm Damage Reduction (F&CSDR);
 - Hydropower (H);
 - Navigation (N);
 - Recreation (RC);
 - Regulatory (RG); and
 - Water Supply (WS)

FY08 CWDP Development Guidance

(cont'd)

– 6 Annexes, including A - D, providing generic guidance on:

- Investigations (I),
- Construction (C), and
- Operation and Maintenance (O&M) Program matters, cutting across all business lines, as applicable.
- Expenses (E);
- Revolving Fund (RF) (Plant Replacement and Improvement Program (PRIP)); and
- Automation Program (AP).

CWDP Development - History

- Formerly, we developed the CWDP by 9 “functional programs,” namely:
 - Investigations (I);
 - Construction (C);
 - Operation and Maintenance (O&M);
 - Flood Control and Coastal Emergencies (FC&CE);
 - Expenses (E);
 - Regulatory Program (RP);
 - Revolving Fund (RF) (Plant Replacement and Improvement Program (PRIP));
 - Automation Program (AP); and
 - Formerly Utilized Sites Remedial Action Program (FUSRAP).

CWDP Development - Current

- Now, we develop the CWDP by the 8 “Business Lines,” and
- 3 functional programs*, namely:
 - E;
 - RF (Plant Replacement and Improvement Program (PRIP)); and
 - AP.

*Two former functional programs, EM and RG, are now called Business Lines.

FY09 CWDP – Performance

Measures

- For the CWDP, there are 8 sets of performance measures – one for each Business Line.
- For each of the 8 sets there are 2 subsets of performance measures, namely:
 - a general subset, tied to CWDP objectives in the Civil Works Strategic Plan; and a
 - a specific subset, defined by CWDP objectives and functional program budgeting objectives of the FY09 EC (Ranking Criteria).

FY08 CWDP – Performance

Measures – F&CSDR Example

- **General subset (derived from Strategic Plan)**
 - (PED) Keep ongoing studies or PEDs going if likely to produce recommendation for project (I) or start new phase of studies or PED (I) to address critical needs
 - (C) Complete ongoing construction to start getting benefits and reduce future flooding impacts with new construction
 - (C) Initiate and complete dam safety projects
 - (C) Conduct dam and levee safety, seepage or static instability studies
 - (OM) Operations - Assure that projects perform as designed
 - (OM) Maintenance - Assure that projects perform as designed

FY09 CWDP – Ranking Criteria

F&CSDR Example (cont'd)

- **Specific subset (defined in BL appendix III):**
 - **Planning Engineering & Design (PEDS)**
 - Date of agreement – executed or expected
 - Population at Risk (*PAR*)
 - Combined flood risk factors (depth, velocity and warning time, *PAR* or *TPAR*)
 - Estimated average annual damages (without project)
 - Benefit to Cost Ratio – only for PED
 - System/Watershed study score

FY09 CWDP – Ranking Criteria

F&CSDR Example (cont'd)

- **Construction (C)**
 - Benefits Cost Ratio (*BCR*) for project
 - Net Benefits
 - Other purpose outputs by BL (ENR RECS)
 - Combined risk factors (depth, velocity and warning time, *PAR* or *TPAR*)
 - Life safety – Y or N (describe in remarks)

FY09 CWDP – Ranking Criteria

F&CSDR Example (cont'd)

- **Construction (C) Dam Safety**
 - Relative Risk of failure – risk compared to other Corps dams (*DSAC* Classification)
 - Condition Classification, Consequence Category, Relative Risk Matrix Value
 - Population at Risk (*PAR*)

FY09 CWDP – Ranking Criteria

F&CSDR Example (cont'd)

- **Operations (O&M)**
 - % of design level available (may be less than 100% due to reduced conveyance, pool restrictions or storage limits, seepage, or other reduced level of protection)% of design level available (reduced conveyance, pool restrictions, seepage (levees), reduced level of protection)
 - O Index as total damages prevented divided by cumulative O costs (HQ will calculate)
 - % of all required inspections, surveys that can be accomplished with a given budget increment

FY09 CWDP – Ranking Criteria

F&CSDR Example (cont'd)

- **Maintenance (O&M)**
 - Condition Classification, Consequence Category, Relative Risk Matrix Value
 - % of design level available (may be less than 100% due to reduced conveyance, pool restrictions or storage limits, seepage, or other reduced level of protection)
 - M Index as total damages prevented divided by cumulative M costs (HQ will calculate)
 - Special legal mandates – Y or N (describe in remarks)
 - Safety issues – Y or N (describe in remarks)

Vocabulary – 2nd Installment

- **Business Line Increment** - any mutually exclusive collection of one or more items of “essential work,” defined and prioritized by any MSC for any of its Business Lines.
 - The increment is prioritized based on its value in terms of performance measures.
 - It is added to the program in order of its priority among all candidate increments.
 - Its priority is based on its relative efficiency and effectiveness in accomplishing performance objectives, goals, and missions.

Vocabulary – 2nd Installment (cont'd)

- **Essential Work** – for any Business Line, a collection of work that must be accomplished in order to avoid unreasonable repercussions, e. g., nonpayment of earnings under a continuing contract.
- **Initial Business Line Increment** – the highest priority program increment, usually comprising principally essential work. Criteria for developing initial line increments are defined, by function, for each Business Line.

