



**US Army Corps
of Engineers**

Engineer Institute for
Water Resources

CIVIL WORKS PLANNERS TRAINING

Overview and Recommended Actions

FEBRUARY 1983

Reimbursable Study RS-1a

CIVIL WORKS PLANNERS TRAINING
Overview and Recommended Actions

Overall Report Preparation by

MARY K. VINCENT

Questionnaire Administration and Analysis by

JAMES E. CREWS

U.S. Army Engineer Institute for Water Resources
Water Resources Support Center
Casey Building
Fort Belvoir, Virginia 22060

Reimbursable Study RS-1a

February 1983

CONTENTS

	<u>Page</u>
LIST OF FIGURES	iii
LIST OF TABLES	iv
PREFACE	1
EXECUTIVE SUMMARY	3
INTRODUCTION AND BACKGROUND	5
STRATEGY FOR PLANNERS TRAINING: WHAT IS NEEDED	9
<u>Review of Planners' Training Framework</u>	9
Administration	9
Sources of Information	13
Curriculum	14
Course Availability, Enrollment, and Evaluation	15
<u>Assessment of Planners' Training Needs</u>	16
What a Planner Needs	16
When a Planner's Needs Should be Met	19
How a Planner's Needs can be Met	19
RECOMMENDED ACTIONS: HOW TO ATTAIN WHAT IS NEEDED	25
<u>Curriculum</u>	25
Identify Planner's Curriculum	25
Establish a Core of Courses	41
Provide Strategically Focused Training	41
Consider Changes in the Long-Term Program	42
Give More Emphasis to On-the-Job Training	44
<u>Administration</u>	45
Review Job Performance Descriptions	45
Review Financing	45
Consider Establishing CEU's	46
Review Policy on Attendance at Conferences	46

	<u>Page</u>
<u>Sources of Information on Training</u>	47
Publicize Training Officer Services	47
Encourage Designation of Training Liaison Officers	47
Clarify Descriptions of CWP Courses	48
Prepare Brochures on Training Program	48
Designate a CWP Training Advisor	48
<u>Availability of Instruction</u>	49
Prepare Special Topic Tapes	49
Take Training to the Students	50
<u>Enrollment</u>	50
Try Out a Rolling Admissions Policy	50
Enforce Course Prerequisites	50
<u>Evaluation of Training Effectiveness</u>	50
Determine Methods for Gauging Learning	50
Test an Additional Mechanism	51
Require Participation in "Instructional Methods"	51
 APPENDIX A: MAIN REPORT	
 APPENDIX B: PLANNERS' TRAINING NEEDS ASSESSMENT QUESTIONNAIRE AND SUMMARY OF RESPONSE	
 APPENDIX C: TABULATION OF CORPS PLANNING DIVISION PROFESSIONAL WATER RESOURCES PLANNERS	
 APPENDIX D: INTERVIEWS WITH OTHER AGENCIES	
 APPENDIX E: DATA ON LONG-TERM TRAINING	

LIST OF FIGURES

<u>No.</u>		<u>Page</u>
1.	Types of training available to Corps Planners	11
2.	Interaction of the planning hierarchy with the PROSPECT Program system	12
3.	Career ladders for types of planners	18
4.	Training mediums	21
5.	Primary training medium as would typically be indicated by characteristics of training needed.	22

LIST OF TABLES

<u>No.</u>		<u>Page</u>
1.	Applicable regulations	10
2.	Knowledge and skill competency needs of a Corps planner	17
3.	Modes of delivery typically associated with training mediums.	23
4.	Listing of curriculum short course training, by planner group.	27
5.	Listing of curriculum long term training, by planner group.	29
6.	Curriculum framework for Apprentice Planners	32
7.	Curriculum framework for Journeyman Planners	33
8.	Curriculum framework for Planning Technical Specialists	34
9.	Curriculum framework for Planning Study Managers	35
10.	Curriculum framework for Planning Supervisors or Executives	36
11.	Comparison of Apprentice Planner curriculum short course training with existing PROSPECT	37
12.	Comparison of Journeyman Planner curriculum short course training with existing PROSPECT	38
13.	Comparison of Planning Technical Specialist curriculum short course training with existing PROSPECT	39
14.	Comparison of Planning Study Manager curriculum short course training with existing PROSPECT	40
15.	Comparison of Planning Supervisor or Executive curriculum short course training with existing PROSPECT	40

PREFACE

This report was prepared by the U.S. Army Engineer Institute for Water Resources (IWR), for the Planning Division, Office of the Chief of Engineers (OCE), U.S. Department of the Army. The study was funded and undertaken at the direction of Dr. Lewis Blakey, Chief of Planning, as a part of the Director of Civil Works Planning Improvement Program for 1982 and is a product of the IWR Special Studies Program.

The report was written by Mary K. Vincent under the supervision of Mr. Kyle E. Schilling, Chief, Policy Studies Division, IWR, in coordination with the project technical monitor, Mr. Kenneth D. Orth, Western Planning Management Branch, Planning Division, OCE. The Planners' training Needs Assessment Questionnaire was administered and analyzed by Mr. James E. Crews with assistance from Mr. Thomas M. Ballentine, and Mr. Mark C. Dunning, IWR. Mr. Ballentine also conducted interviews both within and outside of the Corps.

Special thanks are extended for review, comment, and guidance throughout the study provided by the study's review committee, chaired by Mr. Orth: S. Clay, DAEN-PEC-D, W. Dahlgren, DAEN-PEC-D, H. Kitch, DAEN-CWP-G, W. Klesch, DAEN-CWP-V, R. Plott, DAEN-CWP-F, R. Sherman, DAEN-CWP-A, L. Smith, DAEN-CWE-HY, and R. Rangos, DAEN-CWP-E, (who replaced Myron Yuschishin, DAEN-CWP-E). Additional comments were provided by H. Kinback, BERH, A. Deckelman, HNDTD-TO, E. Cohn, NADPD, C. Enson, SPLPD, J. Belshe', DAEN-CWP-V; R. Daniel, DAEN-CWP-S; J. Willis, HNDTD-TO; and by the Director of IWR, J. R. Hanchey, and the IWR staff, including J. Delli Priscoli, M. Mugler, S. Light, J. Comiskey, and G. Antle.

EXECUTIVE SUMMARY

This is the report on a study, conducted by the Institute for Water Resources, on Corps of Engineers planners' training needs. The study was undertaken at the direction of the Chief of Planning, OCE, as part of the Director of Civil Works' Planning Improvement Program for 1982. Based on information obtained from a questionnaire sent to 2,000 Corps planners and from interviews both within and outside of the Corps, a strategy of what is needed for planners' training was developed. The means by which the strategy could be implemented is described in the actions listed below by their focus:

Curriculum

- o Identify Planner's Curriculum
- o Establish a Core of Courses for Planners
- o Provide Strategically Focused Training for Anticipated New Missions or Policy Changes
- o Consider Changes in the Long-Term Training Program
- o Give More Emphasis to On-the-Job Training

Administration

- o Review Job Performance Descriptions
- o Review Financing
- o Consider Establishing Continuing Education Units (CEU's) for Corps Training Courses
- o Review Policy on Attendance of Conferences

Sources of Information on Training

- o Publicize Training Officer Services
- o Encourage Designation of Training Liaison Officers
- o Clarify Descriptions of CWP Courses
- o Prepare Brochures on Training Program for Planners
- o Designate a CWP Training Advisor

Availability of Instruction

- o Prepare Special Topic Tapes
- o Take Training to the Students

Enrollment

- o Try out a Rolling Admissions Policy
- o Enforce Course Prerequisites

Evaluation of Training Effectiveness

- o Determine Methods for Gauging the Learning Experience
- o Test an Additional Mechanism for the Course Evaluation System
- o Require Participation in "Instructional Methods"

INTRODUCTION AND BACKGROUND

The Corps of Engineers primary purposes are to develop America's water resources and to perform engineering missions so as to contribute to the nation's economic well-being and to preserve and enhance the quality of the environment. Water resources development lies within the Civil Works Program and encompasses the full range of activities required for implementation and management of projects. Planning is central to the Corps activities in resource development because of the considerable investment of public funds and because a project is expected to fulfill its purpose for a long time. Detailed planning is needed to justify project expense and purpose and to enable selection of the alternative which is most cost-effective, least damaging, and best accommodates projected scenarios.

The Corps planning workforce includes planners as well as others who engage in planning activities. Collectively they have been educated in a diversity of disciplines, with each bringing his special knowledge to the planning study. The variety of concerns in planning necessitates this interdisciplinary team approach. However, assembling an educated team is not sufficient, it is essential that the members also be trained in the Corps planning procedures and policies.

Overall, the Corps is committed to the principle that competent, well-trained personnel will carry out its missions and includes development of the workforce as one of eight command goals. In support of this commitment, the Planning Division has identified its goal as service to the field, one of these being to provide the field with the tools and training needed for efficient, thorough planning. Recently, at the direction of the Director of Civil Works, the Planning Division undertook a Planning Improvement Program specifically to improve both the management and technical aspects of planning. Efforts conducted under this Program include the Regulation Reform Action Program (RRAP), the Planning Guidance Notebook, and an examination of planners training. The Program for 1982 specifically names planners training needs assessment as an objective.

Subsequent to the initiation of the overall Planning Improvement Program, several changes have occurred that are recognized as contributing to improvements in planners' training. First is the establishment of the Corps of Engineers Training Issues Committee (CETIC) to evaluate ongoing training and to recommend courses of action. Second are the revisions to the three cornerstone courses of planners' training: Planners Orientation, Planning Program Management, and Planning Principles and Procedures. Finally, there is the new attitude in the Planning Division marked by more serious and positive attention to field needs.

This study of planners' training needs is an element of the Director of Civil Works' Planning Improvement Program for 1982. The study was undertaken by the Institute for Water Resources at the direction of the Chief of the Planning Division in order to: (a) determine what kind of training is needed to support the Corps mission in planning and the objectives of the Planning Division, and (b) to identify a variety of actions that could help provide for a training program specifically targeted to Corps water resources planners.

The study encompasses the three major issues concerning the training program: (a) training needs identification, (b) the appropriate mechanism for providing training, and (c) the administration of the training program. A nine member advisory group composed of persons from the Office of Personnel, Training and Development Branch and the various branches of the Planning Division provided direction and review for study. Others, including personnel in IWR, BERH, the Planning Division, the Huntsville Training Division, and chiefs of planning in the field also provided ideas and review.

Although the study concentrated on Corps-wide sponsored training and Corps-funds programs, it did determine the field's perception of what a planner should be and the fields' opinions on training needs and effectiveness. Several actions were identified that address the three major issues and that could result in improvements to planners' training. Data and information for the study was collected through interviews or discussions within and outside of the Corps and through a field survey questionnaire sent to 2000 Corps planners.

The study made four findings that are key to formulating any improvements to planners' training. First, that in general, the field has a positive attitude towards training and its effectiveness. Most feel that Corps training courses have improved their job performance and, overall they rate Corps course as being one of the three most important qualifications in reaching career objectives. Second is the finding that most planners expect to remain with the Corps at least into the foreseeable future. This and the constraints on hiring, indicate that the planning workforce will be maturing. Third, that training needs vary over career time, e.g. new employees have special, critical needs. Finally, it is evident that Corps planners are reasonably dedicated to their work and to acquiring tools to do a better job. For example: a significant portion devote a fair amount of their own time in keeping up with the literature and attending professional meetings, while a good number have taken the time to participate in long-term training. It may be concluded then that the Corps' investment in training for planners is worthwhile and that planners are receptive to it.

Within the existing training program there are several vehicles which aim towards providing responsive, quality training. Among these are: mechanism for students and supervisors to evaluate short courses; procedures for course revisions, including better alignment of instruction techniques with course content; emphasis on training of instructors and on conducting course dry-runs; EC guidance on matching training needs with available resources; and the CONTRAST Program.

