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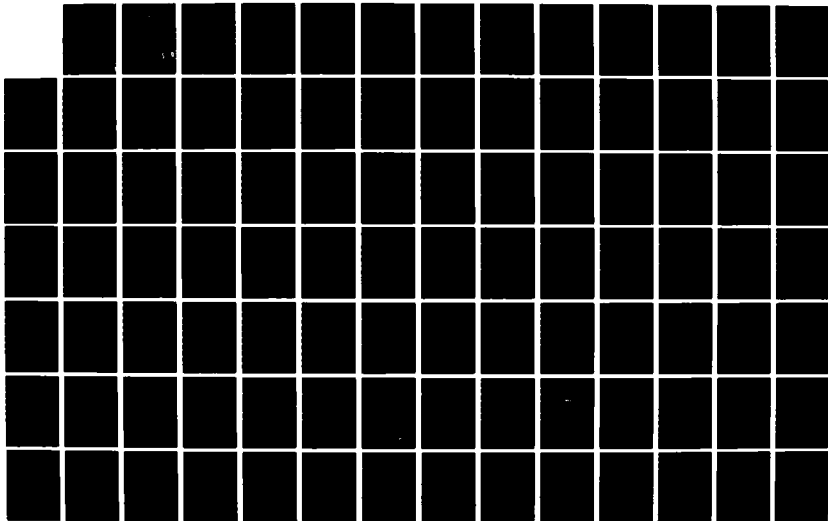
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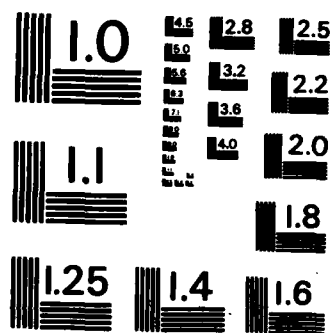
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GUIDELINES FOR DEVELOPMENT OF A BASE
COMPREHENSIVE PLAN TO MANAGE MILITARY
CONSTRUCTION

THESIS

John R. Cole
Major, USAF

AFIT/OMM/SCN/OSC-1

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GUIDELINES FOR DEVELOPMENT OF A BASE COMPREHENSIVE PLAN
TO MANAGE MILITARY CONSTRUCTION

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirement for the
Degree of Master of Science in Engineering Management

John R. Cole

Major, USAF

September 1985

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Abstract

✓ This thesis provides programmers and planners guidance on the development of a base comprehensive plan to manage military construction. The guidance contained here should enable the novice planner to outline the requirements of a comprehensive plan and locate some of the information sources necessary to complete the plan.

Historically, the military has done little to manage the development and growth of its bases and to anticipate the growth and infringement of surrounding communities. In the 1950's the first efforts of master planning began to improve the function of military bases. However, progress in developing comprehensive plans to address the total spectrum of base/community problems has been slow. Only in the last decade has real progress been made in establishing base comprehensive planning as a managerial tool to aid commanders in determining the future of base development.

✓ In addition to providing an outline for the development of the base comprehensive plan, this thesis re-searches the acceptance of comprehensive planning by the leaders in Air Force Civil Engineering. The research on acceptance is designed to determine the creditability that comprehensive planning has established at the MAJCOM level. ↗

GUIDELINES FOR DEVELOPMENT OF A BASE COMPREHENSIVE PLAN
TO MANAGE MILITARY CONSTRUCTION

I. Introduction

Purpose

This thesis is intended to provide assistance to the base-level planners in their efforts to understand the inner workings and functional relationships of the component plans that comprise the Base Comprehensive Plan (BCP). Much guidance and opinionated literature is available on the general topic of planning and urban development, but very little indepth guidance has been provided to the Department of Defense planners. This paper reviews some of the pertinent sources of planning information, assistance, regulations, and laws. It is not meant to be a comprehensive review of all the laws, regulations, and literature concerned with planning. The physical limitations of this paper and the quantity of time available do not make that practical.

Although this paper cannot provide a complete literature review, it is of adequate size to permit the questioning of the Major Commands Deputy Chiefs of Staff for Engineering and Services about their opinions of the

role BCP has played in the past, the future of BCP, how to effectively implement that process, and how to educate Air Force personnel about the importance of the BCP process.

Background

The attributes of effective planning have long been recognized. Historically, however, the military has been slow to respond to long range planning. "When World War I broke out, this country had only 122 men in the air arm. Statistically, the United States ranked fourteenth in world air power, and although an American invented the airplane, American airmen were forced to fly combat aircraft manufactured by other countries". History records that "The United States has entered every war it has fought utilizing the technology of the previous war" (27:9). This complacency has been even more prevalent in support planning. However, such an attitude must change if the United States is to remain a leader in world progress.

"The Air Force (and the federal government as a whole) is now experiencing a new American revolution in the area of comprehensive planning. This revolution is generated by the impacts of rapid and unexpected change, the unwanted fruits of environmental laissez-faire, the need for conservation of resources, and more involvement of the community in the decision-making process. Many of the Air Force's existing management and planning systems will need new dimensions to cope with these problems" (27:1).

Each year Congress appropriates billions of dollars to fund the Military Construction Program (MCP) based solely upon the Services' input to the Planning, Programming and Budgeting System. In 1985, the President's Budget proposed an MCP appropriation of \$7.2 billion (4:57). These appropriations are approved upon the limited project descriptions provided by the Services. The Air Force Engineering and Services' inputs are primarily concerned with the construction of new facilities required to sustain current operations or to support new weapon systems or missions. The origin of these project descriptions is generally one of two places: the Engineering and Environmental Planning Section at the host base, or the desk of a project officer in the Major Command Headquarters. The result is that many projects considered for funding in the appropriation have received, at best, "desktop engineering" until formally submitted for consideration in the upcoming appropriation. The Military Construction Program Guidance requires projects be at least 35 percent designed prior to the Program Objective Memorandum submittal in May. This requirement is designed to reduce the errors in site selection, utility location, and inadequate construction that lead to costly change orders or grievously inadequate facilities.

Like most initiatives to implement economic efficiency, there are always "roadblocks" that must be overcome. Many of these obstacles are founded in the reluctance to change the way business has been conducted.

Personal preference often overruled good sense in the selection of base projects. Funds were often used to construct less than adequate facilities based upon the reasoning that "if the base did not spend the money another base would. Besides, there was always more money next year." According to Tracey L. Smith, the attitude that our resources are unlimited is a reflection of our American frontier heritage. "Many Americans have lived in the land of plenty for so long that it is hard for them to conceive of a doctrine tied to limited resources" (27:6). Perhaps this background makes us reluctant to accept the fact that the budget of the United States has a definite limit and, consequently, that each of us must make sacrifices if this country is to survive its future economic problems (27:1).

The dynamic nature of the many programs and special projects prevents the total elimination of planning errors. However, the quantity of planning errors originating at the base Engineering and Environmental Planning Section can be minimized by the development of a effective Base Comprehensive Plan (BCP). The BCP used in conjunction with a simple Network Analysis program can aid planners in detecting duplicate or conflicting construction projects, goals, and objectives. With the increased attention military spending is receiving, comprehensive planning becomes a valuable tool for effectively using limited resources and eliminating wasteful and unnecessary construction. The BCP pro-

vides planners with an instrument for showing military leaders how to use the resources as efficiently as possible to support the Air Force mission.

Air Force Regulation 86-4, Base Comprehensive Planning, has just been revised. This long-needed document supersedes the previous AFR 86-4 dated November 1966. This revised regulation establishes a requirement for BCP, incorporates many existing Air Force programs, introduces new topics, such as land use planning and transportation planning, and attempts to demonstrate the connection between effective BCP planning and the Military Construction Program (7:1-1).

Definition

In Urban and Regional Planning, Peter Hall discusses the difficulty of defining planning. "Planning, the subject matter of this book, is an extremely ambiguous and difficult work to define. Planners of all kinds think that they know what it means; it refers to the work they do. The difficulty is that they do all sorts of different things, and so they mean different things by the word; planning seems to be all things to all men" (19:iv).

Webster's defines planning as: "1. to make a plan of (a structure, etc.). 2. to devise a scheme for doing, making, etc. 3. to have in mind as a project or purpose." (32:548). This definition is especially relevant to the

definition of BCP because that is what BCP is all about: a plan, a mental image conceived to guide construction efforts.

Lewis Keeble, in his book, Town Planning Made Easy defines planning "in the broadest sense, is making up one's mind what to do before doing it" (21:1). This common sense definition best describes the essence of planning. It quickly gets to the main point of planning, making up one's mind. In the case of the military planner, "making up one's mind" may include convincing superiors, peers, and subordinates that their plan represents the best alternative.

AFR 86-4, Base Comprehensive Planning defines the BCP as a plan that takes into account the effects of the long and short range goals, desires, concerns, and needs of the Air Force as well as the interaction between the Air Force, the community and the environment (11:2). "Comprehensive planning is a process which supports the installation mission, improves operational readiness, protects natural and man-made resources, and demonstrates the Air Force commitment to the implementation of DOD and federal policies" (11:2).

Problem Statement

Comprehensive planning, within the military, has suffered from two major problems. The first is the attitude of complacency found in the United States. The second is that the Department of Defense has provided little concise, formal guidance on the development of base compre-

hensive plans. The publication of the new AFR 86-4 is a step in the right direction, but it fails to provide in-depth guidance for the development of the BCP or to explain the interrelationships of the components. The new regulation accurately defines the responsibilities of all parties concerned with comprehensive planning for the installation but does little to aid the planner with locating sources of information or guidance. For example, the regulation states that "the BCP relies on information from a variety of sources, including: a. Existing conditions maps which graphically portray current base development, attachment 5. b. Appropriate information in computer systems. c. Text and other numerical information in various reports or other documents" (7:10). This ambiguity fails to help the base level planners in developing, conceptualizing, and managing their installation's Military Construction (MILCON) projects. Planners and programmers need a practical desktop guide to assist them with planning and the programming of base developmental projects. This guide should outline regulations, and applicable legal references pertinent to the base's development.

Organization of This Report

This paper is designed so that it will meet both the academic requirements of a Masters thesis and serve as a brochure for the Air Force Institute of Technology School

of Civil Engineering. It is organized into four chapters with associated appendices.

Chapter I contains the introduction, the purpose statement, background, definitions, and the problem statement.

Chapter II explains the research methodology, the research objectives, assumptions, research questions, responses to the research questions, conclusions, and the literature review.

Chapter III contains the guide to base comprehensive planning. It covers planning concepts, the planning process, data sources, and the BCP product.

Chapter IV provides a detailed listing of the components of an abbreviated base comprehensive plan. This includes an outline of the essential written documents and the associated maps, graphs, drawings, and component plans that comprise an effective BCP.

Chapters III and IV are intended for use as course material by the Air Force Institute of Technology School of Civil Engineering. These chapters and their associated appendices contain the BCP outline and examples that constitute the guide.

II. Methodology

The research objective of this thesis is to determine and consolidate the guidance base level planners need to effectively plan and manage the Military Construction Program projects for their installations into an easy-to-use guide. To accomplish the objective, information will be gathered by two methods. First, an inquiry to the MAJCOM Deputy Chiefs of Staff for Engineering and Services asking their opinions and knowledge of the research questions listed in Chapter I. Secondly, a literature review of regulations, laws, guidance, and samples of community planning within the civilian and military communities.

Research Objective

The objective is to develop a guide to the planning process that will lead the base level planner to an acceptable BCP by providing sources of information, interpretation and consolidation of Air Force and Government regulations, and the input of civilian professional planning organizations. The guide must be thorough but simple. The experience of the planner should not be a major factor in the thoroughness of the BCP developed using this guide. As a result, the inexperienced planner should come to the same conclusion as the experienced planner if the guide is to be effective.

The guide will provide the necessary link between planning and programming, allowing each to be more easily managed. Effectively, the guide will enable the planners to develop logical siting plans, and to identify project planning constraints, interdependency and duplication. The guide will demonstrate how to track projects from the project development stage until project completion by the use of a network analysis system, such as Program Evaluation Review Technique (PERT) or Critical Path Method (CPM). Appendix F contains an example.

MAJCOM Survey

Research Questions. In order to compile a practical, easy-to-use desktop guide to developing Base Comprehensive Plans, input from the MAJCOM Deputy Chiefs of Staff for Engineering and Services is essential to determine their support for improved planning to increase managers effectiveness. To ascertain their perception of the role comprehensive planning plays in the management of facility construction projects, the following questions were posed:

- (1) How adequate is the existing DOD BCP guidance? Is it pertinent, current and useful to the planners?

Some guidance exists in the form of planning guidelines and policy letters. The objective is to determine the MAJCOM/DE's

concern for and knowledge of the BCP function.

- (2) How many outstanding examples of comprehensive plans exist in various commands? Are these BCP's effectively used to manage base growth and development?

Some bases have developed adequate BCPs with the help of the Planning Assistance Teams. However, the composition of the Planning Assistance Team varies and as a result the existing BCPs fail to follow a standardized format. The review of the various formats will provide insight into the best attributes of each style.

- (3) What civilian codes and planning guidance should the DOD adopt to enhance our future base developments?

Many cities have developed comprehensive plans to control housing development regions, airports, industrial parks, and greenspace. Some of these concepts are applicable to the development of military installations. Consolidation of effective concepts and criteria into a planning guide can provide a method of educating military planners about the efforts of civilian planners.

- (4) How can managers of the BCP reduce the possibility of deviation from the plan?

The excessive "lead time" required to obtain an MCP project dictates that deviation from the planned program be held to an absolute minimum. Deviations caused by higher levels of command or by Congress cannot be controlled by base level planners, but local changes in planning should meet some exhaustive criteria to insure the changes are in the best interest of all agencies concerned.

- (5) How can we best educate personnel on the role of the BCP supporting the installation's mission and providing for the needs of our people? Where is the best time and place in the career of an officer to accomplish this education?

One of the greatest sources of change is caused by the constant rotation of commanders. Each commander has a different perception of the importance of various programs. Many commanders make changes to the base's MCP priorities without fully realizing the impact of their decision. As a result, many MCP projects that have successfully competed for funding for three or more years in the five year process have been

sacrificed because a new commander does not understand the Planning, Programming and Budgeting System.

- (6) Who should be responsible for educating the commanders? Should the education be conducted at a formal training course or accomplished as part of the commander's orientation at the MAJCOM?

Currently, new commanders receive some training through formal education, but most training in the PPBS is conducted through Professional Military Education courses. MAJCOMS provide specific information about the new commander's command but fail to provide real education about PPBS. The assumption is that the commander's past experience will enable him to adequately guide his new command's construction requirements.

Assumptions. The following assumptions were made concerning the research questions:

- (1) Only a minimum of the MAJCOM Deputy Chiefs of Staff for Engineering and Services (DCS) were expected to reveal any first hand knowledge of the BCP process. Most DCS's were expected to display a lack of interest in the topic.
- (2) The USAF BCP effort was in its infancy. Very few bases were expected to have adequate BCP.
- (3) The military personnel would be reluctant to adopt civilian codes for

land use. There would be a strong belief that the current guidance is equal to that of the civilian sector.

- (4) Civil Engineering officers accept the intervention of the commanders as a "given" and believe that no amount of education will really change the deviations arbitrarily introduced by commanders.
- (5) There would be a reluctance to admit that USAF Civil Engineers have not spent the time necessary to properly educate commanders on the importance of the BCP and perhaps an inadequate job of keeping the commander current on the latest initiatives.

The assumptions represent some of the author's perceptions about the acceptance of BCP by the upper level management. BCP has been viewed as a program to be accomplished because the hierarchy dictated it. It was put into the same class as the Energy Conservation Program and was not emphasized. In the past, few DCS's viewed the BCP as a tool, such as the Management Information System. Perhaps they were unaware of the potential benefit that can be derived from the process. If that were the case, the Air Force Institute of Technology has educated the upper level managers in USAF Civil Engineering about the importance of the BCP process. All responses indicated support for the process, but only two responses indicated first hand knowledge of the process.

Responses. The research questions were sent to all the MAJCOM Deputy Chiefs of Staff for Engineering and

Services with the following exceptions. Air Force Communications Command and Air Force Electronic Systems Command were not questioned. Each of these commands have little real property that does not reside on another command's base. Therefore, BCP is not as important to these MAJCOM's as it is to the remainder of the MAJCOM's.

Responses are included as Appendix E. A summary of the responses is provided to consolidate the varying opinions and recommendations of the DCS's.

In response to question 1, the responses indicated that the current guidance, while not extremely detailed, was adequate to outline the required planning. Headquarters Military Airlift Command (HQ MAC) and Headquarters Tactical Air Command (HQ TAC) take positive but somewhat opposing viewpoints. HQ MAC states:

the AF regulation established the need, purpose, and content for the plan. Its shortfall is that the guidance for the plan document and drawings is not specific and leaves much room for interpretation. Additional guidance is necessary to ensure uniformity and continuity across the Air Force. With several commands/bases having A-E contracts for BCP, variation in BCP content is occurring. I would favor further development of the BCP requirements to achieve more standard Air Force BCP and drawings.

HQ TAC expresses a different perspective. One of creative freedom.

The development of the Long Range (LRP) portion of the BCP is the basis for the BCP and is more dependent on the planners educational background, Air Force on-the-job exper-

ience, personnel creative skills, thought process, and available manhours rather than DOD guidance and policy alone.

The second assumption was that only a few bases would have an BCP that would meet the new guidelines. The responses supported this assumption. There are approximately a dozen bases in the USAF that have adequate BCP's. Most bases are still using much of the old Master Planning Program. It is gratifying to learn of the efforts the MAJCOM's are putting into correcting this deficiency. Many bases are using Architect-Engineer studies to develop a BCP. Other bases, with some guidance from Planning Assistance Teams, are developing their own BCP. Although the finished product will not be available for use before 1987 at many bases, the mere fact that the bases are making an effort to create a BCP means that the problem has gained a great portion of the attention it deserves. HQ MAC responded that:

If nothing else, the publicity given to the planning during the BCP process is important. At bases where comprehensive planning is known only to a worker bee in the Base Civil Engineers, we find gaps and conflicts. The planner must have access to the decision making and the decision makers must get involved with the planning. When this does not occur, the BCP is not effectively used to manage growth and development.

The reluctance to accept civilian codes was proven by the responses obtained. HQ TAC responded that "Since civilian codes and planning guidance may provide conflict-

ing information with DOD guidance and policy, we do not recommend adoption." HQ TAC's position was that the existing guidance was adequate for the current needs. HQ MAC somewhat supported HQ TAC's position but for a different reason. HQ MAC does not believe "the civilian sector plans any better than we in the military." HQ AFLC thinks the civilian codes are adequately covered in the AFR 86-4. HQ Alaskan Air Command concurs with this perception. These examples indicate that the military leadership in Civil Engineering is convinced that the existing guidance is adequate, that the base facility board requires autonomy, and that the military can do anything as well as or better than their civilian counterparts. If this is the case, why has the military been so slow to adopt methods pioneered almost 50 years ago by the civilian community?