Vocabulary – 2nd Installment (cont'd)

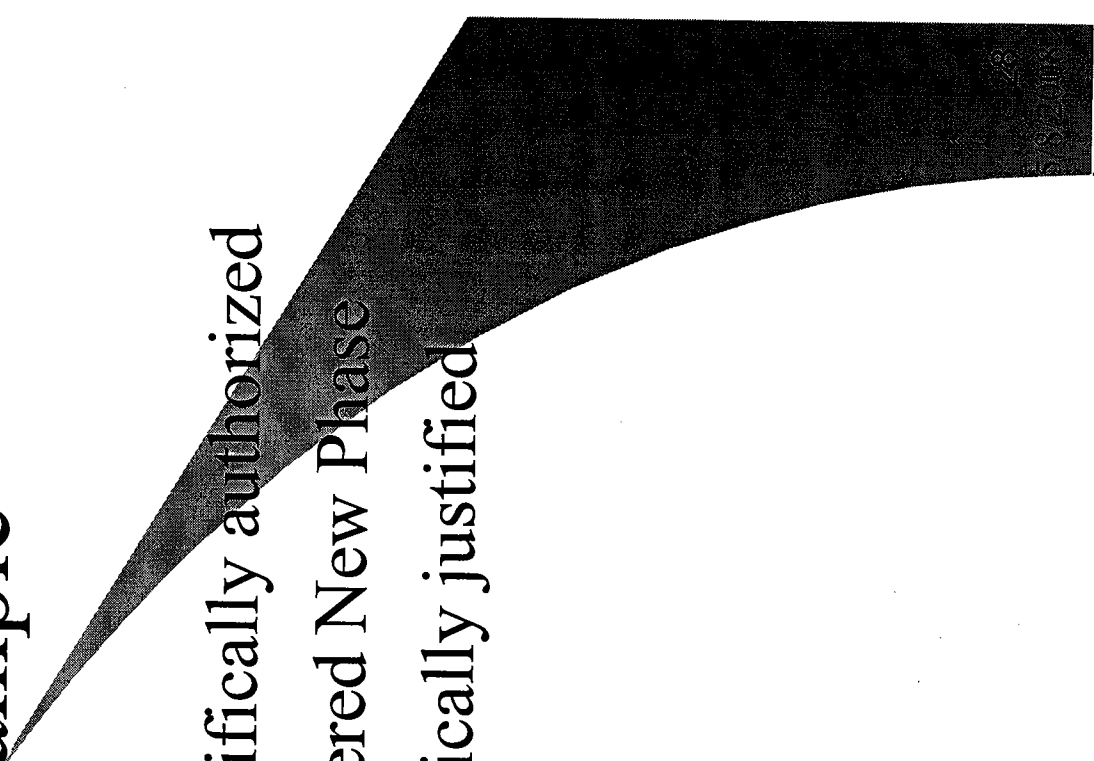
- **Initial CWDP Business Line** – for any Business Line, the Corps-wide initial Business Line derived through synthesis of all region-wide initial Business Line Increment.
- **Initial CWDP** – the Corps-wide initial program by “system approach,” or multiple purposes, derived through synthesis of all Corps-wide initial Business Lines, across all purposes.

Vocabulary – 2nd Installment (cont'd)

- **Ceiling CWDP** – Presidential Policy Program, specifically, the initial CWDP incremented with high performance outputs and complying strictly with Presidential policy.
- **Recommended CWDP** – the ceiling program incremented or decremented to provide the program that Army would prefer to implement.

FY09 CWDP – Initial Program

Criteria – F&CSDR Example

- Investigations
 - Only Studies and PED specifically authorized
 - Seamless PED's are considered New Phase
 - New starts must be economically justified
- 

FY09 CWDP – Initial Program

Criteria – F&CSDR Example

- Construction
 - Includes specifically authorized, replacement, initial beach fill, dam safety, deficiency correction, and dam seepage studies
 - New Starts must be economically justified
 - Continue existing Contracts
 - Contracts must be fully funded if total estimated value less than \$20M

FY09 CWDP – Initial Program

Criteria – F&CSDR Example

- O&M
 - Operations and Maintenance requirements must be separated
 - Includes “minimum level of service”, on-going major maintenance, critical routine maintenance, infrastructure security, rehabs of high risk projects, and dam safety
 - Detailed project descriptions and justifications strengthen funding request
 - Dam Safety work prioritized by HQ and based on DSAAC
 - Inspection of Completed Works based on systems approach
 - Joint activities – Joint Costs by BL (multi use Hydropower)
 - Dist Req’d to screen risk portfolio 35% of inventory in FY09

FY09 CWDP – Program Development

- Under the program development process, MSCs develop program increments, including initial program increments – **Initial Business Lines**.
- HQUSACE, in close collaboration with OASA(CW), reviews the MSCs' initial programs and program increments, by Business Line, then, for each Business Line, develops the **Initial CWDP Business Line** through, valuation and prioritization of program increments across all MSCs, and selection of program increments in highest priority order.

FY09 CWDP – Program Development

(cont'd)

- HQUSACE, in collaboration with OASA(CW), develops the Corps-wide initial program by “Regional System - Watershed Budget” – multiple purposes, namely, the **Initial CWDP** through, valuation and prioritization of program increments across all Business Lines, and selection of program increments in highest priority order.
- HQUSACE and OASA(CW) develop a Corps-wide ceiling program by “Regional System,” namely, the **Ceiling CWDP**, generally, by adding, in highest-return priority, Business Line increments remaining nationwide, to the initial CWDP.