Nevertheless, the study also found that there are opportunities for improving the existing program. For example, although a fifth of the questionnaire respondents had no opinion as to whether or not the Corps training system is effective in recognizing or meeting training needs, about one-half agreed that the system is effective in these regards. (This is different from the overall perception that training has been effective in job performance and career development.) One major weakness is inconsistency: there is a wide range of variation in the attention supervisors give to employees' Individual Development Plans, the activeness of the training

officer, the filling out of follow-up course evaluations, and the holding of Instructor's Meetings for course revisions. For example, two-thirds do not know if their office has a system for prioritizing training and one-fifth say there is no system. Further, while 30 percent indicate that the training officer reacts passively to training requests, another 40 percent say they get no assistance at all.

It is interesting to note that differences of opinion on the training program appear to stratify mostly by supervisory level and type of training experience. For example, non-supervisory personnel would not agree that the training system is effective in recognizing needs. While supervisors, managers, and executives generally agree that needs are recognized, they also tend to believe that needs are not effectively met. Whereas executives believe that training is a high priority item, managers and supervisors tend to perceive that it is not. Managers consider short-term training to be considerably more important to the Corps technical capability than do executives. All supervisory levels agree that the CW Fellowship and Planning Associates Programs are important to promotion and effective in enhancing capability. However, those who have completed the PA Program have particularly high respect for the program and are generally negative to any changes to it. By comparison, there is essentially no difference between persons who have had CW Fellowships and those who have only taken short courses as to their opinion on the effectiveness of the fellowship program in enhancing technical capability.

With regard to short courses, the study noted that of the courses that are most frequently taken and that were graded by the respondees as being worthwhile, many are process oriented. This is indicative of the field need for courses that can not only demonstrate a process that is used in planning but also how that process may be integrated into the overall planning process.

Finally, it should be pointed out that there are some problems within the existing training program that are facts of life and largely unsolvable. Among these are: quality control of instructors, course locations, and course cancellations. Although complaints are made about poor instructors, it must be remembered that complainers are more likely to be heard from than those who are satisfied with the instruction. There is no evidence to indicate that there is a genuine problem with instructor quality and there are in place effective means for removing them. Course locations are determined through an analysis of historical attendance and the needs survey. Although course locations are chosen to be responsive to as many students as possible, the majority of those completing the questionnaire are concerned that some areas are consistently not chosen. Courses may be cancelled despite the high priority of need of those who had intended to go; however, it is a matter of policy that courses below a certain level of interest are not cost-effective and so cannot be held. Efforts are made to place those students in other sessions of the course or in other courses.

This introductory summary poses some of the more salient points to consider in formulating recommendations about planners' training needs. It is evident that there are areas through which the Chief of Planning can insert a greater influence on planners' training. The next two sections of this

report, the strategy and the recommendations, describe what is needed in a program for planners' training and what actions can achieve that program. In addition, a separate volume contains five appendices which present details of the information compiled during the study.

STRATEGY FOR PLANNERS TRAINING: WHAT IS NEEDED

Review of Planners' Training Framework

Some discussion of the existing training program is necessary in order to examine its framework and understand where any problems occur. This discussion is organized by the major elements of the program. Although the elements are treated here in separate sections, in actuality each is integrated with the others.

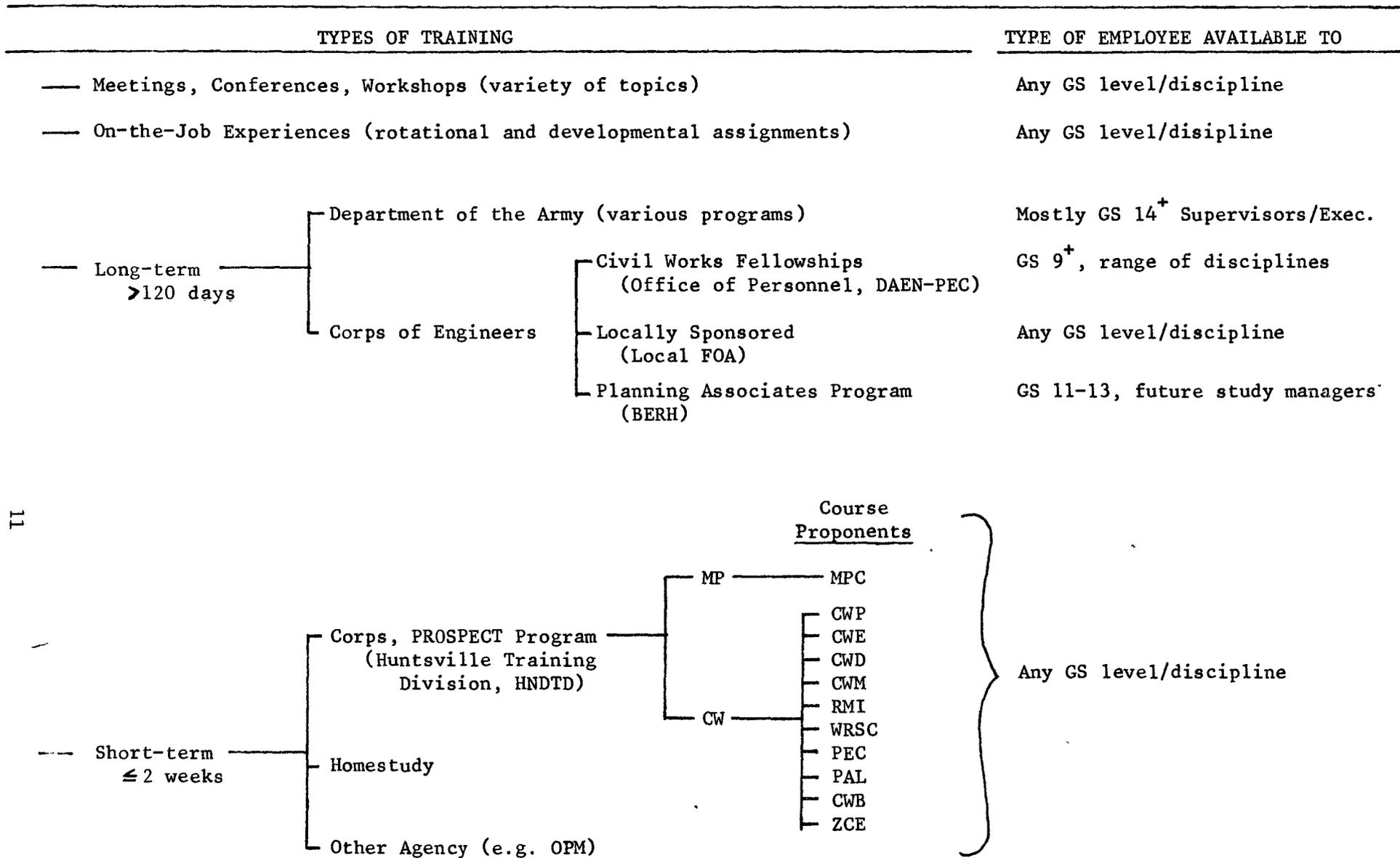
Administration

As of fall 1982, approximately 1,830 Corps professionals worked in planning activities (Appendix C). These employees have access to a variety of training which is either provided by or sponsored by the Department of the Army, largely through the Corps of Engineers. Basically, two types of training courses are available, long-term and short-term. Figure 1 displays the variety within these types and the employee each is intended for. The PROSPECT courses (proponent-sponsored engineer Corps training) realize the greatest number of students since they are short-term and offer a range of subjects. For this reason the report's emphasis is on the PROSPECT Program. Nevertheless, the BERH-administered Planning Associates Program and the OCE-sponsored Civil Works Fellowship are important and have served many planners: 253 have completed the PA Program since its beginning in 1962 and over the last five years, 42 planners have participated in the Fellowship Program. The major points of administration of training are briefly described here. Table 1 lists the applicable regulations.

The lines of responsibility and interaction involved in linking a PROSPECT course with an employee are indicated in Figure 2, and briefly described here. The Personnel Office oversees PROSPECT based on recommendations from the Corps of Engineers Training Issues Committee (CETIC) and the Huntsville Training Division (HNSTD). The HNSTD acts as the program manager by conducting an annual Training Needs Survey, by scheduling and evaluating courses, and by coordinating course development and conduct. The Training Needs Survey provides HNSTD with information from the FOA's on their demand for individual courses, and is the primary source of data for planning the program. In term, the Training Needs Survey is itself based on a key event which takes place for each employee: the annual meeting between the employee and his supervisor, which results in the employee's Individual Development Plan (IDP), the projected schedule of types of training and courses needed for job performance and career development. The supervisor is in position to know what his employee's training needs are and to advise him on what to take when. A Training Officer is also available in the Personnel Office with information on training that may be obtained both within and outside of the Corps. In addition, the Training Officer is the administrative liaison between employees/supervisors and training programs. Proponents act as technical program managers of PROSPECT courses within a subject area in which they have a major interest. Each year, proponents justify and evaluate their existing courses and evaluate proposals for new courses. Proponents coordinate their comments with HNSTD and in the case of a new course, the

Table 1
Applicable Regulations

Number	DAEN Office	Title
ER 15-1-10	PEC-T	Career Planning Board
ER 15-1-16	CPT	Corps of Engineers Training Issues Committee
ER 350-1-410	CPT	Civilian Personnel Training and Development
ER 350-1-412	DSP/EPC-D	Engineer Computer Training and Development
ER 350-1-414	RMT	Proponent-Sponsored Engineer Corps Training (PROSPECT) Program
ER 350-1-415	PEC-D	Executive and Management Development Program
ER 350-1-416	PEC-T	OCE and Locally Sponsored Long Term Training
ER 350-2-1	CW-RR EP-CD	Water Resources Planning Associates Program
ER 690-1-714	CPT	Corps of Engineers Upward Mobility Program
EC 350-1-327	PEC-D	Training and Development Policy
EP 350-1-5	PEC-D	Manager and Supervisors Training Handbook
EP 350-1-6	PEC-D	Employee Development in the Corps of Engineers - A District Engineer's Primer
EP 680-1-1	PEC-R	Corps of Engineers Management Information Systems for Personnel Administration (COEMIS)



11

Figure 1. Types of training available to Corps planners.