Responses varied on the desirability of reducing deviations to the BCP. Most MAJCOM's agreed that minimizing change is desirable; however, there was a certain amount of support for changing the BCP. Terms used were "healthy," "inevitable," and "desirable." The intent of these comments was that the planner must be careful to remember that the BCP is a tool created to assist in accomplishing the current base goals. When those goals change, the existing BCP cannot be permitted to force the base into bad decisions. Instead, the BCP must be revised to support the new goals.

Comments on reducing deviation included some interesting ideas. Recommendations included dedicating a full-time planner to the BCP program, including the members of the facility board in the BCP development process, briefing all the organizations on the base about the BCP, and placing a layout drawing of the BCP in the commander's office. All of these ideas are to increase the populace's familiarity with the BCP program and make them aware of the proposed changes that are being programmed.

Opinions varied slightly on how to educate the commander about the importance of the BCP. Some responses indicated that the Base Civil Engineer should assume total responsibility for the education process. Others took a broader perspective: the educating of the commander is the responsibility of the entire engineering community. The BCE, the Planning Assistance Teams, contracted A-E's, and Air University can all play an important role in educating the commander.

Conclusions. The assumption that most MAJCOM DCS's would not reveal first hand knowledge of the BCP process appears to be generally supported by the responses. However, it must be noted that only 5 of the 9 MAJCOM's responded. The failure to receive an input made the sample very small and therefore the statistics may be easily skewed. The reader should consider the effect the limited sample size has on the conclusions before reaching any

personal conclusions.

The second part of the assumption was that most DCS's would not display interest in the topic. Again, the lack of response may have skewed the facts, but the response indicates a definite interest in the subject.

The second assumption was based upon the fact that the current BCP process is in its infancy and that very few bases have made much progress in this area. The response indicated that only a handful of bases have completed a BCP. There was also strong indications that the MAJCOM's are supporting the BCP program and have provided significant quantities of money to have the BCP's accomplished by contract.

The assumption that the military would be reluctant to adopt civilian codes was very accurate. Every response stated that the military should resist the influence of civilian codes. All respondents believed that the existing land use codes were adequate or that the military was as qualified to develop their own codes as their counterparts in the civilian world.

The fourth assumption stated that civil engineering officers accept the intervention of commanders as a "given." There was a unilateral acceptance of the concept that commanders have the right to interject ideas into the BCP process. This closely follows military doctrine in the classic sense. A few respondents also stated methods of reducing the amount of deviation caused by command input.

Their excellent ideas are based upon educating the commander about the BCP. Although their response is commendable, the assumption holds true. Civil engineering officers assume the commander will change the plan.

The last assumption was that there would be a reluctance to admit that civil engineering officers have not spent the time necessary to educate the commanders about the importance of the BCP. This assumption appears to be upheld by the language used to respond to the questions. Each response indicates that civil engineering should educate the commander, but each response fails to address past efforts. Instead, each addresses the future education of commanders. Good recommendations are made on the responsibilities of the civil engineering community and the Air Force Institute of Technology, but there is no indication that the past or current commanders have been formally briefed or educated in any manner. This supports the assumption that civil engineering is not educating commanders properly.

Literature Review

There are literally thousands of books and papers on the topic of community planning that could contribute significantly to any planning guide. However, many of the books deal primarily with the sociological aspect of planning. Undeniably, the social factors of planning influence

the development of all communities, but the effect of sociology is greater on the civilian community than the military community. The military community is united by a common cause not found in civilian communities. For this reason this thesis will not deal extensively with sociology issues, but will concentrate on the development of functional planning, environmental issues, and effective management.

Urban Planning Resources. Town Planning Made Easy by Lewis Keeble provides a very organized overview of the planning function (21). Mr. Keeble does a very creditable job of explaining the many facets of comprehensive planning. He adequately covers the sociological, economic and physical aspects of developing a master plan for a small town. Much of the information contained in the book is very pertinent to the base planner. After all, a base is a small town comprised of residential, commercial, and industrial areas. Mr. Keeble addresses the problems of separating noncompatible functions while maintaining adequate accessibility. The "how to" format provides an easily followed guide to the basics of effective planning. Details on what type physical data, sources of information, and points of contact are provided to aid the novice planner.

Of particular importance to the base planner is the treatment of land use planning. Most bases are either a modified dispersal land use or a segregated land use. These methods tend to separate noncompatible functions and

often fail to accomodate the needs of the populace. Mr. Keeble offers excellent guidance on researching this portion of comprehensive planning.

The Quality of the Urban Environment (25) is a collection of a number of articles by noted planners. The book is dedicated to educating the reader on the effect the working and living environments. "The quality of the environment in which people live, work, and play influences to no small degree the quality of life itself" (25:v). The authors provide differing points of view on the subject. Marion Clawson wrote an article entitled "Open (uncovered) Space As A New Urban Resource" (2). In this article, the author adovates the planning of open spaces as a primary consideration in master planning. She contends that open spaces provide light and air, views of the urban scene, recreaton, ecological protection, and serve as city forming devices (2:169). Open spaces should incorporate as much undesirable building land as possible. The planner should take full advantage of flood plains, ground water recharge areas, marshes, swamps, excessive slopes, unstable soils, as well as areas of unique natural beauty. This article is of particular interest to base planners since many bases have areas that are undeveloped for one reason or another. The author urges planners to look for compatible uses for these areas in order to improve the quality of life. For example, a base with rock outcroppings may use those outcroppings as a focal point of a base park or pavillion. The

author urges the planner to consider these areas as opportunities not liabilities or constraints.

Principles and Practice of Urban Planning is a lengthy book about the relationship of planning and the role of the local government (18). Although written for planners employed by local governments, the book relates well to the military. The book describes how to begin the development of the master plan, determining the relationship and role each component and organization plays, progresses to the research and analysis phase, and concludes with the implementation phase. A section is devoted to the organization of planning committees and the presentation by that committee of the plan to the public and local government.

Chapter 13 is dedicated exclusively to the composition of the comprehensive plan. Its worthy treatment of the subject includes a short historical section that gives credit to the city of Cincinnati, Ohio for developing the first true comprehensive plan in 1924 (18:352). This chapter offers some excellent guidance on the management of the comprehensive plan. For instance, there should only be one BCP. That BCP must be formally adopted if it is to be a creditable tool. However, prior to adoption, adequate time should be made available for the public to review and critic the ideas. The BCP must always be available for public review and the BCP should be written to capitalize on educating the public (18:367).

Urban Planning and Design Criteria is an absolutely essential book for the professional planner (5). The entire book is dedicated to the development of comprehensive plans and contains numerous models of the decision theories involved with developing the various components of the BCP. The book covers the basic studies, mapping procedures, and data collection required to perform land use planning, conduct transportation studies, population studies, airport planning, utility planning, and industrial development. Also included is a variety of planning criteria, ranging from landscape information to pedestrian and vehicular traffic flow control. This is an outstanding example of a desk reference that provides information about any aspect of comprehensive planning.

Planning For Man and Motor is a British study of transportation planning (26). This excellent work covers the requirements for pedestrian traffic as well as the vehicular traffic. Although transportation planning represents only a small portion of comprehensive planning, it is an extremely important function. Because few other things can irritate so many people as transportation problems, the planner must understand proper transportation planning. This book is a good introduction.

One of the most noteworthy sections in the book is entitled "The Power of Plans." This is a commendable article on the importance of having a well prepared plan to support specific proposals. Much of the discussion hinges on

the reluctance of people to change a written plan. This reaction is very valuable information for the planner who considers change inevitable.

The California Tomorrow Plan is a brief comprehensive plan designed for a state (20). The relevant material in this book is limited, but the presentation is dramatic. The author states the current state problems in a section called "California Zero," the future of California if policies and environmental conditions do not change in "California One," and the proposed alternative in "California Two." This is an excellent job of selling the reader on the author's position.

Summary 1965/1975 General Plan for the City of Boston and the regional core is an executive summary of the city's comprehensive plan (29). It is well written and takes the reader through the city's history, problems, physical constraints, economic problems, and social problems. The summary does an excellent job of covering the structural and environmental blight an old city endures.

The highlight of this book is the outstanding use of graphics to convey information to the reader, for the graphics are colorful and attention-getting. This book serves as an excellent example of the simple but informative style a summary should be written in.

In the third edition of Site Planning, authors Kevin Lynch and Gary Hack have modernized the 1971 edition of this planning guide (22). This edition incorporates

some of the newest function of planning, such as programming, participative planning, user analysis, design strategies, housing tenure, and the characteristics of working and living in built places (22:iv).

The authors, recognized experts in the planning profession, have done a very creditable job of collecting and combining the thoughts and comments of other noted planners and architects into a volume about the planning process and the thought processes that are essential to effective planning. The book covers the planning process systematically, beginning with site selection or evaluation, and then proceeds to explain how to comprehend the user's desires and needs. Lastly, the book progresses to the design phase and the myriad of factors the planner must consider, such as the use of landscaping, housing design, and noise control to improve the quality of the built environment. There is lengthy coverage of the environmental conditions that comprise the "nature of the site" (22:62).

This interesting work provides an excellent, realistic review of the planning process and offers many suggestion on accomplishing the studies necessary to develop an effective comprehensive plan.

Ian McHarg's Design with Nature is a comprehensive study of how man's life is bound to the forces of nature (23:vi). The author insists that mankind must accept nature as a neighbor and an ally instead of an opposing

force, a theme often espoused by ecologists.

The book covers man's impact upon the environment of the world from the 1920's until the present. The author paints a bleak picture of civilization in the 1920's and 1930's. Vivid descriptions of the ugliness of cities and metropolises carry the reader back to a time when few people realized the impact of industrialization on the inhabituality of the world. The highway designer serves as an example of the insensitive force that constructs his design without regard to the impact on the natural environment. Only the concepts of money, time, traffic volume, and speed are important (23:33). This insensitivity is the basis for this book.

The author does a remarkable job of describing the need for planners to embrace the environment and plan controlled developmental projects that are built upon the values of society. By using the concepts of "intrinsic suitability" and "compatibility," planners should lead society to harmonious solutions designed to minimize the loss of the desired environment.

Regulations. Air Force Regulations 19-1, Pollution Abatement and Environmental Quality (14) and 19-2, Environmental Impact Analysis Process (EIAP)(8) provide detailed guidance on environmental matters. These regulations closely parallel the public laws concerned with pollution, such as the Clean Water Act and the Clean Air Act.

These regulations provide some of the most expert, concise documents available to the base level planner in dealing with environmental planning. Unfortunately, there is little federal legislation that deals directly with land use. Most regulatory work is left to the state or local government. More on this matter will be presented later in this paper.

Air Force Regulation 19-9, Interagency and Intergovernmental Coordination of Land, Facility, and Environmental Plans, Programs and Projects is the regulation that provides criterion for the Air Installations Compatible Use Zones (AICUZ) (10). The AICUZ Report details the noise levels created by the operation of an airfield. The data is transformed into noise contours and is used to plan land use. High noise contours are developed for low population density uses while low noise level areas are developed for living areas. Typically, Ldn (Noise Level Day/Night Average) contours are rated in increments of 5 decibels. Areas with noise levels greater than 65 decibels are unsuitable for high use areas unless noise suppression is included in the construction. This not only constrains base development but adds significantly to the cost of construction.

AFM 19-10, Planning In the Noise Environment (13) establishes guidelines for land use in areas of high noise such as flightline areas. It makes specific recommendations about the type of facilities suitable for each

decibel level.

An inconsistency exists in this regulation. The regulation demands that local city and county planning commissions furnish a copy of their comprehensive plan to the military, but no provisions are made for providing a copy of the base comprehensive plan to the local governments. Thus reciprocity is left to the discretion of the commander. Since the commander may choose not to provide a copy to the local planning commissions, this omission is rather inconsistent. Our purpose is to monitor proposed activities that may impact the future of the base. Likewise, the local planners should monitor the proposed military activities that would affect the land under their jurisdiction. It is best for all parties concerned to have a working knowledge of the other's plans. The regulation needs revision to require the distribution of all unclassified planning data to the local planning authorities.

Air Force Regulation 85-1, Resources and Work Force Management defines the duties of all the branches within the civil engineering organization (16). The Engineering and Environmental Planning Branch is responsible for the development and maintenance of the BCP. The Base Civil Engineer (BCE) is charged with the overall maintenance of the BCP and acts as an advisor to the Base Facilities Board, the approving agency for the installation's MCP program.

AFR 86-1, Programming Civil Engineering Resources

(15), provides guidance for the development and submittal of programming documents for Operations and Maintenance, Non-appropriated Fund, P-341, Military Family Housing and Military Construction Program projects. These categories represent most of the construction avenues available. One of these programs must be selected to construct, renovate or maintain any facility. Each program varies greatly in the length of time to fruition and in the possible applications of financial resources. Thus the planner must be familiar with the constraints of these programs when developing the BCP if the BCP is to achieve optimal effectiveness.

Air Force Regulation 86-2, Standard Facility Requirements, is a strong source of information for the planner (17). This regulation provides the authorized square footage of real property for each function in the Air Force. By applying these authorizations, the planner can determine excesses and deficiencies that must be considered in the BCP. Careful analysis of these figures often determines whether a mission change requires new facilities or renovation of existing facilities. Each planner should have a good working knowledge of this regulation.

Air Force Regulation 86-4, Base Comprehensive Planning, is the basic guidance provided all Air Force planners. It establishes policies, procedures, and responsibilities for the Base Comprehensive Planning Program (7). The regulation defines the process for developing, updat-

ing, and implementing the BCP in very specific detail except for the development of the BCP. The guidance in this area consists of a list of the components of a BCP. This excellent list provides an overall view of what should be incorporated, but it fails to provide the planner information on where to find guidance or sources of helpful information on each of the topical areas. This is the major deficiency of this regulation.

Air Force Regulation 86-5, Planning Criteria and Waivers for Airfield Support Facilities, covers the requirements for clear zones and Accident Potential Zones for operation of an airfield (12). These factors are of major importance in determining the future development of the installation and the adjacent communities. An effective planner must have a good understanding of these requirements and their impact on land use.

Air Force Regulation 86-14, Airfield and Heliport Planning Criteria, provides the criterion for maintaining safety clearances around air terminals (6). These clearances not only project outward but upward from the airfield's primary and secondary surfaces.

Air Force Regulation 127-100, Explosive Safety Standards governs the explosive safety clear zones required to keep base development from infringing upon weapon storage areas, explosive ordnance disposal areas, etc (9). This regulation severely limits the development of the areas adjacent to explosive storage areas in order to keep

the population at risk to a minimum.

Laws. Numerous federal and state laws govern many of the aspects of development, expansion, and operation of military installations. These laws provide planning constraints and funding considerations. In general, the laws are to protect society and are not designed to hinder base development. However, sometimes, the laws appear wantonly oppressive. It is foolhardy to seek MCP funding for a new runway if the city adjacent to the installation is going to oppose the construction. In light of the constraints provided by these laws, the expertise of the programmer and planner are most needed.

The National Environmental Policy Act of 1970 (NEPA) was the first piece of federal legislation that gave the country direction in dealing with environmental issues. It established goals concerning quality of life and environmental aesthetics. The basic theory of these goals is that each American is entitled to the right to live and work in a safe, healthful environment. The legislation attacked this issue on two fronts, biophysical and socioeconomic. In 1977, Executive Order 11991 gave NEPA the authority to act as a regulatory agency. This simplified the processing of Environmental Impact Analysis statements. The United States Air Force must comply with NEPA regulations and policies like any other community or industry in the United States. To ensure compliance with

NEPA, AFR 19-2, Environmental Impact Analysis Process (8) is written to closely parallel the public law (31).

Use Standards for Shorelands sets the standards for Protection Subdistricts adjoining coastal shorelands, large lakes, and tidal marshes. The National Oceanic and Atmospheric Administration issued a regulation covering the intent of this legislation in 1978. The regulation designated the agencies responsible for implementation and enforcement of the legislation. Detailed information is provided on the use and development of shoreland or wetlands. Proponents of projects that would significantly change the shoreland are provided a list of actions they must accomplish prior to requesting a permit for the project. Detailed information is also provided on mineral extraction and vehicular access to these areas. The importance of this regulation within the military is the requirement for federal agencies to conform to the legislation's requirements. Federal agencies are not exempted.

In a report entitled "The First Five Years of Coastal Zone Management," the Office of Coastal Zone Management concludes that the program

seeks to ensure adequate representation in the decisionmaking process of all affected interests and levels of government. Given the complexity of this program, it is not surprising then that differences exist as to the extent to which the goals of the Act are being achieved. The information contained in this report indicated that the processes being

put in place as part of the coastal zone management effort are beginning to make a difference (24:60).

According to the Environmental Technical Information System (ETIS) system there is no federal regulation of land use to prevent erosion. All erosion control efforts are governed at local level. This is typical of the federal government's role in land use legislation. The issue is too large and complex for the federal government to effectively legislate. Therefore, the Federal tactic is to do nothing in hope that each state, county, and municipal government will take action to regulate land use within its jurisdiction. There are positive and negative points to this method. If the system works ideally, the local governments will develop regulations that enhance and protect the environment by optimizing the compatibility of industrial and commercial functions with the land. These regulations should be specific in nature and address the exact conditions of the location. Ideally, this would ensure the protection of the resources for the populace.

In the less than ideal world, the influence of large corporations, political influence, and a number of other items can reduce the effects of desired legislation. There may be trade-offs in environmental quality for monetary gains. This process is especially prevalent in areas of low economic growth.

The second, more pessimistic view is often the

circumstances in which a military installation must operate. Most military bases are located in less densely populated areas. These areas enjoy less economic growth than metropolitan areas. As a result, the military's influence on the economy is enhanced. In the past, this has lead local governments to accept projects that were not totally in concert with the environmental needs of the community. Fortunately, with the increased emphasis on the preservation of the environment, this situation is occurring less often. The future looks brighter as the military is more closely following the guidance of the local governments.

The Texas Airport Zoning Act is an example of state legislation that not only impacts the military but may benefit it as well (30). The act, revised in October 1983, established noise and land use constraints for airports and the surrounding vicinity. The zoning of this controlled area was left to the county commission. The proposed "controlled area" was to be 1.5 miles from the runway centerline, parallel to the runway and extend 5 miles from each end of the runway. The act provides for the establishment of an Airport Zoning Board to hear and adopt proposed zoning ordinances and to enforce this controlled land use by police power.