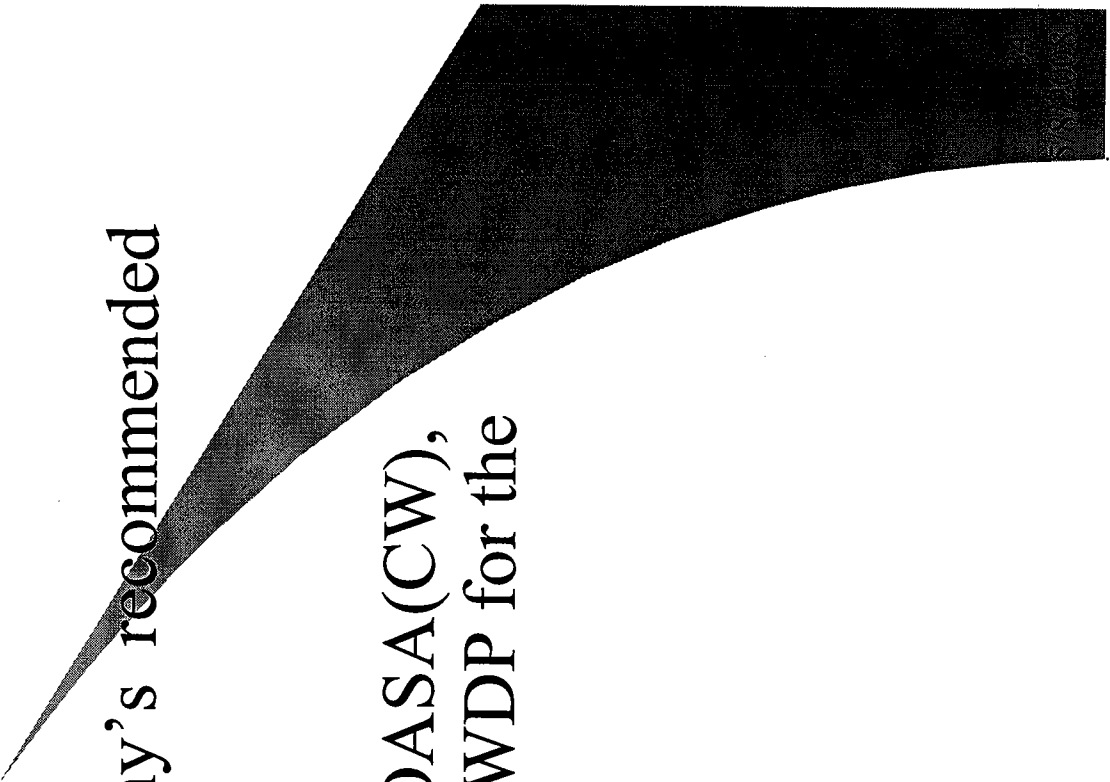
FY09 CWDP – Program Development

(cont'd)

- A Corps-wide recommended program is developed with OASA(CW) by “Regional System,” namely, the **Recommended CWDP**, generally, by adding, again in highest-return priority, Business Line increments remaining nationwide, to the ceiling CWDP.