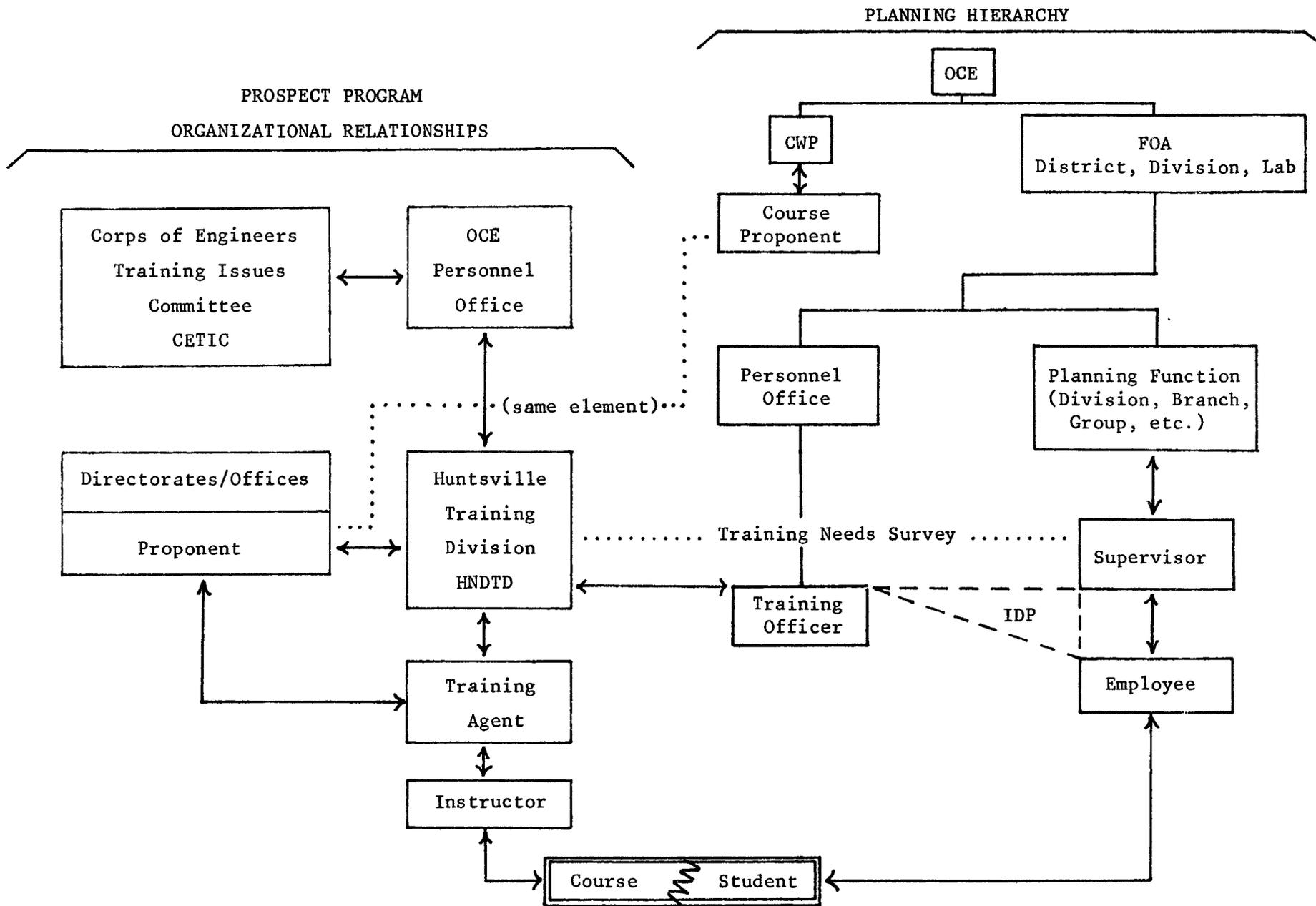


Figure 2. Interaction of the planning hierarchy with the PROSPECT Program system.

proponent, HNDDT, and the training agent work together towards its development. When employees become PROSPECT students, they attend courses designed to meet specific Corps needs and taught by instructors who the proponent knows to be qualified and who has probably completed the PROSPECT course on instructional methods. For PROSPECT courses, the tuition, travel, and per diem are all paid by the student's activity. OCE funds the PA Program and the Civil Works Fellowship.

With respect to program administration there are certain specifically managerial problems. For example, supervisors, Training Officers, and Proponents may not be performing their training-related duties at the level idealized by the regulations. The questionnaire responses are evidence that some supervisors do not give adequate attention to training needs and Individual Development Plans. Sixty percent of respondees are not aware of any system for prioritizing training among planning personnel and 19 percent said there is no system. Overall, respondees indicated that Training Officers give little active assistance. Through interviews with Proponents, the study determined that there are some who do not know why or how they became a proponent or who are unsure of their duties. Job descriptions of people who are proponents do not include their responsibilities as proponents so that those who do fulfill their responsibilities are not credited for it in their performance evaluations. Two frequently-heard problems deal with financing: the costs of training and its linkage to travel and study funds. The response to open-ended questions indicated that many employees would like to see training funded separately. The concern for cost of training is related more to the cost of travel than tuition: nearly 75 percent of respondees believe that regionally presented courses to reduce transportation costs would have a positive impact while only 13 percent would agree that tuition for HNDDT-sponsored courses is unreasonable. Finally, the PROSPECT program lacks incentives for students to take an interest in training and to relate that training to their career development. One way to provide incentive would be to establish Continuing Education Units (CEU's) for Corps Training Courses. Sixty-five percent of questionnaire respondees believe that the ability to earn CEU's would have a positive impact on Corps mission accomplishment and job performance. Also, existing policies on conference attendance are a disincentive to participation in that type of training medium.

Sources of Information

The major sources of information on training are the supervisor, the Training Officer, the Training Handbook (EP 350-1-5, popularly known as "the Purple Notebook"), and fellow workers. However, as mentioned earlier, seriousness of attention to training duties varies among supervisors and Training Officers. Although the questionnaire did not specifically ask if respondees were aware of the role of the Training Officer, it does provide evidence that the Officers are not as effective as they should be. For example, only 11 percent indicated that they typically received active assistance from their Training Officer. In all fairness to the Training Officer, it should be said that he is involved with training concerns of employees in all functional areas and that this is in addition to other duties. Supervisors who do try to do well by their employees in keeping up with pertinent training opportunities say that they are overwhelmed by the

number of training announcements they constantly receive. The "Purple Book" lists the available Corps-sponsored training. PROSPECT courses are listed alphabetically by title and the information on each course includes course purpose, description, and prerequisites as to Corps stratification, occupational series, grade, and any necessary job experience or other prior training needed. The "Purple Book" contains information on training but falls short of grouping courses by functional area and level of specialty. In addition, open-ended responses to the questionnaire included opinions that existing course descriptions are too broad or vague. They indicated that course content and objective is unclear from the write-ups, that some courses seemed to be much alike, and that there is uncertainty in identifying courses appropriate to existing needs and training goals.

Curriculum

Consideration of aspects of program administration and sources of information underscore the need for a curriculum for planners. The concept of a core of courses has been considered for some time, but final agreement has not been reached. Some of the comments returned with the questionnaire suggested that a basic set of courses be identified. This core should cover fundamentals in the planning processes since 97 percent of respondents indicate that such training is important in providing the broad context so necessary for a planner. The importance that planners attribute to training is indicative of the potential benefits that could be realized by installing a curriculum. For example, of factors important in reaching career objectives, work experience is ranked first and Corps training courses are ranked second. Also, 72 percent of respondents "agree" or "strongly agree" that Corps training courses have improved their job performance. It would seem then that a curriculum would increase these benefits. In fact, in considering a variety of options for changing Corps training, 64 percent indicated that a structured training plan or program for new employees entering the planning career ladder would have a positive impact on mission accomplishment and job performance. Finally, while they believe that training is important in several subject areas in order to provide a broad context, more than half consider training to be vital in three areas: Planning Process, Report Preparation, and Planning Principles and Procedures. A second need that became obvious during the study is for flexibility in the curriculum, to anticipate new missions or policy changes and to have the training developed in readiness. Evidence for the need for this strategic capability comes from the poor record of efficiency in providing training in response to change. For example, the WRC principles and standards and the reactionary and time consuming process of changes thereto along with guidance to the field.

The Planning Associates Program does have a curriculum which has been successfully employed and revised as needed. However, a consideration of changes in the PA Program would be the consistent with the goals of the Planning Improvement Program: to improve both the management and technical aspects of planning. In general, questionnaire respondents would like to see more emphasis on long-term training, a shorter PA program, increased attendance in the PA program, and restructuring of the PA program to award an academic degree. Most respondents had no opinion on having a different sponsor than BERH, but more were against than in favor of such a change. A comparison

of the responses of those who have participated in the PA program with those who have not shows that both groups believe the program is important to receiving promotions and that it is effective in enhancing the Corps technical capability. However, in contrast to those who have not been through the program, PA graduates are not in favor of shortening the program and have mixed opinions about the impact of restructuring it to a degree program.

On-the-job training is widely recognized as an effective training mechanism. Inclusion of on-the-job training in a curriculum for planners would be especially valuable since their work typically requires a broad base of knowledge of the procedures, concerns, and policies of a variety of organizational elements in the Corps. According to the questionnaire, persons involved in planning activities rate Work Experience as the most important qualification in reaching career objectives and rate Communication as the most important key to being a successful study manager.

Course Availability, Enrollment, and Evaluation

Within the existing curriculum, i.e. training available to planners, there are three topics which apply to PROSPECT courses that should be briefly covered: courses availability, enrollment, and evaluation. The function of the PROSPECT program is to provide courses that will satisfy Corps training needs, however, timely and effective delivery to the right employees is a difficult task. For example, there is a need for on-the-spot information. This may be information needed for approaching a particular problem, for refreshing the knowledge from a course, or for introducing a new employee to a concept or process. Also, a needed course may be full, cancelled, or available after the time that a particular employee needs it. It sometimes happens too that students are over or under-qualified for the course they are attending, which can have a significant effect on what others get out of the course. Finally, there is the two-sided problem of determining if the students learned what was intended and if the course content and method was effective in conveying material that was later applied on the job. At present there are several evaluation systems within the PROSPECT Program that are good even though they are inconsistently employed across the Program. At the end of a course students complete a questionnaire to indicate how they reacted to course effectiveness, the classroom, and the accommodations. Within 30 days after completion of the course, the Training Officer has the student and his supervisor complete the sections of DD Form 1556 which ask for course comments and ratings. In about 10 percent of the courses, pre-and post-course tests are administered to evaluate learning. Proponents periodically attend their courses to review their conduct. Finally, for some courses Instructor Meetings are held during which the instructors meet with the proponent to plan improvements to the courses. In addition, students used to be asked to evaluate the course 90 days after completion, but this was discontinued because results were not meaningful in providing anything beyond information obtained through Form 1556. The current evaluation system does not provide for any meaningful measure of the impact of the training on job performance and potential.

Assessment of Planners' Training Needs

In that employee competence benefits an organization, it is to the organization's advantage to maintain a program for cultivating knowledge and skills. Herein lies the challenge: putting together an effective training program for Corps water resource planners. Study findings allow exploration of what a Corps planner needs in order to accomplish job assignments and to prepare for future jobs. Those considerations are the basis for the recommendations presented in the final section.

What a Planner Needs

Beyond the basic formal education in an appropriate academic discipline, a planner should possess a combination of knowledge and skill:

- o Knowledge, not only of technical information and organizational and legal requirements, but also of procedures for carrying out activities, such a public involvement.
- o Skill, by way of the efficiency in which procedures are accomplished; this involves expertise in technical matters and in performance factors, such as an ability to communicate.

It is possible to list some of the areas in which capability is needed (Table 2). Obviously this listing covers only the main categories and does not stratify needs by level of expertise or managerial responsibility.

What a planning employee needs varies with his experience and job position. Based on these two factors, planners fall into five groups as shown on Figure 3. This figure represents the career ladder that a planner might pass through after entry into the Corps as an apprentice. Those who become Planning Supervisors or Executives have had experience either as a Planning Technical Specialist or as a Planning Study Manager. Although the figure indicates a beginning and an end point, an individual may complete his career without performing in each level. In general, Apprentice Planners need broad, introductory training. Journeyman Planners, a transition level, principally need in-depth knowledge of the various planning functions and may require some of the specialized training that is typically needed by Planning Technical Specialists or Planning Study Managers. Planning Supervisors and Executives need training in methods for managing personnel, programs, and resources.

Using this career scale, some idea of the overall training needs can be interpreted from the data provided by Corps planning offices in August 1982 (Appendix C). According to that survey, the breakdown of Corps planners is rounded off as follows:

Supervisors/Executives	390	20%
Project Managers	440	25%
Technical Specialists/Journeyman	860	50%
Apprentice Planners	90	5%
	-----	-----
	1780	100%

Another 50 employees were reported as "Other" which would bring the total number to about 1830.

