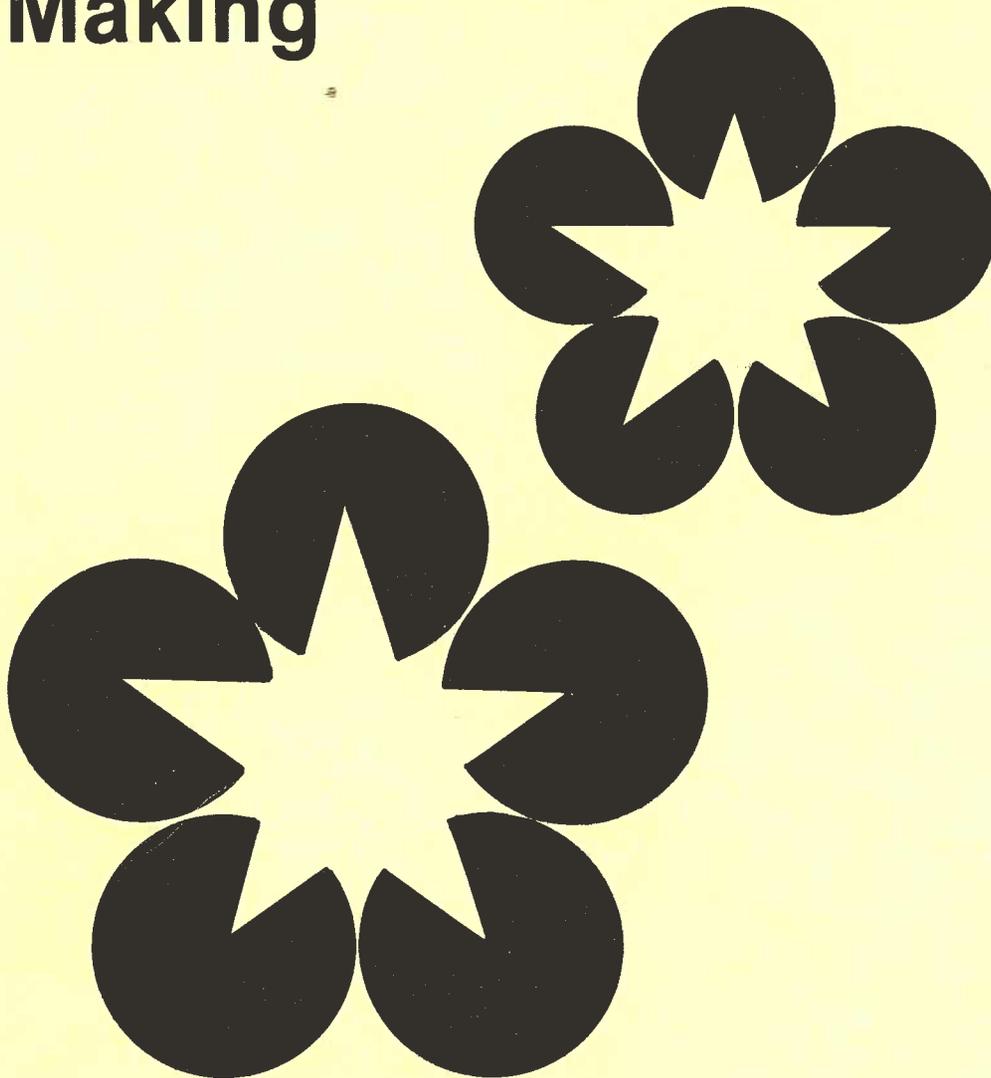




**US Army Corps
of Engineers**

Engineer Institute for
Water Resources

Collaborative Problem Solving for Installation Planning and Decision Making



PREPARED FOR THE U.S. ARMY TRAINING AND DOCTRINE COMMAND

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Collaborative Problem Solving for
Installation Planning and Decision Making

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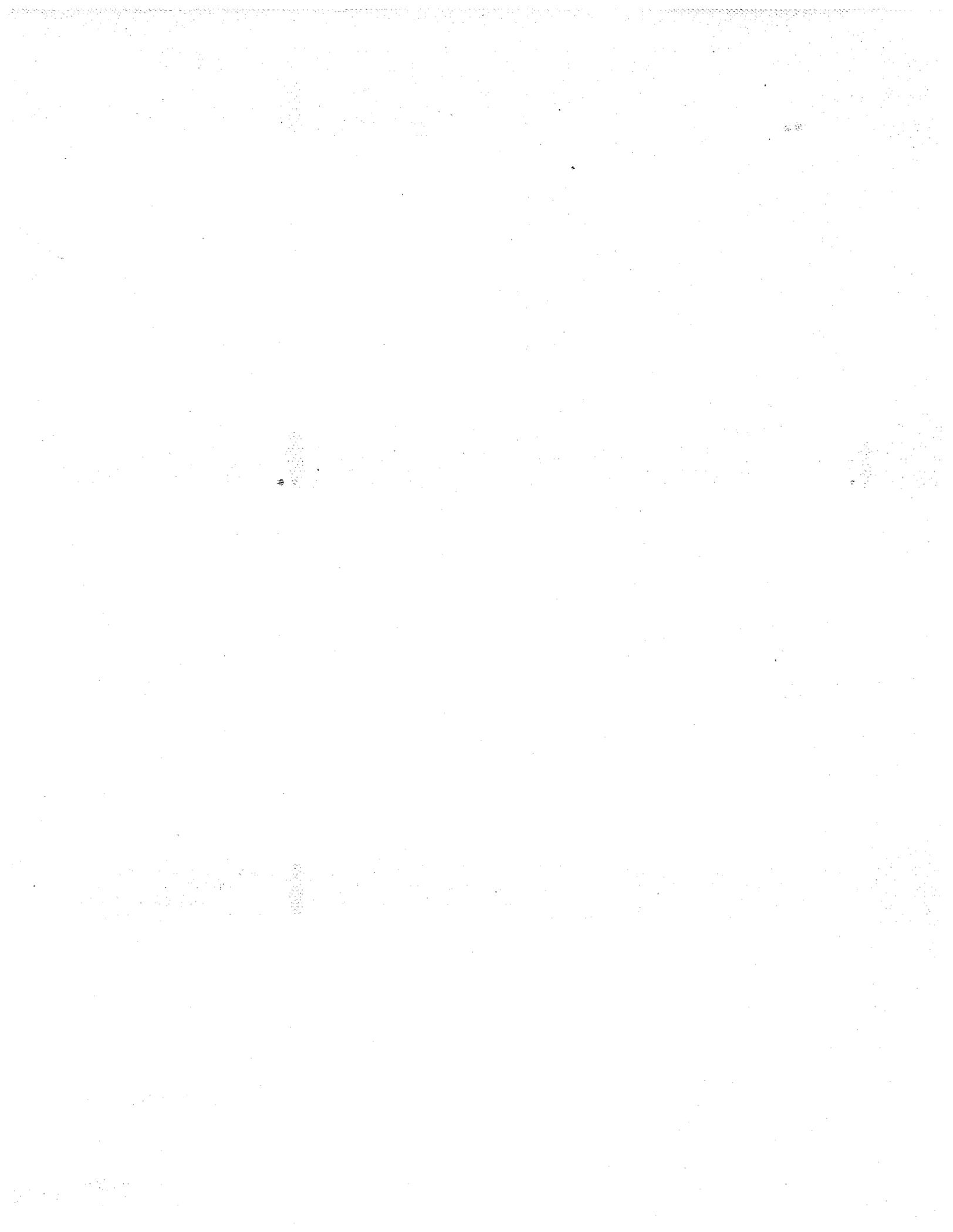
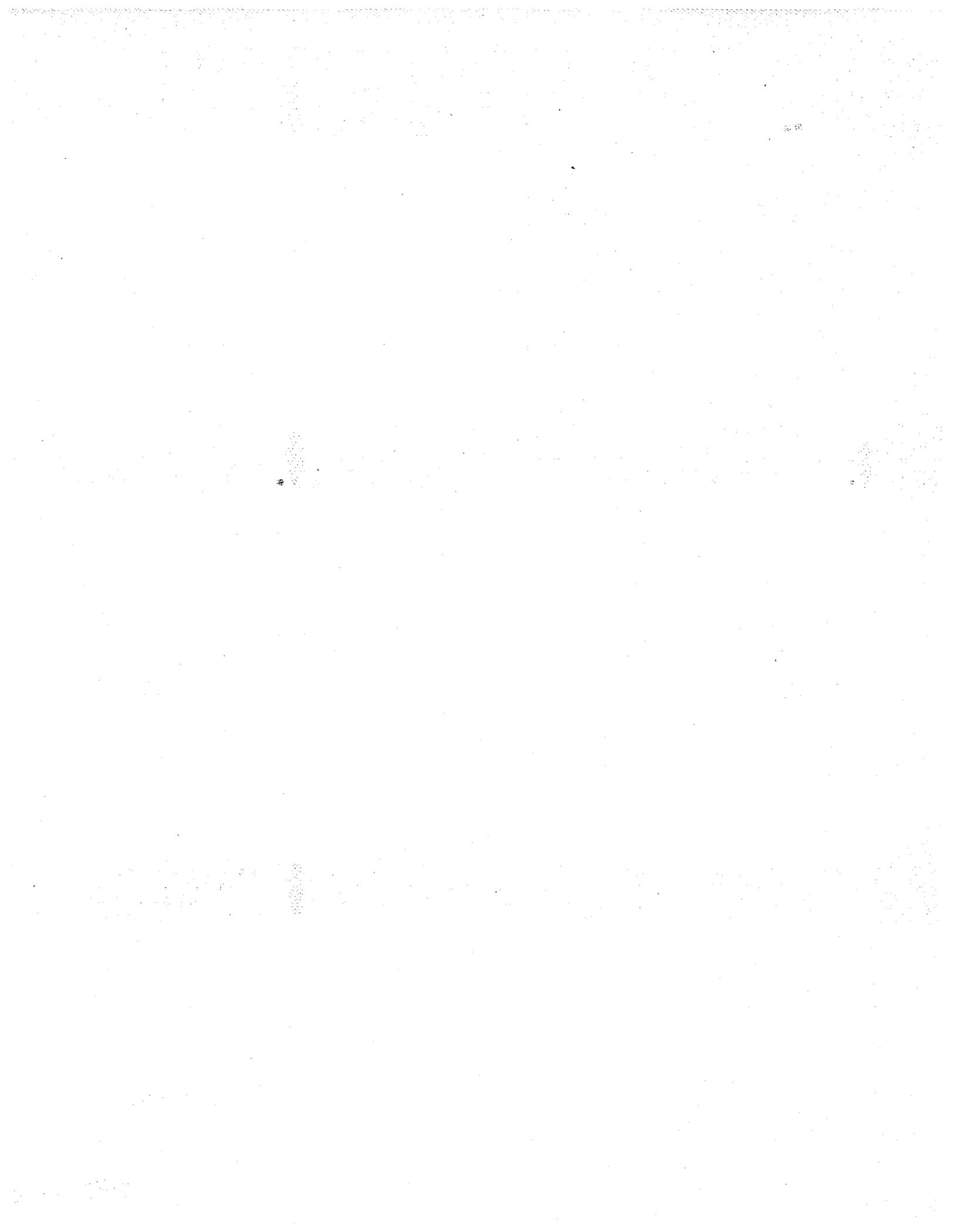