The importance of this legislation is that the military can have a direct input into the zoning of the land surrounding a base and therefore should be able to control

encroachment. Secondly, the concept that base comprehensive planning ends at the boundary of the base must be changed. Obviously, the base's impact on the local area and the impact of the local community on the base's development must all be in the BCP. This interrelation offers the prime opportunity for the base to include the local community in its plans for future development. This may be the bridge needed to bring all the planning functions together.

III. The Guide To Base Comprehensive Planning

In order to understand the complexity of the base comprehensive planning, the reader must first understand the concepts of planning, the planning processes, and the constraints that are associated with military installation comprehensive planning. Air Force Regulation 86-4, Base Comprehensive Planning (7) defines some of these concepts and processes.

Basic Planning Concepts

A. Air Force installations are equivalent to small cities and suffer virtually the same problems. Land use, pollution, traffic management, and growth are major concerns at most installations. The major difference is the Air Force community has a single purpose, support the mission.

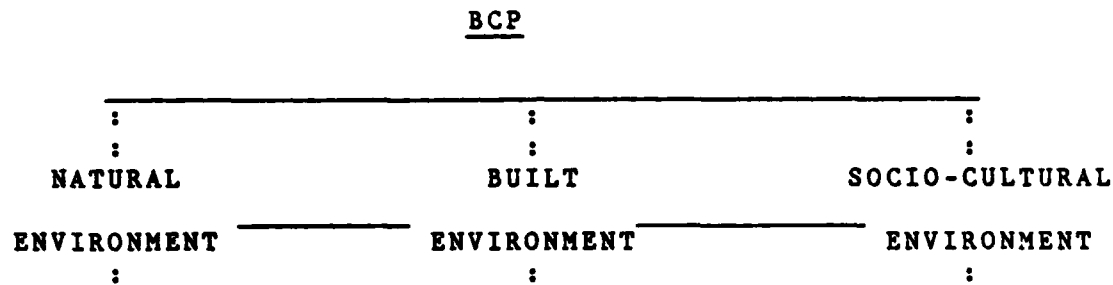
B. Comprehensive planning is designed to support the mission and the people.

C. All communities consist of three fundamental parts:

- (1) Natural Environment - the air, water, land, wildlife and plantlife.
- (2) Built Environment - buildings, structures and infrastructure.
- (3) Sociocultural Environment - education, health and social activities.

The relationship and interaction between these concepts is illustrated in the following diagram taken from AFR 86-4 (7).

TOPICS ADDRESSED IN BASE COMPREHENSIVE PLANNING



- | | | |
|---|---|--|
| <ul style="list-style-type: none"> * Natural Resources * Environmental Protection | <ul style="list-style-type: none"> * Land Use Planning <ul style="list-style-type: none"> - On Base - Airfield / Air Operations <ul style="list-style-type: none"> - AICUZ - Off Base - Auxiliary Sites * Infrastructure Systems <ul style="list-style-type: none"> - Utilities - Communications - Transportation * Facilities <ul style="list-style-type: none"> - Energy - Architectural Compatibility <ul style="list-style-type: none"> - Landscape Planning / Design - Facilities Development - Fire Protection | <ul style="list-style-type: none"> * Quality of Life * Socio -Economic Aspects |
|---|---|--|

Notice the overwhelming portion of the BCP is concerned with the built environment portion of the model. Although significant, the natural environment and the socio-cultural environment are of less concern with this mission-oriented model. The focus of the plan relates to the single-minded purpose of the military --- the mission. However, the planner must not lose sight of the interrelations of the socio-cultural, the built and the natural environments. The planner must realize that the quality of life aspects of the socio-cultural environment are greatly affected by the quality of the built environment and the natural environment. In locations of outstanding natural beauty and adequate opportunity to enjoy that natural environment, the necessity for quality built environments may be reduced for some of the members of the community. Since not all members are nature enthusiasts, their needs must also be considered by the planner. Locations with severe weather conditions that inhibit the enjoyment of natural beauty, such as Minot AFB, North Dakota, provide a special emphasis on the built environment. As a result, the built environment and the socio-cultural environment must offset the bleakness of the natural environment. More emphasis must be placed on developing facilities, landscaping, social and cultural activities to meet the needs of the community. To be effective, the BCP must adequately assess these relationships and use them to guide community development.

The Planning Process

Planning is a systematic process beginning with the requirement identification phase and continuing until the implementation phase. Each step is distinctive and must be methodically approached.

Before entering into a discussion of the current planning process, it is important to understand the evolution of the comprehensive planning process and the tools available to the planner.

Existing Planning Data. There are two major sources of information available to support the Air Force BCP process.

The real property information is contained in the HAF-LEE 7115 and 7116 reports. The 7115 report lists all the base real property. The 7116 report describes the characteristics of that real property, such as the square footage, condition, use, etc. This information provides the data required to compare the current facility authorizations with the current or future facility requirements. Deficiencies are identified and the programming of new facilities is begun.

The second source of vital information is the maps, graphs and charts contained in the Tabs to the BCP. Past regulations have required little information on intercommunity relationships, land use planning, soils information, flood plain data, future utility planning, landscaping, and

phasing information (27:164). There was an obvious need to revise these planning tools to provide truly comprehensive coverage of all the factors involved with base developmental planning.

Land Use Planning. Land use planning in the Air Force possibly originated in the United States Army Air Corps; however, modern land use planning received a strong push by the Air Installations Compatible Use Zone Program developed by the Air Training Command in the 1970's. This program determines the impact of noise on land use. It also considers the probability of aircraft accidents based upon historical data. This data was used in the Air Force Accident Hazard Study to develop the requirements for clear zones. These clear zones prohibit most types of land use development and are of significant importance at such bases as Offutt AFB, Ne. where the main base thoroughfare and a busy public highway transverse the clear zone (3).

The AICUZ program could be expanded to include additional environmental and socio-economic factors to provide a truly comprehensive planning tool. A matrix of considerations could be developed for each problem and a graphic overlay developed to present the problem to persons unfamiliar with the planning process. This system is recommended by Ian L. McHarg, in his book on Design With Nature (23).

Factors which physically affect the planning process are easy to visualize and evaluate. Flooding and undesirable soil conditions are two of the most common planning constraints found on many military bases. These constraints can also be depicted graphically to illustrate their impact on land use.

Ideally, each base should have a team of professional architects and engineers accomplish the BCP. However, the grade structure rarely permits a base to employ the talented, experienced personnel necessary. Highly qualified people are usually assigned to the MAJCOM, but they are usually handicapped by the pressure to support the base's position on planning or a requirement to meet a project deadline. Often, real planning is pushed aside in an effort to expedite the system. The next paragraphs describe the events taking place in the formal planning system.

Requirement Identification. In this phase the project requirement may be identified by a user submitting an Air Force Form 332, BCE Work Request, by higher headquarters, by a note from the BCE, or by verbal instructions from the BCE or the commander. Regardless of the source, the important feature is that the goal or objective of the requirement is known and clearly understood by the planners. It is also imperative the planners understand the project's relationship with the mission. Consequently, planners must assess political factors at the earliest possible time to

preclude false starts. Political factors may include the current base issues, problems, resources, and needs of the base as well as those of the surrounding communities. Projects with high political interest may require judicious handling. Similarly, if the project is essential but it is politically unfavorable, it may also require very careful handling.

Evaluation. As the most important phase to the success of the project, evaluation is essential to the development and implementation of an effective comprehensive plan. Assuming the project has previously been approved by the Facility Board or the Base Civil Engineer, in this phase the project is evaluated for feasibility; proposals and alternative proposals are made to identify the best course of action that will guarantee the mission is supported after all known constraints have been considered. Comparisons and preliminary cost estimates may be required to derive the best possible information for the final decision. Once the feasible alternatives have been established, the alternatives are prioritized by merit or cost to facilitate the selection of the best proposal.

Implementation. After the decision is made to pursue one particular course of action, the planning function enters the third phase. In this phase the selected alternative is transformed into a plan and programming documents are written for the project. Depending upon the type project and the funding involved, the DD Forms

1391/1391c (Construction Cost Estimate) may be as short as one page or as lengthy as a short novel. In either case the documents contain the vital information required to identify the project, the funds required, the type funds required, the approval official, and the necessary certifications to obtain that approval. The MAJCOMS and HQ USAF usually provide supplemental guidance to AFR 86-1 to aid the planners in developing the installation's MCP submittal. This guidance is essential to an effective BCP.

The Base Comprehensive Plan Product. "The BCP document is a report in a narrative and graphic form that provides Air Force commanders, technical staff, and population with a long-range plan that incorporates operational, social, economic, programmatic, environmental, and legal aspects in light of stated goals, objectives and policies" (7:4). The BCP incorporates all the known constraints, opportunities and planning factors to control the growth and development of the military installation. The BCP must be professionally presented if it is to be well received. The presentation of the plan generally determines the willingness to accept some of the recommendations. A shoddily presented plan may hide the brilliance of the plan itself. The research conducted to develop the plan must be impeachable, and the binding, graphics, photographs, slides and artwork must be of professional quality. Every effort must be made to use professional photography, graphics and printing to increase the immediate acceptance of the ideas

contained within the BCP. Many books are sold by their cover alone, and this plan, in particular, must be sold to not only the local commanders and community leaders but to MAJCOM and HQ USAF directors as well as congressional leaders. The professionally published plan is also less likely to be arbitrarily revised when a new commander arrives on the base. People are more reluctant to tear apart or change a plan that shows a great deal of effort and forethought, thus the significance of producing a professional BCP.

A secondary product of extreme importance is the preparation of a 15 to 30 minute briefing on the proposed future development of the base. This briefing should be unclassified and consist of good aerial photographs, a brief summary of the constraints, unusual planning factors considered, and a detailed coverage of the long range development plan. This briefing should be used to inform community leaders and interested government agencies of the planned development.

IV. Components of a Base Comprehensive Plan

General

A BCP contains many plans and planning constraints. Since an effective BCP must be well organized and easily comprehended, the BCP is usually subdivided into smaller more specific plans. A summary in the Plan Overview provides a short synopsis of the comprehensive planning approach for developing that particular installation. The summary and each of the plans or documents included in the BCP will be discussed later in this paper.

Outline of A Typical Base Comprehensive Plan (BCP)

The composition of the BCP should include the following plans, letters, and summaries as taken from AFR 86-4.

I. PLAN OVERVIEW

A. Preliminaries:

1. Cover Letter.
2. Acknowledgements.
3. Use of Information (restrictions, if any on release of data).
4. Use of Plan (on-Base and Local Communities).
5. Procedures for updating.
6. Table of Contents.

B. Commander's Summary:

1. Reason for the plan.
2. Summary of findings.
3. Summary of expected costs.
4. Plan recommendations by priority.

5. Roles and responsibilities.
6. Schedules for implementation.

C. Introduction:

1. Mission Statement

- a. Air Force needs and policies.
- b. Mission of base and tenant units.

2. Installation Profile

- a. Location.
- b. History.
- c. Physical profile (size of base, number of housing units, etc.).
- d. Social profile (base population, dependents, etc.).
- e. Overall base goals and objectives.

3. Community Profile (Available from local planning authorities).

- a. Demographic aspects.
- b. Institutional and governmental aspects.
- c. Economic aspects.
- d. Social linkage.
- e. Offbase constraints and opportunities affecting the base.
- f. Community interaction mechanisms.
- g. Goals, objectives and plans of adjacent communities.

D. Synopsis of the Plan

1. Composite constraints and opportunities for future development.
2. Composite alternatives for future development.
3. Significant environmental consequences of proposals and alternatives.
4. Interaction of component plans.
5. Implementation statement.
6. Summary of Five-Year Capital Improvements Program.

E. Summary of Each Component Plan.

F. References.

G. Appendices (only those required to support the contents of the plan overview).

II. COMPONENT PLANS. For each component (IIA through IIP) include the following information in narrative and graphic forms as applicable:

- Goals and objectives.
- Existing conditions.
- Needs and requirements.
- Constraints and opportunities for future development.
- Alternatives for future development.
- Long-range plan for future development.

A. Natural Resources Plan*:

1. General.
2. Land Management.
3. Grazing and Cropland Management.
4. Forest Management.
5. Fish and Wildlife Management.
6. Outdoor Recreation.
7. Pest Management.
8. Historic Preservation.

B. Environmental Protection Plan:

1. Air Quality.
2. Water Quality.
3. Land and Soils Quality.
4. Toxic Materials and Hazardous Waste Management.
5. Recycling and Solid Waste Management.
6. Installation Restoration Program.
7. Oil and Hazardous Substances Spill Prevention and Countermeasures.
8. Radiation Control.

C. Base Layout and Vicinity:

1. Mapping Process
2. Aerial Photography and Ground Survey

D. Land Use Plan:

1. Functional Areas.
2. Functional Relationships Analysis.
3. Land Use Compatibility with Vicinity Land Uses.

*Incorporate the Composite Natural Resources Plan by reference into the BCP. Summarize major points and include in plan overview (Section I.E.) For guidance, see AFR 126-1 and AFM's 126-2 through 5.

- E. Airfield and Air Operations:
 - 1. Airspace systems.
 - 2. Airfield systems.
- F. Air Installation Compatible Use Zone (AICUZ Study)*
- G. Utilities Plan:
 - 1. Water.
 - 2. Sanitary Sewer.
 - 3. Storm Sewer.
 - 4. Electric.
 - 5. Natural Gas.
 - 6. Street Lighting.
 - 7. Liquid Fuels Systems.
 - 8. Central Aircraft Support Systems (CASS).
- H. Communications Plan**:
- I. Transportation Plan:
 - 1. Access to the Installation.
 - 2. Community Mass Transit Systems Linkage to the Installation.
 - 3. Onbase Circulation Systems.
- J. Energy Plan***:
 - 1. Aircraft Operations.
 - 2. Vehicle Operations.
 - 3. Installation Operations.
 - 4. Land Use-Energy Interactions.
- K. Environmental Design Guidelines-Architectural Compatibility:

* Incorporate the AICUZ program by reference into the BCP. Summarize major points and include in plan overview (Section IE). See AFR 19-9 and AICUZ Handbook.

** Incorporate the Communication Plan for the installation by reference into the BCP. Summarize major points and include in the Plan Overview (Section IE).

*** Incorporate the Air Force Energy Plan for the installation by reference into the BCP. Summarize major points in (1) conservation, (2) efficiency, and (3) supply, as indicated in guidance for the Air Force Energy Plan, and (4) alternative energy sources and include in the plan overview (Section IE).

L. Environmental Design Guidelines - Base Landscape Development Plan:

1. Landscape Design
2. Landscape Planning
3. Landscape Development Phasing

M. Long Range Facilities Development Plan (Beyond 5 Years):

1. New Construction and Replacement.
2. Major Alterations and Renovations Planned.

N. Fire and Life Safety Protection Plan:

1. Fire Protection as An Element of Advance Planning.
2. Design Constraints.
3. Agreements for Offbase Emergency Response.

O. Contingency Planning:

1. Surge Capability (Continental United States).
2. Disaster Preparedness*.
3. Physical Security**.
4. Air Base Survivability (Overseas).
5. Beddown and Support of Deployed Forces (Overseas).
6. Support of Base Base Operations (Overseas).
7. Theater-Specific Needs (Overseas).

P. Quality of Life Programs:

III. Capital Improvements Program:

A. Five Year Capital Improvements Program (Includes FYDP):

* Incorporate the installation's Disaster Preparedness Plan by reference into the BCP. Summarize major points and relationship of BCP and Disaster Preparedness Plan and include in the plan overview Section IE. See AFR 355-1 and supplements.

** Incorporate the installation's AFR 207-1 base security regulation by reference. Summarize impact of perimeter and restricted area security requirements on facility location, lines of sight, vegetation clear areas, etc., and include in the plan overview Section IE.

1. Inter-relationships of short range Capital Improvement Program to Long Range Facilities Development Plan.
2. Short range facilities development by funding source.
3. Impact of facilities development.
4. Short range programmatic improvements.

The Base Comprehensive Plan Tabs

The tab series of the BCP consists of a collection of maps that provide a visual display of existing conditions and future plans for the base. The tab system is a simple method of organizing this data for easy reference. The tabs are numbered in a alpha-numerical sequence. Tabs with a decimal number, such as A-2.1, represents a future plan. Tabs without decimals represent existing conditions. The following list of Tab Designations is taken from AFR 86-4. Those tabs with astericks are plans the base is required to maintain. Those without astericks are optional unless required by other directives (7:16).