Table 2

Knowledge and Skill Competency Needs of a Corps Planner

a. Knowledge

Corps Planning Process — [planning activities
planning functions
planning objectives

Role of Planning in the Corps
Understanding of the Corps as an Institution (how change comes about, why)
Understanding of the Corps Administrative Processes (legislation, organization, mission, funding, budget process, etc.)
Coordination Requirements, other agencies and the public
Ecologic Analysis (inter-relation of natural and socio-economic environments)
Hydrologic Processes

Trends — [Analysis
Recognition

Broad understanding of the elements specific to planning in the various functional categories (flood control, navigation, recreation, hydroelectric power, streamflow regulation, fish and wildlife resources, and beach erosion and hurricane protection)
In-depth and up-to-date knowledge within speciality (e.g., economics)
Awareness of major issues within other specialities (e.g., habitat evaluation within environmental)

Documentation Requirements	Remote Sensing
Report Preparation	Optimization Techniques*
Legal Requirements	Public Involvement
Project Impact	Conflict Management
Statistical Analysis*	Benefit Cost Analysis
Spatial Analysis*	Trade-Off Analysis
Forecasting Techniques	Computer Applications
Simulation Models*	

b. Skills

Coordination	Communications
Interdisciplinary Teamsmanship	Organization
Problem Recognition and Problem Solving	Management
Writing	Analysis

*Have ability at least to the extent to interpret results or to know when and if such an analysis should be applied.

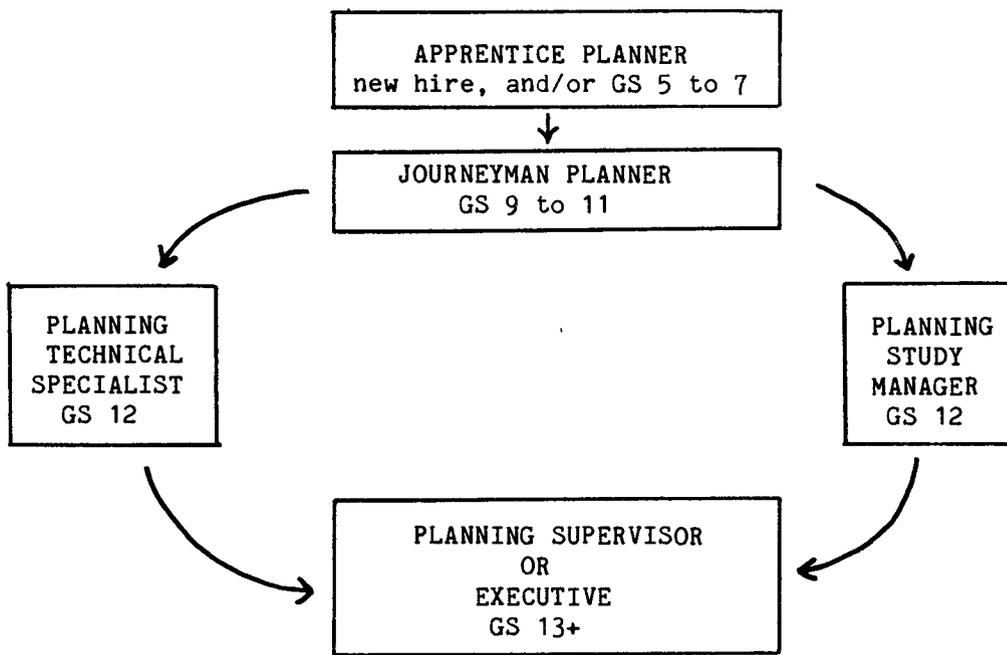


Figure 3. Career ladders for types of planners. GS levels are approximate guidelines.

When a Planner's Needs Should be Met

Basically, there are two situations in which a planner has needs: (a) in preparation for undertaking future assignments or positions, and (b) in accomplishing activities on a current job. These circumstances coexist to some extent for all planners, but for a new employee they are particularly pressing.

The first situation refers most directly to career development; response to such needs is a continuous nurturing, monitoring effort requiring some foresight and driven by organizational changes and workload demands. Generally, the burden of recognition falls on the supervisor since most employees may not have the awareness to put themselves in prospective within their organization. The annual performance appraisal is the means for identifying career needs and outlining a plan and time line for meeting them.

Needs that arise during work on a particular job and that are necessary for satisfactory accomplishment of it are easier to recognize but usually harder to respond to. In this situation, timeliness is critical else schedules or products suffer. Since this type of need demands quick turnaround, the employee can be provided with knowledge but typically will not have the time to acquire a skill. Although satisfying current job needs is a short-term objective, it does expand the individual's capabilities and so, in the long-term is an investment in increased competency.

The key considerations towards meeting planner's needs opportunely may be summarized as:

Needs Situation	Critical Elements in Providing	Primary Competence Emphasis	When to Provide
Preparation for future assignment	Organizational awareness Recognition of individual's potential	Skills	In planned phases
Accomplishment of current tasks	Knowing what is available Timeliness	Knowledge	Immediately

How a Planners' Needs Can Be Met

Planners' needs for successful job performance can be met through training. Evidence for this is provided by the fact that in 80 percent of the Huntsville-sponsored courses surveyed by the questionnaire (and taken by five

or more respondees) at least half of the respondees said that the course improved their capability as a planner. Of course training available to Corps planners includes more than HNDTD courses or even traditional instruction. As shown in Figure 4 there is a wide variety of mediums for training. Depending on training purpose, each of these mediums can be developed to have either a technical or a managerial focus.

Some of these mediums verge on other means of obtaining skills and knowledge (e.g., simple information exchange and practical experience), but in that all can be scheduled for an employee and justified as necessary for a particular performance objective, they can be considered training.

The question then becomes, which training medium is appropriate for providing the planner with what he needs. This requires an examination of the nature of the skill or knowledge needed: that is, whether what is to be learned can be classed as basically process or substance. The matrix in Figure 5 gives a broad indications of the suitability of training medium relative to characteristics of the training needed. In turn, certain modes of delivery are associated with the type of training medium as suggested on Table 3.

Through review of the existing training and the assessment of training needs, this study found that the development of a curriculum for planners should be the focus of any strategy for improving planners training. A curriculum would provide a structural framework for pursuing career goals, thereby indicating needs relative to experience and position and offering an incentive for taking training.

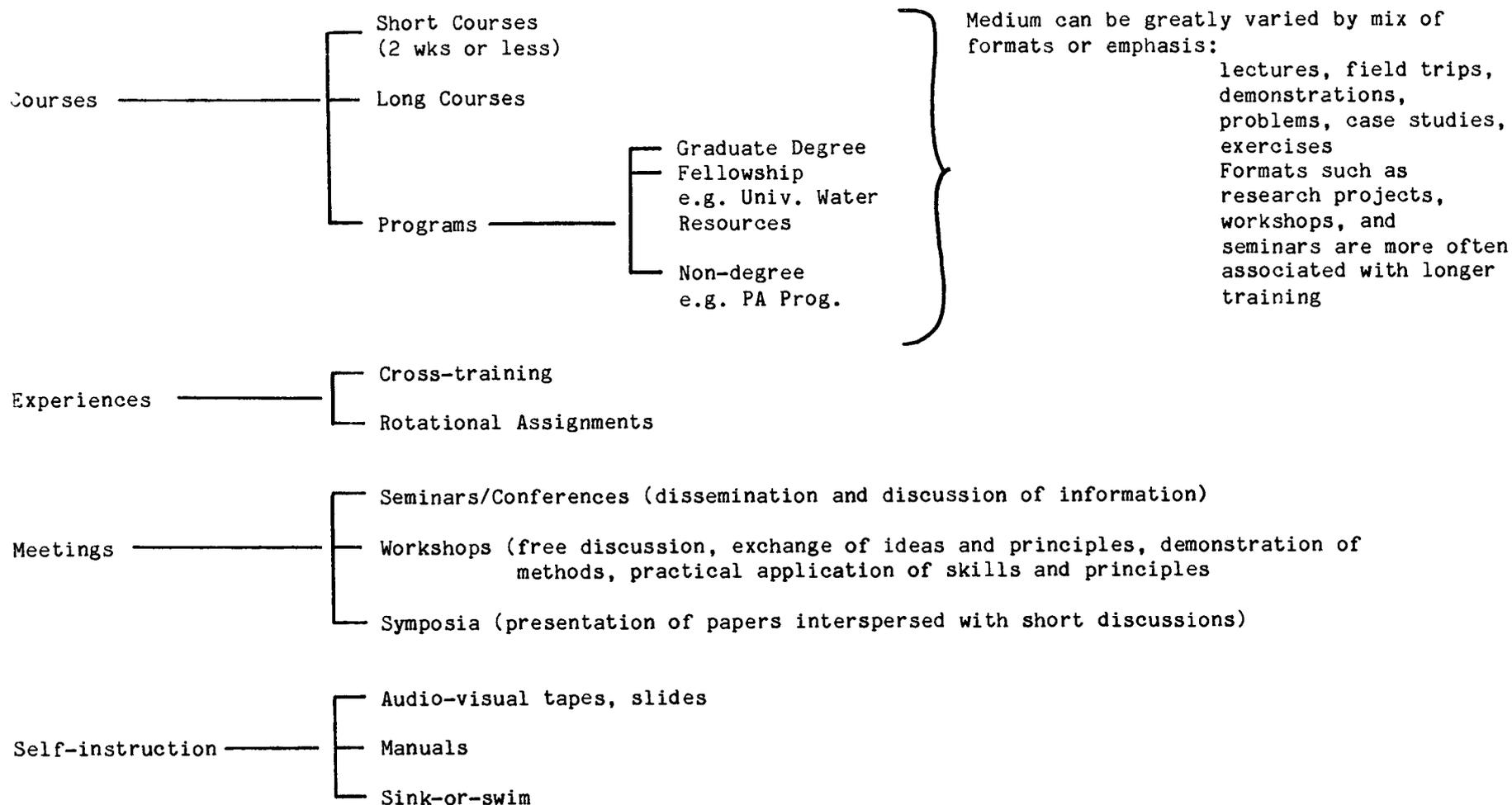


Figure 4. Training Mediums.

		TRAINING TO BE CONVEYED	
		KNOWLEDGE	SKILLS
TRAINING TO BE CONVEYED	PROCESS	<ul style="list-style-type: none"> ● Meetings: workshops ● Courses: case studies 	<ul style="list-style-type: none"> ● Experiences ● Courses: demonstrations, field trips, workshops
	SUBSTANCE	<ul style="list-style-type: none"> ● Courses: lectures, problems & exercises ● Self-instruction ● Meetings: conferences 	<ul style="list-style-type: none"> ● Combination of experiences and courses

Figure 5. Primary training medium as would typically be indicated by characteristics of training needed.

Table 3

Modes of Delivery Typically Associated with Training Mediums

Training Medium	Mode of Delivery					
	Duration		Location			Trainer
	Short Term	Long Term	Local	Regional	National	
Meetings	x				x	Corps, Other Agency
Short-Courses	x		x	x	x	Corps, Other Agency
			(depending on student demand and their location)			
Long-term Training		x	x	x	x	University, Corps
			(depending on student demand and trainer)			
Job Experiences	x	x	x			Corps
Self-Instruction	x		x			(Producer) Corps, Other Agency, University

RECOMMENDED ACTIONS: HOW TO ATTAIN
WHAT IS NEEDED

This section presents some possible courses of action for solving existing training problems and for otherwise improving the Corps training program, particularly for planners. The actions were developed from recommendations from the field, IWR, BERH, OCE, and the study's review committee. Collectively they present a program for improvement although individual ones could be selected for implementation. Cost/benefit information was not developed.

These actions take into consideration the multiple possible effects and purposes of training: to transfer information, build skills, develop career potential, change attitudes, motivate creativity and achievement, provide professional experiences, support and advance organizational goals, influence policy decisions, and promote dedicated service.