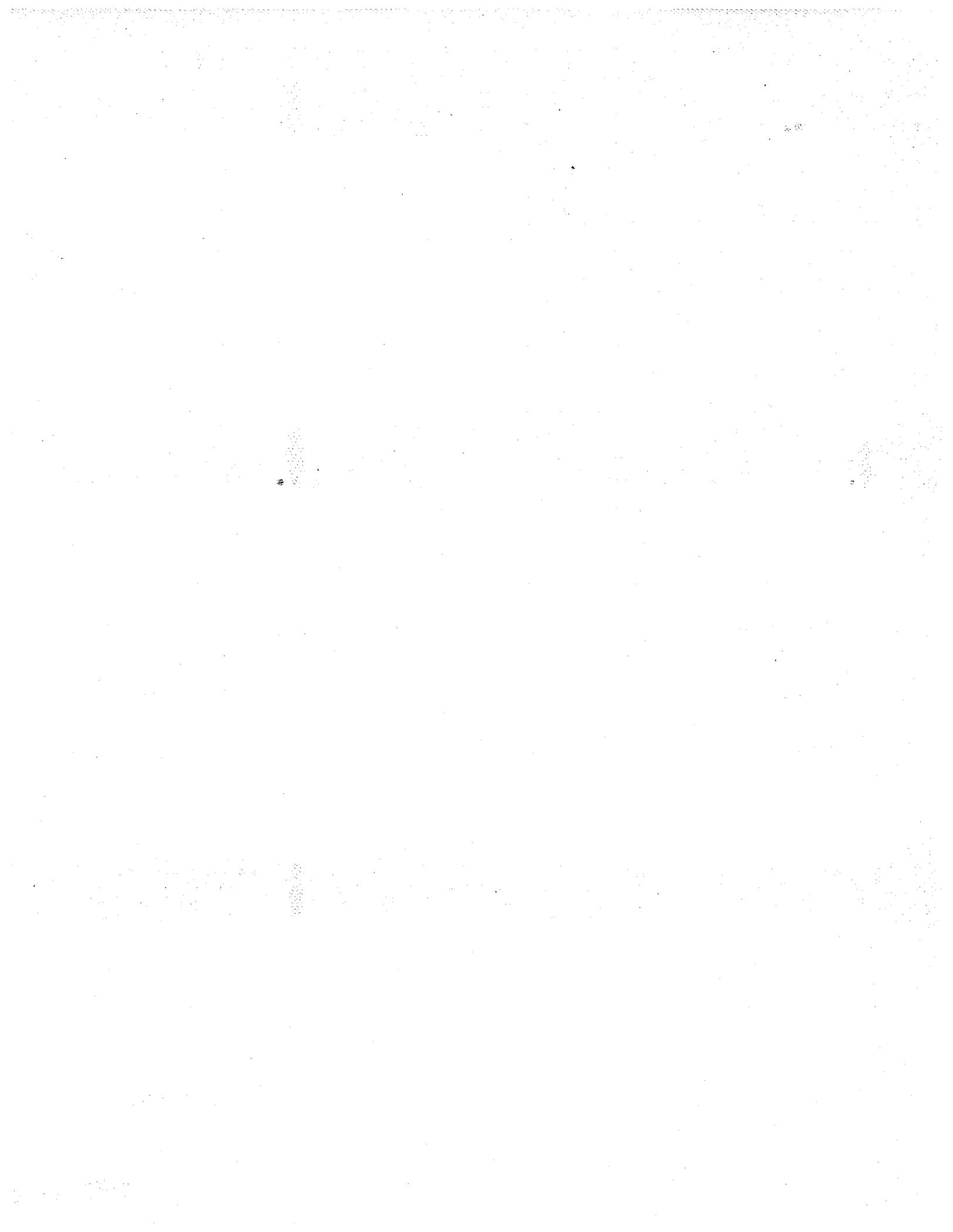
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AN INTRODUCTION TO COLLABORATIVE

PROBLEM SOLVING

INTRODUCTION

Installation planners are often confronted by controversial situations and issues. Typically, the controversy concerns plans that may change the manner in which installation resources such as land and buildings are distributed. When access to or control over resources is being considered, concern and conflict are likely to develop. Many planners have seen what they thought were perfectly good plans stymied because of resistance by those who were affected by or had to implement the decisions. The challenge for planners becomes primarily to find ways to develop plans which meet with support instead of resistance and which are implemented enthusiastically instead of opposed.

This manual is intended to show you how to develop such plans. The approach is called Collaborative Problem Solving or CPS. CPS can be defined as a process in which there is a collaborative effort to jointly meet needs and satisfy mutual interests among those who are involved with or affected by a particular issue. CPS processes generally involve face to face meetings among groups with a stake in the outcome of the particular

issue. In the meetings, participants work to develop mutually satisfactory ways of resolving the problem or issue confronting the group.

After reading the manual you will:

- understand what CPS is, and how it differs from other planning and decision making approaches

- know the major steps in designing a CPS process

- know the major issues which must be addressed in designing a CPS process for a particular issue

- know how to design CPS processes for specific problems and time frames

Structure of the Manual

This manual is divided into six chapters. Chapter I compares CPS with other planning and decision making approaches. Chapter II presents the general principles of CPS, while chapter III describes the steps involved in conducting a CPS process. A method of designing CPS processes is presented in Chapter IV, while Chapter V illustrates the use of the method. Chapter VI summarizes the material presented.

PLANNING AND DECISION MAKING

SITUATIONS AND APPROACHES

To illustrate the problems and challenges of planning let us look at some common situations in which installation planners could become involved; these will be used in this manual to illustrate the application of CPS principles and processes.

Space Allocation

You are a realty specialist in charge of space allocation at the installation and have just been asked to make a decision to assign space to several activities. You have a building with 30,000 square feet of usable space, and the aggregate space requirements of the three proposed tenants of the building total 45000 square feet. Each tenant has submitted a justification of its space requirements and each taken separately appears reasonable. The problem that you have is how to decide to allocate the available space. In addition, how do you make a decision which won't result in so much conflict that you have to spend precious time justifying your decision to your superiors, and which won't hurt your relationship with the tenants who may feel they have been unfairly treated by you?

Master Planning Revisions

You are an installation master planner. You have recently been approached with a request for a variance in the installation's master plan. The site

in question, a 25 acre open space, has been set aside in the master plan for parkland. The site is close to base housing and supplies needed recreational areas for the population. The requested variance is to use the land for barracks. A new unit has been added to the installation and housing for 600 personnel is needed. The plan is to install temporary barracks on the park site and initiate military construction program authorization in the next cycle. You are concerned that this variance would sacrifice needed open space because of a short run need. The problem, however, is how to reconcile the immediate need for additional housing space with the installation's long term needs for recreation land.

Asbestos Exposure

You are an installation environmental specialist who has been given the responsibility of asbestos control. A survey to determine the extent to which asbestos insulation is present in installation buildings has recently been completed. The survey disclosed that several buildings, including an elementary school and several enlisted housing apartments, have asbestos insulation. The results of the survey quickly spread throughout the installation and there has been widespread concern expressed by residents of the apartment complex, by parents with children in the elementary school, and by teachers and staff working in the school. A number of people representing these groups has requested to meet with you. They want to find out more about the survey results, its implications for them, and what the installation intends to do about the problem.

Some Common Planning and Decision Making Approaches

Let's look at some common ways of dealing with these situations. Each way may be appropriate under some circumstances; however, each of these approaches can have some undesirable side effects.

Unilateral Decision

In this approach, someone with the authority to make a decision does. In the first situation, for example, if you are the realty specialist with the authority to allocate space you can analyze the situation and make a decision based on your professional judgement. In many cases this approach may work well; however, when parties feel that their needs or concerns have been ignored, and that they have not been treated fairly, they are likely to try to go "over your head" to appeal your decision. You may have to spend precious time justifying your actions to your superiors. Even if your decision is upheld you've probably spent more time than you could afford with the decision, and your working relationship with the parties has probably been damaged. You may be left feeling aggravated and upset about the situation.

Compromise

Another common, and often appropriate, approach is to search for a compromise. This is the "half a loaf is better than no loaf" rationale which recognizes that in most situations no one party can determine the

outcome unilaterally. In approaching situations with the objective of reaching compromise several problems can arise. The first is that superior solutions may be missed. In the space allocation situation, for example, say a compromise is achieved and each of the three parties receives one-third of the available space. While the outcome may be equitable, one or all of the tenants may not be able to be productive with the amount of space which has been allotted. Another result of trying to reach compromise can be stalemate. As each party tries to protect its space requirements and vigorously stands by its position compromise may become impossible. Instead, positions harden and a stalemate ensues. In this case, no decision can be reached unless some form of unilateral decision is made. When something like this occurs relationships also may be damaged.

Incremental Concessions

A person employing this approach responds to a problem situation by making a series of small decisions. Usually, the person follows the "squeaky wheel gets the grease" principle to determine how decisions are made. That is, decisions are concessions made to those who exert the most pressure or otherwise "make life miserable" for the decision maker. The problem with incremental concessions is that they use up options for arriving at good solutions. Following this approach the realty specialist might assign 15,000 feet of the 30,000 feet of available space to a tenant who complains loudly. He might then award another 12,000 feet to another tenant who complains less loudly and then be left with only 3,000 feet left for the tenant who doesn't complain. In the master planning example, the planner

could make a series of small concessions to allow portions of the open space to be used for housing. The end result of this series of concessions could be a piece of open space which is too small or too poorly configured to be of use for recreation. Making incremental concessions is likely to yield the least favorable outcome and result in the most damage to relationships and credibility of the decision maker. Surprisingly, it is probably the most common decision making approach.

Incremental concessions are often the way installation commanders deal with local communities which object to installation-created intrusions such as noise. Installations at first may adopt a "hang tough" policy and refuse to deal with the concerns of communities. However, in the face of increased community -- or congressional -- pressure, installations seem to adopt an "organized withdrawal" policy of granting seemingly small, concessions to reduce the pressure. While each concession may be small, the net result can be to fritter away the installation's bargaining room for dealing with the problem in a more comprehensive and final manner.

Conflict Avoidance

Another common approach to dealing with situations like those described is to simply avoid confronting the situation. In the case of the asbestos problem, it is possible that the environmental specialist might try to postpone meeting with the affected groups to avoid an unpleasant situation. Trying to avoid problems, however, seldom helps resolve them. They are likely to become worse and people may feel they are being ignored or being taken advantage of.

These examples show that too often disagreements, conflicts or problems are dealt with in ways which result in poor quality decisions - i.e. decisions which have a low potential of being implemented, decisions which do not resolve anything and only produce more conflict, decisions which waste time and money, and decisions which damage the relationships of those who must work together.

Collaborative Problem Solving

In contrast to many common planning and decision making approaches, CPS offers a way of reaching decisions that have a high potential of being implemented, that resolve conflict, that are efficient, and that strengthen or at least do not damage the relationships among parties who are involved. CPS seeks to resolve disputes by engaging the parties in a search for solutions to the situation that are acceptable to all concerned. The parties are responsible for working out the solution to the dispute themselves. In many cases the disputants are assisted by a facilitator who helps keep the problem solving process focused.

In the space allocation planning situation, for example a CPS approach would bring representatives of the tenants together in one or more face to face meetings in which tenants would jointly confront the space allocation problem. Together they would define what their needs are for space and would then try to develop solutions that meet the full complement of space needs. Tenants would evaluate the options against each of their needs and

develop a solution all could support. The resultant decision might be a solution in which all the tenants' space needs have been met, or it might be some form of a compromise. However, the process of having collaboratively worked through the problem gives any solution developed a much better chance of being implementable.

SUMMARY

This chapter has introduced collaborative problem solving as an alternative way of dealing with planning and decision making situations at installations. It has shown that common ways of dealing with disputes that are likely to arise in planning situations can have undesirable side effects. CPS processes can surmount many of the obstacles. The next chapter explains how and why CPS processes offer superior ways of reaching better decisions.

Chapter II

COLLABORATIVE PROBLEM SOLVING

No single conflict management approach is suitable for all circumstances. However, there are many conflicts which are amenable to solution through collaborative problem solving. Collaborative problem solving processes are aimed at facilitating the ability of groups in conflict to work together to develop solutions to their disputes which satisfy the interests and needs of the disputants. The major principles which provide the foundation for CPS are described below.