BCP Tab Series

Tab Designation

Tab A - Natural Resources

Tab A-1 Natural Features

- Geology
- Hydrology and Surface Drainage
- Climate and Weather
- Topography and Physiography
- Soil Borings and Soils Analysis for Construction
- Agricultural Soils Classification
- Floodplains and Wetlands

- Vegetation Types
- Prime and Unique Farmland

Tab A-2 Composite Natural Resources

Tab A-2.1 Future Plan

Tab A-3 Land Management

- Grounds Categories
- Water Bodies
- Facilities
- Pavements

Tab A-3.1 Future Plan

Tab A-4 Grazing and Croplands*

Tab A-4.1 Future Plan*

Tab A-5 Forests*

Tab A-6 Fish and Wildlife*

Tab A-6.1 Future Plan

Tab A-7 Outdoor Recreation*

Tab A-7.1 Future Plan*

Tab A-8 Historic Preservation*

Tab A-8.1 Future Plan*

Tab A-9 Bird Aircraft Strike Hazard

Tab A-9.1 Future Plan*

Tab A-10 Pest Management*

Tab A-10.1 Future Plan*

Tab B - Environmental Quality

Tab B-1 Air Quality*

Tab B-2 Water Quality*

Tab B-3 Land and Soils Quality*

Tab B-4 Toxic and Hazardous Wastes*

Tab B-5 Recycling and Solid Wastes*

Tab B-6 Installation Restoration Program*

Tab B-7 Oil and Hazardous Spill Prevention*

Tab B-8 Radiation Control*

Tab B-9 Composite Constraints and Opportunities*

Tab C - Base Layout and Vicinity Maps

Tab C-1 Base Layout*

Tab C-2 Offbase Sites

Tab C-3 Regional Location Map

Tab C-4 Vicinity Location Map

Tab C-5 Aerial Photographs

Tab C-6 Base Layout - Half Scale

Tab D - Land Use Plans

Tab D-1 Existing Land Use

Tab D-1.1 Future Land Use

Tab D-2 Offbase Sites Land Use*

Tab D-2.1 Offbase Sites Future Land Use*

Tab D-3 Vicinity Land Use*

Tab D-4 Vicinity Existing Zoning*
 Tab D-5 Real Estate*
 Tab D-6 Constraints and Opportunities
 Tab D-7 Functional Relationships*
 Tab D-8 Explosive Safety Quantity Distance
 Tab D-9 Other Hazardous Constraints*
 Tab D-10 Community Center Layout*
 Tab D-10.1 Future Community Center Plan and Phasing*
 Tab D-11 Other Small Area Development Plans*

Tab E - Airfield Operations

Tab E-1 Onbase Obstructions to Airfield Criteria
 Tab E-2 Approach and Departure Zone Obstructions to
 10,000 Feet
 Tab E-3 Approach and Departure Zone Obstructions Beyond
 10,000 Feet
 Tab E-4 Airspace Obstructions - Vicinity
 Tab E-5 TERPS Automation Plan*
 Tab E-6 Airfield and Airspace
 - Clearances (AFR 86-14)
 - Clear Zones
 - Primary Surface
 - Transitional Surface
 - Approach and Departure Surface
 - Approach and Taxiway Clearances
 Tab E-7 Airfield Pavement Plan
 Tab E-8 Airfield Pavement Details
 Tab E-9 Aircraft Parking
 Tab E-9.1 Proposed Aircraft Parking
 Tab E-10 Airfield Lighting System

Tab F - Air Installation Compatible Use Zone(AICUZ)

Tab F-1 Existing Land Ownership and Value
 Tab F-2 Compatible Use Districts
 Tab F-3 Vicinity Noise Contours
 Tab F-4 Onbase Noise Contours

Tab G - Utilities Systems

Tab G-1 Water Supply System
 Tab G-2 Sanitary Sewerage System
 Tab G-3 Storm Drainage System
 Tab G-4 Electrical Distribution System
 - Above Ground
 - Below Ground
 Tab G-5 Central Heating and Cooling Systems
 Tab G-6 Natural Gas Distribution System
 Tab G-7 Street Lighting System*
 Tab G-8 Liquid Fuels System
 Tab G-9 Cathodic Protection System*
 Tab G-10 Central Aircraft Support System

Tab G-11 Composite Utility System Constraints*

Tab H - Communications and NAVAID Systems

Tab H-1 Basewide Communication Plan

Tab H-2 Other Onbase Communications Systems

Tab H-3 NAVAIDS and Weather Facilities*

Tab I - Transportation Systems

Tab I-1 Community Newtwork and Access to Base

Tab I-2 Onbase Network

Tab I-2.1 Future Transportation Plans

Tab J - Energy Plan

Tab J-1 Existing Energy Transfer Systems*

Tab J-2 Air Force Energy Plan Data*

Tab J-3 Composite Constraints and Opportunities*

Tab L - Landscape Development

Tab M - Facilities Development

Tab M-1 Existing Facilities by Construction Type

Tab M-1.1 Long-Range Facilities Development Plan

Tab M-2 Facilities Constraints and Opportunities*

Tab M-3 Five-Year Capital Improvement Program

- Five Year Defense Plan (FYDP)

- Other Short Range Capital Improvements

Tab N - Fire Protection

Tab N-1 Existing Water Systems and Fire Protection Systems*

Tab N-2 Electrical and Gas Shutoff Valves and Breakers, etc.*

Tab N-3 Flight Line Fuel Hydrants and POL Additional Data*

Tab N-4 Storm Drain and Fuel Seperators, etc.*

Tab N-5 Response Time - Onbase Road System*

Tab N-6 Response Time - Offbase Regional and Crash Rescue*

Tab N-7 Additional Fire Protection Planning Data*

Tab O - Contingency Planning

Tab O-1 Surge Capability

Tab O-2 Physical Security

Tab O-3 Disaster Preparedness Crash Grid Map

Tab O-4 Air Base Survivability*

Tab O-5 Beddown and Support of Deployed Forces*

Tab O-6 Theater-Specific Requirements*

Notice the distribution of the astericks in the tab listing. It is relatively easy to find "concentrations" of astericks in subjects dealing with environmental issues, natural resources and fire protection. Each of these issues has gained the attention of the public, the Congress, and the Air Force leaders. Public law and public sentiment have championed these issues, however, little information on land use and BCP is required to be maintained. This supports my assumption that there is little interest in BCP within the military. If there were more interest in effective planning there would be more mandatory composite land use plans. Appendix A is an example of composite land use constraints and opportunities that illustrates the importance of this type planning. By using a system of overlays, it is readily apparent that of the thousands of acres on Offutt AFB only a couple of hundred acres are really suitable for development as sites for residential areas. With severe constraints of this magnitude, it is absolutely essential that the planners, the Base Civil Engineer, and the Commander are all in harmony on the future land use planning. If they are not, then the base is doomed to continue along the path taken so many times before.

**Appendix A: Plan Overview: Preliminaries,
Commander's Summary, and Introduction**

Plan Overview

Preliminaries

Cover Letter. The cover letter provides a quick summary of what is detailed in the plan. It should briefly state major topics considered and topics excluded from the plan. Every effort must be made to insure the cover letter is brief, informative, and visually appealing. Appendix C, taken from the Offutt AFB, Nebraska BCP (3) represents a good cover letter.

Acknowledgements. This page of the BCP is one of the most often forgotten or misused parts of the plan. It provides the author of the plan with the opportunity to recognize the individuals, professional organizations, firms, staffs, and associates that have made contributions to the BCP effort. This opportunity should not be allowed to go unnoticed. Much of the information included in the BCP will come from sources other than the author or writer, and recognizing the contributions of these people is morally and ethically required. Acknowledging the contributions of these contributors also provides an easy reference source for readers interested in a particular topic. The name and organization enables the reader to locate expert information without extensive research.

Use of Information. The use of the information contained in the BCP by Department of Defense personnel or

by the civilian community is generally widely accepted because the information is unclassified. However, it is advisable to have the draft BCP reviewed by the base Public Information Officer and other reviewers prior to publishing. At times the compilation of unclassified data results in data that is of possible intelligence value. Finally, the writer must insist that the commander or his designated representative carefully review the BCP for any statements that may be politically sensitive within the Department of Defense or the civilian community prior to providing a distribution statement for the BCP.

Use of Plan. This statement should describe the purpose of the BCP, how it is to be used, its limitations, the Office of Primary Responsibility (OPR), and information on how to obtain additional copies of the BCP or extracts. This statement should also describe the relationship of the BCP to other plans within the civilian communities adjacent to the base.

Procedures for Updating. It is very common for plans to be permitted to become obsolete. Consequently, the efforts of thousands of people are permitted to go to waste each year. The quality of the planning has little impact on whether the plan is neglected or not.

Because human nature often ignores the issues that are not causing immediate problems, there must be a method of insuring the BCP is maintained in a current

state. Obviously, the first step is to determine the minimum time interval suitable for updating the plan. The writers should set a specific date for completing the update. AFR 86-4 specifies that the BCP Tabs will be updated by 30 September each year and the BCP will be reviewed every five years (7:8). Five year intervals are too long. The BCP should be updated annually and a specific date established for that update. The planners must develop a time table for revising the plan that includes adequate time for review by the interested agencies, reading time and printing time. Additional requirements, such as aerial photographs, may impact the amount of time required to revise the plan. The writers must not overlook any source of potential delay when developing the time table.

This section should also include a list of agencies involved with the last review of the BCP, including office symbols, names and phone numbers. Although this list may have sufficed at the previous review, it may not include all the agencies required this time.

Table of Contents. Like all lengthy published documents, the BCP would be extremely confusing if a table of contents were not provided. The table of contents should follow the general outline of the BCP recommended by AFR 86-4 (7:11) but must be more finely divided to aid the reader in quickly locating the appropriate subject.

Commander's Summary

The Commander's Summary or Executive Summary gives a brief synopsis of the BCP's purpose, its findings, and recommendations. This summary should be limited to approximately 20 pages but it must accurately reflect the findings, recommendations, expected impacts, and the strategies for implementing the recommendations. Appendix D is the Bergstrom 1990 plan (1), which serves as an excellent example of an executive summary.

Reason for the Plan. This part of the summary should be held to a maximum of one paragraph simply stating the need for maintaining and using a BCP as a tool to guide base development. The Introduction of the Bergstrom 1990 plan contains a neat, concise statement of purpose.

Summary of Findings. This section is the heart of the Commander's Summary. Here the problems or constraints are summarized and the recommended course of action proposed. The problem areas should be readily identifiable by providing keywords in the margin, subparagraph headings, or tabbing. Only major problems should be included in this section. Minor problems can be discussed in detail elsewhere in the BCP or, if there are sufficient related minor problems, they may be lumped together in a topical fashion. Appendix D provides an example of a summation of findings taken from Bergstrom 1990 (1:4).

Summary of Expected Costs. The summary of expected costs should provide a quick reference for the commander to consult when the commander requires information about the type and amount of funds required to complete a project or a phase of the BCP's recommended improvements. The information required is very simple: project number, title, program (Operations and Maintenance, Military Construction Program, P-341, Non-Appropriated Fund, Medical or other appropriations), obligation authority, program year, and a short description of what the project entails. As important as this information is to the commander, it can cause great potentially great problems if the obligation authority too accurately reflects the government estimate and that information is subsequently provided to civilian sources. Depending on the commander's desires, the obligation authority printed may be rounded or the page may be removed prior to releasing the BCP to the public. An example of the desired format and brevity is in Appendix D.

Plan Recommendations by Priority. Recommendations for suggested courses of action or future projects should be provided in a prioritized list. Two lines of thought exist on this subject. One upholds that the prioritization of recommended projects should be accomplished by the planners without regard to the desires of the commanders or his staff. The second line of thought provides for involving the commander and his staff early in the process to identi-

fy their concerns about the issues affecting the base and its people. This is a much more realistic approach, for the planners are to advise the commander on planning issues and the commander usually has the ultimate say in the planned course of action. Because it is foolhardy to operate in a vacuum, planners must include the commander and his staff in the planning process, keep them updated, listen to their concerns, express professional opinions and concerns, and provide the commander with the pertinent information required to make intelligent decisions. The resultant BCP should adequately comprehend the current and future needs of the base.

Roles and Responsibilities. AFR 86-4 outlines the responsibilities of Air Force Commanders, the Director of Engineering and Services, the Air Force Engineering and Services Center, the Air Force Regional Civil Engineers, the Major Commands, the Installations, and the various elements of the base level civil engineering function regarding comprehensive planning (7:5-8). The shortcoming of this regulation is that it does not identify the role of the project originator. Originators of work requests have a responsibility to their organization, the USAF and the taxpayers to research the requirements for the work they propose prior to submission of the request. Ostensibly, the requestor should have better access to the vital information involving mission changes for his organiza-

tion. It should be the requestor's responsibility to verify the actual need for the work and to determine the benefits, period of use and the date the work is required. Likewise, it is also the requestor's responsibility to notify the planner when there is no longer a requirement for the project.

Schedule for Implementation. This is a general description of how and when the BCP will be implemented. For the BCP to achieve maximum effectiveness, the implementation must be as soon as possible after the plan is approved. The schedule should be adhered to if at all possible, but the planner must be careful not to let the schedule become a driving force. It is more important to let events shape the schedule than to let the schedule mutilate the BCP. If significant meetings, regulations, legislations, etc. are eminent, revise the schedule to reflect these events.

Introduction

Mission Statement. This section of the BCP should contain the United States Air Force mission statement taken from AFM 1-1, the Major Command's mission statement, the base's mission statement and the mission statement of supported tenants. The mission statement should clearly detail the applicable needs and policies of the Air Force, the Major Command, the base and the tenant units. A clear, concise understanding of these needs sets

the tone for the review of the BCP and will prove invaluable in dealing with non military agencies. This information is relatively easy to obtain and should be used in the most condensed form acceptable to each organization involved. The idea is to provide a brief overview of the missions for readers who are unfamiliar with the base.

Installation Profile. The Installation Profile is divided into five major divisions; location, history, physical profile, social profile and base goals. Some of these divisions are extremely brief while others are lengthy, but each serves a significant purpose in educating the users of the BCP. A great deal of research may be required to obtain historical and social data necessary to complete this section. A few suggested sources of information are the base historian, the Major Command Historian, city, county and state records.

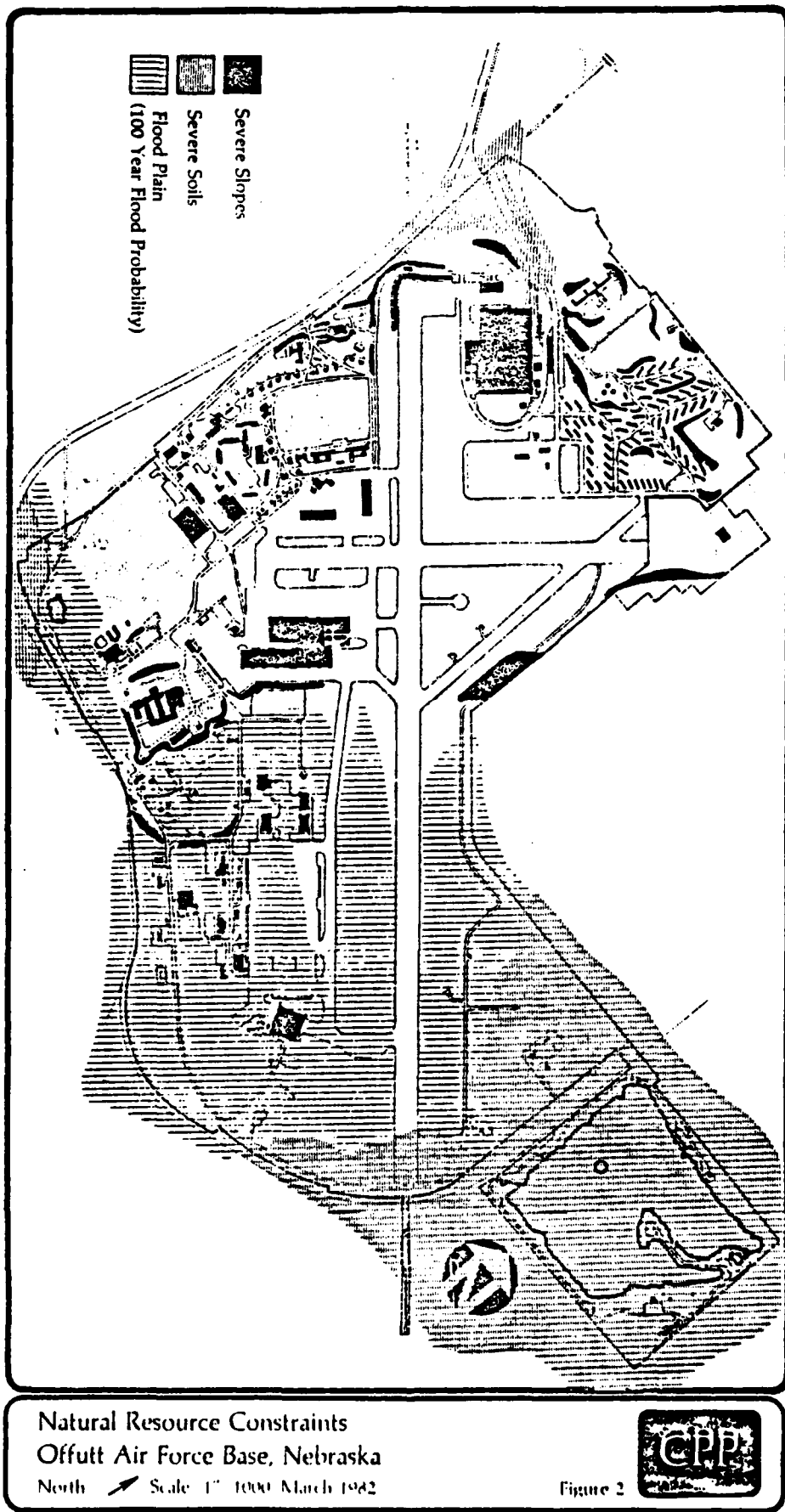
Location. This division is the simplest of all. Simply provide a verbal description of state, county, city or township and the approximate location of the base in relation to the nearest city or town. It may also be prudent to obtain longitude and latitude coordinates for future reference. Provide a small but detailed map of the base location in the state and another map of the local area.

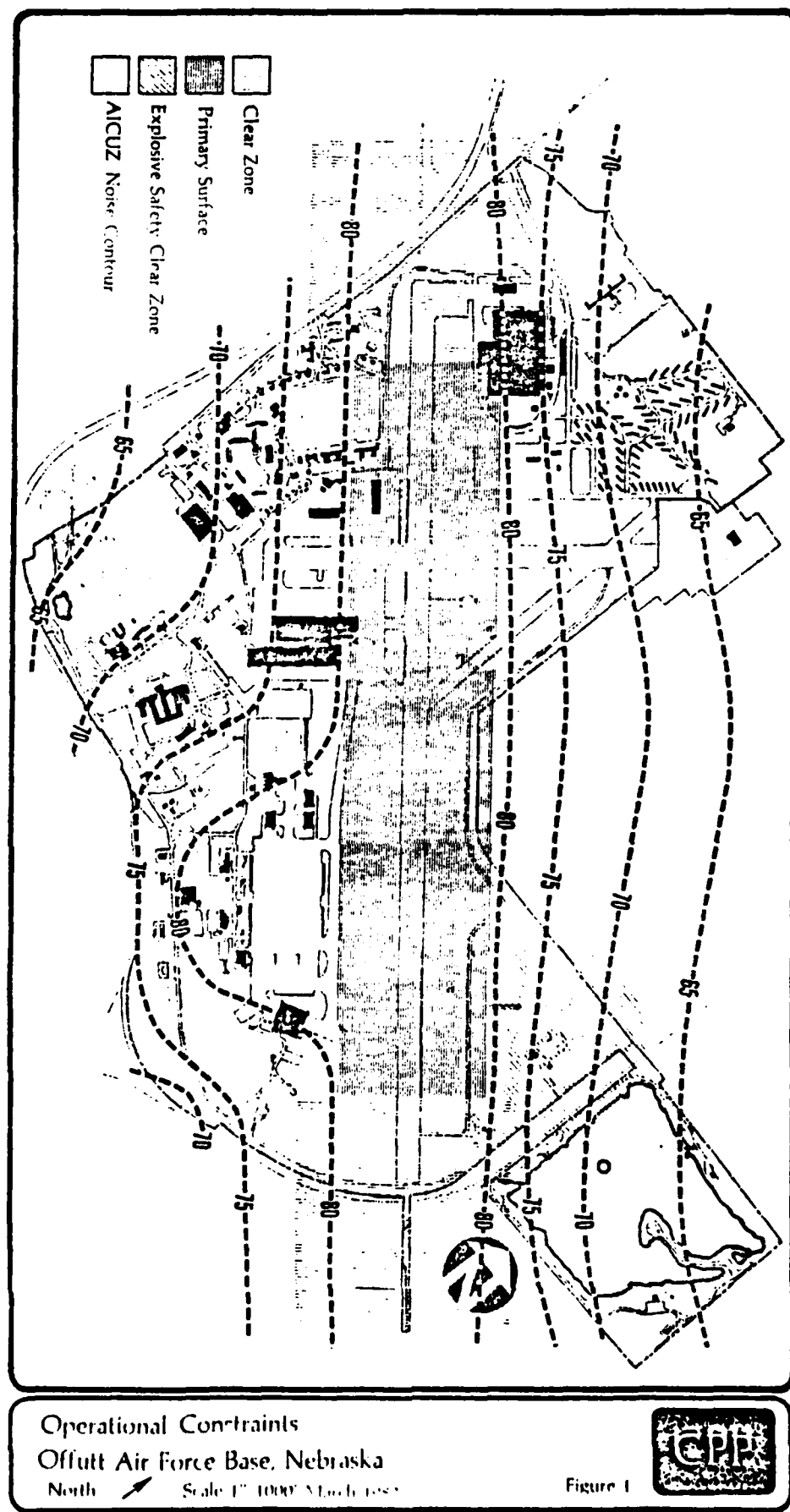
History. The base's history provides insight into why the base developed or didn't develop in the manner an

observer might expect. Historical data can be very difficult to obtain for some installations. However, it is easier to obtain historical data on many of the older bases than on some of the more recently constructed bases. This is due largely to the interest of historical groups and the excellent data they have compiled. Francis E. Warren AFB, Wyoming is an excellent example of a base over 100 years old that has a complete history on file thanks to the efforts of the state historical society. Obviously, this makes research on that base much easier.