Curriculum

Identify Planner's Curriculum

This action would identify a curriculum for planners, which would serve as guidance to which courses could be of use to different types of planners in the development of their careers. The curriculum indicate which blocks of courses go together and about when in a career/job situation they would be of most use. Course blocks could be sequenced from introductory to generalist to specialist levels that correspond to behavioral objectives such as:

<u>Level</u>	<u>Objective</u>
100's	Basic understanding of introductory material
200's	Ability to talk to and understand specialists in other disciplines; ability for non-specialists to accomplish the basic tasks of other specialists
300's	Total understanding of difficult or specialized established technology; transfer of new technology
400's	Understanding of techniques for planning study management
500's	Understanding of supervisory techniques, and Corps program management concerns

In addition to skill levels, blocks should also be set up by the appropriate CWP Proponent; i.e., similar to a department in a university, the environmental, economic, and regional, etc. branches within CWP would oversee

courses within their expertise. At present, CWP courses in a particular subject area are not necessarily under the same proponent. Once the curriculum is developed, it is important that course title be revised to include the level number.

Curriculum development should focus on PROSPECT courses in order to provide a framework that could be recognized Corps wide. This framework could then be expanded with locally available courses, developmental assignments, and long-term training. In this way, the curriculum would provide some reference between training and the Individual Development Plan. The curriculum could be designed so as to guide planners targeting specific positions (e.g., project manager) as well as particular technical specialties or general functional areas (e.g., navigation analysis).

The concept of a curriculum should be considered in any review of financing because by sequencing and relating courses, it could reduce the taking of overlapping or unneeded courses and therefore reduce costs.

This section presents some preliminary thinking towards development of a curriculum. The ideas given here block out the curriculum in terms of the particular needs of five groups of planners that were depicted on the career ladders on Figure 3: Apprentice Planner, Journeyman Planner, Planning Technical Specialist, Planning Study Manager, and Planning Supervisor or Executive. The curriculum suggestions for each group are displayed on a series of tables with the information organized as follows:

Group	Overall Curriculum Framework	Listing of Training	Comparison of Curriculum Short Course Training with existing PROSPECT
Apprentice	Table 6	Tables 4 & 5 100 level	Table 11
Journeyman	Table 7	Tables 4 & 5 200 level	Table 12
Tech. Specialist	Table 8	Tables 4 & 5 300 level	Table 13
Study Manager	Table 9	Tables 4 & 5 400 level	Table 14
Supervisor/Exec.	Table 10	Tables 4 & 5 500 level	Table 15

Table 4

Listing of Curriculum Short Course Training by Planner Group

Course Title	Purpose	Duration	Attendees	Prerequisites
<u>APPRENTICE PLANNERS</u>				
101 Planning Introduction*	Introduce new planners to the objectives, procedures etc. of Corps planning so that they have basic understanding of the program.	5 days	New planners (required to attend in first 3 months).	None.
102 Corps Planning for Non-Planners	Give Corps non-planners and individual outside the Corps a basic understanding of the objective, procedures, policies, etc. of Corps planning.	2 days	Anyone out side of Corps planning.	None.
110 Planning Orientation**	Give apprentice planners a basic understanding of the language, procedures, assumptions, etc. of other disciplines to improve their ability to talk to, work with, and understand others with sensitivity to their different professions in interdisciplinary situations.	2-3 days for each course.	All planners (within first 5 yrs). Required for study managers.	Planning Introduction.
120 Management Orientation***				
130 Economics Orientation				
140 Environmental Orientation				
150 Engineering Orientation				

*Essentially the current Planner Orientation Course.

**Essentially the current Planning Principles and Procedures Course.

***Essentially the current Planning Program Management Course.

(Continued)

(Table 4, Concluded)

Course Title	Purpose	Duration	Attendees	Prerequisites
<u>JOURNEYMAN PLANNERS</u>				
202 Planning for Hydrologic Engrs.	Give journeyman planners a working understanding of other disciplines and specific Corps procedures, policies, etc. related to each; provide knowledge needed to perform basic tasks of other disciplines.	5-10 days for each course.	All planners (at least 3 courses required for study managers).	Related Orientation Courses.
210 Planning In-Depth				
220 Management In-Depth				
230 Economics In-Depth				
240 Environmental In-Depth				
250 Engineering In-Depth				
<u>PLANNING TECHNICAL SPECIALIST</u>				
3xx Various Courses	Give senior planners a working understanding of state-of-the-art procedures, concepts, etc. in highly specialized technical areas, and current Administration, Congressional and agency trends and policies.	1-10 days for each course	Senior technical specialists	Position related to course subject
<u>PLANNING STUDY MANAGERS</u>				
4xx Various Courses	Give study managers a working understanding of state-of-the-art procedures, concepts, strategies, etc. for managing planning studies.	1-10 days for each course	Study managers	Position or preparation for position
<u>PLANNING SUPERVISORS AND EXECUTIVES</u>				
5xx Various Courses	Give planning supervisors and executives a working understanding of state-of-the-art procedures, concepts, strategies, etc. for managing personnel.	1-10 days for each course	Supervisors and executives	Position or preparation for position

Table 5

Listing of Curriculum Long-Term Training, by Planner Group

Course Title	Purpose	Duration	Attendees	Prerequisites
<u>APPRENTICE PLANNERS</u>				
190 Planner's Rotation Development Program	Familiarize apprentice planners with the day-to-day operations, assignments, problems, etc. of planning and related offices, including plan formulation, economics, environmental, engineering, construction operations, and programs offices. Specific rotation programs would be developed by an tailored to each FOA.	1-3 months in each office.	All planners (within first 5 years.)	None. Related Orientation courses should be taken before or during assignments in each office (e.g. economics Orientation while assigned to the Economics Branch).
<u>JOURNEYMAN PLANNERS</u>				
290 Planner Development Program	Same as Journeyman Training (above). Participants would attend each of the In-Depth courses over 5-wk period, with an additional 3(+,-)wks devoted to other subjects, such as law and real estate. "Mini-PA Program."	8 weeks; consec-utively or staggered over several years.	Potential study managers.	Orientation courses.
291 Planning Associates (PA Program)	Develop knowledgeable, effective study managers. Essentially an expanded Planner Development Program (above) with additional topics, field investigations, short-term rotational assignments and independent research.	11 months	Potential study managers.	Orientation courses.

(Continued)

(Table 5, Continued)

Course Title	Purpose	Duration	Attendees	Prerequisites
292 University Programs (OCE or locally sponsored)	Develop competency, expand knowledge, keep abreast of changes.	(Usually >120 days)	Specialists, generalists, managers	Study is in support of job mission. Must be GS-9 for OCE sponsorship.
293 Developmental Assignments (competitive or exchange bank)	Broader background and develop capability through experience in a complementary position.	Variable; typically 3 to 6 months	Specialists, generalists, managers	None.

PLANNING TECHNICAL SPECIALISTS

392 University Programs (OCE or locally sponsored)	(----- as for 292 -----)			
393 Developmental Assignments	(----- as for 293 -----)			

PLANNING STUDY MANAGERS

491 Planning Associates Program	(----- as for 291 -----)			
492 University Programs (OCE or locally sponsored)	(----- as for 292 -----)			
493 Developmental Assignments	(----- as for 293 -----)			

(Continued)

(Table 5, Concluded)

Course Title	Purpose	Duration	Attendees	Prerequisites
<u>PLANNING SUPERVISORS AND EXECUTIVES</u>				
591	Special Programs*			
592	University Programs (OCE or locally sponsored)	(----- as for 292 -----)		
593	Developmental Assignments	(----- as for 293 -----)		

* Includes the various programs sponsored by the Department of the Army. The current programs are described in chapter 7 of HNBP 350-1-1, the Purple Book. They are listed below:

31

- 591a. Armed Forces Staff College (GS 12+; 14.5 wks).
- 591b. Education for Public Management Program (GS 12, 13; 9 mos)
- 591c. Education for Federal Officials at Mid-Career (GS 14+; 1 yr)
- 591d. Federal Executive Fellowship (executives; usually 1 yr)
- 591e. Fellowship in Congressional Operations for Executives (GS 13+; 1 yr)
- 591f. Industrial College of the Armed Forces (GS 13+; 10 mos)
- 591g. Maxwell Mid-Career Development Program (GS 13+; 1 or more academic terms)
- 591h. Sloan Fellows Program at MIT (GS 15; 1 yr)
- 591i. Sloan Fellows Program at Stanford University (GS 14; 9 mos)
- 591j. The National War College (GS 14; 1 yr)

Table 6

Curriculum Framework for Apprentice Planners

Typically, the Apprentice Planner is a new hire at GS level 5 to 7.

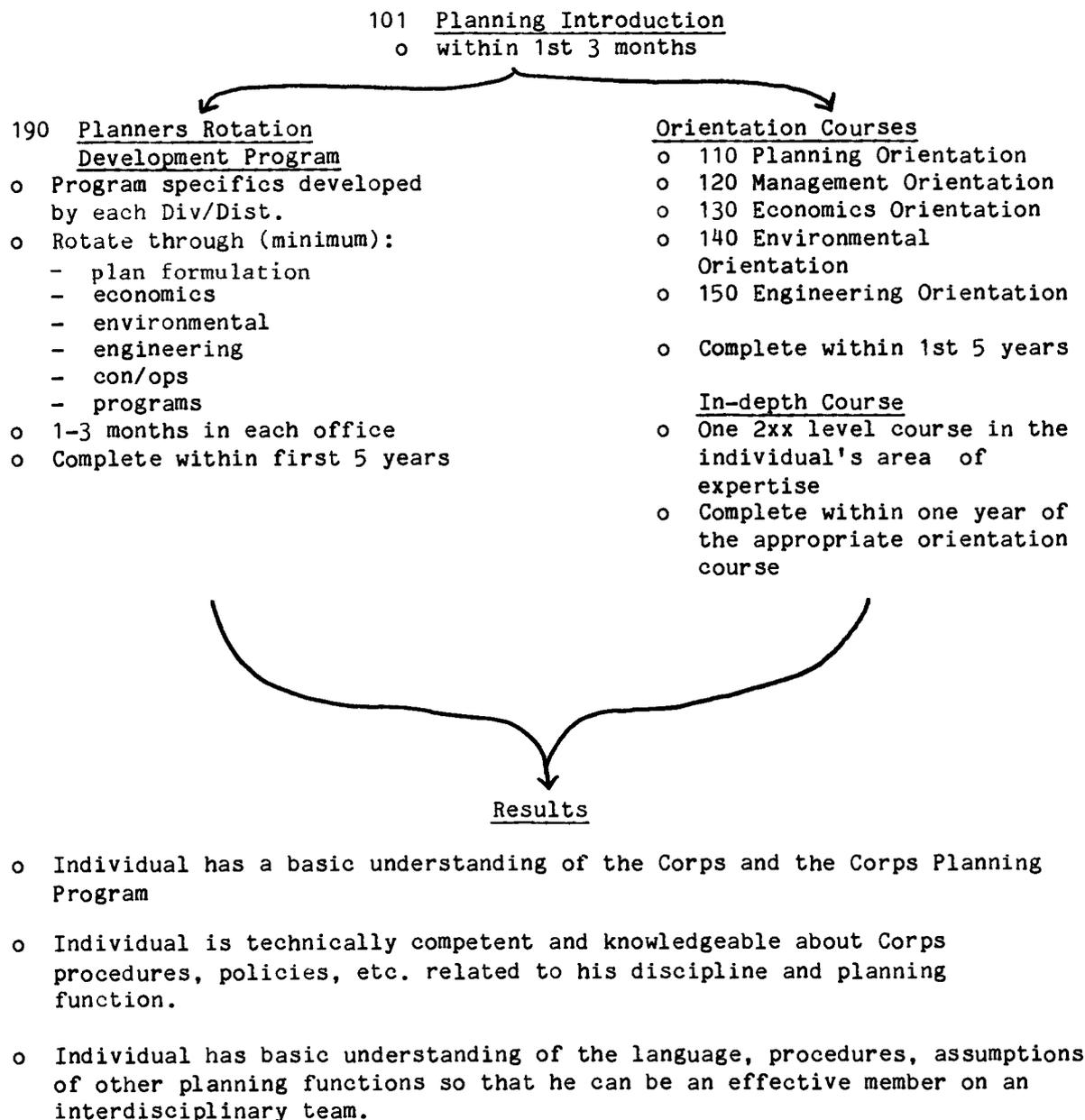


Table 7

Curriculum Framework for Journeyman Planners

Typically, the Journeyman Planner is at GS level 9 to 11.