GENERAL PRINCIPLES

Participation

This principle is derived from an essential assumption undergirding democratic practice: people should have the right and the responsibility to manage their own affairs. From this assumption a number of implications follow:

- when people feel a sense of genuine participation in the decision making process, and they feel that their participation can make a difference in the outcome of a decision making process, they are more likely to participate seriously and cooperatively,

- when people feel they have some control over the process which generates options, they are likely to be more willing to consider them and evaluate them in a serious and responsible manner,

- when people feel that their participation has been genuine, that the process for reaching a decision has been fair and that all sides have had a chance to influence the outcome, they are far more committed to implementing the solutions which have been developed.

Process

The way in which something is decided often is as important as what is decided. When people have some ownership in the process which has generated a solution they are more committed to implementation of the solution than if it were imposed upon them.

Getting Your Own Needs Met by Ensuring that Others' Needs Are Met

People and organizations act to protect their own interests and values. While it is only natural to enter into a planning or decision making situation with the attitude of trying to make sure that your side "wins" -- in the sense that its needs are met in the outcome, it is equally likely that others are approaching the situation in much the same manner. Conflict and disagreements in planning often result when people feel that their needs are not going to be met by a particular outcome.

While in some situations it may be possible to totally dominate a decision making process and ensure that your needs will be met while ignoring the needs of others, in a pluralistic society such as our own this approach is not generally effective. There are just too many ways people who feel they have been wronged can obtain power to seek redress to their grievance -- courts, press, civil disobedience, etc. While it may be possible to dominate a decision at one point in time, the decision can be derailed later on, or the future ability to work with those who have been dominated may be ruined. Since the obstacles to successfully dominating a decision to ensure that your^s needs are met are significant, the most likely way of ensuring that your own needs will be met in a situation in which you can't dominate is to try to work with others to find ways to see that their needs are met.

To better identify how this objective can be achieved it is necessary to contrast the CPS approach with the more traditional way in which solutions to problems are reached.

The Traditional Way: Positional Bargaining

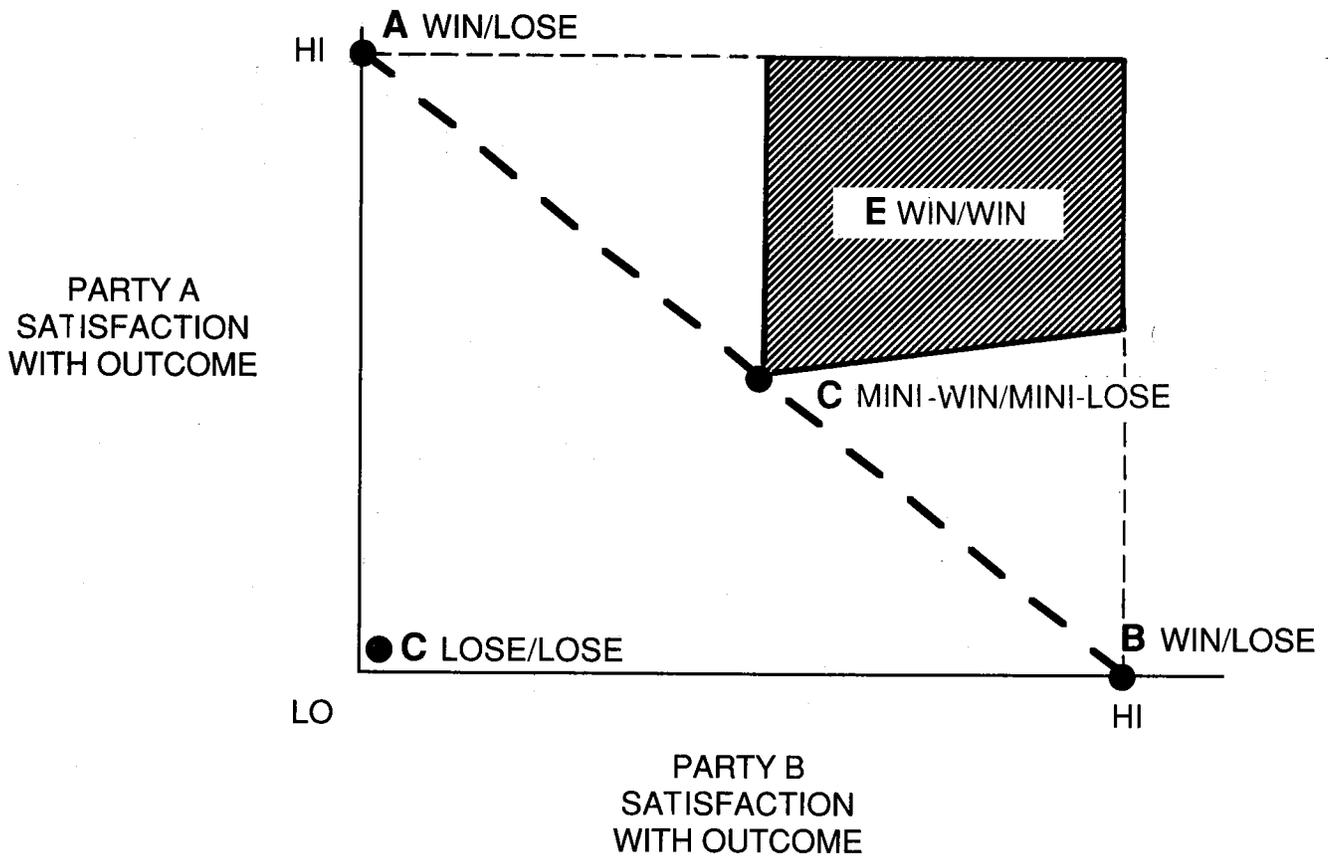
A solution to a problem presented by a party can be referred to as the position of that party. The position generally represents the party's idea of what it thinks will best meet its needs. The problem is, however, that this position has probably been generated in isolation, without consideration for the needs of others who have a stake in the outcome. If everyone follows this logic in developing solutions, the result is a

number of competing solutions to the problem which represent preferred outcomes from the point of view of the parties. When taken together the positions are likely to be incompatible and in competition with one another.

The dynamic which is then introduced is one of each side arguing for its own position and seeking to "win" its position. If positions are in competition, however, to the extent that one party "wins", it is likely that other parties "lose" in the sense of obtaining their position as the outcome. This situation is graphically represented in Figure 1 below. If one side has greater resources it may be likely to achieve a solution more in its favor. Points A and B show situations where one side wins and the other side loses. If both parties have sufficient resources and will, however, they may prevent one another from reaching their preferred solution. Instead, some accommodation may be reached as in Point C. This point represents a compromise, a "mini-win/mini-lose" outcome. While this outcome is usually regarded as satisfactory in problem solving there are some dangers in this approach. Point D shows a situation in which both sides had enough resources to prevent the party from achieving its position; however, no compromise was reached. Instead, a stalemate ensued and neither party achieved its needs and the problem continued to fester and probably grew worse.

While there is thus a danger in approaching the solution from the point of focusing on positions and working toward some sort of compromise, an additional point to note is that in a compromise neither side is completely

Figure 1. Outcomes of a Dispute.



satisfied. In viewing the figure another outcome is theoretically possible. Area E shows a situation where both parties have achieved all their needs. This point illustrates a "win/win" outcome. It would represent a situation where both parties had identical positions - that is, a situation where there was no disagreement. If, however, there are differences in positions -- and disagreement -- can solutions to problems typified by Area E be achieved? The answer to this question is that such solutions are possible; however, the search for such win/win outcomes demands abandoning the emphasis on the positions with which parties in a disagreement begin. Instead, a procedure termed "interest based bargaining" is employed. This approach is described in the next section.

The CPS Approach: Interest-based Bargaining

CPS relegates a concern with the specific positions of parties regarding resolution of the issue to the background and focuses instead on the identifying the underlying motivators of the particular positions advocated. These underlying motivators are termed "interests" or "needs"; they refer to material and psychological factors that need to be provided in order to enhance an individual's or a group's satisfaction.

The key assumption of the interest-based approach is that the position advanced by parties is only one of a set of ways in which the needs of the parties can be satisfied. By focusing explicitly on what these needs are before a search for solutions is attempted, there is a greater possibility for discovering and creating new options for resolving the conflict than would be possible if positional bargaining approaches were employed.

By identifying all the interests that a solution to the problem should meet it will likely be found that a number of interests are shared by parties. In addition, some interests, while not identical, will be complementary; that is, the attainment of one parties' interest will not diminish the attainment of the other parties' interests. These areas of common or complementary interests provide a valuable common ground that encourages cooperation among parties. They can provide additional incentive for parties to continue to work together to try to find ways to reconcile interests that may be in opposition.

CPS processes then:

- encourage participation by involving those with a stake in the outcome of a planning or decision making process in that process
- are attentive to the way things are decided in addition to the substance of the decisions themselves
- are focused on trying to find ways to meet the needs of all the parties involved in the planning or decision making process

CPS MEETINGS

The most essential element in CPS processes are meetings in which those with a stake in the dispute sit down together and try to jointly solve the problems confronting them. Figure 2 shows an actual CPS meeting. CPS

meetings are different from many meetings you may have attended because they include two new roles. Figure 3 shows how a CPS meeting might be structured. Two of the roles shown - those of participant and leader - are common to almost any sort of meeting. However, CPS meetings have two additional roles - those of facilitator and recorder. Each role is described below.

Substantive Participant

Substantive participants have a direct stake in the outcome of the planning or decision making process. They will likely be impacted in some way by the outcome. They will stand to lose or gain control over or access to resources as a result of the process. They will be pursuing their interests in the CPS process.

Facilitator

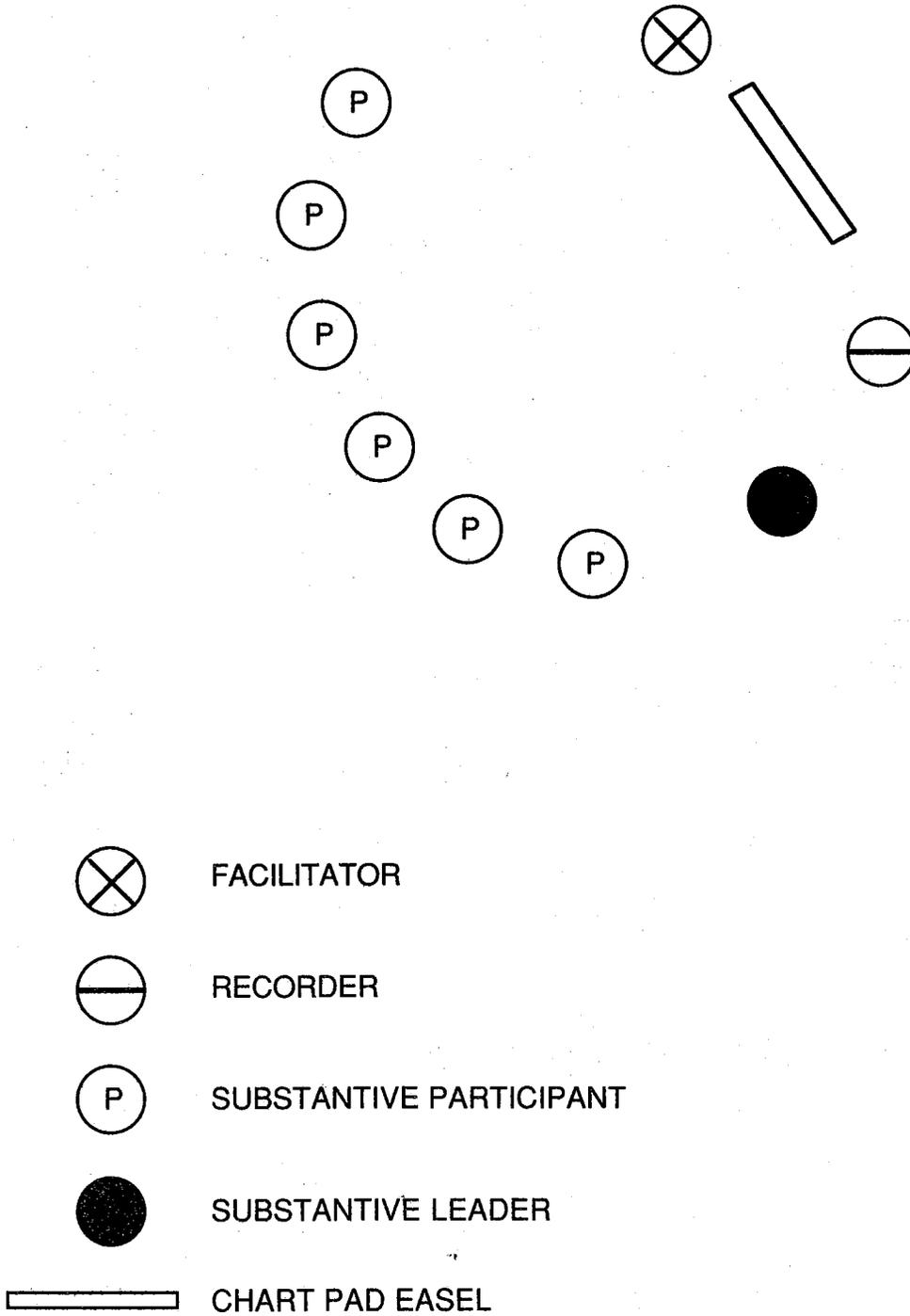
The CPS facilitator is a leader of the CPS process. The basic job is to insure that the way that the CPS process is conducted is consistent with the basic principles undergirding the CPS approach. A facilitator has been referred to as a "meeting chauffeur" (Doyle and Strauss, 1976); this term conveys the idea that the facilitator's primary objective is to help the group get from point A to point B with as little trouble as possible.