FY09 CWDP – Program Development

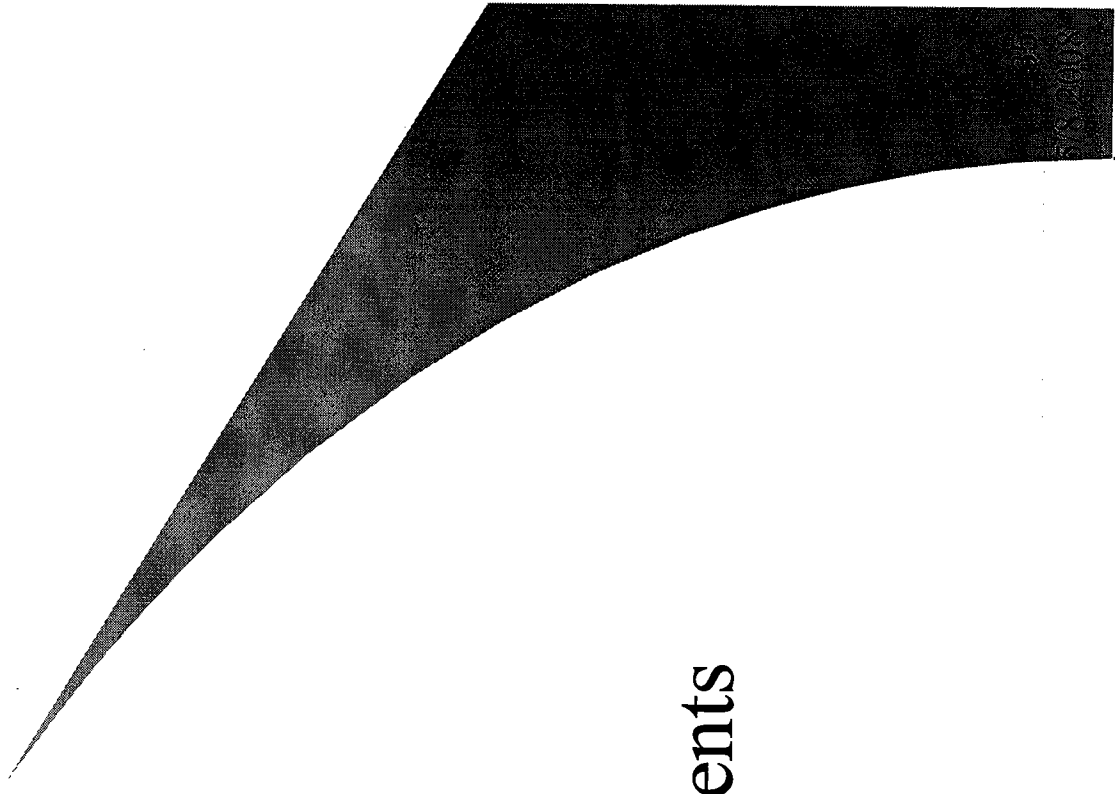
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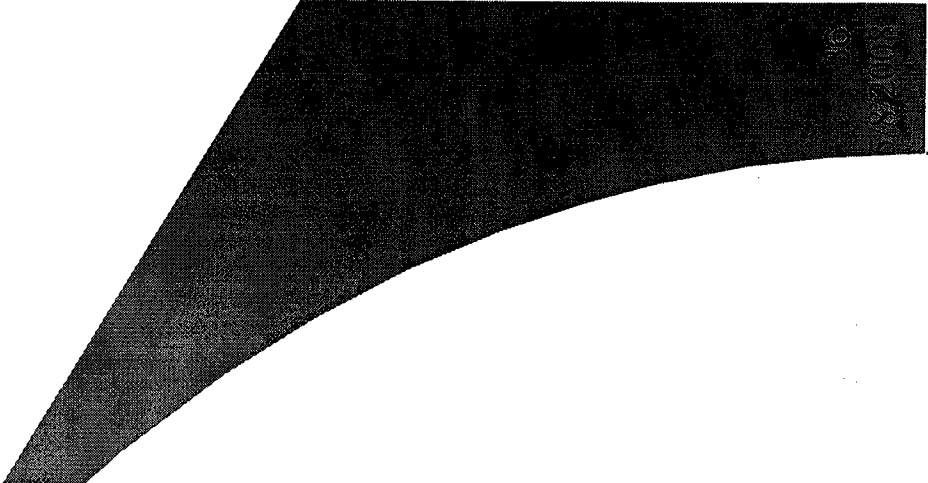
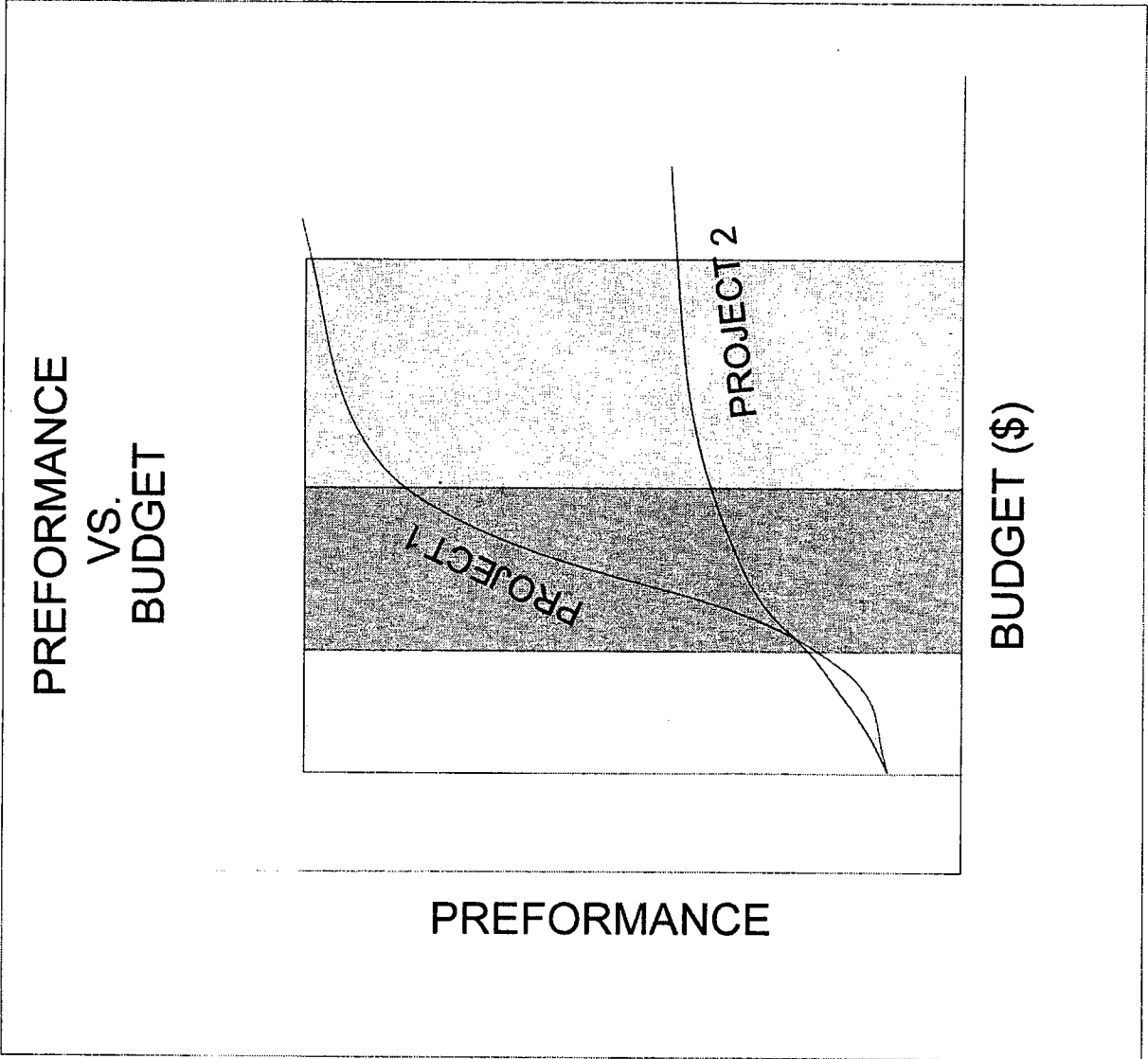
- OASA(CW) submits the Army's recommended CWDP to OMB.
 - OMB, in collaboration with OASA(CW), finalizes the recommended CWDP for the President's Budget.
- 