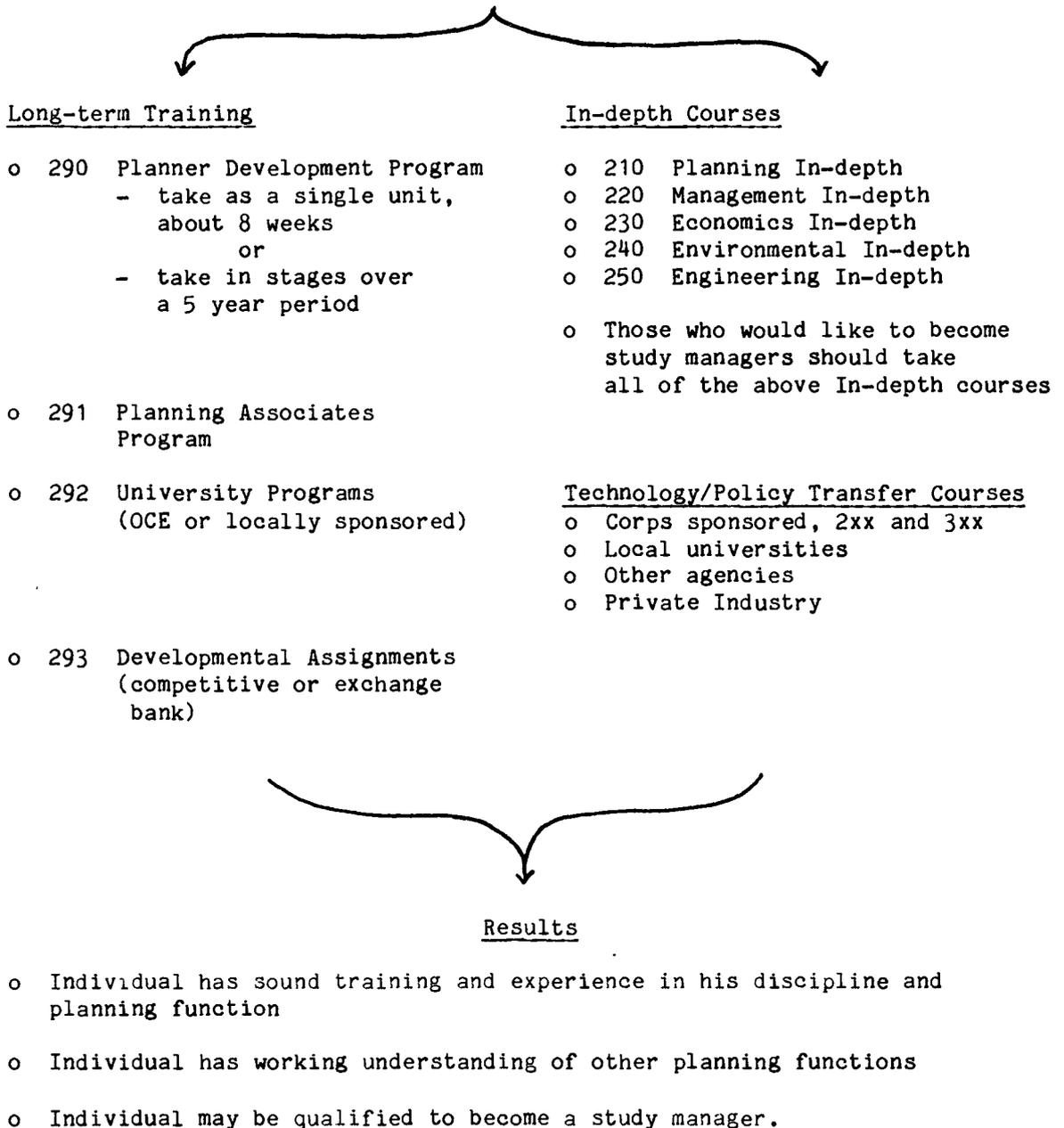


Table 8

Curriculum Framework for Planning Technical Specialists

Typically, the Planning Technical Specialist is at GS level 12.



Long-Term Training

- o 392 University Programs
(OCE or locally sponsored)
- o 393 Developmental Assignments
(competitive, or
exchange bank)

Technology/Policy Transfer Courses

- o Corps sponsored, 3xx
- o Local Universities
- o Other Agencies
- o Private Industry



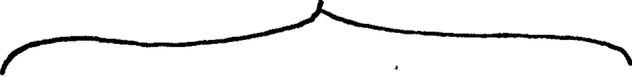
Results

- o Individual is proficient in his discipline and a recognized expert in his planning function.
- o Individual may be qualified for a supervisory/executive position

Table 9

Curriculum Framework for Planning Study Manager

Typically, the Planning Study Manager is at GS level 12.



Long-Term Training

- o 491 Planning Associates Program
- o 492 University Programs
(OCE or locally sponsored)
- o 493 Developmental Assignments

Technology/Policy Transfer Courses

- o Corps sponsored, 4xx
- o Local Universities
- o Other agencies
- o Private Industry



Results

- o Individual is a competent study manager
- o Individual may be qualified for a supervisory executive position.

Table 10

Curriculum Framework for Planning Supervisors or Executive

Typically, the Planning Supervisor or Executive is at GS level 13 or higher.

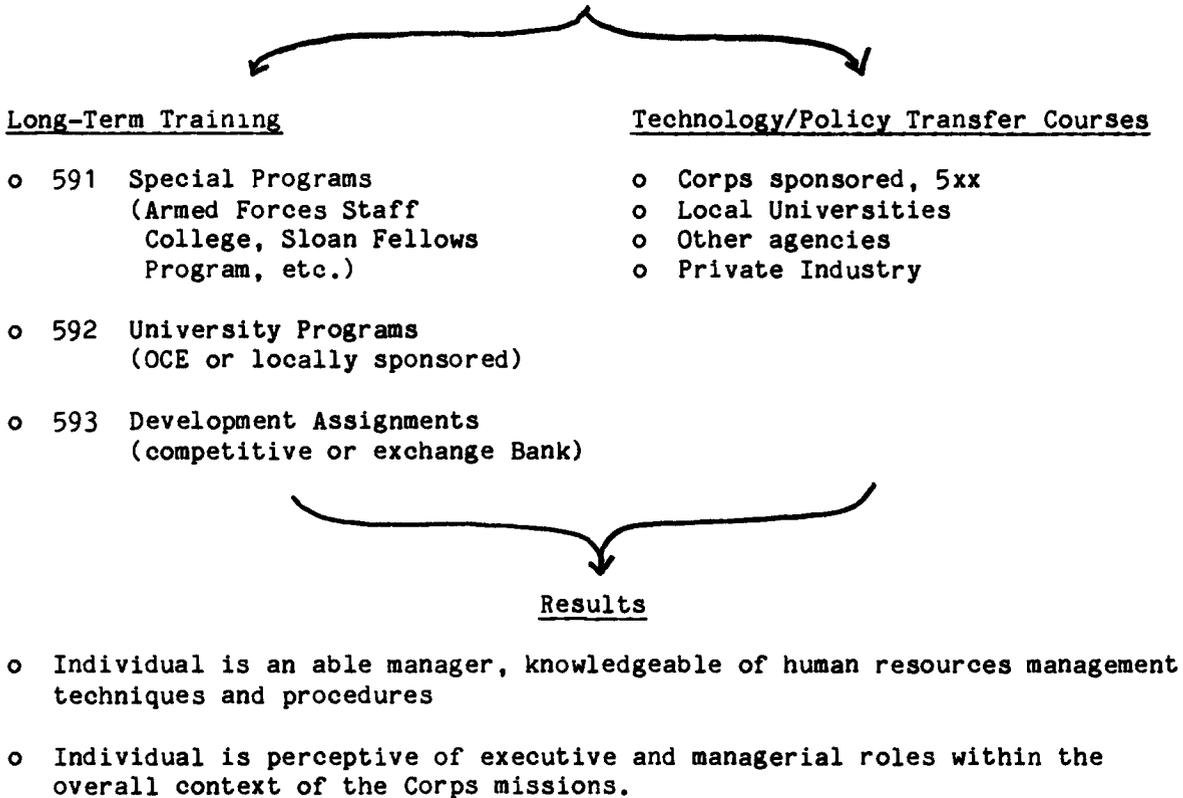


Table 11

Comparison of Apprentice Planner Curriculum Short Course Training with Existing PROSPECT

Training Curriculum	PROSPECT Short Title and Proponent
101 Planning Introduction	~ Planner Orientation (CWP-G)
102 Corps Planning for Non-Planners	
110 Planning Orientation	Pln-Princ & Procd (CWP-G)*
120 Management Orientation	Plan Prog Mgmt (CWP-A)*
130 Economics Orientation	
140 Environmental Orientation	
150 Engineering Orientation	
	Fund Environ Science (CWP-V)
	Appls Geology and Hydro (CWE-H)

* Elements of this course are equivalent to that envisioned by the Training Curriculum.

Table 12

Comparison of Journeyman Planner Curriculum
Short Course Training with Existing PROSPECT

Training Curriculum	PROSPECT Short Title and Proponent
202 Planning for Hydrologic Engineers	Plan/Hydrologic Engrs (CWE-HY)
210 Planning In-Depth	
220 Management In-Depth	
230 Economics In-Depth	
240 Environmental In-Depth	
250 Engineering In-Depth	
	Plan Prog Mgmt (CWP-A)* Pln-Princ & Procd (CWP-G)* Economic Analysis-WRP (CWP-S) Environ Impact Assessmt (CWP-V) Environ Qual Plng (CWP-V) Flood Plain Mgmt Plng (CWP-F) Forecasting Techniques (CWP-P) Environmental Writing (CWP-V) Public Involve Basic (CWP-A)
	Hydrologic Engr/Planners (CWE-HY) Intro to Wetlands (CWO-N) Pub Aware/Coflict Resol (PAL-B) Public Involve Regulatory (CWO-N) RA-MP Training (CWM-S)

* Elements of this course are equivalent to that envisioned by the Training Curriculum.