In CPS processes facilitators play the following functions:

Figure 2. A CPS Meeting.



Figure 3. Typical CPS Meeting Arrangement.



- keep meeting discussion on track and schedule
- summarize discussion and identify key points
- focus discussion
- orient group to objectives
- create and maintain a non-threatening environment encouraging participants to participate

Facilitators are outcome neutral; they are not committed to any specific solution. Instead, the facilitator is committed to establishing and maintaining conditions conducive to group problem solving in the CPS sessions so that workable solutions emerge. When an individual cannot divorce himself from advocating a particular solution that person cannot be an effective facilitator. Further, if the group believes that the facilitator is focusing on the substance of the meeting rather than the process, the group is likely to resist the efforts of the facilitator.

The requirement that facilitators be neutral with regard to the specifics of the outcome should not prevent installation planners from facilitating CPS processes. The primary goal of planners is to reach solutions to problems which meet the spirit of regulations and which can be implemented. Since there is generally a wide latitude for creating solutions within the framework of regulations, planners need not be tied to any specific outcome.

Recorder

The recorder employs a technique called visual recording to create a group memory -- a common record -- of the deliberations and outcomes of the CPS process. It identifies what happened -- major points of discussion, what was agreed upon, who is responsible for implementing. Visual recording is a major means of keeping CPS processes focused on the major issues of concern. Too often in meetings people ramble or repeat themselves. By referring to the visual record the facilitator can refocus the group back to the major issues, or can show people who keep repeating the same point that their point has been captured and is a part of the record.

As with the facilitator, the recorder serves to assist the process of the group. However, where the facilitator takes an active role in directing the meeting process, the recorder essentially has a passive role of writing down what is being said. Recording is a skill which requires being able to listen to the flow of discussion in the meeting and being able to capture the essence of that flow in short sentences which are written down on flip chart paper in full view of the participants. Meeting participants can then review what is being written down and can call attention to something they feel has not been recorded correctly. Figure 4 illustrates the recording process.

Figure 4. Visual Recording.



In some situations the facilitator will play both the facilitator and recorder roles. Conversely, in some complex meeting situations a facilitator may have two or more recorders to ensure that everything is captured.

Substantive Leader

Some planning and decision making situations have someone who is authorized to be in charge -- the group leader or chairperson. Experience has shown that the substantive leader should not play either the facilitator or recorder roles. Leaders can be perceived by other participants as trying to dominate the problem solving process (whether the leader actually is or not) when they play either the facilitator or recorder roles.

Leaders can play two basic roles in the CPS process; however, it is important that whatever role the leader decides upon is fully recognized by the group before the CPS process begins. The first role a leader can play is where he is responsible for making the final decisions. In this role, the CPS process becomes a way to inform the leader about issues and options so that he can ultimately make a decision which has the agreement of those who must implement or abide by the decision, and, therefore, a decision which has a better chance of lasting. In the second role, the leader gives up decision making authority and agrees to be bound by the group's decision which will emerge as part of the CPS process.

CPS IN TRADOC

CPS processes are not new to TRADOC. Some DEH offices have implemented quality circle processes to identify problem areas involving FE personnel and to find solutions to them. Quality circles use the CPS principles: those with a stake in the outcome of a decision involving working conditions or work procedures participate in developing the decision; group processes are used to develop decisions; and the needs of group members are factored into decisions which are developed.

TRADOC installations are also implementing the Installation Compatible Use Zone (ICUZ) studies. These studies identify where noise generated by the installation is producing land use compatibility problems in communities adjacent to installations. Using a CPS process, installations and communities work together to find ways of dealing with noise and land use issues.

CONDITIONS FOR CPS

There are several prerequisites that need to be met before CPS meetings can be effective. The first precondition is that parties in the planning or decision making situation must agree to meet with one another. This condition presupposes that parties are not so hostile to one another that they would not agree to talk. Parties should also have enough trust in one another's sincerity in approaching the problem solving process to be willing to work with them collaboratively. Another prerequisite is that no

one party should feel that it has sufficient power to unilaterally determine the outcome in its favor with little or no cost to itself. In this situation, there is likely to be little incentive for such a party to participate in the CPS process. Finally, those conducting the CPS process should be seen as being capable of acting fairly and impartially in the CPS meetings by all the parties.

These conditions need to be present in order for CPS meetings to be a realistic alternative for dealing with planning and decision making issues. If the conditions are not present they may be brought about, as shown in Chapter III.

SUMMARY

This chapter has provided an overview of the principles of CPS. In contrast to other problem solving approaches, CPS (1 encourages the participation of those with a stake in the outcome of the process, (2 is attentive to the process by which solutions are reached, and, (3) tries to find ways to meet the needs of all the participants in the problem solving process. There are four basic roles which can occur in CPS processes -- substantive participants, facilitator, recorder, and substantive leader. The next chapter considers steps in planning and conducting CPS processes. For CPS to be effective, those involved in the planning issue must agree to meet with one another; in addition, those facilitating the CPS process must be seen as impartial by the substantive participants.

Chapter III

BASIC STEPS IN DESIGNING AND CONDUCTING COLLABORATIVE PROBLEM SOLVING MEETINGS

INTRODUCTION

The first two chapters showed that CPS differs from other planning and decision making approaches. This chapter describes how installation planners can design and conduct CPS meetings. Two sets of activities are described: preparatory activities that are essential for designing effective meetings; and the activities which are involved in conducting the actual problem solving meetings themselves. These activities are shown in Figure 5. The sections below describe the steps which are involved in preparing for and conducting CPS meetings.

PREPARING FOR CPS MEETINGS

Before effective CPS meetings can be conducted it is necessary that planners have a good grasp of the issues involved in the dispute with which they are dealing. It is also necessary to get the parties involved in the dispute to participate in CPS meetings. The steps involved in achieving these objectives are discussed below.

PREPARING FOR CPS MEETINGS

Problem Analysis

Establishing Conditions for CPS

CONDUCTING CPS MEETINGS

Clarify Ways Parties See the Issues

Identify Interests and Needs

Generate Alternatives

Evaluate Alternatives

Select Alternative

Approve the Agreement

Develop Provisions to Implement, Monitor
and Update Agreements

**Figure 5 - Basic Steps in Designing
and Conducting CPS Meetings**

Problem Analysis

The goal of problem analysis is to help the planner obtain a better understanding and insight into the nature and causes of the problem or issue, so that appropriate CPS meeting can be designed.

The analysis addresses questions such as the following:

-What are the issues?

-What groups are now involved in the problem? What other groups could become involved (stakeholder identification)

-Is there a willingness and motivation among parties to enter into a CPS process? Do conditions for collaborative problem solving exist (trust, interdependent interests, shared values, voluntary participation)

These questions are discussed in greater detail below.

What are the issues?

An issue is a point of debate or controversy between two or more parties. Often, in a planning or decision making situation, it is presumed that everyone knows what the issue is, and the emphasis centers on trying to find solutions. However, as time goes on it becomes apparent that there is no clear consensus among participants of what the basic issue actually is.

In fact, the lack of consensus of what the issue is may be the basis for the problem. When there is not a clear understanding of how the other party perceives what the problem is and what is at issue, little progress in reaching any sort of agreement among participants is likely.

For example, in the case of the conflict over the use of land zoned for an installation park, the group seeking to construct temporary barracks might define the issue as meeting space needs for its troops. The master planning staff might define the issue as maintaining the integrity of the installation master plan. In this situation it is important to recognize that each party has a different perception of what is at issue in the dispute. In the CPS process to follow it will be important that each party comes to understand the other's point of view.

Methods for identifying the issues: The most direct way to determine how parties in the dispute define what is at issue is by talking with them. Interviews, whether conducted face to face or over the telephone, can yield an abundance of information about how the parties define the issues. Where it is not possible to interview parties directly, an alternate method for obtaining such information is to look over documents submitted by parties which explain their position.

What groups are now involved in the conflict? What other groups could become involved (stakeholder identification)?

The objective is to identify those groups which should participate in the CPS process. The basic criterion for selecting such groups is that they will have a stake in the outcome of the CPS process. That is, they will be benefitted or costed in some way, they will have some responsibility for implementing decisions which are reached, or they have some special "veto" power over solutions.

It is essential that all stakeholder groups be represented in the CPS process. Failure to include a stakeholder group could result in a violation of one of the general principles of CPS -- that of participation. If a group has not participated in the problem solving process, it is not likely to have developed the emotional commitment needed to implement solutions.

Particularly difficult stakeholder groups to involve in CPS processes are "headquarters" or other review or supervisory organizations. These parties likely have some "veto" over outcomes, but may not be especially interested in participating in the problem solving process itself. Such parties should be actively encouraged to participate; at the very least they should be kept informed of the direction and general thrust of problem solving so that constraints invoked by such groups can be factored into the process.

Methods for identifying stakeholders: There are three basic methods for identifying parties in the CPS process: self-identification, third party identification, and identification through analysis. Self-identification is accomplished when a party steps forward and requests

inclusion in the CPS process. Those parties which initially surface a problem are in this category. In third party identification, parties which are likely to have some stake in the outcome of a CPS process are identified by asking the opinion of others. For example, in the master planning dispute presented, the facilitator could ask the real estate specialists who, in their opinion, might have a stake in the outcome of the dispute. If groups are identified in this manner, they should be given the opportunity to participate in the CPS process -- whether or not they chose to do so will be up to them. Analytic methods for identifying groups which have a stake in the outcome of the CPS process establish objective conditions by which groups are likely to feel they are affected by the outcome of the CPS process. Some of the ways in which groups are most likely to feel affected are:

Proximity. If the outcome of a decision could involve physical impacts such as noise, dust, odors, etc., those living or working near the site under consideration are likely candidates for being included in the CPS process.

Economics. Groups which have jobs to gain or lose as a result of an outcome are probable parties which should be asked to participate in the CPS process.

Use. Those groups whose use of an area is likely to be affected in any way by the outcome of the CPS process are also likely to be interested in participating.

