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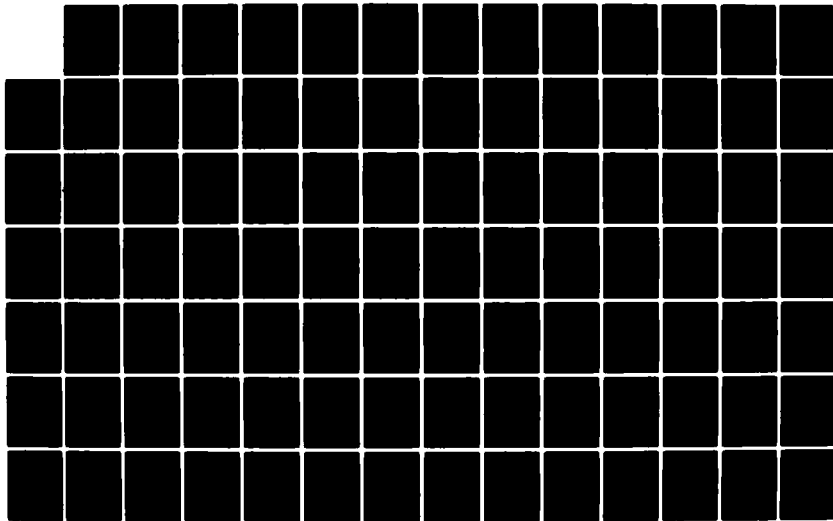
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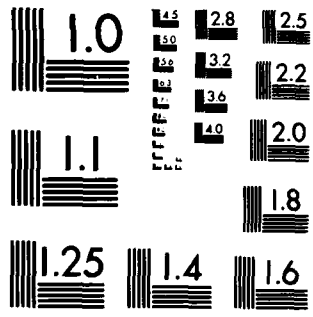
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GEOGRAPHIC PERSPECTIVES ON THE RELATIONSHIP
OF AIR FORCE BASE REALIGNMENTS TO RURAL
COMMUNITY WELFARE IN THE UNITED STATES

by

Stephen Franklin Burrell

A Dissertation submitted to the faculty of The University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Geography.

Chapel Hill

November 15, 1982

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STEPHEN FRANKLIN BURRELL. Geographic Perspectives on the Relationship of Air Force Base Realignment to Rural Community Welfare in the United States (Under the direction of STEPHEN S. BIRDSALL.)

Small towns in rural locations expect socioeconomic trauma when military bases in their hinterlands are closed. The purpose of this research is to learn how three small communities were affected by closure of their adjacent Air Force bases and to explain the role played by location as an influence on community revival efforts after base closure. Explaining socioeconomic relationships between the host community and its nearby military base was an inherent part of the study.

The towns of Presque Isle, Maine; Glasgow, Montana; and Moses Lake, Washington, were selected for geographic analysis. They were chosen because of their rural location, common dependency on agriculture for economic livelihood, similarity of military missions and because each town lost its military base between 1960 and 1970.

Discovering the effects of base closure on the three case study communities was made tractable by using several geographic methodologies, including aspects of central place theory, "economic health," population potential, political geography, the community growth and economic development model and ideas related to aberrant location decisions. Data for locationally analyzing each community were collected from federal, state and local statistical sources, from Department of Defense records and from field interviews conducted in each location in August 1977.

Elements of the Air Force base realignment process are described; the site and situation of each community is discussed; the economic health of case study communities before and after base closure is compared to that of other communities of similar size and location; detailed

socioeconomic effects of base closure on each community are presented; and the influence of location on each community's strategy for revival is explained.

This research produced several conclusions. Recognized indicators of community welfare show that case study communities were no different before or after base closure than other rural communities of comparable size; community perceptions of decline were more severe than the actual decline that did occur; location and local resources were observed to play an important role in community revival efforts; and community socioeconomic viability was more dependent on hinterland agricultural activity than on continuing existence of the nearby Air Force base.

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CHAPTER I

ELEMENTS OF THE AIR FORCE BASE REALIGNMENT PROCESS

Defense of our nation is a complicated, demanding task. Provision of a strong national defense requires large inputs of people and resources and efficient allocation of federal tax dollars. The Department of Defense (DoD), monitored by Congress, must wisely manage these items in an effort to give our nation the best possible defense for the quantity of resources expended. Part of this DoD management process is the continuing military base realignment program made necessary by changing defense requirements. Realignment means either closing a base or changing its assigned mission (people and equipment must be moved) by an increment large enough to have some effect on the local community which hosts the base. Realignment or deactivation of a military base is a locational decision; it involves coordination between many levels of government, causes movements of people, requires careful consideration of geographic factors, generates possible changes in local socioeconomic conditions and land use adjacent to the affected base, and in most cases, allows a reduction in cost to the Department of Defense. Ultimately, it offers a savings to the taxpayer.

Much effort has been spent trying to determine community changes associated with base realignment decisions, but little attention has been paid to the influence exerted by geographic factors, such as site and situation, on the community as it seeks to cope with base closure.

The purpose of this study is to address base realignment problems from the locational point of view using methods of analysis provided by the discipline of Geography. Three case study communities will be examined. The study will focus on how the community is affected by the base closure cycle and how closely tied to the community the military base seems to be; how community relative location can be measured; and how well the community, endowed with its own particular set of geographic characteristics, can reuse its location for non-defense activities.

Reasons for Base Realignment

The process leading to closure of a military base has grown more complex because the required sequence of events leading to base closure is now more open to public scrutiny than ever before. Congress desires economy from DoD, but communities affected by base closures fear for their future viability. This situation naturally produces conflicting views and opinions among those directly involved in the base closure decision. The following statements illustrate the dilemma DoD faces in making base realignment decisions.

If the Department of Defense does not make substantial reductions of manpower in headquarters and support activities in the coming months, the Armed Services Committee will be compelled to take more stringent action next year to achieve some results.¹

The Big Spring community will suffer considerably should Webb (Air Force Base) close. In addition to the loss of revenue for local firms, property values will decrease, rental property will be vacated, schools will be forced to close, hospital staffs will lose competent employees (in the form of military/civilian dependents).²

. . . The people of Aroostook County are devoutly patriotic; they believe that a strong national defense is indispensable to the preservation of liberty and freedom in our country and throughout the free world. They have responded to the military needs of this country and have helped to nourish and sustain a vital element of our national defense--Loring Air Force Base. They have built schools to accommodate the children of military personnel. They

have constructed stores and stocked inventories to supply the needs of the base. They have left farms to engage in civilian support work for the base. They have built a community and an economic network to make Loring one of the finest Strategic Air Command bases in this country. And they are not going to be elated with any decision that destroys in a matter of weeks and months what they have labored a lifetime to build . . .³

Why is it necessary to realign our national military base structure? Several reasons can be given for military base realignments; changing military requirements accompanying the decreasing share of the federal budget received by the Department of Defense is a basic reason. From 1960-1975, more emphasis was placed on federal funding for domestic social programs than for national defense.⁴ In 1964, defense outlays alone accounted for 41.8 percent of total federal outlays; by 1977, this figure had declined to 23.7 percent; in fiscal year 1980, defense outlays constituted 23.1 percent of total federal outlays.⁵ As a result of this trend in federal spending, DoD must more stringently balance competing resource demands within the overall defense program. Base realignments can help solve the problem of competition for scarce resources by making funds previously required for base support available for other defense programs.⁶ The shift during some administrations toward more federal spending for domestic social purposes than for defense programs, in addition to congressional desire for increased economy within the Department of Defense, has had considerable influence on the number of DoD realignment proposals in recent years.

Costs associated with operating and maintaining Air Force bases have also increased as inflation has taken its toll.⁷ DoD operations and maintenance costs for fiscal year 1964 totaled \$11,693 million; in fiscal year 1972 the figure was \$21,242 million; and in fiscal year 1979, operations and maintenance costs had risen to \$38,085 million.⁸ Base

streets and buildings must be maintained, and base utility bills must be paid regardless of the type or level of mission activity the base supports. In most cases, operations and maintenance costs for an Air Force base may be compared to the annual budget required to run a small town for a year. For example, operations and maintenance costs for Peterson Air Force Base in Colorado Springs, Colorado, were slightly over \$24 million in 1978. In 1979, these costs had risen to \$25,388,000.⁹ Peterson Air Force Base provided employment for 4,556 military and 1,510 civilian personnel in 1979.¹⁰ In addition, some bases are simply more expensive to operate than others because of varying local climatic conditions. For instance, snow removal equipment and increased base heating costs must be borne at bases along our northern border. Depending on the relative operations and maintenance costs among different bases, some bases may become more likely candidates for closure than others. The consistent increase in operations and maintenance costs is another reason why DoD and the Air Force advocate closure of some of its bases.

Weapons systems obsolescence and changes in weapons systems designed to counter various threats are definite influences on military base structure. Base realignments can be expected to occur when weapons systems no longer possess utility. The historical structure of Aerospace Defense Command illustrates this situation. During the 1950s, the primary threat to our nation was a force of enemy bombers. To counter this threat, the Air Defense Command, as it was called in 1957, reached a peak strength of 69 fighter interceptor squadrons, 1,500 aircraft and more than 100,000 people dedicated to the air defense mission. In the 1960s, defense against enemy missiles rather than bombers became the priority mission of Aerospace Defense Command. At the expense of oper-

ational fighter squadrons, defensive systems to warn against ballistic missile attack over the North Pole were installed. The demise of the fighter role in our air defense strategy is exemplified by a few statistics: Aerospace Defense Command currently deploys only six active duty F-106 fighter interceptor squadrons to guard against an attack by manned bombers. These six squadrons are augmented by interceptor aircraft from Tactical Air Command and ten Air National Guard fighter squadrons. The change in Aerospace Defense Command weapons system structure caused by the threat of intercontinental ballistic missiles is a good example of base realignments made necessary by reasons other than traditional cost considerations.

Even though the major Air Force commands are assigned separate missions, some duplication of responsibilities, capabilities, and management may occur. Attempts to reduce duplicate functions sometimes triggers the need for base realignments. Tactical Air Command and Aerospace Defense Command both have a prime responsibility for operation of defensive fighter aircraft, and both commands operate surveillance and control radar. Similarly, both Strategic Air Command and Aerospace Defense Command have experience with control of space vehicles and are involved in space activities. Functional overlap among these three commands is the current basis for the elimination of Aerospace Defense Command and allocation of some of its resources to the two surviving larger commands. The base realignment process is inherently a part of reorganization among major air commands.¹¹

Changing geopolitical perceptions and international relations can also influence the need for military base realignments. After the end of U.S. involvement in the Viet Nam war, it was no longer necessary

to train aircrews at the wartime rate. Aircrew training decreased, and some training bases were closed. Apparent perception at policy making levels of our government of a lessening Chinese threat has also influenced the number of bases we maintain in the Far East. Concomitantly, we have become increasingly committed to revitalization of NATO. Our national interests in the Middle East also demand that we be ready to react in that volatile zone of international tension. International events may generate changes in the structure and number of our military bases at home and abroad.

International agreements and treaties may also affect the distribution of military bases. The SALT I agreements resulted in cancellation of the Safeguard Anti-Ballistic Missile program for which twelve sites were planned. Some ABM sites were already under construction. In this case, base realignments occurred before planned bases ever became operational.

Reaction to Proposed Base Realignments

Justification for base realignment is usually understood and accepted by all parties involved except for the group, community, congressional district, or politician directly affected. The community which hosts an adjacent military base perceives base closure to be a negative event. Because base closure is a function of an agency (DoD) serving the public interest, citizens in the host community have a voice (the community's elected congressional representatives) through which community opposition to base closure can be made known. When community opposition expresses itself through political channels, the base realignment is viewed in a context different from that of DoD.

Operation in a political environment causes changes in the otherwise orderly and analytical sequence of events leading to the base closure decision. A threat/response type of atmosphere develops; tactics designed to stop realignment action are employed, public hearings are held, many types of data are collected and exchanged, lawsuits erupt, many federal agencies other than DoD may become involved, and much money is expended. Powerful political influence is exerted during the "politics versus economics" phase of the decision-making process; the political factor may be strong enough to cause a significant "detour" in the reasonably straight economic road leading to realignment decisions. Base closures involve much more than simply evaluating valid economic reasons that may set the process in motion.

Planning Factors Influencing Base Realignments

The rationale for base realignments has been briefly explained. How the process works, along with some recent changes affecting the process, should also be discussed to provide complete understanding of the locational decision.

Air Force realignment actions begin inside the Pentagon as Air Force planners continuously strive to balance Air Force resources with Air Force commitments to meet present and future worldwide threats. Such activity results in the selection of bases which are possible candidates for realignment or closure. The selection of these bases is limited to a few locations around the country, and it is this locational decision, made by Air Force planners, that will affect the landscape at a specific place. Plant location decisions usually involve choosing the best site that will satisfy a given set of locational requirements.

The base realignment process differs from this traditional approach because the spatial array of bases is already fixed by previous locational decisions. The Air Force problem is one of adjusting this fixed array to provide the best national defense for the country.

Many variables are considered. Air Force operational and training requirements are possibly the most important variables. Within the suite of operational/training requirements, such items as strategic offense, defense, and airlift are taken into account along with logistics, force deployment, and capabilities of the Air Reserve forces. Other important variables are future flexibility of forces, manpower/facility availability, and proximity of related Air Force functions. Air Force planners must balance the relative importance of these variables against budgetary constraints. If required, candidate bases for realignment are chosen and recommendations are reviewed by a number of agencies internal and external to the Pentagon, including the Vice Chief of Staff and Chief of Staff of the Air Force, the Air Force Secretary of Installations and Logistics, the Secretary of the Air Force, officials at Department of Defense level, possibly the White House, and Congress. Before reaching the highest level of DoD officials, extensive review of proposed realignment action will have been accomplished by concerned Air Force planning offices as well as the major air commands involved. A stormy path is traveled as a realignment proposal makes its way through the Pentagon.

Recent Changes in the Base Realignment Process

Prior to the 1960s, decisions on which bases to deactivate were internal to the Pentagon. Word was relayed to Congress, and DoD

retired to await the imminent "blast from the Hill." Gates to the base were "padlocked," and the closure process was essentially completed. During the Kennedy administration, Secretary of Defense McNamara did little to change this procedure. In early 1961, McNamara announced closure or reduction of 52 installations without notification of congressmen whose districts would be affected. Many congressmen were caught unaware while in their districts on Easter recess. Congressmen thus embarrassed expressed desire for advance notice from DoD before closure announcements were made. Little progress along these lines was made, however, and McNamara's timing of base closure announcements and the equitability of base closure distribution among states continued to be questioned by members of Congress throughout his tenure as Secretary of Defense. Legislation was passed in 1965 requiring DoD to inform Congress 30 days before DoD took any base closure action; also it was proposed that any base closure plans be submitted to Congress for review while Congress was in session.¹² Through these measures, Congress forced the base closure process to become somewhat more open, but DoD remained the dominant force in selection of installations for deactivation and in implementation of closure actions.

Compliance with the National Environmental Policy Act (NEPA) of 1969 caused significant changes in the previously rather cloistered base closure process. NEPA requires the environmental consequences of any "significant" federal action to be reported to the Council on Environmental Quality (CEQ) established by NEPA.¹³ Base realignments are often considered in the "significant" category and therefore require a report to the CEQ in the form of an environmental impact statement (EIS). Public hearings are an integral part of most environmental impact pro-

cedures and definitely are part of any EIS related to base realignments. The public hearing mechanism and the whole set of EIS procedures, plus the volume of data necessary to generate an EIS, have also functioned to make DoD's base realignment decision more open to the public.¹⁴

Events leading to an EIS begin with an environmental assessment which highlights possible impacts on the human environment in the area where a base may be closed. The goal of an environmental assessment is to determine whether or not a base realignment action constitutes a major federal action. If so, then an environmental impact statement must be executed. The draft environmental impact statement winds its way through the Pentagon and is subsequently rendered to the public and to the Council on Environmental Quality for a 45-day review. Draft statements contain much information on socioeconomic and physical environmental changes that might be precipitated by base realignment. Evaluation of these data by public interest groups are voiced in required public hearings where officials and citizens from the national to the local level get involved. At this juncture, litigation against DoD may occur contesting the propriety and accuracy of the EIS. Such litigation is used as a delaying tactic against base closure but generally does not result in reversal of the base closure process. After public review, the final environmental impact statement is filed, and another waiting period ensues before any action can be taken. During this sequence of events, several opportunities exist for the public to "air" information that was formerly held quite closely by the Pentagon. No longer can the Pentagon make internal decisions, close the gates to an Air Force base and simply walk away as in the McNamara era. However, the Pentagon still "proposes" which bases to close, the Pentagon probably has a

reasonable idea which bases it will deactivate when closure proposals are released, and the public still has no direct link to Pentagon pre-proposal base closure planning. On the other hand, the environmental impact statement has provided the public with a powerful means for "having its say."

Help for the Realignment Community

Achievement of a Pentagon base realignment decision heralds a different set of activities for the affected community. During this final phase of the realignment process, the community must cast aside efforts to stop realignment action and begin adjusting to loss of the military base. Fortunately, the community does not have to face this problem alone. The widespread defense realignments of the 1960s spawned an agency within the Office of the Secretary of Defense called the Office of Economic Adjustment (OEA). Secretary McNamara established OEA in May 1961, to advise communities affected by base realignments on matters of local economic recovery. OEA also serves as the base closure community's focal point in Washington.¹⁵ OEA functions like an industrial development/intergovernmental relations/grant advisor-expediter/ombudsman organization, performing all these tasks under the umbrella of presidential blessings.¹⁶

OEA's mandate is to help the community help itself, and OEA assists only those communities that request economic recovery assistance. Many small communities do not possess the professional talent required to generate economic recovery plans and the necessary organizational structure required to implement these plans. OEA uses a team of federal professionals working with local officials to meet these community needs.

The economic adjustment process begins with a request for assistance from officials in the impacted community to the Secretary of Defense or to the Assistant Secretary of Defense for Installations and Logistics. At this time an organizational/information phase is set in motion as OEA helps the community get organized for the task of economic recovery. The next phase is devoted to planning development strategies to overcome economic losses attributed to base closure. OEA assistance during this phase usually takes the form of providing technical expertise in collecting and analyzing data used in formulating economic recovery plans. OEA member agencies often perform this task. Community resources and deficiencies are analyzed, and a plan for economic recovery is devised.

Another major function of OEA is helping impacted communities secure surplus DoD property for use in the economic recovery effort. Infrastructure left behind by a closed military base can be valuable to community recovery efforts, especially if much of this property can be acquired before it begins to deteriorate. Disposal of excess DoD property is managed by the General Services Administration, but the sequence of events between base closure and DoD property becoming available for community use is quite complex. OEA's job is to insure that the right actions are taken on behalf of the community at the right time in order to expedite the exchange of property between GSA and the community.¹⁷ Local leaders have the responsibility for success of economic recovery efforts, but continuing liaison with OEA exists until the community no longer feels the need for help from OEA.

These comments outline only a portion of OEA activities. Following the steps in the base closure process and understanding interaction

between the numerous actors involved is difficult at best. Appendix 1 offers a base closure schema which is designed to visually simplify the complexities of the base realignment process.

Base/Community Relationships

Until the community hears of possible changes in the status of its nearby military base, few local citizens bother to consider base/community socioeconomic relationships. Most Air Force bases have been established long enough for the base to be perceived as a permanent part of the host community. Dollars flow into the community from civilians working at base jobs, from military contracts fulfilled by local sources, and from expenditures by military personnel for local goods and services. Depending on levels of base/community interaction and the abilities, quality, and interest of municipal government and business organizations, the community may or may not have a quantitative grasp of base contributions to community socioeconomic welfare. Indeed, most small communities have never recognized such a loss could occur and have never felt any need for such information. The attitude of "taking the base for granted" does little to cushion the psychological shock suffered by the community when a possible base closure is first announced.

Communities are most sensitive to possible economic losses incurred by base closure, but base/community relationships take many other forms. Many military people are truly an integral part of their host community through home ownership, membership in church, educational, and civic organizations, and participation (by voting) in municipal matters. Community and base officials participate reciprocally in local and national holiday events. Community and military law enforcement agencies are mutually respected. Military students attend community

schools, which receive federal remuneration for military enrollments. The military can obviously be expected to assist the community should natural disaster occur. Military dependents find many forms of employment in the civilian community. Some dependents may possess unusual medical or educational talents which become an asset to the community. Local merchants sometimes show their appreciation for the military by sponsoring annual picnics or other forms of entertainment for military personnel. The local Chamber of Commerce often has a military affairs committee. The base and its host community may have mutual fire protection agreements. In some cases, the municipal airport and the Air Force base share the same facilities for aircraft operations. In the small community or rural setting, the base/community relationship is much like two small towns separated by a short distance interacting with each other. However, the functions of the two "towns" are drastically different. In addition to performing various service functions for the base and its personnel, the host community has a hinterland which it also serves. In contrast, the base is capable of operating on a self-contained basis and has no hinterland in the traditional sense of a service center. The base population may be larger than that of the host community, but most interpersonal contact between base personnel and the community occurs inside the community. Certain situations, such as a military exercise, may cause base/community interaction to cease altogether for brief periods of time.

This general description of base/community relationships illustrates the nature of noneconomic ties that may exist between the two entities. The strength of these ties varies from place to place. At the time base realignment is announced, the community and the base

possess several ties, but the local populace assigns varying levels of importance to the impending closure according to the type of relationship involved. Economic relationships between the community and the base are perceived to be the most important.

When the host community learns of possible base closure, the socioeconomic importance of the base seems to increase in magnitude. Studies are made of base economic contributions (dollar flow and employment) to the community, and the community becomes increasingly informed through local media about what base closure may mean to the community. The level of anxiety may be increased if the community is dependent basically on a single alternative economic activity, such as agriculture, for its livelihood. Typically, the affected community is unable initially to imagine anything but imminent community decline.

Communities react to the base realignment announcement by questioning the validity of the decision, by expressing anger at having to bear undue hardship because of a decision over which the community had no control, and by expressing genuine concern for the weakening effect base realignment may have on the nation's total defense posture. Armed with updated knowledge of base economic importance to the community, another reaction is to try to "save the base" through legal or political methods. Questioning the validity of the required environmental impact statement may be one of the methods employed. Once these tactics are exhausted, communities usually acquire a positive attitude and shoulder the task of overcoming loss of the military base by taking advantage of the many forms of planning and assistance available to them.

Communities facing base closure fear population loss in the community hinterland. Local unemployment rates are expected to rise;

retail and service businesses anticipate loss of revenue; housing vacancy rates are expected to rise while individual home values decline; local school systems forecast teacher unemployment and educational program adjustments because of lower enrollments; municipal taxes are expected to increase in order to support a fixed level of municipal services. Every individual has his own ideas about the effects of base closure, but the citizenry is united by feelings of resentment against the action.

Some community socioeconomic components will experience decline after base closure because fewer people are available to support these components. Community apprehension about future status of these functions is justified. School enrollments will drop, housing vacancy rates and values usually follow the expected pattern, local business volume decreases, and teacher employment drops to a lower level in proportion to school system enrollment. Other elements of community structure may not be affected at all even though decline is anticipated. The magnitude and duration of decline in community socioeconomic conditions depends on many factors such as community growth patterns independent of the military base, levels of use of available economic resources, community attitudes toward recovery efforts after base closure, and geographic location. Each base closure community experiences a different set of circumstances associated with base realignment because of differences in community geographic and socioeconomic conditions.

For most communities, the base closure cycle follows an established pattern. A base is announced as a possible candidate for realignment, the host community reacts, efforts to stop the action run their

course, closure occurs, changes (positive and negative) in community socioeconomic welfare become apparent, recovery efforts begin, and the community reaches a new level of welfare related to the individual community's set of socioeconomic conditions, site, and situation. As a general rule, communities do not "die" as a result of base closure; in many cases the experience can have positive community effects.

Summary

Basic elements of the base realignment process have been outlined to help the reader understand how these complex locational decisions are made. It is also important to understand how these decisions become volatile when they are transposed to specific locations that must function within a given set of geographic characteristics. Without this introduction, it would be difficult to explain community reactions and socioeconomic changes that accompany the base realignment process. Using the tools of geography and a case study approach, the thrust of this research is designed to explore what actually happened in three small, rural communities that have experienced the base realignment cycle.

Footnotes

¹Honorable John C. Stennis, Chairman, Senate Armed Services Committee, to Secretary of Defense, December 3, 1973.

²U.S., Department of the Air Force, Record of Informal Public Hearings, Big Spring, Texas, 4 November 1976, Volume II, p. B-279

³U.S., Department of the Air Force, Record of Proceedings, Hearing for Informal Public Comment on Draft Environmental Impact Statements, Limestone, Maine, November 17-18, 1976, pp. E-30-31.

⁴Patrick A. Martinelli, ed., National Economic Policies and Issues (Washington, D.C.: The National Defense University, 1975), pp. 149-151.

⁵U.S., Department of Defense, Annual Report, Fiscal Year 1980, p. 21.

⁶An example of the magnitude of savings from base realignments is illustrated by the following statement taken from the Department of Defense Annual Report: "In the past several years, major base realignment decisions have resulted in the elimination of approximately 6,200 military and civilian positions and an estimated reduction in costs of \$100 million." Ibid., p. 271.

⁷The problem of inflation was addressed by the Secretary of the Air Force in a recent policy letter in which he stated: "Our budget is down 40 percent in real purchasing power. Because of this sharp decline in buying power, we have taken a number of actions to streamline our operation." U.S., Office of the Secretary of the Air Force, Air Force Policy Letter for Commanders, 1 November 1976.

⁸U.S., Department of Defense, 1980 Annual Report, Appendix A, Table 1, p. A-1.

⁹Interview with Mr. Wilbur C. Flewellen, Budget Officer, Peterson Air Force Base, Colorado, 18 July 1979.

¹⁰"Major Active Air Force Installations in the U.S.," Air Force Magazine, May 1979, pp. 151-159.

¹¹U.S., Congress, House, Committee on Appropriations, Department of Defense Appropriations for 1979. Hearings before a subcommittee of the Committee on Appropriations. 95th Cong., 2nd sess., 1978, pp. 314-316.

¹²Quotes from Mr. McNamara illustrating his position on defense installation adjustments are found on page 406 of Thomas P. Murphey, Science, Geopolitics, and Federal Spending (Lexington, Mass.: Heath and Co., 1971), Chapter 13. Also detailed are congressional rebuttals to McNamara's base closure policies and accounts of battles between

Congress and Presidents Kennedy and Johnson concerning executive versus legislative authority over military base closures.

¹³ Congress has seen fit to make specific references to NEPA requirements and base realignments in the U.S. Code, Title 10, Section 2687. Section b states: "No action described in a subsection (a) with respect to the closure of, or a realignment with respect to, any military installation may be taken unless and until . . . (2) the Secretary of Defense or the Secretary of the military department concerned complies with the requirements of the National Environmental Policy Act of 1969 with respect to the proposed closure or realignment." National Environmental Policy Act of 1969, U.S. Code, Title 42, section 4321 (1970). Public Law 91-190, Jan. 1, 1970, 83 stat. 852. Sec 102c.

¹⁴ "Since these statements whenever possible will be made available to the public, it must be assumed that they will receive careful scrutiny." U.S., Secretary of the Air Force, U.S. Air Force Regulation 19-2, Environmental Assessments and Statements. Attachment 2, 22 November 1974, p. 9.

¹⁵ John E. Lynch, Local Economic Development after Military Base Closures (New York: Praeger Publishers, 1970), p. 23.

¹⁶ The following quote by Richard Nixon is illustrative: "On March 4, 1970 I established the Interagency Economic Adjustment Committee to assist individuals and communities that suffer adverse economic impacts as a result of necessary Defense realignments. I now intend to strengthen the Committee's efforts and expand its membership." Excerpt from White House Memorandum dated April 6, 1973, to heads of 17 federal departments and agencies.

¹⁷ Community acquisition of federal property is more accurately detailed on page 29 of the monograph entitled, "Impact on Defense Cutbacks on American Communities." U.S., Department of Defense, The Impact of Defense Cutbacks on American Communities (Washington, D.C.: The President's Economic Adjustment Committee, 1973), pp. 29-36.

CHAPTER II

LOCATIONAL ANALYSIS AND THE BASE

REALIGNMENT PROBLEM

Geography as a discipline seeks to explain where and how various distributions appear on the earth's surface, and proper geographical analysis provides knowledge that leads to better understanding of the dynamics and relationships peculiar to the distribution being studied. Locational analysis is the application of the geographic perspective to problems that are observed in particular places and which result from both local and external circumstances. Locational analysis involves viewing the selected place as a function of its site and situation in conjunction with those attributes of geography that are found in the local area, such as its physical geography or local economic conditions.

The phenomenon of base realignments lends itself very well to locational analysis because the national pattern of military bases is constantly being adjusted, which in turn leads to changes at specific locations throughout the country. The base realignment problem is one of proper allocation of resources among several possible alternatives, with the consequence that change is exhibited at one or more locations in the total distribution. National reallocation of resources affects local conditions. One town's economic health may decline while another's is enhanced; visible changes in local land use can be anticipated, and

respective local landscapes are left changed as a result of a national locational decision.

Scale and Base Realignments

In any attempt to explain base realignment decisions, consideration must be given to relative location at both the national and local scale. Relative location becomes important at the national scale because the distribution of nations considered threatening to our national security determines the positioning of forces designed to respond to such threats. The pattern of external threats may change with shifts in international alliances, with redefinitions of our national interests, or with changes in weapon systems fielded by our enemies. The location of our country must be viewed in a dynamic rather than static international context, and the dynamics of our international relative location ultimately affect specific internal locations as changes are made in the distribution of our military bases.

When viewed from the individual community perspective, relative location acquires a set of characteristics quite different from those considered important at the national scale. Base realignment decisions affect specific locations which possess particular geographic characteristics of site and situation. The affected location operates within the context of a given set of physical conditions, such as climate and soils, that may influence the pattern of human activity. The affected community also comes equipped with its own set of human and economic conditions, many of which are a function of location. Specific resources and markets are available to sustain a human population whose cultural attributes influence what is thought to be the proper employment of available resources. Though a specific location is affected by

base realignment decisions, that location operates relative to its hinterland and a larger system of towns and cities. The regional urban network is an interactive system in which events affecting parts of the system produce changes in the total regional system and in which the general welfare of the regional system affects its respective parts. Community relative location is fully as important as national relative location, but in a different context. The base realignment problem is a classic case reflecting the importance of scale because the matrix of factors which must be weighed depends on whether attention is given to the national or local focus.

Because base realignments present problems that are a function of location, the geographic components of location must be inventoried and assessed (a part of the process of locational analysis). A partial inventory of these components would include site, situation, physiography, economic resources, population and labor force characteristics, transportation facilities, the local economic climate and community attitudes. Not only does the status of these community attributes have to be considered, they must be determined with the idea of community relative location in mind. Any attempt to assess community socioeconomic impacts or recovery strategies would be rather sterile without giving attention to socioeconomic indicators as they exist within the context of the local community setting. It would be erroneous, for instance, to apply a national economic model to a set of local community circumstances and expect valid results. Locational analysis performed with the geographic perspective in mind prevents these errors.

Location--Resource or Obstacle

Community location, then, may be treated as either an intangible resource or as an obstacle to future development. Recognition of locational advantages offered by some places and the disadvantages of others is not a new idea in geography. Spatial associations of resources in conjunction with a natural means of transportation that make these resources accessible have influenced the development of our nation's core region.¹ In much the same way, community spatial associations and accessibility may make location a resource or an obstacle to development after military base realignment. The three locations chosen as case studies in this research are not nodes of high accessibility within the national transportation network nor do they enjoy proximity to recognized national centers of commercial activity. From this point of view, these case study communities appear to occupy locations that pose an obstacle to future development. Again, scale comes into play. Nationally, these community locations may not be advantageous; regionally, the case study community locations could be much better. Therefore, the communities selected for study were chosen to reduce the effects of national scale locational factors relative to regional scale factors.

Inside the community, location plays a different kind of role in the minds of the populace. The community may or may not perceive its location to be advantageous. Positive or negative locational perception influences community attitudes which in turn may impinge on the success of future community strategies for development.²

The Base Realignment Problem and Its
Integration with Geographic Concepts
and Ideas

Geography is the single discipline which recognizes analysis of specific locations as central to its purpose. For this reason it offers much to contribute to solving the difficulties that arise from national base realignments. The discipline provides a framework designed to analyze complex locational and socioeconomic problems. Geographic methods can bring some clarity out of the complexity produced by the continuing requirement for base realignments.

The mercurial nature of the base realignment problem makes it a candidate for techniques and methods used in modern geography, but few geographers in academia have chosen to apply their talents to military related topics. Since World War II and the Korean Conflict, few articles dealing with the topic of military geography, as defined in scholarly works such as Inventory and Prospect, have been published in journals of geography.³ Traditional military geography has been applied in the fields of intelligence, regional geography (the regional method applied to area analysis), physical geography (the effects of elements on man and materials), and cartography. These subjects are still vital to the military but receive little attention (in the military sense) from departments of geography in universities around the country. Qualified geographers are present in the armed services, but few are employed in direct geographic analysis of military problems.

The requirement for sound environmental impact statements related to military locational decisions has forced the Air Force and its sister services into a greater appreciation of the contributions which can be made by interdisciplinary approaches to complex problems.

Given the changes that geography has experienced over the last two decades, modern geographers would probably not elect to describe their research associated with military problems as traditional military geography in the World War II sense, but rather the application of modern geographic thought and methods of locational and spatial analysis to military topics.

What are some geographic concepts and ideas that can contribute to analyzing the problems presented by base realignments? The sub-disciplines of economic and political geography contain useful elements that may be applied to the task, and ideas drawn from regional science and regional economics are also helpful. Each of the analytical tools used in this research is briefly explained to show its contribution to examining specific parts of the base realignment problem. In concert, these several research approaches allow a more complete and correct understanding of a complex geographic situation.

Contributions from Economic Geography

Community development efforts after base realignment inherently involve attempts to attract industry to the affected community. Within the broad scope of geography, the field of economic geography is especially well equipped to deal with problems of industrial location. In the case of base realignments, specific community resources must be inventoried, evaluated, and matched with specific requirements of industrial or manufacturing activities which could possibly be attracted to the base realignment community. Economic geography provides a body of knowledge, theory, and locational techniques for the specific purpose of attacking the industrial location task. Before any industry can be

successfully attracted to a given location, factors such as market and labor force quality and quantity available to the industry must be considered. In addition, transportation networks, transportation costs, local infrastructure, availability and cost of utilities, availability of water and other specific raw material resources, should be analyzed. Community educational attributes, such as quality of schools, and community social amenities customarily are also evaluated. In base realignment communities, there is the additional problem of trying to match particular industries with facilities left at the former military base. Items that could possibly be used again such as hangars, runways, heating plants, houses and other components of infrastructure can be an advantage in efforts to attract industry to the base realignment community. Community recovery strategies become a process of matching community locational resources against the requirements of specific industries and then trying to lure these industries into the base realignment community. In reality the task of industrial location is much more difficult than it seems. The subdiscipline of economic geography, however, offers a systematic framework which can be used to conduct locational analysis of base realignment communities and to assist these communities with the task of recruiting new industry for the purpose of community revitalization.

General Model of Community Growth and Economic Development

A different conceptual framework is offered by the community population growth and economic development model, which aids in understanding what happens to the local community when a military establishment is built nearby. Briefly described, this model, as adapted by

Professor Barry Moriarty, is rooted in the regional growth work of Gunnar Myrdal and has been combined with the export base concept. The export base concept suggests that communities grow when a new export base industry arrives in the community. Export base industries produce for consumers outside the local area and thus bring income into the community. Imported income enhances community welfare and stimulates demand for services. Community growth becomes a cumulative process as labor skills, tax base, and infrastructure begin to increase. This higher general level of community welfare may serve to attract other export base industry, and community growth proceeds in a cumulative manner.⁴

The model is particularly useful because it illustrates internal community linkages that are involved in the community's growth process. When the host community loses its adjacent military base, the process of community growth is interrupted, and a state of equilibrium or possible decline within the model's sequence of events may be expected to occur. The process of community growth cannot be expected to continue unless steps are taken to rejuvenate the community's economic base. An attempt to set the process of community growth in motion again after military base closure is precisely what happens in base closure communities today. After base closure, communities design industrial location strategies (using the tools of economic geography) that hopefully will lure industry into the community thereby recapturing for the community that portion of the economic base that was lost through military base closure. The structure and relationships postulated by this model provide a sound conceptual basis for understanding the dynamics of community growth as it may be affected by an adjacent military base.

Explanation of Aberrant Location
Decisions

Additional conceptual support for events surrounding military base realignment decisions is offered by Julian Wolpert's work describing location decisions made within a threat stress reaction environment.⁵ Impacted groups feel a threat to their well being, in this case by the closure of a nearby military base, and devise a reaction to the threat. Thus a cycle of threat and coping strategy response begins between the parties concerned--the community affected by the base closure versus the Department of Defense. Results of this departure from rational decision making may affect the choice of bases which are finally closed and may also affect the impacted community's recovery strategies. According to Wolpert, tradeoffs between interest groups often make for dysfunctional location decisions. Once a threat to their environment is perceived by a group receiving the impact of the policy decision, they generate a response to the policy decision. The decision process then becomes interdependent, and threat versus stress response between groups affects the bargaining process. The resulting location decision becomes a consequence of conflict and interaction rather than one controlled by more logical factors such as budgetary requirements or weapons systems obsolescence.

In the behavioral context, Wolpert's ideas fit the situation today in which a community learns of the possibility of damage to its economy and reacts to this threat by asking its congressional representatives to examine the situation. Depending upon the power an individual congressman possesses, it is possible for DoD base closure or realignment decisions to be modified, slowed, or stopped through the stress threat and reaction coping response sequence. The threat of military

base realignments in some sections of the country has been perceived by members of Congress to be strong enough to cause these congressmen to band together in coalitions with the avowed purpose of stopping further base realignments in their congressional districts. Wolpert's statements about locational decisions made in a threat coping response environment lend greater clarity to understanding the behavior of different interest groups as they express their attitudes toward military base realignments. The ultimate result of these departures from rational decision making is that the interest groups concerned, if they are strong enough, are able to effect changes in the proper distribution of military bases.

Elements of Political Geography

The subdiscipline of political geography offers still another way to view community reaction to base realignment decisions. Most towns near a military base will generate a political response when they learn of a decision that affects "their" base. Stanley Brunn in his book entitled, Geography and Politics in America, has examined the role of politics as an influence on the location of federal facilities.⁶ The main thrust of Brunn's discussion is that political factors, such as relative power, favoritism, tradeoffs and equitable distribution, may cause departures from the optimum selection of locations for federal facilities. The political decision making environment must certainly be considered when explanations for location of certain types of federal activities are sought. Brunn considers the location of many federal facilities to be a combination of both political influence and geographic criteria which would logically govern the final location of national capitals, military academies, training centers and defense bases.

The manifestations of political influence on location of military facilities can be seen by examining certain congressional districts around the country and noting the size, number, and continuing viability of military facilities within those congressional districts. Each representative elected to congress sees the advantage in seeking maximum federal benefits for his congressional district. Individual congressional influence is exhibited during annual discussions concerning the military appropriations bill. "It was just a good old swap session." This statement was made by a congressman describing how restoration of funds for a Louisiana Naval Reserve unit and funding for fish and wildlife programs on military installations were managed by a Mississippi senator and a congressman from Florida.⁷ Regional competition for federal facilities is strong within Congress, and military base location is influenced by the relative power of our elected representatives.

Military base realignments fit the context of Brunn's discussion concerning the influence of political factors on the location of public facilities. Explanation of locational decisions by geographers usually focuses on primary locational requirements. In the case of military base realignments, these primary locational requirements take the form of operational considerations such as specific requirements for the type of weapon system involved, or proximity of other military operations to be supported. Astute geographers must also consider the political context within which these locational decisions are made. Recognition that aberrant behavioral and political actions may influence locational decisions is an important part of sound locational analysis.

Economic Health

Sound locational analysis also dictates that additional elements of geography be included in studying the base realignment problem. For instance, the community must know something about its socioeconomic status relative to surrounding areas before valid base realignment recovery strategies can be logically designed. The concept of the "economic health" of an area can be of some assistance in forming the conceptual framework that helps the base closure community grasp its position relative to other areas. The term, "economic health," means many things to individual researchers. Generally, it is considered to describe the general economic welfare of a particular location or an area. Though no precise definition of economic health appears to exist, the term is generally well understood among researchers and laymen alike. Studies of economic health have attempted to compare the relative welfare of one area to that of another within a specifically defined region.⁸ Research concerning economic health of an area usually attempts to derive an index of the level of welfare of an area by using a composite measure of several economic variables which can be quantified within the area concerned.

In relation to base closure communities, the concept of economic health would not be very helpful if it was limited to the development of some sort of index for measuring "health" of base closure communities. The concept is more useful in pointing out to researchers that they should examine several aspects of community economic indicators in addition to such traditional variables as unemployment and per capita income. The aura of economic health in an area will definitely influence the ease or difficulty of recovery from

base closure, especially if the area regards itself as being distressed, is recognized as being a problem area not experiencing economic progress, or is recognized as being a depressed area. On the other hand, if the base closure community is recognized as being located in an area characterized by a trend of overall economic growth, the recovery process will probably not be as difficult. The concept of economic health is useful in studying base closure communities because it requires researchers to recognize the multivariate nature of analyzing economic conditions in base closure communities. The concept of economic health also encourages researchers to recognize that the general growth or decline of an area should be considered when studying the total effects of specific base closures.

Regional Pathology Research

Another useful concept that helps explain changes associated with base realignment concerns the idea of regional pathology. Regional pathology, or the set of interlocking conditions typical of problem or declining areas in this country, has attracted the attention of many researchers.⁹ Since base realignments are often perceived as disruptive to local economic conditions, regional pathology research can supply knowledge about socioeconomic changes that may be anticipated in the base realignment area. Specifically, this research provides information about the kinds of community socioeconomic variables which may be watched as barometers of community decline. Some of the variables traditionally selected as indicators of economic decline are: changes in unemployment rates, gross population changes per unit area, changes in median family income and the percentage of the labor force engaged in manufacturing. Other indicators, such as retail sales, housing vacancy

rates, and percent of families below the poverty level, provide additional information about economic conditions in times of community economic stress. Any study of "problem areas" may treat these and other variables in a quantitative or a descriptive manner in order to gain more knowledge about what actually happens to specific places or areas that experience economic downturns.

Population Potential

Since relative as well as absolute location plays a role in the consequences of base realignment decisions, some measure of relative location would be useful for indicating community ability to weather the socioeconomic changes triggered by base realignment decisions. One such method of analysis which could be applied for this purpose would be to measure the population potential of communities affected by base realignment actions. Maps of population potential define demographic gravitational fields that aid in understanding geographic patterns of economic and sociological activities.¹⁰ Population potential is an index of a region's relative capacity for interaction as measured by its aggregate proximity to people. The surface defined by the set of population potential values for a region indicates the relative proximity of each place to the region's population or the relative access each place has to the total population.

Potential at a point may be thought of as a measure of the proximity of that point to all other places in the system, or as a measure of aggregate accessibility of the point to all other points in a region.¹¹

Potential represents indirectly the variable tendency for interaction between places. By measuring a base realignment town's population potential, the relative location or importance of that town to other towns in

the state could be ascertained. Observations could be made about the potential the affected community has to interact with other urban places as a specific function of its relative location and population size. The influence of location as a factor bearing on the town's ability to withstand socioeconomic change could be more readily understood. Using population potential measurements, base realignment communities are better able to see their relationships to other places in the total network of urban places.

Central Place Theory

Another idea that can be applied to the geographic analysis of base closure communities is central place theory. It is one of the most important theories in geography and was developed by Walter Christaller in an attempt to explain the ideal arrangement of trade centers on the landscape.¹² Christaller's arrangement of trade centers and their hinterlands results in a nested hierarchy of hexagons as each trade center competes with its neighbors for business. While the evolution of hexagonal retail trade center patterns offers little to the locational analysis of base realignment communities, some of the concepts inherent in central place theory are germane.

Among these concepts are the spatial distribution of demand for goods and services, threshold population size of service centers and the range of a good. Demand for goods and services is distributed over the landscape in correlation with the distribution of people. Where people are concentrated in large numbers, the demand for a wider variety of goods and services should theoretically be greater than in successively smaller towns. In turn, the population size of communities sustains a certain number of service activities, e.g. drugstores,

banks or grocery stores; this is the threshold population needed for these various service activities to survive. People are also willing to travel only limited distances for certain kinds of goods and services. A short distance is traveled to procure a loaf of bread, while one will travel much further to procure the services of an orthodontist. The distance people will travel to obtain particular goods and services is known as the range of a good.

The communities subjected to locational analysis in this research generally fall into the 5,000 to 10,000 population size category and can be expected to render a suite of goods and services based on the demand generated by a threshold population of this size.¹³ The size of the hinterland served by these small central places is thus influenced by the distance people will travel to satisfy their desires for the kinds of services rendered by towns of this size (the range of a good).

Central place theory dictates a decline in the variety of goods and services provided by a trade center when this trade center, operating at a stable level of trade based on its population size, loses population because of base closure or realignment. Indeed, most citizens in base closure communities believe that retail business will be irreparably damaged. Part of this research is directed toward discovering whether or not this tenet of central place theory holds true, what types of services are affected, and to what degree these services are affected. Central place theory provides a rationale for explaining the empirical socioeconomic changes that occur in base realignment communities.

In sum, community response to hinterland population change involves aspects of behavioralism, economics, politics, location and community dynamics that are part of the community itself. The elements of geography previously discussed have been brought together to address the complex adjustments communities make when base realignments cause hinterland population changes.