Table 13

Comparison of Planning Technical Specialist Curriculum
Short Course Training with Existing PROSPECT

Training Curriculum	PROSPECT Short Title and Proponent
3xx Various Courses	<p>Flood Plain Hydrology (CWP-F) Nonstructural Plans (CWP-F) Spatial Data Mgmt Tehnq (CWP-F) Earth and Rockfill Dams (CWP-C) Eco Survey Tech (CWP-V) Environ Data Contracts (CWP-V) Environ Aesthetic Quality (CWP-V) Cultural Envir-Anal/Eval (CWP-V) Habitat Evaluation Pro (CWP-V) Wetland Classification (CWP-V) Pollution Problems (CWP-V) Wetland Dev & Restora (CWP-V) Land Use Analysis (CWP-S) Regional Develop Accounts (CWP-S) Social Impact Anal-Tech (CWP-S) Water Supply/Conserv Plng (CWP-S) Water Trans Planning (CWP-S) Transportation Plan Data (CWP-S) Public Involve Advanced (CWP-A)</p> <p>Environ Tech Info System (ZCE) Computer Application/Engr (CWE-B) Dam Break Analysis (CWE-HW) Selective W-D Structures (CWE-H) Enviromental Engineering (CWE-B) Environ Laws & Regs (CCE) Flood Freg Anal (CWE-HY) Ground Water Hydrology (CWE-HW) Hydrologic Analysis Flood (CWE-HY) Hydro Aspects Hydropower (CWE-HY) Hydropower Planning (CWE-HY) Interdiscip Imagery Anal (WRSC) Photogrammetry-Managers (CWE-BU) Reg Function/Comp & Enf (CWO-N) Remote Sensing-Fundament (WRSC-C) Reservoir System Anal (CWE-HW) Advanced RA/PM sys W/S (CWB-S) Ship Navig Channel Design (CWE-H) Small Scale Hydropower (CWE-E) Streambank Protection (CWE-HW) Water Quality Modeling (CWE-HW) Water Supply Hydrology (CWE-HY) Advanced HEC-2 (CWE-HY)</p> <p>Basic HEC-2 (CWE-HY) Field Techniques (CWO-N) Wetlands Specialist (CWO-N) Wetland Soils/Hydro (CWO-N) Cost Analysis WWT (CAPDET) (CWE-B)</p>

Table 14

Comparison of Planning Study Manager Curriculum
Short Courses Training with Existing PROSPECT

Training Curriculum	PROSPECT Short Title and Proponent
4xx Various Courses	Urban Environment (CWP-V) Neg Bargain & Confl Mgmt (CWP-V) Adv Network Management (MPC-E) CW Program Development (CWB) Problem Analysis-Manager (PEC-T) Remote Sensing-Manager (WRSC-C) RA-PM for Managers (CWM-S) Intro Constr Contract Mgt (MPC-E) Also, elements of: Plan Prog Mgmt (CWP-A) Pln-Princ-Procd (CWP-G)

Table 15

Comparison of Planning Supervisor or Executive Curriculum
Short Course Training with Existing PROSPECT

Training Curriculum	PROSPECT Short Title and Proponent
5xx Various Courses	Public Involve Exec/Mgr (CWP-A) Executive ADP (RMI-S) Mgmt Development I (PEC-D) Mgmt Development II (PEC-D) Mgmt Development III (PEC-D) Manage the E&S Workforce (PEC-T) Problem Analysis-Exec (PEC-T) Wetlands Executive (CWD-N)

Note: Employees must be in a management or an executive position to take these PROSPECT courses; there is no provision for training to prepare for such positions.

Establish a Core of Courses for Planners

Designation of a core of courses is needed for employees in water resources planning. If implemented, this action should be announced with these qualifications:

- identifies a core of generalist courses that would provide the basics for all journeyman planners, to be taken during their first two years.
- is advantageous for being considered for promotion or job application, but is not required.
- indicates which courses should be retaken periodically (e.g., every 3-5 years).

There are three PROSPECT courses that could make up this basic core:

- i. Planner Orientation
- ii. Planning - Principles and Procedures
- iii. Planning Program Management

If this action were to be taken with these three courses, their content should be carefully examined as there may be need for revision. This core of three might be expanded to include two courses that do not presently exist in PROSPECT: a course in Environmental Analysis and one in Economic Analysis. Existing courses such as Environmental Quality Planning, Economic Analysis for Water Resources Planning, and Environmental Impact Assessments of Projects partially cover the material.

In addition, the basic core of three to five courses could be expanded periodically to accommodate special needs. For example, at the present there may be two areas of particular need: computer usage and mobilization. The need for training in computer usage comes as part of the technological trend. Evidence to support the existence of this need comes from the questionnaire: overall, respondees indicate little experience with computer-aided technique, which could be useful in planning. As for mobilization, about one-third believed they did not have the right skills and another third had no opinion. Huntsville has produced a video mobilization course that could provide the basis for any further training and cross-training.

Provide Strategically Focused Training for Anticipated New Mission or Policy Changes

The intent is to provide the Chief of Planning, OCE, with an improved ability to build planners' skills in areas where he anticipates either a need or future work requirements and to be ready for the job when it is received. These kinds of training needs are not likely to be recognized through the normal course needs identification and evaluation system. In the past it sometimes happened that Federal policies would change and Corps guidance to implement would lag by a considerable time. The result was that guidance was time consuming to produce. One part of this problem has been rectified by the RRAP: i.e., the notion that guidance had to be definitive.

This course of action is meant, however to address the other part of the problem: anticipating and getting information and planning process skills built to meet new requirements quickly. It is not expected that this action would be exercised often, but only whenever there is judged to be needs for training in order to build capability for future likely policy changes or new or altered missions.

The action would operate through the Chief of Planning, who would target certain areas of need and would anticipate building planning capability in them. One model of a planners' need that has gone through this process is the series of workshops and subsequent training course on "Water Supply and Water Conservation Planning" which anticipated an increased water supply mission. The planning procedures manual used in this course is the result of a coordinated effort to anticipate newly emerging national water resource needs in water supply and their relation to a prospective new national policy encouraging an (at that time) undefined conservation ethic.

The fact that the Corps is in a state of flux and will be needed to give timely response to new challenges is evidence of the need for this action. Other rationale is the CWP goal: to provide service to the field. Implementation would impact the character of the planner's training program and subsequently, the nature of the courses and the ways in which they are available.

Consider Changes in the Long-Term Training Program

For Corps planners, the existing possibilities for long-term training include the Civil Works Program and the Locally Sponsored Long Term Training Program (course curriculum nos. 292, 392, 492, and 592; Table 5) both of which provide for study at an academic institution and both of which appear to be operating satisfactorily. Another possibility is the Corps-developed Planning Associate Program (course curriculum nos. 291 and 491; Table 5) which is a successful and important factor in the training of planners. Since this is an in-house program, there are frequently ideas for its improvement. Through this action these ideas would be developed and studied and recommendations made. Some of the current ideas on the Planning Associate Program are:

- Consolidate the program to six months and run two sessions per year. This would double the number of people who could be trained and could possibly be operated so that one session was for updating/retraining PA graduates and the other for first-timers. Also, since the time away from the office would be reduced more employees would be able to attend. However, this action would require staffing changes because the program now operates without dedicated instructors.
- Run the program in conjunction with some University training in the area. This could serve to strengthen and roundout the program by requiring students to take formal training in a specialty while they are out of the office. The Washington area offers a variety of courses that would be of interest, some of which could not be obtained locally by some Corps offices. This idea could be taken further: to restructure the PA program so that students earn an academic degree.

- Separate the program's instructional blocks into two sets. One set being those blocks that can only be given in the Washington area and the other being instruction that could be obtained through other training, either Corps short courses or college semester courses. Identification of a curriculum for planners could facilitate this. This would be similar to course curriculum no. 290 (Table 5). The advantages would be reduced time away from the job and perhaps a more in-depth training in some subject areas. However, the program could lose some of its features: interaction, over a period of time with leaders in water resource planning and development; the interdisciplinary theme that can be maintained through intensive training in Corps procedures; training tailored to meet an individuals needs; and interaction with classmates in different disciplines and from different offices but with similar goals.
- Have a different program sponsor. If BERH did not conduct the program, the most likely sponsor would be IWR. IWR would be suitable because of its interdisciplinary staff, its focus on policy issues and planning methodologies research, and its experience in training courses. Although the advantage of being in the Washington areas could be maintained and BERH staff could be tapped, the program would lose the benefits of close interaction with BERH staff and of observation and involvement in the planning study review process. However, IWR could develop the necessary close interaction because IWR staff is engaged in planning methodologies research, special studies, and policy studies.
- Have the program come under the direction of the Chief of Planning. This would inject the program with influence from the office which is most closely involved with issues and developments in Corps planning.
- Establish a Water Resources Planning and Policy Institute for the career development and training of water resources planners. This institute, which is described in a paper by BERH would: (a) conduct an expanded PA program of at least twice the present quantity; (b) conduct at least 10 different short courses per year on water resources planning and policy; (c) conduct special courses, seminars, and conferences each year to train planning personnel on special issues, situations, and new developments; and (d) provide technical assistance to field offices on planning and policy, planning techniques, and on the overall state-of-the-planning-art.

Since 62 percent of respondees believe the PA program is important to receiving promotion and since over half of the graduates are now in positions of authority throughout the Corps, it would be prudent to consider changes and to decide if any would result in program that could better respond to developments in water resources planning and policy and can continue to produce the caliber of planners the Corps needs. This action is consistent with the goals of the Planning Improvement Program: to improve both the management and technical aspects of planning.

Give More Emphasis to On-the-Job Training

On-the-job training, including rotational and professional development assignments can provide valuable experience and should be encouraged for the development of well-rounded planners. This action contains two concepts for increasing the opportunity and benefits of on-the-job training for planners: developmental assignments and an intern program for planners or non-engineers. Although developmental assignments are undertaken, there are certain revisions which could be made to facilitate them. First, selection to such assignments should be competitive. This not only avoids the question of merit promotion but also extends the change to apply to more employees and helps to ensure that the best qualified goes. Second, the Planning Division should establish a link to the Professional Development Fund. Without this link funds for developmental assignments must now come out of the travel budget. Third, an exchange bank could be set up for developmental assignments; this could be a listing of persons with the type of assignment they are looking for and a listing of what offices are willing to offer various types of assignments (course curriculum nos. 293, 393, 493, and 593; Table 5).

The intern program envisioned by this action would be modeled on the "Training Agreement for Accelerated Promotion of Rotational (Resources and Construction) Career Program". (This Training Agreement was formerly known as the Junior Engineer Training Program or JET). The written program would involve a planned sequence of rotational assignments and formal classroom instruction. The structure of the program would need to be developed within each FOA. Typically the program would be completed within a planner's first five years and would involve a rotation through plan formulation, economics, engineering, con/ops, and programs, with a stay of about one to 3 months in each office. This intern program is included in the earlier section on curriculum as the "Planners Rotation Development Program" (Table 6), course curriculum no. 190 Table 5).

Establishment of an intern program would attract more significant than a course curriculum alone not only because it would be more rigorous, but also because it would carry a package label and therefore encourage greater commitment.

Administration

Review Job Performance Descriptions

This action involves the review and possible revision of job performance descriptions for supervisors, Proponents, and Training Officers. These people play important roles in getting employees into training, but the attention that individuals give to the training program varies widely. The intent of this action is to emphasize the importance of the roles of supervisors, proponents, and Training Officers and to clarify these roles as duties. For persons who are doing a minimal job this action would encourage more serious attention and greater conscientiousness. Those who are already doing a good job would get credit for their performance.

Review Financing

There are two financial problems in the PROSPECT program that need to be studied in order to determine their extent and to identify possible solutions.

One problem is the cost: for example about six semester courses could be taken at a local university for the cost of attending (travel, per diem, tuition) one week-long Corps course. Since project or study funds are usually used to pay for training, the cost can become significant.

The second problem is that training funds are tied to travel funds: when travel is cut, training is cut. Also, since the two funds are tied, offices anticipating cancellations may overschedule employees for training. If travel and training funds could be separated then there would be fewer course cancellations.

Comments submitted with the questionnaire offered ideas for solutions. Some suggested that training be centrally funded with training funds as a line item in the budget. This would effectively separate training from travel and study funds and so reduce concern for the cost of training. However, agencies that do include training as a line item do not advise doing this because the visibility makes the funds vulnerable to being cut. Another idea is central funding through a revolving fund whereby Corps offices would be able to distribute training among employees up to an amount based on the organization's salary or level of people. Then, at the end of the year the amount actually spent would be paid back. While this idea does separate training and travel, it does not separate training from study funds or guarantee that the revolving fund would be paid back.