Values. Some groups may only be peripherally affected by direct affects of an outcome but they may still have a concern in the outcome out of a sense of "what ought to be". Where groups have strong values about aspects of an outcome they are likely to be interested in participating in the CPS process. An example of a values interest in an outcome could be the proposed use of installation land for a park where some portion of the land contains an indian burial ground. Groups which have a strong feeling about the sanctity of such grounds might have an interest in being involved in the CPS process.

Is there a willingness for parties to engage in CPS?

The basic premise of CPS is that superior resolution of planning and decision making disputes can be achieved if the parties can approach the dispute as a problem to be solved rather than as a contest to be won. One of the most important questions to be answered, therefore, is whether parties would agree to work together to solve the problem. For parties to agree to work together the following conditions need to be present:

- parties should have some trust in each other

- parties should not be able to achieve their desired outcome by not doing anything or by being able to unilaterally determine an outcome.

If these conditions are not present there are likely to be serious obstacles to inducing parties to enter into a CPS process. These obstacles are not necessarily insurmountable; however, it is important that they be recognized and dealt with early in the process. The next section will discuss ways to deal with situations in which parties may not trust one another, or in which a party may not feel it has a lot to gain by participating.

Establish Conditions for CPS

The problem analysis may have disclosed that one or more parties might be unwilling to participate in CPS meetings. If so, there are sometimes ways in which such obstacles can be overcome, and ways of dealing with some common obstacles are presented below.

Trust Problems Among Parties

Mistrust among parties in a dispute is natural. Parties try to protect their positions and guard them from attack by the other side. Since information is power, there is likely to be reluctance to cooperate and exchange information with the other side. In such a situation it may be hard to convince parties to trust one another enough to work together. In such circumstances it can be pointed out that since the CPS process is consensual in nature there is actually little risk in participating. An outcome must be agreed upon by the parties; the process can only proceed with the full agreement of the parties. It can be suggested by the

facilitator that parties agree to try the CPS approach for a given time period -- at least one meeting -- and then decide whether or not they want to continue with the process. If parties can be induced to actually participate in the process they will find that the process itself is trust building among participants. In practice, once parties actually enter into a CPS process, they usually do not choose to abandon it.

Power Differences among Parties

If the problem analysis has disclosed the probability that one of the parties has a great deal of power to influence the outcome relative to the others, it is a possibility that this party may not have much motivation to enter into a CPS process. After all, if the party could unilaterally determine the outcome why should it voluntarily seek to collaborate with others? However, if a CPS process is to work, it is necessary that powerful parties be motivated to enter into the process. There are a number of ways such motivation can be achieved. One way is to convince the party that it would be in its best interest to participate even though it could unilaterally achieve its aims. It could be pointed out, for example, that while the party might achieve its interests in the short run, ultimate success may depend on the acquiescence of others. Another way is to make sure the party understands that if it unilaterally forces an outcome, it jeopardizes its ability to get along with others in the future. Others may adopt a philosophy of "don't get mad, get even" to guide their relationship with the other party.

There can be real incentives for powerful parties to cooperate in a CPS even though they might feel they could dictate an outcome. Even if there is no willingness to cooperate it may still be possible to motivate such parties by enlisting the assistance of other more powerful parties. In the context of installation planning should a powerful party not want to engage in a CPS process it might be possible to enlist the assistance of the installation Chief of Staff or other powerful actor to motivate the party to participate.

Meeting Preliminaries

Prior to beginning the actual problem solving process in a meeting a number of preliminary activities must be addressed. These activities are very important in setting the proper tone of the problem solving meeting.

Meeting Logistics

As a general rule, problem solving meetings should be held on neutral "turf" away from the offices of any of the stakeholder groups. In most instances, if the installation planner is accepted by the parties as a facilitator, the planner can select an appropriate meeting site. Other desirable characteristics of a meeting site include easy access for all parties, adequate parking and easy access to food. The meeting room itself should comfortably hold the number of participants expected for the meeting. In addition, it can also be desirable to have one or more "break-out" rooms available where subgroups of participants can caucus

together to discuss issues away from the larger group. Meeting rooms should have adequate space to hang up lists of problems, group discussions, and potential solutions generated in the problem solving sessions. Finally, attention should be given to finding a time of day to hold the meeting that is most convenient for all parties.

Meeting Objectives and Agenda

Facilitators should develop a draft agenda for the problem solving meeting. This agenda lays out the overall objectives for the meeting, and a sequence of activities for reaching these objectives. The objectives and activities are developed on the basis of the problem analysis already conducted. Figure 6 illustrates what a draft set of meeting objectives and agenda for the space allocation issue might look like.

The draft represents the facilitator's understanding and best judgement of what needs to be done; however, following the principles underlying CPS it should be emphasized that the meeting agenda developed by the facilitator is only a draft -- until it is passed by the problem solving group.

In practice, a problem solving group is likely to agree to the objectives and agenda without making changes; however, once again the process of creating a group-owned set of objectives and agenda underscores and reaffirms the CPS principles.

Naturally, if there is disagreement about workshop objectives and/or agenda the problem must be dealt with and a set of objectives and agenda created and developed that all parties can accept before the meeting proceeds.

<u>Time</u>	<u>Topic</u>	<u>Meeting Objective</u>
0000-0010	Welcome, introductions	Develop a solution for meeting the space needs of tenants
0010-0040	Discussion of workshop objectives, discussion of draft agenda	
0040-0130	Identify and discuss space allocation issues and problems	
0130-0145	Break	
0145-0245	Identify needs which must be met in a solution	
0245-0330	Generate "how to" statement	
0330-0445	Lunch	
0445-0545	Generate options	
0545-0645	Evaluate options	
0645-0745	Select option	
0745-0800	Discuss conditions for implementing, monitoring, and updating	
0800	Adjourn	

Figure 6 - Objectives and Agenda for Problem Solving Workshop

Meeting Groundrules

Groundrules prescribe the range of acceptable behavior in the meeting. These are the framework that helps create a safe working environment conducive to creativity. Facilitators should develop a list of proposed groundrules and bring them before the group at the same time that the meeting objectives and agenda are presented. As with these latter two items, groundrules must be accepted by the group.

Groundrules that can be presented to the group include:

Accepted Behavior: Facilitators can identify the type of behavior that they intend to engage in -- e.g., they will not take part in substantive discussions, but only attend to the process of group decision-making, being concerned with keeping the group focused, clarifying points, reminding the group of groundrules, and generally helping the process of problem solving. In addition, facilitators can propose accepted behavior for participants. Such behavior would principally include focusing on issues and refraining from personal attacks on other meeting participants.

Meeting Process: It may be that as the group proceeds with the meeting, participants may wish to change some aspect of the already agreed upon. Another proposed groundrule would be that such already agreed to procedures could be renegotiated if the group agrees. In this way, participants need not feel they are irrevocably committing themselves to a procedure they don't fully understand.

The procedure of addressing the preliminary issues of meeting process in the fashion described above underscores the principles undergirding CPS. By gaining group agreement or process a subtle shift in the character of the meeting occurs. The meeting no longer is someone else's meeting -- it has become the joint property of meeting participants. As this joint ownership is nurtured in the course of the meeting, group norms develop enforcing appropriate individual behavior along the groundrules. These norms become quite strong and exert a much greater force in controlling individual behavior in the problem solving process than could ever be achieved by a facilitator who tries to impose some behavior on participants. In addition, by adhering to the principles of participation process and interest based negotiation, a considerable commitment to the products of the group's deliberations can develop.

CONDUCTING CPS MEETINGS

The activities presented in this section describe how a group -- with the aid of a facilitator and recorder -- moves through the problem solving process to develop solutions which meet the needs of the parties involved in the dispute. Appendix A provides information on a particularly valuable tool -- the Nominal Group Process -- for moving through the group problem solving steps.

Clarify the Ways in Which Parties See the Issues

Often in conflicts, the parties do not have a clear or mutual understanding of the issue as seen through the eyes of the other parties. The objectives of this step therefore, are to develop an awareness and understanding of how the issues are seen by the other parties, and to find ways for parties in the conflict to focus more directly on their own perception of the issues in the conflict.

Therefore, one of the first activities in a CPS meeting is to have parties focus on defining what the problems are from their point of view. Several actions are involved in this step:

Generate Problems

Parties should be asked to answer the question: "What are the major problems which this process should try to solve?" or a similar question. Each party would be asked to provide an answer to the question from its own point of view. A number of groundrules would also be in force. The first groundrule would be that the identification of problems would be non-evaluative. That is, no evaluation of the problems identified by a party would be permitted by other parties. So, if a party identified a particular situation as being a problem, no other party would be allowed to disagree and challenge the party's assertion.

Clarify Problems

After the perceived issues are laid out, time would be allotted to discuss why a party believes something to be a problem. During this stage, the basic purpose is to allow all parties to present their conception of what the problems are to each other. While disagreements about interpretation of data, situations, etc., are likely, the objective is to allow everyone to get better acquainted with how the other parties see the situation.

While some change in how parties define the problems may occur as a result of this step, such change is not the basic objective. Rather, the major purpose is to allow all parties to see how and why other parties define the problems.

Identify Interests and Needs

As noted in Chapter II, an essential principle in the CPS process is to get parties to distill the interests that underlie the particular position they favor. While it is easy conceptually to differentiate positions and interests, in practice they are often hard to untangle. A considerable amount of time and effort is likely to be necessary in helping each party develop a clear statement of what its interests are in the particular issue.

In the master planning situation, for example, if a position is presented that advocates placing barracks on land identified for a park, the underlying interests could include having adequate space and maintaining control and access. The position advocated is one way of meeting these needs. There may

be others. Once again, the major emphasis of this step is to help parties focus on their interests as opposed to specific positions for satisfying them.

To help identify interests it is sometimes useful to look at specific positions advocated by a party and ask the question "Why is that position advocated?" Conversely, it may be productive to have the party examine its own preferred position and answer the question: "Why wouldn't the other party be likely to make the basic decision we want them to?" (Fisher and Ury, 1982: 41).

Parties should be encouraged to help each other communicate their needs to the other parties. It is important that the full range of interests motivating the parties be brought out into the open so that they are understood by all who are participating in the CPS process. Again, the assumption is that the process is a way to creatively find ways of solving problems which meet the full range of needs of the parties involved. It is important to understand that each parties' interests are self-defined and are in and of themselves legitimate.

The end point of this step is a clear statement of what each parties' needs are with regard to the solution to the problem. These needs are then combined in a "How to" statement of the form: "The task is to find a way to meet the needs of Party A which are ..., and also to meet the needs of Party B which are ..., etc."

Generate Alternatives

Once interests of the parties have been identified and a "How to" statement developed, the parties begin a mutual search for solutions that will meet the needs which have been defined. The goal of this step is to invent options which could potentially meet the needs. In CPS, the process of generating alternatives is separated from advocacy. No evaluation of the desirability or acceptability of alternatives is done until after a full range of alternatives has been identified. The primary reason for separating alternative generation from evaluation is that the process of evaluation stifles creativity. The basic objective of this step is to foster a non-threatening climate which is conducive to the development of creative ways to address the "how to" statement which has been developed.

Several techniques suggested by Fisher and Ury (1982) may be useful in helping parties be creative in developing options.

Logical Chain

It may be helpful to move up and down a logical chain which links the specific problem with specific options for solving the problem. This chain starts with a particular diagnosis of a problem. Given a particular diagnosis, a general prescription can be derived. From the general prescription, specific suggestions for action can be derived. Given this logical chain, it is possible to start with a specific option which has been generated and ask: Of what general prescription is this option a sub-set? Having identified the

general prescription, it could be possible to identify other specific solutions which follow from the general prescription. It is possible to look at a general prescription and ask what general diagnosis of the problem is implied. It is then possible to ask if other general diagnoses of the problem are possible. If so, what other general prescriptions would be implied given a different diagnosis of the problem's cause. From a different general prescription different specific solutions could be deduced. Often different disciplines or professions can provide a different way of looking at problems and providing different diagnoses and prescriptions which can lead to the invention of creative options for meeting the needs expressed in the "how to" statement.