The base's history should be written in a chronological order covering only the information pertinent to the development of the base, such as mission changes, major construction efforts, legal matters that changed the base, natural disasters that changed the base and a general description of how the base profile came to be.

**Appendix B: Natural Resource and Operational
Constraint Overlays**





Appendix C: Example of a BCP Cover Letter

CONCEPTUAL PLANNING AND PROGRAMMING



TASKING: This group was tasked by HQ SAC/DE to develop a comprehensive plan for Offutt AFB. The plan was to include all major activities, constraints and criterion which would affect the development of the main base. Off-base tenant units, military family housing and development of the surrounding community were excluded from the criterion. Our efforts were to develop a sound, feasible five-year plan and identify long-range requirements. In addition to the findings contained in this document, we have attempted to establish a process to periodically update findings and meet the continuing need to provide planning and programming guidance.

OFFUTT AFB, NEBRASKA

MARCH, 1982

Appendix D: Bergstrom 1990 Executive Summary

"BERGSTROM 1990"

FACILITY IMPROVEMENT PLAN

PREPARED BY:
ENVIRONMENTAL AND CONTRACT PLANNING SECTION
67th CIVIL ENGINEERING SQUADRON
BERGSTROM AFB, TEXAS 78743

PREFACE

"BERGSTROM 1990" IS AN EXECUTIVE SUMMARY OF THE COMPREHENSIVE LONG RANGE FACILITY IMPROVEMENT PLAN FOR BERGSTROM AIR FORCE BASE, TEXAS. IT HIGHLIGHTS KEY CONSIDERATIONS OF OUR PLANNING PROCESS AND GRAPHICALLY DEPICTS SEVERAL OF THE MAJOR FY 84 - FY 91 CAPITAL IMPROVEMENT ACTIONS. THESE ACTIONS REPRESENT BOTH NEW CONSTRUCTION AND UPGRADING OF EXISTING FACILITIES. THE PROJECTS HAVE BEEN SELECTED BY THE BASE FACILITIES BOARD TO ENSURE A MORE EFFICIENT BASE, PROVIDE A HIGHER QUALITY OF LIFE, AND SUPPORT OUR MISSION REQUIREMENTS THROUGHOUT THIS DECADE AND INTO THE 1990'S.

THIS SUMMARY IS INTENDED TO BE USED AS A BASIC REFERENCE FOR COMMANDERS AND OTHER KEY OFFICIALS TO ENSURE WHAT WE DO TODAY IS PART OF A COORDINATED PROGRAM FOR WHAT IS NEEDED IN THE FUTURE. OUR FACILITY IMPROVEMENT PLAN IS AN IMPORTANT INITIAL STEP TO "MAKE THINGS HAPPEN, MAKE THINGS BETTER, AND MAKE THINGS LAST."

— NOTICE — HOW TO USE THIS BOOKLET

THE NARRATIVE FOR SECTIONS I - IV IS ORGANIZED WITH THE MAIN POINTS IN OUTLINE FORM ON THE LEFT-HAND PAGE. THE FACING PAGE SUPPLEMENTS PORTIONS OF THE OUTLINE WITH MORE IN-DEPTH DISCUSSION. DETAILED PLANS SUPPORTING THE INFORMATION IN THE BOOKLET ARE ON FILE IN THE BASE CIVIL ENGINEER'S OFFICE.

INTRODUCTION

"BERGSTROM 1990" — A FACILITY IMPROVEMENT PLAN

PURPOSE

SYSTEMATIC MODERNIZATION OF PHYSICAL ASSETS

"BALANCED" DEVELOPMENT FOR THE 80'S AND 90'S

MISSION SUPPORT

MORE EFFICIENT BASE

HIGHER QUALITY OF LIFE

A MARKETING BOOK

COMMANDER AWARENESS

CONTINUITY

COMMITMENT

FORMAT

PAGE

- | | | |
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| I. | INSTALLATION PROFILE — WHERE WE HAVE COME FROM | 1-2 |
| II. | EXISTING LAND USE — PROBLEM AREAS | 3-4 |
| III. | THE PLANNING PHILOSOPHY — PLANNING AND
DEVELOPMENT GUIDELINES | 5-8 |
| IV. | "BERGSTROM 1990" — A LOOK INTO THE FUTURE | 9-21 |

I. INSTALLATION PROFILE

MISSIONS

PAST

ARMY AIR CORPS, SAC, AND TAC
AUSTIN AND BERGSTROM — POSITIVE WORKING RELATIONSHIP
FACILITIES DEVELOPED TO SUPPORT VARIETY OF MISSIONS

PRESENT

67 TRW - TACTICAL RECONNAISSANCE OPERATIONS AND TRAINING
HQ 12 AF — MANAGES TACTICAL UNITS WEST OF MISSISSIPPI RIVER
MAJOR TENANTS

602 TACTICAL AIR CONTROL WING
HQ 10 AF (AFRES)
924 TFG (AFRES)

STATISTICS

LAND AREA — 4,000 ACRES
BASE BUILDINGS — 250 PERMANENT OR SEMI-PERMANENT, 60 TEMPORARY OR
"FORCED USE" WORLD WAR II STRUCTURES
FAMILY HOUSING — 403 BUILDINGS (704 UNITS)
AIRFIELD PAVEMENTS — 2.3 MILLION SQUARE YARDS
PAVED ROADS — 39 MILES
UTILITIES — PROVIDED BY CITY AND PRIVATE FIRMS
WORK FORCE — 6,000: 5,000 MILITARY, 1,000 CIVILIAN
RETIREES / DEPENDENTS SUPPORTED - 50,000

DISCUSSION OF INSTALLATION MISSIONS

MISSIONS

PAST

Bergstrom AFB is located seven miles southeast of Austin, Texas in Travis County. It was established in 1942 on approximately 4,000 acres on land donated by the city of Austin. A strong and positive working relationship characterizes Bergstrom and Austin community relations. Facilities have been developed to support a variety of aircraft and missions over the years as summarized below.

COMMAND	PERIOD	AIRCRAFT
Army Air Command	1943 - 1948	C46, C47, C54, C82, AT6, T24
Strategic Air Command	1949 - 1957	F84F
Tactical Air Command	1957 - 1958	F101, CB29
Strategic Air Command	1958 - 1966	B52, KC135
Tactical Air Command	1966 to Present	RF-4C, F-4D, T39, O-2, OV-10 C-130

PRESENT

67th TACTICAL RECONNAISSANCE WING—The 67 TRW have been the host organization since 1971. Its primary mission is to maintain a combat ready air reconnaissance force and conduct advanced reconnaissance training. Ninety RF-4C aircraft are assigned to the two operational and two reconnaissance training squadrons.

HEADQUARTERS 12th AIR FORCE—The Headquarters exercises control over personnel assigned to nine active duty Air Force bases in the western and southwestern United States as well as a number of Air Force Reserve and Air National Guard Units.

Major tenant organizations include:

DETACHMENT 8, 602d TACTICAL AIR CONTROL WING—This is the largest tenant unit at Bergstrom. Its mission is to maintain a continuously ready Tactical Air Command control support system capable of providing direction to air elements and to direct fire support for ground forces.

924th TACTICAL FIGHTER GROUP—An Air Force Reserve organization flying the F-4D fighter aircraft. Their mission is counter air, interdiction, and close air support. There are 18 F-4D aircraft assigned.

HEADQUARTERS 10th AIR FORCE—This AFRES Headquarters directs activities of approximately 60 flying and nonflying reserve units located throughout the United States. Their mission is to ensure the units under their control are operationally ready in the event of mobilization or if they are needed in support of civil defense and natural disaster civil relief.

II. EXISTING LAND USE

PROBLEM AREAS

AGING FACILITIES — MANY BUILT IN THE 40'S AND 50'S

INADEQUATE SPACE FOR MANY FUNCTIONS

FACILITIES INCOMPATIBLE WITH SURROUNDING LAND USES

INADEQUATE INTERIOR DESIGN — POOR LAYOUT AND APPEARANCE

LACK OF ARCHITECTURAL CONTINUITY

CONGESTED ROADS — INADEQUATE PARKING

FRAGMENTED DEVELOPMENT — A "PIECEMEAL" APPROACH

DISCUSSION OF EXISTING LAND USE

CHANGING MISSIONS, AGING FACILITIES, AND OTHER FACTORS PRESENT A CONTINUOUS CHALLENGE TO KEEP OUR FACILITIES USABLE AND AS ATTRACTIVE AS POSSIBLE. PROBLEM AREAS ASSOCIATED WITH ADAPTING EXISTING FACILITIES TO OUR PRESENT MISSION REQUIREMENTS INCLUDE:

PROBLEM AREAS

AGING FACILITIES — Many of our critical facilities, including airfield pavements and utility systems, were constructed in the 40's and 50's. Building materials and standards in use then were often inferior from those used today. Higher than normal maintenance costs, excessive energy consumption, and poor appearance are three of the results.

INADEQUATE SPACE — Mission changes in recent years have resulted in severe overcrowding of many of our facilities. Often a "quick-fix" for overcrowding has been the use of portable metal buildings. Portable buildings are expensive to maintain, do not provide the required working space, and create a visual intrusion.

INCOMPATIBLE FACILITY SITINGS — Facilities have been sited and constructed without adequate consideration of their effect on surrounding land uses. Similarly, certain organizations have been assigned to buildings which are in an inappropriate land use area. Facilities sited in the wrong location decrease efficiency and create a sense of imbalance.

INADEQUATE INTERIOR DESIGN — Several units have been required to use older facilities originally designed to support activities different from those of the present organization. Poorly designed interiors complicate coordination and lower efficiency.

LACK OF ARCHITECTURAL CONTINUITY — Development on Bergstrom has taken place over a period of four decades. Conflicting architectural themes, styles, and forms are apparent. Lack of continuity within the various land use areas and on the base as a whole decreases the sense of pride in the installation.

CONGESTED ROADS, INADEQUATE PARKING — Vehicle use of Bergstrom's primary roads has increased significantly in recent years. This use coincides with increased numbers of military retirees and their dependents in the Austin area who use selected facilities on base. Many facilities also require additional parking support.

FRAGMENTED DEVELOPMENT — Facilities have been constructed that meet only a portion of an organization's total facility requirement. A piecemeal approach results in a lack of organizational continuity and reduces efficiency.

III. THE PLANNING PHILOSOPHY

ASSUMPTIONS

**PRIMARY MISSION OF BERGSTROM'S MAJOR ORGANIZATIONS WILL
REMAIN THE SAME**

**AIRCRAFT CURRENTLY IN USE WILL REMAIN THE SAME (OR REPLACE-
MENT AIRCRAFT WILL HAVE BASICALLY SIMILAR SUPPORT REQUIREMENTS)**

FUNDAMENTAL GOALS

SPECIAL EMPHASIS

**SENIOR LEADERSHIP INVOLVEMENT — BALANCED, FLEXIBLE,
RESPONSIVE**

"GRASS ROOTS" APPROACH — USER INVOLVEMENT

(Continued)

DISCUSSION OF THE PLANNING PHILOSOPHY

ASSUMPTIONS

TWO PRIMARY ASSUMPTIONS AFFECTING BERGSTROM'S LONG RANGE FACILITY IMPROVEMENT PLANS ARE:

67 TRW and the major tenant organizations will remain on base without significant changes in their current missions. This implies the workforce will remain at approximately the same level.

Operational squadrons will continue to use the RF-4C and F-4D aircraft. If these aircraft are replaced, new weapons systems will require support facilities similar to those used by the F-4.

OTHER ASSUMPTIONS AFFECTING BASE DEVELOPMENT INCLUDE:

Contract utility services (natural gas, water, electric, and sewage) will continue at levels required to support our operations.

The number of retired military and their dependents using facilities at Bergstrom will substantially increase over the next decade.

FUNDAMENTAL GOALS

Bergstrom's Comprehensive Plan is based on four fundamental United States Air Force goals. They serve as a framework for guiding base development.

- I. Provide maximum operational / support capability to perform assigned, proposed or potential missions.
- II. Insure wise protection, provision, use and management of human, financial, natural, and man-made resources.
- III. Promote land use / airspace compatibility with off-base areas which affect or may be affected by base development and operations.
- IV. Promote the public health, safety, welfare and overall quality of life.

SPECIAL EMPHASIS

Special emphasis will be placed in the following areas to assist the base in meeting our fundamental planning and development goals.

SENIOR LEADERSHIP INVOLVEMENT — The base Facility Board members and other senior officials will establish priorities and provide overall direction for facility improvement. This will help ensure a balanced approach which considers the entire base and all its facility problems (including roads, utility systems, and other components of the infrastructure). A flexible, responsive program will ensure basewide commitment to meet changing requirements.

"GRASS ROOTS" APPROACH — Facility users will be involved at all stages of project development to ensure clear expectations, adequate scope and the best facilities possible to meet their needs.

III. THE PLANNING PHILOSOPHY

SPECIAL EMPHASIS (CONT'D)

COMPATIBLE LAND USE AREAS - FUNCTIONAL USES GROUPED

FACILITY SITINGS — EFFICIENTLY LOCATED

BASE APPEARANCE — ARCHITECTURAL COMPATIBILITY

POSITIVE COMMUNITY RELATIONS

TRAFFIC MANAGEMENT

QUALITY CONSTRUCTION — HIGH STANDARDS AND ENERGY UPGRADE

FACILITY DISPOSAL

DISCUSSION OF THE PLANNING PHILOSOPHY

SPECIAL EMPHASIS (CONT'D)

COMPATIBLE LAND USE AREAS — Facilities housing similar or related functions will be consolidated into these major land use areas: operations, maintenance, administrative/community, base support/industrial, mobility and housing (reference Land Use Map - page 21). Benefits include concentrated visible investment, a sense of order, and increased efficiency. Incompatible uses within these areas will be relocated whenever possible. Detailed plans on compatible land uses are available at Base Civil Engineering.

FACILITY SITING — Sitings for new facilities will be made with consideration to the compatible land use areas as well as the following planning factors:

- Efficient use of the existing infrastructure (airfield pavements, roads, parking support, utility systems, etc.)

- Building orientation (energy conservation and visual consistency)

- Opportunity for expansion due to mission change

- Pedestrian and vehicle traffic patterns

- Airfield/airspace criteria and environmental considerations

BASE APPEARANCE — Bergstrom's overall appearance will be enhanced by stressing architectural compatibility within the various land use areas and the base as a whole. Architectural compatibility includes coordinated elements of design, traditional building materials, colors, landscaping, signage, and lighting. Results include a sense of balance and place which can have a positive effect on motivation. Detailed plans by land use areas have been developed.

POSITIVE COMMUNITY RELATIONS — Bergstrom will continue to coordinate with local communities and governmental agencies. Noise impacts on and off base will be minimized consistent with our mission requirements.

TRAFFIC MANAGEMENT — Adequate parking support will be provided for existing and programmed facilities. Base roads will be upgraded to improve safety and traffic flow.

QUALITY CONSTRUCTION — New facilities, additions, and renovation projects will use high quality energy efficient materials. Reduced energy consumption, better sound attenuation, improved facility appearance, and reduced periodic maintenance requirements will result.

FACILITY DISPOSAL — New construction projects will replace several outdated metal and wooden forced use facilities over the next few years. These inefficient and often unattractive buildings will be disposed of promptly.

IV. "BERGSTROM 1990" A LOOK INTO THE FUTURE

MAJOR INVESTMENTS

OVER 30 NEW FACILITIES PROGRAMMED
MAJORITY OF HOUSING UNITS UPGRADED
UTILIZES ALL FUNDING AVENUES
DEVELOPMENT IN EACH MAJOR LAND USE AREA

RESULTS

MISSION SUPPORT
PROVIDES REALISTIC EXPECTATIONS
ELIMINATES WW II AND PORTABLE BUILDINGS
ORDERLY DEVELOPMENT
ENERGY UPGRADE
MORE EFFICIENT BASE
HIGHER QUALITY OF LIFE

DISCUSSION OF "BERGSTROM 1990"

MAJOR INVESTMENTS

Bergstrom's total facility improvement program involves hundreds of small and large scale projects to construct, upgrade, repair, and maintain our assets. The list below and the perspectives on the following pages provide a look at several of the major projects programmed through FY 91. Development is planned in all of the functional land use areas (see Land Use Area Map - page 21).

MISSION

Squadron Ops Facility - 91 TRS - (FY 83)
Squadron Ops Facility - 12 TRS
Squadron Ops Facility - 45 TRTS
Base Operations Facility*
DCO Facility Upgrade (FY 84)
Aircraft Mobility Storage
Squadron Ops Facility - 62 TRTS (Complete)
Squadron Ops - Simulator - 67 TTS (Complete)

ADMIN/COMMUNITY

Regional Conference Facility
Wing HQ Facility (FY 84)
Base Support Center (FY 84)
Education Center (FY 84)
Hospital Addition
BX-Commissary Additions (FY 85-86)
Outdoor Recreation Complex
Base Library
Child Care Addition (FY 86)
Base Fitness Center (FY 85)
Airman and O'Club Upgrade (FY 84)
Recreation Center
Field Training Det.