FY08 CWDP – Program Development

(cont'd)

Analysis
for
Prioritizing
Program Increments

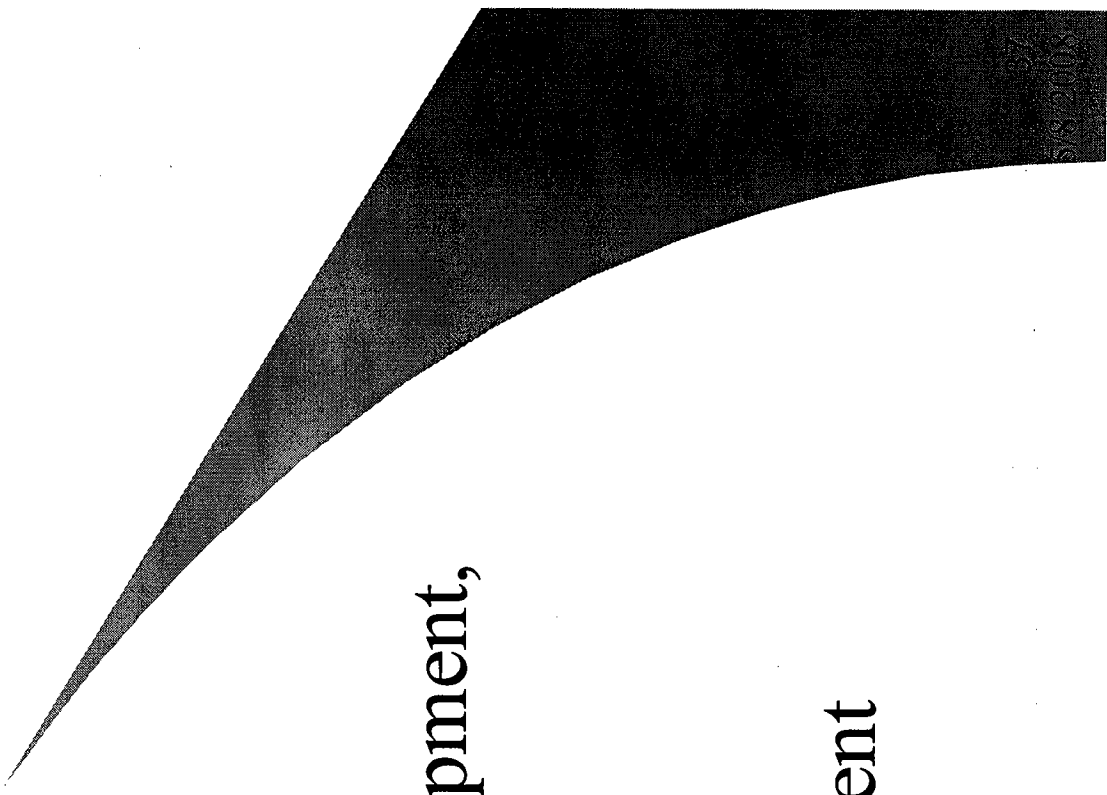




FY08 CWDP – Program Development

(cont'd)

Illustration
of
Program Development,
by
Business Line,
by
Program Increment



BUSINESS PROGRAM DEVELOPMENT BY PERFORMANCE INCREMENTS									
INCREMENTAL COST (k\$)									
Inc 6									FUNCTIONAL PROGRAM
Inc 2									O&M
Inc 5									Const
Inc 4									Invest
Inc 3	Inc 3								
Inc 2	Inc 2	Inc 3							
Initial	Inc 2	Inc 2							
Initial	Inc 2	Inc 2							
Initial	Initial	Inc 2							
Initial	Initial	Initial	Inc 2						
	Initial	Initial	Initial	Inc 2					
	Initial	Initial	Initial	Initial	Inc 2				
Nav	FDR	Env	Hydro	Rec					
BUSINESS PROGRAM									

Program Development – Quiz

- What does CWDP abbreviate?
- Where can you find the FY09 EC?
- We develop the CWDP by programs of what kinds?
- How many programs are there of each kind?
- How many parts does the EC have?
- What are they called?
- What kind of programs do the annexes cover?

Program Development – Quiz (cont'd)

- What kind of programs do the appendices cover?
- How many sets of performance measures are there for the CWDP?
- How many subsets are there within each set?
- Where are they found?
- What are the sources of the subsets?
- What is a “Business Line Increment”?
- How is it prioritized?
- What is “essential work”?

Program Development – Quiz (cont'd)

- Where are the criteria for developing initial program increments found?
- What comprises the “initial CWDP Business Line”?
- Who develops it?

Summary

- We've covered:
 - The general CWDP development process;
 - The players and their roles in the former process; and
 - The players and their roles in the current process, involving development by
 - “Business Line,” and
 - “Systems Approach.”

Summary (cont'd)

- For those involved in development of the CWDP, this lesson should help you contribute to development of more successful programs. For others, it should help you better prioritize and plan your work.
- Again, if you have any questions or comments you'd like to share, please feel free to ask or make them now.
- As before, you'll have an opportunity to comment privately, later, when you complete the course questionnaire.