Solutions to improve financing are not immediately obvious and it is not clear whether or not any changes could be made that wouldn't introduce greater problems. This action proposes that the problems be examined to discover if they really are significant and, if they are, to determine if there are any feasible solutions.

In the meantime, individual offices are employing some mitigating procedures: (a) encouraging employees to take locally available training; (b) having a course brought to them if enough employees need it; (c) taking

advantage of video training tapes available through the video leasing program and materials available through the CONTRAST program; and (d) following the guidance in the EC 350-1-327, "Training and Development Policy".

Other training cost-reducing ideas that are described as recommendations elsewhere in this section include having a Training Liaison Officer in each planning office and developing a planners' curriculum. A Training Liaison Officer could help employees shop for the most cost-effective course to satisfy their training needs. A curriculum would provide a framework to the appropriate courses and so help an employee identify courses that may overlap with his previous training.

Consider Establishing Continuing Education Units (CEU's) for Corps Training Courses

The CEU is a uniform, nationally accepted unit of measurement of noncredit continuing education and is used as a means for recognizing and rewarding individual effort in pursuing continuing education. The standard definition of a CEU is "10 hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction." The establishment of CEU's for Corps Training Courses could provide:

- A system for recording and reporting an individual's participation in continuing education from place to place and over time. Since Corps courses are of different lengths, may change title, or be deleted, reporting in terms of CEU's would provide a quick and meaningful summary of a training history. For example, 40 CEU's in environmental planning would convey information in a way similar to the academic credit system of reporting 24 hours in statistics.
- A means for combining an individual's record of training taken through different institutions. For example CEU's obtained through Corps courses could be accumulated with CEU's earned at a community college.

This action would provide an incentive for pursuing knowledge because it would encourage professional and personal development and would give the employee a framework within which he could develop at his own pace. It would also encourage employees to seek continuing education resources to serve their particular needs. CEU's would be considered favorably in job applications and promotions and would thus provide a more positive incentive than the idea to require certain training for promotion. Finally, if a planners' curriculum were to be established, this action could serve to strengthen its success.

Review Policy on Attendance at Conferences

This action would review the policy on attendance at conferences with the objective of finding ways to provide material encouragement for participation in professional societies. This would be consistent with the Corps belief that employee participation in professional organizations reflects favorably on the Corps.

Sources of Information on Training

Publicize Training Officer Services

The Training Officer position has the potential for being a resource problem solver but unless employees are aware of his services, his efforts may be fairly low key and one-sided. In order to (1) help the employee become aware of what a training officer can do, and, (2) provide a measure for the training officer to become more visible and active, there is need for an audio-visual tape briefly describing the training program and significance of training and the training officer's role. This tape could be shown annually, similar to films on fire prevention or subversion. The action would also serve to increase the availability of the course catalog to lower level employees. Another idea that could help Training Officers in their work is a quarterly or yearly newsletter, which could also be produced on video-tape. Until last year, an annual update session had been given for all Training Officers, but this has been eliminated.

This action is directly responsive to the general underlying reasons for making changes to the training program: to encourage a more serious and positive attitude toward training and to install a recognition of its significance to career development.

Implementation should be preceded by a review of the job performance descriptions for Training Officers. A planner's curriculum would strengthen the impact of this action because it would enable Training Officers to have a better grasp of planning as a discipline and would increase his interest in it.

Encourage Designation of Training Liaison Officers

Chiefs of Planning are overwhelmed by the number of training announcements they constantly receive; some of the training could be useful to his employees, however, he does not have the time to sort through, compare, and select courses of interest. This may sound like a task for the Training Officer but there are reasons why he cannot accomplish it. First he functions as the source of information for all elements of the organization, of which planners and planning activities are just one part. There is, then, a gap between what supervisors in planning can do and what the Training Officer can do.

This action describes a means for providing a link between the Training Officer and the planning supervisor in order to better respond to planner's training needs. Within the field-level Planning Division, a Training Liaison Officer would be designated to be the point of contact between the Division and the Training Officer and to be responsible for knowing the Corps training programs, including how they operate and the rules for application and participation. In addition, this individual would be aware of locally available training of interest to planners as well as non-local programs (e.g., the Water Resources Planning Fellowship at Colorado State University). In short, this person would act as an information specialist in planner's training and would be effective because he would be familiar with the concerns

and needs of planners. The advantages of having such a source of information would outweigh the time that would be required for the individual to learn the necessary material and to keep up with it. Planning Divisions should be not be required to appoint a Training Liaison Officer, but they would be encouraged to do so if they were aware of the advantages. It would, for example, reflect favorably in the supervisor's performance ratings.

This action is in the spirit of ER 350-1-414, which encourages FOA's to have a training committee. Already, one Chief of Planning has designated a person to act as a training liaison and is pleased with the results.

Clarify Descriptions of CWP Courses

The catalog of PROSPECT courses states the purpose and gives a description for each course. Such material is updated as needed. While this information is not as detailed as it could be for all courses, the actual number of catalog entries in need of revision is not known. A separate effort would be needed to determine that. However, for each course, the catalog information should be clear as to: scope of subject matter, course organization, level of difficulty, job applicability, course frequency (quarterly, biennially, etc.), and course objectives in both learning and behavioral terms. This action would require a thorough review of course descriptions and more rigorous attention and effort on the part of course proponents. This action also calls for a separate numbering system for CWP courses. As part of its title, each CWP course would have a number which would indicate its level (e.g., the levels on page 25). If completed, this action could ease the course selection process and the scheduling of courses in an employee's Individual Development Plan.

Prepare Brochures on Training Programs for Planners

As part of the Planning Improvement Program and as the result of a command goal given by the Chief of Engineers for his 1980 program, CWP-V has published a brochure on the Planner's Environmental Training Program (EP-200-2-1). The brochure describes courses in PROSPECT that have been developed for environmental planners. The courses are grouped by their focus: Basics (skills), Technical Foundation (knowledge), and Integrated Planning. The general opinion is that the environmental brochure is effective in helping employees and supervisors select courses. In the immediate time-frame (within a year) a similar sort of brochure could be fairly easily prepared for the other functional areas of planning. The cost for design, layout, and printing (2000 copies) is low: estimated at about \$550 in July 1982.

Later, the short-term, or wherever a core of courses and a curriculum for planners is established, the brochures could be redone.

Designate a CWP Training Advisor

Within the interaction between the existing planning hierarchy and the training programs there is need for a position having the responsibility to oversee the issues, concerns, and performance of planners' training and to ensure that each CWP course has the correct proponent. Logically, this

position would be located in CWP. It would require that someone would know the training available to planners, keep up with changes in planning, and function to recommend near-term and strategic actions to serve training needs. In essence, proponents do this for their own courses, but what is needed in an interface among the CWP proponents and between them and HNTD; a sort of a dean of CWP courses. The pace with which water resources planning and policy evolve provides some justification for such a position.

Availability of Instruction

Prepare Special Topic Tapes

There are topics on which information needs may be immediate and for which a need may arise often throughout the Corps. A short course, even if offered frequently may not satisfy the need and additionally, a course may not be the most appropriate medium for delivering the information. In these circumstances, an audio-visual tape could be the most responsive source of information and possibly more helpful/descriptive than a busy co-worker or a person in a distant office. A series of 8 to 10 tapes could provide timely answers to the needs of several employees each year. Examples of topics for which there may be an immediate need and that could be provided on tape are cost-sharing, flood plain mapping, the P+G, and new employee orientation. Special topic tapes could be useful for transfer of technical information as well as policy information. The number of employees involved, their need frequency, and topic of their needs would be determined in initial work on this action.

The advantages of this action are in the number of employees that can be reached and when. It also provides a supervisor with training he can give any number of employees at the same time. Although tapes produced through this action would eventually become cost effective, there is a disadvantage in the amount of money needed up-front. Other disadvantages may be in getting persons to perform and in getting the subject matter agreed upon.

The variety of formats that the tapes could be produced in increases their training potential. For example: straight-forward instruction accompanied by a manual; leader-led tapes in which tape sessions are interspersed with locally-led discussion; a posed panel discussion in which a small group pursues a guided discussion; or a one-person presentation. Also, segments of core courses could be produced as special topic tapes for use in meeting on-the-spot needs.

This action is consistent with the Corps interest in ways to decentralize training. For example, through the CONTRAST Program (Corps Non-traditional Training) the Corps has successfully developed exportable training packages for mobilization and occupational safety and health. The Corps has also contracted for a video leasing program for courses in variety of subjects including math, computer applications, data processing, and management.

Take Training to the Students

It sometimes happens that one FOA or a regional group of FOA's will have enough employees in need of the same training to warrant taking the training to them. This has and is being done. The HNDTD is receptive to providing courses this way and even to developing a course especially for a particular FOA if there is a need. Taking training to the students can reduce costs by reducing travel, particularly if there are few instructors involved. Since this action is already in place, it is simply recommended that both the FOA's and HNDTD be more attentive to such opportunities.

Enrollment

Try Out a Rolling Admissions Policy

This action is another way to be more timely in response to individual needs. Its feasibility should first be examined on a trial basis in a popular course such as Planners Orientation. The idea is to enable students to enroll right up until the time the course is given. It could be a real benefit for those at entry level. However, it would require that instructors and course materials be flexible: conceivably, it could happen that a concurrent session would be needed on short notice.

Enforce Course Prerequisites

The catalog of PROSPECT courses identifies the prerequisites for taking each course. This includes statement of the type of student the course is designed for in terms of his: Corps stratification (including mission function), occupational series, and grade level. For some courses additional information on prerequisites is given, such as current job assignment, experience, and formal education. The requirements for taking a course seem to be clear enough, the problem lies in students attending courses for which they are not qualified. This action would require that course prerequisites be enforced. The action would recognize that exceptions can occur. An employee who does not fall within the stated prerequisites could attend on the basis of written justification by his supervisor.

Evaluation of Training Effectiveness

Determine Methods for Gauging the Learning Experience

This action calls for a separate effort to identify means for evaluating how effective a course has been in conveying the information intended. Specifically, it calls for measures that would be suitable for courses in planning. Tests are an example, but besides being better suited to technical material are further disadvantaged by being insulting and by discouraging those in need. However, a test can be a learning experience: what is needed is some means of testing which gives feedback to the instructor and positive incentive to the student.

Test an Additional Mechanism for the Course Evaluation System

This action involves an evaluation mechanism to provide information on application of training to the job. This information is currently not obtainable either in the end-of-course evaluation or the DD Form 1556 30-day post-course evaluation. It would have the student and his supervisor assess the value of the training after the student has had time to put what he learned to work and while the memory of the experience is still fresh. Ideally, this would be six months later. This evaluation would be designed to provide information to follow-up that obtained through Form 1556 and to differentiate between the value to the current job and to career development. Because the merit of this action cannot be foreseen, it should first be tried on an experimental basis, for example on a core courses. However even if it were to be expanded, the evaluation could probably be accomplished through a random sample of students; otherwise the volume of data would be overwhelming. The evaluation that could result from this action could be helpful in improving course content and meeting training needs.

If this action could be successfully implemented it could be used to monitor the planner's curriculum because evaluation results could be indicative of the worth of the core courses and the structure of the curriculum program. ER 300-1-418, which is now in draft, provides for a six-month post-course evaluation which may be able to collect the necessary information.

Require Participation In "Instructional Methods"

The Huntsville Training Division offers a course in "Instructional Methods", which is designed to familiarize the participant with the various techniques for successfully designing, instructing, and evaluating a training course. Currently, potential instructors are encouraged to take this course. It is recommended that this course be a requirement for all Corps instructors of CWP proponent courses before they conduct any training sessions.