Avenues of Research

To focus on problems related to military base realignment decisions, many locational analysis techniques can be applied by geographers. These techniques can help answer several questions that are locational in nature. The intent of this research is to address some of these questions. The more important questions are: What changes have actually occurred in base closure communities as a result of base closure or base realignment decisions? Are some of these community changes location specific, or can they be observed wherever base realignments occur? Are remote, rural communities highly dependent (in a socioeconomic sense) on their associated military bases for continuing community viability? Do some communities recover from the experience of base realignments more easily than others, and if so, why? Can it be said that in relation to recognized indicators of community welfare, that base realignment communities are any different than other communities of comparable size and location? How do location and geographic situation influence community recovery efforts after base realignments? Can any insights be gained regarding the duration of the community recovery cycle after base realignments?

Research Design

A research design using the case study approach was used to conduct the geographic analysis of Air Force base realignments. Three communities where bases were closed between 1960 and 1970 were chosen as case study communities to determine what impacts were suffered by these communities and to learn how these communities coped with the changes generated by base closure. These communities are: Moses Lake, Washington; Glasgow, Montana; and Presque Isle, Maine. A field visit to each of the three case study communities was conducted in August 1977 to collect community socioeconomic data that would hopefully indicate community welfare before and after base closure. To supplement these community impact data, records of the President's Office of Economic Adjustment within the Department of Defense were evaluated to learn how government agencies assisted base closure communities in community economic revival efforts.

To focus on the locational aspects of base closure, a population potential surface for each of the states where case study communities were located (Maine, Montana and Washington) was constructed using 1970 census data. The population potential surface permitted measuring each case study community's relative location in order to better understand how difficult community rejuvenation efforts might be made as a function of location. Interviews with community leaders and businessmen who experienced base closure in each location were also conducted to learn the details of how each community designed coping strategies and to learn if the community even addressed location as a factor in economic recovery efforts. During these interviews specific questions were asked

about whether location functioned as an asset or a liability in planning community revival efforts.

The "politics" of base closure were also examined via community interviews, local newspaper accounts of base closure and government records of people and agencies participating in the base closure cycle. Community attitudes toward base closure and subsequent community attempts to reuse its former military base could also be gleaned from the same sources.

To examine community "socioeconomic health" before and after base closure, case study communities were subjected to a t-test of variables indicative of community economic welfare (according to regional pathology research). These variables, as found in case study communities, were compared with the same variables in other small, rural communities not affected by national military location decisions. The objective was to determine whether or not significant differences in economic health exist between these two types of communities.

Through analysis of community interviews and socioeconomic data, examination of government records and statistical sources, and the application of quantitative techniques, this research design seeks to investigate the role of location as an influence on rural communities that had to cope with loss of their military base. Additional details about selection of case study communities and data analysis and collection are supplied in Chapter 3.

Evaluating the effects of Air Force base realignments on nearby host communities is a complex task involving observation of several characteristics that exist in the location where the base realignment occurs. For better research organization and understanding, the

discipline of geography offers a set of "glasses" through which to view the event of base closure at both national and local scales. It is hoped that this view through the geographer's glasses will bring the impact of base realignments on selected host communities in the United States into sharper focus.

Footnotes

¹Stephen S. Birdsall, "North America," in Geography--Regions and Concepts by Harm J. deBlij, 2nd ed. (New York: John Wiley and Sons, 1978), pp. 208-209.

²Gordon C. Cameron, "The Regional Problem in the United States--Some Reflections on a Viable Federal Strategy," Regional Studies, 2 (1968), p. 216. Evidence that community geographic location could present an obstacle to recovery efforts after base realignment can be found in documents generated by several public and private agencies concerned with designing community recovery strategies. An Office of Economic Adjustment Working Paper dealing with the problem of economic recovery at Larson AFB (Moses Lake, Washington) states: "It became evident early in our studies that the distance from Seattle, Portland, and Spokane could represent a major problem and detract from the possible utilization of the Larson facilities." (OEA Working Paper, no date, probably 1966.) A letter from Montana's Senator Mike Mansfield to President Johnson illustrates the same problems presented by the location of Glasgow AFB: "Unfortunately, those efforts to date have produced nothing, and defense officials are frank in stating that Glasgow is the most difficult base closure problem they have yet encountered." (Letter dated Oct. 6, 1967, from United States Senate Office of the Majority Leader to the President, Washington, D.C.) An OEA Point Paper addressing the same topic states: "The (Glasgow) project thus far has not succeeded because of the location of the base and lack of state financial capabilities to participate in a federally supported program." (OEA Point Paper dated March 13, 1968, Office of Economic Adjustment, Washington, D.C.)

³Preston E. James and Clarence F. Jones, eds., American Geography, Inventory and Prospect (Syracuse, N.Y., Syracuse University Press for the Association of American Geographers, 1954), pp. 484-495.

⁴Barry M. Moriarty, Industrial Location and Community Development (Chapel Hill, North Carolina, The University of North Carolina Press, 1980).

⁵Julian Wolpert, "Departures from the Usual Environment in Locational Analysis," Annals of the Association of American Geographers. Vol. 60 (1970), pp. 220-229.

⁶Stanley D. Brunn, Geography and Politics in America (New York: Harper and Row, 1974), pp. 100-130

⁷The Air Force Times, October 30, 1978, p. 16.

⁸John H. Thompson, Sidney C. Sufin, Peter R. Gould, and Marian A. Buck, "Toward A Geography of Economic Health: The Case of New York State," Annals of the Association of American Geographers, Vol. 52 (1962), pp. 1-20.

⁹E. A. G. Robinson, ed., Backward Areas in Advanced Countries (New York: St. Martin's Press for the International Economic Association, 1969), p. 53.

¹⁰William Warntz, "A New Map of the Surface of Population Potentials for the United States, 1966," The Geographical Review, Vol. 54 (1964), pp. 170-184.

¹¹Ronald Abler, John S. Adams; Peter Gould, Spatial Organization--The Geographer's View of the World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971), p. 216.

¹²Walter Christaller, Central Places in Southern Germany, trans. C. W. Baskin. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966).

¹³Thomas L. Bell, "Central Place as a Mixture of the Function Pattern Principles of Christaller and Losch: Some Empirical Tests and Applications," Ph.D. dissertation, University of Iowa, 1973.

CHAPTER III

THE CASE STUDY APPROACH AND COMMUNITY GEOGRAPHIC SETTINGS

Introduction

Much interest is exhibited by concerned citizens, Air Force decision makers, and congressmen when the issue of base realignments is confronted. Currently, the requirements of environmental impact statements bring these various interest groups and issues together. Impact statements dictate that information be presented regarding expected community changes associated with base realignment actions. The extent of community change in places where past realignments occurred is seldom considered when preparing these documents even though such information would be worthwhile in evaluating the data contained in current impact statements. In an attempt to understand what happens to towns during the base closure process and to attack the research questions posed in the previous chapter, intensive study of selected towns which had been through the base closure cycle was pursued.

Several reasons for adopting a case study research method are evident. Adequate time series data that would illustrate what happened to base closure communities are difficult to obtain. Annual statistics for variables which would indicate community changes associated with base closure are not available from standard sources such as the U.S. Census. The Census Bureau often does not compile data on communities

as small as the case study towns chosen for this research. County statistics such as those contained in the County and City Data Book may mask the local impacts experienced by the affected community within the county, and these data are collected only on a decennial basis. For the purpose of data collection and to become acquainted with case study communities, each community was visited in August 1977. Community leaders were interviewed and local data were gathered to indicate what actually happened to the communities during the base closure process.

Quality and availability of data varied with each community. The variable nature of the data can be attributed to such factors as lack of established requirements to keep records, the number and training of people available to perform records-keeping functions, lack of funds for records-keeping purposes on both a state and local level, and destruction of records after what seemed to be an appropriate length of time. Even with these limitations, much valuable information was obtained through field efforts which was not available from library sources alone. A large portion of this information was obtained from individual interviews.¹

The possibility of base closure produces definite reactions from people who believe they will be adversely affected. Today these citizen reactions are publicly aired through hearings required when an environmental impact statement is filed. Records of these hearings provide the researcher with insights regarding what the public expects to happen when a base nearby is closed. Do impacts perceived by the public match actual impacts? This question influenced the kinds of information sought in each case study community. During the data collection process, an attempt was made to identify base-community

interrelationships in as many ways as possible, guided to some degree by public perceptions of base closure impacts. The goal was to gather information on those variables which people believed at that time to be affected by base closure and from the data collected, to learn if these variables were really affected the way people thought they would be. Annual information for each year in the 1960 to 1970 decade was procured when available. It was expected that the annual value of variables would change (a decline was anticipated) if base closure had any impact on the variables under investigation.

Only through the case study approach could the detail desired be obtained across as many variables as possible. A broad quantitative treatment of the topic is not practical because of the scarcity of information for base closure communities and because when data did exist they were not always comparable from place to place. The amount of time and funds available to complete field research were also of concern. As a framework within which data collection and analysis should proceed, all of these factors combined to point toward a research effort that was made tractable by the case study approach.

Selection of the Case Study Communities

To clearly discern the effects of base closure, it is desirable to choose case study locations where the effects are not cushioned by proximity to a large urban industrial complex. Also, the effects of base realignments are perceived to be more severe in locations where population density and urban activities are not concentrated, that is, in remote locations. These circumstances lead to a choice of case study communities located in rural settings. Such communities could be

viewed as "worst case" impact situations because of distance from important regional economic activity and because of community dependency which is supposed to exist on the nearby base. Another factor bearing on the selection of case study towns would be for the adjacent Air Force base to have been closed long enough for the host town to experience some kind of decline and recovery cycle. To observe "impact" differences and similarities between cases, it would also be helpful if the communities selected had similar local economies and that similar military missions were performed by the associated military installations. Because of the complex nature and variety of community impacts and anticipated difficulty of comparing data across selected communities, incorporation of 1960 and 1970 census information was desired whenever possible to employ data from standardized sources and to illuminate community changes that might be contained in these kinds of data.

As might be anticipated, a limited number of candidate communities existed that would satisfy desired selection criteria. The list of bases realigned or closed in the decade between 1960 and 1970 provided three communities that seemed to "best fit" research purposes. They were Moses Lake (Larson AFB), Washington; Glasgow (Glasgow AFB), Montana; and Presque Isle (Presque Isle AFB), Maine. These three communities occupy rural locations in states across the northern tier of our country, and agriculture plays an important role in the economic viability of each community. The Air Force bases concerned were all Strategic Air Command bases; Moses Lake and Glasgow were SAC B-52 bomber and KC-135 tanker units comprising part of our nations' nuclear retaliatory forces. Presque Isle was home of the Snark missile, an early air-breathing missile which could reach the Soviet Union from Maine. Each community

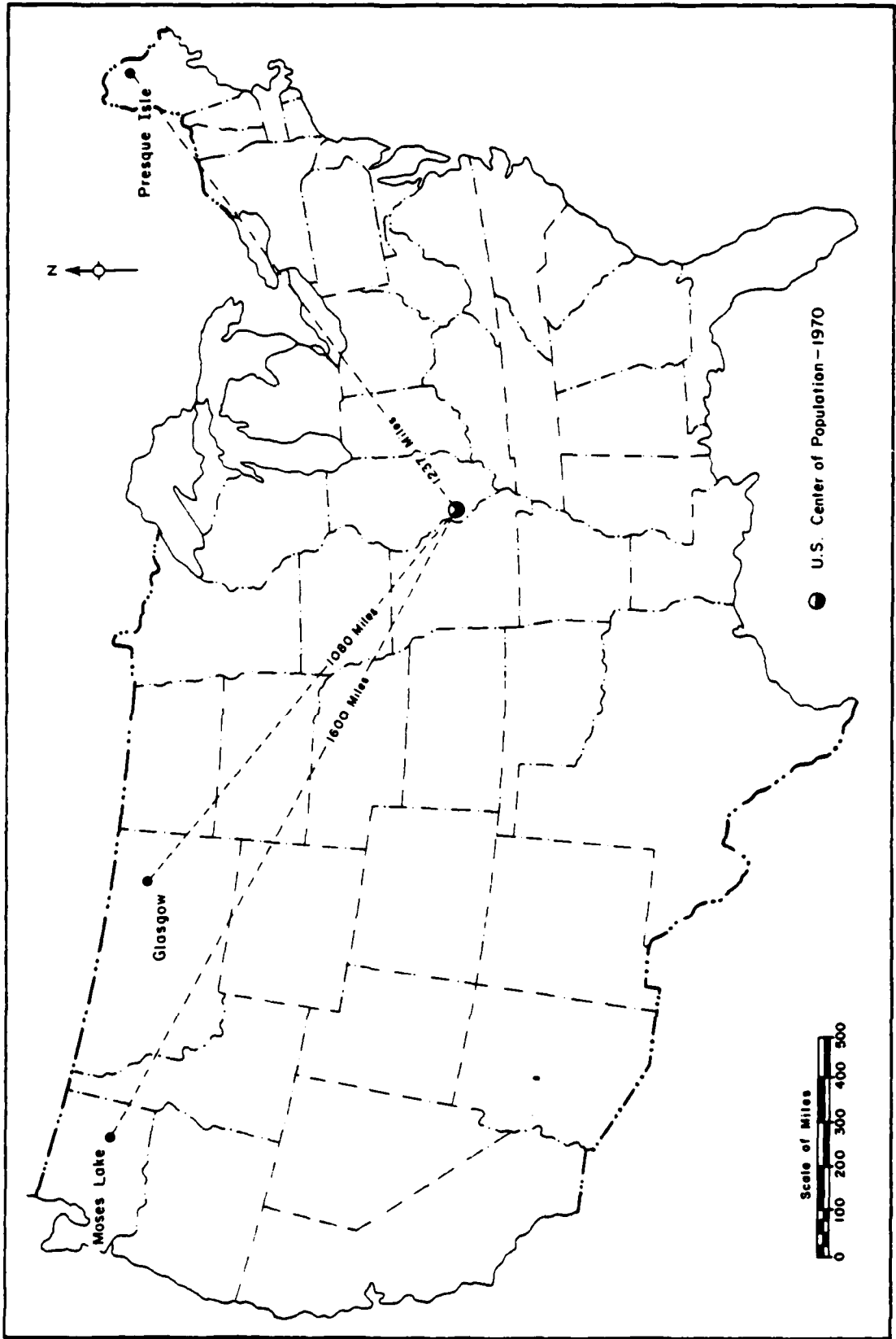


Figure 1

Location of Selected Case Study Communities

sought and received assistance from the federal government in planning for recovery from base closure decisions. All towns selected perform central place functions; Glasgow is also a county seat. By virtue of their location, the towns selected are rendered relatively free of confounding urban effects which could soften or cloud base closure impacts. The case study towns were small (10,000 people or less) in terms of population. For observation of changes associated with Air Force base closure in rural locations, the communities selected were the best the empirical world could offer.

Collection of Case Study Information

Information of the kind needed for impact analysis is often difficult to find, especially for small towns. A limited amount of census information is available for towns of less than 10,000 people. The most expeditious way to find out what actually happened in case study communities as their military bases were closed was to travel to each location for a period of time for the purpose of obtaining on-site information. Field visits to each case study community were conducted August 1-19, 1977; approximately one week was spent in each location. During these visits as much useful statistical information as possible was collected. Equally important, many interviews about the base closure situation were conducted with knowledgeable, respected people who were involved with the base closure process in each community. Bankers, journalists, school administrators, city, county, state and federal employees, realtors, local planners, former military careerists, industrial developers and various businessmen were interviewed in each community. These interviews led to recovery of information stored in

town halls, courthouses, local libraries, and business establishments. Aside from obtaining leads on base closure records and events, the serendipity that occurred during these interviews was invaluable for supplying details, opinions, and facts that could not have been learned from statistical analysis alone. Field visits to each case study location allowed me to get the "feel of the local area" and to learn something about the psychology of base closure as people recounted their feelings and experiences during interviews. Current attitudes toward future community growth, coupled with local economic conditions, could also be observed firsthand.

Information Derived from Census Documents

Some information about small town social and economic characteristics can be obtained from the 1960 and 1970 Censuses of Population.² Data collected from this source were used to compare the level of socioeconomic welfare in case study towns to that of other small towns in northern states across the country. The range of socioeconomic variables that could be analyzed was limited to those provided in census tables. The purpose of this comparison was to determine whether base closure made case study towns any "different" from other small towns that hosted no military base between 1960 and 1970. The results of this statistical comparison between the two types of towns is presented later in this research.

Census documents also provided base data for population potential studies of the three states containing base closure communities.³

Population potential is a measure of the nearness of people to one another in the aggregate. The map of potential describes the amount and location of interaction energy at each point in a region. The potential model is a way of summarizing the geographical complementarities in any spatial system.⁴

Population potential maps were constructed to gauge the "relative remoteness" or distance of case study communities from other communities within the states of Maine, Montana, and Washington. The potential for interaction between case study towns and other locations inside these states can be estimated from county population sizes and distances between the county centers of population. If the potential for interaction is low for case study towns, then how difficult might the recovery process be after base closure? What development strategy should base closure towns adopt as a result of their relative location in their respective states? What kind of market situation can these towns expect for their goods and services? Such questions can be addressed through the use of population potential maps.

Department of Defense Sources
of Information

Several offices within DoD contributed information vital to completion of this research. A particularly helpful agency was the Air Force's Environmental Planning and Development Office (AFLEEVX) in the Pentagon. This office provided examples of environmental impact statements used by the Air Force in various realignment situations. It also made available public hearings which were useful in determining community attitudes toward recent base closure proposals. People working in this office also gave their perspective about the total environmental analysis process, how it affected military activities, and how the Air Force was dealing with a whole new suite of governmental regulations which had never before been a factor in the military decision-making process. Community changes accompanying the base closure process needed to be illuminated, and conversations with people in

this agency served to outline attributes of possible community socio-economic change requiring further study.

The Office of Economic Adjustment (OEA)

The President's Economic Adjustment Committee, operating under the chairmanship of the Secretary of Defense, coordinates several federal programs which can be directed toward helping communities cope with base closures or realignments. The Defense Office of Economic Adjustment serves as the Committee's full-time staff and when new bases are built or old ones closed, or when personnel and mission changes occur that affect communities, OEA provides information about specific federal agencies that can help the community cope with positive or negative impacts. Comprised of economists, planners, engineers, social scientists and representatives of many powerful federal agencies, OEA can help community officials handle bureaucratic "red tape" and assist in community organization for industrial development. To obtain the services of OEA, the community must ask for help through its elected federal representatives. On receipt of a request for community assistance, OEA can become the ombudsman for the community in Washington, D.C.

Records of base closure experiences where OEA has assisted have been maintained since OEA's establishment. Much of the information on which this research is based came from these OEA records. The records usually included items such as community resource inventories used to plan recovery strategies, correspondence between local officials and OEA personnel about possible impacts and how to cope with them, local newspaper accounts of base closure followed by the recovery cycle, letters between congressmen and their constituents outlining the "poli-

tics" of base closure situations. Sifting through and synthesizing this body of information allowed a fairly comprehensive view of what happened to each community as it experienced traumas associated with base realignment.

Data for this research take the form of historical records from local newspapers, personal interviews, statistics from town halls, and documents from all levels of government. Because neatly compiled catalogs describing what occurred in communities during "base closure years" do not exist, the case study approach allows collection and analysis of the variety of data required to accurately indicate what happens to communities affected by base realignments. Case study communities were selected on the basis of common criteria, but it must be recognized that each community occupies a different geographic site and situation.

Case Study Communities--
Site and Situation

Moses Lake, Washington--Location,
History and Growth Trends

Moses Lake, Washington, previously the host community for Larson Air Force Base, is situated in eastern Washington's Columbia River Basin. The town occupies a location in the northwest quadrant of the area D. W. Meinig outlines as the Great Columbia Plain.⁵ It is one of the two largest towns in Grant County, Washington; other principal towns in the area are Soap Lake, Ephrata (the county seat), Quincy, and Warden. The centrality of Moses Lake's location in relation to larger urban places in Washington is enhanced by the town's location at the crossroads for primary transportation routes traversing the Columbia Basin. Seattle is 177 highway miles to the west, Spokane is 105 miles east of

MOSES LAKE, WASHINGTON-LOCAL AREA

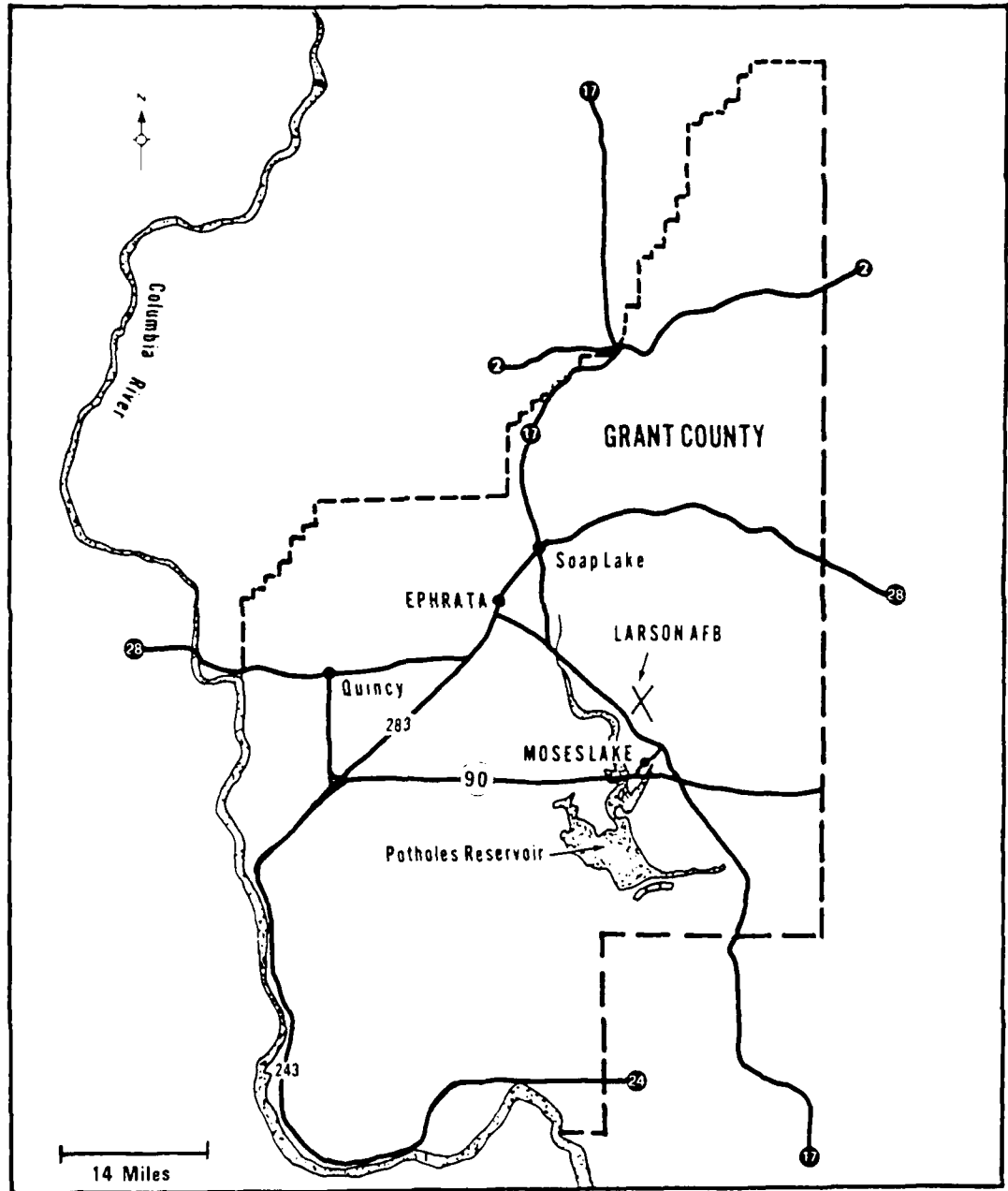


Figure 2

Moses Lake, Portland, Oregon, is 290 miles southwest, and the Canadian border is 160 miles north. Interstate Highway 90 facilitates rapid access to Spokane or Seattle, while State Highway 17 provides adequate access along the Columbia Basin's north-south axis.

In relation to the town's historical origin, the Indian heritage is rich throughout the Columbia Basin; a former Indian chief lends his name to the town. In 1897, Moses Lake's first settler appeared; horse trading was the basis of his livelihood. The town had been platted by 1910 and was known as the town of Neppel. When the town was incorporated in 1938, its name was changed to Moses Lake.⁶

The body of water around which the town grew is the third largest natural body of water in Washington. Its origin dates back to the Pleistocene epoch when glacial erosional forces worked to change the physiography of the Columbia Plateau. The lake presently occupies a portion of the old Columbia River bed cut by glacial meltwaters.

Moses Lake is still a young town since it became established only at the turn of the century. It did not begin to experience rapid population growth until the 1940s. Population increased seven times over from 1940 to 1950 and increased another five-fold in the decade from 1950 to 1960. According to a report on the impact of the Columbia Basin Irrigation Project, Moses Lake was the fastest growing town in the project area between 1948 and 1963.⁷ Town population stabilized at approximately 10,200 in the decade of the 1970s.

Several factors influenced this rapid growth of population, not only in Moses Lake, but also in other Columbia Basin towns. Meinig attributes this growth to the increase in irrigated farmland made possible by the Columbia Basin project, to the Hanford project located

in nearby Richland (begun in 1943 for the purpose of manufacturing plutonium used in atomic weapons) and to construction of several large dams on the Columbia River.⁸

In 1977, the estimated population of Moses Lake was 10,475.⁹ At that time, the town appeared new; main streets were wide and newly paved, few vacant store fronts could be found, buildings were in good condition, the central business district appeared to thrive, and new homes were being constructed. Basin agriculture was expanding, and local businesses provided many services for the surrounding agricultural hinterland. Over the previous ten years, expansion of potato and sugar beet processing also helped generate new jobs for the town. New uses related to both aviation and manufacturing have been found for the former Air Force base, and recreation and tourism have become more important to the local economy. Moses Lake is well situated to benefit from future agricultural and food processing activity associated with continued expansion of the Columbia Basin irrigation project. It is within this setting that events surrounding the closure of Larson Air Force Base should be viewed.

Larson Air Force Base

Larson Air Force Base was originally established during World War II (1943) as a training base for fighter pilots and bomber crews; at that time, the total construction cost of the base was \$12 million. The base was closed for a time after World War II but was activated again in 1948. Several major Air Force commands based their operations at Larson from the late 1940s until the base was officially closed June 30, 1966. Some of these commands were the Military Air Transport Service (MATS, currently known as the Military Airlift Command; Air

Defense Command (ADC), located in conjunction with defense of the Hanford Atomic Works; and most recently, Strategic Air Command (SAC), which operated B-52 bombers and KC-135 tankers from the base. In the early 1960s, silos for the Titan I missile were under construction in the Moses Lake area, and operational functions required for these missiles were located at Larson. Missile operations ceased with base closure in 1966.

Good flying weather (352 days of contact flying conditions annually), excellent runway facilities (one runway is 13,500 feet long by 300 feet wide and is stressed for operation of heavy aircraft), proximity to aircraft production plants (Boeing Aircraft Company's Seattle plants are twenty minutes flying time from the base), and traffic-free terminal area skies have made Larson locationally attractive for testing new Boeing aircraft. Historically, Boeing aircraft test and training operations have played an important role in utilization of Larson facilities.

Given the waxing and waning of a variety of activities at the base during its brief history, some local citizens described the Moses Lake economy as a "boom and bust" economy tied to the destiny of Larson AFB. Two basic activities have served to underpin and sustain the local economy; these activities are agriculture and the continuing operations of Boeing at the base, even after its closure.

The Decision to Close Larson

On November 19, 1964, Secretary of Defense McNamara announced that 95 defense installations would be closed. Larson AFB was one of these installations, as was Glasgow AFB in Montana. Operations at the base four miles northwest of Moses Lake were to cease by June 30, 1966,

allowing the community nineteen months to plan its strategy for utilization of any base facilities turned over to the community by the government.¹⁰

At the time of base closure, the base employed 4,124 military personnel and 392 civilians. Total base population was approximately 8,000. The military payroll was \$12 million annually, while the civilian payroll was placed at \$2.5 to \$3 million annually. Base local purchases from the community were reported to be approximately \$14.5 million each year. In terms of real property, the base was worth \$154 million. Some 1,200 base personnel resided in communities near the base (Moses Lake, Ephrata, and Soap Lake). Big Bend Community College, a two-year school oriented to vocational education, had 400 students from the base enrolled in its programs.

By closing the base, the Department of Defense estimated that 1,356 military and 364 civilian jobs would be eliminated. Payroll and operations and maintenance costs to DoD would be reduced by \$10,877,000 per year. Cost reduction was not the only reason for Larson's closure. The other major mission, Titan I missile operations, was to be deactivated along with B-52/KC-135 operations. With cessation of missile operations, cost of support functions for B-52s alone would be disproportionately high.¹¹ The strategic location of Larson in relation to the Soviet Union caused shorter Ballistic Missile Early Warning System (BMEWS) timing for aircraft launch; in this respect, other SAC bases were more favorably located than Larson. Many substandard buildings were considered too costly to replace. In addition to these reasons cited by DoD, economies of scale also came into play. Since both bases to be closed possessed identical types of aircraft (B-52Ds), plans were

afoot to consolidate the B-52 units at Glasgow and Larson by moving them to March Air Force Base near Riverside, California.¹² The B-52D squadron at March AFB was to be moved to Guam in response to requirements of the war in Southeast Asia, and the unit at March was to be increased from one to two squadron strength through consolidation of aircraft from the other two bases. Cost reduction, aircraft launch timing criteria, and growth of the conflict in Southeast Asia all were influential factors in the decision to close Larson Air Force Base.

Aside from these logical factors cited as reasons for base closure, some people in Moses Lake felt that political tradeoffs had something to do with the base closure decision. One person interviewed in Moses Lake stated that in 1962-1963 Grant County was receiving more federal tax dollars than some states in the union. A third powerhouse was desired at Grand Coulee Dam some sixty miles north of Moses Lake. In order for the third powerhouse to be built and for federal funding in Grant County not to become excessive, closure of Larson AFB was an appropriate tradeoff.¹³ While the argument cannot be proved or disproved, Washington has received large sums of federal funds for development projects. According to a statement by Senator Warren Magnuson, Washington ranked highest in the United States in per capita expenditures for defense purposes (\$426 per person) in 1964. As of December 31, 1964, Congress had appropriated \$571,901,534 for the Columbia Basin project alone.¹⁴ In 1970, the state of Washington ranked 16th in terms of federal outlays by state.¹⁵ The state of Washington, and especially the Columbia River Basin towns, had not suffered for lack of federal dollars. It would have been difficult for the Washington congressional delegation to argue that Larson should have remained an operational SAC base.

Glasgow, Montana--Location,
History and Growth Trends

Glasgow, Montana, a small town of 5,000 people, is the county seat of Valley County in northeastern Montana. The Milk River, identified from a distance by its characteristic galeria vegetation, flows along the southern margin of the settlement. The town is situated in the narrow river valley, and to the north, dissected higher topography rises rapidly to an elevation of 2,300 feet. Physiographically, the area is part of the glaciated Missouri Plateau. Precipitation averages 12-15 inches annually, and local farming techniques have evolved to accommodate the aridity and short growing season (124 days of frost-free weather).

Situated approximately eighteen miles north of Fort Peck dam and reservoir on the Missouri River, Glasgow is located some sixty miles south of the Saskatchewan border and 125 miles west of the North Dakota border near Williston. Larger towns in Montana, such as Billings and Great Falls, are 279 and 271 highway miles respectively, from Glasgow. Though no interstate highway passes nearby, Glasgow is served by U.S. and state highways radiating from town in the four cardinal directions. However, Fort Peck reservoir does present a natural obstacle to motor vehicles moving in a southerly direction from Glasgow. Burlington-Northern also provides Glasgow with main line rail transportation to Chicago and the Seattle-Portland area each day. Commercial air transportation is also available to Montana's larger urban centers from Glasgow's adjacent city-county airport. Even though Glasgow is situated on the margins of our northern interior prairie, it does possess adequate means of transportation for interaction with other market centers.

GLASGOW, MONTANA - LOCAL AREA

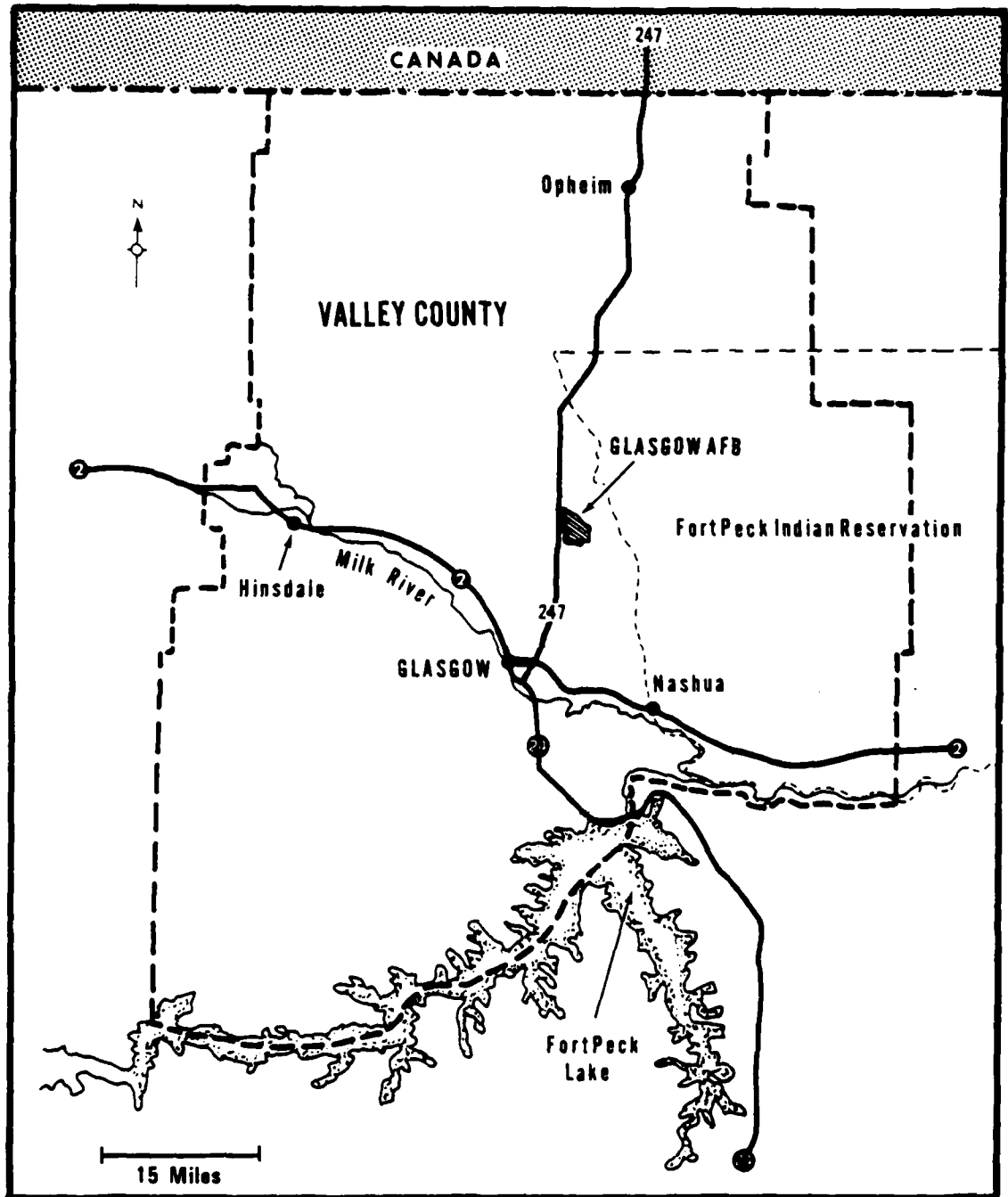


Figure 2

Historically, Glasgow's origin is tied to agriculture and the railroad. The railroad was built through the area in 1888, and the town was established near siding #76.¹⁶ With the railroad came homesteaders, and farms began to co-exist with larger cattle ranching operations. As is well documented, 160-acre homesteads were too small for dry-land farming, and it took several years to combine smaller farms into units large enough to produce a profit. The Burlington-Northern railroad still plays a role in the town's economy; turn-around crews stop in Glasgow, and some residents are employees who service engines and rolling stock.

Another event which affected Glasgow was the construction of Fort Peck Dam and its associated electric generating facilities begun in 1933. The dam is located some eighteen miles south of Glasgow; obviously the town felt the effects of the nearly 10,000 people who were employed during the peak of construction activity. Conceived as a flood control and navigation improvement project, Fort Peck dam construction also furnished employment during the depression. Today, the dam and reservoir is a multi-purpose facility that provides public water supplies, power generation, irrigation, and recreation. Glasgow is well situated to benefit from the activities associated with this public works project.

Glasgow's economy is directly linked to its farm and ranch hinterland. In addition to functioning as the county seat, the town also provides central place functions related to agricultural production. Local agricultural techniques are those characteristic of dry-land farming. Large farms, substantial capital inputs, and extensive use of land and machinery are required. Wheat, barley, and oats are all produced on local farms; wheat is the most important of these three commod-

ities by value and volume. Valley County often ranks high among Montana counties in production of spring wheat and oats.

Income derived from livestock production (cattle, sheep and horses) is also vital to the area's economy. Feedlots, auction barns, and veterinary facilities all exist in or near Glasgow in response to the demand for these services from Valley County ranchers. Just over sixty percent of the county's land area is devoted to rangeland, and revenues from livestock and grain production are nearly equal. The local region's primary economic activity is based on agriculture, and geographically, Glasgow plays the classic Von Thunen market town role in the county.

The Fort Peck Indian Reservation is located in eastern Valley County. Inhabited by Sioux and Assiniboine, the reservation was established in 1888. Approximately 6,000 Indians live on the reservation, and 1,000 of them live in Valley County's portion of the reservation. Unemployment runs high (45%) on the reservation. Indian income is primarily derived from farming and from mineral resources found on reservation lands.

Population growth in Glasgow and in Valley County has waxed and waned with the beginning and end of large construction projects nearby. Population statistics reflect an average population for Glasgow of 4,187 between 1930 and 1970. Valley County population for the same period averaged 13,253 and mirrored the same increases and decreases as Glasgow. Many people moved into the area with the advent of the Fort Peck dam construction from 1933 to 1941. These people moved away again just as rapidly after project completion. The same situation, caused by construction of Glasgow Air Force Base, recurred in the 1950 to 1960 decade. After these boom and bust events, town and county population

stabilized in recent years at around 5,000 and 11,000 respectively. Glasgow functions currently as a small central place in an agricultural hinterland. Without some external influence, such as a new industrial plant or reuse of former base facilities, town and county population can be expected to remain at current levels. The relationship between town size and its hinterland population is "in balance."

Glasgow Air Force Base

When Glasgow Air Force Base was deactivated on June 30, 1968, it was one of the Air Force's newest installations. Air Defense Command (ADC) was the first organization to take control of the base in 1955. At that time, the primary military threat to our nation was from Soviet bombers attacking from the north, and construction of the installation was based on the need to counter this threat with fighter interceptors located along our northern border. In 1959 it was announced that the base would expand to accommodate B-52 bombers and KC-135 tankers. This plan supported defense policy of locating our bombers as closely as possible to military targets while at the same time dispersing the bomber force in order to reduce its vulnerability. Strategic Air Command took over the base in 1960 after the runway was rebuilt and extended (13,500' x 300') to carry heavier loads. The fighter interceptor squadron remained as a tenant unit. The acquisition value of real property at Glasgow Air Force Base was placed at \$91,239,000 in June 1967.

When plans for base closure were announced in November 1964, Glasgow functioned as a classic, modern SAC base. Taxiways and alert facilities were configured for rapid aircraft launch, and maintenance hangars existed to provide support for aircraft as large as the B-52. Facilities for Glasgow's people were also first-rate. Both single and multiple

family housing units (1,227 units) with garages were available to house base personnel. All facilities, such as a 50-bed hospital, chapel, fire station, sewer and water system, schools, and a library, were constructed to support a base population of 8,100. Some 1,000 people associated with the Air Force base lived in the town of Glasgow 18 miles south and in other nearby communities.¹⁷ Annual base payroll was over \$8 million, and approximately \$4 million from the base operating budget was spent in the local area on procurement of items such as food, services, and utilities.¹⁸ The air base, a "town" even larger than the town of Glasgow, had been artificially superimposed on the plains of northeastern Montana, and the residents of Valley County viewed this new "town" as a permanent part of their landscape. Certainly the extent of base improvements over a short period of time, in conjunction with the DoD policy of dispersing strategic weapons systems, gave the townspeople reason to believe they played no temporary role as they expanded their businesses to meet the demands of military personnel.

The Decision to Close Glasgow AFB

The base north of Glasgow was part of the November 19, 1964, base closure package announced by Secretary McNamara (Larson AFB at Moses Lake, Washington, was also one of the 95 bases included in these plans). Closure date for Glasgow AFB was set for June 30, 1968.

Reasons given for closing Glasgow AFB were: economies in maintenance and support resources could be achieved by locating identical aircraft from two bases (Larson and Glasgow) at a single base (March AFB, California); expenses caused by severe winter weather conditions, which made aircraft maintenance more difficult would be reduced; military personnel living off base (1,000) could not be adequately housed in

surrounding communities; on base capacity for additional military activities did not exist without construction of new facilities; the fighter interceptor squadron could be relocated at Ellsworth AFB, South Dakota, at nominal cost yet still accomplish its mission of area defense. Closure of Glasgow AFB was to generate an annual savings of \$12,655,000 and eliminate the requirement for 1,651 military and 288 civilian employees.¹⁹ It was only natural for the citizens of Valley County and the town of Glasgow to question the validity of the stated DoD reasons for closure of such a recently constructed Air Force base. Citizens and the Montana congressional delegation continued trying to block the base closure decision, and nearly twelve years elapsed before the Air Force finally announced its decision to make the base available for community ownership.

The town of Glasgow was still functioning quite well as an agricultural service center when the area was visited in August 1977. Uses for the base facilities were still being pursued. A new city-county library had been built in town and a new county courthouse was completed in 1973. The town and its people conveyed a positive impression about the area's future in 1977, and few signs of any lingering economic depression caused by base closure were observed.

Presque Isle, Maine--Location, History and Growth Trends

Among the case study communities selected, Presque Isle, Maine, is the largest with a 1970 population of 11,452. The town is nestled in the Aroostook Valley section of the New England province, a physiographic division of the Appalachian Highlands. Topography in the valley is typical of landforms resulting from continental glaciation followed by erosional dissection. Landforms are rounded and rolling, drainage pat-

PRESQUE ISLE, MAINE-LOCAL AREA

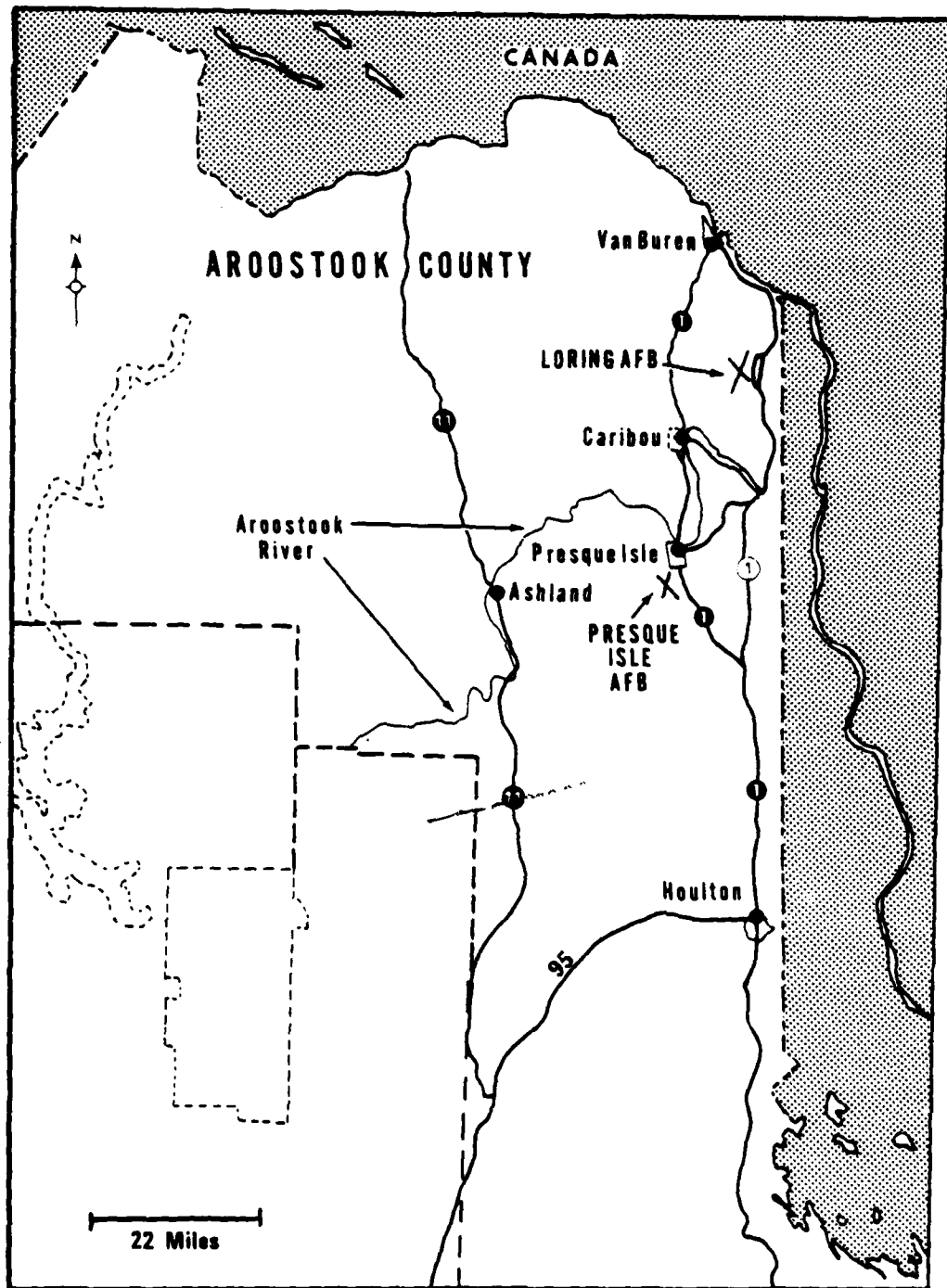


Figure 4

terns are deranged and many lakes and small streams are present on the heavily forested landscape. Local soils are of the podzolic and silty loam types which are favorable for potato growing.²⁰ Even though it is not the county seat, Presque Isle is still the largest town in Aroostook County, which is in turn the largest of all counties in Maine accounting for twenty percent (6,821 square miles) of the total state land area. Presque Isle is located in the more populated eastern one-third of Aroostook County only a dozen miles west of the Canadian border. Such a location makes Presque Isle one of the more northerly situated towns in the coterminous United States. Its northerly location had much to do with Presque Isle's selection as a launch site for the Snark missile, a first generation air breathing missile which could reach Soviet targets only from such a location. Boston is some 400 miles southwest of Presque Isle, and Portland, Maine, is 300 miles southwest. Across the nearby Canadian border, there are no population concentrations that fall within the Presque Isle hinterland. Thirteen miles north of Presque Isle is Caribou, a small town almost equal in size and function to Presque Isle; forty miles south is Houlton, the county seat. These three towns are the focus of activity along the transportation corridor that trends north-south from Van Buren, a Canadian border crossing point, to Houlton some eighty miles south. Unquestionably, Presque Isle is "off the beaten path" of regional economic activity focused on the larger cities of Boston and Montreal.