Functional Managers at HQ

Function	HQ Manager
Investigations	
Construction	
O&M	
O&M Remaining Items	
MR&T	
FC&CE	
GE	
CAP	
PAS & FPMS	
Regulatory	
RF	
AP	
FUSRAP	

Business Line Managers at HQ

Business Line	HQ Manager
Environment-Ecosystem Restoration	
Environment-Stewardship	
Emergency Management (EM)	
Environment –FUSRAP	
Flood and Coastal Storm Damage Reduction (F&CSDR)	
Navigation (N)	
Hydropower (H)	
Recreation (RC)	
Regulatory (RG)	
Water Supply (WS)	

Civil Works Strategic Plan

Table 1. Summary of Civil Works Strategic Goals and Objectives, and Program Objectives

Strategic Goals	STRATEGIC GOAL 1. Provide sustainable development and integrated management of the Nation's water resources.	STRATEGIC GOAL 2. Repair past environmental degradation and prevent future environmental losses.	STRATEGIC GOAL 3. Ensure that projects perform to meet authorized purposes and evolving conditions.	STRATEGIC GOAL 4. Reduce vulnerabilities and losses to the nation and the Army from natural and man-made disasters, including terrorism.
Strategic Objectives and Business Line Goals	<p><i>The following objectives presume that the Corps has a cost-sharing partner.</i></p> <p>OBJECTIVE 1.1. Seek water resources solutions that better balance economic, environmental, and quality of life objectives.</p> <p><u>Navigation Objective</u></p> <p>1.1.1. Invest in navigation infrastructure when the benefits exceed the costs.</p> <p>Future: Invest in navigation infrastructure that is fully capable of supporting maritime requirements in environmentally sustainable ways where economically justified.</p> <p><u>Flood and Coastal Storm Damage Reduction Objective</u></p> <p>1.1.2. Invest in flood and coastal storm damage reduction solutions when the benefits exceed the costs.</p> <p>Future: Invest in solutions that reduce the Nation's flood and coastal storm losses in environmentally sustainable ways where economically justified.</p> <p><u>Hydropower Objective</u></p> <p>1.1.3. Invest in hydropower rehabilitation projects when the benefits exceed the costs.</p>	<p><i>Environmental Restoration</i></p> <p>OBJECTIVE 2.1. Restore degraded, significant ecosystems structure, function, process to a more natural condition.</p> <p>Ecosystem Restoration Objectives</p> <p>2.1.1. Invest in restoration projects or features that make a positive contribution to the Nation's environmental resources in a cost-effective manner.</p> <p><i>Environmental Protection</i></p> <p>OBJECTIVE 2.2. Protect the Nation's wetlands to prevent degradation from future development.</p> <p><u>Regulatory Objectives</u></p> <p>2.2.1. Administer the Regulatory Program in a manner that protects the aquatic environment (assures zero net-loss of wetlands).</p> <p>2.2.2. Administer the Regulatory Program in a manner that enables efficient decision making.</p> <p><i>Environmental Remediation</i></p> <p>OBJECTIVE 2.3. Assist in the cleanup of contaminated, hazardous, toxic, and radioactive waste sites as authorized or requested by others.</p>	<p>OBJECTIVE 3.1. Improve the efficiency and effectiveness of existing Corps water resources projects.</p> <p><u>Navigation Objective</u></p> <p>3.1.1. Operate and manage the navigation infrastructure so as to maintain justified levels of service in terms of the availability to commercial traffic of high-use navigation infrastructure (waterways, harbors, channels).</p> <p><u>Flood and Coastal Storm Damage Reduction Objective</u></p> <p>3.1.2. Operate and maintain Corps infrastructure to ensure that designed levels of flood protection are realized.</p> <p><u>Environmental Stewardship Objective</u></p> <p>3.1.3. Ensure healthy and sustainable lands and waters and associated natural resources on Corps lands held in public trust to support multiple purposes, i.e.,</p> <p>3.1.3.1. Protect, preserve, and restore significant ecological resources in accordance with master plans.</p>	<p>OBJECTIVE 4.1. Prepare and provide for rapid, efficient, and effective all-hazards response and recovery.</p> <p><u>Emergency Management Objectives</u></p> <p>4.1.1. Attain and maintain a high, consistent state of preparedness.</p> <p>4.1.2. Provide rapid, effective, efficient all-hazards response..</p> <p>4.1.3. Ensure effective and efficient long-term recovery operations.</p> <p>OBJECTIVE 4.2. Improve the safety and security of critical water resources infrastructure.</p> <p><u>Homeland Security Objective</u></p> <p>4.2.1. Reduce risks to critical water resources infrastructure.</p>