Options Which Work to Expand Resources

Since many problems relate to a scarcity of resources, options which look at creating ways to expand the resource base should be explored.

Dovetailing

This idea refers to looking for options which represent low cost to you, but which result in high benefit to other parties. As expounded in Getting to Yes (Fisher and Ury, 1981) the major idea here is to make it easy for the other parties to say "yes".

Evaluate Alternatives

At this stage, parties try to evaluate the alternatives against their needs and to eliminate the most unacceptable ones. Some alternatives will be eliminated immediately because they clearly do not meet some of the parties' needs. Others will stand out as strong options for settlement and will become the focus of the next step.

While the overall goal is to achieve solutions which meet all the needs of all the parties, realistically this may not be possible. What is the more pragmatic objective is to find solutions to problems which meet the most important needs of the parties involved. Therefore, in evaluating options, parties should think about how the options address their most important needs, and they should also be thinking about what needs they may be willing to trade off or to sub-optimize in order achieve reach agreement and meet their most important needs.

Fisher and Ury (1981) emphasize the need to develop some objective indicators of how well your needs are met to use in the evaluation process. These indicators would offer a means independent of the parties' will of establishing how well an option meets the needs of the parties. They offer a number of sources for identifying such objective evaluation measures: precedent, scientific judgement, professional standards, what a court would decide, moral standards, equal treatment, and tradition. It is important to obtain some agreement from the parties as to what independent standards will be used to evaluate alternatives against. That is, a party may say "I am

going to evaluate how well each option meets my needs on the basis of the scientific judgement of an expert." However, if there is substantial disagreement about the validity of scientific evidence in the particular situation or disagreement about which expert should be consulted, the criterion that evaluation take place independent of will would likely not be met. Instead, a situation of "equal and opposing experts" that is commonplace in legal proceedings is likely to result.

Methods for Evaluating Options

There are a number of ways to identify options which appear to offer a potential consensus among parties in the CPS. Among these options are ranking, voting and Likert scaling.

Ranking. In this procedure, parties in the CPS are asked to rank the options according to how well the parties feel each option meets that party's needs. Each option is given an identification number. Each party receives an index card for each option. The identification number for the particular option is noted on the card and the participant selects those options which are at least potentially acceptable to the party. From this group of cards the participant then ranks this group of cards identifying the most acceptable to the least and numbers the cards in descending order. The facilitator then collects the cards and tallies the number of number 1 ranks each option has received, the number of number 2 ranks each option has received, and so on. Using this method, it is possible to identify options which are clearly

perceived by most in the group as being most acceptable. Options which are unranked by anyone can probably (with the group's concurrence) be discarded.

Straw Vote. Voting in this procedure is only a way of identifying preferences; outcomes are not binding. A show of hands is one way of accomplishing a straw vote (i.e. "How many think this option is potentially useful and should be kept under consideration? Raise your hands.") Another procedure which accomplishes much the same objective is to ask participants to distribute a number of votes among the options which have been identified. Each participant may receive seven votes to use as he wishes -- he can cast all seven on one option or can cast one on each of seven options he chooses. Participants then physically place check marks beside options which have been developed and which are written down on sheets of newsprint which are hanging around the meeting room. After participants place their votes, the votes are tallied. Options which have not received any votes can then be brought before the group to see whether they should be retained or not. The implication is that since no one voted for the option it is not considered as being very important to the participants. Conversely, those options which have received the greatest number of votes are likely to be those for which some or all participants have the greatest amount of interest, and thus will need to be included in attempts to work toward a final solution which all parties can accept.

Likert scaling. In this procedure, participants are asked to provide a response to a statement like "This option should definitely be considered in greater detail as being potentially the final solution to the problem."

Participants can respond in terms of five ways: agree strongly, agree, don't know, disagree, disagree strongly. Each option is thus rated by each participant and responses are tallied for each option. Those options which receive all disagree or disagree strongly responses can be eliminated (once again, subject to the group's approval). Those options which have received all agree or agree strongly responses are candidates for a final solution. Options which have polarized response patterns -- some agree with the statement, others disagree -- should be retained since there may be unique elements of the option which are important to some of the participants. Options which generate a high proportion of "don't know" responses should be clarified. What else would need to be known about the option before participants could decide whether the option could meet their needs? Can such information be obtained?

Figure 7 illustrates how a Likert scaling table to evaluate general options generated in the space allocation example might look. Option A shows complete agreement among participants; it is a likely candidate for a final solution. Option B shows complete agreement among participants that the issue should not be considered for a final solution. It will probably be dropped from further consideration. Option C shows no clear agreement among participants; additional clarification is needed for this option. There may be different definitions of the problem that are driving the disagreement -- perhaps these need to be clarified. Some important interests are not being met in the option -- whose are they, and what are they. Finally Option D has a lot of uncertainty surrounding it; the option needs to be fleshed out, and additional information about it developed before participants can evaluate it.

How do you feel about the statement: "The option should definitely be considered in greater detail as being potentially a final solution to the problem?"

		Summary of Responses				
<u>Option</u>		<u>Strongly Agree</u>	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
A	Create common area that all tenants can use for some compatible purposes, e.g. xeroxing	2	1			
B	Brief the CG and let him decide					3
C	Operate facility on 24 hour basis and adjust work schedules		1		2	
D	Look for additional space off-base			3		

Figure 7 - Likert Scaling Example

The end result of any of these procedures is arrival at a smaller number of options which seem to offer a greater likelihood of acceptance among participants. The methods can be used alone or in combination with one another. For example, a straw vote could be used to narrow the list of options to only those for which there was some commitment in the group. Then a Likert procedure could be used to identify where major areas of general agreement, and polarity, exist within the group.

Select Alternative

By this stage in the problem solving process one of four situations is likely. The parties may already have identified one alternative which was clearly best at meeting all interests. More likely than complete agreement, however, would be an agreement in principle, with details still to be clarified. Third, a "bargaining range" may have been established -- the parties are narrowing the range of alternatives and still are engaged in productive problem solving. Finally, the parties may be so far apart that no agreement is likely, even though all parties may be negotiating in good faith.

The objective of this step is to move the parties toward the selection of an alternative. Essentially, this can be accomplished by focusing on incremental concessions or by combining alternatives into a superior solution which requires fewer concessions on the part of parties.

Approve the Agreement

Agreements reached between participants in the problem solving meetings may still have to be ratified by decision-making bodies. Normally the negotiators have maintained communication with the parties who will be reviewing the agreement, so that the agreement falls within understood guidelines and authorities the negotiators were given.

Develop Provisions to Implement, Monitor and Update Agreements

Agreements should not only specify the actions each party will take but should also describe how the agreement will be implemented, and how implementation will be monitored. In addition, some provision for updating agreements reached may be appropriate.

SUMMARY

This chapter has described the steps in carrying out a CPS meeting. Two basic sets of activities were described. The first set focuses on helping the planner understand the dispute so that appropriate CPS meetings can be designed. The second set of activities are the actual problem solving sequence which enables disputants to turn the dispute into a problem to be solved collaboratively. The objectives and activities involved in these steps are summarized in Table 1. The next chapter presents a way of helping design CPS processes which are tailored to the requirements of specific situations.

Table 1. Summary of Steps in Designing and Conducting Collaborative Problem Solving Meetings

Step	Objectives	Activities
----	-----	-----
Problem Analysis	Achieve insight into the nature of the problem. Identify groups involved in the issue and obtain their views on the nature of the problem. Determine obstacles and opportunities for conducting CPS.	Compile background information on problem; meet and talk with parties involved in the issue to obtain their perceptions about the nature and causes of problems; parties' positions and desired outcomes for resolving problem; parties' views about and trust in other parties involved in the issue; parties' perception of ability to determine outcome unilaterally.
Establish Conditions for Conducting CPS	Eliminate or reduce obstacles to CPS identified during Problem Analysis.	Meet with parties to discuss their participation in CPS; listen to parties' views about participating; explain how process works and the safeguards for protecting parties' interests that are inherent in the process.
Meeting Preliminaries	Obtain meeting site that is conducive to CPS. Develop group norms regarding appropriate meeting behavior and process.	Select meeting site. Develop draft objectives and agenda for meeting; develop draft ground-rules of meeting procedure. Present draft objectives, agenda and groundrules to group for approval; modify as necessary based on group input and consensus.
Identify Issues	Enable each party to articulate and clarify its own views about the causes and nature of the issue. Enable each party to understand how other parties define the issue.	Parties meet jointly to identify problems; facilitator keeps problem identification process non-evaluative and asks parties to clarify and expand on their views. Facilitator reminds group of meeting groundrules and provides a safe environment for the exchange of views.
Identify Interests and Needs	Identify each parties' material, psychological and procedural interests that need to be satisfied for an acceptable solution to the problem.	Help parties to identify their own interests and their perception of what other parties' interests are. Help parties differentiate interests from positions. Note identical or complementary interests among parties; identify areas where there appear to be interest conflicts. Develop a "How to" statement that encompasses all the interests that have been expressed by parties.
Generate Alternatives	Develop list of options that could potentially satisfy the interests of the parties expressed in the "How to" statement.	Brainstorm or otherwise enable participants to invent options. Prevent invention phase from becoming evaluative. Identify data needs of participants to help them generate alternatives. Obtain or help develop required information.

Table 1. Continued

Evaluate Alternatives	Obtain preferred set of alternatives for final selection.	Identify data needs that parties may have in order to better evaluate options. Obtain or help develop required information. Perform ranking of options; discuss results, pointing out areas of agreement and disagreement; encourage dovetailing and tradeoffs.
Select Alternative	Select solution to problem that all parties can endorse.	Help parties focus on differences; identify bargaining range; identify potential trade-off opportunities. Caucus separately with parties to help a party discuss and clarify its own views. Deliver messages and proposals among parties.
Approve Agreement	Present agreed upon solution to decision making body for ratification or approval.	Assist parties in preparing briefing and/or other documents to submit to approving authority.
Develop Provisions to Implement, Monitor and Update Agreements	Identify how solution is to be implemented; what actions will be taken by whom and when; how performance will be monitored, by whom; and how and when the solution will be reevaluated and updated.	Help parties determine who does what, by when. Help parties prepare any implementation agreements, MOAs, etc.

Chapter IV

A THOUGHT PROCESS FOR DESIGNING COLLABORATIVE PROBLEM SOLVING MEETINGS

INTRODUCTION

There is no single CPS meeting which can be prescribed for all situations. Many factors, such as the time available, types of issues involved, characteristics of the parties, etc., will influence the ultimate CPS process which is developed. This chapter presents a "thought process" for developing CPS meetings which are tailored to the specific requirements of your situation.