Historically, the town of Presque Isle originated in the late 1820s when several towns in the local area began to grow. The wilderness of northern Maine was settled from the north by the French moving along the Saint John River and from the south by Massachusetts emigrants; all

these settlers sought the freedom and fertile land offered by the remote lands of northeastern Maine. From that time to the present, the local economy revolved around the utilization of agricultural and forest resources available in the local area.

Local agricultural activity has traditionally concentrated on potato production. Only ten percent of Aroostook County is allocated to cropland. The significance of potato production is borne out by the fact that annually, a third of the county's cropland (150,000 acres) is allocated exclusively to potatoes. Competition from Washington and Idaho, however, has forced Aroostook County farms to become larger and more mechanized. The total number of farms has decreased as marginal operators were forced out of production. Total acreage of potatoes cultivated has remained stable.²¹ Dependence on a one crop economy has forced the area to live or die with fluctuations in the potato market.

Most of the county (86 percent) is still in timberland, another resource which is being used to help boost the primarily agricultural economy. Local residents find employment in various activities associated with forest products--manufacturing of plywood, potato barrels, furniture parts, wood shingles and fencing, and in sawmills, pulpmills, and lumber companies.

Towns between Van Buren on the Canadian border and Houlton to the south are linked by U.S. Highway 1, which connects at Houlton with Interstate 95 providing this rural area with access to more populous southern Maine and the Boston metropolitan area. Highways are adequate in a north-south direction, but travel within western Aroostook County is difficult and is often over private roads which may be closed. Distance

to major metropolitan areas over-the-road is a problem for merchants in Presque Isle, even though the town is serviced by three intrastate trucking firms. Two rail lines are available for shipping purposes, and Presque Isle is the hub of air traffic since it possesses the best airport facilities among the half dozen larger towns in the area. Commuter airlines enter and exit the local market and have competed for local traffic with major carriers (such as Delta Airlines) from time to time. Loring Air Force Base in nearby Limestone generates a demand for commercial air transportation as military personnel travel throughout the nation in the course of duty or on vacation.

Census figures for Presque Isle reflect a population loss between 1960 and 1970 of eleven percent (1,434 people). This loss was indicative of population trends throughout northern Maine during the decade.²² Other indices, such as expanding industry and sales activity, public works and growing college enrollment, point toward growth rather than decline in the area. Some residents questioned the validity of the 1970 census and are not sure that people had actually left Presque Isle since many new homes, apartments and mobile homes have been built.²³

Presque Isle Air Force Base

Presque Isle did not serve the same military function of launch bases for bombers and tankers as did Larson and Glasgow. Rather, it first served as a transit point for transatlantic military planes in World War II. Later, Presque Isle was designated to support the Snark missile, an air breathing aircraft type missile which could reach targets in the U.S.S.R. from northern Maine. The Snark was a sub-sonic, winged intercontinental missile launched by two rocket boosters and powered by a small turbojet engine. Basically, it was a pilotless aircraft. With

rapid changes in ICBM technology, the Snark soon became obsolete. The missile was considered vulnerable to interception during its penetration of hostile areas and its test record was poor. Because of its questionable reliability and its vulnerability, the Snark program was phased out almost before it became operational. Better missiles, our first ICBMs, were becoming ready for firing at about the same time the Snark program was cancelled. Presque Isle was the only location where the Snark was ever based, and due to these factors it was not surprising that closure for the base could be forecast.

Research and development on Strategic Air Command's first missile, the Snark, was started in 1946 and completed in 1960. In October 1957, the missile first flew 5,000 miles in tests on the Atlantic range. March of 1958 marked delivery of the first operational missile to the Air Force, and the first missile arrived at Presque Isle in May 1959. Presque Isle was selected as a launch base because of the missile's range and expected target assignment. The missile was fulfilling an "alert status" role by March 1960, and in February 1961, the 702nd Strategic Missile Wing at Presque Isle was declared operational.

Closure of the base at Presque Isle was mentioned in an address by President Kennedy on March 28, 1961.²⁴ The President announced that as many as fifty bases might be closed, and that one of the bases was a Snark missile base. He indicated in his defense budget message that the Snark was obsolete, of marginal military value, and should be phased out. Since only one of these bases existed, it was not hard for the people of Presque Isle to anticipate that their economy would be affected. In June 1961, the missile wing at Presque Isle was inactivated by SAC headquarters.

Physical Characteristics and Base-Community Relationships

Though not as large in area or population as the other two case study bases, the base at Presque Isle was important to the town's economy. Locationally, the base was almost an integral part of town, since the two types of land use were separated only by a fence, and town and base streets functioned almost as one. Base payroll amounted to \$2,500,000 annually as payment to 1,259 military and 268 civilian workers. Only 882 military dependents lived on the base, and 1,548 lived in town. Base local procurement contracts were worth \$1,845,732 each year to the townspeople; local public schools received \$102,198 per year in federal impact funds paying for military dependents who used the schools.²⁵ Base property consisted of 2,100 acres (as large as the town) with 49 major buildings and 196 units of family housing and two runways 7,400 and 6,000 feet in length. Six of the major buildings were Snark hangars 440 feet long. Near the time of closing, Presque Isle was a town of 12,886 people (1960) with only 247 persons in manufacturing activities. The base had a larger sewer and water system than was operating in town.²⁶ Acquisition cost of the base was \$12.7 million and DoD figures disclosed that \$2.78 million annually would be saved by the military through base closure. Military and civilian jobs eliminated totalled 869 and 168 respectively. Total payroll loss to the community was placed at just over \$5 million annually; closing costs to the government were \$500,000.²⁷

Reaction to base closure was predictable. October 1, 1961, was described as a "black day" in Presque Isle, the day the base was officially closed. Merchants feared they would lose their businesses, and the real estate market figured to be hit hard. The speed with which the event had occurred was an additional psychological blow, even though

the citizens were aware of what might happen as the result of President Kennedy's statements the previous March. The town hoped the Department of Defense might change its mind.²⁸ The community did not actively battle to keep the base open. Rather unusually, the town pulled itself together in an effort to plan for ways it could recoup anticipated losses and begin to grow again.

The site and situation of each case study community has been presented to acquaint the reader with basic physical and economic characteristics of each community, as well as the function of each Air Force base involved and its relationship to the host community. Within the framework of these basic locational factors, the actual impacts and experiences that accompanied base closure in each location can be examined.

Footnotes

¹When asked for information about base closure impacts, people in case study communities were both candid and helpful in their release of information. Some provided the means for obtaining desired information, and without their assistance, particular items and explanations about base closure and community response to it would not have been forthcoming. Only in a few rare instances was anything but a positive attitude encountered among those who were interviewed in case study communities.

²U.S., Department of Commerce, Bureau of the Census, United States Census of Population: 1970, Vol. 1, Characteristics of the Population, Table 117. Socioeconomic characteristics for places of 2,500 to 10,000 in the United States are also contained within 1960 Census of Population volumes.

³U.S., Department of Commerce, Bureau of the Census, Centers of Population for States and Counties 1950, 1960, and 1970.

⁴Ronald Abler, John S. Adams, and Peter Gould, Spatial Organization: The Geographer's View of the World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971), pp. 216-219.

⁵D. W. Meinig, The Great Columbia Plain; A Historical Geography, 1805-1910 (Seattle: University of Washington Press, 1968), p. 6.

⁶Moses Lake Chamber of Commerce, Moses Lake, Washington (Moses Lake: Moses Lake Chamber of Commerce and the Port of Moses Lake, 1966), p. 1.

⁷Washington Agricultural Experiment Station, The Economic Significance of Columbia Basin Project Development (Washington State University Bulletin #669, September 1966), p. 36.

⁸Meinig, pp. 479-482. Positive influence of the Columbia Basin Project on economic growth in the Basin area is well documented in the previously cited report by the Washington Agricultural Experiment Station.

⁹This figure was obtained from the Moses Lake City Planning Department.

¹⁰Moses Lake (Washington) Columbia Basin Daily Herald, November 19, 1964.

¹¹Office of Economic Adjustment Working Paper, November 1964. The cost of support functions is explained by, "A generally undesirable physical base layout which involves a split operation with parts of the operational and maintenance activities being on opposite sides of the runway, thereby creating lost time, extra transportation requirements and loss of efficiency. With the phase out of the Titan I missiles, relative operating cost for B-52 support would be unusually high."

¹²Columbia Basin Daily Herald, November 19, 1964.

¹³This attitude was expressed during the course of an interview conducted in Moses Lake, Washington in August 1977.

¹⁴Washington State Agricultural Experiment Station, p. 13.

¹⁵Clyde E. Browning, The Geography of Federal Outlays (Chapel Hill: University of North Carolina Department of Geography, 1973), p. 112.

¹⁶Valley County, Montana, Overall Economic Development Program--1976 (Glasgow, Montana: Valley County Development Council, 1976), p. 9.

¹⁷Valley County, Montana, Overall Economic Development Program (Glasgow, Montana: Valley County Economic Development Council, 1968), Appendix III.

¹⁸Ibid.

¹⁹Glasgow, Montana, Chamber of Commerce letter to Senator Mike Mansfield, December 3, 1964. This letter questions reasons Secretary of Defense McNamara gave to Senator Mansfield as justification for closure of Glasgow AFB.

²⁰Stephen S. Birdsall and John W. Florin, Regional Landscapes of the United States and Canada (New York: John Wiley and Sons, 1978), p. 130.

²¹Northern Main Regional Planning Commission, Overall Economic Development Program for Northern Maine (Caribou, Maine: Northern Maine Regional Planning Commission, 1974), pp. 30-31.

²²Ibid., p. 38.

²³Interview conducted on August 15, 1977, with Larry E. Clark, Executive Director, Presque Isle Industrial Council.

²⁴Office of the Historian, Headquarters Strategic Air Command, Strategic Air Command Missile Chronology 1939-1973 (Offutt AFB, Nebraska: Strategic Air Command, 1975), p. 18.

²⁵Office of Economic Adjustment Working Paper, July 15, 1963. This working paper details some of the events, in chronological order, associated with the closure of Presque Isle AFB.

²⁶James K. Keefe, Presque Isle, A Community's Fight for Survival, unpublished paper dated November 8, 1963, and discovered in files of the Office of Economic Adjustment.

²⁷Office of Economic Adjustment Working Paper used to provide an overview of costs related to closing Presque Isle AFB. No date is found on this document.

28 James K. Keefe, "Skyway Industrial Park," The Maine Townsman,
February 1963, p. 4.

CHAPTER IV

BASE CLOSURE COMMUNITIES COMPARED WITH OTHER COMMUNITIES OF SIMILAR SIZE AND LOCATION

Central place theory leads us to expect that the socioeconomic welfare of base closure towns should be below that of other towns of comparable size. Such an expectation is generated by a loss of population (departure of military people) in the hinterlands of base closure towns which in turn affects the level (volume and variety) of goods and services base closure towns are able to provide. Also, within the context of the Community Growth and Economic Development Model and its incorporated economic base concepts, a base closure town should expect a lower level of general welfare if all other influences on the community remain constant.

What about the welfare of case study towns when compared with other towns of similar size where no military base existed? Given the level of prosperity before base closure, did case study towns fare better, worse, or about the same as other small towns during the 1960s? Before their bases were closed, were case study towns any different from towns of comparable size and location? After the event of base closure can any differences be observed between the two types of towns?

Candidate communities greet the news of possible base closure with alarm because of the perceived notion of attendant socioeconomic decline. Is it known to these communities whether they are any different

from any other "typical" communities without a nearby military base? Given a set of attributes generally indicative of community welfare, this research seeks to identify differences between the two types of towns using 1960 and 1970 as index years. The intent is not to measure increments of change in socioeconomic attributes for the towns between 1960 and 1970 but to compare towns for the purpose of determining their similarities or differences at the time of specified index years.

To gain more knowledge about these questions, a statistical test for differences between case study towns and other towns in the same population size category may be applied. Such a test will provide information about the welfare of case study communities in relation to broad trends generally experienced by small towns across the northern United States.

For purposes of comparison with case study towns, a simple random sample of forty towns was taken from a population of 198 towns (a 20 percent sample) in the thirteen states comprising the study area.¹ The primary criterion for choosing towns from which the sample was taken was a 1960 population figure in the 6,000 to 12,000 category. Towns in this population size interval can be found in the County and City Data Book.² This population range encompasses the 1960 population of all three case study towns. The year 1960 was chosen as the base year for analysis because base closures in case study communities were all post-1960 occurrences. After all towns which qualified on the basis of population size were identified in the County and City Data Book, a table of random numbers was used to select sample towns from all states with the exception of South Dakota. Sampling with replacement was accomplished, and no random numbers were duplicated in the selection process.

Once the desired random sample was obtained, data to be used for comparative purposes were collected for each case study and sample town. These data were collected from sources which could be relied upon to provide standardized information for comparison before and after the three base closures concerned. To fulfill this requirement, it was necessary to use Bureau of the Census publications for 1960 and 1970, such as Characteristics of the Population, the Census of Housing and the Census of Retail Trade. One problem encountered throughout this research has been the lack of information available for smaller towns comparable to the size of case study towns. The problem also appears when using census or other federal publications. Much more information is available for places greater than 10,000 than for smaller towns. Such a situation places limits on the number of community attributes which could be subjected to the difference of means test.

Within the limits of census data, variables selected for analysis were population, retail sales, housing vacancy rate, unemployment, median income of families and unrelated persons, manufacturing employment, percent of families below the poverty level, and the non-worker/worker ratio. Analysis of these variables should illuminate the general socioeconomic status of the two types of towns. Some of these variables have been used by other researchers to identify problem areas in the United States. If base closure caused severe hardship for the associated towns, it is believed that these hardships will be reflected by careful examination of the previously listed set of variables.³

Data were subsequently punched on computer cards and t values were computer calculated by evoking the Statistical Analysis System (SAS) t-test procedure.⁴

To evaluate results of t-test procedures, a null hypothesis that the means of the two groups of data were equal was established. A significance level of .05 was chosen. If the computed t value for the variable means being tested is greater than the tabular t value at the .05 level, it is unlikely that the means of the two groups of data are equal. T values used for interpretation of difference tests were computed on the basis of unequal variance with degrees of freedom corrected for unequal variance and sample size. Statistical considerations concerning the application of a t-test when sample sizes are both small and unequal are described in Appendix 2.

T-tests of socioeconomic indicators point toward the conclusion that in 1960, the three towns with adjacent active military bases exhibited little difference from other small towns in northern states. Even though people in case study towns might have perceived their towns to be different because of the operational Air Force base nearby, they were basically the same as other small towns in northern locations. Where differences were observed in two of the eight variables tested, case study communities were as they should be given their economic setting, and they enjoyed a status above that of sample towns in 1960.

Among the eight variables subjected to t-tests for 1960, only manufacturing employment and the non-worker/worker ratio proved to be different from the proposed hypothesis of equal means. Since all three case study towns served a primarily agricultural hinterland in 1960, it was no surprise that a difference in means was observed when case study and random sample towns were compared. According to 1960 Census data, 273 persons were employed in manufacturing in Presque Isle, 76 in Glasgow, and 595 in Moses Lake.⁵ Mean manufacturing employment in sample towns

was 946. By 1970, with local base utilization and economic diversification programs under way in Presque Isle and Moses Lake, manufacturing employment in case study towns had increased enough for "no difference" to be observed when compared with sample towns.

The non-worker/worker ratio is the ratio of persons not in the labor force (including persons less than 14 years of age) to persons 14 years old and over in the labor force.⁶ This ratio measures the number of people in the labor force required to support people, both young and old, not in the labor force. It is similar in concept to the dependency ratio used by demographers.⁷ The non-worker/worker ratio appears to be a more refined measurement since the actual labor force available to support "dependents" is considered rather than aggregating age groups to derive a dependency ratio as is done by demographers. In 1960, it took more workers to support non-workers in sample towns than in case study communities. The "dependent burden on the active population" was not quite as great in case study towns as it was in sample towns when the means of the two samples (1.50 and 1.61 respectively) were considered. By 1970, the means of the two samples reflected "no difference," but the non-worker/worker ratio was still lower in case study than in sample towns (1.39 and 1.41 respectively).

After the event of base closure in case study communities, the same eight variables were again tested for differences using 1970 data. The only difference identified by t-test results was in the percent of families below the poverty level, (\$3,745) in 1970. This difference of means is difficult to explain, especially since other indicators such as unemployment and median family income displayed no differences between case study and sample towns. Economic circumstances in the hinterlands

of case study towns may help explain the difference. Aroostook County, Maine, and Valley County, Montana, both qualify as Federal Redevelopment areas. Given this situation, the economies of random sample towns apparently outstripped the agricultural economies in case study towns during the decade by a margin large enough for a difference of means to be observed. While case study towns have a higher percentage of families below the poverty level, inspection of the data for the three case study towns indicates that between 1960 and 1970, the percentage of families below the poverty level declined considerably in Presque Isle (from 21.4 to 9.9 percent) and moderately in Glasgow (from 15.4 to 12.8 percent) but remained about the same in Moses Lake (11.1 and 11.2 percent). Seasonality of agricultural activity providing only part-time employment for a large number of workers may help explain the higher percentage of low income families in Moses Lake and Presque Isle.

The means for percent of families below the poverty level decreased by nearly the same increment between 1960 and 1970, approximately a five percent decline. The mean for case study towns behaved as did the mean for sample towns, but apparently the percentage of families below the poverty level in case study towns was so much greater in 1960 that even with a decrease equal to that of sample towns, case study towns still had a larger proportion of families below the poverty level than did sample towns in 1970.

This difference in percent of families below the poverty level seems somewhat of an anomaly when viewed in the context of other variables tested and when taking into account that the data show a decline in the percentage of poverty level families in case study towns between 1960 and 1970. Even though this anomaly remains largely

unexplained, base closure did not seem to cause an increase in number of families below the poverty level in Moses Lake, Glasgow or Presque Isle.

Evaluation of t-test results for 1970 socioeconomic indicators provides a conclusion of "no difference" for seven of eight variables tested. As in 1960, base closure towns were found to be quite similar to other towns in the same population size category.

The results of this research support the hypothesis of no difference in selected community attributes for case study towns and towns of comparable size. In only three of sixteen tests were differences of means observed; however, these differences were not consistent for both 1960 and 1970. Based on these variables as indicators of social and economic well-being in small towns across the northern U.S., one would conclude that base closure towns are no different from other towns. Base closure appears to have had little influence on the variables tested. If it had, then one would expect to see consistent differences in 1960 and 1970 for case study and random sample towns. Results of this research point toward base closure as a short term community impact, too short to be identified through the variables tested for the ten-year period covered by this study. Before and after the event of base closure, there is no reason to believe that welfare of the three base closure towns is any different from that in other towns of comparable size in the thirteen-state study area.

The general conclusion objectively presented by this research conveys several meanings to citizens in prospective base closure communities. Community fear and apprehension of losing a nearby military installation should be less intense with the realization that before

and after this event, base closure towns are much the same as other communities of similar size and location. The turmoil caused by fear of base closure often generates a "save the base" reaction which serves to slow the process of rational planning for economic diversification and base utilization. Community anxiety may cause some factions to seek reversal of the closure decision, while others seek help in obtaining possession of the military installation. Community leadership is thus divided, and time is lost in preparing for eventual base closure. Candidate communities should also be aware that long term economic decline does not seem to accompany base closure. While perturbations in local business activity can be expected during the period of months encompassing actual base closure and departure of base personnel, this study indicates the business fluctuations to be of less than ten years duration. The idea that the local economy may not be as dependent on the adjacent military base as the community perceives this dependence to be is also introduced by the conclusion of "no difference" between types of towns compared in this study. The lifeblood of base closure towns in the northern U.S. does not depend on military activity but on the type of economic activity practiced by non-military residents of the town's hinterland. As an example, agriculture has always been the most pervasive activity in the areas where the three case study towns are located. Communities facing base closure should also realize that local diversification programs fostered by military drawdowns help to sustain a level of community welfare equal to or above that of towns without a military base. Indeed, an event such as base closure may be required to make an otherwise inert town recognize the need for diversification.

Results of this research should help potential base closure communities face their future with a new level of comfort and confidence about the long term consequences of possibly losing their military installation. Normal efforts to assure community growth and stability, coupled with national influences exerted on the socioeconomic indicators examined in this study, should make welfare of base closure communities equal to that of any other small town in the years to come.

Footnotes

¹The following states comprised the area from which towns were randomly selected: Oregon, Washington, Idaho, Montana, Wyoming, North Dakota, South Dakota, Minnesota, Wisconsin, Michigan, Vermont, New Hampshire, and Maine. These states were chosen because of their locational similarity to states containing case study communities in terms of northerly location, rural orientation and sparse population distribution in large portions of these states, and the number of Air Force bases much like those formerly located near case study towns that are found in many of these states.

²U.S. Bureau of the Census. County and City Data Book, 1972 (U.S. Government Printing Office, Washington, D.C., 1973), Appendix B, Table B-1.

³Benjamin Chinitz, "The Regional Problem in the U.S.A.," Backward Areas in Advanced Countries. ed. E. A. G. Robinson (London: MacMillan Co., 1969), Table 1, p. 53.

⁴A. J. Barr et al. A User's Guide to SAS 76 (Raleigh, N.C.: Sparks Press, 1976), pp. 275-277.

⁵U.S. Bureau of the Census. U.S. Census of Population: 1960 Vol. 1, Characteristics of the Population. (U.S. Government Printing Office, Washington, D.C., 1963), Table 81.

⁶U.S. Bureau of the Census. U.S. Census of Population: 1960 Vol. 1, Characteristics of the Population. Part 14, Idaho. (U.S. Government Printing Office, Washington, D.C., 1963), pp. xxix and 75.

⁷William Petersen, Population (3rd ed; New York: MacMillan Publishing Co., Inc., 1975), pp. 71-80.

CHAPTER V

THE SOCIOECONOMIC EFFECTS OF BASE CLOSURE ON CASE STUDY COMMUNITIES--MOSES LAKE, WASHINGTON

General Community Attitudes Toward Base Closure

Case study communities approached the day of base closure with some trepidation. Businessmen believed their welfare to be closely tied to purchases by base personnel and expected an immediate decrease in retail activity. People exhibited a fearful "what will happen to us now" attitude. Many became afraid their town would die.

Since current base closure studies require public hearings as part of the environmental impact process, some insight about community attitudes toward base closure can be obtained from records of these public hearings. The following statements, given by citizens of one town where base closure proposals were made, convey feelings of apprehension and fear. These statements are typical of smaller communities around the country that feel threatened by possible economic decline, and they provide the reader with some ideas about community psychology generated by base closure.

Loring (AFB) is the county's largest and most stable employer. Aroostook County (Maine) has experienced an alarmingly high outmigration for many years. The reduction of several thousand base personnel would cause many others not directly employed by Loring to lose their jobs . . . Aroostook County's unemployment rate would be high for many years to come . . . Many restaurants, automobile dealers, contractors, and other businesses will fail shortly after the proposed Loring reduction takes place.¹

A large percentage of our apartment units will become vacant; this is going to lead to mortgage foreclosures for some people. It's going to create an oversupply of all types of housing units, which is going to result in decreased real estate values. And this proposal (to close Loring) is going to create a severe staffing problem at our hospital . . . in Caribou . . . We're probably going to see a property tax increase, not to pay for additional services, but we're going to see an increase, just to pay for present services, and to help us pay for our increased welfare rolls . . . Our school department, recreation department, other agencies, are going to be forced to reduce or eliminate some programs. We will see some sections of our community deteriorate rather rapidly. Clubs, organizations, churches, these will all be affected. Some of them will cease to exist because of this. In general, what I'm saying is, I see a very tough time ahead for our community if this happens.²

. . . this attempt at closing what obviously is a significant part of the community in Aroostook County will hurt several areas, not only business and community, but it will hurt the health care institutions and the health care delivery system.³

An estimated 2,000 jobs will be lost if the planned (Loring) reduction of 83 percent occurs. Social institutions, including churches and local charities, will be greatly impacted. In 1975, Air Force personnel contributed \$100,000 to local churches and \$50,000 to the United Fund. Real estate values, property taxes, local government taxing sources, county taxes and state taxes will all be adversely affected.⁴

. . . My projections for Limestone (school system) indicates that we shall be forced to decrease our staff positions from 175 to 85. These projected staff decreases include 58 certified personnel, 14 teacher aides, four transportation personnel, five custodial personnel, three clerical personnel, and six food services personnel. The total salaries of personnel in projected staff decreases would be approximately \$770,000. Nearly all of this money would ordinarily be spent locally.⁵

. . . Maine Public Service Company, which supplies electric energy to the entire Aroostook County area will experience revenue decreases reflecting loss in population, unemployment, failure or closure of many small business ventures and reduction in on-base utility procurement. The revenue loss has been projected at \$1,416,458 which is 8 percent of my company's anticipated 1977 revenues . . . Revenue losses of this magnitude will hasten the need for upward rate adjustment.⁶

. . . Major factions of our community will have to be displaced rendering heartbreak as well as a severe loss in earning and spending power: educational programming and opportunity, at all levels, will have to be severely curtailed; our economy will be reduced to that of the depression era.⁷

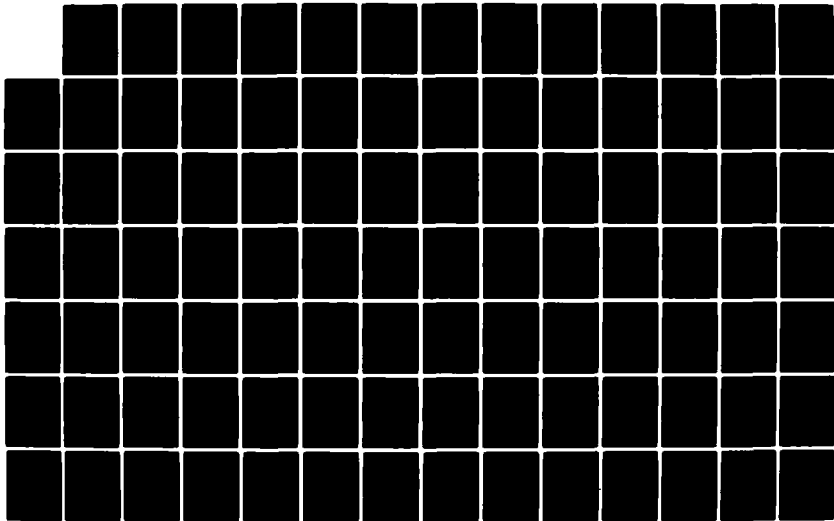
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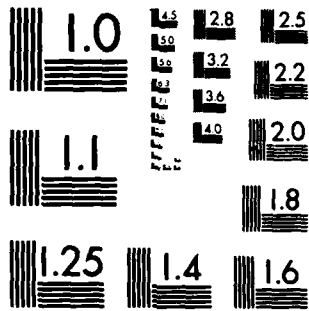
GEOGRAPHIC PERSPECTIVES ON THE RELATIONSHIP OF AIR
FORCE BASE REALIGNMENT..(U) AIR FORCE INST OF TECH
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

These comments, extracted from public hearings on the proposed closure of Loring AFB, Maine, display community attitudes toward possible loss of its military base. The same feelings and citizen perceptions of socioeconomic decline associated with base closure are displayed by other candidate closure towns throughout the country.⁸

What then of the actual community activities affected by closure of a military installation? Do those things happen to the community that its constituents anticipate? Much of the research conducted in case study communities was oriented toward answering the questions.

Field interviews provide some idea of general community apprehension accompanying base closure, but quantitative predictions of decline associated with case study communities are hard to find. During the middle 1960s when case study bases were closed, there was little requirement for impact assessment such as that found in today's environmental impact statement. Quantitative statements that were made were often used in support of political attempts to keep the base open. Some measures of anticipated impacts were gleaned from consultant reports, newspaper articles, and DoD sources. Statements of anticipated impacts range from casual estimates of sales losses by local businessmen to more rigorous predictions of the number of secondary school teachers who would lose their jobs in proportion to departing numbers of school children. A description of methods used to predict impacts is seldom given, but in arriving at the town's loss of total retail sales, one consulting firm's report displayed some knowledge of rudimentary input-output analysis.⁹

Expected Base Closure Effects--
Moses Lake, Washington

In Moses Lake one car dealer estimated that he would lose 25 percent of his annual salary, and a bank manager forecasted that bank deposits would fall by a similar amount.¹⁰ School officials estimated that 110 to 115 teachers and 25 non-certified personnel would lose their jobs when the 2,667 students from Larson AFB left town.¹¹ Loss of the \$15 million base payroll was expected to depress retail sales in Moses Lake by 5.9 million dollars (17% of 1963 total sales) and 257 jobs. Retail and service payrolls would decrease by a total of \$698,000.¹² City tax revenue was to have declined by \$256,800 with an expected decline in level of municipal services provided. An estimated 1,280 apartments and single-family dwellings were to be left vacant as a result of base closure.¹³ One thousand of these units were occupied by military and civilian personnel from Larson. Assessed tax value of dwellings occupied by Larson-related people was estimated to be \$3.1 million. Twenty-one retail business licenses and 39 service licenses in Moses Lake were directly attributable to the base.¹⁴ However, it would be difficult to say that loss of these licenses would result in closing of a like number of business establishments. Office of Economic Adjustment estimates indicated that 25 retail sales establishments and 44 service establishments would possibly close their doors.¹⁵

Actual Base Closure Effects--
Moses Lake, Washington

In addition to these estimates of base closure impacts, several absolute losses could be enumerated. Most of the 3,947 military and 388 civilian personnel and their dependents left Moses Lake for other Air Force assignments.¹⁶ A few workers chose to retire in the area

rather than move again. To Moses Lake citizens, departure of people from Larson represented losing a city 73 percent the size of Moses Lake only five miles away from town.

The annual base electricity bill was \$200,000 and \$500,000 was spent each year for heating purposes. These payments to oil and gas companies and to the Grant County Public Utility District were two of the largest local expenditures made by the base.

In the case of Moses Lake, therefore, documented community concern with base closure revolved around the anticipated economic decline. Impact on retail sales, the real estate market, school teachers' jobs, general unemployment, and city tax revenue were among the most frequently recorded items of community concern. Demonstrated concern with possible social impacts could not be documented.

Bank Deposits

One measure of assets available for local economic stimulation is the amount of money deposited in local banks. If military and federal civilian employees contribute large sums of money to the community banking system, then bank deposits should show a noticeable decline when the base is closed. The annual trend of Moses Lake total bank deposits between 1960 and 1970 portrays no drastic decline associated with base closure (Table 1). The predominant trend is one of overall growth in total bank deposits; bank deposits doubled during the ten-year period. After the base closure announcement in 1964, bank deposits increased by \$2 million in 1965 and increased again by an increment of \$3 million in 1966, the year when most military people left Moses Lake. In 1967, following the departure of large numbers of military personnel, bank deposits grew by only \$100,000. The growth

TABLE I
COMMUNITY SOCIOECONOMIC DATA - ROSSEL LAKE, WASHINGTON

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Population	11,279	11,137	11,133	11,000	10,900	10,159	10,050	10,289	10,227	10,600	10,916
Bank Deposits	\$12,177,075	\$15,239,519	\$17,000,124	\$15,228,651	\$20,478,450	\$20,855,062	\$27,900,711	\$27,412,990	\$29,512,702		
Enrollment	5,602	6,192	7,076	6,809	6,576	6,997	6,227	5,666	5,218	5,526	5,597
School Dist. #1-1		605	655	521	524	502	292	222	250	267	276
School Dist. #1-2		566,997	551,111	500,558	\$7,794,977	\$9,967,977	\$9,472,224	\$9,127,275	\$164,160	\$239,944	\$265,714
Expenditures	\$1,528,574	\$2,002,897	\$2,485,000	\$2,979,892	\$3,002,688	\$3,097,004	\$3,125,614	\$3,086,203	\$3,148,263	\$3,520,274	\$4,198,228
Enrollment-By Fund											
School Dist. #1-1											
School Dist. #1-2											
Community College											
Business Permits Issued Annually	279	525	516	500	504	507	519	521	526	556	552
Total Varant Housing Units	47	79	66	62	62	60	597	502	465	No Data	250
Total Housing Units	4,458	4,679	4,679	4,704	4,704	4,677	4,659	4,649	4,612	4,682	4,640
New Rentl. Bldg. Permits Issued/Yr.	50	75	9	8	8	1	1	5	4	4	2
Property Tax Revtl.	\$20,479	\$26,982	\$29,001	\$27,386	\$27,386	\$29,400	\$27,554	\$28,592	\$28,426	\$28,126	\$28,792
Tax Base Valuation	\$11,600,000	\$12,000,000	\$12,000,000	\$11,932,704	\$11,932,704	\$11,919,228	\$11,511,612	\$11,753,154	\$11,642,882	\$11,858,916	\$11,862,528
Number of Full-Time Policemen	19	17	17	20	20	20	20	20	20	20	18
Number of Full-Time Firemen	1	1	1	1	1	1	1	1	14	14	14
Number of Hospital Employees	102	101	101	102	102	98	101	99	101	105	102
City Recreation Budget	\$2,915	\$3,120	\$1,800	\$2,195	\$2,195	\$28,098	\$75,556	\$79,757	\$110,946	\$120,248	\$127,249
United Fund Contributions IAFB	No Data	\$7,000 (89)	\$10,000 (100)	\$10,000 (99)	\$10,000 (97)	\$18,877 (93)	\$7,000 (90)	\$95,911 (91)	\$44,242 (96)	\$44,631 (99)	\$47,097 (106)
Avg. Moses Lake Rentl. Accts./Mo.	No Data	4,129	4,146	3,964	2,946	2,871	2,816	2,799	2,875	2,976	No Data
Avg. Revenue/Mo. Rentl. Accts.	No Data	\$36,721	\$4,542	\$5,096	\$4,749	\$4,425	\$4,946	\$3,909	\$7,871	\$11,248	No Data
Avg. Moses Lake Comm. Accts./Mo.	No Data	62	67	64	64	61	61	58	59	No Data	No Data
Avg. Revenue/Mo. Comm. Accts.	No Data	\$2,068	\$25,401	\$26,040	\$25,389	\$25,292	\$24,430	\$23,324	\$25,641	No Data	No Data
Total Rentl. Accts. Grant County HUD	16,815	11,341	11,595	11,415	11,267	11,252	11,259	11,340	11,880	12,860	13,795
Annual Rentl. Rev. Grant County Pfd	\$1,514,831	\$1,612,289	\$1,637,000	\$1,675,671	\$1,600,801	\$1,713,141	\$1,702,388	\$1,757,597	\$1,947,470	\$2,309,375	\$2,516,789
Avg. Annual Gen. Asst. Cases	175	174	146	143	143	127	96	142	124	160	98
Avg. # People Receiving Gen. Asst. Children Cases	44	428	297	289	289	223	194	346	487	682	203
Avg. # Aid to Dep. Children Cases	111	125	130	220	220	230	189	202	285	321	458
Avg. Annual # People Receiving Aid	403	468	502	588	978	2,005	872	1,125	1,270	1,452	1,918

Data concerning United Fund contributions are explained as follows: the number in the top left of the box is the amount contributed by the base for that year; in the bottom left is the percentage of the community goal contributed by the base; the figure in the top right corner is the percent of community goal achieved that year; and the figure in the bottom right corner is the community goal established for that year.

trend spurted again in 1968 reflecting an increase of \$3 million over 1967 deposits. Growth in bank deposits was somewhat more stagnant in the years 1969 and 1970.

When adjusted for inflation, Moses Lake bank deposits still reflect the previously described trend (Table 1A).¹⁷ The only difference made by correcting for inflation is that the growth in 1969 and 1970 bank deposits was not as great as uncorrected figures would indicate.

The only year in which bank deposits decreased (by \$968,093) was in 1962. This decline may reflect departure of a large number of defense contract construction workers engaged in installation of the Titan I missile complex at Larson. Boeing Aircraft Company also had been involved in testing jet tankers during this period and the test program was being phased out.¹⁸ Population figures for these years (1962-63) indicate a corresponding decrease. One person interviewed in Moses Lake felt that departure of missile site construction workers was a bigger blow to the local economy than loss of Larson AFB. To quote this person, "They made good money and spent it in town;" military people bought retail goods from the base commissary and from the base exchange.¹⁹

The trend in bank deposits does not indicate any persistent decline associated with closure of the base in 1966. The greatest aggregate period of growth in bank deposits was during the period 1964 to 1966 when the base was phasing down. While bank deposits did not increase as fast in 1967 (after base closure), growth still occurred. Certainly no large relative deposit losses were experienced by banks when the military left town.

The nature of the military profession requires frequent moves. For this reason, many military people maintain financial ties to a hometown bank or to a bank which caters to military personnel. Local accounts are for the convenience of checking and for establishment of local credit. In addition, the on-base Federal Credit Union is heavily used by base personnel for savings purposes and as a source of loans for more expensive consumer items such as new cars. While a local bank may have a branch office on base, it tends to perform the checking account or payday check cashing type of services as opposed to the more extended services, such as mortgage loans or savings accounts, a long-term resident of the community expects from his bank. This is not to say that military personnel do not use local financial institutions for a variety of financial services, but it may help explain why a large decrease in bank deposits was not experienced by banks in Moses Lake when the base closed down.

Schools

Base closure affects local schools through decrease in school enrollment, decline in teacher employment, and means an annual loss of operating funds to schools attended by children of federally employed civilian and military personnel (Public Law 81-874 funding). Moses Lake did not escape these impacts, but they were not as severe as school officials predicted. After the base closure announcement in November 1964, base population declined steadily during 1965. However, total school enrollment (kindergarten through 12th grade) declined by only 260 pupils (Table 1). Ten fewer teachers were employed in the 1965-66 school year than in 1964-65. The most drastic decrease in both students and teachers occurred in 1966. After formal base closure

in June of 1966, Moses Lake schools began the Fall of 1966 term with 1,171 fewer students and 67 fewer teachers than in the Fall of 1965. In 1967, twenty-five of the teacher positions lost in 1966 were recouped. Total school district enrollment increased slowly toward the end of the decade and had started to stabilize at 5,500 pupils by 1970. School officials' estimates of loss in number of teachers was fairly accurate. On the basis of federal impact assistance payments, 2,667 students might possibly have been lost to the school system as a result of base closure. School district enrollment statistics point to a considerably smaller loss of students (1,171), and these statistics are taken as correct since they were obtained directly from the Moses Lake School District as opposed to a consultant's report.

Grammar school enrollment was hardest hit by base closure. This is not surprising given the predominant life cycle stage of military families. Two of the city's eight grammar schools closed. One was in town and one was on base. In comparison with the number of grammar school students, high school enrollment remained stable at approximately 1,080 students from 1963 to 1970. Decline in school system enrollment caused no change in the basic curriculum throughout the school system, and no change in accreditation. Some special education programs were changed as a result of base closure. Lack of availability of immediate federal school support funds caused changes in grammar school music and physical education programs and in the high school language programs. Money to hire grammar school music and physical education specialists was no longer available. At one time the Moses Lake school system provided training in five different languages. Loss of federal school funds required a decrease in the variety of languages taught in high

school because money was no longer available to hire language teachers. At the time of base closure, Washington state school funds were partly derived from special tax levies. Before base closure the Moses Lake school system, with its federal support funds, had not been pressed to use this special tax levy as a source of funds. After base closure, a special tax levy for educational funds (as well as loss of Public Law 81-874 funds) was also a factor contributing to decline in the school system's language curriculum. Music programs were not affected in the junior high school; the school system's concert band, orchestra, and vocal groups were maintained throughout the base closure cycle. In Moses Lake grammar schools, the music program has currently been reinstated at the sixth-grade level.²⁰

Some Moses Lake schools were built with federal support funds, and the school system building program was not as vigorous after base closure. However, the school system was left with excess capacity in physical space following departure of base students. Presently, one of the two closed grammar schools is being used for administrative and recreational functions; the other has reopened in response to increased population as housing at the former Air Force base has again become occupied.

Moses Lake public schools were hurt primarily through loss of federal support funds when Larson Air Force Base closed. Decreases in level of school funds in turn forced a cut-back in the variety of educational instruction offered but no change was required in the core curriculum. The number of teachers did decline but began a rapid recovery the year after base closure, possibly as the result of an attempt to decrease the student/teacher ratio. In the years following

base closure, oscillations in the number of certified personnel have stabilized at approximately 270, which would reflect a net loss of some seventeen teachers from the school system following base closure. Obviously the loss of PL 81-874 funding was the most serious blow dealt by base closure to the Moses Lake public school system.

As a proportion of School District 161 total expenditures, PL 81-874 funds accounted for approximately 16 percent of monies available for expenditures during the years 1960-1966. After base closure, PL 81-874 monies as a proportion of total school district expenditures declined by 11 percent in 1967. In the remaining years of the decade, PL 81-874 funding increased to around 6 percent of total school district expenditures (Table 1). PL 81-874 funding did not totally disappear after base closure because the base housing area was still federally owned, and people began to move into base housing because of cheap rents. The category of PL 81-874 funds changed from an allocation attributed to children of Air Force personnel to an allocation generated by people living in federal government quarters but not hired by the federal government. Given these conditions, some federal financial assistance was still available to Moses Lake schools though at a reduced level.

Total expenditures for School District 161 increased steadily in the years between 1960 and 1970, even though a prime source of revenue (PL 81-874 funds) was lost. Corrected for inflation, however, these expenditures show stagnation rather than increases in 1966, 1967 and 1968 (Table 1A). Moses Lake schools lost access to some funds as a result of base closure, but the school system was far from crippled.

Community College Enrollment

The enrollment at Big Bend Community College has remained generally stable or increased in the years since it began classes in 1962 (Table 1). Only in 1966, the year of base closure, did there occur a major decline in number of community college students. Student enrollment dropped from 1,167 to 916, a decline of 21 percent from 1965 to the summer of 1966. From 1966 to 1970, enrollment remained stable at a figure of approximately 1,054 students, an increase of 15 percent over the low enrollment associated with base closure. By 1975, the number of community college students had increased to 2,321 or nearly double the enrollment in the year before base closure. It is especially pertinent that facilities for expansion of community college vocational-technical programs were made available as suitable buildings at the former air base became vacant. Currently the North Campus of Big Bend Community College is located on the base. Base closure had little negative effect on Big Bend Community College except for the single year's decline in 1966 enrollment. In contrast, availability of buildings and land on base (at a cheap price from HEW) facilitated expansion of the college.

Unemployment

Development of the Columbia Basin irrigation system has made agriculture the mainstay of the basin economy, and Moses Lake has become a focal point of processing for basin agricultural commodities, especially for potatoes and sugar beets. Any discussion of unemployment trends in the Moses Lake-Grant County area should outline the manner in which the agricultural economy influences local unemployment cycles each year. Potatoes are harvested in late August for processing and

storage. Sugar beets are harvested in September; and a high workload ensues at the Utah and Idaho Beet Processing Plant, Moses Lake's single largest employer, from September until February. According to the Moses Lake office of the Washington State Employment Security Commission, peak unemployment in Moses Lake occurs in August when workers who process potatoes and sugar beets are waiting for processing plants to resume full-scale operations with the fall harvest. At this time of "peak unemployment," many people are actually not out of jobs but may collect unemployment compensation because they are not at work in processing plants. A more realistic period of true unemployment is experienced during the winter months from November until February. Winter weather precludes outside agricultural activity and some workers have no jobs until spring planting activities begin. Migrant workers also influence local unemployment trends as they respond to seasonal farm labor requirements.