Civil Works Strategic Plan

Strategic Goals	STRATEGIC GOAL 1. Support sustainable development through integrated water resources development and management.	STRATEGIC GOAL 2. Repair past environmental degradation and prevent future environmental losses.	STRATEGIC GOAL 3. Ensure that projects perform to meet authorized purposes and evolving conditions.	STRATEGIC GOAL 4. Reduce vulnerabilities and losses to the nation and the Army from natural and man-made disasters, including terrorism.
Strategic Objectives and Business Line Goals	<p><u>Hydropower Objective</u></p> <p>Future: Invest in environmentally sustainable hydropower infrastructure improvements where economically justified.</p> <p>OBJECTIVE 1.2. Support the formulation of regional and watershed solutions to water resources problems.</p> <p>1.2.1. As approved and funded, provide a range of assistance to support sustainable regional, basin-wide, or watershed planning and activities in partnership with others.</p> <p>Objective 1.3. Reduce the backlog of ongoing, budgeted construction projects.</p> <p>1.3.1. Deliver project benefits as quickly as possible within available resources.</p> <p>1.3.2. De-authorize projects that no longer show a positive benefit-to-cost ratio.</p> <p>1.3.3. De-authorize projects that no longer have the active support of a local cost-share sponsor.</p>	<p>4.3.1. <u>FUSRAP Objective.</u> Achieve the cleanup objectives of the Formerly Utilized Sites Remedial Action Program (FUSRAP).</p> <p>4.3.2. <u>Support for Others Objective.</u> Assist the Environmental Protection Agency in achieving the objectives of the Superfund Program.</p>	<p>3.1.3.2. Ensure that the operation of all Civil Works facilities and management of associated lands, including out-granted lands, complies with the environmental requirements of the relevant Federal, State, and local laws and regulations.</p> <p>3.1.3.3. Meet the mitigation requirements of authorizing legislation or applicable Corps decision document.</p> <p><u>Hydropower Objectives</u></p> <p>3.1.4. Provide reliable power.</p> <p>3.1.5. Provide peaking power.</p> <p>3.1.6. Maintain capability to provide power efficiently.</p> <p><u>Recreation Objectives</u></p> <p>3.1.7. Provide justified outdoor recreation opportunities in an effective and efficient manner at Corps-operated water resources projects.</p> <p>3.1.8. Provide continued outdoor recreation opportunities to meet the needs of present and future generations.</p> <p>3.1.9. Provide a safe and healthful outdoor recreation environment for Corps customers.</p>	

TABLE III-1 Performance Measures and Budget Ranking Criteria		
CW Strategic Goal/Objective	Budget Objective	Metric [Metric Column Number]
1.1, 1.2 and 1.3	Keep ongoing studies or PEDs going if likely to produce recommendation for project (I) or start new phase of studies or PED (I) to address critical needs	<ul style="list-style-type: none"> • Date of agreement – executed or expected [39,40,41] • Population at Risk (PAR)[50] • Population Affected (POP AFFECTED)[51] • High Combined flood risk factors (depth, velocity and warning time, PAR or TPAR)[53,54,55] • Estimated average annual damages (without project)[48] • Benefit to Cost Ratio – only for PED[43] • System or Watershed study score[62]
1.3	Complete ongoing construction to start achieving benefits and reduce future flooding impacts with new construction (C)	<ul style="list-style-type: none"> • Benefits Cost Ratio (BCR) for project[43] • Net Benefits[46] • Combined risk factors (depth, velocity and warning time, PAR or TPAR)[53,54,55]
5.1	Initiate and complete dam safety projects (C) Conduct dam and levee safety, seepage or static instability studies (C)	<ul style="list-style-type: none"> • Dam Safety Action Classifications (DSAC) [74] • Relative Risk Matrix Value from Condition Assessment, Consequence Category [68,69,70] • Population at Risk (PAR)[50] • Population Affected (POP AFFECTED)[51]
3.1	Operations - Assure that projects perform as designed (OM)	<ul style="list-style-type: none"> • % of time available[72] • O Index [64,65,66,84] • % of all required inspections, surveys that can be accomplished with a given budget increment[73]
3.1	Maintenance - Assure that projects perform as designed (OM)	<ul style="list-style-type: none"> • Relative Risk Matrix Value from Condition Assessment, Consequence Category [68,69,70] • % of design level available (may be less than 100% due to reduced conveyance, pool restrictions or storage limits, seepage, or other reduced level of protection) [71] • M Index as total damages prevented divided by cumulative M costs [64,65,67,85] • Special legal mandates – Y or N (describe in remarks)[76] • Safety issues – Y or N (describe in remarks) [77]

TABLE 2
 INVESTMENT INCREMENTS COMPRISING INITIAL FUNDING, CEILING LEVEL FUNDING AND
 ARMY- RECOMMENDED PROGRAM

	FRM	NAV	HP	AER	STU	REC	WS	OTH	TOT
INITIAL FUNDING INCREMENTS									
Study and design phases continuing from FY 2008 budget, NTE FY 2008 amount for each	9	2	0	19	0	0	0	0	29
Investigations-related remaining items, NTE FY 2008 amount for each	26	11	0	10	0	0	0	0	47
Earnings on previously awarded continuing construction contracts, plus E&D and S&A associated with those contracts, for specifically authorized projects in the FY 2008 budget	96	244	33	12	0	0	0	0	384
Capability funding level for Projects with DSAC = 1 or 2 (ongoing) and additional funding for dam safety assurance and seepage control projects (FRM)	282	86	0	0	0	0	0	0	368
Court decree, treaty, and mitigation-during-construction requirements that must be met in FY 2009	5	0	0	0	0	0	0	0	5
Construction-related remaining items NTE FY 2008 amount for each	54	22	4	28	0	0	0	0	108
Critical rehabilitation work (formerly in Construction account)	0	13	0	0	0	0	0	0	13
Capability funding level for ESA BiOp requirements at operating projects that must be met in FY 2009 to avoid jeopardy	75	31	0	0	0	0	0	0	106
Authorized replacement of sand lost from shorelines due to Federal navigation O&M (NAV)	0	4	0	0	0	0	0	0	4
Projects to use beneficially use dredged material from operating projects	0	9	0	0	0	0	0	0	9
Critical operation, maintenance, and repair work including project security (Incr 1 & 2) & Joint Cost	385	816	179	1	72	0	3	0	1457
O&M remaining items NTE FY 2008 amount for each	32	61	5	1	3	0	0	0	102
Recreation operations to provide visitor health and safety services at acceptable levels to 36 percent of	0	0	0	0	0	201	0	0	201
Continue remedial work and studies ongoing in FY 2008 (FUSRAP)	0	0	0	0	0	0	0	130	130
Preparedness - FCCE (EM)	0	0	0	0	0	0	0	40	40
Preparedness - NEPP (EM)	0	0	0	0	0	0	0	5	5
"Level 1" performance (REG)	0	0	0	0	0	0	0	180	180
FY 2008 level of service at FY 2009 price levels (ED&M)	0	0	0	0	0	0	0	177	177
INITIAL FUNDING LEVEL	964	1299	221	71	75	201	3	532	3367
ADDITIONAL, WITHIN-CEILING FUNDING INCREMENTS									
Additional funding for highest performing studies and PEDs	11	15	0	20	0	0	0	0	46
Additional funding for National Priority projects	10	88	0	176	0	0	0	0	274
Additional funding to continue construction on all ongoing FY 08 Budgeted projects	198	32	4	2	0	0	0	0	236
Funding for special case construction	27	0	5	4	0	0	0	0	36
Critical rehabilitation work (formerly in Construction account)	16	10	0	0	0	0	0	0	25