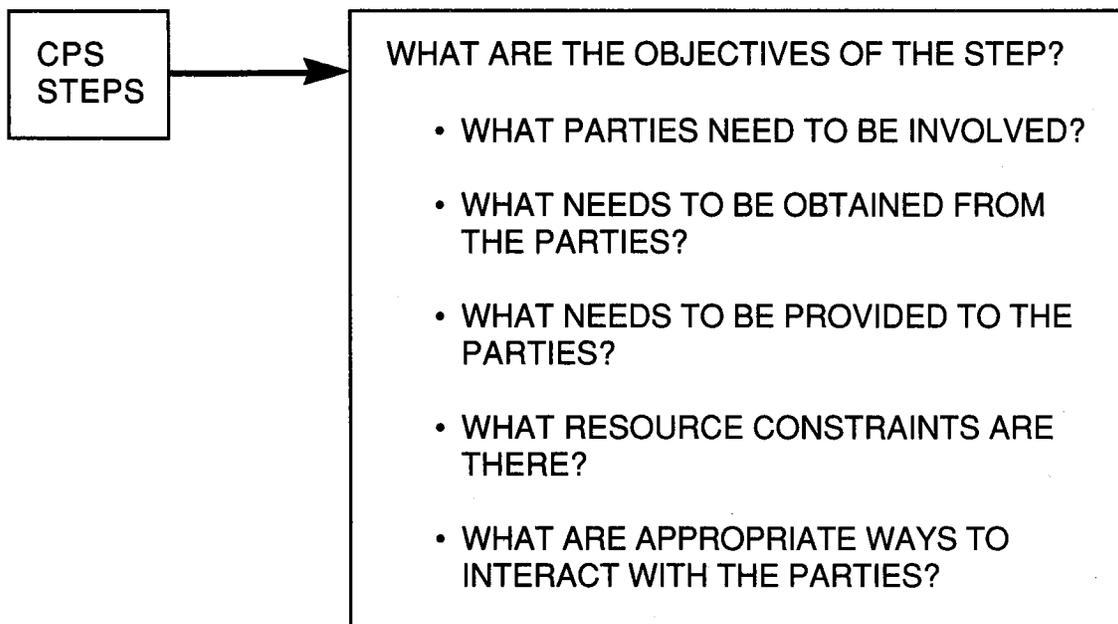
THE THOUGHT PROCESS

The thought process enables the design of the CPS meetings to be carried out in a logical and systematic fashion. It consists of asking several questions for each of the activities involved in preparing for and conducting CPS meetings. The answers provided help formulate the CPS "plan". Figure 8 illustrates this concept. The thought process questions are:

- (1) What are the objectives of the step?

For each objective:

Figure 8. The CPS Thought Process.



(2) What groups need to be involved in the CPS process to achieve the objective?

(3) What needs to be obtained from the parties to achieve the objective?

(4) What needs to be provided to the parties in order for them to be able to effectively participate?

(5) What resource constraints need to be taken into account?

(6) What are appropriate ways to interact with the parties to accomplish the objective?

The sections below discuss each of these questions in greater detail.

What are the objectives of the step?

An objective can be defined as a description of an intended result or outcome. This question asks you to be specific in defining what outcomes you want to achieve during the particular stage of the CPS process. After all, if you don't know where you want to go it's difficult to select a suitable means of getting there. Outcomes are most helpful if they can be defined in "tangible terms" - i.e. using words which describe discernable performance or actions on the part of those involved in the CPS process.

For example, an objective of the first step in the CPS process (Problem Analysis) is to identify what is at issue. The desired outcome in this case would probably be a list of problems which need to be addressed. Other objectives in step one can be defined by the questions which the problem analysis addresses. Objectives in other parts of the problem solving process become less prescribed and more conditional on the particular circumstances of the specific situation.

What Parties Need to be Involved to Accomplish the Objective?

The problem analysis will identify the parties most likely to have a stake in the resolution of the problems being considered in the CPS. While the parties will be expected to be involved throughout the process, the level and intensity of their participation may vary according to the specifics of the objectives being considered.

What Needs to be Obtained From the Parties to Achieve the Objective?

In order to accomplish the stated objective in most cases it will be necessary for the parties in the CPS to do something. For example, an objective in the "Clarify Issues" step would be to obtain a list of issues as seen by the parties in the CPS. The product to be obtained to satisfy the objective is the list.

What Needs to be Provided to the Parties in Order for them to be
Able to Effectively Participate?

In order to achieve the stated objectives in the CPS you will want something from the parties. However, in some cases, before you can expect to obtain something from the parties you must provide something to the parties. This question asks you to explicitly consider what you might need to provide the parties so that they have the means or ability to provide you with what you need.

Recall the situation involving asbestos contamination. Assume a CPS process were being implemented to develop a plan for controlling exposure of people at the school while continuing to provide needed instruction. During step five (Generate Alternatives), the CPS designer would likely want a list of options which could satisfy the needs of the parties involved. However, before the parties could generate options they might need to have information on a variety of topics - e.g. technical standards regarding exposure, legal requirements or rights regarding risk of exposure, educational requirements, etc. It is likely that as groups move through the CPS process they will identify and generate their own information requirements. Those facilitating the CPS process will probably be asked to obtain and provide the needed information. To the extent that likely information requirements can be anticipated they should be planned for and incorporated into the CPS process design.

What Constraints Need to be Taken into Account
in Reaching this Objective?

It is important to consider the resource constraints which affect the character of the CPS process. The amount of time, personnel and other resources which are available need to be identified and factored into the design process. It would be useless to structure a CPS process which would take two months to implement if all you have is two days to deal with the problem. Similarly, how many people are available to conduct the CPS process? Is it just the facilitator, or is there enough of a budget to provide a staff? Is there enough time to train the staff?

What Are Appropriate Ways to Structure the Process
to Accomplish the Objective?

Given the answers to the above questions it then becomes possible to select the most appropriate ways to structure the process for achieving the objectives of each of the steps.

The total collection and sequencing of steps, objectives, and interaction methods forms the CPS plan.

SUMMARY

This chapter has presented a thought process to help those planning a CPS work through the design of a program in a systematic and logical fashion. By following this thought process it is much more likely that important considerations will be factored into the CPS design. The next chapter continues with the thought process, illustrating its use in designing CPS processes.

Chapter V

USING THE THOUGHT PROCESS

This chapter illustrates the use of the thought process presented in the previous chapter. CPS designs will be developed for two of the situations presented in Chapter I.

SPACE ALLOCATION

Recall that you are a realty specialist in charge of space allocation at the installation and have just been asked to make a decision to assign space to several activities. You have a building with 30,000 square feet of useable space, and the aggregate space requirements of the three proposed tenants of the building total 45,000 square feet. Each tenant has submitted a justification of its space requirements and each taken separately appears reasonable. The problem that you have is how to decide to allocate the available space. In addition, let's assume that you have to make a decision within a week; however, you don't want to devote the entire week to this one issue.

Problem Analysis

While sitting at your desk you review the basic principles of CPS and perform a quick problem analysis. It might look something like this:

What are the major issues: Resolve space problem in building.

What parties are involved: Tenant A, Tenant B, Tenant C.

Is there a willingness and motivation to try CPS: Unknown; however, parties have a high need to obtain space and would probably be receptive to CPS. The first two objectives of the problem analysis require little work; therefore, it is not necessary to go through the complete thought process. However, the third objective requires some additional information to complete. The thought process can help identify a way of obtaining it. The thought process for this objective appears below.

Objective: Determine willingness of parties to participate in a CPS process.

What groups need to be involved: Three tenant groups.

What needs to be obtained from parties: Agreement or refusal to participate in the CPS process.

What needs to be provided to parties: Brief explanation of CPS approach, why you feel it could be appropriate to the situation, time requirements for participating in the CPS, personnel requirements (one decision maker per unit).

Resource constraints: None

Appropriate Ways of Accomplishing the Information Exchange: Telephone call or visit to offices of tenants.

Having gone through the problem analysis and decided that telephone calls to each tenant is appropriate, you called the commander of each party and allocation problem. You requested that he send someone to the meeting who had authority to make decisions for the unit. The commanders agreed to send representatives -- noting that their people would be protecting their unit's interests.

Now that agreement to participate in a CPS has been obtained you return to the CPS plan and move through the thought process. The complete design appears below (Table 2). As the plan shows, most of the objectives seem accomplishable in a group workshop.

To further illustrate the CPS process let us proceed with this hypothetical example and move into the structure of the CPS workshop. The workshop site should be away from the offices of the tenants. The meeting room should have a flip chart pad and easel, marking pens, and tape for hanging up flip charts as they are written. A table facing the front of the room with participants' chairs behind it should be present. Participants will face forward -- symbolically facing the problem jointly -- rather than facing one another. The first topic, after greetings and introductory remarks opening the meeting, is to present a draft agenda of what you hope to accomplish. This draft agenda represents your perceptions and expectations; following the basic principles of CPS it becomes necessary to have the group develop ownership of

Table 2. Thought Process for Space Allocation Problem.

Step	Objective	Groups to Involve	Needed From Parties	Provide To Parties	Resource Constraints	Ways to Interact
1	Identify main issues	Tenants	Problem statement	Nothing	None	Telephone call
2	Determine willingness of parties to participate in CPS	Tenants	Agreement or refusal to participate in CPS process	Explanation of CPS; resource requirements	None	Telephone call/visit
3	Establish conditions for CPS	N/A	N/A	N/A	N/A	N/A
4	Identify/clarify concerns of parties about space allocation	Tenants	List of problems	Nothing	None	Problem solving workshop
5	Identify interests and needs	Tenants	List of needs which a decision on space allocation must meet.	Nothing	None	Problem solving workshop
6	Generate a "How To" statement	Tenants	How to statement containing the needs which a solution must meet.	Nothing	None	Problem solving workshop
7	Develop a list of alternatives	Tenants	List of alternatives which could potentially meet needs and solve	Nothing	None	Problem solving workshop

Table 2. Continued.

Step	Objective	Groups to Involve	Needed From Parties	Provide To Parties	Resource Constraints	Ways to Interact
6	Perform evaluation of how well options address needs of parties	Tenants	Ranking of preferences for options.	Nothing	None	Problem solving workshop
7	Select a solution which meets the needs of the parties	Tenants	Solution	Nothing	None	Problem solving workshop
8	Approve agreement	Tenants	Agreement with or without conditions	Nothing	None	Meeting
9	Update agreement	Tenants	Any conditions which need to be changed or	Nothing	None	Telephone call/meeting

the meeting process. Therefore, it becomes necessary to have the group approve the draft agenda. In most cases there will not be any objections to the way you have structured the agenda and the meeting format, but occasionally there will be. In those situations the objection or issue raised should be brought before the group for decision. Once again, it is their meeting and their process for solving the problem. What would the group like to do?

Another point to make is that the agenda and meeting plan -- indeed the entire CPS plan -- represents your best judgement at the time it was developed. As new information develops and interaction proceeds it is natural that the plan will need to be modified and updated. It may be that participants will be unable to reach consensus in the time frame allotted. Perhaps it will be necessary to schedule another meeting. The key point is that you, as designer and implementor of the CPS process, need to be flexible and responsive to change.

The CPS process is consensus based; therefore, by definition, solutions which emerge must be endorsed by all parties in order for them to be implemented. How does this work in practice? Several outcomes are likely. First, parties can realize that a particular solution is the best that can be achieved given the awareness of the other parties' needs which have to be met. This outcome may represent sub-optimization of parties' needs; however, because all the parties share the burden equitably there is the recognition that the outcome is fair. A second outcome can be that a truly creative solution emerges in which all the needs of all the parties can be met. A third outcome is that

the parties come to redefine the problem. It may no longer be defined as "how to manage space in building", but "how to obtain the necessary space on the installation." By expanding the scope of the way in which the problem is defined a new CPS process -- probably with additional parties -- may be needed. Another outcome which could occur is that parties may have been unable to reach any kind of agreement, perhaps other than to agree that they disagree. Two points apply here. First, this outcome is not as bleak as one might first think. Information about major points of disagreement among parties is quite valuable and can form the basis for focusing on ways to address these problems. The second point is that this situation is not as likely as one might think. If the principles of participation have been followed in the conduct of the CPS process, and if appropriate conditions for CPS among the parties existed, there is likely to be a strong incentive among the parties to reach some kind of solution. That is, ownership of the process creates a condition where the self-esteem of participants becomes involved and serves as an inducement to create workable solutions.

ASBESTOS EXPOSURE

As presented in Chapter I, there was concern about the possibility of exposure to asbestos in several apartments and an elementary school at the installation. While there is not yet any hostility on the part of groups who may be exposed to asbestos, there is a demand to know what is happening and what the installation intends to do about the situation. As the environmental specialist with the responsibility for asbestos you have decided to employ a CPS process to address the issue.

Problem Analysis

What are the issues: The basic issue is the fact that people may be exposed to asbestos in their living quarters, or where they work or go to school. Groups are concerned about potential health hazards of asbestos and likely have anxiety because of the uncertainty of the situation. Groups want to be informed about the status of the asbestos problem and what the installation intends to do about the situation.