Though agricultural activity has played an important role in Moses Lake unemployment trends, the community generally anticipated a substantial increase in local unemployment as a function of base closure. It was expected that any such increase in unemployment would be reflected by changes in covered employment data before and after base closure. Unemployment statistics for the Moses Lake Employment Security District from 1960 to 1970 were sought, but records for individual districts were not maintained during that period. County unemployment data were available from 1962-1970, and these data were obtained from the research division of the Washington State Employment Security Service. County data were not considered to be a gross misrepresenta-

tion of unemployment trends in the Moses Lake area since the Moses Lake district covers most of Grant County.

TABLE 2
AVERAGE ANNUAL UNEMPLOYMENT IN PERCENT, 1960-1970

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
U.S.	5.5	6.7	5.5	5.7	5.2	4.5	3.8	3.8	3.6	3.5	4.9
Washington	6.4	6.8	5.5	6.2	6.5	5.4	4.1	4.3	4.3	4.8	8.3
Grant Co.	N.D.	N.D.	7.6	10.4	9.0	7.2	5.9	6.9	6.8	7.1	8.9

Comparison of unemployment percentages for the United States with those for the state of Washington and for Grant County illustrates that unemployment in both the state and county were higher than the national average annual unemployment rates between 1960 and 1970 (Table 2). Throughout the decade the state unemployment rate ran almost one percentage point higher than the national rate while Grant County was almost three percentage points above national rates for the years in which Grant County data were published. For the years 1962 through 1970, Grant County unemployment rates were two percent higher than state unemployment rates. Washington was experiencing slightly higher unemployment than the nation and the unemployment situation in Grant County was somewhat worse than throughout the state of Washington.

The percent average annual unemployment figures for Grant County reveal some interesting trends between 1962 and 1970. Average annual unemployment, the number of unemployed persons expressed as a percentage of the civilian labor force, increased to its highest level in 1963 (Table 2). Such an increase might have been influenced by the loss of construction activity in the local area associated with ter-

mination of missile site construction at Larson AFB.²¹ From 1963 to 1966, average annual unemployment continued to decrease to its lowest value of the decade (5.9 percent in 1966). The base closure announcement was made in late 1964 followed by formal closure in June 1966. Annual unemployment for the local area increased by a single percentage point to 6.9 percent in 1967 and remained stable near that value until 1970 when it increased nearly two percent. Since 1970, Moses Lake employment security officials indicate that average annual unemployment in the Moses Lake district has fluctuated between eight and nine percent.

To determine if annual unemployment trends masked any monthly unemployment increases associated with base closure, Grant County monthly unemployment figures for 1965 and 1966 were obtained. Monthly unemployment trends for 1965 and 1966 reflected the same periodicity, but the overall monthly levels of unemployment were lower in 1966, the base closure year, than in 1965. No marked increases in unemployment could be detected in the six months following base closure in June 1966. Unemployment levels did not significantly increase with base closure as might have been expected. Rather, unemployment levels were at their lowest (from 1962 to 1970) during the base closure year.

This unexpected result may be explained by the fact that Larson military personnel functioned as a source of labor which could be used to fulfill harvesting and other seasonal agricultural requirements in the basin area. An estimated 500 military people doubled as part-time agricultural workers during the year.²² Replacement of these airmen, many of whom worked for farmers throughout the year, was viewed as a potential problem for local farmers. Female dependents from Larson

were also considered a lucrative source of labor for employment in local food processing plants. When the base closed, the military labor pool was lost to the local economy, and many agriculture-related jobs became available for those who were previously unemployed.²³ In the case of Moses Lake, local circumstances surrounding base closure produced a decline in unemployment rather than the traumatic increase which was expected. Unemployment did not skyrocket and remain at high levels as a function of base closure.

Impact on Business Establishments

One of the basic community reactions associated with base closure is a fear of decline in number of business establishments and their volume of sales. It is infrequent that the affected community possesses hard facts on the amount of business a nearby military base generates for the community. The general community perception is that all forms of business in town will be devastated by base closure. In the case of Moses Lake, an attempt was made to discern how business establishments in town were affected by the loss of Larson AFB. This was accomplished by examining the number of business permits issued by the town from 1960 to 1970 and by interviews with long-term businessmen in Moses Lake.²⁴

The number of business permits issued annually reflects the missile construction and aircraft testing activity of the early sixties. An almost ten percent increase in licenses issued was noted in 1961 and in 1963 with a decline of nearly six percent in 1964 (Table 1). During the base drawdown and closure years of 1965 and 1966, stability and a slight decline was observed (a drop of three percent in 1966). The last half of the decade exhibited stability in number of licenses

issued with the exception of a six percent increase in 1969. By 1975, the number of business licenses issued had increased by 28 percent over the base closure year. Fluctuations in seasonal vendors, such as those who appear over holidays (Christmas) and during the summer months, may have accounted for a portion of the eighteen fewer licenses issued in 1966 in comparison with 1965. Even though people departed steadily from the base in 1965, the number of business licenses issued in that year remained the same as in 1964. During the base closure year no wholesale failure of Moses Lake businesses was apparent, if number of business licenses issued is taken as an indicator.

Interviews with Moses Lake businessmen who experienced base closure impacts add insights to the inferences drawn from investigations of annual business permits and provided information about the kinds of business establishments affected. These interviews indicate that it was primarily the marginal business operators who were hurt by base closure.²⁵ The major automobile dealer most affected was the Lincoln/Mercury dealer. Others associated with the Moses Lake automobile business indicated that management difficulties were also being experienced by the Lincoln/Mercury dealer and that base closure was possibly not the prime cause of this business failure. One used car dealer left town, but his efforts were described as having been on a trial basis and of only two years duration in Moses Lake. Loss of car sales hurt most dealers, but their reaction was to bolster sales by adding a larger variety of cars to their dealerships.

Two hardware stores went out of business near the time of base closure. A long-time merchant in Moses Lake indicated that one pro-

prietor retired and therefore closed his business; the other hardware store was older and was managed in a less than efficient manner which left it open to the rigors of competition. A major hardware dealer stated that his business volume declined by thirty percent in the year of base closure, but that it was back to normal volume the following year (1967).

Grocery stores apparently suffered little from base closure; only one store closed, but this business failure was again attributed to the pressure of local competition rather than base closure. Some businessmen interviewed stated that grocery sales in town actually increased as those who formerly used the base commissary began using local grocery stores for their food requirements. The same statement was applied by an interviewee to the photo shop business; sales increased as people who had previously used the base exchange for their photo supplies and equipment were forced to turn to in-town shops when the base closed.

A furniture store, two shoe stores (one of the bargain store type), and an appliance store also went out of business about the time of base closure. Tavern trade was helped or hindered as a function of pre-closure clientel according to some interviewees. Business in some taverns increased as those who frequented on-base clubs began to use local taverns; some taverns lost business as base personnel who preferred them left town. Other service/retail establishments, such as flower shops, jewelry stores, and gasoline service stations were impacted by base closure. Gas stations most directly affected would seem to be those catering directly to base trade, such as those situated just outside

the base main gates. The depression of gasoline sales lasted approximately two years.²⁶

Among the eighteen fewer business permits issued in 1966 than in 1965, nine retail establishments were verified as having closed their doors. Some of these firms succumbed due to management difficulties or the pressures of competition, with base closure being a possible contributing factor. As opposed to widespread business failures, the more realistic reponse to base closure by Moses Lake businessmen was a reduction in the inventory of goods on hand as sales demand decreased. Sales volumes in Moses Lake were affected, but on the basis of interviews conducted, the depression of sales volume appeared to be of short duration, lasting as long as two years depending on the type of business involved.

To supplement these data related to Moses Lake businesses and base closure, similar information concerning annual number of business establishments in Grant County was extracted from a Census Bureau document entitled, County Business Patterns.²⁷ Table 3 reflects what happened to business establishments in Grant County during the base closure years.

TABLE 3
GRANT COUNTY, WASHINGTON
ANNUAL BUSINESS ESTABLISHMENTS, 1959-1970

	1959	1962	1964	1965	1966	1967	1968	1969	1970
# Reporting Units	858	881	871	863	860	844	840	815	837
# Manufacturing Units	32	32	38	35	36	38	37	36	35
# Retail Trade Units	313	326	335	323	314	317	316	313	320

There were 21 fewer reporting units in 1970 than in 1959; not a drastic decline when it is recalled that Grant County possesses several municipalities one of which (Ephrata) is as large as Moses Lake. During the base closure years (1964-1966), a decline of 11 reporting units was observed and there were 20 fewer units in 1968 than in 1966 (Table 3). Changes in the total number of reporting units were primarily associated with the 1-3 employee category, indicating that small firms freely entering and exiting the market were responsible for most of the annual change in total number of reporting units.

The number of manufacturing firms in Grant County exhibited stability during the decade with three more firms in existence in 1970 than in 1959. More manufacturing establishments existed during and after the base closure years than before (Table 3).

The number of retail trade units in the county also remained reasonably stable with seven more reporting units present at the end of the decade than in the beginning. Maximum fluctuation occurred between 1964 and 1966 during the base closure years when the number of retail trade units declined by 21. Again this is not considered excessive because of the small size of firms (1-3 employees) involved.

County business pattern data reflect no severe declines in number of firms operating in Grant County that can be definitely connected with base closure. Because of the way these data are reported and aggregated, they are probably too gross to reflect perturbations caused by base closure.

Housing--Real Estate Market

Housing vacancies can be expected to increase when a military base closes because some military personnel occupy homes within the

host community. Some military families desire to own their own home in town, and others may have to live off base if the number of military families exceeds the quantity of base housing available. In 1964, approximately 1,000 Moses Lake housing units were occupied by military personnel from Larson. An estimate placed the total number of homes which would be affected by base closure at 1,280 units.²⁸ This estimate included all types of dwellings such as single family homes, apartments, duplexes, and mobile homes.

The number of units occupied compared to the number of units available illustrates 1960 to 1970 population changes in Moses Lake. In 1961-1962 when a large number of construction workers and Boeing employees were present, occupancy rates were greater than 95 percent. After the base closure announcement in 1964 and as military personnel departed steadily in 1965, the occupancy rate dropped to 81.3 (Table 1). In 1965 a total of 630 vacant housing units, 18.6 percent of the total housing stock, existed in Moses Lake. Occupancy rates remained around 85 percent in 1967-1968 and had climbed back to 92.5 percent by 1970, an occupancy rate somewhat higher than the 1960 value of 89.3 percent.²⁹ Unquestionably, the real estate market was depressed temporarily since approximately one of every five houses in Moses Lake became vacant during the base closure years. However, these data on total housing units include units of varying quality, all units counted are not sound, and some can be expected to fall in the dilapidated category. If the vacancy rate was computed on the basis of sound units alone, it would probably be somewhat less severe.

Though the number of vacant housing units in Moses Lake placed a strain on the local real estate market, it is doubtful that the total number of vacancies ever reached the estimated level of 1,280. Reputable realtors in Moses Lake who experienced base closure and its impact on real estate values estimated that the housing market had recovered by 1968, two years after base closure.³⁰ Areas of larger, more expensive homes were never plagued by high vacancy rates. A zone of two and three bedroom, minimum standard, rental housing in eastern Moses Lake was severely affected by base closure, since many lower income military families resided there.

This housing section and a group of houses on the north side of town within two miles of Larson AFB were locations where FHA and VA mortgage loans were concentrated. By October of 1966, after the base was officially closed in June, 40 homes were up for sale by VA representatives and 112 homes were available through FHA sources. Fifteen miscellaneous homes throughout Moses Lake were also for sale by the FHA. These FHA and VA single family and duplex dwellings represented five percent of Moses Lake's 1966 housing stock. Most of these homes were of frame construction with two bedrooms, a single bath, and with no basement or carport. Sale prices of these homes ranged from \$5,400 to \$11,450 with an average sales price of \$7,500.³¹ In contrast, the 1960 median value of owner-occupied homes was \$13,400.³² Other homes were probably for sale as a result of base closure, but these homes in the east and north sections of Moses Lake were significant because of the concentrated number of vacancies found in these two sections. Landlords who owned small, cheap apartments or mobile home parks were also hurt by base closure because they lost their source of low income military renters.

It is also likely that both military and civilian homeowners suffered financial losses because of base closure. Depressed home prices, inability to rent or sell homes, loss of equity to apply to another home at the next duty station, mortgage refinancing and possible loss of VA eligibility are collective factors that would serve to impair the financial status of homeowners faced with the prospects of moving in response to base closure.

Though the real estate market was temporarily depressed as a result of base closure, the "filtering process" often associated with surplus housing availability helped alleviate housing vacancy rates in town and allowed certain groups of people to move into homes of higher quality.³³ As has been mentioned previously, the Moses Lake-Grant County labor force was partially comprised of migrant workers as a function of the area's predominantly agricultural economy. Many of these workers were of Hispanic origin. Food processing plants began operations in Moses Lake during the same time period the base was phasing down. These processing plants needed a supply of labor, and many migrant workers became sedentary because circumstances presented them with long-term employment in food processing operations. A steady income, coupled with availability of better quality housing made affordable by base closure, allowed this group of people to purchase homes on the market and thereby "filter up" into dwellings better than those in which they had lived previously. Houses vacated by military personnel and acquired by formerly migrant workers were neat, well kept and presented a pleasing external appearance in 1977. As one realtor stated, "certain minority groups got a steady pay check and cleaned up some of our minimum standard housing."³⁴ Most base closure events are

described in negative terms, but in Moses Lake, the filtering process served the positive purposes of helping decrease local vacancy rates and at the same time providing a lower income group with a higher standard of living.³⁵

Changes in Residential Building Permits

With the excess number of single family dwellings available in Moses Lake, it was logical to expect not only a decrease in average price of homes but also a decline in the number of new homes under construction. This expectation was supported by data from the City of Moses Lake Building Division.³⁶ The number of new residential building permits granted annually by the city between 1960 and 1970 mirrored population changes during the decade. In 1960 and 1961, when an increased number of construction workers were in town, a large number of permits were issued with the most new residences (75) constructed in 1961. In 1962 half as many new residential permits were granted (36), and in 1963 through 1970, the number of new homes built declined dramatically; less than a half dozen new homes were built in any of the last five years of the decade (Table 1). Aside from the departure of people from the area, the block of homes on the Air Force base went on the market for rent at very low rates. This situation served to restrict the volume of new home construction in Moses Lake after base closure. In addition, the changing population structure of Moses Lake may have also influenced the demand for new housing. When the town was new in the 1940s and 1950s, young families with young children were present, but in later years, these young people matured and left Moses Lake. An older age group was left in town with the result of slower population

growth and less demand for new housing.³⁷ Obviously, the number of new homes built in Moses Lake during the late 1960s was curtailed severely as a result of base closure and the large number of cheap rental homes available to those who needed housing.

Changes in Moses Lake Tax Base and Municipal Services

Communities affected by base closure always fear a decline in revenue producing tax base resulting from decreases in real estate values, decline in retail business inventories, and overall devaluation of community assets. The attitude in Moses Lake was no different. A report on the economic prospects of Moses Lake stated:

in addition to the direct and indirect effects on local employment, deactivation of Larson could have a substantial impact on the city's tax revenue and resulting level of service. . . . total city revenue losses could amount to as much as \$256,800, almost one-fifth of the city's expected income.³⁸

Data from Table 1 on property tax receipts and valuation of the Moses Lake tax base do show a decline in 1966, the base closure year, but property tax receipts recovered in 1967 and were stable or increased throughout the rest of the decade. When these receipts are adjusted for inflation (Table 1A), the 1966 decline is still observed and property tax receipts remain about \$25,000 below the 1965 level for the last five years in the decade. Even with this retrenchment, Moses Lake property tax receipts were \$69,000 greater in 1970 than in 1960. Valuation of the tax base decreased by \$906,081 (or 6% of 1965 valuation) in 1966 but remained stable or showed a slight increase between 1967 and 1970. While this tax valuation decrease of nearly one million dollars appears drastic, the average tax valuation for Moses Lake for the 1960 to 1970 decade was approximately \$13.3 million. In the years following

base closure, the valuation of Moses Lake's tax base exceeded the average for the decade. The tax base was increasing steadily in the years prior to base closure, and in the years after closure, stability, not a steady increase in valuation, was the norm.³⁹ Tax base valuation adjusted for inflation exhibited the same trend as did property tax receipts (Table 1A). The largest incremental decrease occurred in 1966, and tax base valuation remained at approximately \$13 million for the rest of the decade. The town's tax base was still \$1 million more in 1970 than in 1960.

According to the Grant County Tax Assessor, the noticeable drop in Moses Lake's tax base valuation from 1965 to 1966 was attributable to the decline in volume of merchandise kept in Moses Lake stores as businessmen reduced their inventory of items for sale.⁴⁰ The tactic of reducing inventories in response to decreasing retail demand was confirmed by businessmen who experienced the base closure years in Moses Lake.

Tax revenues did decline, but was the decrease enough to create changes in essential municipal services provided by the city of Moses Lake? Table 1 shows no decrease in the number of full-time policemen and firemen employed by the city in the 1960-1970 decade. However, the decrease in city revenues was felt by Moses Lake. In a letter to the City Council, the city manager addressed measures to be taken in an effort to recoup the loss of revenue caused by population loss and reduction in assessed value of real property. Department heads of city activities were ordered to curtail expenditures and no expansion of services was authorized. New capital goods items were not to be purchased, and the proposed 1966 city budget provided for a minimum main-

tenance program. Personnel vacancies for a bookkeeper and a fireman were not to be filled, and one position in the Police Department was to be eliminated. The sewage treatment plant needed an additional person, but that workload was to be absorbed by existing workers. Part-time employee allocations were also to be decreased. In addition to these measures, a proposed one percent increase in utility taxes was to be used to balance the budget.⁴¹

If the local tax base were severely eroded as a result of base closure, it could be expected that the first community services to feel the pinch would be less critical services such as recreational programs. Moses Lake has a larger park acreage (120) than the city size might warrant. In the state of Washington, Moses Lake ranked third in the per capita amount budgeted for parks and recreation in 1964.⁴² These unusual circumstances might have rendered city recreation programs more open to budget cuts in a climate of declining local tax resources. Table One indicates a steadily increasing annual recreation department budget between 1960 and 1964 and a marked decline (15%) in 1965, although base closure was not complete until mid-1966. In 1967, the recreation department budget again started to increase, and in 1968, a marked increase (40%) over the 1967 budget is noted. According to the Moses Lake Recreation Department, the large budget increase in 1968 was due to an increase in the number of people employed by the recreation department. Moses Lake's recreation director also indicated that the budget drop experienced in 1965 may not have been directly related to base closure but to the city's acquisition of recreation programs formerly administered by a recreational council rather than by city management.⁴³ The same trend is observed when the city recreation bud-

get is adjusted for inflation (Table 1A). Using data corrected for inflation, the city recreation budget was 2 1/2 times larger in 1970 than in 1960. Even though budget fluctuations in the recreation department can be observed in the base closure years, no long-term decline in city recreation services can be noted; in addition, recreation department personnel did not indicate that city recreation programs were adversely affected by the event of base closure.

Research indicates that the decline in tax revenue associated with base closure caused some difficulty in Moses Lake, but not enough to cause major changes in essential services provided by the city. Sound, creative city management was equal to the challenge presented by revenue losses, and neither devaluation of tax base nor loss of property tax receipts appear to have had more than minimal impact on provision of municipal services.

Base Contributions to Community Charity Drives

Because activities like annual United Way campaigns depend on individual contributions, departure of several thousand people from a community in a short period of time could severely curtail services that depend on charity as the source of their funds. In the early years of the 1960s, Larson Air Force Base was a staunch contributor to Moses Lake's United Way Campaign. Between 1960 and 1966, Larson Air Force Base contributed an average of 15 percent annually to the local United Way campaign; the base was responsible for as much as 23 percent of the total contributed in 1963 and as little as one percent of total contributions in 1967, after base closure (Table 1). The United Way contribution goal was reduced from \$45,000 to \$39,000 (13%) when it was known

that the base would close in 1966 so base closure did have a negative effect on charity contributions. This negative effect was short-lived, however, with both the level of contributions (goals) and amounts contributed by the community again at the pre-base closure levels by 1968. Moses Lake did lose that portion of United Way contributions generated by the base, but the town recouped this loss by better organization and use of a "Loaned Executive" program designed to increase contribution efforts made in the corporate and employee divisions of the campaign. Employees at new food processing and sugar beet plants in town also helped increase the level of contributions.⁴⁴ Again, through aggressiveness and better management techniques, the town was able to tap previously unrecognized resources to insure that community activities supported by charity were not hurt by the loss of contributions available from Larson Air Force Base.

Base Closure Effects on the Grant County Public Utility District

In 1965, the Grant County Public Utility District was the nation's third largest non-federal producer of hydro-electric power. It is owned by the residents of the county and generates its power from the Priest Rapids and Wanapum power developments on the nearby Columbia River. Electricity is provided to local residents at low cost, and annual residential consumption was nearly four times the national average in 1964. These circumstances led to extensive use of electricity for residential, commercial and heating purposes.⁴⁵ Aside from these residential and commercial kinds of consumption, one of the larger local expenditures made by Larson Air Force Base was the \$200,000 electric utility bill paid annually to the Grant County Public Utility District.⁴⁶ Under

these conditions, base closure and out migration by large numbers of people could be expected to produce changes in the number of electrical utility commercial and residential accounts, with a corresponding decrease in revenue to the local supplier of electricity. Did this happen to the Grant County Public Utility District, which provides electricity for the town of Moses Lake?

The data presented in Table 1 concerning Moses Lake electrical utility accounts and revenues help to answer this question. Though revenues and accounts data for the specific years 1960 and 1970 were not available, the information for all other years except 1969 is complete.⁴⁷ Residential revenues and accounts data for 1969 are based on only an eight month increment, and the 1969 totals are thus lower than for preceding years. If representative figures for winter months taken from preceding years are inserted for missing 1969 values, then the totals for 1969 are within 47 customers and \$1,700 of 1968 totals.

In Moses Lake, the average number of residential accounts per month declined from a high of 3,136 in 1962 to a low of 2,799 in 1967, a difference of 337 in the average number of monthly customers. The largest decrease in average monthly residential accounts occurred from 1962 to 1963 when 172 accounts were lost. This loss of residential accounts was probably associated with departure of contract missile construction workers finishing the work required for missile operations at Larson in 1962 and 1963. In the base closure years of 1965 and 1966, a total decline of 120 accounts can be noted. The average number of residential accounts in Moses Lake began to increase again in 1968.

The average monthly revenue from these residential accounts displays a similar pattern but fluctuations in revenue were somewhat

more modest than fluctuations in numbers of residential accounts. For the decade, the difference between the peak revenue year of 1961 (\$36,721) and the base closure year of 1966 (\$33,546) amounted to only \$3,175, eight percent of 1961 average monthly residential revenue from Moses Lake accounts. Corrected for inflation (Table 1A), average monthly residential revenue exhibited reasonable stability in the years for which complete data were available. The most noticeable drop (\$1,200) occurred in 1966. In 1968 monthly revenue from residential accounts was almost identical to the 1961 level, demonstrating a high degree of stability regardless of base closure.

The average number of commercial accounts increased during the years of missile construction activity and began to slowly decline in 1964, 1965, and 1966. A noticeable drop of 31 commercial accounts occurred in Moses Lake in 1967, the year after base closure, but the average number of commercial accounts increased slightly in 1968. Average monthly revenue from commercial accounts in town reached its maximum (\$26,030) for the decade in 1963 and its minimum (\$23,324) in 1967. The difference in revenue for these years represented a ten percent decrease over 1963 revenues from average monthly commercial accounts. More stability is observed when these figures are corrected for inflation (Table 1A), and revenue from commercial accounts was greater in 1968 than it was in 1966. Revenues from commercial accounts were less (by approximately \$10,000) than revenues from residential accounts in Moses Lake from 1960 to 1970.

The average monthly number of residential and commercial accounts changed more in response to base closure than did the average monthly revenues from these accounts. While many people left and commercial

enterprises ceased operations in conjunction with base closure, the revenue loss from Moses Lake accounts did not seem to represent a severe blow to the Grant County Public Utility District. If there is a relationship between number of residential electric utility accounts and housing vacancies, it also appears that the number of vacant homes in Moses Lake during the base closure years never reached forecast levels. Changes in number of commercial accounts also appear gloomy, but revenue losses indicate the picture was not as dark as it may have seemed. Apparently the decline in commercial accounts was generated by types of Moses Lake businesses that did not contribute much to utility district revenues anyway.

Data for the utility district as a whole, which includes an area (all of Grant County) much larger than Moses Lake, do not indicate that loss of the electric utility bill paid by the base caused the utility district to suffer very much. Both the average number of residential accounts and total residential revenues for the district increased between 1960 and 1970 (Table 1). The average number of accounts grew from 10,815 in 1960 to 13,795 in 1970, and revenues increased from \$1,514,833 in 1960 to \$2,546,789 in 1970. Slight declines in average numbers of accounts and revenues did occur in base closure years, but in only one year, 1966, did revenues for the district decline; however this decline amounted to a total of only \$11,000 in comparison to total district revenues for 1965. Inflationary adjustments to these data (Table 1A) reveal the same patterns showing a decline of approximately \$30,000 in 1966; however, the overall trend is one of growth in residential revenues between 1960 and 1970.

Utility district losses attributed to base closure and changes in Moses Lake proper were possibly balanced by growth throughout the area served by the utility company during the decade. Also, when Larson Air Force Base became the property of the Port of Moses Lake, the Grant County Public Utility District was again paid by the Port for residential accounts generated by people who moved into housing on the base which was formerly occupied by military families. This represented an increase in 544 residential accounts between 1967 and 1968 and the increase in revenue amounted to \$189,773. The Grant County Public Utility District survived the base closure years very well.

Base Closure and Changes in Public Assistance Programs

Base closure might be expected to trigger an increase in people receiving welfare assistance from sources such as the Aid to Dependent Children and General Assistance programs which were available during the 1960s. The rationale would be that some families would be left without an employed head of household or that family income would shrink as jobs became scarce for those who may have worked at jobs related to base activity.

Whatever the reason, community perception was that welfare recipients and case loads would increase following base closure. It should also be remembered that during the 1960s, social welfare programs abounded and that qualifying for these programs was not as difficult as it is today. In addition, many lower ranking Air Force enlisted people could qualify for some assistance programs because their annual incomes were so low.⁴⁸ Many of these enlisted people, usually E-3 and below in rank, were often the same ones who worked part time in the

local agricultural industry to supplement their income rather than accept welfare assistance.

The state of Washington publishes General Assistance and Aid to Dependent Children data by county on a monthly basis.⁴⁹ If the closure of Larson affected Grant County welfare programs, a change in case load and number of people receiving assistance should be reflected in these data. Analysis of General Assistance cases in Grant County between 1960 and 1970 indicates a definite drop in the average annual case load in the base closure year (1966). In fact, the average annual case load was lower in 1966 than for any other year in the decade. The same statement is true for the average number of people receiving General Assistance funds between 1960 and 1970 (Table 1). The case load and number of persons receiving Aid to Dependent Children also decreased in 1966. The average annual number of Aid to Dependent Children cases steadily increased each year until 1966 when the decline is noted and then steadily increased again in 1967, 1968, 1969 and 1970. The average number of people receiving dependent children aid mirrored the case load trend during the decade. It is reasonable to presume that the declines in these two welfare programs occurred because of a population change within Grant County in 1966, and that the population change can be attributed to base closure. No major increase in the average number of welfare cases or recipients in Grant County accompanied base closure. Since many military people could qualify for welfare assistance, it seems the 1966 decline in case loads and numbers of people can probably be attributed to the deletion from welfare rolls of those qualifying Air Force personnel who departed Grant County following base closure.⁵⁰ As with the unemployment situation previously described, the reverse

of what the community expected to occur actually happened with respect to Grant County welfare assistance programs--these programs experienced a decline in numbers of associated people following base closure rather than the expected increase.

Summary

The preceding discussion of changes in Moses Lake's socioeconomic characteristics provide an outline of what actually happened to this rural Columbia Basin town as it experienced the closure of Larson Air Force Base. The expected "across the board" decline in community welfare did not occur. The number of vacant homes in Moses Lake did increase and grammar schools were affected by loss of federal impact funds to the school district, but these declines were of a short-term (two years) duration rather than of a permanent nature. Other community attributes, such as unemployment rates and welfare cases were positively affected by base closure. One particular segment of the population (migrant workers) benefited by the better quality of housing made available as a result of base closure. Less than astute management expertise and local competition may have been more of a factor in causing some retailers to close their doors than was base closure in those situations that could be documented. As a result of changes in available tax resources, Moses Lake suffered few, if any, changes in municipal services provided. Though not discussed directly, data in Table 1 concerning hospital employees indicate that hospital employment was stable throughout the years of base closure. On the basis of hospital employment, one may assume that the level of community medical services provided also remained stable, and that base closure had little effect on the local hospital since few of its patrons would have been military

personnel. Community capital assets were not destroyed by wholesale withdrawals from local banks.

The picture of Moses Lake during the decade of the 1960s is one of a town affected as much or more by fluctuations of population as contract construction workers arrived and departed as it was by base closure. Base closure impacts in Moses Lake took the form of noticeable drops in those community attributes driven by the physical presence or absence of people, such as school enrollments, unoccupied houses, and volume of retail business. The broad effect of base closure appeared to be of two types: one of short-term decline in socioeconomic attributes, then recovery to pre-base closure activity levels, or one of reduced community growth rates after base closure when compared to the years immediately prior to this event. The trend in base closure impacts did not seem to follow the expected immediate and traumatic decline to a new and lasting, lower increment of community socioeconomic welfare that central place theory would postulate. It is a tribute to the active community of Moses Lake that its people did not allow the town to falter for very long after Larson Air Force Base closed.

Footnotes

¹Department of the Air Force, Record of Proceedings, Hearing for Informal Public Comment on Draft Environmental Impact Statements held at Limestone, Maine 04750 on November 17-18, 1976, (Washington, D.C., U.S. Air Force), pp. 36-37.

²Ibid., pp. 45-46. ³Ibid., p. 54. ⁴Ibid., p. 97.

⁵Ibid., p. 162. ⁶Ibid., p. 188. ⁷Ibid., p. E-372.

⁸See, for example, the records of public hearings held in conjunction with other base closure actions. U.S. Air Force, Record of Informal Public Hearings, Big Spring, Texas, 4 November 1976, (Department of the Air Force: Washington, D.C., 1976).

⁹Clark, Coleman and Rupicks, Inc., The Economic Prospects of the Moses Lake Area, (Seattle, Washington: Clark, Coleman and Rupicks, Inc., 1965), pp. 105, 201.

¹⁰R. W. Beck and Associates, Beck Plans Utilization of Larson Air Force Base, (Seattle, Washington: R. W. Beck and Associates, 1966), p. 3.

¹¹Clark, Coleman and Rupicks, Inc., p. 104. The number of students who might possibly leave the school district is based on federal impact assistance funds paid to the Moses Lake school district according to this document.

¹²Ibid., p. 106. These figures reflect loss of expenditures from military, civil service and other base workers and the loss of revenues from workers indirectly affected by base closure, such as teachers and employees of establishments supported by base expenditures.

¹³Ibid., p. 56. ¹⁴Ibid., p. 251.

¹⁵Office of Economic Adjustment working paper, "Impact Upon Area Due to Closure of Larson Air Force Base." No date is given on the working paper; it was probably published in early 1965. Documents such as this could be procured by writing the Director for Economic Adjustment, Pentagon, Washington, D.C. 20301.

¹⁶Moses Lake (Washington) Columbia Basin Daily Herald, December 8, 1964. Larson's base population was placed at 8,000, a figure which includes the dependents of military and civilian workers employed on the base.

¹⁷The socioeconomic variables measured in dollar amounts in Table 1 were corrected for inflation by multiplying the gross amounts listed for each year (except 1960) by the annual change in the Consumer Price Index. "The Consumer Price Index (CPI) measures the average change in prices of goods and services purchased by consumers for day-to-day living." The increment attributable to inflation was subtracted from

the amounts listed in Table 1 yielding the values listed in Table 1A. The definition of the CPI and CPI values used in computation for Table 1A were extracted from the U.S. Department of Labor Bureau of Labor Statistics, Handbook of Labor Statistics (Washington, D.C.: U.S. Government Printing Office, 1980), pp. 321-323.

¹⁸Clark, Coleman and Rupicks, Inc., p. 101. "As many as 2,000 civilian workers were employed at Larson in late 1961 when the Boeing Test Center was in operation and the missile site construction was underway. Most of these workers resided in Moses Lake."

¹⁹Mr. Pete Kalamakis, interview held in Moses Lake during field research visit August 5, 1977. Mr. Kalamakis operates an automobile body repair shop, and a substantial amount of his business was generated by people from Larson Air Force Base.

²⁰Mr. Lee Hutsell, Principal, Moses Lake High School, interview held in Moses Lake during field research visit August 5, 1977. Much of the information about changes in teacher employment, school enrollments and closures, and school funding was obtained during this interview.

²¹Clark, Coleman and Rupicks, Inc., p. 88. The statement about unemployment trends and cessation of missile site construction is supported by a description of covered employment trends from 1955 to 1963 found in the report, Economic Prospects of the Moses Lake Area.

²²*Ibid.*, p. 104.

²³This statement is reinforced by Moses Lake employment security officials who stated that the departure of military personnel holding local jobs helped decrease the level of unemployment claims since new jobs became available to those on unemployment rolls.

²⁴The town requires an annual business license to be issued for all types of retail and service activity ranging from department stores to the sale of Christmas trees.

²⁵In the following discussion, businesses mentioned as either failing or being negatively affected by base closure were verified by two separate sources.

²⁶Mr. Pete Kalamakis, interview held during field research visit August 5, 1977.

²⁷U.S. Bureau of the Census, County Business Patterns, First Quarter 1959. Parts 2, 9, and 10. (U.S. Government Printing Office, Washington, D.C., 1961). Data are missing for 1960 and 1961 in Table 3 because County Business Patterns was not published in these years. For manufacturing units only, a reporting unit represents a single business firm. For total reporting units and retail reporting units, several firms performing the same function in the county may be aggregated to constitute a single reporting unit. This situation makes it difficult to determine the influence base closure may have had on number of firms going out of business in Grant County.

²⁸Clark, Coleman and Rupicks, Inc., p. 56.

²⁹Data on total housing units and units occupied were furnished by the Moses Lake City Planning Department.

³⁰Mr. K. O. Moos, interview held in Moses Lake during field research visit August 4, 1977. Mr. Moos is a realtor who had lived in Moses Lake for twenty-three years. He indicated that the housing market had recovered by 1968.

³¹Federal Housing Administration and Veterans Administration Property Listings for September and October 1966. These listings contained the prices, addresses, and features of homes held by the FHA and VA in Moses Lake. Listings were obtained from a Moses Lake realtor; the same lists could probably be procured from appropriate FHA and VA offices in Seattle or Spokane, Washington.

³²Clark, Coleman and Rupicks, Inc., p. 55.

³³Brian J. L. Berry and Frank E. Horton, Geographic Perspectives on Urban Systems, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), p. 307.

³⁴Mr. K. O. Moos, interview held in Moses Lake during field research visit August 4, 1977.

³⁵The positive affects of the filtering process were confirmed by three different individuals, the city engineer, a realtor, and a hardware store owner.

³⁶Mr. Mac G. McLanahan, Assistant Public Works Director for the city of Moses Lake, Washington. Interview held in Moses Lake during field research visit August 2, 1977. Mr. McLanahan has lived in Moses Lake for many years and was able to describe in detail the history of base closure and its impact on Moses Lake. Data on the number of new residential building permits issued annually were provided by Mr. McLanahan.

³⁷Mr. Chuck Edwards, Sr., interview held in Moses Lake during field research visit August 6, 1977. Mr. Edwards is a long-term resident of Moses Lake and has operated a retail hardware business in town for many years.

³⁸Clark, Coleman and Rpuicks, Inc., pp. 100, 106.

³⁹These data on Moses Lake tax revenues were obtained from Mr. John Kolve, Grant County Tax Assessor, during a field visit to Moses Lake and Ephrata, Washington, August 4, 1977.

⁴⁰Mr. John Kolve, Grant County Tax Assessor, interview held during field visit to Ephrata, Washington, August 4, 1977.

⁴¹Letter from Mr. Chester L. Waggener, Moses Lake City Manager, to the Moses Lake City Council. Letter dated August 30, 1965.

⁴²Clark, Coleman and Rupicks, Inc., pp. 157.

⁴³Mr. Cecil Lee, Moses Lake Recreation Director, interview held in Moses Lake during field research visit August 4, 1977.

⁴⁴Data on United Way contributions in Moses Lake were made available by Mrs. F. C. Trask, Executive Secretary for United Way of Moses Lake, Inc., in a letter dated August 3, 1977.

⁴⁵Greater Moses Lake Chamber of Commerce, Moses Lake, Washington, (Moses Lake, Washington: Moses Lake Chamber of Commerce, 1965), p. 28.

⁴⁶Clark, Coleman and Rupicks, Inc., p. 103.

⁴⁷Mr. Douglas F. Burk, Customer Records Supervisor, Grant County Public Utility District, interview held in Ephrata, Washington, August 4, 1977. Mr. Burk was very helpful in providing statistics on Moses Lake residential and commercial accounts and revenues during this interview.

⁴⁸TSgt. Douglas D. Balhorn, United States Air Force Academy Finance Office, interview held at United States Air Force Academy, Colorado, February 22, 1982.

⁴⁹State of Washington, Department of Social and Health Services, Income Maintenance, Community Social Services and Medical Assistance, (Olympia, Washington: Planning and Research Division, 1960-1970). These data, in addition to data on Public Assistance programs, can be obtained from the Office of Program Analysis in the Washington State Department of Social and Health Services, Olympia, Washington.

⁵⁰A recent conversation (February 24, 1982) with Mr. Paul Strand, Research Analyst for the Washington State Department of Social and Health Services, validates reasons for decline in welfare case loads in base closure years. Mr. Strand lived in Moses Lake when Larson Air Force Base closed and indicates that the circumstances surrounding military people on welfare, their departure from Grant County and the subsequent decline in welfare recipients is quite similar to the situation described by the author.

CHAPTER VI

THE SOCIOECONOMIC EFFECTS OF BASE CLOSURE ON GLASGOW, MONTANA

Glasgow Air Force Base and the Town of Glasgow, Montana

Pertinent locational and historical circumstances related to the community of Glasgow should be recounted before proceeding with analysis of anticipated and actual changes associated with base closure.

Both the town and former Air Force base are situated on the plains of northeastern Montana in Valley County. The base was located some eighteen miles north of town, and the two places were connected by a two-lane county road. As opposed to Larson Air Force Base in Moses Lake, Washington, Glasgow was still a reasonably new base at the time of its closure, having been operational only since 1955. The local economy is based on livestock ranching and grain farming; spring wheat and barley are the two major crops cultivated. During the 1950s and 1960s, the agricultural trend was toward larger individual farms and increased mechanization with a consequent outmigration of people from the local area. Valley County had experienced "ups and downs" in its population trends over the years as people associated with construction of both Fort Peck Dam and the Air Force base arrived and departed. The town had a population of 4,700 in 1970. B-52 bombers appeared at the Air Force base in 1960, base closure was announced in November 1964 and almost all of the base population had departed by June 1968.

Nearly four years elapsed between the base closure announcement and departure of the base population.

Until the closure announcement was made, the community had been convinced that the base was a permanent installation. Many of the base closure anxieties felt by the community were triggered by the fact that this small community had expanded its role as a provider of services for the base only a short time before the closure announcement was made. Local businessmen had made new investments and the base was to be closed before they would have a chance to recoup these investments. Many of the community impacts seemed more intense to the town as a result of the newness of the base, the town's location in rural northeastern Montana, and the response of the community to the new market for goods and services created by the base population. These events were in accordance with central place theory. The move by local merchants to supply more goods and services was directly related to the higher level of spatial demand in Glasgow's hinterland generated by the influx of military people.

Base Closure Effects Expected by the
Town of Glasgow

Anticipated difficulties related to base closure in Glasgow were much the same as those in any other base closure community. Utility companies, such as Montana Power Company, expected to lose the investment they had made in transmission lines and substations newly constructed to supply power to the base. For example, one substation built for base support cost Montana Power more than \$325,000.¹ The Valley Rural Telephone Cooperative had gone into debt (\$564,411) to provide service to military housing occupants on the base and still had an unpaid

balance of \$361,000 on its loan. With base closure the telephone cooperative would be left without a way to sell telephone service at a monthly rate required to amortize the debt. In addition to the phone company's debt situation, three full-time employees who worked on the base would lose their jobs, and other phone company employees would have their wages adjusted; these adjustments and terminations would amount to an annual payroll loss of \$24,000.²

The Valley Electric Cooperative had invested approximately \$50,000 to provide service to military people, civilian employees and construction workers living in trailer courts near the base. The annual revenue (\$14,000) from these customers would be lost to the electric utility. In addition some people who worked at the base had moved into vacant farm houses served by Valley Electric Cooperative, and revenue from these customers would no longer exist.³

Bankers were skeptical about the effect of base closure on the real estate market since the banks had made loans to many people for the purchase of homes. Most of the loans were taken over by the VA and FHA; these government lending agencies stood to lose an estimated \$1,500,000 in home mortgages.⁴

The Construction Trades Council indicated that 300 construction workers depended on the base for jobs each year, and their annual payroll (\$1,641,000) would no longer be spent in the community; base closure "would almost wreck the economic condition of any community of this size."⁵

Other local labor organizations predicted that 340 workers could expect to lose their jobs; among these workers were 100 people in retail trade, 40 people in service occupations and some 200 construction

workers. Unemployment of these 340 workers was based on an expected 40 to 50 percent reduction in local business activity. Three hundred civilian personnel from the base were projected to leave, and 75 to 100 teachers would have to seek other employment. Total population loss exclusive of the military was put at 2,000 to 3,000, and "the loss of payroll from these workers, plus the purchases of military personnel will have a severe effect on business."⁶

Civil Service employees had purchased homes in the area and were members of the community in every way. They saw their property values decline to approximately 60 percent of its original cost.⁷

Glasgow School District #1 forecasted that 85 teachers would be unemployed and 15 other administrative personnel would be forced to find other jobs, with a subsequent payroll loss to the community of \$450,000. Federal impact funds would be cut off as military dependents departed, while local tax support for the school district had to be maintained.⁸

In summary, the public utilities, real estate market, local business, construction work and the school system would collectively decline as people left the area in response to base closure.

Some businesses were to be affected not only by the sudden loss of clientele, but also by being caught in an expansion mode as they had increased the supply of goods and services needed by the larger number of consumers in the community.

A new meat packing plant was built at a cost of \$375,000 to supply meat for consumption at Glasgow Air Force Base. Scheduled for completion in March 1965 (after the closure announcement in November

1964), many people in the community bought stock in the packing plant to raise construction funds.

We were told by the base that they were required by regulation to buy from the nearest, small, federally inspected packing plant as long as the "price was competitive and the product met requirements."⁹

At the time of the base closure announcement, the packing plant was incomplete, and stockholders in the community were left "holding the bag" with a plant that might not have a market for its products.

A wholesale distributor, produce company, and the local Coca-Cola bottling plant had added new cooling equipment, floorspace, and distribution equipment to their businesses on the advice that the air base was to be a permanent installation.¹⁰

Activity in the provision of services was also stimulated by the presence of the base. Motels expanded their capacity, and one new motel was built at a cost of \$125,000. A \$45,000 commercial laundromat was installed on the base, and at the time of the closure announcement, the owner had not had time in his two years of operation to retire his investment debt. Downtown, a commercial laundry and drycleaning operation expanded to take advantage of the contract laundry and drycleaning service required by the base. The proprietor spent \$131,000 on new building and capital equipment. The new laundry and drycleaning operation had not opened for business at the time of the base closure announcement.¹¹ A credit bureau started for conducting credit reports on military people primarily would also lose money sunk into an operation heavily dependent on the presence of the military for its viability. Along with the local utilities, a cable television company had installed 1,330 hook-ups on the base and 731 outlets in town. The cable television company expected to lose two-thirds of its revenue when the base closed.

Two small pizzerias had also opened to provide food service to the base population.¹² Between 1957 and 1964 Glasgow retail and service firms added 137,740 square feet of new floor space at a cost exceeding \$2,475,000. Glasgow businessmen were obviously counting on the continuing existence of the air base. Some of these people were caught by the base closure announcement at a time when business expansion appeared to be a lucrative course of action.

Valley County and the town of Glasgow, as providers of municipal services, also believed they would feel negative effects from base closure. Taxes on the Great Northern railway spur from town to the base would be lost, and the overall county tax base would be decreased. The county also figured to lose commercial airline service and the associated lease revenue at the city-county airport because the base generated most of the area requirement for commercial air transportation. Property taxes would decrease by 25 percent as the residents of approximately 100 homes in town departed. Revenue to the county from license plate fees (\$30,000 from 3,000 registrations) would no longer exist when the base phased out.

The town of Glasgow had also made many improvements in its infrastructure.¹³ Streets were paved (18 miles), new water and sewer mains were installed (8 miles each), a new storage reservoir, and a new sewage lagoon had been built by the town since the base appeared on the landscape in 1955. Street lighting was improved, and to meet the demand for additional housing, playgrounds, streets and other community services, an area encompassing 350 acres was added to the town. Glasgow also built a new fire hall and purchased new fire trucks and equipment, along with renovation of the police station.¹⁴

These were substantial improvements for a town the size of Glasgow situated in rural northeastern Montana. It is not surprising that the community was upset over the base closure announcement. The base had been operating for only a few years, and the town had no reason to believe that the Air Force's newest installation would be closed so soon after completion of construction. Analysis of detailed community socioeconomic data will provide information about whether or not the community suffered as much as Glasgow's citizens believed it would when the base ceased operations.