	FRM	NAV	HP	AER	STU	REC	WS	OTH	TOT
ESA BiOp requirements at operating projects that must be met in FY 2009 to avoid jeopardy	0	0	0	0	0	0	0	2	0
Projects (and remaining item) to beneficially use dredged material from operating projects	0	3	0	0	0	0	0	0	3
Critical operation, maintenance, and repair work including project security (Incr 1,2 & 3) & Joint Cost	86	480	101	0	20	0	0	1	688
O&M Remaining Items	0	0	0	0	0	0	0	0	0
Recreation operations to provide visitor health and safety services at acceptable levels to 49 percent of visitation	0	0	0	0	0	0	59	0	59
Remaining Items for protection of administration facilities and program evaluation and support (Recreation) & Joint Cost	0	0	0	0	0	0	15	0	15
"Level 1" performance (REG)	0	0	0	0	0	0	0	0	27
Full FCCE Preparedness/ NEPP Account (EM)	0	0	0	0	0	0	0	0	2
Levee Inventory & Assessment (EM)	0	0	0	0	0	0	0	0	10
Maintain service, contracting and decrease staffing (ED&M)	0	0	0	0	0	0	0	0	1
TOTAL - ADDITIONAL WITHIN-CEILING INCREMENTS	348	628	110	202	20	74	3	40	1425
CEILING FUNDING LEVEL	1312	1927	331	273	95	275	6	572	4792
FIRST ADDED, RECOMMENDED FUNDING INCREMENTS (R1)									
Additional funding for very high performing studies and PEDs including New Starts	3	4	0	3	0	0	0	0	10
Investigations Remaining Items	0	1	0	1	0	0	0	0	2
Additional funding for justified hydropower replacement projects (HP)	0	0	21	0	0	0	0	0	21
Additional funding for National Priority projects	1	12	0	54	0	0	0	0	67
Additional construction funding for other, very highest performing projects	104	0	0	4	0	0	0	0	109
Critical rehabilitation work (formerly in Construction account)	0	18	0	0	0	0	0	0	18
Authorized replacement of sand lost from shorelines due to Federal navigation O&M (NAV)	0	2	0	0	0	0	0	0	2
Critical operation, maintenance, and repair work including project security (Incr 3) & Joint Cost	36	86	19	0	0	0	0	0	141
Funding for National Recreation Reservation Service (NRRS) contract services payments (Recreation)	0	0	0	0	0	5	0	0	5
Level "1 plus" Performance Regulatory	0	0	0	0	0	0	0	0	20
Maintain service and contracting (ED&M)	0	0	0	0	0	0	0	0	2
TOTAL - RECOMMENDED 1	145	122	40	62	0	5	0	22	396
CUMULATIVE FUNDING LEVEL	1457	2049	371	335	95	280	6	594	5188

	FRM	NAV	HP	AER	STU	REC	WS	OTH	TOT
THIRD ADDED, RECOMMENDED FUNDING INCREMENTS (R3)									
Additional funding for all other studies and PEDs in FY 2008 budget or that would have met FY 2008 selection criteria	0	0	0	0	0	0	0	1	0
Investigations Remaining Items	3	1	0	0	0	0	0	0	3
Additional funding for High Performing Projects	0	42	0	0	0	0	0	0	42
Construction Remaining Items	28	0	0	0	0	0	0	0	28
Additional funding for National Priority projects	0	0	0	5	0	0	0	0	5
Additional funding for hydropower maintenance and rehabilitation (HP)	0	0	6	0	0	0	0	0	6
Critical rehabilitation work (formerly in Construction account)	0	5	0	0	0	0	0	0	5
Projects to beneficially use dredged material from operating projects	0	1	0	0	0	0	0	0	1
Additional operation, maintenance, and repair work including project security (Incr 3) & Joint Cost	48	25	9	0	0	0	0	0	82
O&M Remaining Items	5	0	0	0	0	0	0	0	5
Accelerate SLAPS VP and SLDA (FUSRAP)	0	0	0	0	0	0	0	0	13
Additional improvements to service and contracting (ED&M)	0	0	0	0	0	0	0	0	4
TOTAL -- RECOMMENDED - 3	84	74	15	5	0	0	0	1	17
TOTAL CUMULATIVE FUNDING LEVEL	1608	2193	415	378	98	297	7	630	5626