HOUSING

Wherry Housing Upgrade (FY 83, 84, 85)
Unaccompanied Enlisted Personnel Housing
Upgrade (FY 83, 85, 88)
Two-Story Appropriated (FY 84)

MAINTENANCE

Maintenance Management Facility
Engine I & R Addition (FY 84)
Aircraft General Purpose Shop (FY 87)
Avionics Maintenance
Regional Paint and Strip Fac (FY 84)
Aircraft Washrack
Sound Suppressors (FY 84, 87)
Hot Cargo Pad - Live Load Area
Apron B Upgrade (FY 84)
NAVAIDS Shop (FY 87)

BASE SUPPORT/INDUSTRIAL

Commercial Trans. Addition (FY 86)
Base Supply & Equip Warehouse
Engineering Ops Addition (FY 87)
Vehicle Maintenance Compound
Petrol Ops Facility
MWR/NAF Storage

MOBILITY (602 TAIRCW & 924 TFG)

Composite Ops Facility (FY 87)
Special Ops Facilities (FY 87)
Reserves Ops & Training (FY 85)

BASE WIDE

Widen Presidential Blvd. (FY 87)
Improve Base Access - F St. (FY 84)
Landscaping (FY 84 on)
Increased Parking (FY 84 on)
Alt Ext Electric - Underground (FY 87)
Energy Conservation Investment Programs (FY 84 on)

***NOTE:** A specific year is not indicated for projects in the FY 88-91 years because of the changing nature of "out-year" programs.

WIDEN PRESIDENTIAL BLVD (FY 87) — This main arterial on base will be widened to four lanes to improve traffic flow. Turn lanes will be installed at the entrances to major facilities and cross streets. The road is currently closed to two way traffic flow during the afternoon rush hours.

HOSPITAL ADDITION — Project will provide a multi-story addition to the existing Hospital for patient wards, outpatient clinics, medical storage, dental and administrative facilities. Additional parking will be provided.

DORM UPGRADE (FY 83, FY 85, FY 88) — Renovation of Unaccompanied Enlisted Personnel Dorms to include room reconfiguration, exterior alteration, and upgrading of mechanical systems. Ten dormitories will be upgraded.

WING HEADQUARTERS (FY 84) — 17,000 SF facility consolidates Wing HQ functions currently housed in 5 separate buildings. Two forced use wooded buildings will be removed. Prominent centralized location in the admin/community area improves accessibility and frees valuable space in the mission land use area.

BASE SUPPORT CENTER (FY 84) — Consolidates 12 major support functions, including 67 CSG HQ, into 68,000 SF, two-story structure. Convenient location will improve efficiency and coordination. Project permits disposal of 5 forced use facilities. Ample parking areas will be provided.

The facilities shown in the perspectives are conceptual and subject to modification. For detailed information on projects and their sitings, scope, and program year, contact the base civil engineering office.

EDUCATION CENTER (FY 84) — 17,500 SF facility housing the base education functions. This facility will replace 6 temporary metal buildings and one WW II wooden building. The site allows for convenient access for on/off base users and ample support parking.

BASE LIBRARY — The present library is an undersized, forced use WW II wooden building. A new 10,500 SF facility will house all library functions for base personnel into the 1990's. Site selection was based on convenience to users and support for the proposed Education Center.

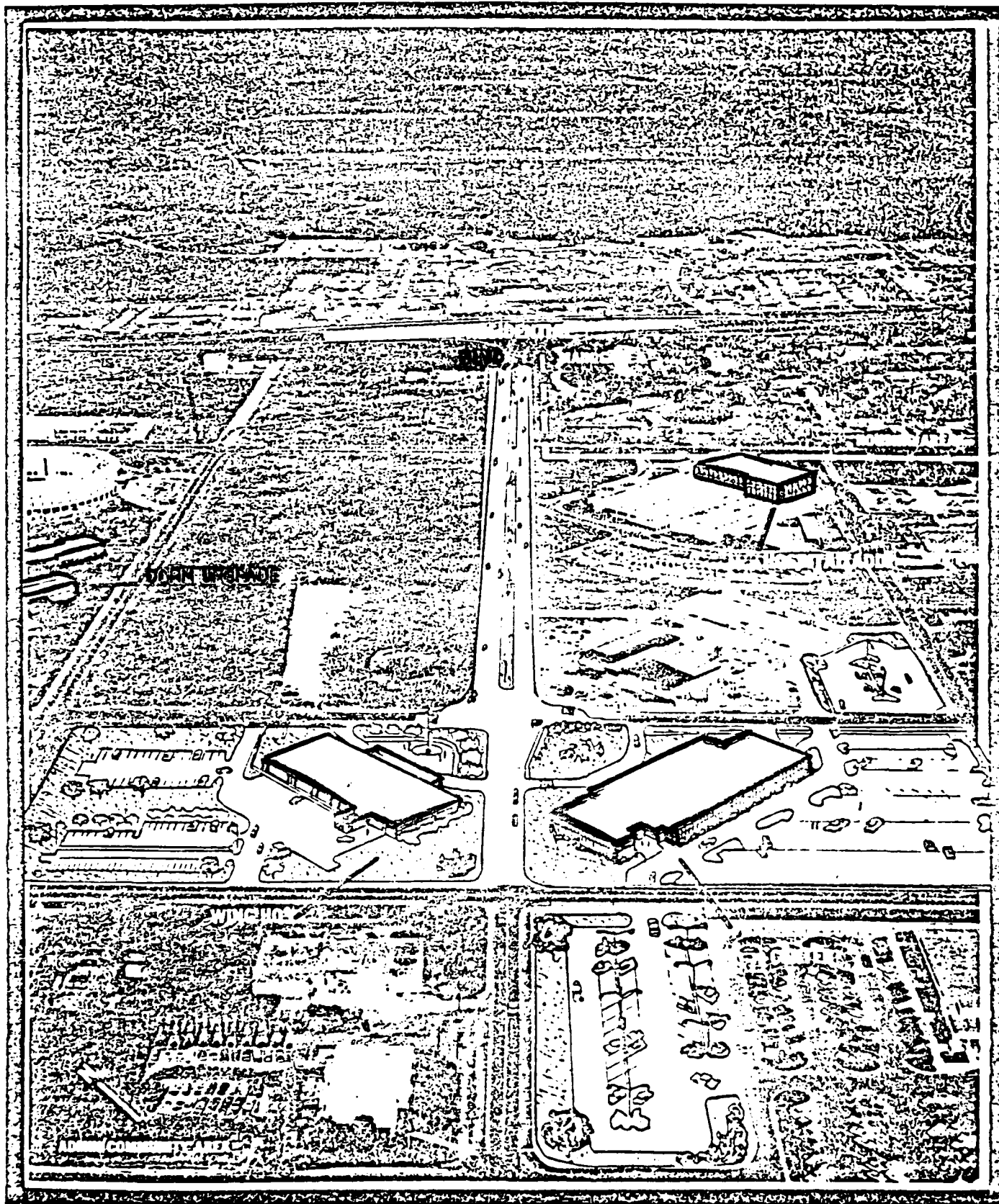
IMPROVE BASE ACCESS (FY 84) — F Street needs to be widened to three lanes to accommodate increased traffic on Bergstrom. Currently, the road must be closed to two way traffic during the morning rush hours. Access to State Route 71 will be improved to allow F Street to be used as an exit from the base.

DORM/AIRMEN'S CLUB PARKING (FY 85) — Existing parking lot will be enlarged to support parking requirements in the vicinity of the Dorms, Airmen's Club and Dining Hall.

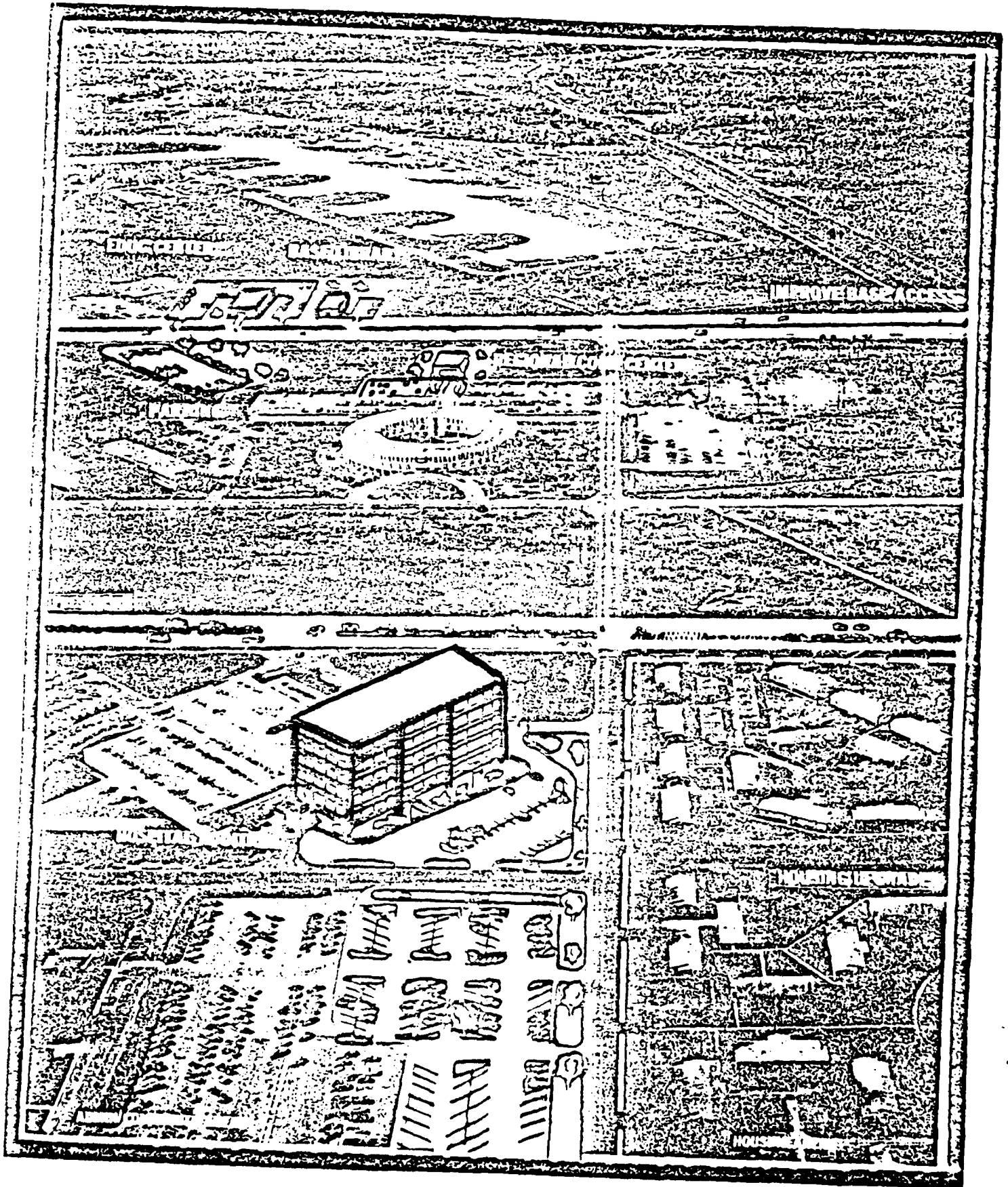
REGIONAL CONFERENCE CENTER — An adequate facility to host regional conferences does not exist on the base. The proposed 6,800 SF building will satisfy 12 AF, 10 AF, and 67 TRW requirements.

HOSPITAL ADDITION — Project will provide a multi-story addition to the existing Hospital for patient wards, outpatient clinics, medical storage, dental and administrative facilities. Additional parking will be provided.

HOUSING UPGRADE (FY 83, FY 84, FY 85) — 480 Wherry Housing units and 126 two-story appropriated housing units will be renovated. Interior and exterior modifications will be made which includes additional living space and energy upgrade.



"BERGSTROM 1990"

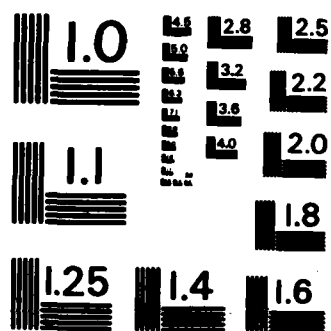


AD-A161 221

GUIDELINES FOR DEVELOPMENT OF A BASE COMPREHENSIVE PLAN 2/2
TO MANAGE MILITAR. (U) AIR FORCE INST OF TECH
WRIGHT-PATTERSON AFB OH SCHOOL OF SYST. J R COLE
SEP 85 AFIT/GEN/LSH/855-4 F/G 13/2 NL

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

OUTDOOR RECREATION COMPLEX — Existing outdoor recreation facilities are inadequate to meet the demand. This complex will provide tennis courts, basketball courts, volleyball courts, little league baseball fields, and supporting facilities.

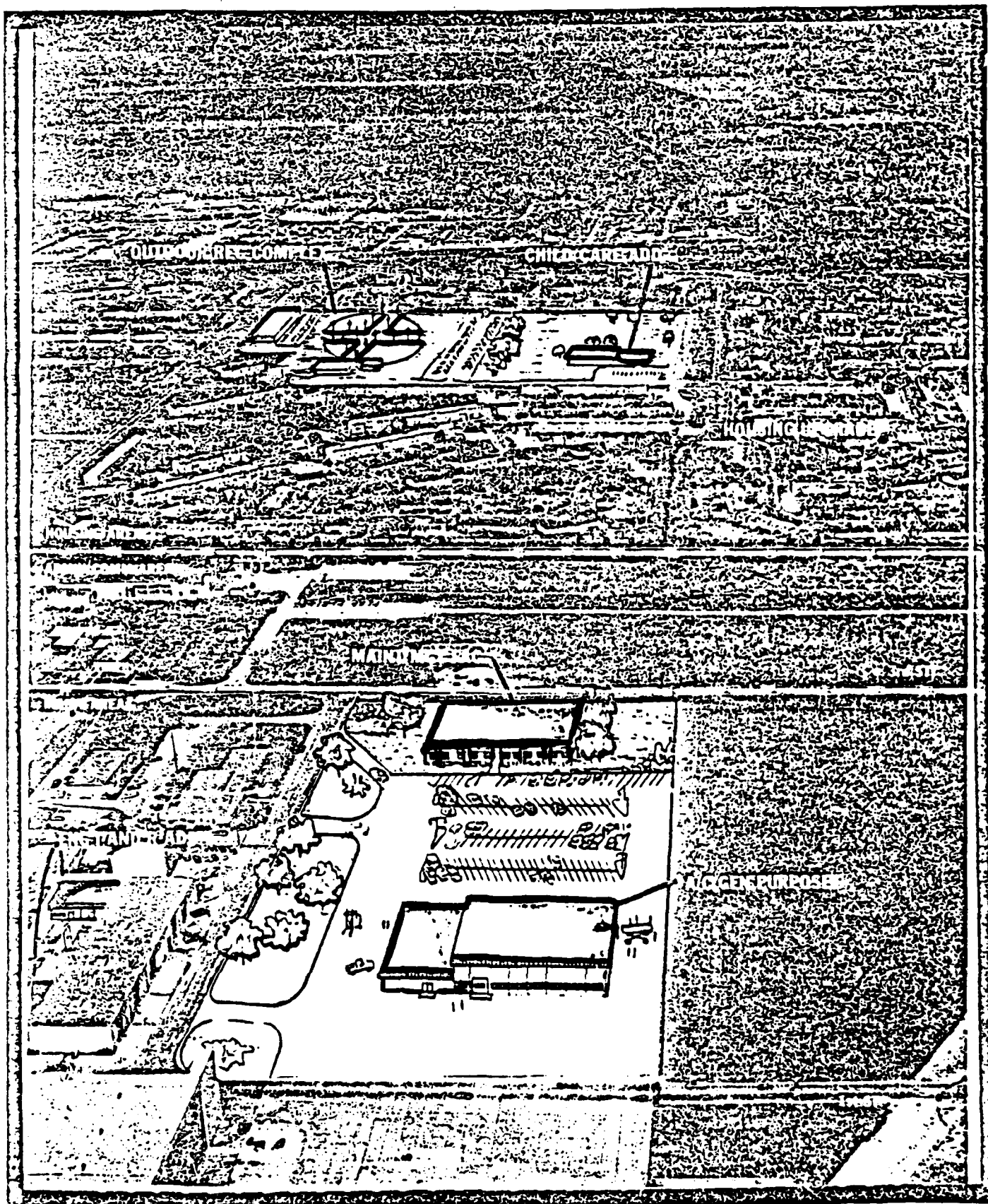
CHILD CARE ADDITION (FY 86) — There is not sufficient space in the existing child care facility. A 7,100 SF addition is required to meet foreseeable demands.

HOUSING UPGRADE (FY 83, FY 84, FY 85) — 480 Wherry Housing units and 126 two-story appropriated housing units will be renovated. Interior and exterior modifications will be made which includes additional living space and energy upgrade.

MAINTENANCE MANAGEMENT FACILITY — A 16,200 SF facility will consolidate key maintenance supervisory and training functions. An inefficient 30+ year old wooden building will be removed. The location will be very accessible to maintenance personnel.

ENGINE I&R ADDITION (FY 84) — A 5,770 SF addition is required to support the maintenance of gas turbine engines and provide additional warehouse space for this forward supply point.

AIRCRAFT GENERAL PURPOSE SHOPS (FY 87) — A 38,000 SF facility will provide space for the Component Repair Squadron and the Equipment Maintenance Squadron. It is located close to work centers in the maintenance land use area. The existing outdated, inefficient facility will be demolished to make room for Squadron Operations buildings in the mission land use area.



AVIONICS MAINTENANCE FACILITY — A new facility will be built to house Avionics, PMEL and the Component Repair Squadron. It will replace a 35-year old facility that cannot satisfy current mission requirements.

COMPOSITE OPERATION FACILITY — A 28,000 SF complex will consolidate the functions of the 712th Air Support Operations Center Squadron. This complex will replace several separate facilities, including four portable buildings, located in the mission land use area.