Bank Deposits

The Glasgow hinterland supports two banks. The trend in total deposits of these two banks indicates net growth between 1960 and 1970 when the town experienced base closure. In fact, the data in Table 4 show 1970 deposits to be almost double the amount of 1960 deposits. Only in 1968 did bank deposits show a decline (1%) rather than growth over the previous year's deposits for each year in the decade. Table 4A (bank deposits corrected for inflation) reflects the same trend except that the rate of growth in deposits is somewhat lower from 1966 to 1969. It should be remembered that by June 1968, almost all of the military people associated with the base had moved out of the local area. The slight decline in bank deposits reflected in 1968 can probably be attributed to the exodus of personnel associated with the former Air Force base. Except for the small decline evident in 1968, Glasgow bank deposits exhibit strong growth throughout the decade with annual growth in deposits averaging almost one million dollars each year.

Base closure had little effect on local bank deposits because of the increase in agricultural production and cattle and farm prices

TABLE 4
COMMUNITY SOCIOECONOMIC DATA - GLASGOW, MONTANA

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Valley Co. Pop.	17,080	19,100	21,100	21,900	22,400	21,800	21,100	19,500	12,800	12,100	11,471
Glasgow Population*	6,798	4,831	4,742	5,084	5,049	4,701	4,559	4,599	4,312	4,466	4,700
Bank Deposits	\$16,087,100	\$17,108,438	\$17,901,678	\$20,409,635	\$22,041,456	\$23,545,232	\$24,188,394	\$28,801,617	\$28,555,155	\$29,744,193	\$31,665,533
Certified Teachers Glasgow Dist. 5	125	133	149	143	156	149	144	145	91	87	92
Enrollees Glasgow Dist. 7	No Data	2,970	3,101	3,404	3,635	3,572	3,561	3,372	1,866	1,816	1,886
Pl. H. - 7th Funding	\$120,088	\$166,825	\$331,348	\$66,501	\$454,194	\$496,791	\$497,899	\$490,980	\$502,802	\$91,483	\$141,578
Expenditures Glasgow Dist. 7	\$791,095	\$860,558	\$1,170,020	\$1,324,855	\$1,386,474	\$1,688,843	\$1,799,346	\$1,864,357	\$1,861,351	\$1,623,073	\$1,518,240
New Bldg. Permits Issued/yr.	60	87	42	25	18	6	3	2	2	3	4
Taxable Valuation Glasgow	\$2,826,527	\$2,908,321	\$3,179,170	\$4,055,353	\$4,199,323	\$4,344,061	\$4,373,575	\$4,406,648	\$4,462,127	\$4,420,372	\$4,395,953
Taxable Valuation Valley County	\$12,090,280	\$12,248,768	\$11,999,302	\$14,877,925	\$15,272,129	\$15,745,287	\$15,949,058	\$16,108,552	\$16,337,732	\$16,279,867	\$16,619,088
Glasgow	\$280,042	\$155,547	\$169,993	\$190,316	\$170,625	\$191,471	\$191,187	\$194,389	\$209,121	\$230,330	\$268,324
Tax Receipts Valley County	No Data	\$406,338	\$392,863	\$471,466	\$526,486	\$538,950	\$543,807	\$547,916	\$640,802	\$661,038	\$708,553
Tax Receipts Full-Time	3	3	4	3	4	4	4	4	4	3	3
Sheriff's Officers of Main Residntl.	1,609	1,666	1,635	1,753	1,741	1,621	1,572	1,586	1,487	1,540	1,616
Phones-Glasgow	442	494	441	442	467	458	442	442	429	434	456
Phones-Glasgow Glasgow Customers	2,368	2,585	2,631	2,609	2,623	2,591	2,460	2,415	2,351	2,272	2,272
Montana Power Co. Utility Bill	No Data	No Data	\$12,891	\$16,198	\$17,067	\$19,198	\$19,683	\$16,596	\$18,919	\$3,724	\$4,601
Annual 7 Residntl. Water Users	1,172	No Data	1,290	1,295	1,323	1,392	1,490	1,516	1,496	1,518	1,541
Annual 7 Commercial Water Users	260	No Data	286	290	294	192	172	174	174	172	176
Annual Revenue City Water & Sewer Dept.	\$118,921	\$135,875	\$138,234	\$132,576	\$145,322	\$146,036	\$138,158	\$139,563	\$146,855	\$138,670	\$156,483
Valley Co. General Relief Payments	No Data	\$16,179	\$30,877	\$24,728	\$19,596	\$25,044	\$28,936	\$31,717	\$45,405	\$4,356	\$35,212
Valley Co. Aid To Dependent Children	No Data	\$3,268	\$3,830	\$4,746	\$3,619	\$7,191	\$8,166	\$8,694	\$10,137	\$8,698	\$8,619
Deaconess Hospital Annual Gross Revenue	No Data	No Data	No Data	\$190,432	\$211,643	\$174,062	\$179,912	\$217,166	\$340,000	\$427,839	\$507,915
Deaconess Hospital	No Data	No Data	No Data	\$210,661	\$264,128	\$266,551	\$331,033	\$672,605	\$713,180	\$812,211	\$826,413

*Population data entries for the town of Glasgow in 1960 and 1970 are actual census figures. Town population figures for 1961-1969 are estimates derived by multiplying 2.9 times the number of main residential phones in Glasgow for each of those years.

TABLE 4A
GLASGOW, MONTANA
COMMUNITY SOCIOECONOMIC DATA ADJUSTED FOR ANNUAL INFLATION

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Bank Deposits	\$16,083,100	\$16,954,462	\$17,722,661	\$20,185,125	\$21,776,958	\$23,168,508	\$27,535,268	\$27,995,172	\$27,336,678	\$28,078,518	\$29,607,277
PL 81-874 Funding Glasgow Dist. #1	\$120,088	\$165,224	\$328,034	\$362,469	\$448,744	\$488,842	\$484,456	\$477,233	\$481,684	\$86,460	\$142,418
Expenditures Glasgow Dist. #1	\$791,095	\$852,813	\$1,158,320	\$1,410,282	\$1,769,836	\$1,661,821	\$1,750,764	\$1,812,155	\$1,783,174	\$1,532,181	\$1,419,648
Taxable Valuation Glasgow	\$2,826,527	\$2,882,146	\$3,147,378	\$3,010,744	\$4,148,911	\$4,274,556	\$4,255,488	\$4,283,262	\$4,274,718	\$4,172,831	\$4,110,216
Taxable Valuation Valley County	\$12,090,280	\$12,138,133	\$11,879,409	\$14,714,248	\$15,088,863	\$15,493,362	\$15,518,433	\$15,657,522	\$15,651,547	\$15,368,194	\$15,538,847
Glasgow Tax Receipts	\$280,042	\$15,147	\$168,293	\$188,222	\$148,577	\$190,375	\$186,025	\$188,946	\$200,338	\$217,441	\$250,882
Valley County Tax Receipts	No Data	\$402,681	\$388,934	\$467,280	\$520,168	\$530,327	\$529,124	\$532,574	\$613,888	\$624,020	\$662,497
Annual Revenue City Water & Sewer Dept.	\$118,921	\$134,652	\$136,832	\$131,078	\$144,072	\$143,699	\$134,428	\$135,655	\$140,687	\$140,904	\$146,212
Valley Co. General Relief Payments	No Data	\$16,033	\$30,568	\$24,456	\$19,361	\$24,643	\$28,155	\$50,269	\$43,498	\$32,432	\$32,923
Valley Co. Aid to Dependent Children	No Data	\$3,239	\$3,792	\$4,634	\$4,595	\$7,076	\$7,945	\$8,451	\$9,711	\$8,211	\$8,059
Tot. Annual Wages P Deaconess Hospital	No Data	No Data	No Data	\$188,337	\$209,103	\$171,277	\$175,054	\$211,085	\$325,720	\$403,880	\$474,900
Annual Gross Revenue Deaconess Hospital	No Data	No Data	No Data	\$208,344	\$264,958	\$262,286	\$341,555	\$653,772	\$683,226	\$766,727	\$772,696

in general that coincided with base closure years. Agricultural land was removed from the Soil Bank and placed into production at about the same time the base was phasing out.¹⁵ Capital gains in one segment of the Glasgow economy may have offset any decline generated by base closure. Banks in Glasgow primarily serve the local business and agricultural hinterland and are more dependent on these traditional segments of the local economy than on the transient nature of military depositors. Base closure had little effect on the volume of capital assets (reflected in bank deposits) available for use in the Glasgow community.

Schools

At the time of base closure, three schools were operating at Glasgow Air Force Base. Two were elementary schools and one was a junior high school. High school students from the base were transported 18 miles to school in town. High school facilities were not capable of handling all students during a single time period each day, and students were forced to attend school in two separate shifts.

In 1964, prior to the base closure announcement, 156 teachers and 3,635 students were present in Glasgow School District #1. By 1970, the number of teachers had decreased to 92 and student enrollment had dropped to 1,886. These figures represented a 41 percent decrease in teachers and a 48 percent decrease in total student enrollment two years after base closure.¹⁶ The three schools on base obviously ceased to function with the departure of military personnel. Glasgow schools were reduced to pre-base operating levels in terms of numbers of students and teachers. During the 1960 to 1970 decade, 1964 was the year when the maximum number of teachers were employed (156). In 1968, the year of base closure, 91 teachers were employed, a loss of 65 teaching

positions in comparison with 1964 teacher employment. The school district had predicted a loss of 70 teachers because of base closure, and their prediction was reasonably close to the mark.

In conjunction with the loss of nearly half its pupil enrollment, the Glasgow school district could expect to lose its federal financial assistance for operating expenses to school districts affected by federal activities (Public Law 81-874 funds). Public Law 81-874 funding for Glasgow schools increased dramatically between 1960 and 1968 as indicated by PL 81-874 data listed in Table 4. These funds were just as dramatically withdrawn in 1969, the year after base closure. Data in Table 4 indicate an 82 percent (\$411,419) reduction in PL 81-874 funds for Glasgow schools in 1969. The total dollar reduction of federal support funds was within \$39,000 of the payroll reduction predicted by the Glasgow school board when the base closure announcement was made.

Throughout the decade, total expenditures in Glasgow School District #1 continued to increase (as PL 81-874 funds were increased) until 1968 when total expenditures began to decline. A decrease in expenditures could be anticipated as military dependents left the area and the schools on base were closed. Proportionately, however, total expenditures did not decrease as much as PL 81-874 funds (Table 4). Using 1967 as the peak expenditure year for comparison, expenditures declined by \$3,006 (2%) in 1968, \$238,278 (13%) between 1968 and 1969 and by \$104,733 (7%) between 1969 and 1970. Adjusted for inflation, the data in Table 4A reflect the same trend showing a lower level of spending in 1968, 1969, and 1970 but still supporting the fact that even with these incremental decreases in the last three years of the

decade, total school district expenditures had increased by 48 percent during the decade 1960 to 1970.

The Glasgow school district lost nearly half its enrollment, 41 percent of its teachers, some 80 percent of its PL 81-874 funds, and decreased its total expenditures by 18 percent between 1967 and 1970. While these impacts were severe, especially for the teachers involved, no mention was made during a field visit to Glasgow that the quality of education provided by the school district suffered as a result of base closure.

The increase in military population had placed a heavy load on the local school district; base closure relieved some of this load, especially at the high school level where double shifts of students each day were no longer necessary. Glasgow schools experienced change resulting from base closure, but rather than receiving a crippling blow, the school system retrenched to render a level of educational service much as it was before the Air Force base appeared in north-eastern Montana.

Unemployment

Unemployment in Glasgow and Valley County was expected to increase with base closure. Unfortunately, disaggregated unemployment data for Montana's lower order civil divisions could not be retrieved for some years prior to 1970. Montana's small population and consequent lack of funding did not enable complete unemployment records to be maintained before 1970.¹⁷

National and state unemployment data in Table 5 show that unemployment in Montana was slightly greater (by 0.7 percent) than the national average (4.8 percent) for the 1960-1970 decade. Data for

Valley County were obtained from census publications for 1960 and 1970 and from a Valley County economic development plan for other years listed in Table 5.¹⁸

TABLE 5
AVERAGE ANNUAL UNEMPLOYMENT IN PERCENT, 1960-1970*

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
U.S.	5.5	6.7	5.5	5.7	5.2	4.5	3.8	3.8	3.6	3.5	4.9
Montana	6.7	7.3	5.5	5.4	5.3	5.0	4.7	4.8	4.7	4.5	6.6
Valley Co.	8.6	N.D.	8.0	5.5	4.9	4.9	4.2	3.8	N.D.	N.D.	5.1

*Data for Valley County are average monthly unemployment rates.

Unemployment figures available for Valley County show that unemployment was lower in the county than in the state in the years 1964-1967 when Glasgow Air Force Base was operating at full strength. Data for the years 1968 and 1969, after base closure, were not available, but a 1976 economic development document for Valley County gives some indication of unemployment levels in those years. The report states that:

the expected "sudden rise" in unemployment was not officially recorded until late 1968 with a November rise to 5.67% from October's 2.79%. In December, unemployment dropped to 4.96%, but in January (1969), the percentage rose to 6.47% and continued in February at 6.21% . . . Representative cross-sectional surveys through late spring, 1969, show unemployment in excess of 12 percent.¹⁹

It should be noted, however, that unemployment in Valley County increases cyclically in winter months when highway maintenance and other construction workers are idle, according to Glasgow's local employment service manager.²⁰ Valley County's development program document stated that "The Montana State Employment Agency estimates that 241 persons, who

will remain in the area, will be unemployed following the closing of the Air Force base."²¹ If this number of people actually did go on unemployment rolls, average monthly unemployment in the Glasgow area after base closure (1968-1969) probably reached 9.6 percent.²² The 9.6 percent unemployment figure for 1968-1969 is used only as an estimate to determine what a reasonable unemployment rate might have been if 241 additional unemployed people were immediately added to the average monthly unemployment situation in the year prior to base closure.

Unemployment obviously did rise after base closure, but the problem was not one of lasting duration since 1970 census data place Valley County annual unemployment at 5.1 percent, a rate considerably lower than at the beginning of the decade. Even with base closure, Valley County appeared to enjoy a lower level of unemployment in the last three years of the decade than it did during the decade's first three years. This is not an attempt to illustrate that base closure had no effect on local unemployment levels but to point out that unemployment in the local area may not have reached epidemic proportions and apparently was not sustained.

Valley County unemployment levels did not appear to be grossly different from state levels, and both averaged less than one percent higher than national rates for the decade of the 1960s. Employment groups most directly hurt by base closure were probably teachers and construction workers because teaching positions were directly tied to local area population, and contract construction work depended on continued existence of the base. During Glasgow field interviews, high sustained unemployment rates following base closure were seldom discussed as one of the lingering base closure impacts.

Impact on Business Establishments

The expansion of local businesses to meet consumer demand generated by increased numbers of people in the Glasgow hinterland has been described. It was unfortunate that many of these small businesses were caught in both the build-up and closure phases of Glasgow Air Force Base's short life. As the base reached its full operational capability in the early 1960s, military officials encouraged local entrepreneurs to provide more services for the new military population with the conviction that the base would be a permanent installation. Some Glasgow businessmen were cautious about overexpansion because they had experienced the "boom and bust" business cycle associated with Fort Peck Dam construction years. When the base closure announcement was made, however, it was received with an attitude of disbelief by the community.²³ Was the impact on business establishments as severe as anticipated by the townspeople?

As might be expected, local retail merchants were hardest hit. Among the three supermarkets in town, one closed its doors. The defunct supermarket apparently was part of a supermarket chain which had seized the opportunity offered by the Glasgow market. Three furniture stores operated in Glasgow and all increased their retail capacity to meet local demand. With base closure, one furniture store failed, and the other two reduced their inventories. Variety stores, such as F. W. Woolworth, also came to town banking on future community growth. Two of these stores existed in Glasgow; one closed its doors. Moving and storage firms would naturally be adversely affected by base closure because their primary customers were transient military personnel.

Among the four moving and storage firms, two went out of business.²⁴ These were firms that could be documented as ceasing operations after base closure.

Other types of retail businesses, such as gas stations, clothing stores, movie theatres and bars were mentioned as being affected by loss of clientele, but specific operators who went out of business could not be pinpointed in field interviews.

To discern whether or not base closure had any noticeable effects on Valley County business, data related to the number of manufacturing and retail reporting units in the county were extracted from County Business Patterns (Table 6).

TABLE 6
VALLEY COUNTY, MONTANA
ANNUAL BUSINESS ESTABLISHMENTS, 1959-1970

	1959	1962	1964	1965	1966	1967	1968	1969	1970
# Reporting Units	270	298	292	293	279	265	250	235	226
# Manufacturing Units	7	7	6	5	6	6	5	5	5
# Retail Trade Units	103	108	123	119	121	112	107	98	93

These data indicate that there were 44 fewer total reporting units in the county in 1970 than in 1960 and that the number of units reported annually began to steadily decrease between 1966 and 1970. However, these are businesses of all kinds scattered throughout the county; all of these businesses could not be expected to have trade ties to the base.

The number of manufacturing units was small and exhibited stability throughout the decade. This is not unexpected since agriculture, not manufacturing is the lifeblood of the Valley County economy.

There were ten fewer retail trade units in 1970 than in 1960, and the maximum number of retail trade units (123) was reported in 1964 (Table 6). Starting in 1967, the number of retail trade units began to decrease each year. Towns other than Glasgow exist in Valley County, and it is doubtful that the aggregate decrease of 28 retail reporting units observed between 1966 and 1970 means 28 businesses closed in Glasgow because of base closure. Field research data and interviews support this conclusion.

As was the case in Moses Lake, Washington, the response of main street businessmen to loss of customers was to reduce inventories rather than to close their doors. Local banks showed good growth through the hard years after base closure as was demonstrated earlier in this research. "Inventories were reduced but few closed, and most of main street still made money."²⁵ The volume of retail trade in Glasgow was estimated to have declined by about one-third after base closure.²⁶ This post-base closure estimate of decline in retail sales is not as large as the pre-base closure estimate put forth by the Glasgow Central Labor Council.

Documented evidence of business failures does not suggest that the impact of base closure on Glasgow merchants was as severe as it was initially forecast to be. As with teachers, those businesses directly dependent on the base population and base contracts, such as local moving and storage firms, could expect their operations to be severely curtailed. Merchants who endured served the Glasgow hinterland before and after the base existed and probably were not so heavily dependent on the additional increment of business generated by the base population. Merchants who capitalized on this marginal market obviously

were hit hard. In addition, many retail goods and services were available to military people on the base, and the base was 18 miles from town. Military personnel would probably not choose to travel into Glasgow for groceries and many shoppers' goods available in the base exchange and commissary. These circumstances may have served to make the impact of base closure less intense than anticipated by local businessmen.

Retailers in town certainly felt the affects of base closure, but widespread business failures were not the norm as the base began to phasedown. Again, as with Moses Lake, it seemed to be the marginal operators who were hurt most. By 1977, when field research was conducted in Glasgow, "business in the community was back where it was before base closure."²⁷ The vagaries of dependence on an agricultural economy, inflation, lack of rain and wheat and cattle prices, were of more concern to Glasgow residents than the lasting economic affects of base closure.

Housing--Real Estate Market

All military people moving to rural northeastern Montana were not provided housing at Glasgow Air Force Base. Civilian workers at the base also needed places to live. Contract construction at the base was also proceeding in the early 1960s, and these workers needed housing. Therefore, in 1960, 1961 and 1962, three developers were building homes on a speculation basis in Glasgow because everyone working at the base could not live there. Two new subdivisions were built on the northeast side of Glasgow in response to the increased demand for housing. The speed at which these new homes were constructed later created some problems for the city; development was uncoordinated and water lines and storage tanks were too small for efficiency in the new

development. Consequently, fire protection was poor. The investment in new streets, water mains, and sewer lines made by the town of Glasgow to support new development has previously been described. As with the retail goods and services sector of the Glasgow economy, the housing sector was encouraged to expand; "every base commander assured the city of Glasgow that the air base was here to stay and more housing would be needed."²⁸

The influence the base closure announcement exerted on new residential and commercial construction in Glasgow is illustrated by the decline in number of new business and residential building permits listed in Table 4. Little explanation of these figures is necessary. New construction proceeded apace in 1960-1963 and declined drastically for the remainder of the decade after the base closure announcement in 1964. Most of these new building permits were issued for residential construction.

Between November 1964 and June 1968, over 100 houses were vacant and 120 were for sale in Glasgow. These homes, mostly FHA repossessions, decreased in value by 25 percent. A house that once sold for \$20,000 was worth only \$14,000 after base closure. Individual homeowners who had to leave Glasgow could not recoup their investments in this kind of real estate market. FHA would not sell these homes to speculators, and a manager plus a yard maintenance person were hired to care for the large number of vacant homes. Rental prices decreased by 20 percent in order for landlords to break even on their investments.²⁹

The depressed real estate market created the proper circumstances for residential filtering to occur in Glasgow as it did in Moses Lake. Glasgow residents who were renting or living in substandard

housing could buy vacant homes without making down payments in order for some income to be rendered to mortgage holders. Glasgow is a turnaround point for Burlington Northern railroad crews traveling between Havre, Montana, and Minot, North Dakota. As railroad people received better wages, they began to move into Glasgow homes that had decreased in price. When railroaders moved out of rental homes in Glasgow, others moved into rental homes vacated by railroad workers. The rental market was so depressed that some rental properties were torn down to preclude taxation on the structures. As has already been stated, three trailer parks existed between the town of Glasgow and the base. Trailers lodged in these parks were the first forms of housing to feel the effects of base closure and were moved away early during the closure cycle.³⁰ Even though the local housing market was dealt a severe blow, some people were able to benefit from the effects of base closure by moving into better quality housing.

It took six years after base closure for the Glasgow housing market to recover. In 1977, houses costing \$16,000 to build were selling for \$32,000-\$35,000, and there was not an excessive amount of housing available in town.³¹

Glasgow Tax Base and Municipal Services

Valley County, and especially the town of Glasgow, had good reason to believe that income from tax sources would decline as people began leaving the area. If tax revenues were lost, then a concomitant decline in county and city services was expected. In addition, the town had spent money improving streets, water and sewer facilities and in upgrading the ability to provide police and fire protection. Did

city and county taxable valuations show a noticeable decrease in the decade of the 1960s?

To answer this question, data on Glasgow and Valley County taxes were obtained from the Valley County Tax Assessor's office for each year in the decade (Table 4). These data indicate that for the town of Glasgow, the taxable valuation of property increased each year between 1960 and 1970, except for 1969 and 1970 when taxable valuation decreased by one percent and one-half percent respectively. When inflation is accounted for, a slight decline is noted in the last three years of the decade. However, the data corrected for inflation still show that taxable valuation in Glasgow nearly doubled from 1960 to 1970 (Table 4A). Knowledgeable people in the tax assessor's office indicated that the slight decline in taxable valuation in 1969 was associated with business inventory decreases by local merchants immediately after base closure. In terms of taxable valuations, base closure appears to have had little affect on Glasgow's sources of revenue procured by taxation.

Valley County exhibited less than a one percent decrease in its taxable valuations in the year following base closure. The large jump in taxable valuations between 1962 and 1963 was probably due to property reappraisals conducted in both the town and county in 1963. When adjusted for inflation, Valley County taxable valuations do not exhibit the degree of decline in 1968, 1969 and 1970 that is observed for the town of Glasgow (Table 4A).

One reason for base closure's apparent lack of affect on Valley County tax valuations is that livestock and agriculture are the basis of taxes in Montana. Farmers who run highly mechanized operations pay

the most taxes in Valley County. For example, a farmer with a new tractor paid approximately \$700 annually in county taxes in 1977. In contrast, "the base and base personnel contributed little to the Valley County tax base."³²

Such a statement is supported by the data on actual tax receipts collected by the town of Glasgow listed in Tables 4 and 4A. Town tax receipts fluctuated in the first half of the decade but showed a steady increase in the last half of the decade after the base closure announcement in 1964 and final departure of military personnel in 1968. In fact, the town collected more taxes in each year after base closure than in any other year of the decade except 1960.³³ Actual taxes received in Valley County also showed a steadily increasing trend throughout the decade with taxes collected being 74 percent greater in 1970 than in 1961 (Table 4).³⁴ Regardless of base closure, both the city and county were in a stable position with regard to taxable valuations and tax receipts between 1960 and 1970. The predicted loss of tax revenues to the town and county apparently were not severe.

Glasgow had expanded its municipal services to meet demands induced by increased population. Base closure had little apparent affect on Glasgow and Valley County's consolidated law enforcement division, if the number of full-time officers is used as an indicator. Before and after base closure, about the same number of full-time employees were present in the Valley County Sheriff's Department (Table 4). Any variability in number of people employed by the sheriff's department was accounted for on the basis of whether or not a clerk was employed in the Glasgow office and by variability in the

number of part-time deputies working throughout the county. The number of part-time employees varied from three or four in the early 1960s to one between 1966 and 1969.³⁵ Ability to keep the peace in the local area did not suffer from lack of funding or loss of employees.

Local fire protection was provided by a mutual agreement between the town and the Air Force base. It was an interesting agreement that worked very well for the town. The base trained Glasgow's volunteer firemen to assist in crash fires and supplied the town with a source of fire-fighting foam that would otherwise not have been available. The main benefit for the town was training of its firefighters by the base. Air Force firemen would assist the town in case of a large fire, and during its existence, the base actually helped the town fight two fires. The town was able to reciprocate by loaning the base a fire truck for six months while base trucks were being repaired. The number of people in the town's volunteer fire department did not change with base closure and remained at 21 before and after base closure.

During the days of base construction, fire losses were high because many older dwellings were pressed into service by construction workers. After the base closed, many old homes were destroyed and fire losses decreased. Having base fire fighting facilities and training available to the town was an asset that was lost with base closure. However the number of firefighters in Glasgow was not reduced, and the town continued to provide adequate fire protection for its citizens.³⁶

Base closure was expected to have a detrimental effect on other municipal services, such as water and sewer facilities, which the town had gone into debt to supply. Those familiar with the situation did not indicate that provision of these services was affected by loss of

revenue due to base closure. Though bonds were sold for new streets, schools, and public buildings needed as people moved into Glasgow, the town was not in debt for provision of these services at the time of base closure. The city and county were able to build a new courthouse, library, swimming pool, and water treatment plant during and after the base was active, paying much of the cost of these projects with locally generated funds.³⁷ The expected tax revenue loss which would trigger a decline in quality of municipal services does not seem to have materialized in Glasgow after base closure.

Effects of Base Closure on Public Utilities

Utility company revenues were certain to be affected by base closure, and analysis of changes in utility company customers should tell something about the number of families actually leaving the town of Glasgow.

The number of residence main phones in operation at the end of each year between 1960 and 1970 displays Glasgow population changes related to base closure (Table 4).³⁸ The years 1963 and 1964 were peak years for the number of main residence phones in Glasgow. After the base closure announcement in 1964, the number of residence phones declined by 120 (or seven percent) by year's end in 1965. In 1968, after the base closed its doors, a decrease of 99 residence phones (a 6% difference in comparison with 1967) can be observed. By 1970 the number of main residence phones was back to the early 1960s level.

In small towns like Glasgow where accurate annual population data are seldom maintained, the phone company uses a factor of 2.9 in its population studies, multiplying this factor by the number of main

residence phones to yield the annual population. Comparison of phone company population data with 1960 and 1970 census data for Glasgow indicates quite an error (1,732 people) in 1960 but a high degree of accuracy (an error of only 4 people) for 1970 (Table 4). It would be difficult to say that phone company estimates of Glasgow's annual population are accurate for years when no formal census was taken.

The Valley County population estimates rendered by the Montana Department of Administration are certain to be more accurate since they are tied to elementary school enrollments and county birth and death rates. Valley County population estimates reflect a larger aggregate movement of people from the county in base closure years but tend to mask population changes in the town of Glasgow. For instance, Valley County population data show quite clearly the large number of people who left Glasgow Air Force Base between 1967 and 1968 (Table 4).³⁹

In any case, the number of residence main phones provides an insight into the number of households that left Glasgow during the base closure years, as well as providing a cross-check on the number of vacant homes and apartments that resulted from base closure. If the number of residence main phones in the year base closure was announced (1964) is compared with the year the base closed its gates (1968), it is estimated that 254 domiciles of all types were left vacant in the town of Glasgow. However, some of these structures were destroyed for tax purposes and some were occupied by lower income families as the filtering process ran its course.

An examination of business main phones provides a similar insight into how Glasgow merchants were affected by base closure. Fluctuations prior to the base closure announcement were as great as they were during

and after most military people had departed. The average number of main business phones for the decade was 446 with the maximum number of phones counted in 1964 (467) and the minimum number recorded in 1968 (429). A noticeable decline occurred between 1967 and 1968 (-13), but a decline of the same magnitude also occurred between 1961 and 1962. Between 1969 and 1970, however, a gain of 22 main business phones occurred in town (Table 4).

Given these fluctuations, it would be inaccurate to state that thirteen fewer business phones in 1968 meant that thirteen businesses closed as a result of base closure. Personal accounts of business failures attributable to base closure are considered more valid than the number of main business phones operating each year. What the trend in number of main business phones does seem to indicate, however, is that the number of Glasgow businesses remained stable throughout the decade with a net gain in 1970 over 1960 and that large numbers of businesses did not fail in response to base closure.⁴⁰

The average number of monthly customers served by Montana Power Company in Glasgow exhibited a downward trend from 1964 to 1969 with a cumulative loss of 351 meters during these years. There were 96 fewer customers in 1970 than in 1960; this loss is equivalent to the approximately 100 homes occupied by people associated with Glasgow Air Force Base. Data for the first half of the 1970 decade (not listed in Table 4) indicate that the number of customers served by Montana Power had stabilized at a figure slightly greater than the 1960 number of electricity users. Montana Power Company obviously lost revenue from the decline in number of customers in the base closure years since these data indicate

a steady decrease, rather than fluctuations, in number of customers served (Table 4).⁴¹

More dramatic than the loss of revenue from customers in town was the revenue lost by Montana Power Company when the Air Force base shut down. Even though some rate changes occurred between 1962 and 1970, the period covered by the data in Table 4, the \$15,000 decrease in revenue from the base is unmistakable when the figures for 1968 and 1969 are compared.⁴² Base closure made Montana Power Company a net loser during the 1960s since the utility had invested in distribution lines and transmission equipment and then lost not only residential customers in town but also 80 percent of the revenue from the county's largest industrial customer.

As a provider of municipal services, the town of Glasgow expanded its water and sewer facilities to insure adequate services to new residents. A significant number of people moving away in response to base closure might have made it difficult for the town to continue providing water and sewer service at pre-base closure levels. Data from the Glasgow Water and Sewer Departments do not seem to indicate such problems (Table 4). The number of residential water users increased each year from 1960 to 1970 except for a drop of 20 residential users in 1968. Certainly homes were vacant during the base closure years, but the data do not indicate drastic declines in numbers of residential users. Businesses billed for water use also increased through 1964. A decrease of 102 businesses (35 percent) using water can be noted in 1965 (Table 4), followed by a decline of another 20 commercial water users in 1966, with stability in number of commercial users evident

during the last four years of the decade. These commercial users may have been rental units classified as "business" users.

Revenues to the town from water and sewer services during base closure years were not severely curtailed at any time except in 1966 and 1969 (Table 4). In those two years the revenue decrease amounted to only 5 percent from the previous year's revenue. Corrected for inflation (Table 4A) revenues accruing to the city water and sewer department showed net growth between 1960 and 1970. Even though the town had gone into debt to upgrade municipal water and sewer services, any loss of income triggered by population decline did not appear serious enough to hamper operation of the town's water and sewer system.⁴³

Base Closure and Changes in Public Assistance Programs

Factual information about changes in local welfare programs and expenditures was difficult to obtain from local sources since records were not readily available. However, one individual who worked for the Glasgow office of the Montana Social and Rehabilitation Services indicated that Aid to Dependent Children and other welfare programs decreased in total costs and case loads when the Air Force base closed. People generate welfare problems and about one-third of the county population left when the base closed. Some of these "people problems", such as family splits and unwed mothers, may have been present in somewhat higher incidence when more military personnel were present in the county.⁴⁴

Characteristically, the local perception is that welfare case loads and expenditures rise as a result of base closure. Some evidence was available to examine the welfare picture in Valley County because

General Assistance funds are disbursed by the county in Montana. Data on General Assistance and Aid to Dependent Children expenditures were available from the Valley County clerk's annual report (Table 4).⁴⁵ General Relief payments are made for items such as care of county charges, cash allowances, food, clothing, fuel, rent, water, and light bills, burials and ambulances, and homemakers services.

General Relief payments fluctuated before and after the base closure announcement and during base closure years rather than displaying any particular trend. A noticeable (78 percent) increase occurred in 1967 General Relief funds. The major portion of this increase (\$12,000) was disbursed for care of county charges, and a \$9,000 increase was noted in the food, shelter, and clothing category. Largest expenditures for General Relief occurred in the base closure years of 1965, 1966, 1967 and 1968 with a marked decrease (\$10,000 or 24 percent) in 1969 after base closure. The same trend is observed when these figures are adjusted for inflation (Table 4A). Expenditures for General Relief almost doubled in 1962, well before base closure. Given this situation, it is difficult to say that base closure caused increased outlays for food, shelter and clothing in Valley County.

Aid to Dependent Children disbursements displayed a much more consistent trend increasing (except for 1964) from 1961 to the peak year of expenditure in 1968 and decreasing (by 14 percent) in 1969 and 1970 (Tables 4 and 4A). These data seem to indicate that the intervening years between base closure announcement (1964) and final departure of most military personnel (1968) were associated with increased outlays of welfare funds in Valley County, and that after base closure fewer funds were spent for welfare purposes.

It is unfortunate that field interviews could not clarify whether or not it was base closure or some other circumstances within the county that caused Valley County welfare funds to be spent as they were in the 1960s. However, no one interviewed singled out the number of people on welfare in the county during base closure years as being different from typical years in Valley County.

Base Closure and Changes in Local Medical Care

Communities affected by loss of population generally perceive a decrease in quality of available medical service. This could have been the situation in Valley County and Glasgow after base closure as medical professionals would possibly have departed after experiencing a decreasing demand for their services. Research supports the idea that health professionals are the first to leave declining communities.⁴⁶

If gross hospital revenues and wages paid hospital employees are used as indices, Glasgow and Valley County health care systems felt little impact from base closure. Revenue and wage data listed in Tables 4 and 4A were collected from Frances Mahon Deaconess Hospital in Glasgow, the focus of medical care in Valley County. These data indicate that the hospital continued to function quite well throughout the base closure years. The large wage and revenue increases in 1967 were triggered by administrative changes required to meet Medicare program standards.

The number of hospital employees remained stable at an average of approximately 114 from 1966 to 1977. Though it is difficult to attract general medical practitioners to Glasgow, "the type and number of services hasn't changed and Deaconess Hospital was not influenced by

the presence of Glasgow Air Force Base."⁴⁷ The completion of a new, 30-bed extended care wing at Deaconess Hospital in 1968 (the year of base closure) also serves to illustrate the lack of impact base closure had on local health care systems.

Glasgow Air Force Base possessed its own medical facilities (a 50-bed hospital), and military people associated with the base would generally have used these facilities rather than those at Deaconess Hospital. Thus it comes as no surprise that Deaconess Hospital felt little influence from Glasgow Air Force Base before or after base closure. Citizens of Glasgow and Valley County apparently experienced little, if any, change in the quality of medical care available to them.

Summary

As the host town and county for Glasgow Air Force Base, Glasgow and Valley County saw rapid changes on the rural landscape in the late 1950s and early 1960s. Almost as many new people arrived as previously existed in Valley County. Finding itself unequipped to meet demands of additional population, the town increased its capability to provide municipal services, and merchants expanded to supply new demands for goods and services. The unanticipated base closure announcement came when the Air Force base and the community were successfully beginning to adapt to each other spatially, economically and socially. Because of these circumstances base closure was viewed with particular skepticism by the Glasgow community.

Community functions affected the most by base closure were those directly related to population levels. School teachers lost jobs because pupil enrollment was almost halved. However, it was no longer necessary to double-shift classes at the high school after the base

population decreased. Real estate values were depressed and homes became vacant, but some people benefited from these circumstances through the filtering process. Local power and telephone utilities lost revenue, particularly that which was attributable to the base, and they also suffered loss of capital investment in distribution equipment. Glasgow retailers reduced their stock inventories in response to base closure, but few commercial or retail establishments actually stopped operating. Those that did go out of business were marginal operators or those whose businesses were directly tied to base population levels, such as moving and storage firms. Bank deposits, a measure of community viability, were not affected by base closure, but were positively affected by activity in the agricultural hinterland. At the same time, the town and county did not appear to suffer from loss of tax revenue and so were able to carry on their business of law enforcement and fire protection, as well as continuing to maintain satisfactory levels of sewer and water service. It is noteworthy that new municipal buildings were constructed during and after base closure. According to the data presented, medical/hospital services were also not affected. Unemployment levels did increase after base closure, but unemployment does not appear to have been a chronic problem. Contract construction workers and school teachers were probably the two main employment groups affected by base closure.

The effect of base closure on levels of county welfare assistance is cloudy. General Relief funds were observed to fluctuate during the 1960s while Aid to Dependent Children payments seemed to increase during base closure years and declined afterward. Field interviews could not clarify the relationship between increased Aid to Dependent Children

payments and base closure. A statement about base contributions to community charity activities such as the United Fund is not considered herein because Glasgow Air Force Base participated in this fund drive for only one year, 1969, after the majority of military people had departed. Those business activities that were caught in the middle of expansion programs, such as motels, laundries, cable TV and the new meat packing plant, were dealt a severe blow by base closure. The impact was atypical and worsened because of the short time the base had been fully operational before closure.

Socioeconomic impacts could be observed as Glasgow and Valley County rode out the storm of base closure, but Glasgow was able to survive the event without lasting damage to its business community or municipal infrastructure. As prescribed by central place theory, Glasgow reacted to provide more goods and services for the larger number of military people in its hinterland. However, trade relationships between the military base and the town were apparently not as strong as they might be in the case of a central place supporting a comparable hinterland population increase attributable only to non-military people. If the base-town trade ties had taken the form of a direct linear relationship, local socioeconomic changes caused by base closure should have been more severe than this research seems to indicate. The distance between the base and town (18 miles) may explain this situation.

Large numbers of people left the area, schools closed and houses were vacant; the fact that the town is "alive and well" today indicates its dependence on its agricultural hinterland for long-term viability rather than the false economy that arrived with the Air Force base. Some people in the community were not sorry to see the base

closed because more people in the area meant increased hunting pressure on wildlife and vandalism to uninhabited rural farm structures.

The base closure announcement made citizens both irate and apprehensive because many of them had attempted to supply more and better services to the military population. However, the town endured, and in hindsight, "not much else was hurt except town shopping."⁴⁸

The evidence offered by community socioeconomic data collected for the base closure decade seem to support this statement.

Footnotes

¹The United Community Committee of Glasgow, Montana, "Community Brief, Glasgow, Montana," published December 3, 1964, in Glasgow, Montana in association with the Glasgow, Montana, Chamber of Commerce, p. 3. This community brief is a compendium of statements made by businessmen in the Glasgow area who used this particular medium to express their views about the base closure and the effects it would have on Glasgow and Valley County. The community brief was then forwarded to Montana Senator Mike Mansfield for his use in questioning the validity of the Glasgow base closure decision.

²Ibid., p. 4. ³Ibid., p. 5. ⁴Ibid., p. 7. ⁵Ibid., p. 9.

⁶Ibid., p. 10. ⁷Ibid., p. 12. ⁸Ibid., p. 13. ⁹Ibid., p. 15.

¹⁰Ibid., p. 14. ¹¹Ibid., p. 17. ¹²Ibid., p. 18.

¹³Ibid., p. 19. ¹⁴Ibid., p. 20.

¹⁵Mr. James L. Hines, Vice President, First National Bank of Glasgow, Montana; interview held during field research visit to Glasgow, August 9, 1977. Quarterly reports published in the Glasgow newspaper, the Glasgow Courier, are the source of annual bank deposit data listed in Table 4.

¹⁶Data on teacher employment and school district enrollment were obtained from the Glasgow-Valley County School Superintendent's office in Glasgow, Montana, during a field visit to Glasgow on August 9, 1977. The State of Montana, Superintendent of Public Instruction, also publishes a document called the Annual Report of School Trustees to County Superintendent of Schools, which provides teacher employment and pupil enrollment by school district in the state.

¹⁷Mr. Roy Hagen, Manager, Glasgow Office, Montana Job Service; interview held during field research visit to Glasgow, August 8, 1977.

¹⁸Valley County Economic Development Council, Overall Economic Development Program (Glasgow, Montana: Valley County Economic Development Council, 1968), p. 14. Average annual unemployment data listed by the Development Council apparently were obtained from Montana State Employment Service 608 and 625 reports generated by the Glasgow local employment office.

¹⁹Valley County Economic Development Council, Overall Economic Development Program (Glasgow, Montana: Valley County Economic Development Council, 1976), pp. 12-13.

²⁰Mr. Roy Hagen interview.

²¹Valley County Economic Development Council, 1968, p. 9.

²²The figure of 9.6 percent unemployment was derived by adding the 1967 average monthly number of unemployed persons (153) to the number

of people predicted to be unemployed by base closure (241) and dividing the total (394) by the average monthly total labor force for 1967 (4,083).

²³Mr. James L. Hines, Vice President, First National Bank of Glasgow, interview held during field visit to Glasgow, Montana, August 9, 1977.

²⁴Mr. O. E. Markle, Proprietor, Markles, Inc., interview held during field visit to Glasgow, Montana, August 11, 1977. Mr. Markle runs a hardware store in Glasgow and had also worked to find possible future industrial uses for the former air base. Mr. Markle was quite knowledgeable about the effect base closure had on Glasgow's central business district.

²⁵Ibid., Mr. O. E. Markle.

²⁶Mr. James L. Hines interview.

²⁷Mr. James L. Hines interview.

²⁸United Community Committee of Glasgow, Montana, Community Brief, p. 9.

²⁹Mr. M. K. Bjorklund, United Insurance and Real Estate, interview held during field visit to Glasgow, Montana, August 11, 1977. Mr. Bjorklund had been a realtor in Glasgow for many years and was able to provide many details about the influence of base closure on the local housing market.

³⁰Mr. Manson Bailey, Executive Director, Valley County Development Council, interview held during field visit to Glasgow, Montana, August 8, 1977. Mr. Bailey's family homesteaded in the Glasgow area, and as a lifelong resident, he was able to describe many relationships between the town and the base. Mr. Bailey carefully described the residential filtering process as it occurred in Glasgow.

³¹Mr. M. K. Bjorklund interview.

³²Mr. Maurice Arnold, Valley County Tax Assessor, interview held during field research visit to Glasgow, Montana, August 9, 1977. Mr. Arnold was quite helpful in explaining perturbations in the Glasgow and Valley County tax bases between 1960 and 1970. He was also able to clarify the role played by the base and military personnel in the scheme of Valley County taxable valuations.

³³Data on Glasgow tax receipts were taken from the Glasgow Town Clerk's Annual Financial Statement to the Montana State Examiner.

³⁴Data on actual tax receipts for Valley County, Montana, were taken from the Valley County Clerk's annual reports.

³⁵Information about the number of full and part-time employees in the Valley County Sheriff's Department was obtained from the Valley County Commissioner's journal and from talking with the clerk in the sheriff's Glasgow office. This interview was conducted on August 10, 1977.

³⁶Mr. Jim Hines interview. Mr. Hines was a member of the Glasgow Volunteer Fire Department for 19 years and could provide accurate details about the symbiotic relationship between the military and municipal fire departments, as well as the stability in numbers of local fire fighters and local ability to provide fire protection for the town.

³⁷Mr. Manson Bailey and Mr. Jim Hines interviews.

³⁸Mr. Jack Olson, Manager, Glasgow Office, Mountain States Telephone Company, interview held during field research visit to Glasgow, Montana, August 8, 1977. Data concerning the number of residence and business main phones in the town of Glasgow were obtained from the Mountain Bell Telephone Company. Mr. Olson and Mr. Stepper, representing Mountain Bell, indicated that counts of main phones do not include extension phones in residences or businesses and that the 1964 and 1965 decline in residence main phones is accounted for by people leaving town because of base closure.

³⁹Richard Dodge, Montana State, Regional, and County Estimates 1950-1975 with City Population Estimates for 1970 and 1975. Montana Department of Community Affairs: October 1976.

⁴⁰Data on numbers of main business phones in Glasgow were collected from the Glasgow office of the Mountain States Telephone Company.

⁴¹Data on the number of Glasgow customers served by Montana Power Company were obtained from the Glasgow office of Montana Power Company, Mr. Dell Lind, Manager.

⁴²Payments to Montana Power Company by the Air Force for power to run Glasgow Air Force Base were obtained from the Glasgow office of Montana Power Company. The figures listed in Table 4 represent the monthly payment made in January of each year because January would be representative of the peak power used by Glasgow Air Force Base in any month of each year.

⁴³Data concerning the Glasgow water and sewer system and its number of users were obtained from the City of Glasgow Water and Sewer Department Audit Reports compiled by Junkernier, Clark, Campanella and Stevens Certified Public Accountants. These reports were made available by Mr. Brent McGill, Glasgow City Engineer. Water and Sewer Department annual income was extracted from the Glasgow City Clerk's Annual Financial Statement to the State Examiner of Montana.

⁴⁴Ms. Delores Shelton, Montana Social and Rehabilitation Services, Glasgow Office, interview held during field visit to Glasgow, Montana, August 9, 1977.

⁴⁵Valley County Clerk's annual report, Glasgow, Montana. Welfare data were extracted from the Payments Classified by Purpose section. These annual reports would be available from Ms. Mary Lou Eide, Clerk and Recorder, Valley County, Glasgow, Montana.