Groups involved in the problem: Using the indicators described in Chapter II several stakeholder groups can be identified.

Proximity (direct exposure to physical impacts): residents of apartments, school children (parents of children), teachers and staff at the elementary school.

Economic (economic costs and benefits associated with outcomes): base planning board.

Use (control, use of area affected by outcome): installation commander's planning board.

Values (sense of what "ought to be" as an outcome): probably none.

Groups likely to represent the interests of those directly involved:
parents, teachers' union.

Thus, using the analytical methods, several stakeholder groups have been identified. There may be other groups which also need to be involved. Third party identification approaches can be employed when talking with the groups already identified to determine whether there are other stakeholder groups.

Willingness and motivation to participate in a CPS process: It is clear that groups want to be informed about the situation and what the installation intends to do about it. It is less clear whether a CPS approach is the appropriate process to employ in this situation. In order to develop information about this issue the thought process can be used.

Objective: Determine the willingness of groups to participate in a CPS process

What groups need to be involved: Parties identified

What needs to be obtained to achieve objective: Representatives from the groups to sit on an advisory board to participate in a CPS

What needs to be provided to groups:

-Asbestos survey findings, and the implications of the findings for health, safety, and operations

-General range of options open to the installation to address the problems

-The idea that the installation wants to select a plan which poses the least hardship on anyone and that in order to do so requires input of all affected groups

-Brief overview of CPS process; invitation to participate in the process; idea that smaller planning body needed

-Groundrules concerning the status of the group - i.e. either it will be advisory in nature or else it will have some decision making power

Resources required: Need a meeting site that can accommodate the number of people expected to attend a meeting to present findings about asbestos survey; technical expert(s) on asbestos; trained facilitators

Appropriate ways of interacting: Interviews with leaders of parties identified could be held to provide a briefing on the CPS which is being contemplated and to ask for help in the selection of a task force of 10 - 15 persons to work with the installation on the asbestos problem. The role of the task force would have already been decided upon by the installation -- i.e. advisory or decision making -- and the groundrules for the operation of the task force would be clearly presented to the leaders. In addition, leaders would be briefed on the public meeting and the way it would be structured. At this time groups could be asked to identify any other parties which need to be contacted.

A public meeting could also be called to inform groups of the findings of the asbestos survey. However, large public meeting formats are not well suited to situations involving high levels of anxiety or where there may be a lot of questions. An alternative approach is to break the group assembled for the meeting into facilitated groups of 10-15 persons where the implications of the survey could be discussed and explained more completely. This latter approach would require more resources (trained facilitators and probably a number of technical experts who could address group questions) than a simple public meeting format. At the public meeting, the public could also be briefed on the concept of the CPS process and the advisory panel.

The remainder of the CPS process would concentrate on working with the task force. However, all actions taken by the task force would be disseminated to the broader group. These concerns are reflected in the remainder of the plan shown in Table 3.

While a more complex and time consuming process than that used in the space allocation example, essentially the same principles are involved:

- groups with a stake in the outcome participate directly in the problem solving process

- the process is attentive to the substantive issues of the problem, but also is sensitive to the procedural and relationship dimensions of the solution.

Table 3. Thought Process for Asbestos Exposure Problem.

Step	Objective	Groups to Involve	Needed From Parties	Provide To Parties	Resource Constraints	Mays to Interact
1	Identify main issues	Parents, residents school staff, installation planning board	Problem statement	Nothing	None	Personal interviews
	Identify key leaders	as above	Names of leaders of parties	Nothing	None	Personal interviews
	Determine willingness of parties to participate in CPS	Leaders of parties	Interest in participating in a CPS Representatives from groups to sit on advisory board to participate in CPS	Overview of CPS process, idea that an advisory board is needed, groundrules on function of group	None	Personal interviews
2	Keep public informed	General public	Names of those who would like to be kept informed, names of additional groups which would like to participate in the CPS process	Asbestos survey findings, general range of options, overview of CPS process, function of advisory board	Need a meeting site which can accomodate the number of people likely to attend a briefing on asbestos survey findings	Public meeting, facilitated workshops at meeting
	Establish conditions for CPS	N/A	N/A	N/A	N/A	N/A

Table 3. Continued.

Step	Objective	Groups to Involve	Needed From Parties	Provide To Parties	Resource Constraints	Ways to Interact
3	Identify/clarify concerns of parties about asbestos exposure issue	Advisory panel	List of problems	Nothing	None	Problem solving workshop
4	Identify interests and needs of parties which must be met in a just and equitable solution to the asbestos problem	Advisory panel	List of needs which a decision on asbestos problem must meet	Nothing	None	Problem solving workshop
5	Keep public informed	General public	Nothing	Progress in CPS to date	None	News release, newsletter
5	Generate a "How To" statement containing needs which must be met in a solution to the asbestos problem	Advisory panel	"How To" statement containing the needs which a solution must meet.	Nothing	None	Problem solving workshop
	Develop a list of alternatives	Advisory panel	List of alternatives which could potentially meet needs and solve asbestos problem	Nothing	None	Problem solving workshop

Table 3. Continued.

Step	Objective	Groups to Involve	Needed From Parties	Provide To Parties	Resource Constraints	Ways to Interact
6	Perform evaluation of how well options address needs of parties	Advisory panel	Ranking of preferences for options.	Information which could help parties evaluate options, e.g. health codes, standards, etc.	None	Problem solving workshop
7	Keep public informed	General public	Nothing	Progress in CPS to date	None	News release, newsletter
7	Select a solution which meets the needs of the parties	Advisory panel	Solution	Nothing	None	Problem solving workshop
8	Inform public of solution	General public	Understanding of the solution	Briefing on the nature of the solution	Ability to accommodate large number of people	Public meeting
	Approve agreement	Installation commander	Agreement with or without conditions	Nothing	None	Meeting
9	Update agreement	Advisory panel	Any conditions which need to be changed or added.	Nothing	None	Telephone call/meeting

SUMMARY

This chapter has shown how two of the situations faced by environmental planners might be addressed using a CPS approach. The thought process has been shown to be a way to help planners systematically think through design issues and develop CPS processes tailored to the needs of the specific situation. The major principles and techniques for conducting CPS processes have now been introduced. The final chapter of this manual summarizes this material.

Chapter VI

SUMMARY AND CONCLUSIONS

CPS is an alternative form of planning and decision making. In contrast to other more common problem solving approaches, CPS addresses not only the substantive issues of the problem or conflict, but is also sensitive to the influence which procedure and interpersonal dynamics can have on the quality of decisions made. The primary focus of CPS is to create a climate in which the energy and creativity of individuals can be tapped to produce high quality solutions to problems which everyone can support.

CPS works on the principles of participation and process and the awareness of needs. These principles assert that solutions to problems are best reached by encouraging the participation of those with a stake in the outcome of the process, by encouraging that the procedures for reaching a resolution to the problem or issue is perceived to be fair and equitable by participants, and by ensuring that the needs for participants are reflected in the solutions developed.

In addition to traditional roles found in other problem solving approaches, the CPS process requires a facilitator, who is attentive to the process aspects of CPS. When one plays the facilitator role, any other roles the person might have which are concerned with the substance of the problem or issue are suspended. Facilitators can come from the parties themselves, or can be a third party having no direct stake in the problem or issue. As

enforcer of the principles of CPS it is essential that the facilitator be seen as legitimate to all parties in the CPS.

APPENDIX A

NOMINAL GROUP PROCESS¹

The Nominal Group Process was designed based on research which suggests that individuals generate more creative ideas and information when they work in the presence of each other but do not interact. According to this research, when people interact in groups, they are more likely to react to each other's ideas rather than come up with new ideas, or consider new dimensions of the problem.

The procedure for Nominal Group Process is as follows:

1. OPENING PRESENTATION:

After an initial presentation explaining the Nominal Group Process, the audience is broken into small groups of six to nine participants.

2. STAFF AND ADVANCE PREPARATION:

Each group is assigned a Discussion Leader and Recorder. Prior to the meeting, these staff persons will put up four sheets of newsprint, and also have felt-tipped pens, scratch paper, pencils, and 3 x 5 cards ready.

¹Reproduced from Institute for Water Resources Advanced Public Involvement Training Course Workbook.

3. INTRODUCTIONS:

The Discussion Leader will introduce himself and invite everyone in the group to do the same.

4. POSING THE QUESTION:

The Discussion Leader will then present the group with a pre-developed question such as: "What are the water rproblems in the James River study area which affect you?" The Discussion Leader will write the question at the top of one of the flip chart sheets.

5. GENERATING IDEAS:

Participants are provided with paper or file cards and asked to write on the paper all the answers they can think of to the question posted. Their notes will not be collected, but will be for their own use.

Time: 5-10 minutes.

6. RECORDING IDEAS:

Each person, in turn, is then asked for one idea to be recorded on the newsprint. The idea will be summarized by the Recorder on the newsprint as accurately as possible. No discussion is permitted.

Participants are not limited to the ideas they have written down, but can share new ideas that have been triggered by others' ideas.

Anyone can say "PASS" without giving up their turn on the next round.

The process continues until everyone is "passing". Alphabetize the ideas on the list: A-Z, AA-ZZ, etc.

7. DISCUSSION:

Time is then allowed for discussion of each item, beginning at the top of the list. The discussion should be aimed towards understanding each idea, its importance, or its weaknesses. While people can criticize an idea, it is preferable that they simply make their points and not get into an extended argument. Move rapidly through the list, as there is always a tendency to take too long on the first half of the list and then not be able to do justice to the second half.

Time: 40-60 minutes.

8. SELECTING FAVORED IDEAS:

Each person then picks the ideas that he thinks are the most important or best. Instructions should be given to pick a specific number, such as the best five, or the best eight. These ideas should be written on a slip of paper or 3 x 5 card, one idea per card. They may just want to record the letter of the item on the list (A, F, BB, etc.) or a brief summary, so that they don't have to write out the entire idea.

Time: 5 minutes.

9. RANKING FAVORED IDEAS:

Participants then arrange their cards in preferential order, with the ones they like the most at the top. If they have been asked to select eight ideas, then have them put an "8" on the most favored and number on down to a "1" on the least favored (the number will change with the number of ideas selected). A score sheet should then be posted which contains all the alphabet letters used in the listing. Then the participants read their ratings (" . . . R-6, P-2, BB-8, . . .") which are then recorded on the score sheet. When all the scores have been shared, then tally the score for each letter of the alphabet. The highest scoring item can be shown as #1, etc. Post the rankings for the top 5-7 items, depending on where a natural break occurs between high scores and low scores.

Time: 5 minutes.

10. DISCUSSION OF RESULTS:

The participants may then want to discuss the results. Someone may point out what two very similar items "split the vote" and were they to be combined they would constitute a single priority item. If the group as a whole wants to combine them this is acceptable. It should be pointed out, though, that an analysis will be made of all the results, not just the priority items.

Time: 5 minutes.

TOTAL PROCESS TIME: 1 1/2-2 hours, plus time for opening presentation.

USES OF NOMINAL GROUP PROCESS

If the full Nominal Group Process is utilized as indicated above, the cumulative time of opening presentation, Nominal Group Process, and reports back to the total group (assuming a larger audience has been broken into small groups) would probably mean a total time of 2 1/2-3 hours. This would be the equivalent of an entire evening meeting. It is possible, however, to utilize portions of the process. For example:

Everyone in an audience can be asked to generate ideas on 3 x 5 cards. The ideas can then be given an initial ranking by the number of times an idea occurs (although this may not be a measure that an idea is good, but simply that a number of people are aware of it).

After a series of alternatives has been presented (along with some time for discussion) the participants can rank the alternatives on 3 x 5 cards and a tally developed for the group. This runs the danger of appearing to be a vote which may be misleading unless the audience is very representative; but the same danger is inherent any time a ranking process is used.

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