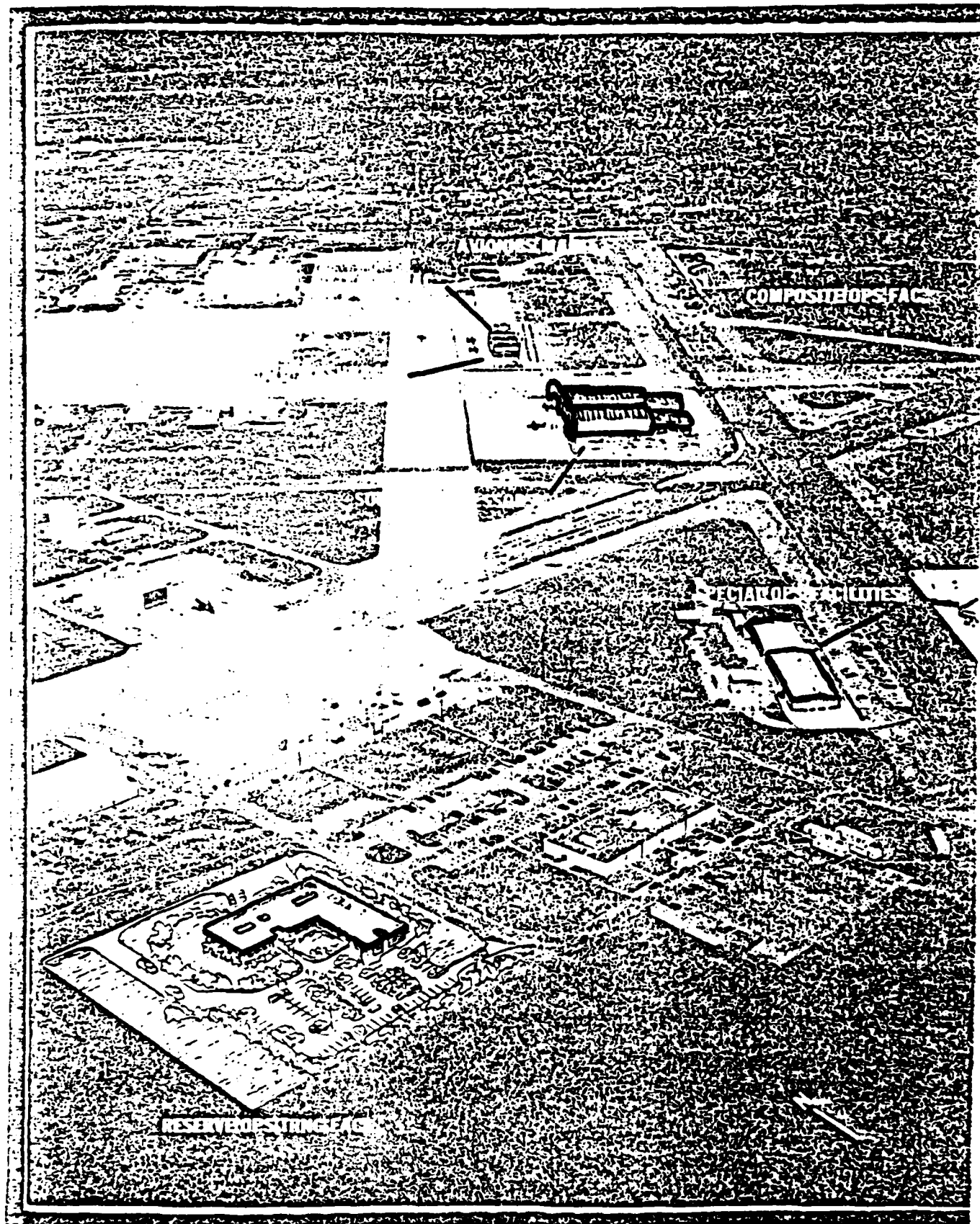
REGIONAL AIRCRAFT STRIP & PAINT FACILITY (FY 84) — A two-bay corrosion control facility will support TAC flying units and TAC gained Air Reserve Units located in the southwestern United States.

AIRCRAFT WASHRACK — A covered washrack will support aircraft assigned to Bergstrom and those using the regional strip and paint facility.

SOUND SUPPRESSORS (FY 84, FY 87) — Two power check pads with Hush Houses will be constructed to conduct suppressed noise operational checks of installed and uninstalled jet engines. The facility will be convenient for Wing and Reserve maintenance operations.

SPECIAL OPERATIONS FACILITIES (FY 87) — The 602d Tactical Air Control Center Squadron and 12th Tactical Intelligence Squadron require an addition to an existing building and a new support facility. The proposed 33,550 SF of space will consolidate their operations and permit disposal of 11 portable buildings and two forced use facilities.

RESERVE OPERATIONS/TRAINING FACILITY (FY 85) — This 19,000 SF facility will provide adequate space for the 924 TFG operational training and administrative requirements. The location of the new facility will consolidate Reserve activities in the mobility land use area.



BASE ENGINEERING OPERATIONS ADDITION (FY 87) — A major addition to the Base Civil Engineering office will consolidate several engineering functions and permit removal of an inefficient metal addition as well as four woodframe WW II structures.

COMMERCIAL TRANSPORTATION ADDITION (FY 86) — A 15,000 SF addition to the base Supply warehouse will provide space for Base Traffic Management functions currently housed in an old wood frame warehouse constructed during WW II.

BASE FITNESS CENTER (FY. 85) — A 30,000 SF addition to the gym and a 11,000 SF alteration project will provide the required indoor recreation facilities.

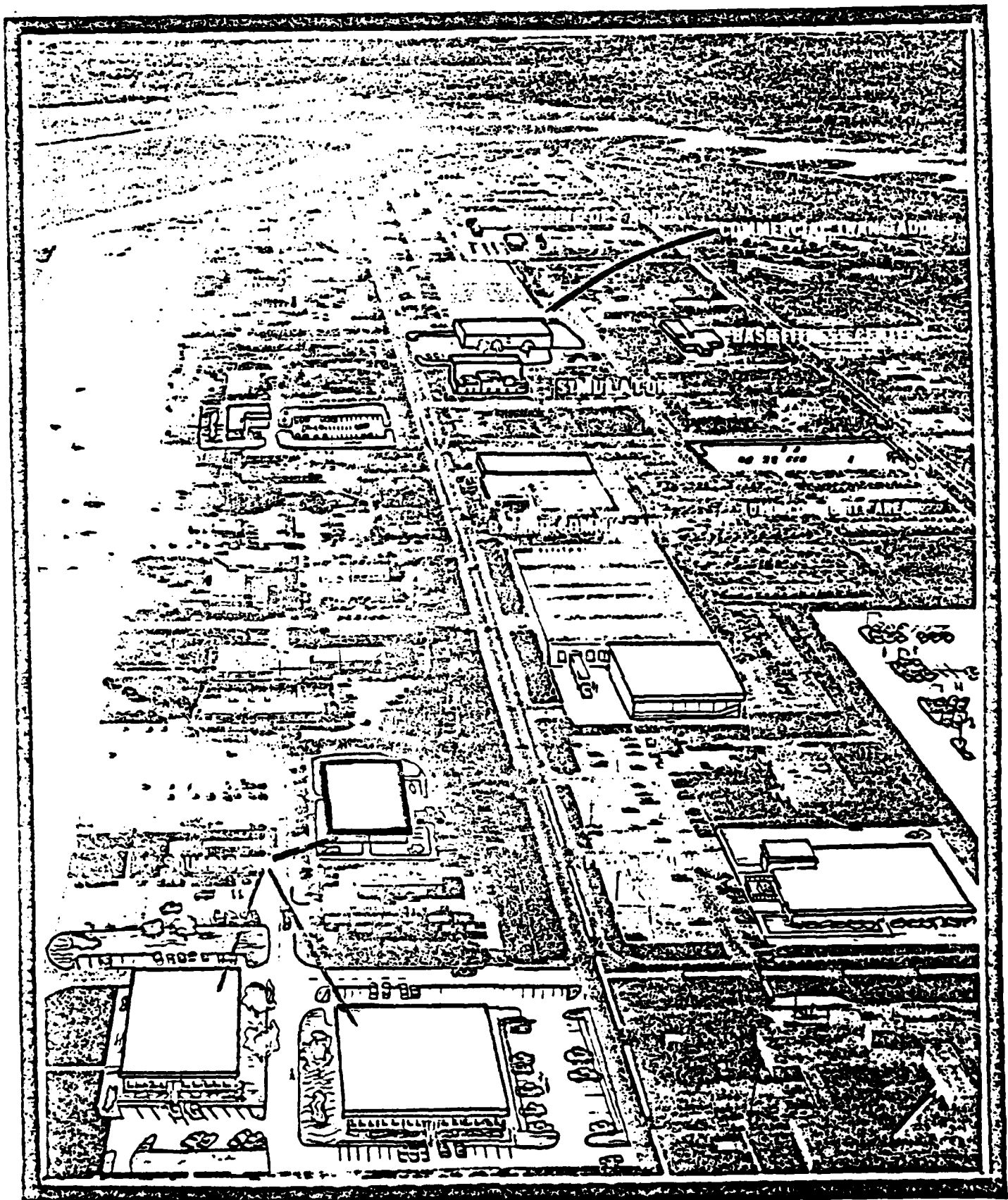
FLIGHT SIMULATOR (Complete)—A 21,400 SF masonry building housing the 67th Tactical Training Squadron was completed in 1982.

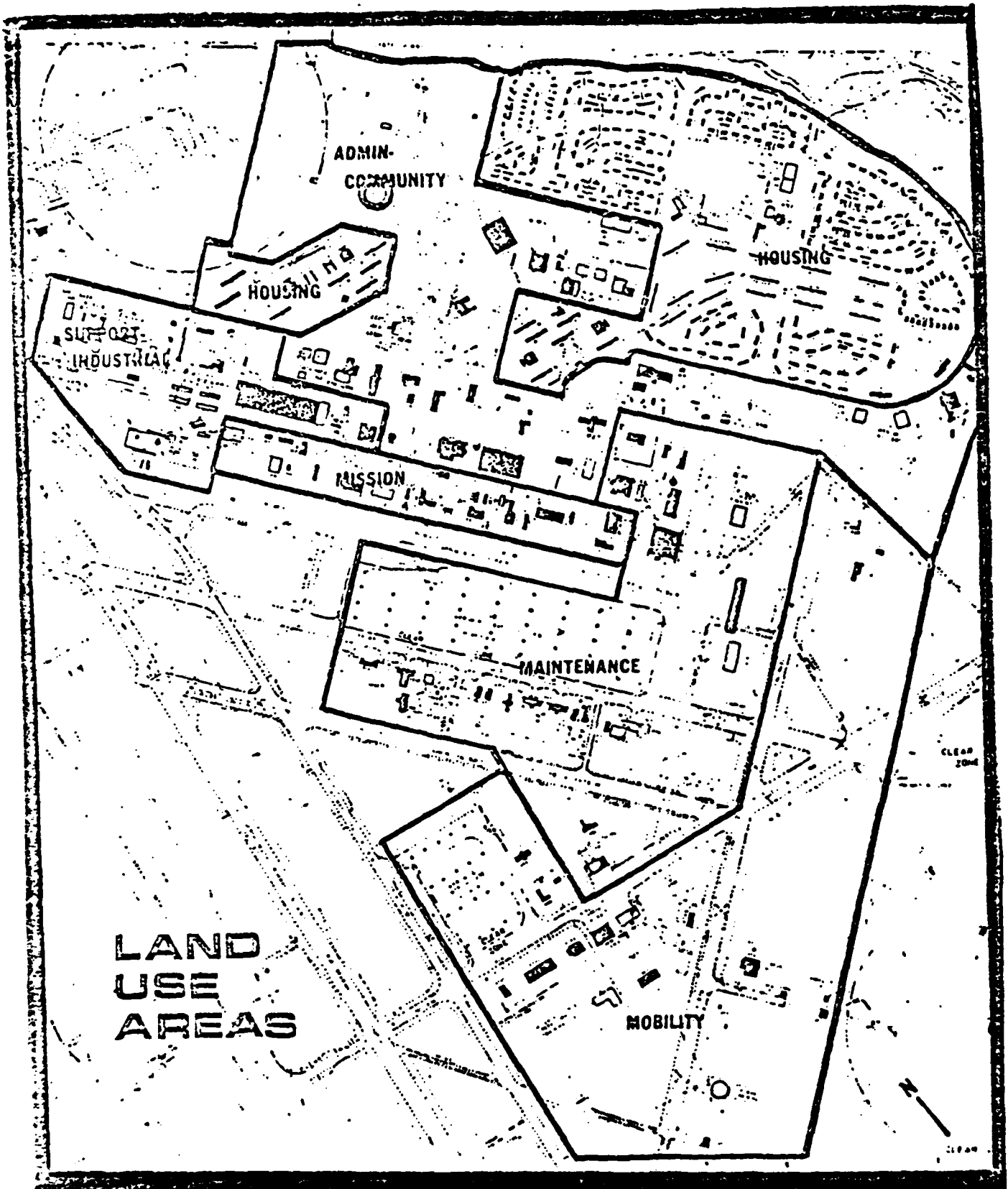
SQUADRON OPERATIONS (FY 83) — A 14,000 SF facility is being constructed to be used by the 91 TRS.

BX AND COMMISSARY ADDITIONS (FY 85 - FY 86) — Major additions to the BX and Commissary will take place. Additional parking support will be provided.

SQUADRON OPERATIONS — Two separate squadron operations facilities will be provided for the 12 TRS and the 45 TRTS. Two old wooden facilities will be removed. A new masonry squadron operations facility was completed for the 62 TRTS in 1982.

FIELD TRAINING DETACHMENT — Sufficient space for administrative and training requirements will be provided in this 24,600 SF facility. It will replace a 35-year old wood frame structure.





"BERGSTROM 1990

**Appendix E: Research Letter and
Responses from MAJCOM DE's**

10 Jun 85

AFIT Thesis Topic: A Procedural Model of a Base Comprehensive Plan to Guide Development and Management of Military Construction Projects

HQ SAC/DE: Colonel Schwartz

Sir, I have chosen a thesis topic on the use of base comprehensive planning to manage the development and execution of military construction projects. The thesis is to be a real "how-to" guide to developing the base comprehensive plan and how to use that plan to control base development. My goal is to provide a easy-to-use desktop reference for programmers and planners. To insure I achieve this goal I would appreciate your opinion on the following questions.

1. Do you believe the existing DOD BCP guidance is pertinent, current and useful to the planners?
2. How many outstanding examples of base comprehensive plans exist in your command? Are these BCP's effectively used to manage base growth and development?
3. What civilian codes and planning guidance should DOD adopt to enhance our future base developments?
4. How can managers of the BCP reduce the possibility of deviation from the plan?
5. Can we educate personnel that a BCP is the culmination of the efforts of many professionals to insure the base development will support the installation's mission and provide for the needs of our people? If so, where is the best time and place in the career of an officer to accomplish this education.
6. Who should be responsible for educating the commanders? Should the education be conducted at a formal training course or accomplished as part of the commander's orientation at the MAJCOM?

Your answers will enable me to obtain the perspective of the MAJCOMS/DE's about the importance of base comprehensive planning.

JOHN R. COLE, Major, USAF



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS ALASKAN AIR COMMAND
ELMENDORF AIR FORCE BASE, ALASKA 99506

5 JUL 1985

REPLY TO
ATTN OF: DEP

SUBJECT: AFIT Thesis Topic: A Procedural Model of a Base Comprehensive Plan to Guide Development and Management of Military Construction Projects

to AFIT/LSH (Major Cole)

Col Hodge, DCS/Engineering and Services for the Alaskan Air Command, asked that I respond to your questions on his behalf. Your questions are those many of us have pondered because of the apparent lack of respect for the work of the planners. In answer to your questions:

1. The files are loaded with BCP guidance in the form of booklets, manuals, and letters. In addition there are IICEP Bulletins, AFM 19-10, and AFR 86-4.

2. All of the above documents are helpful, but scattered. We need an all-inclusive bible such as the Civil Engineers have in AFM 85-15.

3. Only one at this time is recognized by Air Staff as a professional product. We are, however, in the process of developing by A-E assistance, complete BCPs for each of five bases.

4. I think we have codes covered in AFR 86-4.

5. This can be accomplished only through education at newcomers in-briefings; and this must begin at the highest levels. This kind of education must be presented at AFIT in the many short courses and at the base in-briefing of new officers. A point to stress is that planners are either architects or engineers and therefore have valid reasons for deciding on specific land use allocations, and their plans reflect their training and experience. Forced changes to comprehensive planning by senior rank, rather than by reason, is both destructive and frustrating.

C. A. Wickstrom

C. A. WICKSTROM
Director of Programs



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE LOGISTICS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433-5001

11 JUL 1985

REPLY TO
ATTN OF: DE

SUBJECT: AFIT Thesis Topic: A Procedural Model of a Base Comprehensive Plan (BCP) to Guide Development and Management of Military Construction Projects

TO: AFIT/^{LSA}LSH (Major Cole)

1. In response to your request, the following comments are provided to assist your thesis topic.

a. HQ AFLC has initiated work to contract A-E firms to reaccomplish the Command BCPs. The existing Air Force BCP guidance is lacking in specific bulletin guidance but we are receiving the new bulletins as they are completed by HQ USAF/LEEV. Currently, the DOD does not have departmental guidance; however, several bulletins are being prepared for multi-service application (i.e., Landscape Bulletin). The existing guidance is extremely pertinent, relatively current, and not only useful to the planner but also the O&M and design side of the house.

b. We anticipate several outstanding examples of BCPs by late 1987. AFLC installations initiated short-range planning efforts during the late 1970's. The AFLC Simplified Development Plans (SDP) actually served as models for the Interim Planning Framework (IPF) and the BCP program. The following are a few outstanding examples of AFLC short-range plans:

(1) SDP

- (a) Tinker AFB OK
- (b) Kelly AFB TX

(2) IPF

- (a) Hill AFB UT
- (b) Robins AFB GA
- (c) Kelly AFB TX

c. The civilian guidance for comprehensive planning is reflected in the new AFR 86-4 Base Comprehensive Planning. In addition, the concept of zoning could be formalized and applied to the comprehensive planning process to enhance future development areas. The base facility panel actually performs the function of a civilian zoning or planning commission.

d. Deviation from the plan may in some cases be necessary or even desirable with mission changes or realignments. To prevent unnecessary or costly changes, the plan should be enforced by the facility panel and base commanders. We currently review each siting to ensure compatibility with the IPF.

e. The education of base personnel on the purpose and policy of the BCP should be a combination of involvement and classroom experience. Our people should be encouraged to become involved in facility and quality of life working groups to express the intangible organization and people needs of their respective units. Through direct involvement and participation, we can further improve the BCP and educate the Air Force member. The initial training of officers and NCOs should include the concept and principles of comprehensive planning.

f. The responsibility for providing a theoretical baseline to the commanders should lie with AFIT or any other educational institution. The instruction of practical applications should lie with the civil engineering community.