⁴⁶Larry R. Whiting (ed.), Communities Left Behind--Alternatives for Development, (Ames, Iowa: Iowa State University Press, 1974).

⁴⁷Ms. Louise Johnson, Director of Nurses, Deaconess Hospital, interview held during field research visit to Glasgow, Montana, August 9, 1977. Employment, wages and revenue data concerning Deaconess Hospital were obtained from Mr. Del Ginger, the hospital business manager.

⁴⁸Mr. Jim Hines interview.

CHAPTER VII

THE SOCIOECONOMIC EFFECTS OF BASE CLOSURE ON PRESQUE ISLE, MAINE

Presque Isle Air Force Base and the Town of Presque Isle, Maine

Presque Isle functions as a collection and distribution center for agricultural and forest commodities in northeastern Maine where potato production and lumbering are mainstays of the local economy. Situated close to the Canadian border, Presque Isle is a focal point of Aroostook Valley central place activities. The nearest major market is in Boston some 400 miles to the southwest. High levels of unemployment and outmigration have been characteristic of Aroostook County, which was classified as a depressed area by the Area Redevelopment Administration in 1962. Northern Maine has been a logical location for Air Force bases since the 1940s because of proximity to Europe and the Soviet Union. The choice of Presque Isle as a site for launching Snark missiles has been described previously. The town and the Air Force base were almost an integral unit, locationally speaking, and were separated only by a fence rather than by any distance that would serve to decrease town and base interaction.

Presque Isle was included in one of the first large rounds (50 bases) of base closures by DoD. While the town played host to a military base for several years, it was well known that the Snark was an obsolete weapons system, and the March 30, 1961, base closure announce-

ment came as no surprise to the town. Expectations of base closure also served to lessen the psychological impact on the community. Presque Isle Air Force Base was also a smaller base (1,259 military personnel) with a different mission than either of the other two case study bases. Time elapsed between base closure announcement and formal base closure was only a few months, and base facilities were made available for community ownership in short order. By October 1962, the former Air Force base had been converted to Skyway Industrial Park. Loring Air Force Base, some twenty miles away in Caribou, Maine, retained control of 194 Presque Isle housing units for use by its personnel complement. Rather than working to prevent base closure, the community chose to procure base facilities and to put them to other uses.

Base Closure Impacts Anticipated by the Town of Presque Isle

Base closure was not welcomed enthusiastically by the town, and the day of official base closure was described as a "black day" in Presque Isle. "With the closing of the base and the moving out of large numbers of military families, the economy of Presque Isle was severely depressed."¹ The town was generally skeptical about what would happen as a result of base closure, but detailed statements about base closure impacts were hard to find.

Perhaps this reflects the difference in the ways DoD must conduct its base closure activities today in comparison with twenty years ago. In 1961, there was no requirement to quantify what would happen to Presque Isle's socioeconomic structure when base closure occurred.

A statement by the director of Skyway Industrial Park to Air Force Lieutenant Colonel George J. Kelley lends some credence to this idea:

Unfortunately, or perhaps fortunately, Presque Isle did not take the time to completely assess what was happening to it nor have we taken time to assess what is taking place at the present time.²

It is safe to say the community knew it would lose military local procurement purchases amounting to \$1,845,732 each year and that the annual 2.5 million dollar military payroll would no longer be available to merchants in town. Federal impact funds resulting from public school attendance by military dependents would no longer be paid to local schools (\$102,198). Beyond these absolute losses, retail sales, home construction, apartment rentals and bank deposits were expected to decline, and unemployment claims were expected to increase. Analysis of community socioeconomic data collected during a field research visit to Presque Isle in August 1977, provides additional information about what happened to the town when the base closed.

Bank Deposits

Bank deposits were affected by base closure according to the data listed in Table 7. Between 1960 and 1961 (when the base was closed) deposits in Presque Isle's largest local bank, Northern National Bank, decreased by nearly 3 million dollars or 16 percent. While bank deposits increased steadily each year after base closure, year-end deposits did not reach pre-base closure levels again until 1965. It should be remembered, however, that local bank deposits are made volatile by local area dependency on the potato market. By the end of the decade, bank deposits had increased by 35 percent over 1960 year-end deposits. Adjusting Presque Isle bank deposits for inflation (Table 7A)

TABLE 7
COMMUNITY SOCIOECONOMIC DATA - PRESQUE ISLE, MAINE

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Local bank deposits	\$17,278,000	\$14,475,000	\$13,458,000	\$16,472,000	\$16,149,000	\$19,976,000	\$20,337,000	\$21,433,000	\$21,289,000	\$21,011,000	\$23,264,000
# Teachers Employed	105	115	143	143	150	152	159	No Data	193	183	195
M.A.S.D. #	3,118	3,274	3,720	3,876	3,923	3,962	3,984	4,333	4,339	4,371	4,327
Annual Enrollment	\$79,514	\$102,821	\$49,761	\$60,724	\$70,626	\$76,656	\$73,636	\$74,787	\$84,859	\$93,311	\$77,182
PL 81-874 Funding	\$705,609	\$786,608	\$863,803	\$1,122,755	\$1,106,431	\$1,296,097	\$1,359,949	\$1,534,798	\$1,593,766	\$1,874,094	\$2,294,000
M.A.S.D. #	10,909	10,845	11,071	11,328	11,773	12,844	13,716	13,998	13,867	13,785	13,415
Total Expenditures	981	1,168	927	987	768	524	563	570	731	843	1,152
Avg. Monthly Empl't	13,652	15,748	10,509	11,044	9,289	6,618	5,417	5,694	6,363	8,068	10,621
Aroostook County	105	87	89	78	81	91	83	72	85	88	91
Unempl. Claims/Wk.	\$487,800	\$471,900	\$443,300	\$15,719,921	\$18,455,053	\$24,371,789	\$26,164,480	\$24,199,084	\$25,656,990	\$25,557,950	\$26,909,658
State of Maine-Avg.	No Data	16	9	12	5	12	28	12	21	13	11
Unempl. Claims/Wk.	77%	80%	84%	84%	No Data	87%	84%	79%	74%	No Data	101
Permits Issued	\$18,895,840	\$40,431,860	\$41,144,680	\$41,532,050	\$42,676,150	\$44,248,850	\$45,448,200	\$46,029,650	\$47,755,680	\$49,253,640	\$72,827,700
Retail Sales Tax*	\$1,166,875	\$1,192,740	\$1,275,485	\$1,391,324	\$1,450,989	\$1,504,461	\$1,545,239	\$1,565,008	\$1,623,693	\$1,970,146	\$2,148,417
# New Dwellings	\$21,266	\$28,851	\$28,402	\$27,653	\$28,181	\$47,696	\$46,437	\$49,994	\$49,317	\$51,957	\$58,994
Ann. Appropriations	3,700	3,967	3,623	3,710	3,909	3,918	4,060	4,194	4,302	4,382	4,544
City of Presque Isle	1,546	1,586	1,558	1,568	1,555	1,563	1,580	1,587	1,595	1,600	1,596
Recreation Dept.	233	214	214	208	221	219	227	220	226	227	223
Annual Expenditures	793	770	800	696	644	566	532	574	672	705	942
# Main Residence & Commercial Phones	\$99	\$101	\$111	\$99	\$102	\$109	\$108	\$108	\$110	\$107	\$194
# Metered Rainfall	3,422	3,454	3,581	3,884	4,181	3,866	4,296	4,578	4,727	4,426	4,224
Water Users	229	253	277	319	325	369	418	472	527	606	655
# Metered Commercial											
# Metered Residential											
# APDC Cases											
Aroostook County											
Payment/APDC Case											
Aroostook County											
Annual # Hospital Admissions											
Enrollment-Univ. Maine Presque Isle											

*Actual sales tax assessments for Presque Isle businesses are listed for 1960-1962. Values listed for 1963-1970 represent actual taxable sales of Presque Isle retailers.

reveals slower growth than in Table 7, but depression of town bank deposits was not a long-term event in Presque Isle.

Northern National's bank president, Mr. Roger Erskine, indicated that the bank deposit decreases in 1961 reflected the indirect and direct effects of base closure on business in the area, as well as the decrease in savings and demand deposit accounts created by departure of people from the Presque Isle hinterland. However, Mr. Erskine did not indicate that decline in bank deposits caused any change in the bank's ability to conduct business or to serve the community during or after base closure.³ Farming and lumbering have continued to remain the economic base of the area, and bank deposits are influenced by several variations in these two activities. Bank deposits were affected by base closure, but demonstrated enough resiliency in the years following the event to preclude community hardships generated by a lack of local investment capital.

Schools

Decreases in pupil enrollments and teacher employment are characteristic results of base closure. In the case of Presque Isle, however, the number of teachers employed and pupils enrolled increased throughout the decade (Table 7). One explanation for this "base closure anomaly" was that Presque Isle area schools were included in the first school administrative district created in Maine at about the time of base closure (Maine Administrative School District Number One), with subsequent redistricting and inclusion of two grammar schools in the new district. The increase of 486 students between 1961 and 1963 reflects this event; a decline in enrollment would have been expected as military dependents left the area. A more direct explanation is

that base housing at Presque Isle Air Force Base was turned over to military people working at Loring Air Force Base. Rather than being unoccupied, Presque Isle base housing continued to possess military tenants who furnished students for the Presque Isle school system. Thus there was no net loss in pupil enrollment or teacher employment associated with base closure that negatively affected the Presque Isle school district.

Public Law 81-874 funding for Presque Isle schools did decline (by 52 percent) between 1961 and 1962 (Table 7) indicating that local schools felt a short-term loss of funds as military dependents left with base closure. Funding was increased the following year (1963) but not to the pre-base closure levels. Some PL 81-874 funding was recouped by military dependents from Loring Air Force Base moving into the Presque Isle school system, but their numbers were apparently not large enough to replace those who left. Federal impact funding for Presque Isle schools did not again approach its pre-base closure level until 1968. However, loss of federal impact funds did not appear to have any influence on school district expenditures since they increased each year between 1960 and 1970 (Table 7). Adjusting federal impact funds and school district expenditures for inflation shows no appreciable change in these trends and by the end of the decade, Presque Isle schools were spending 225 percent more than they spent in 1960 prior to base closure.

The Presque Isle school system was seeking a site for a new junior high school, and with base closure, the search for a site ended. The General Services Administration, through the Department of Health, Education, and Welfare, gave Maine Administrative School District #1

23 acres of former air base land on which to build the new school. In addition, some of the base facilities were utilized for vocational training. The state of Maine authorized funds for a vocational school to be located in Presque Isle, and 80 acres of land with buildings were transferred to the state. Under GSA discount procedures, this property was conveyed to the state at no cost as long as it was used solely for educational purposes for a twenty-year period. This transaction was completed in March 1962, with the U.S. Air Force leaving behind \$108,000 worth of machine tools and equipment to be used by the new vocational school.⁴

Research information indicates that the Presque Isle school system profited by base closure. Few, if any, teachers lost their jobs, and pupil enrollment did not decline. Federal impact funds were cut but had no detrimental effect on school district expenditures or the school system's ability to continue providing a sound education to Presque Isle school children. Land, buildings, and capital equipment for two new schools were also made available at very little cost to local citizens. A statement by Mr. James K. Keefe in a letter to Lieutenant Colonel George J. Kelley sums up the impact of base closure on Presque Isle schools: "We did not face a big decrease where education was concerned."⁵

Unemployment

Because of its association with agricultural production, unemployment in Aroostook County follows a cyclical pattern each year. People can find jobs in September and October when potato harvesting and processing are in full swing, but April and May are months of high unemployment when labor requirements for agricultural activity are low. Potato processing plants in the local area are also shut down in June, July,

and August each year. Local construction work begins to decrease after the first autumn freeze; however, this seasonally generated increment of unemployed people is often offset by hiring at potato plants.

In addition to the annual cycle of unemployment, Aroostook County has been classified as an area of persistent unemployment by the U.S. Labor Department. At the time of base closure, "the economy of Presque Isle depended solely on potatoes and the military."⁶ According to the 1960 Census of Maine Manufacturers, only 246 people were employed in manufacturing in Presque Isle.⁷ Given these facts, how did the local situation compare to unemployment in the state of Maine and to national levels of unemployment in the 1960s? During the first half of the decade, unemployment in Maine averaged 1.4 percent higher than national unemployment during those years (Table 8).

TABLE 8
AVERAGE ANNUAL UNEMPLOYMENT IN PERCENT, 1960-1970

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
U.S.	5.5	6.7	5.5	5.7	5.2	4.5	3.8	3.8	3.6	3.5	4.9
Maine	7.4	8.4	6.9	6.9	6.2	4.9	4.2	3.9	4.1	4.6	5.5
Aroostook Co.	N.D.	8.0	10.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

In the last half of the decade, state and national unemployment rates began to converge, and for the decade, unemployment in Maine averaged only 0.7 percent greater than the national average for the same time period. Unfortunately, unemployment data for Aroostook County or Presque Isle could not be obtained for each year throughout the 1960s. The Maine Department of Manpower Affairs no longer retains this infor-

mation for years prior to 1970 because of changes in data collection criteria and therefore loss in comparability of annual unemployment data.⁸

The meager data for Aroostook County listed in Table 8 suggest that unemployment in the county was slightly less than state levels in 1961 but had increased in 1962. Whether the 1962 increase was due to base closure or variability in local agricultural markets could not be determined. None of the people interviewed during the field research visit indicated that unemployment in the Presque Isle area became excessive or unusual as a result of base closure.

Even though annual unemployment rates for Aroostook County throughout the 1960s could not be resurrected, average monthly employment statistics were available.⁹ If base closure caused a permanent change in the number of people working in Aroostook County, this fact should be reflected in the average monthly employment statistics for the 1960s. During the base closure year (1961), an average of 64 fewer people worked in Aroostook County than in 1960 (Table 7). After 1961 and until 1967, the average number of people employed increased markedly (29 percent greater in 1967 than in 1961) and then fell in small increments in 1968, 1969 and 1970. These data do not indicate that base closure reduced the number of people working in Aroostook County during the 1960s.

In the absence of annual unemployment rates for the Presque Isle area, the average number of weekly unemployment claims filed in the local unemployment office were used as surrogate data. These data indicate that average weekly claims increased by 19 percent during the base closure year but decreased by a slightly larger increment (20 percent) the

year after base closure (1962) and continued to decrease until 1967 (Table 7). Base closure may have had a temporary effect on the number of weekly unemployment claims, but these data do not indicate that the number of claims consistently remained high in the local area as a result of base closure. It is also interesting to note when using state data as an index, that changes in Aroostook County's weekly unemployment claims mirrored perturbations in these same data for the state (Table 7).¹⁰ This analysis leads to the conclusion that unemployment in Presque Isle was not particularly different from the state-wide unemployment situation.

Impact on Business Establishments

Specific accounts of business failures attributable to base closure were hard to discover during the August 1977 field visit to Presque Isle, but personal interviews, data on retail sales, and the number of business permits issued annually help to "paint the picture" of what actually happened to the central business district when the base closed.

The number of business permits issued each year declined from 105 to 87 between 1960 and 1961 (Table 7). The city issues licenses and permits to victualers, taxis, pool halls, bowling alleys, junkyards and the like. According to people in the Presque Isle City Clerk's office who issue these permits, the decrease between 1960 and 1961 was accounted for by a decrease in the number of junkyard permits and in the number of victualers. Only one pawn shop was cited as having closed its doors.¹¹ For the remaining years in the decade, the number of business permits issued annually fluctuated from a low of 72 in 1967 to a high of 91 in both 1965 and 1970. The average number of permits

issued for the decade was 86. These figures seem to indicate that some restaurants may have been affected by base closure, but it appears that the number and variety of retail businesses found in this small town CBD did not change very much.

Further insight into the influence of base closure on businessmen in Presque Isle may be gained from evaluating data extracted from County Business Patterns (Table 9).

TABLE 9

AROOSTOOK COUNTY, MAINE
ANNUAL BUSINESS ESTABLISHMENTS, 1959-1970

	1959	1962	1964	1965	1966	1967	1968	1969	1970
# Reporting Units	1633	1591	1599	1630	1660	1610	1594	1545	1467
# Manufacturing Units	196	187	207	190	181	176	183	157	158
# Retail Trade Units	611	593	578	582	587	565	568	560	514

When interpreting county data, one should remember that Aroostook County is a very large county within the state of Maine and that there are several small towns throughout the county. Houlton is comparable in size to Presque Isle. The size of the reporting area makes it unlikely that county data will accurately reflect the changes in Presque Isle businesses that were triggered by base closure.

The total number of reporting units declined by 42 between 1959 and 1962, followed by increases in 1964, 1965 and 1966 to levels that exceeded pre-base closure reporting levels. Beginning in 1967 a steady decline ensued through 1970 (Table 9). Most of the reporting units accounting for this decline were in the 1 to 3 employee size categories. The net loss of 166 reporting units between 1959 and 1970 is probably

not attributable to base closure but more related to the overall business climate in Aroostook County during the decade.

The number of manufacturing units first declined slightly in 1962 and then peaked for the decade in 1964 after base closure. After 1964 a net loss of manufacturing units in the county is observed (Table 9).

Retail trade reporting units fluctuated from a maximum of 611 in 1959 to 587 in 1966 and then began to noticeably decline between 1967 and 1970. In both total number of reporting units and in number of retail reporting units, the greatest annual decline occurred between 1969 and 1970, long after base closure. Data in Table 9 indicate that decline in number of Aroostook County businesses began well after base closure in 1961 and do not appear to be directly related to loss of people from the Presque Isle hinterland alone.

Data on retail sales in Presque Isle provide another avenue for discovering how base closure affected local merchants. Sales tax figures in Table 7 for 1960 through 1962 are not comparable with those listed for 1963 to 1970. Actual sales tax assessments for Presque Isle businesses are listed for 1960-1962, while actual taxable sales are listed for the years 1963-1970. These data are derived by the state of Maine from total retail sales in Presque Isle. The sales tax assessment decline (\$55,900) in 1961 is related to base closure, according to a Presque Isle Chamber of Commerce official.¹² Sales tax assessments increased in 1962, but did not attain the 1960 pre-base closure levels. After the first year taxable sales were listed in 1963, gross taxable sales for Presque Isle increased annually through the end of the decade. Taxable sales data adjusted for inflation in Table 7A

indicate an increase of 3 million dollars between 1963 and 1964 and stability in taxable sales (at approximately \$24.5 million annually) for the remainder of the decade. Sales tax data reflect a decline of short duration in main street business activity.

The brevity of base closure's influence on retail business is supported by newspaper accounts of increased sales at year's end in 1963. "Sales (in Presque Isle) to date had topped sales to the same date in 1962. A jeweler believed that the farmer in the area is the only one hurting."¹³

Sales and use tax figures supplied by the State Bureau of Taxation show that as early as April 1961, the city financial downward trend began. These figures for Presque Isle continued to drop until early this year (1963), then began to show a gradual increase. This past June was the biggest June in the history of Presque Isle business life; and June 1961 (the base closure year) was the worst.¹⁴

Life-long residents and businessmen in Presque Isle shared these views about base closure and retail business declines.

The biggest impact was on main street business, but it was only a temporary adjustment. It was only a short time before (imported) industry picked up the slack from departure of military people.¹⁵

Another businessman indicated that a decrease in automobile sales and grocery store receipts accompanied base closure and that business was stagnant for approximately 18 months afterward, but that nobody closed business.¹⁶ A third businessman reported that,

local retailing and service activities were affected, but that he could not recall any businesses actually ceasing operations. In fact, the local manager of Sears, Roebuck and Company publicized the long-term advantages of lessened dependency on the military as a bulwark of the Presque Isle economy.¹⁷

Newspaper stories stated that,

Three large main street businesses have closed since inactivation of the base, and the community's last movie house is busy only on Saturday. Presque Isle isn't booming, but apparently it's not doing too badly.¹⁸

These data illustrate the short-term nature and shallow impact of base closure on retail establishments in Presque Isle. It is also unclear from personal interviews that even as many as three businesses closed their doors after base closure as detailed in the previously described newspaper accounts. The "black days" did not last as long as Presque Isle merchants thought they would.

Housing--Real Estate Market

At the time of the base closure announcement, housing shortages existed in Presque Isle.¹⁹ What changes in the Presque Isle housing and real estate market were presented by base closure?

Construction of new dwellings was definitely slowed. Data on the number of new dwellings constructed annually show a general decrease after the base closure year (1961) to a low of only five new dwellings built in 1964 (Table 7). On the average, fourteen new homes were built per year in Presque Isle between 1961 and 1970. Beginning with the fourth year after base closure (1965), the number of new homes built each year again began to increase and approached or exceeded the annual average each year through the end of the decade. New housing starts were decreased as a result of base closure. According to a newspaper account, "New housing construction through August of 1961 numbered 10, compared with an average of 33 through that month in the previous four years."²⁰

The number of homes for sale increased with base closure. Estimates of homes for sale after the base closure announcement ranged between 90 and 150.²¹ More vacant apartments also appeared after base closure.

Apartments that rented for \$125 per month when the base was here went down to \$90 after the base closed. Rents became plentiful. Before the closing there had been none.²²

One source of data indicated that Presque Isle went from a shortage of 200 adequate housing units to a surplus of 300 after base closure, and that most of these surplus units were in the form of apartments.²³

The Presque Isle tax assessor used a "real estate sales ratio" for the purpose of tracking the local real estate market each year (Table 7). By dividing assessed values of homes sold by the sales price, the real estate sales ratio was derived. High ratios mean a depressed housing market as assessed values and sales prices approach unity. Real estate sales ratios began to increase in 1961 and did not begin to decline until 1966, indicating the stagnant housing market in Presque Isle during that time period after base closure (Table 7). The exceptionally high ratio indicated for 1970 was caused by a tax revaluation in that year. Mass repossessions of FHA or VA tract-type housing did not occur in Presque Isle because they did not exist.

Specific residential sections in town were not affected by base closure; the housing market was depressed throughout Presque Isle. The quality of homes that were devalued the most were those described as "substandard." "Blighted property really got hurt."²⁴ However, as these substandard homes were left vacant, the residential filtering process was observed to begin functioning as people who previously could not afford a home of their own began to occupy lower quality dwellings in Presque Isle.

The local real estate market and new home construction were depressed for a period of some four years after base closure. Fewer new homes were built, and it took these years for the market to adjust

itself to the sudden increase in the number of vacant homes and apartments. Home values were depressed as evidenced by higher real estate sales ratios than before base closure. However, the depressed real estate market was not a lasting phenomenon in Presque Isle. "Today (January 1964) there are between 30-40 (vacant homes) with all realtors in the area reporting a brisk market."²⁵ Presque Isle was probably able to survive the temporary slump in its housing market because of the local shortage of homes and apartments that existed before base closure.

Presque Isle Tax Base and Municipal Services

Because local tax valuations and revenues drive the level of services a municipality is able to sustain, the manner in which base closure changed Presque Isle's tax base should be evaluated. Fortunately, the Presque Isle tax assessor was able to provide information about local tax valuations and city appropriations for the base closure decade.

The assessed value of real and personal property in Presque Isle did not decline in any year between 1960 and 1970. However, the increments of increase were smaller during the base closure years of 1961 to 1962 and 1962 to 1963 than for other tax years in the decade. The smallest increment of assessed value increase is noted in 1963 (Table 7). Smaller increases in these years are probably due to decreases in retail business inventories and the larger number of vacant homes and apartments that became available as people left Presque Isle. Though assessed values did not rise as fast in the two years following base closure, assessed values did increase. For all other years in the decade, assessed values increased at least by \$.6 million and in

most years the annual increase in assessed values exceeded \$1 million (Tables 7 and 7A). Assessed property values were maintained in Presque Isle even during the base closure years.

If assessed property values did not increase as much during the base closure period, was the amount of money appropriated by the town for all kinds of municipal services adversely affected? City of Presque Isle annual appropriations listed in Table 7 indicate that the city increased its appropriations each year in the 1960 to 1970 decade. When corrected for annual increments of inflation data in Table 7A still support this statement. In fact the city spent more money (on an annual basis) in the base closure years, 1961 and 1962, than it did at any other time during the decade except in 1969 and 1970. Increased city spending in 1961 and 1962 partially reflects the amount of money it took for the city to buy and service parts of the former Air Force base. As a municipality, Presque Isle amassed enough revenues from all sources to maintain or exceed its level of spending for municipal services throughout the decade of the 1960s.

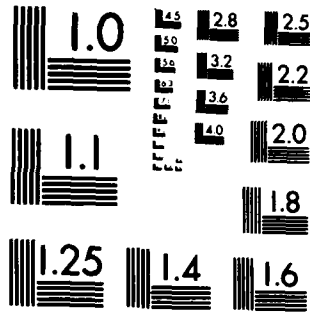
Certainly the less essential services, such as the city recreational program, were not badly hurt by base closure if expenditures for the Presque Isle recreational department are used as indicators.

The city recreation department spent almost the same amount of money each year from 1961 through 1964 and then more than doubled its annual expenditures in 1965. These higher levels of spending were maintained for the rest of the decade (Table 7). Small decreases in city spending for recreation can be noted in 1962 and 1963 but these decreases amounted to less than \$1,000 in each of these years. Table 7A indicates that stagnation in recreation department expenditures occurred in 1962,

1963 and 1964. The departure of townspeople who may have used these recreational programs made available by the town did not seem to affect Presque Isle's ability to provide recreation programs for its citizens after base closure.

Neither were essential services such as police and fire protection negatively affected by base closure. Between 1960 and 1970, fifteen full-time policemen and twelve full-time firemen were on duty in Presque Isle. "Base closure had no influence on the number of policemen and firemen employed in Presque Isle."²⁶ In order to maintain a certain level of fire rating, a specific number of firemen have to be on duty at all times, and police shift work required at least five policemen on duty during the base closure decade. The outmigration of people due to base closure was apparently not of sufficient magnitude for the town to choose to reduce its level of police and fire protection.

Presque Isle's welfare, as illustrated by assessed property values, annual appropriations, recreation department expenditures, and number of policemen and firemen employed annually did not seem to be severely injured by base closure. If anything, the town was able to maintain a consistent level in the provision of municipal services during the base closure years and to experience a healthier level of municipal welfare in the latter years of the decade. Base closure appears to have had a very small impact on Presque Isle as a functioning municipal entity.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963 A

Effects of Base Closure on
Public Utilities

Local utility companies, as suppliers of water and sewer services, telephone communications, and electricity to residential and commercial users in Presque Isle, would naturally be affected through loss of customers and revenues as people left town in response to base closure. To determine how these types of services were affected, data concerning the annual number of utility users were collected from Presque Isle sources.

The number of residential and commercial main phones operating inside the Presque Isle exchange each year clearly shows the effect of base closure (Table 7). In 1962 there were 344 fewer phones in Presque Isle than in 1961 (an 8.7 percent decline). This decline was temporary, however, because the number of customers billed as of January 1 each year increased steadily between 1963 and 1970. At the end of the decade, the number of telephone customers in Presque Isle had increased by 23 percent over the number that existed in 1960.²⁷ Among the 344 customers lost between 1961 and 1962, some could probably be attributed to still vacant homes at the former air base (before people from Loring moved in) and some were probably due to vacant homes and apartments in town. During the field research visit, no statements were made that indicated base closure caused New England Telephone particular difficulty in terms of revenue decreases, loss of capital equipment, or in ability to continue providing customer service.

Along with phone customers, the number of residential water users in Presque Isle each year provides some insight about what happened to the town during base closure. The largest single decline in annual number of metered residential water customers came in 1962, after base clo-

sure. The number of customers declined by 28 (2 percent) between 1961 and 1962 (Table 7). Throughout the remainder of the decade the number of residential customers serviced by the Presque Isle Water and Sewer Authority fluctuated an average of only five customers each year.

These data indicate stability in quality of service provided and in the number of people served. It would also seem to indicate that while there were several vacant homes on the market, they must not have stayed unoccupied for a long period of time. Due to the small decline in residential customers that accompanied base closure, it does not appear that the Presque Isle Water and Sewer Authority would have suffered a severe loss of revenue in 1962.

The number of commercial water users billed each year in Presque Isle reflects a similar situation. The decrease in commercial customers seems to have been much more sensitive to base closure than the reaction of residential customers, since the largest decline in commercial water customers came in 1961, the year of base closure, rather than in the year after (1962). Nineteen commercial water customers were lost in 1961 when compared to 1960 (8 percent) and the number of commercial water users remained stable through 1962. A small decline of six customers is noted in 1963 and then the number of commercial water customers began to show a net increase for the rest of the decade (Table 7). The nature of these commercial water users and their relationship to the former air base could not be clarified. These data would suggest that 19 firms ceased operation in base closure years, but other supporting data and interviews do not seem to support such an assumption.²⁸

Analysis of telephone and water customers indicate that the impact of base closure on these elements of community service was of

short duration, and although declines in base closure years are noted, base closure did not appear to cripple provision of phone or municipal water services. Unfortunately, data for electrical utilities could not be obtained.

Base Closure and Changes in Public Assistance Programs

Base closure could be expected to increase the incidence of welfare assistance in Presque Isle because fewer jobs would be available in an area characterized by dependency on agricultural prices and production rather than industry. Was base closure an influence on levels of welfare assistance in the Presque Isle area? The only consistent welfare information that could be obtained from state sources during the base closure period was information concerning the Aid to Families With Dependent Children program in Aroostook County. Though these are county-wide data, most of the incidence of welfare assistance could be expected to occur in the Caribou-Presque Isle-Houlton corridor in Aroostook County because of the higher concentration of county population in this area.

The number of AFDC cases in Aroostook County reported in February of each year do not appear to show much relationship to base closure (Table 7). In 1961 (the base closure year), case loads were down (by 23 cases) in comparison to 1960 but the case load was observed to increase (by 30 cases) in 1962. This 1962 increase in case loads may have been related to base closure, but if so, it represented only a 4 percent increase. More significant is the steady decline in case loads from a high of 800 in 1962 to a low of 534 in 1966, rather than

the expected increase. The average case load for the decade was 698, well below the case loads in base closure years.

It is possible that the decline in case loads in the middle years of the decade was related to the increased number of jobs available in Presque Isle as new industry moved into the former air base. The sudden increase in case loads between 1969 and 1970 (+237) is unexplained but is probably related to rules changes governing eligibility of AFDC recipients.

AFDC payments per case in February each year remained more stable than the case load (Tables 7 and 7A). An increase of \$10 is noted between 1961 and 1962 payments, but payments were back down to \$99 per case in 1963 and fluctuated between \$99 and \$110 between 1963 and 1969. The significant increase in monthly payment per case in 1970 is again unexplained but probably increased for the same reasons that influenced the rise in case loads.²⁹

Case load and monthly payment information do not seem to suggest that base closure caused a large increase in the Aroostook County Aid to Families With Dependent Children program. If the 1962 increase in case loads and payments was tied to base closure, it was an increase of short duration followed by a marked decline in AFDC assistance in the county within eighteen months after the October 1961 event.

Base Closure and Changes In Community Medical Service

Presque Isle Air Force Base did not possess its own hospital, and base personnel used the hospital at nearby Loring Air Force Base or used the town's hospital. Field research interviews indicated that the maternity ward in the Presque Isle hospital was actively used by the

younger group of people at the base. Even with the loss of this interaction between the base population and the town, however, Presque Isle's hospital has been crowded since the air base closed.³⁰ Admissions data for the 1960 decade support this fact. These data show a steady annual increase in the number of admissions to the hospital during and after base closure (Table 7).³¹ Such a situation would not indicate a lessening of the number of active physicians in the community or in the variety and quality of medical services rendered by Presque Isle's A. R. Gould Hospital. Though the town did provide some medical services for military personnel, base closure had little effect on community medical services. None of the people interviewed during the field research visit indicated that base closure caused a negative change in availability of Presque Isle's medical services.

Base Closure and State College Enrollment

Since many military people seek advanced education in the community where they reside, it may be anticipated that base closure would influence local college enrollments. The University of Maine has a branch in Presque Isle (formerly Aroostook State Teachers College) that began to expand near the time of base closure. Growth of this small educational institution was not hampered by the departure of military personnel, since college enrollments consistently increased between 1960 and 1970. By the end of the decade, enrollment had risen by an increment twice the size of its 1960 level (Table 7).³² If functioning of the college were related to base closure, a drop in enrollment in 1961 or 1962 should have been observed. Base closure had little effect on enrollments at Presque Isle's local college.

Summary

As a community, Presque Isle accepted base closure with anxiety and much concern for the community's future viability. However, the review of Presque Isle's socioeconomic welfare indicates that Presque Isle survived base closure very well. Retail sales and the housing market were probably the two segments of the local economy that were directly affected by base closure. Depression of the housing market lasted for three to four years, and it was housing of marginal quality that suffered the most. Higher vacancy rates and a decrease in home values and apartment rents by approximately 25 percent did allow the filtering process to work as it did in other base closure communities. Retail sales were depressed for a shorter period of time with increases reported by local merchants within 18 months or less after base closure. Little evidence could be found that a large number of retailers went out of business. The number of business permits issued annually did decline in an apparent response to base closure, but these businesses were of the type that frequently enter and exit the local market (pool halls, pizza houses, junkyards). With the departure of military people, automobile and grocery sales also declined. Retail sales recovered quickly, however, as evidenced by increases in retail sales tax assessments and actual taxable sales.

School teachers did not lose their jobs and enrollments did not decrease primarily because the school district was reorganized and because military personnel from Loring Air Force Base, a few miles north of Presque Isle, occupied Presque Isle base housing made available when the base closed. Although Public Law 81-874 funds declined, school district expenditures were up throughout the decade. Rather than

schools being closed, a new junior high school and a vocational school were built and utilized by the community. Enrollment at the local college was also unaffected by base closure.

The record of annual assessed tax values and municipal appropriations for Presque Isle indicate that its local tax base and municipal welfare did not suffer from base closure. Using these two measures, community welfare improved in each year of the 1960 to 1970 decade. Bank deposits were down 16 percent during the year of base closure but began recovery the following year and exhibited strong growth in the last half of the decade. The 9 percent decline in number of phone customers billed in the year after base closure was recouped within three years by New England Telephone Company, and the ability of the Presque Isle water authority to continue to supply required services was not impaired by base closure. Although the Presque Isle community hospital was used by people from the base, departure of the military population failed to decrease the annual number of hospital admissions. The Aid to Families With Dependent Children program also appeared to be unrelated to base closure since the trend in number of AFDC cases was downward in the years immediately following base closure.

Employment data for Presque Isle and Aroostook County suggest a temporary, short-lived increase in unemployment rates and claims. Total employment increased and unemployment claims declined in the years immediately following base closure, a situation which is the reverse of unemployment trends anticipated by base closure communities. Loss of a segment of its military population did not seem to trigger an unemployment situation for Aroostook County which was anomalous in relation to unemployment trends existing state-wide.

People interviewed during the field research visit stated that base closure had little affect on civic club memberships or on charity fund drives such as the United Way campaign. The military base and the town each supported separate United Way fund drives, and total contributions were not combined for distribution to United Way supported organizations in the community. Therefore, base closure made little difference to community charitable organizations; Presque Isle Air Force Base was not a source of income for these community organizations.³³

Analysis of community socioeconomic characteristics suggests that the impact of base closure on the community of Presque Isle lasted for only one or two years except for the housing market. Reasons for this shallow impact include the speed with which the community was able to acquire the former Air Force base for new industrial uses and the smaller size of the departing military population in comparison with the other two case-study communities addressed in this research. Presque Isle coped with base closure quite well.

Some comments made by citizens of Presque Isle are indicative of community attitudes toward base closure in retrospect. "Depression of base closure lasted two years maximum and was not that important."³⁴ "The only thing base closure affected were the local merchants through the buying power exercised in town."³⁵

The community is better off today than before base closure. The 1970 Census showed fewer people in Presque Isle than in 1960, but several new homes, trailers and apartments have been built. Our long-term growth trend is upward; I'm not so sure all these people have left the Presque Isle area.³⁶

Footnotes

¹James K. Keefe, "Skyway Industrial Park," The Maine Townsman, February 1963, p. 4.

²Letter from Mr. James K. Keefe, Director, Presque Isle Industrial Council, to Lieutenant Colonel George J. Kelley, Alexandria, Virginia, dated January 18, 1964. In this letter, Mr. Keefe was responding to Colonel Kelley's inquiry about what happened to the town when base closure occurred.

³Mr. Roger Erskine, President, Northern National Bank and member, Presque Isle Industrial Council, interview conducted during field research visit to Presque Isle, Maine, August 16, 1977. Mr. Erskine was quite knowledgeable about the business climate associated with base closure in Presque Isle. Data on bank deposits listed in Table 5 are for the Presque Isle Office of Northern National Bank only and were obtained from the bank.

⁴Office of Economic Adjustment Working Paper, "Presque Isle Chronology." dated July 15, 1963.

⁵Mr. James K. Keefe letter.

⁶Mr. James K. Keefe letter.

⁷Letter from Mr. James K. Keefe, Director, Presque Isle Industrial Council to Mr. Donald F. Bradford, Pentagon Office of Economic Adjustment dated November 11, 1963.

⁸Aroostook County unemployment rates for 1961 and 1962 listed in Table 6 were obtained from Office of Economic Adjustment letters recounting unemployment rates at the time of base closure, from a Presque Isle Water and Sewer Authority report detailing the chronology of Presque Isle Air Force Base closure and from a Presque Isle registered community audit that listed community capacity to support industrial development.

⁹Aroostook County average monthly employment data were obtained from the Maine Department of Manpower Affairs, Employment Security Commission, in Augusta, Maine.

¹⁰Average weekly unemployment claims information for Aroostook County and the state of Maine were obtained from the Maine Department of Manpower Affairs, Division of Economic Analysis and Research. The number of weekly unemployment claims supported by the Maine Unemployment Insurance Program are aggregated from local offices at the state level and forwarded to the U.S. Department of Labor in Employment Training Administration Report #210--Weekly Report of Unemployment Insurance Claims.

¹¹Data on the number of annual business permits were obtained from the Presque Isle, Maine, annual reports which can be obtained from the Presque Isle City Clerk.

¹²Mrs. Chris Leach, Presque Isle Chamber of Commerce, interview held during field visit to Presque Isle, Maine.

¹³Bangor (Maine) Daily News, December 1963.

¹⁴Bangor (Maine) Daily News, October 1, 1963.

¹⁵Mr. Larry E. Clark, Executive Director, Presque Isle Industrial Council; interview held during field research visit to Presque Isle, Maine, August 15, 1977.

¹⁶Mr. Roger Erskine interview.

¹⁷Mr. Hazen Stetson, former employee of the Maine Public Service Company and member of the Presque Isle Industrial Council; interview held during field research visit to Presque Isle, Maine, August 16, 1977.

¹⁸Bangor (Maine) Daily News, October 1, 1963.

¹⁹Mr. Hazen Stetson interview.

²⁰Bangor (Maine) Daily News, October 1, 1963.

²¹The James K. Keefe letter to Lieutenant Colonel George Kelley placed the number of homes for sale at 90 while Mr. Hazen Stetson estimated that base closure caused as many as 150 homes to be placed on the real estate market.

²²Bangor (Maine) Daily News, October 1, 1963.

²³Mr. James K. Keefe letter.

²⁴Mr. Gerald Clark, Presque Isle Tax Assessor, interview held during field visit to Presque Isle, Maine, August 16, 1977. Mr. Clark was kind enough to supply the information concerning real estate sales ratios in Presque Isle for the base closure decade and to describe the filtering process as it pertained to Presque Isle.

²⁵Mr. James K. Keefe letter.

²⁶Mr. Bert Johnson, Presque Isle City Clerk, interview held during field research visit to Presque Isle, Maine, August 17, 1977. Data for the city of Presque Isle concerning taxable valuations, appropriations and the recreation department budget can be found in the Presque Isle annual reports on file in the City Clerk's office. Since the number of policemen and firemen employed remained constant throughout the decade, no data were listed for these categories in Table 7.

²⁷Mr. Ed Foster, engineer, New England Telephone Company, interview held during field research visit to Presque Isle, Maine, August 17, 1977. Telephone data listed in Table 7 indicate the number of residential and commercial customers billed for a main phone as of January 1 each year. Revenue data for each year were not available.

²⁸Data related to the number of residential and commercial water customers for each year between 1960 and 1970 were obtained from the Presque Isle Water and Sewer Authority. Annual revenues could not be obtained.

²⁹Aid to Families with Dependent Children case load and payment data were obtained from the Maine State Department of Human Services. The state is required to submit a report to the federal government in February of each year entitled, Statistical Report on Numbers of Recipients and Amounts of Money and/or Nonmedical Vendor Payments Under AFDC and GA, by county. Unfortunately, General Assistance Welfare information was not listed in these reports in each year between 1960 and 1970. This absence of General Assistance information precludes any statements about the influence of base closure on increases in General Assistance welfare programs.

³⁰Mr. Hazen Stetson interview.

³¹Annual number of admissions to the A. R. Gould Hospital were obtained from Mr. David Peterson, Hospital Director of Fiscal Affairs, Presque Isle, Maine.

³²Enrollment figures for the University of Maine, Presque Isle, were obtained from Mr. Dave Abbot, Registrar, in Presque Isle, Maine.

³³Mr. Hazen Stetson interview.

³⁴Mr. Hazen Stetson interview.

³⁵Mr. Bert Johnson interview.

³⁶Mr. Larry Clark interview.

CHAPTER VIII

LOCATION AND COMMUNITY STRATEGIES FOR REVIVAL

Introduction

What adjustments can communities make that will enable them to cope with changes generated by base closure? After learning of base closure, the affected community often reacts by enlisting congressional aid to keep the base open or by fighting the decision by using the environmental impact statement as a weapon. When these methods are exhausted and results are not in the community's favor, the base closure decision is accepted by the community. Within Wolpert's threat reaction conceptual framework, the community must design a different coping response to the threat of base closure, a response that will replace business lost to the community and revive the sagging local economy. The question is one of how to enter a model, like the community growth and economic development model postulated by Moriarty, for the purpose of rejuvenating community growth and general welfare. The usual strategy revolves around using facilities available at the former Air Force base to stimulate the local economy, and the scale of these efforts is characteristically local in nature because the affected community is the geographic unit where vested interest primarily resides. Other agencies at state or federal levels will contribute to the effort, but the burden of implementing revival strategy falls on the base closure community because it will be the benefactor of future development. In

the formulation of revival strategies, is the community cognizant of location as a resource or as an obstacle, and is the community cognizant of its geographic site and situation? How can community relative location be measured? Application of population potential methods offers a solution to the problem of measuring relative location. Because of location, site and situation, can some communities adjust to base closure more easily than others? Through studying the revival strategies applied in each of the three case study communities, these important locational issues can be addressed.

The Situation of Presque Isle, Maine

As has been mentioned, Presque Isle was one of the first locations where base closure was thrust upon the community. Not only was the community aware that base closure was imminent, but when the event occurred, it took place with considerable speed. The announcement was made in March 1961, and closure actions were completed by October of that year. The townspeople had two choices, pursue an active policy of industrial development or do nothing. Given Presque Isle's geographic location, it would have been very easy for the community to perceive its location as an insurmountable obstacle and to have done nothing. What kind of "mental map" did Presque Isle citizens possess? Did they perceive themselves to be at a locational disadvantage in relation to possibilities for future development? Some comments by people who participated in the revival efforts are instructive.

Although he never presented the speech, Senator Muskie referred to Presque Isle's location in remarks prepared for the All America City awards ceremony in Presque Isle:

Some said the base would be a millstone around the neck of the community, that industry would never come this far north. It was too cold. Presque Isle was too far removed from the major marketing areas.¹

Another author, writing about the recovery process in Presque Isle, describes the town as being located on a geographical frontier along the northern reaches of Maine, refers to its geographical isolation, and speaks of the liabilities the town faced in terms of purely locational economics.² In relation to the purchase price the town paid for the former Air Force base, location seemed to play a role:

There is no question that the value would have been a great deal higher but for the fact that Presque Isle, Maine's northernmost city, is located some 300 miles from any city or urban area of 50,000 or over population.³

A long term resident of Presque Isle stated that,

distance to market is a problem; however, the increase in transportation costs is somewhat offset by productivity of local workers. At the time of base closure, access was a problem; planes were the only efficient way in and out of Presque Isle, roads were horrible, passenger service on the railroad had been eliminated, and bus services were not good.⁴

In 1977, this situation had changed, and although distance to market still caused greater transport costs from Presque Isle, "excellent air transport to Boston existed, the town was served by three rail lines, and trucks provided overnight service to the Boston area."⁵

These statements are indicative of the "locational obstacles" the people of Presque Isle felt they had to overcome in their attempts to revive the community? Was Presque Isle as locationally handicapped as its citizens perceived? The concept of population potential allows the relative location of Presque Isle to be evaluated.

Population Potential and Presque Isle's
Relative Location

Population potential is an abstract, macroscopic variable measuring the relative location of each place with respect to all other places in a region. Population potential is a measure of the nearness of people to one another in the aggregate.⁶

Maps of population potential describe the amount and location of interaction energy at each point in a region. The potential model is a way of summarizing the geographical complementarities in any spatial system.

To evaluate the relative location or potential for interaction of Presque Isle with all other county centers of population in Maine, a map of population potential was constructed. Briefly, the map of Maine population potential was developed by plotting the latitude and longitude (as computed by the U.S. Census Bureau) locating each county center of population on a map of Maine and digitizing these data for use as control points.⁷ Population potential at each of these control points was computed by using an algorithm of the form

$$PP_i = \frac{P_i}{1/2 d^*} + \sum_{j=1}^n \frac{P_j}{d_{ij}}$$

where PP_i = total potential at any county center of location, i ;

P = population size at any population center location in the bounded

region; d_{ij} = distance in miles between location i and location j ;

d^* is the distance from center i to its nearest adjacent population center.

The $1/2 d^*$ term is included to take into account the effect of

the mass of town i on itself. County population values were extracted

from the 1970 Census County and City Data Book. Digitized control

points and their associated population potential values were then input

to the Harvard SYMAP and SYMVU computer mapping program to generate

population potential surfaces for the state of Maine (Figures 5 and 6).⁸

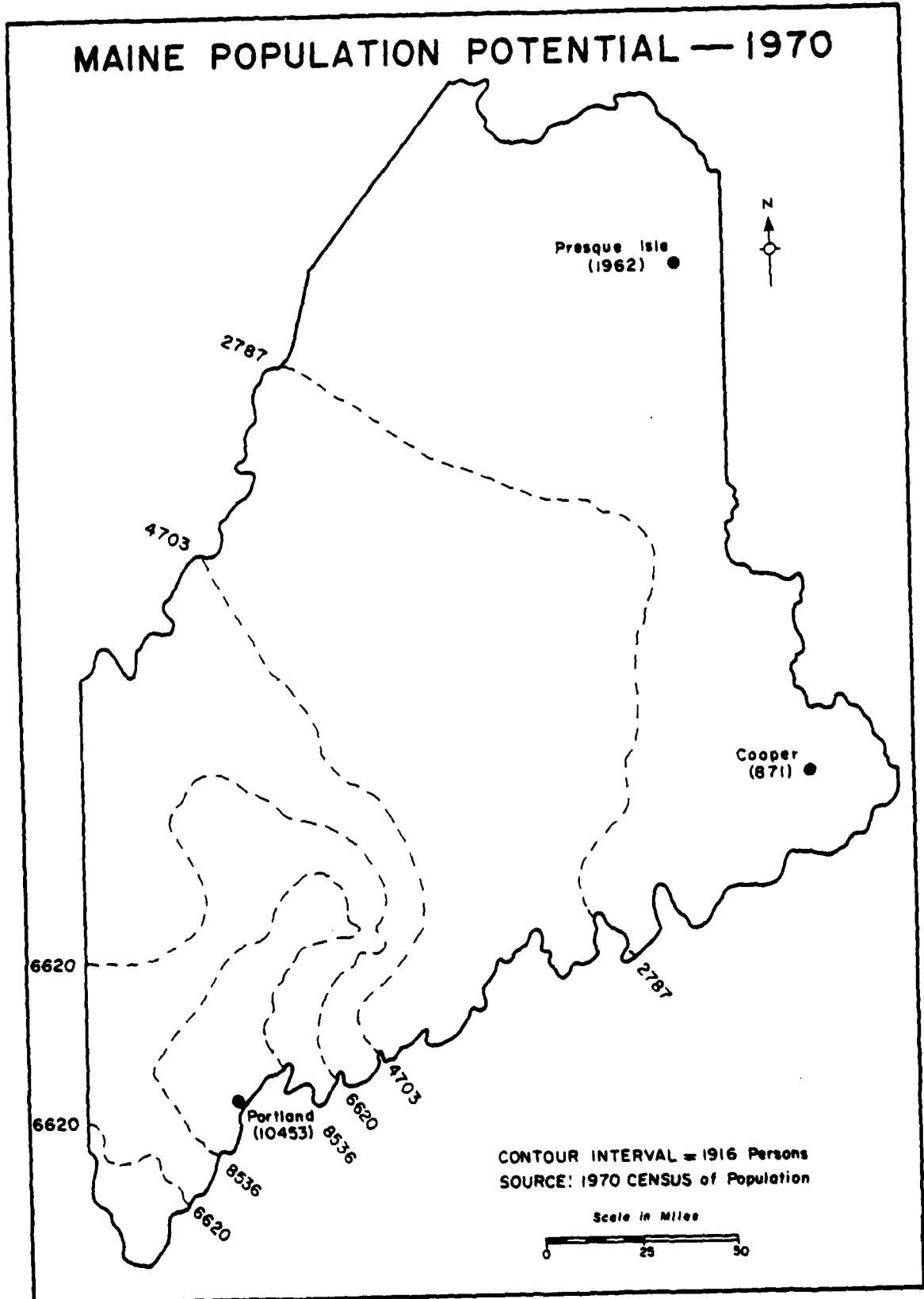
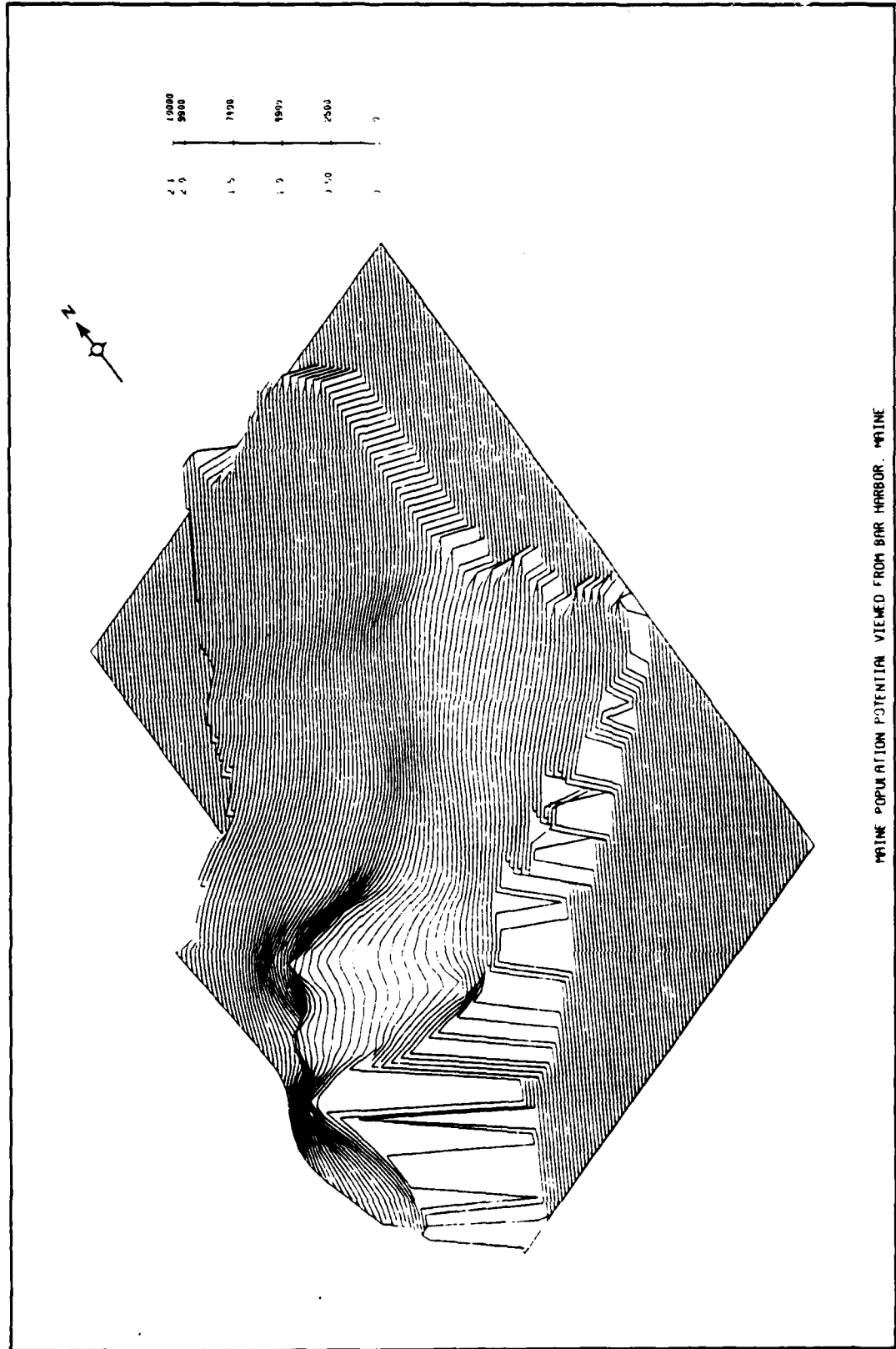


Figure 5



MAINE POPULATION POTENTIAL VIEWED FROM BAR HARBOR, MAINE

Figure 6

From this map, the relative location and potential interaction of places within the state of Maine can be ascertained based on the size of county populations and their distances from all other county centers of population. Such maps help explain "how far away" Presque Isle is from other centers of population in Maine, and what potential exists for development in Presque Isle if masses of people as consumers of goods and services and their distances from Presque Isle are taken into account.

In 1970, Aroostook County's population potential ranked 15th among the 16 counties in Maine, not a position of prestige in terms of relative location. Maine's leading county in terms of population potential was Cumberland County, which contains the Portland metropolitan area. Cumberland County's population potential value of 10,453 persons per mile presents no surprise. It is somewhat surprising, however, to find that Washington County in extreme southeastern Maine has the lowest population potential (871 persons per mile) of all counties. Visual impression of the Maine population potential map leads one to believe that Washington County is closer to other population centers in Maine than is Presque Isle. In terms of straight line distance, the visual impression is correct; not so if relative location is evaluated from the population potential perspective. Though Aroostook County (Presque Isle) ranks low in population potential, its value (1,962 persons per mile) is more than twice that of Washington County; and Hancock County (2,673), the county bordering Washington County to the west, exceeds Aroostook County's population potential by only 711 persons per mile.

Population potential demonstrates that Presque Isle is not as "far away" as the mental maps of its citizens might perceive it to be,

but the zone of peak population potential still remains focused on littoral southwestern Maine. Interpretation of the Maine Population Potential Map (Figure 5) clearly shows the zone of lowest population potential to cover the northeastern one-third of the state.

Population potential isolines representing values within the two lower class intervals are also spaced quite far apart, indicating a widespread, shallow gradient of low population potential covering the eastern two-thirds of the state area. Population potential increases quite rapidly in the southwestern one-third of the state as indicated by the close spacing of isolines representing values greater than 4,703 persons per mile.

From a different perspective, these undulations in the surface of Maine population potential can be seen in Figure 6, the SYMVU plot of Maine's population potential. Figure 6 is presented as if the observer were positioned off the northeastern coast of Maine looking westward toward the surface of Maine population potential. The higher surface in Aroostook County clearly shows the Presque Isle area to possess an advantage in potential over counties along the northeastern coast, even though Presque Isle is farther away in linear distance from maximum zones of population potential than are these two coastal counties. However, Presque Isle's population potential is nowhere close to that generated by the more heavily populated counties in southwestern Maine (Figure 6).

Within Aroostook County, the center of population is located approximately halfway between Presque Isle and Caribou on a line connecting these two towns. Market oriented entrepreneurs might logically concentrate their development strategies and choose their develop-

ment sites along a north-south axis in the Aroostook Valley, for locally, it is in this zone that the most potential for interaction and access is found. Given these circumstances of local population potential, the location of the former Air Force base was indeed a resource for the people of Presque Isle. Houlton, Presque Isle, Caribou and Limestone possess locational advantages over other towns in Aroostook County, but, where population potential is concerned, these Aroostook Valley towns do not exhibit locational advantages in relation to other municipalities throughout the state.

The conclusion to be drawn from this analysis is that Aroostook County and Presque Isle do not enjoy the potential for a high degree of increased interaction and access relative to the total population in Maine; however, Presque Isle's relative location is not as bad as the impression a layman receives by examining a Maine highway map. Certainly Aroostook County's population potential is not the lowest in the state.

Presque Isle's Response to Base Closure

Presque Isle's success in handling the socioeconomic changes caused by base closure is quite well known among Department of Defense agencies that work with base closure issues. To the communities who must face the prospects of base closure, the Presque Isle case is offered as the "classic example" of successful community response under difficult circumstances.⁹ How were these successful community efforts achieved?

A combination of factors, some of them locational in nature, allowed Presque Isle to succeed in its community revival effort. The town, forewarned that base closure was on the horizon, accepted the

decision rather than fighting to keep the base open, although alternative military uses for the base were explored.¹⁰ Community attitude toward revival efforts is one of the most important keys in implementation of successful adjustment strategies. The decision to try to procure the military base and its facilities for the town was a step that demonstrated an optimistic community attitude nurtured by dynamic civic leadership. Coupled with the correct community attitude, interest of the Maine congressional delegation in Presque Isle's plight, DoD's "moral responsibility" to aid base closure communities (manifested by establishment of a federal task force to help Presque Isle), and Presque Isle's designation as one of the first base closures all served to create conditions and resources that were focused on overcoming any losses suffered by the community. Powerful individuals, such as Secretary of Defense McNamara and Senator Edmund Muskie, were included in this process. Air base runways and support facilities were already being leased for community use (1959), and few obstacles were placed in the path of local efforts to obtain government land, buildings and equipment for future industrial development purposes.¹¹ The size of the base was not so large (2,100 acres) as to make acquisition by the community intractable, and much of the acreage was conveyed at no cost to the community.¹² The short time of transition from military use to civilian acquisition has already been mentioned as a factor which allowed Presque Isle to begin planning to revive the community by recycling the Air Force base.

Aside from the things people and federal agencies could do to help Presque Isle, several aspects of industrial location (previously unrecognized) existed that were favorable for the community. Little attention had been paid to improving the quality of the area's potato

production or to potato processing and manufacturing techniques, and the potential for manufacture of materials using forest products had not been assessed. What remained to be done was for the community to match the ready-made industrial park with resources available in the area.

It should be mentioned that Presque Isle Air Force Base was not the kind of base that supported strategic bombers and tankers as did Larson and Glasgow. As a consequence, it possessed a different kind of infrastructure. The Snark hangars themselves, 400 feet long, new, and equipped with overhead cranes, were one of the elements of infrastructure that facilitated ready conversion to industrial activity.¹³ These buildings were attractive to industrial users from the beginning, and one of the first firms to realize their utility was a manufacturer of plywood products. A symbiotic relationship existed between base infrastructure and resources locally available. In addition, the base was transferred to the town with its infrastructure basically intact for the nominal cost of \$56,000. A willing labor force also was ready to seize any industrial employment that appeared.

While conditions were right for the community to put the former air base to lucrative use, the task was not as easily accomplished as it may seem. The ombudsmanship role played by the then embryo Office of Economic Adjustment, several federal agencies and the Maine congressional delegation, plus the competence, attitude, and organization of local community leaders, served as the catalyst which changed a "white elephant" into a profitable industrial park.¹⁴

Presque Isle's reaction to base closure was to do something about it by attracting new industry to fill the void left by departing mili-

tary people. The town's task was made easier through use of outside expertise and influence and by turning latent locational resources into active forms of production. The role of community leadership in acquiring the base and making it productive should not be underestimated, but the community was also given the opportunity to acquire capital assets at a relatively low price.

As demonstrated by maps of population potential, Presque Isle's relative location could not be expected to attract large numbers of new industrial firms. However, the town did possess locational resources in the form of advantages offered by a particular site. The former air base was close to the town, and the two entities were tied together by a common infrastructure (streets and sewer systems). The local labor force was also reputed to exhibit greater productivity than workers in Maine's metropolitan areas.¹⁵ A potential new industrial park appeared where none had existed before, and facilities became available to change the form of local primary resources into manufactured goods which could bear the cost of transportation to market.¹⁶ Airport facilities of higher quality than the town alone could be expected to provide allowed better access to large cities along the northeastern seaboard, and thus made possible an efficient means of bringing prospective plant managers to see Presque Isle. Within Aroostook County, the former air base did enjoy an advantage in relative location, since it was close to the center of population and was accessible to people via the Aroostook valley road network. In Presque Isle's case, a poor relative location was overcome by an array of site factors matching the requirements of firms that could use resources locally available.

Presque Isle was highly successful in converting the military base to an occupied industrial park in a short period of time.¹⁷ A measure of this success is how quickly people stopped worrying about the "economic disaster" created by base closure. Presque Isle's industrial developer described a survey of the local business climate to an OEA official in Washington some two years after base closure:

No mention was made of "Presque Isle Air Force Base" but mention was made of the "Industrial Park". This indicates our campaign is working. Thank goodness people's memories are short. It looks like most of Presque Isle's ills have been cured except for agriculture.¹⁸

The Situation of Glasgow, Montana at the Time of Base Closure

As a function of its location on the prairies of northeastern Montana, livestock ranching and grain production are mainstays of Glasgow's economy.

The Air Force base was sited eighteen miles to the north of town, and the base became a permanent part of the area's landscape in the late 1950s. Mission activities were expanded to support bomber and tanker aircraft in 1960, and the town responded to the influx of new people by increasing its ability to provide goods and services for them. Valley County had experienced other periods of "boom and bust" starting with the construction of Fort Peck Dam on the Missouri River in the 1930s. At the time of the base closure announcement in November 1964, Glasgow residents had no reason to believe that military functions performed by the base would or could be suspended. Military operations were to cease at the base in June of 1968, and most of the military personnel affected did not actually leave the area until 1967 and 1968. In this case, nearly four years time was available for the community to cope with

the reality of base closure. One of the coping strategies was to try to keep the base open by using congressional power.

What other strategies were devised to overcome the problems of base closure, and how did geography and relative location help or hinder these plans? How did the community feel about its location after being forced to address this issue?

Glasgow's Location--Obstacle or Resource?

Some measure of community attitude toward its locational plight is contained in the community brief prepared for the purpose of refuting DoD base closure arguments:

As for considering the base for other non-military use, this is a remote, non-industrial area without the diversification of larger metropolitan areas. If this phaseout program is carried to its ultimate end, this will constitute the biggest catastrophe in the history of Glasgow, Montana.¹⁹

People interviewed during the field research visit also recognized that Glasgow's location was not favorable citing transportation costs, distance from markets, lack of skilled labor resources and local climate as collective obstacles acting to deter the attraction of new industry to the Glasgow area.²⁰ Industrial developers trying to find new uses for the base in 1977 indicated that, to some degree, the failure of their predecessors could be attributed to the remoteness of the area, the shortage of laborers, and high transportation costs.²¹

The Office of Economic Adjustment also learned that location was a formidable problem to handle while seeking viable economic uses for the former air base. OEA working papers state that,

Glasgow is a small, isolated community of some 6,000 people, located in the sparsely populated northeast section of Montana. It is the largest city within a radius of 150 miles and is 700

mile. from the nearest metropolitan area (Minneapolis-St. Paul). Glasgow is the only community which has accepted our assistance where a solution (to base reuse) has not been found.²²

Local and federal organizations working to find productive uses for the base were forced to realize that Glasgow's location was an obstacle rather than a resource. As with most DoD siting decisions, the community was stuck with the results of a government locational decision in which it had no part. The community had no reason to take stock of its location as an influence on future community growth and development until the base closure announcement was made. Quite early in the base closure process, however, the townspeople began to consider the disadvantages of their site and situation. Evidence of their locational concern surfaced in the community brief sent to Senator Mansfield for his use in trying to keep the base open. How "bad" is the relative location of Glasgow, Montana? Evaluation of Glasgow's population potential provides some insights helpful in answering this question.

Population Potential and Glasgow's Relative Location

Maps used to measure Glasgow's population potential were constructed in the same manner as those for Presque Isle, using 1970 centers of county population and county population values for Montana. The isoline map and SYMVU plot of Montana population potential in 1970 are presented as Figures 7 and 8 respectively.

Montana's population potential surface exhibits more complexity than that of Maine, since many more peaks and valleys are evident on the Montana map. Larger urban areas such as Butte, Billings, Great Falls and Missoula, are responsible for the zone of higher population potential

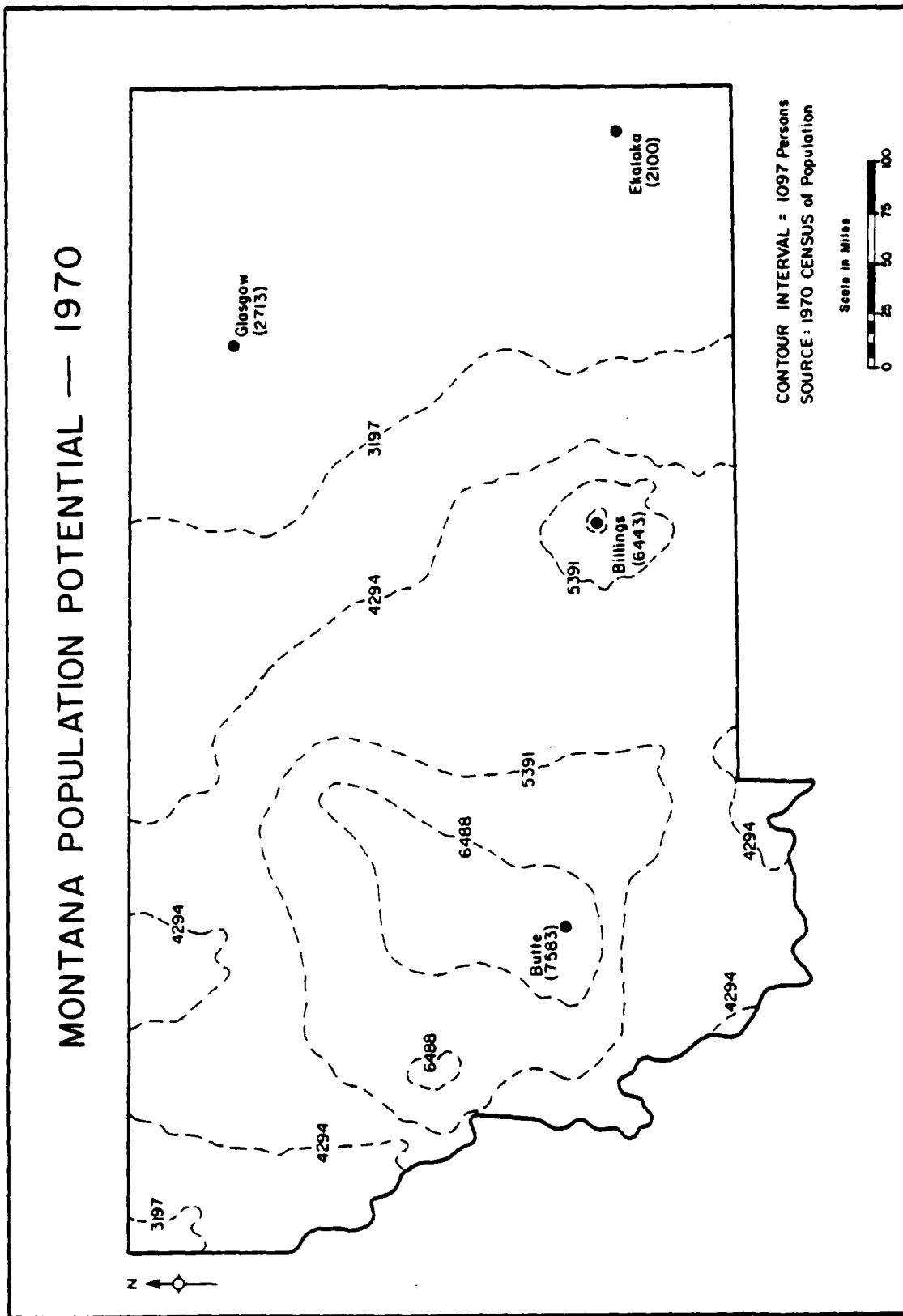


Figure 7

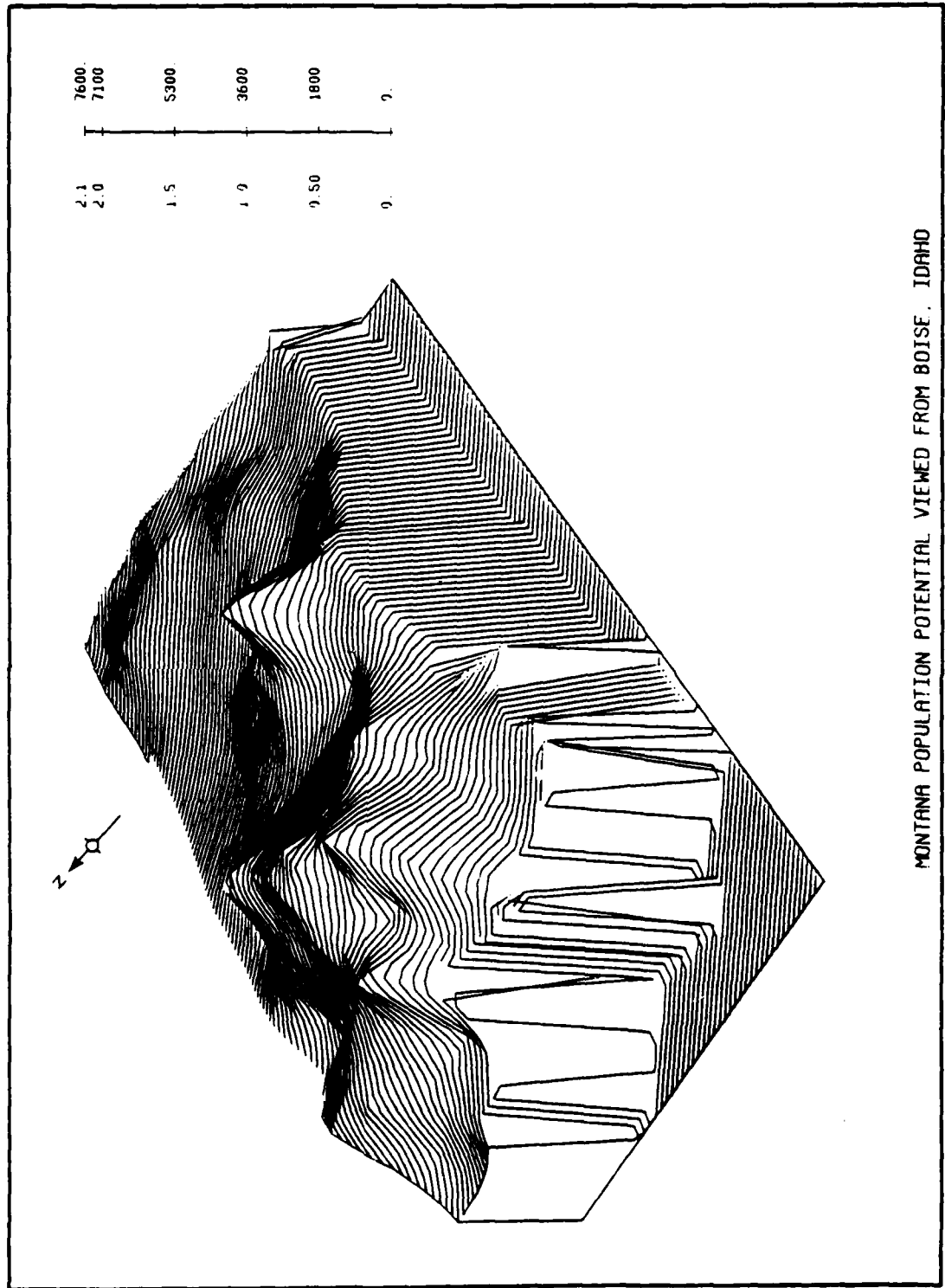


Figure 8

in the southwestern portion of the state, and Silver Bow County (Butte) is the location of maximum population potential (7,583 persons per mile). Isolines of potential regularly increase from east to west but are more closely spaced and become closed as major population concentrations in southwestern Montana are approached. The map also reveals that the eastern one-third of the state is the zone of lowest population potential; the county (Carter) with the lowest population potential value, 2,100 persons per mile, is located in the southeastern corner of Montana. If a plane were passed through the surface, it would tilt downward from west to east with the peaks of values above 6,400 persons per mile noticeable above the plane, while the plane generally rested on an eastward sloping surface. The SYMVU plot, sloping eastward toward the zone of low population potential, illustrates this trend quite well (Figure 8). In this plot, the viewer is looking northeastward toward the potential surface from a position that is approximated by the location of Boise, Idaho.

Valley County (Glasgow) with a value of 2,713 persons per mile, ranked number 50 among Montana's 57 counties in terms of 1970 population potential. While seven other counties ranked lower, their population potential values averaged only 400 persons less than Valley County, and all were located to the east along the North Dakota border. Valley County may not exhibit the lowest population potential in Montana, but it cannot expect to match the higher values found in the southwest where the potential is three times as great.

Glasgow's relative location, as measured by population potential, is quite distant from the mainstream of activity in Montana. Valley County, and other Montana counties east of the 3,197 potential isoline,

cannot generate much interaction among themselves or with larger centers of population within the state given such uniformly low values of population potential. Citizens of Glasgow, and those working to attract new industry to the base, had the correct perception of their isolation. In this case, Glasgow's relative location is a disadvantage both in terms of population potential and in distance from larger urban concentrations. It is not surprising that efforts to find new uses for the base have been difficult from the outset. The only locational advantage Glasgow does enjoy is a local one, since the center of population for Valley County lies only five miles north of town.

Glasgow's Response to Base Closure

As has been mentioned, nearly four years elapsed between the closure announcement and cessation of military activities at Glasgow Air Force Base. During this time, local citizens and the Montana congressional delegation sought to either maintain the Strategic Air Command mission at the base or to find other military or governmental activities that could utilize base facilities.

The initial reaction of Glasgow citizens to Secretary McNamara's base closure announcement was both swift and predictable. After the announcement on November 19th, Glasgow residents held a town meeting on November 25th for the purpose of appealing DoD's base closure decision. It was a classic case of stress threat reaction behavior which produced a coping strategy designed to deal with the adversity thrust upon the community. Within two weeks the town was able to generate a factual document, complete with statistical data, which questioned the validity of reasons given for closing the Air Force base. These data were for-

warded to Montana's Senator Mansfield, Senate Majority Leader, for use in his attempts to persuade Secretary McNamara to reconsider the Glasgow decision.

The case developed by Glasgow townspeople did a good job of refuting the DoD arguments for closing the base. Their brief indicated that according to base weather statistics, the field at Glasgow experienced a ceiling of 1,000 feet and visibility of three miles or more 94.7% of the time. Also the argument about severe winter weather hampering aircraft maintenance activity was countered with information stating that available heated hangars were not being used to capacity. DoD statistics about adequacy of off base housing for Glasgow personnel were also questioned. The town stated that the base had acquired new additional housing by using the housing inadequacy argument, that airmen were being asked to move from town onto the base, that rental homes were available in town, and that the town generally had a surplus of housing. The predicted savings from base closure were also questioned, since most of the savings to be realized were from base operating costs rather than from elimination of military and civilian jobs. The townspeople also cited their attempts to support the base through expanded business and housing activity while receiving promises that the base would remain a permanent facility. Senator Mansfield was asked by his constituents to take the matter to the Senate and House Armed Services Committee and to lend his fullest support to reconsideration of the base closure decision.

Senators Mansfield and Metcalf exhibited interest in Glasgow's plight by asking the Office of Economic Adjustment to assist the town in planning community revival efforts. A group of OEA officials

visited the base and town six months after the closure announcement in mid-December 1964, but were confined to the base by blizzard conditions and sub-zero temperatures. Little was accomplished on this visit, and the same group returned to Glasgow in January 1965, to assist community efforts in organizing for economic revitalization and to discuss possible uses for the base. For the next two years, some 25 potential uses for the base were explored by OEA without success. Some of these potential uses included establishing a branch of U.S. International University at the base, using base facilities to train Indians, trying to attract aviation-oriented training and industrial development by importing families, training them and then attracting industries to the base that could use this pool of trained manpower. Efforts were also made to increase the recreational uses of nearby Fort Peck reservoir. Several federal agencies were involved in these activities, Montana State University studied the non-defense prospects of base utilization, and a special effort to find some productive use for the base was made by a Congressional Fellow assigned to Montana Senator Metcalf's office.²³

Three years' work failed to yield firm prospects for non-military reuse of the base, and in April 1967, Senators Mansfield and Metcalf introduced in Congress the Northeast Regional Service Corporation Act designed to provide a corporation that would negotiate the best plan for making use of Glasgow facilities and at the same time, insure that base buildings and infrastructure were maintained in good condition until some new use for the base was discovered. This bill was apparently never passed.

The possibility of having the Glasgow decision reversed always lingered in the minds of the Montana congressional delegation even though the decision to phase-out Glasgow was reaffirmed by DoD on many occasions.²⁴ Though Senator Mansfield stated in congressional hearings that, "the time for arguing against the decision or attempting to bring about a reversal is long past," he wrote a personal letter to President Johnson in October 1967, asking the President to, "re-examine the original decision to declare the base (Glasgow) surplus to our defense establishment."²⁵ On the bottom of this letter, Senator Mansfield penned a note indicating that Glasgow AFB was the newest, most complete and most modern base in the nation. President Johnson in turn queried Secretary McNamara about the continued use of Glasgow as an Air Force installation but was unsuccessful in receiving justification from DoD for keeping the base open.²⁶ President Johnson subsequently directed the Secretaries of Commerce and Housing and Urban Development and the Administrator of the General Services Administration, under the direction of the Secretary of Defense, to evaluate every opportunity offered by the base and to design a plan for its most productive use. Almost three years after the base closure announcement, the Montana congressional delegation was still trying to change the base closure decision.

Progress on the base reuse program lagged, and Senator Mansfield again wrote the President in March 1968, three months before the base was to close. Though attention was focused on the Glasgow problem at the highest federal levels, no practical use for the base had been discovered when its military mission was terminated in June of 1968.

Strategies for Base Reuse After
Base Closure

It should be noted that even though SAC had departed from Glasgow, the Air Force still controlled what happened to the base and its facilities. AVCO Corporation was awarded a contract for operations and maintenance of the base and was also to seek new uses for the base through its development staff. From 1968 to 1972 various uses were made of base facilities, some privately funded and some federally funded. Most of these schemes involved training or employment of disadvantaged persons. Through AVCO's efforts, a firm was recruited to manufacture defense items for the Army. A Work Incentive Program and a Community Child Development Center were also established at the base. A plastics manufacturing firm operated at the base for a year but failed because of undercapitalization. The Mountain-Plains Education and Economic Development Program, Inc., sponsored by the Department of Health, Education, and Welfare, was conceived in 1970 to aid the rural disadvantaged from six states and to help make use of base facilities. People were trained in building trades, social services, lodging and food services, mobility and transportation and office education. Many were Viet Nam veterans. AVCO was also able to obtain a contract for manufacturing electronic wing harness shipsets for the L-1011 aircraft, but the contract ran its course in three years.

With the advent of the Safeguard Missile System (1970), the base was to be used as the nation's supply and maintenance center for this new missile designed to defend against ballistic missile attack.²⁷ Some 500 people would have been employed, but the project was cancelled as part of U.S.-Soviet Strategic Arms Limitation Talks (SALT) agreements.

Most of these reuse projects were sponsored by the federal government with private manufacturers able to find few profitable uses for base facilities.

In 1972, the Air Force reactivated Glasgow as a satellite operations base for dispersal of B-52 bombers and KC-135 tankers. Bombers and tankers were dispersed from main operating bases to former SAC bases around the country ("satellite bases") to decrease the vulnerability created by concentrating our strategic forces on fewer bases-- interestingly enough, a reversal of the trend advocated by Secretary McNamara which figured in the original Glasgow phasedown. Some 230 military and civilian personnel were associated with this operation. One of the base schools was again opened, as well as part of the hospital. The satellite operation continued until 1976 when the Air Force announced its intent to again close Glasgow Air Force Base. This time, however, the "closure" would be of a different nature since the Air Force also announced that it intended to proceed with Title X action, which meant that the base would be turned over to the General Services Administration for disposal to other government agencies or to the community.

With base closure announced by the Air Force, the Office of Economic Adjustment intensified its efforts to find new uses for the base. The Montana Governor's Office was able to obtain an Economic Development Administration grant to fund the Glasgow Reuse Project which involved applying the expertise of OEA, several local, state and federal agencies, the Montana congressional delegation and the new base facilities manager. The base reuse project had gone full circle and was starting over again. Such base utilization schemes as a development

of an energy park, aircraft testing, developing an equipment supply depot for Alaskan north slope oil activity and foreign meat marketing were addressed as part of the new Glasgow Reuse Project.²⁸

Factors Hindering Development of
the Base

The base closure problem at Glasgow was carefully scrutinized. With the level of attention it received, why have solutions to the situation been so difficult to find? The exigencies of a difficult location have already been discussed, but other factors also played a role.

From the time base closure was announced in November 1964, until Title X proceedings began in 1976, any prospective firm who might use the base could not be certain that its contract would not be cancelled because the Air Force still owned base land and facilities. As long as the base was under military control, leases could be granted for a maximum of three years, and the lease contained a thirty-day recapture clause. The recapture clause meant that the base would revert to military use in a short time if dictated by national defense requirements. Few private firms would wish to operate under these conditions, and many prospects were lost not only because of unfavorable lease conditions but also because of the length of time required to process applications for use of base facilities.

Attempts by the Montana congressional delegation to keep the base open did not help because they kept the base insulated from private use of facilities while some federal use for the base was sought. It is no secret that Senator Mansfield and the community felt that it was

DoD's responsibility to find some purpose for the base since it was DoD that located the base in Glasgow in the first place.

Other factors of location, which may be classified as site factors, also pose difficulties for future development of the base. In the late 1970s, it would have been nearly impossible for the town of Glasgow and Valley County to purchase the base as was done in Presque Isle. The local tax base could not have sustained operations and maintenance at the base, and the fair market value purchase price would have been too great. Population size in Valley County was also small and could not be expected to furnish a labor force of adequate size to support a large industrial firm. Distance between the town and the base (18 miles) serves to decrease commuting interaction and increases costs of delivering goods and services to the base. The total size of the base (6,800 acres) also makes it unwieldy for a small community to manage. Neither is the base infrastructure tailor-made for general industrial use as was the situation in Presque Isle. Modification of some aircraft hangars to support the Safeguard program detracted from using these buildings for industrial use. Also, the heating plant on base is oil fired, and the rising costs of energy make heating the base an increasingly expensive proposition.

Harmony among local citizens regarding how or even if the community should attempt base reuse was a problem, and such friction among organizations trying to find new uses for the base did not contribute to successful efforts.²⁹ Negotiations between the Air Force and those trying to seek new uses and lease agreements were also sometimes luke-

warm. Personalities involved in these negotiations appeared to be adversaries rather than working toward an end that was beneficial for both parties.³⁰

Some citizens felt that the Montana congressional delegation rendered the most help in keeping the base going until a long-term use for it could be found. Others felt the community had been forgotten by their Washington representatives. Some felt that the experts from Washington had been of little help except in obtaining grants for studying the base reuse problem. Certainly, government officials had been of small assistance in expediting leasing of the base by the community since nine years had elapsed (at the time of the field research visit in 1977) without finalization of a suitable lease agreement. Some citizens felt that Glasgow was too small a town for OEA to help and so had been left to its own devices. Some felt that the large number of bases closed simultaneously was too heavy a load for OEA to manage at one time. It is not surprising that Senator Mansfield, in his 1967 letter to President Johnson, quoted Defense officials as stating that Glasgow was the most difficult base closure problem they had yet encountered.

Concerted efforts over a long period of time were made to find some way of preventing the waste of Glasgow Air Force Base. The location of the base, as demonstrated by its low population potential and distance to market, has been a difficult barrier to overcome. The politics of the situation, preventing the base from becoming available for private rather than government uses, should not be overlooked. In addition, site and situation factors play a large role. The Glasgow area has been doing what it does best, production of wheat and cattle,

for a long time; turning to other natural resources in the area to revive the economy (as Presque Isle was able to do) would not be an easy task.

The locational factors applied in the siting of Glasgow Air Force Base were logical and correct at the time the locations of Strategic Air Command bases were decided. The geography of national defense made these locational decisions easy to make, and these installations became fixed on the landscape. Bringing new activities with different locational criteria to these fixed sites can be made quite difficult by the same geographical circumstances that permitted the easy initial location of the military base. Such was the case in Glasgow, Montana.

The Situation of Moses, Lake, Washington,
at the Time of Base Closure

Moses Lake, Washington, host community for Larson Air Force Base, received its closure notification in November 1964 along with Glasgow Air Force Base. The town is situated in the Columbia River Basin area of Grant County in south central Washington where the predominantly agricultural economy is based on potato, sugar beet, soybean and wheat production irrigated by waters from the Columbia River. The federal government has spent large sums of money developing the river basin, and towns throughout the area have benefited from this investment.

At the time of base closure, Larson Air Force Base was a "town" of its own located only a few miles northwest of Moses Lake and nearly the same size. The base served as a Titan Missile launch site for the Air Force, but the primary mission was in support of B-52 bombers and

KC-135 tankers. Good relations existed between the base and its host community, and many airmen were employed on farms in the area when not on military duty. Most military people had departed the area by the summer of 1966 so the community had almost eighteen months to devise its strategy for coping with base closure. Unlike Glasgow, concerted efforts to keep the base open were not made, and there was little question that the base would be declared surplus; it would therefore become available for community use if the community could get organized for such an effort.

What influence would location exert on attempts to find lucrative new uses for the base, and did the community feel that location would be a factor in devising plans for rejuvenating the local economy after base closure? Again, population potential can be a useful device for analyzing the relative location of Moses Lake.

Population Potential and the Relative
Location of Moses Lake

In the state of Washington, the zone of maximum population potential is concentrated along the eastern shore of Puget Sound from Olympia northward through the Tacoma, Seattle and Everett urban areas (Figure 9). It is a concentration that overshadows all others, with the maximum value of 135,737 persons per mile located in King County (Seattle). The isoline interval is 8,000 persons per mile, and isolines are very closely spaced between the values of 30,870 and 62,870 indicating the rapid rise toward peak values in the Puget Sound area. Above the 62,870 value, no isolines were constructed because they would be so closely spaced, and clarity at other locations would be destroyed by adding more isoline intervals to the SYMAP process.

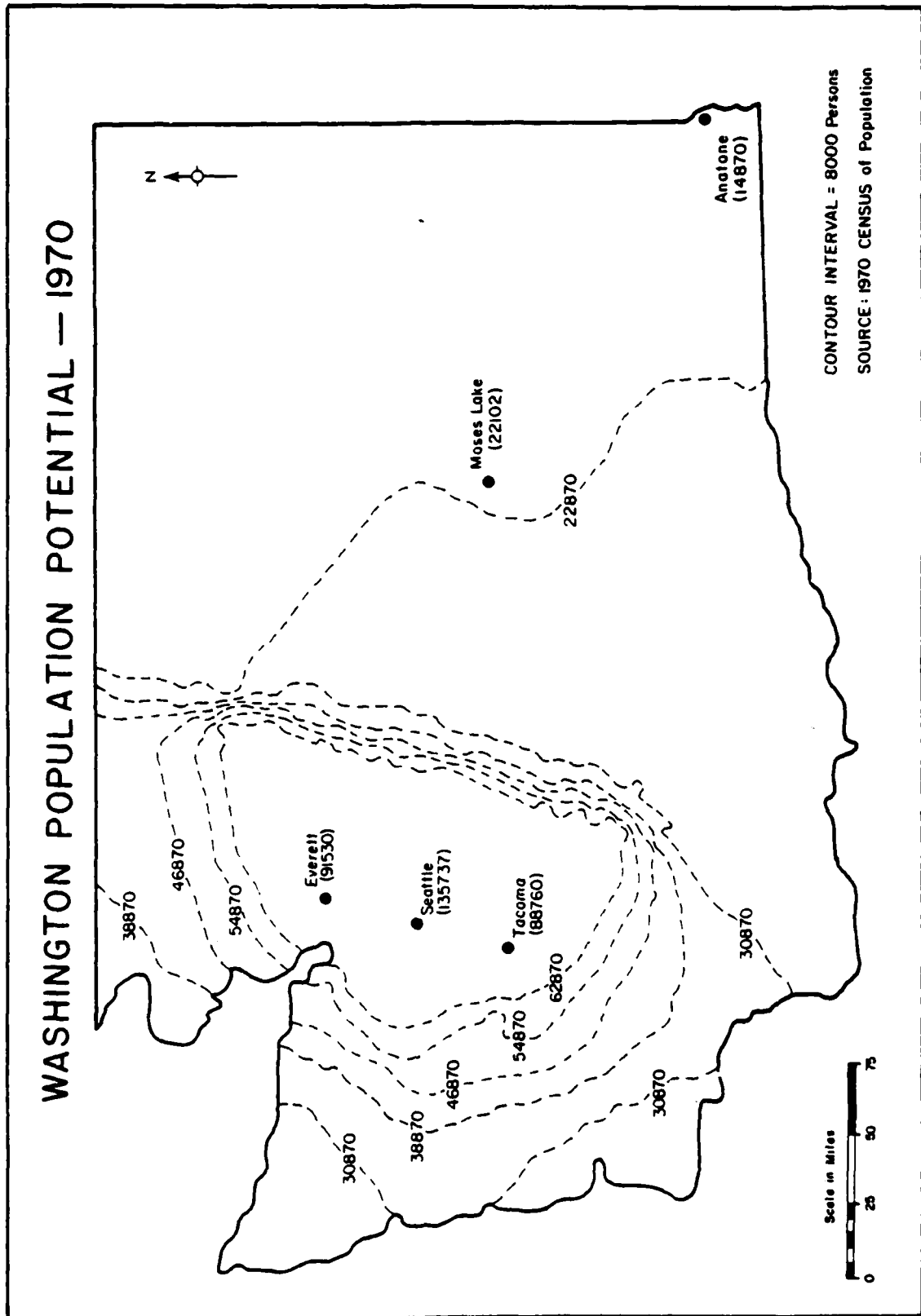


Figure 9

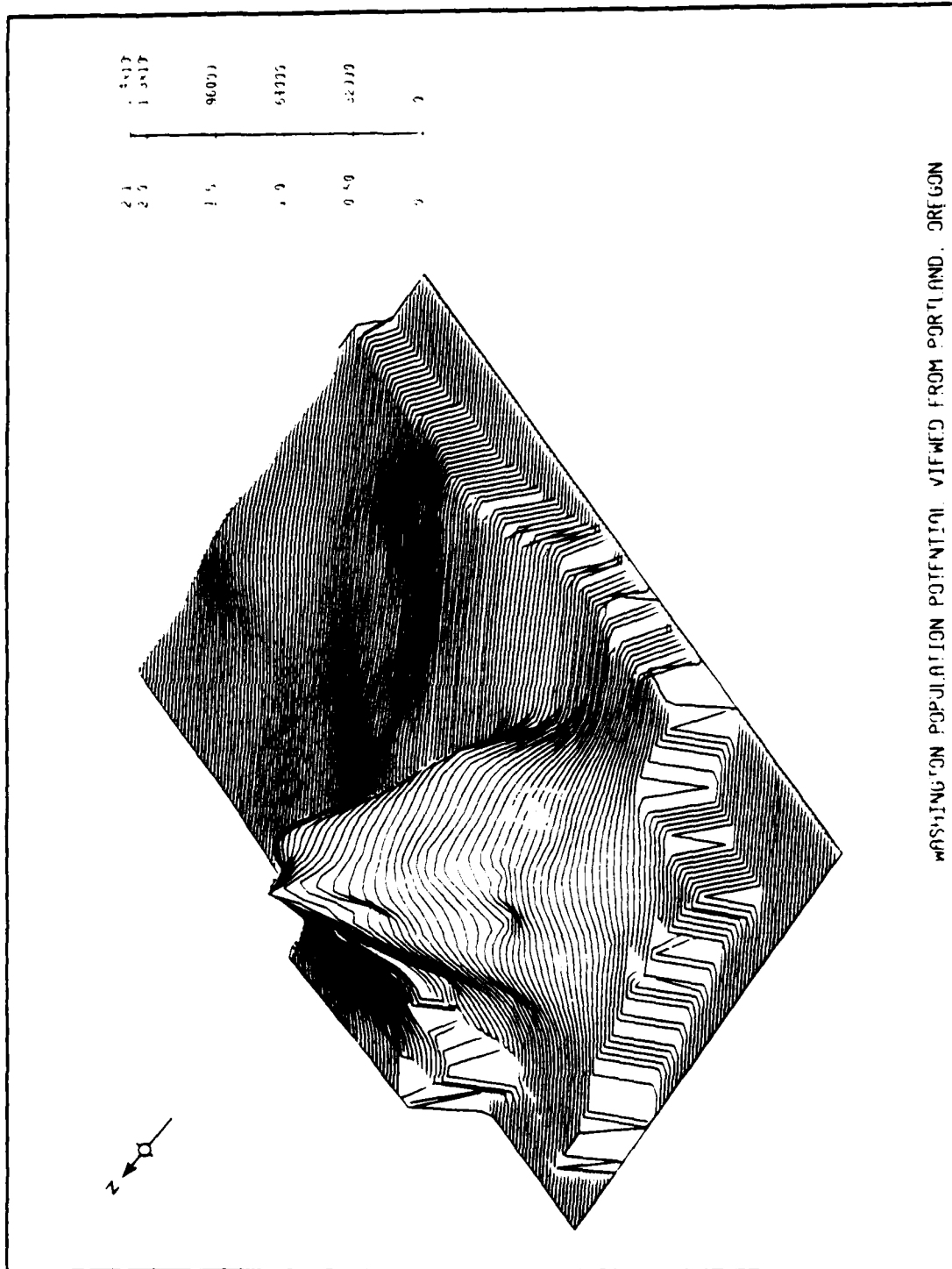


Figure 10

Instead, for values above 62,870, actual population potential values are indicated at county centers of population in urban areas along Puget Sound. The dominance of this area is easily demonstrated by the close isoline spacing and high values of population potential inside the 62,870 isoline in the western half of the state.