2. We hope these answers provide you the catalyst to further improve the DOD comprehensive planning program. We surely look forward to your guide. If we can be of further assistance, please feel free to contact my staff community planner, Mr Blevins, extension 74920.

FOR THE COMMANDER



DAVID M. CORNELL
Brigadier General, USAF
DCS/Engineering and Services



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS MILITARY AIRLIFT COMMAND
SCOTT AIR FORCE BASE, ILLINOIS 62225

12 JUL 1985

Major John R. Cole
AFIT/LSH
Wright-Patterson AFB OH 45433

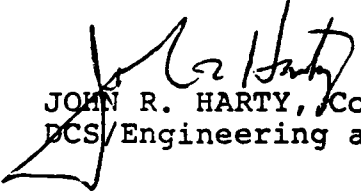
Dear Major Cole

I appreciate the opportunity to provide opinions on your thesis topic. Base Comprehensive Planning and its importance to the MCP process is a worthy subject and I applaud your selection of it.

I have found in MAC, and elsewhere in the Air Force, that programmers seldom plan. Those that do can do better. Your idea of a desk top "how to" guide for the planner/programmer is exciting and if you pull it off you will have performed the Air Force a great service.

I have attached my comments regarding your specific questions. Good luck.

Sincerely


JOHN R. HARTY, Colonel, USAF
DCS/Engineering and Services

1 Atch
Comments

1. Current DOD/AF guidance provides a framework for establishing a Base Comprehensive Planning (BCP) program. The AF regulation establishes the need, purpose, and content for the plan. Its shortfall is that the guidance for the plan document and drawings is not specific and leaves much room for interpretation. Additional guidance is necessary to ensure uniformity and continuity across the Air Force. With several commands/bases having A-E contracts for BCP, variation in BCP content and plan drawings is occurring. I would favor further development of the BCP requirements to achieve more standard Air Force BCP and drawings.

2. Most of our bases are developing BCP documents.

a. We have 16 bases. Of those, I would say only 3 or 4 BCPs fall in the "very good" category. Most of these have resulted from PAT visits. After the PAT visit, enthusiasm and understanding of the planning process has led planners and senior managers to continue the process. Consequently, those bases have a working plan which is used at all levels to make decisions. We think the PAT concept is valuable and have four visits scheduled this year.

b. We also have one BCP effort underway by contract. Scott AFB's BCP is scheduled for completion in September 1985. This entails a BCP document and several new plan drawings. The plan drawings will be computer produced from new aerial photography. We believe this document will be an effective tool in managing base growth and future development. Other MAC bases are being done in-house and are at varying stages of completion. Kirtland and Little Rock AFBs have excellent draft plan documents that once completed, should be an effective growth and development management tool. We have not evaluated whether the quality of the in-house work is comparable to the A-E work for the plan document. In either case, new base maps are needed for all our bases.

c. If nothing else, the publicity given to planning during the BCP process is important. At bases where comprehensive planning is known only to a worker bee in the Base Civil Engineers, we find gaps and conflicts. The planner must have access to the decision making and the decision makers must get involved with the planning. Where this does not occur, the BCP is not effectively used to manage growth and development.

3. I'm not convinced the civilian sector plans any better than we in the military, nor are their codes and planning guidance superior. However, community (basewide) participation is one important area where the military community can be involved in the BCP process. During and after the plan development stage, the draft plan should be briefed to various base organizations and groups for input and information. The more input sought will provide a broader base of support for plan acceptance. Overall, the BCP quality would be greatly enhanced.

4. Some deviation is inevitable and probably healthy. However, we can do some things to encourage "plan following" rather than "plan deviation".

a. The first thing to do is advertise. Brief the decision makers (command section, facilities board (FB), etc.). The FB is similar to a community's planning and zoning committee. It approves the BCP Long-Range Plan and sitings. This is to ensure sitings and facility location and design complies with the BCP. Actively involving FB members in the BCP process provides a mechanism for continuity and authority in managing the BCP.

b. One other effective technique is to place the BCP layout on the wall in the Wing/Base Commander's office. The intent here is to induce greater familiarity and for commanders to cross-check the impact of their decisions on the future development of the base.

5. Yes. I'm not sure you can start too early or ever stop the process. Certainly, PME such as intermediate and senior service schools, is an excellent opportunity to educate our middle and senior managers and I would increase emphasis there.

6. I think the entire engineering community bears some responsibility to educate, acquaint and influence commanders on BCP. The BCE through his periodic briefings will help. Interest focused during PATs or A-E studies will also. I also think it should be on the agenda for the base commanders' PME course. In short, appreciation of the value of planning is not likely to come from a single short course. All avenues, both formal and informal, must be used.



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS TACTICAL AIR COMMAND

LANGLEY AIR FORCE BASE VA 23066-6001

REPLY TO
ATTN OF:

DEEV

2 JUL 1985

SUBJECT: AFIT Thesis Topic

TO: AFIT/LSH (Major Cole)

1. We in TAC Environmental planning are interested in the outcome of your thesis. In response to the questions you asked in your 10 Jun 85 letter the following is provided:

a. We feel that the existing and revised DOD BCP guidance is pertinent, sufficient, and in balance for current and foreseeable future BCP taskings. AFR 86-4, Base Comprehensive Planning Program, along with our TAC Supplement 1 to AFR 86-4 establishes the policies, procedures, and responsibilities for the BCP program. The development of the Long Range (LRP) portion of the BCP is the basis for the BCP and is more dependent on a planners educational background, Air Force on-the-job experience, personnel creative skills, thought process, and available manhours rather than DOD guidance and policy alone. Our eyes and ears are always open for new technological developments and guidance for improving time and cost efficiency during the development of a BCP.

b. There are approximately four outstanding in-house and A-E developed LRP's and BCP's in our command. All BCP's are in the process of being updated in accordance with revised DOD BCP guidance and policy. More continuity among our commanders concerning the BCP program is insuring that the approved BCP's and LRP's are effectively used for future base development.

c. Since civilian codes and planning guidance may provide conflicting information with DOD guidance and policy, we do not recommend adoption. Our recently revised DOD guidance and policy is sufficient in setting the framework for present and foreseeable future base development.

d. Managers of the BCP can reduce the possibility of deviation from the approved plan by first insuring that the community planning program has a high priority and is managed full time. BCP managers must also strive for visibility, continuity, respond to BCP related needs, obtain broad base support, educate the commanders on the BCP process, and coordinate all planning efforts.

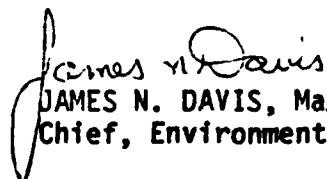
e. We are in the continuing process of educating personnel through Air Force and MAJCOM sponsored conferences and workshops, AFIT courses, and base level BCP briefings. This helps to ensure that existing and future base development is planned in accordance with the approved BCP to support both the people's needs and mission requirements. To be an effective planner you must be somewhat of a synthesizer, an advocate, analyst, a catalyst, generalist, politician, and communicator. First, an officer should gain the required experience as a 2nd or 1st Lieutenant assigned to the Environmental Planning Section at base level. The educational process will be continuous thereafter.

Readiness is our Profession

f. In commanders courses and orientation briefings, planning is presented only as an overview. Therefore, we believe that the BCE should be responsible for promoting the planning process with their commander and for soliciting strong support and interest.

2. Hopefully this information will be of use to you in developing your thesis. We are looking forward to seeing the results.

FOR THE COMMANDER


JAMES N. DAVIS, Major, USAF
Chief, Environmental Planning Division



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS STRATEGIC AIR COMMAND
OFFUTT AIR FORCE BASE, NEBRASKA 68113

REPLY TO
ATTN OF: DE

16 JUL 1985

SUBJECT: Base Comprehensive Plan Thesis (Your Ltr, 10 Jun 85)

TO: AFIT/LFH (Maj John R. Cole)

1. This letter is in response to your questions in subject letter.

2. With respect to USAF Base Comprehensive Plan (BCP) guidance, AFR 86-4 is current (Dec 84) and is both pertinent and useful in a general sense. The more refined guidance we think is necessary to provide enough detail for BCP work at SAC bases is in our Supplement to AFR 86-4.

3. Our Phase I BCP contracting program started Sep 83 representing the first attempt in the Air Force to produce both graphic tabs and narrative planning analysis as required by latest AFR 86-4. Judging by what we have seen thus far from the 12 SAC bases currently under contract, quality of work in both form and substance is excellent. More importantly, correspondence and other contacts with these bases indicate that the plans are being used and have a practical value at base level. We have tried to encourage this result by involving base management in the early plan development process. Meetings and interviews are held for the purpose of developing management input for the BCP. Once completed, the BCP is indorsed by base management.

4. The adoption of civilian codes and planning guidance, per se, doesn't have a great benefit for DOD. Unlike a civilian community, we manage and control all land and facilities within our jurisdiction and we have the single driving principle of supporting a military mission. This can be used to our advantage in planning if we acknowledge it as a planning goal. Our DOD planners have backgrounds in civilian planning guidance, so in most cases we can strive to develop the best possible mission support capability and achieve civilian community amenities as well. Three civilian planning concepts in particular, have a crossover benefit to the military. Grouping of functionally related facilities within a particular land use area can benefit managerial control, reduce loading and increase efficiency of base transportation network, and reduce other operational costs associated with widely spread functions. Orientation of land use areas in relation to each other on a base can control unwanted impacts for certain types of facilities (noise impacts, visual impacts, explosive and

other safety impacts). Finally, the reservation of certain land areas for specific future development, including gradual demolition of unsatisfactory facilities and the relocation and collocation of functions, can posture the base for any possible mission realignments.

5. Yes. Upon completion of the BCP, it becomes the continuing duty of the community planner/DEEV to keep base management informed of the existence and function of the BCP. This is done primarily through the community planner reviewing new facility sitings against the BCP and reporting to the base facilities board. A good plan will derive specific facility development recommendations out of a series of well-established planning goals and objectives. If the manager of the BCP sees that a specific recommendation becomes unacceptable to base leadership at some point in time, his first step should be to "back off" to the goals and objectives driving that recommendation to look for another alternative which best meets all criteria. In this way, the plan remains flexible and ill-considered deviation is discouraged. With the approval of each BCP by SAC goes delegation of siting authority if sitings conform to plan. This serves as a positive incentive to site facilities properly and encourages use of the BCP by decentralizing development decisions and making base leadership more "responsible" for sensible facility development. An added inducement is SAC/IG emphasis directed by CINCSAC/CS and aimed at improving long-range focus of the bases.

6. Yes. Education of key personnel at all levels on base is crucial to the success of this program. AFIT now provides courses for young officers in this general area (Course Nos. 420 and 520). However, there is much to be gained from more specific BCP related training for young officers at AFIT. The Air Force Academy has a core course called "Air Base Planning and Design." The content of this course has been steadily shifting more and more emphasis to the comprehensive planning aspects of air base development. The cadets are now required to do a semester project involving the planning, programming, and design of a hypothetical mission beddown at a real Air Force base. We have been assisting the Academy by providing current BCP products, and will provide computerized data bases, when available, as the Academy has the capability to utilize this data on existing CADD systems.

7. All echelons are responsible for the BCP education of Commanders. At base level it is the community planner's job to brief new commanders regarding the existence and function of the BCP (at some bases the departing commander has been a great help here). Most MAJCOMs also provide briefings to commanders during visits. Training should be and is provided both as

formal training courses (AFIT) and as part of commander's orientation. Orientation at MAJCOM may be of most benefit because of the additional emphasis that can be provided.

8. Hope this meets your needs. Best of luck on the thesis.


RAY D. SCHWARTZ
Colonel, USAF
Deputy Chief of Staff
Engineering and Services

Appendix F: Network Analysis Example

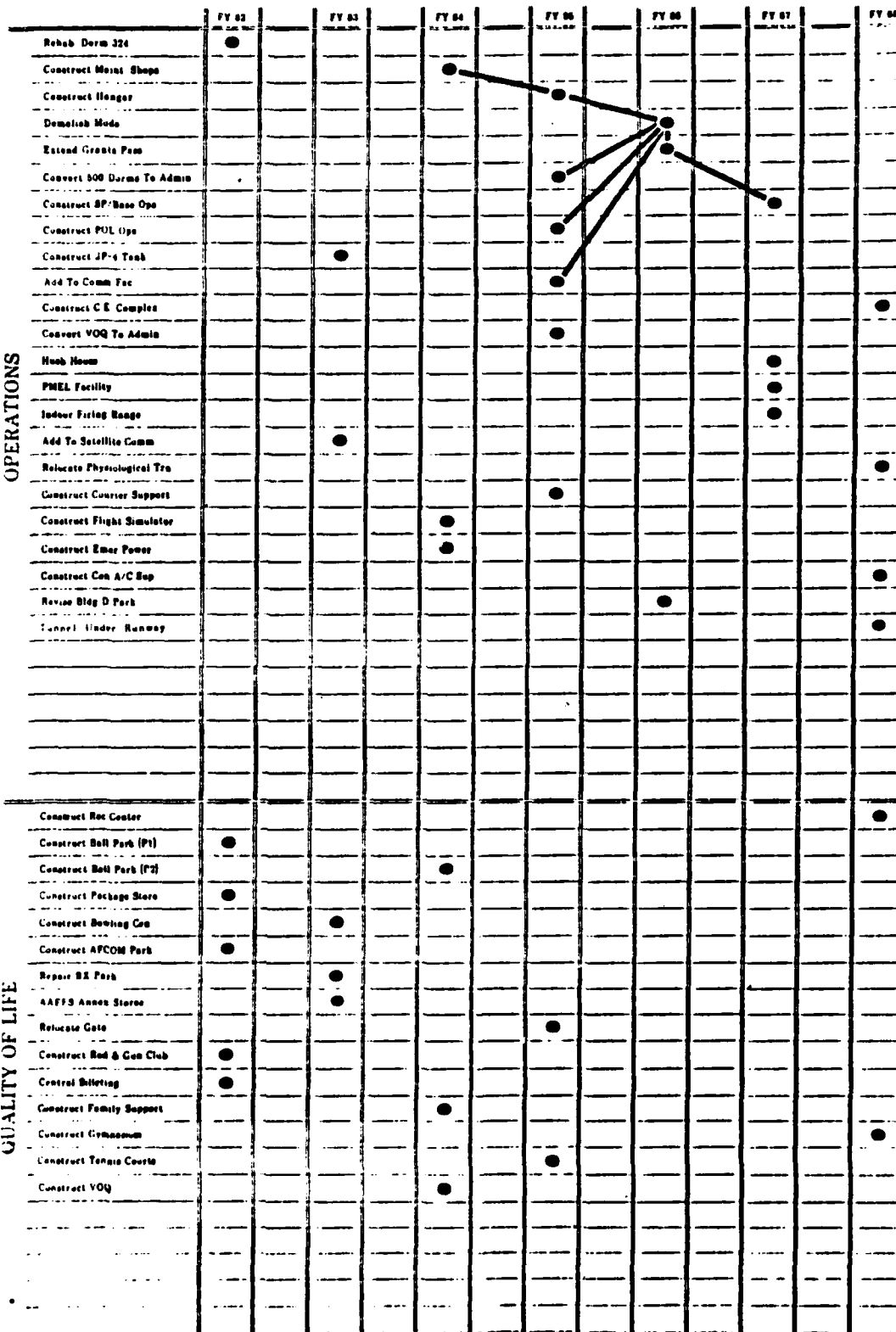
Using Simplified Network Analysis Techniques to Manage Planning and Programming

Most engineers and architects are familiar with the use of Network Analysis techniques to manage construction. The most famous techniques, Critical Path Method (CPM) and Program Review and Evaluation Technique (PERT) have been employed for more than 20 years in construction management. Amazingly, network analysis is seldom used to assist in project planning or programming. If these techniques were employed in a very simplified form, every person reading the BCP 's summary would be able to identify the impact of one proposed project on other future projects.

Network analysis in its simplest form is a chronological ordering of events that are dependent upon one another. If event A's start date is delayed by 90 days and event B cannot start until event A is complete, then the logical assumption is that event B will start and finish 90 days behind the estimated schedule. This same logic applies to Military Construction Program projects. Many large initiatives, such as the B-1, require numerous MCP projects for beddown of the new system. Many of these projects are interdependent upon each other. Failure to receive appropriation for one project may delay the operational date of the weapon system. Close observation can provide the planner and programmer with alternatives. The accompanying chart demonstrates a simple method of showing dependence.

PROGRAM PHASING

OPERATIONS



QUALITY OF LIFE

Program Phasing Plan FY 82 / 88
Offutt Air Force Base, Nebraska
March 1982



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VITA

Major Cole graduated Memphis State University in 1972 with a Bachelors of Science degree in Architectural Engineering Technology. Upon entering the Air Force in 1973, he was assigned to Francis E. Warren AFB, Wyoming as Deputy Missile Combat Crew Commander in the Minuteman missile system. In 1976, Major Cole became the Architect/Engineer for Fairchild AFB, Washington. His next assignment was to Kwang Ju Air Base, Korea as the Base Civil Engineer. Upon returning to the United States, Major Cole was assigned to the Strategic Air Command Headquarters as the Chief of Operations and Maintenance Program Branch. He later became the Chief of the Program Development Division. In 1983, Major Cole became the Chief of the Readiness Division for the DCS Engineering and Services, Strategic Air Command. In 1984, Major Cole was reassigned to the Air Force Institute of Technology.

Major Cole is a member of the Society of American Military Engineers, Sigma Iota Epsilon, and was chosen as one of the Outstanding Young Men of America in 1982.

He is married to the former Patricia Ann Craig and they have a son, David, and a daughter, Sarah.

Permanent address: 2002 Corning Ave.

Memphis, TN 38127

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This thesis provides programmers and planners guidance on the development of a base comprehensive plan to manage military construction. The guidance contained here should enable the novice planner to outline the requirements of a comprehensive plan and locate some of the information sources necessary to complete the plan.

Historically, the military has done little to manage the development and growth of its bases and to anticipate the growth and infringement of surrounding communities. In the 1950's the first efforts of master planning began to improve the function of military bases. However, progress in developing comprehensive plans to address the total spectrum of base/community problems has been slow. Only in the last decade has real progress been made in establishing base comprehensive planning as a managerial tool to aid commanders in determining the future of base development.

In addition to providing an outline for the development of the base comprehensive plan, this thesis researches the acceptance of comprehensive planning by the leaders in Air Force Civil Engineering. The research on acceptance is designed to determine the creditability that comprehensive planning has established at the MAJCOM level.

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