The contrasting feature on the 1970 map of Washington population potential is the less urbanized eastern half of the state where only one isoline (22,870) meanders through the entire area from north to south. Potential values are low with the minimum value (14,870) located in the extreme southeastern corner of the state in Asotin County near the town of Anatone. This division of the state into zones of high and low population potential is marked by the physical barrier of the Cascade Mountain Range, a formidable obstacle to interaction between the eastern and western halves of the state. Figure 10, the SYMVU plot of Washington population potential, strikingly illustrates this mountain barrier.

Grant County (Moses Lake) with a population potential value of 22,102 persons per mile is located just to the east of the 22,870 isoline almost in the center of the state. In 1970, Grant County ranked 28th in population potential value among the 39 counties in Washington. As can be seen in Figure 10, the population potential surface in eastern Washington exhibits a generally accordant upper level that slopes southeastward. Figure 10 was constructed as if the viewer were located in Portland, Oregon, looking northeastward towards the surface of Washington population potential.

Grant County possesses a higher level of population potential than the eleven counties to the east of it with the exception of Spokane County, where eastern Washington's largest city is located. In fact,

the population potentials of Grant and Spokane Counties are almost equivalent, and Grant County surpasses the average population potential of the other ten eastern counties by nearly 5,000 persons per mile. While population potential is higher in counties west of Grant County, Grant County and Moses Lake enjoy a central location in the Columbia River Basin farming area; accessibility is enhanced by the location of Moses Lake at the intersection of Interstate Highway 90, the main east-west highway link across Washington, and State Highway 17 which traverses the state from north to south. In terms of population potential, the relative location of Moses Lake is better than most counties in eastern Washington, and location could be considered a resource in the community's attempts to revive its economy after base closure.

Citizen Perception of Moses Lake's Location

The people of Moses Lake did not seem to feel that their location placed them at a disadvantage with respect to future development. When asked about locational disadvantages during the field research visit, interviewees responded that the only disadvantage they could cite was that Moses Lake was not on a railroad main line. The town is served by spur lines of the Burlington Northern and Milwaukee Railroads. Neither were the mountains of the Cascade Range perceived to be a barrier to interaction within the state. One interviewee cited the lack of reliable commuter air transportation from Moses Lake to other cities in Washington as being a locational disadvantage.³¹ Scheduled air transportation serving Moses Lake waxed and waned as small air carriers entered and exited the Moses Lake market. However, no general negative attitude toward location as an obstacle to base reuse efforts was dis-

covered among people interviewed or in records describing community revitalization actions.

On the contrary, many publications extolled the advantages of Moses Lake's location and base facilities for industrial development. Items such as proximity to engineering and technical expertise (the Boeing Company), availability of quality, low-cost housing (former base housing), nearness of recreational activities in the Columbia Basin, and positive attitude of the community toward aviation activity were locational attributes advertised by Moses Lake industrial developers.³² Office of Economic Adjustment working papers also indicated that Washington State was becoming self-sufficient in its ability to support markets for local consumer industry, and that the "central geographic position" of Moses Lake placed the community in a good position to pursue this type of economic activity. Another positive locational factor was the availability of low-cost electrical power generated by Columbia Basin power plants. Coupled with the relatively high population potential in Grant County, these locational attributes equipped the community with a set of site and situation factors that could be expected to positively influence community revival efforts when the base was closed.

Moses Lake's Response to Base Closure

Moses Lake chose to organize and plan for acquiring the former air base rather than fighting to keep the base functioning in its military role. While reasons for closing the base were called into question by citizens and congressional delegates who addressed these issues with DoD officials, protracted efforts to change the base closure

decision were not made. Local leaders organized themselves into an action committee who turned to the Washington congressional delegation and OEA for help in dealing with the federal agencies, such as the Federal Aviation Agency (FAA) and General Services Administration (GSA), who would be involved with making all or portions of the base available for community use.³³

One of the first requirements was for a professional study to be conducted that indicated how the community could use the base. At the request of Washington's Senator Jackson a meeting was held in Washington, D.C., between community officials, OEA officials and Area Redevelopment Administration (ARA) representatives to assess the planning assistance ARA could render Moses Lake. A planning and reuse study for the base was later funded by ARA. Community planning and organizational efforts continued in the months between the base closure announcement (November 1964) and base closure (June 1966). One of the key events in this process was local acceptance (by community vote) in November 1965 of the idea to use the state of Washington's public port district as the public instrument which would handle the conversion of Larson Air Force Base to the Port of Moses Lake.³⁴

In Washington, the Public Port District is the primary local public agency that can deal with local economic development. A port district can own and develop industrial land for lease or sale to industry in compliance with a comprehensive plan, construct facilities for tenants using industrial revenue bonds or port revenues, make facilities available for food processors, provide waste water treatment and utilities and can operate marine, air and land transport terminals and related facilities.³⁵ The Port of Moses Lake, officially established

in October 1966, could buy all or part of the former air base from GSA on a negotiated basis. The next step was for the community, through the port district, to begin seeking tenants for the 9,000 acre installation.

Strategies for Community Use of
Larson Air Force Base

Armed with the managerial and legal instrument designed to accomplish the transfer of a government facility to community ownership, Moses Lake began to seek funding for the task and to make use of its locational advantages. Initial uses envisioned for the base included continued use of existing facilities in the form of a regional airport, using some of the buildings for educational purposes, and housing industrial activities in buildings on other parts of the base.

Obtaining the base for civilian aviation purposes proved to be of vital importance to successful operation of the embryo port district. A source of funds was desperately needed, and the Boeing Aircraft Company could supply the necessary revenue. Boeing had used Larson Air Force Base for aircraft testing and aircrew training while it was still a military facility and had installed an industrial complex at the base. Boeing thus had a vested interest in being able to use base facilities. Locational advantages for aircraft operations included traffic free skies, runways that could handle large aircraft (13,500' x 300'), unobstructed approaches to the runways, modern navigational aids and only twenty minutes flying time from Boeing's Seattle plants to Moses Lake. In a letter to the Moses Lake Port Authority, a Boeing official stated, "over the next decade, a base such as Larson would be invaluable to our future crew training requirements."³⁶ Details were worked out

between the Port Authority, the Boeing Company, GSA, FAA and the Air Force, and Boeing was able to use Larson facilities shortly before military use of the base was terminated. Boeing was allowed to use the base free for the first year of Port operations in return for Boeing's agreement to lease the facility through 1980 for flight testing and training. Boeing underwrote the cost of running the airfield for a year and paid \$10 for each landing and a one-cent charge per gallon of fuel loaded at the former base.³⁷ The salvation for the Port of Moses Lake was that Boeing's construction of new airplanes (the 747) coincided with the closure of Larson Air Force Base, and Boeing needed a location to train aircrews and test new aircraft. The Air Force also used the base and paid the Port \$3,800 each month for training operations involving C-141 aircraft, a military cargo aircraft built by Boeing, from McChord Air Force Base just south of Seattle. The underwriting of the new Port of Moses Lake by civilian aircraft manufacturers allowed the Port to survive and begin to develop other types of activities at the base.

Educational use of base facilities began with transfer of a large section of the cantonment area to Big Bend Community College. The community college, at the request of Boeing, began a vocational-technical course in riveting for 100 students. The community college subsequently moved its campus to the base and continued to offer courses in technical and general studies, as well as aviation studies leading to commercial licenses and certification of pilots as flight instructors. Enrollment at the community college grew in the 1960s as has already been discussed.

Since the production of an irrigated potato crop was expanding in the Basin at the time of base closure, opportunities existed for potato processors to move into the Moses Lake hinterland. Local agri-

cultural leaders saw the opportunity for potato processing, sold stock, and built a potato processing plant. The processing plant needed a place to store potatoes and leased a 41,000 square-foot building on the base for this purpose in 1966. The potato storage function was the first non-aviation tenant at the former air base. Similar opportunities existed for potato harvesters, and a manufacturer of potato harvesting equipment moved on the base in 1970.

Other firms related to agriculture have been attracted to the area by local markets and facilities at the base. These include a manufacturer of sprinkler irrigation systems, a well drilling and pump firm and a metal can manufacturer which services food processors throughout the northwest. More recently (1976) mushrooms are grown in 90,000 square feet of a former hangar. One of the more unusual activities at the former air base is the shipment of cattle "on-the-hoof" by air to Japan and Korea. Sugar beets are also grown in the Columbia Basin, and the largest beet processor in the nation leases warehouse space at the air base. The rapid expansion of agriculture in the late 1960s has been a boon to finding a variety of uses for facilities previously used for military purposes.

All firms using facilities at the base are not directly related to agriculture. Other firms include sheet metal manufacturing and a steel fabricator who specialized in building trucks for the Alaskan Pipeline project when it was under construction.

Military housing, left vacant when the base closed, played a key role in base reuse strategies. Community leaders believed that available base housing could be used to lure industry to the area, especially potato processors, by guaranteeing new firms a source of housing for

their employees. The Port of Moses Lake negotiated with the Air Force and by 1968, 340 of the available 1,335 housing units had been renovated and rented.³⁸ Dependents of military people who were serving in Viet Nam rented many of these houses. These people were a potential source of labor. As expansion of potato processing continued, two new potato processing plants were built in Moses Lake. These plants were able to employ people who had rented base housing and to use this housing for workers who were imported.³⁹ The Port continued to use available base housing as an industrial recruiting tool by insuring that any prospective firm would have housing for its workers.

Though the Air Force continued to own the housing units, the Port of Moses Lake collected rents, paid for services and maintenance and returned the excess of revenue over expenditures to the Air Force. Rent for former base housing was cheap enough to induce some people who lived in town to move to the air base. At the time of the field visit to Moses Lake, most of the base housing units had been occupied, and the Grant County Housing Authority was negotiating with GSA over the sale of base housing to the county. The possibility of renting base housing at reasonable rates proved to be an influential factor in attracting new firms to the Moses Lake area.

In the case of Moses Lake several locational factors combined to permit successful reuse of the former military base. Within the Columbia Basin, Grant County's population potential is high and the town enjoys a location central to a productive and expanding agricultural hinterland. The former air base, equipped with the necessary aviation infrastructure, was located proximate to one of our nation's largest manufacturers of military and civilian aircraft. Potato production was

expanding in the Basin as a result of federal irrigation projects, and the time was right for potato processing plants to take advantage of the agricultural resource present in Moses Lake. Cheap electrical power and housing for workers were also available in Moses Lake. Within the state of Washington, the port district system as an industrial development mechanism which could manage reuse of the former air base was also available for the community to activate.

Other factors also contributed to designing successful strategies for base reuse. One of these factors was the retention of the former base commander as a manager of the Port of Moses Lake. Such an individual possessed knowledge about government contracting, expenses and details of operating the base that others could not be expected to know. The former base commander could also function well in working with both the community and federal agencies involved in turning the base over to the community because he was part of both entities. The community stood behind the effort to gain productive community use of the base and viewed reuse of the base as an opportunity. It became well organized with the help of the Washington congressional delegation and OEA and began an active effort to procure the base in the short period between the base closure announcement and official closure. Certainly, community leaders did not feel that the location of Moses Lake would hinder attempts to find new uses for the base.

The feeling among those interviewed in Moses Lake was that the citizens of Moses Lake made possible the successful reuse of the base. The two federal agencies most often cited as lending most assistance to converting the base were the regional office of the GSA and FAA. They did not mention any particular federal program or agency working from

Washington, D.C., as being key factors in making base reuse strategies work. Washington state's port district system was often cited as the key to making base reuse a viable proposition.

There was no strong effort to develop local agricultural industry until the base closed; the agricultural economy was the salvation of Moses Lake; potato and beet processing took up the slack after the base closed.⁴⁰

These statements, along with a commitment from Boeing to initially underwrite the Port of Moses Lake, indicate the most important factors involved in the successful conversion of Larson Air Force Base to Grant County Airport and the Port of Moses Lake.

Footnotes

¹Address of Senator Edmund S. Muskie (D-Maine) at the All American City award ceremony to Presque Isle, Maine, April 25, 1967. A copy of this speech, which was never presented, was discovered in Office of Economic Adjustment files in Washington, D.C.

²John E. Lynch, Local Economic Development After Military Base Closures, (New York: Praeger Publishers, 1970), pp. 48-49.

³Statement by James K. Keefe in an article entitled, "Presque Isle, A Community's Fight for Survival," dated November 8, 1963. It is not known where this article was published. A copy of the article was found in the Office of Economic Adjustment files concerning Presque Isle.

⁴Mr. Hazen Stetson, former employee of the Maine Public Service Company and member of the Presque Isle Industrial Council; interview held during field research visit to Presque Isle, Maine, August 16, 1977.

⁵Mr. Larry E. Clark, Executive Director, Presque Isle Industrial Council; interview held during field research visit to Presque Isle, Maine, August 15, 1977.

⁶Ronald Abler, John S. Adams, and Peter Gould, Spatial Organization--The Geographers View of the World, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1971), pp. 216-218.

⁷U.S. Bureau of the Census, Centers of Population for States and Counties, U.S. Government Printing Office, Washington, D.C., 1974.

⁸SYMAP, version 5.20, Laboratory for Computer Graphics and Spatial Analysis, Graduate School of Design, Harvard University, Cambridge, Massachusetts.

⁹Defense Office of Economic Adjustment, Economic Recovery--Community Response to Defense Decisions to Close Bases, President's Economic Adjustment Committee, Washington, D.C., 1975, pp. 30-31.

¹⁰Letter from Brigadier General Joseph T. Kingsley to Senator Edmund S. Muskie dated 28 April 1961. Senator Muskie asked the Air Force to explore alternative military uses for Presque Isle Air Force Base with the idea in mind that Presque Isle's location might be suitable for installation of Minuteman Missiles. General Kingsley's letter replied that though Presque Isle had been considered as a Minuteman site, "Presque Isle is not as suitable as using other locations, primarily because of deficiencies in the road network and the geology of the area." It's interesting that locational factors played a role in Presque Isle's rejection as a Minuteman site. The point here is that while alternative military uses for the base were sought, they were not avidly pursued by local business leaders or by the Maine congressional delegation.

¹¹Office of Economic Adjustment Memorandum dated 26 May 1961. This memorandum describes Senator Muskie's request to Secretary McNamara that as much property on the base be left for community use as was possible. Secretary McNamara responded that his desire was to do everything possible to help the community to leave the facility in useable condition and to reach beyond normal practices in cooperating with the community. Also those agencies working with Presque Isle were not to become bogged down in details of regulation. This statement of DoD policy illustrates that "red tape" was not to become a problem in conveying the base to the community for future civilian uses.

¹²Transfer of 105 acres for community educational purposes was accomplished through a Department of Health, Education and Welfare program that allows government property to become a community's property without cost if the property is used solely for educational purposes for a 20-year period. Runways, adjacent buildings and land (450 acres) were transferred, without charge, to the city under the FAA airport program. The balance of the land (approximately 728 acres) and buildings was sold by GSA to the city for \$56,000. Included were six Snark hangars, three large warehouses, half dozen smaller warehouses and a dozen miscellaneous buildings. This information is documented in OEA records.

¹³OEA working papers stated that the principal difference (advantage) between Presque Isle and other bases being closed was the availability of the Snark missile hangars.

¹⁴In the early days of procurement and conversion of the former air base, many skeptical citizens who didn't believe the scheme would work referred to acquisition of the base by the town as a "white elephant."

¹⁵Mr. Hazen Stetson interview.

¹⁶Office of Economic Adjustment resume on conversion of Presque Isle Air Force Base to civilian use dated March 8, 1971. This resume details the many uses found for the former air base and states that Area Redevelopment Administration loans to local potato processors helped make Presque Isle the "largest producer of frozen potatoes in the world (1964)." Changing the form of raw potatoes obviously resulted in a higher value of product that could be marketed over longer distances. Inter-industry linkage was also present within the industrial park since a paper plant operating there cut and printed cartons used for shipping freshly packed potatoes.

¹⁷Lynch, pp. 48-68. Details of Presque Isle community organization, the role of OEA, various federal agencies involved, procurement of grants, land use policies, firms locating at the former base and employment increases resulting from new industrial developments are treated in this section of Mr. Lynch's book. This book also recounts the early history of OEA and serves as a good reference text for anyone interested in the complexities of military base closures.

¹⁸Letter from Mr. James K. Keefe, Director, Presque Isle Industrial Council to Mr. Don Bradford, Officer of Economic Adjustment in Washington, D.C., dated December 26, 1963.

¹⁹"Community Brief in the Matter of Proposed Closure of Glasgow Air Force Base." Prepared by the United Community Committee of Glasgow, Montana, December 3, 1964, page 4 of letter to Senator Mike Mansfield.

²⁰Interviews with Mr. James L. Hines, Mr. O. E. Markle and Mr. M. K. Bjorklund.

²¹Mr. Lanny Gill, Development Specialist, and Mr. Max Enseleit, Consultant Engineer, Valley Industrial Park, Glasgow AFB, Montana. Interview held during field research visit to Glasgow, Montana, August 11, 1977.

²²Office of Economic Adjustment point paper on closure of Glasgow Air Force Base, Glasgow, Montana, March 13, 1968. Office of Economic Adjustment, the Pentagon, Washington, D.C.

²³Ibid.

²⁴Office of Economic Adjustment point paper on closure of Glasgow Air Force Base, March 13, 1968. This "point paper" outlines circumstances surrounding attempts to keep Glasgow operating and the subsequent declarations by the Secretary of Defense (McNamara) that the base would be closed.

²⁵Personal letter from Senator Mike Mansfield to President Lyndon B. Johnson, October 6, 1967.

²⁶Memo from President Lyndon B. Johnson to Senator Mike Mansfield, October 6, 1967. This memo was a response to Senator Mansfield's plea for assistance in keeping Glasgow AFB open. The President described a conversation with the Secretary of Defense who could not justify keeping the base operating.

²⁷Overall Economic Development Program for Valley County, Montana, 1976. Valley County Development Council, Court House Annex, Glasgow, Montana. pp. 14-17. The chronology of base reuse projects is described in detail in this publication.

²⁸Ibid., p. 25.

²⁹The Billings (Montana) Gazette, Saturday, July 6, 1968. Internal disagreements within the community concerning the future of the base were described in an article entitled, "Lack of Unity Plagues Glasgow." Some residents did not care whether the base was used again or not and were glad to see it closed.

³⁰During the field research visit to Glasgow, the base contracting officer representing the Air Force was mentioned as being a bottleneck to lease negotiations. Also some equipment was shipped from the

base which was supposed to be left for future use by the community. Lack of cooperation between the community and Air Force officials over making the base available for community use was another obstacle that slowed the attraction of industry to Glasgow.

³¹Mr. Clyde Owen interview.

³²The Port of Moses Lake, "Grant County Airport, the Jet Port With a Future." Published by the Port of Moses Lake, Washington, no date. This promotional brochure could be obtained by writing the Port of Moses Lake, Moses Lake, Washington, 98837.

³³Letter from members of Moses Lake Steering Committee to Congresswoman Catherine May, November 24, 1964. This letter states, "now that Larson Air Force Base will be closed, it's time for us to roll up our sleeves and go to work. The economic impact this closure could have on the upper Columbia Basin area, without a successful effort to counteract it, is obvious. Our first job is to find answers to a lot of questions. We need your help in getting them."

³⁴Columbia Basin Daily Herald, Moses Lake, Washington, October 8, 1976. p. 3A.

³⁵Washington Public Ports Association, "Public Ports Districts." Published by Washington Public Ports Association, Olympia, Washington, 98507.

³⁶Letter from Mr. J. D. Bixby, Boeing Company Director of Facilities to Mr. Floyd Rigsby, Moses Lake Port Authority, dated February 28, 1966.

³⁷Mr. Clyde Owen interview.

³⁸Columbia Basin Daily Herald, p. 6A.

³⁹Mr. Mac G. McLanahan interview.

⁴⁰Interviews with Mr. Mac G. McLanahan, Mrs. Bob West and Mr. Pete Kalamakis.

CHAPTER IX

FINDINGS AND CONCLUSIONS

Geography and Base Closures

Geography makes its contribution to the issue of base closure through the broad spatial perspective it lends to analysis of the problem. The complexities of base closure are better attacked by analyzing the community within its locational setting rather than by concentrating only on individual community attributes such as the local economic situation. Viewing the base closure community as an entity which possesses its own physical, cultural, political, economic and social geographic characteristics, all a function of community location, offers clearer understanding of how best to cope with the problem.

The purpose of this study was to apply the geographic perspective to three communities in rural locations to learn how each of these communities coped with losing what was perceived to be an integral part of itself. Rural communities were selected because it was assumed that impacts suffered in rural locations would be more readily observed (and possibly more severe) than if base closure occurred in an urban setting where a variety of activities might contribute to community viability.

The operational hypotheses were: rural communities with military bases nearby were highly dependent on the base for community economic viability; remote locations made community recovery from base closure more difficult; rural communities that had experienced base

closure were different (in terms of economic health) from rural communities that did not host a military base; and the geography of the surrounding area was an important factor in relative success of community revival after loss of a nearby military base.

Several ideas and methods of analysis were available that could be applied. Among these were the stress, threat, and reaction ideas offered by Wolpert; Brunn's statements about how politics influences government location decisions; tenets of central place theory related to the range of a good, threshold population size and the spatial distribution of demand; the community growth and economic development model as developed by Moriarty; research related to declining regions and economic health; and using population potential to measure community relative location.

After formulation of conceptual structure and research design which would guide the study, the next task was one of data collection. Data were obtained from the Department of Defense, from standard statistical sources, such as the U.S. Census, and from each case study community by visiting each location for a period of five days. Synthesis of these data forms the locational analysis on which the following findings and conclusions are based. These findings and conclusions apply only to the specific case study communities involved, and attempts to apply these findings to base closures in general should not be made.

Base Closure and Community Changes

Rural communities that might lose their military base display attitudes of apprehension and fear when news of base closure is heard. Townspeople realize many people will leave the local area and make gloomy predictions about what will happen to the town. Most of these

predictions are related to decline in retail business on main street. Magnitude of predicted business losses usually ranges from 25 to 40 percent of current retail trade. Automobile dealers, banks, realtors, construction firms, utility companies, merchant associations and representatives of city government all are quick to place estimates on how much local businesses will be damaged.

While most citizens are concerned about economic decline, others voice their worries about what may happen to the quality of education, medical care, churches and social services in town when the military population is gone.

Indicators of community welfare evaluated in this research generally reveal that community decline accompanying base closure is not as great as is feared. Among the three case study towns, bank deposits exhibited an overall growth trend in the years following base closure. A slight decrease in bank deposits was observed the year after base closure, probably because military accounts were withdrawn, but the small net decrease followed by strong bank performance in later years illustrates local bank dependence on the hinterland economy exclusive of the air base for long term bank viability. Banking assets needed for community growth were not affected by base closure.

Community schools were negatively affected by base closure because school enrollment and teacher employment are directly related to hinterland population. Pupil enrollment will decrease as the military population leaves, and consequently, not as many teachers will be needed. Secondary school teachers were an employment group that lost jobs in Moses Lake and Glasgow. Teachers in Presque Isle fared better because of creation of a new school district and continued use of base housing

by tenants from Loring Air Force Base. Logically, teacher employment could be expected to decrease in a location where a replacement population does not move in after military families depart. Base closure may positively affect community schools; it was no longer necessary to double shift daily high school classes in Glasgow, and in both Presque Isle and Moses Lake, new school facilities on former air base property became available as a result of base closure.

All three case study community school systems lost PL 81-874 funding as military pupils departed. This dollar loss of funds per student was one change that could be accurately quantified. Loss of these funds meant loss of teacher salaries and some special educational programs (languages and music in Moses Lake), but in none of the case study communities was accreditation lost. Changes in the quality of basic grammar school and high school education were also not experienced. In all three case study towns, annual school expenditures continued to increase after base closure. Community college enrollments declined slightly the year after base closure in Moses Lake, but an enrollment increase was observed in following years. In Presque Isle, college enrollment continued to increase regardless of base closure. No community college was present in Glasgow, but in the other two case study locations, community colleges were scarcely affected by base closure.

Unemployment did increase in Glasgow as teachers and construction workers were affected by base closure, but increased unemployment was not of lasting duration. Unemployment in Glasgow was lower in 1970 than in 1960. Unemployment actually went down in Moses Lake after base closure as agricultural jobs held by military people became available to those with no jobs in Moses Lake. In Presque Isle, more people

were at work after base closure than before, and a decrease in unemployment claims was observed. Unemployment in case study communities did not increase dramatically as was expected, and where unemployment did increase (Glasgow), it did not become chronic in nature.

Businesses that did fail after base closure seemed to be marginal operators or were firms that could become dependent on military business, such as moving and storage firms, car dealers, pawn shops and restaurants. Grocery sales declined in Presque Isle and one grocery store went out of business in Glasgow. Furniture stores were also hurt in Glasgow and Moses Lake. Sales tax assessments declined in Presque Isle, and gas stations and taverns catering to the military lost business in Moses Lake. In no case study location were wholesale business failures observed as a function of base closure; instead, the general policy of businessmen was to reduce stock inventories rather than close their doors. In Moses Lake and in Presque Isle the decrease in retail business attributable to base closure was described as lasting approximately two years.

One of the most noticeable community changes in all three case study towns was a depressed home and apartment market as military occupants had to leave. Individual homeowners who had to sell their homes and move at the time of base closure doubtlessly suffered financial losses. Single family dwelling values fell by 25 percent in Glasgow, and rental prices were down 20 percent after the base phased out. The occupancy rate of total housing stock in Moses Lake went down 15 percent. More apartments for rent appeared in Presque Isle and rental prices went down after base closure. The value of marginal housing was depressed more than quality homes in all three places; mobile home parks

and apartments were first to feel the affects of base closure. Construction of new homes virtually ceased in all three communities as large stocks of vacant homes went on the market at reduced prices.

An unexpected but logical consequence of base closure effects on local housing markets was the observance of residential filtering (upward) in all three case study towns. Better housing at lower prices came within reach of different segments of community populations; migrant workers benefited in Moses Lake and railroad people took advantage of the situation in Glasgow.

It took four to six years for the stagnant housing market to recover in all three communities. Recovery of new home construction was somewhat slower. Prior to base closure, housing was in short supply in all three places. After the base closure cycle ran its course, an excess of housing was not observed in case study communities. Those who either held their property or bought homes at reduced prices during base closure years did very well on the increase in value of such property seven to ten years after base closure. Community revival efforts took care of excess housing stock; the lesson for property owners would seem to be to "ride out" the depression of housing values, if possible, rather than to sell at any price.

Though loss of municipal income is expected to accompany base closure, this did not happen in case study communities. Base closure does not seem to disrupt the provision of public goods and services as much as it does the level of goods and services provided by the private sector. Moses Lake anticipated a 20 percent loss in municipal revenues; the tax base remained steady or increased after base closure. In Presque Isle there was no decline in assessed value of the local tax

base, but assessed values did not increase as fast after base closure. Drawdown of military people had little or no affect on taxable valuations in Glasgow, and taxes collected in both the town and county increased after base closure in that location. Since municipal revenues remained stable regardless of base closure, provision of municipal services was not curtailed. Municipal expenditures increased in the years following base closure, and all three towns continued their recreation programs and employed the same number of policemen and firemen.

When there was no longer a requirement for electricity to be supplied to case study bases, electrical utility companies lost revenue. This was an absolute loss which could easily be quantified. In addition, revenues from residential customers also declined as homes were vacated. Revenue losses were not great where residential customers were concerned, and change in number of residential accounts was more volatile than electrical utility revenue from these accounts. Overall growth was experienced by the electrical utility company serving Moses Lake in the years following base closure; however, Moses Lake was situated in the Columbia Basin, an area growing at the time of base closure.

As with electrical utilities, telephone companies experienced a decline in number of residential and commercial phones installed in base closure towns. In Presque Isle this decrease was most noticeable in the year of base closure, but the local phone company experienced little change in its annual revenue. In Glasgow, the change in number of residential phones was more apparent than the change in number of business phones locally installed.

The number of municipal water users declined in Presque Isle in the base closure year, and a five percent decrease was observed in Glasgow. However, there was no crippling of local utility company ability to provide electrical, telephone, water or sewer service in any of the three case study towns.

No increase in public welfare assistance programs appeared to accompany base closure as was anticipated by the communities involved. In fact, case loads and funds expended for General Assistance and Aid to Dependent Children went down in Moses Lake during the base closure year. A similar situation was observed in Presque Isle, and base closure seemed to bear no relationship to general relief programs in Glasgow.

In all three locations, no changes in community medical care or hospital staffing were caused by base closure. The number of hospital admissions continued to climb in Presque Isle, and the variety of medical services and number of hospital employees remained stable in all three places before and after base closure.

Only in Moses Lake was the base contribution to charity drives lost after base closure. Moses Lake citizens were able to recoup this loss within two years through application of new management techniques and aggressiveness during their United Way campaigns. In the other two case study communities the closed bases were not important contributors to the "community chest"; charitable organizations in all three locations did not appear to suffer because of base closure.

Analysis of community socioeconomic data before and after base closure indicates that the host communities and their Air Force bases were not as complementary as townspeople believed. An Air Force base

is almost a self-contained town with a special purpose, furnishing most consumer items considered necessary by its military tenants. To the extent that the military population functions as a consumer within the community, through retail sales purchases, home ownership, school attendance, or working at jobs available in the local area, the host community will be affected by direct loss of military population when the base closes.

Classic central place theory and research supporting it would indicate that as the spatial distribution of demand waxes and wanes in response to hinterland population changes, the variety and volume of goods and services found in a central place should change by a proportionate amount. The Air Force base acted to provide an additional increment of consumer demand above the demand that would be sustained by each town's hinterland population size. When the bases closed, host towns lost this "increment" of demand. However, while the volume of goods and services may have changed (as exhibited by a decrease in the volume of retail sales, for instance) the variety of goods and services expected to be found in towns of this size remained much the same after base closure. Data concerning town welfare before and after base closure show that the towns were more dependent on their hinterland activities for continuing viability than on the Air Force base population.

Though some employment groups (teachers and construction workers) and community services (utility companies, schools) were affected, the changes were not severe enough and of long enough duration to cripple any case study community as a functioning entity. This fact was supported by the conclusion of "no difference" in the level of

economic health found in case study towns and other comparable towns along the northern border of the country.

Location and Community Rejuvenation

Location did affect community rejuvenation efforts after base closure because each town existed in its own geographic site and situation. Site and situation influenced resources that could be used for the community to replace the lost increment of economic activity caused by the departure of military people. The three communities were also left with different kinds of infrastructure that could be used in different ways as the bases closed. Moses Lake had its Boeing complex, and Presque Isle was left with Snark hangars easily adapted to industrial use.

When compared to other places in their respective states, analysis of population potential values would lead to the conclusion that Presque Isle should have been the most difficult location for community rejuvenation efforts, Glasgow an intermediate case, and Moses Lake the easiest, since it possessed the highest population potential. Presque Isle and Glasgow were not the lowest in terms of their respective state population potential values, but they were quite far behind larger urban places in Maine and Montana. Geographic analysis comes into play here because factors of geography other than population potential alone help explain why Presque Isle and Moses Lake were able to find uses for their former military installations.

Presque Isle was one of the first bases where an organized attempt at community rejuvenation was made at local, state, and federal levels. Conveyance of the former air base to the town was accomplished

quickly and more cheaply than at the other case study locations. Presque Isle was provided the benefit of a full-time DoD consultant and received much attention from OEA. Community leadership was dynamic in Presque Isle, and an industrial council was established to administrate attempts to recruit new industry. The community was also in support of rejuvenation efforts focused on reusing base facilities, and the former base was located quite near the town, a factor which made it logistically easier for the town to manage. Presque Isle was also situated near the Aroostook County center of population making labor resources readily accessible to new business enterprises. The most important geographic factor contributing to Presque Isle's rejuvenation efforts was the availability of unused local resources for which there was a market. Manufacturing of forest products could be conducted in Snark hangars available at the former base. The time was also right to change the form of the community's main agricultural resource, potatoes, and potato processing plants arrived in Presque Isle. The community could couple local resources with facilities made available cheaply and quickly through the efforts of the Maine congressional delegation and the ombudsmanship of OEA. In addition, the size of the military population leaving Presque Isle was also smaller than in Glasgow or Moses Lake. Presque Isle benefited by being one of first conversion efforts, and its location was recognized as being a difficult obstacle to overcome. In the case of Presque Isle, problems of a difficult location were displaced by other factors of geographic site and situation.

Moses Lake enjoyed a different set of locational circumstances as it faced base closure. As with Presque Isle, Moses Lake citizens

accepted base closure with a positive attitude, and the base was available for community access within 18 months. A key instrument in making conversion of the base work in Moses Lake was the state system of port districts which has been described. The local resources to which Moses Lake could turn for fostering community growth after base closure were potato processing and aviation. Moses Lake is located in the Columbia River Basin where potato yields and quality are enhanced by availability of water for irrigation in a dry climate. With the advent of potato processing, Moses Lake occupied a location central to the area that provided the raw material for processing plants. When base closure occurred, potato processing was just beginning as a new activity in Moses Lake. Base housing could be made available for workers in potato plants opening in town and was used to attract potato processing companies. As with Presque Isle, Moses Lake had an available agricultural resource ready for expansion which could be coupled with some of the former air base facilities.

The prime locational factor that helped Moses Lake endure base closure was proximity of the base to Boeing aircraft factories in Seattle and Boeing's history of association with the base through aircraft testing programs. Government agencies (FAA and GSA) were also quite helpful in making base facilities available to the Port of Moses Lake, as was the Air Force in allowing base housing to be rented. Moses Lake could turn to local resources, a function of its location, to begin the task of making the community grow after base closure.

Glasgow possessed a different set of locational attributes in comparison with Presque Isle and Moses Lake. Cattle and grain production have long been the mainstay of Glasgow's agricultural hinterland.

No new agricultural resources or methods of processing were available to provide new employment or attract new industry after the military population departed. The primary reasons for Glasgow's inability to begin a new round of growth after base closure, however, were more related to political efforts to keep a military mission at the base and to continued Air Force control of base facilities than to difficulties in finding innovative uses for hinterland commodities. Continued government ownership of the base, short-term leases, and defense recapture clauses all would have served to preclude successful community use of the base even if the small Valley County population and tax base would have permitted such attempts. Glasgow is a good example of the political aspects of base closure where members of the Senate were powerful enough to seek federal agency solutions to the base reuse problem.

Location had much to do with the lack of success these agencies had to finding productive use for the base. Distance of the base from town (18 miles), poor prospects for finding a source of labor, and distance from markets are all indicated by Glasgow's low population potential. In addition, conflicts among community factions and apparent lack of cooperation by some Air Force officials who could help or hinder community reuse efforts served as obstacles in the path of organized base reuse efforts. However, continued military control of the base did allow several years of prospecting for new activities at the base which the community could not have supported alone. The lesson to be learned from the Glasgow case is that political attempts to keep the base open by lodging interim federal activities at the base are detri-

mental to community reuse efforts in the long run, especially if these activities cannot be sustained by the local hinterland.

The experience of case study communities appears to demonstrate that some communities have an easier time finding new uses for their former military installations and thereby rejuvenating themselves than do others. This difference among communities is a function of geography and the locational resources each community has to draw upon. Additional factors in relative success among the three communities were community attitudes, instruments that could be used to organize and administrate base reuse efforts, and the speed with which the communities could gain access to the former Air Force base.

Conclusions

Geographic analysis of case study communities sheds some light on the questions posed at the beginning of this research. Case study communities do not seem to be as highly dependent on their nearby military installations for long-term survival as the host community believes itself to be. Some communities can mitigate the changes that are caused by base closure more easily than can others. Location and local resources play an important role in community revival efforts. Geographic site and situation provided each base closure town with a set of resources that it had to use in coordination with the community talent available to seek a new level of community welfare after base closure. According to recognized indicators of community welfare, Presque Isle, Glasgow and Moses Lake were no different before or after base closure than other rural communities of comparable size. The duration of negative community changes caused by base closure was variable in each location, lasting some two years in Presque Isle, two to four years in Moses

Lake and possibly as long as six years before some attributes of community welfare were again at pre-base levels in Glasgow. The speed with which each community was able to again attain or exceed its pre-base closure level of welfare was dependent on how fast it was able to acquire the former Air Force base and to find productive uses for it.

The three base closure communities all depended on an agricultural economy for their livelihood. One of the positive aspects of base closure was that each community was forced to reevaluate its economic status and to seek a more diversified way to sustain its level of welfare. There was no universal prescription for successful community revival; each town had to find its own way. Within the framework of the community growth and economic development model, base reuse attempts can bring about a level of community welfare that equals or exceeds the level of welfare prior to base closure.

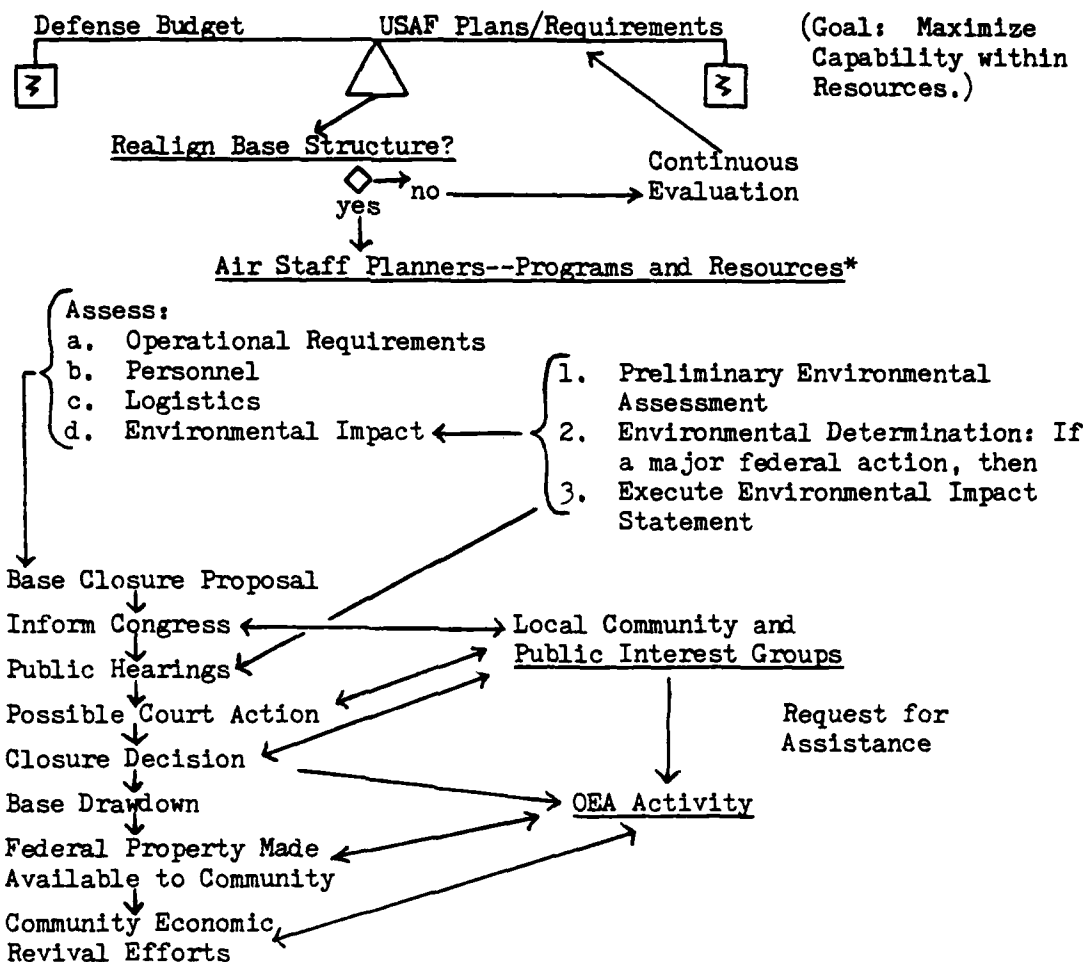
Communities expect a more severe decline than actually seems to accompany the phenomenon of base closure. These sometimes overstated perceptions may cause anxious communities to react by using political or legal tactics in an attempt to reverse base closure decisions. Such reactions slow community planning for recycling the base and may cause internal community conflict over the kinds of conversion strategies to be employed.

For those involved in the base realignment process (community and DoD officials alike), the utility of this research lies in recognizing that community perceptions of decline are probably greater than actual socioeconomic decline related to base closure. In addition, all community changes associated with base closure are not negative.

The trend of community changes associated with base closure in the three case study locations was one of short term decline and then growth, or at least retrenchment to pre-base closure levels and maintenance of welfare at this level, rather than decline to a sustained lower level of welfare than any of the communities had experienced before base closure.

Maps of military base distribution across the land will change as national location decisions are made to provide for America's defense, and communities near military bases will continue to have to cope with the consequences of these locational decisions. However, the map of communities hosting military bases will remain much more stable than the map of military installations. The experience of Presque Isle, Maine; Glasgow, Montana; and Moses Lake, Washington, demonstrates this fact. Host communities are still on the landscape long after the apparently critical demand superimposed on the area by a military base has been removed.

Appendix 1

Base Closure Schema

*Current defense strategy would probably dictate that the following variables be evaluated in any base closure proposal:

- | | |
|--------------------------------------|--|
| 1. Operational/Training Requirements | 2. Future Flexibility |
| a. Strategic Offense | 3. Manpower-Facility Availability |
| b. Strategic Defense | 4. Proximity of Related Air Force Functions; e.g. Airlift vs. Logistics Requirements |
| c. Strategic Airlift | 5. Urban Encroachment on Base Facilities |
| d. Tactical Fighters | 6. Community Support/Relations |
| e. Tactical Airlift | |
| f. Logistics | |
| g. Force Deployment | |
| h. Air Reserve Forces | |
| i. Pilot and Navigator Training | |

Appendix 2

T-Test Statistical Considerations

If the researcher is willing to assume that both populations sampled have normal distributions and that population variances are equal, any hypothesis about a difference can be tested using the t distribution regardless of sample size. The normal distribution is considerably different from the t distribution when sample size is relatively small; the t-test is more appropriate in situations where research circumstances dictate the use of small samples and where a normal population can be assumed.¹

In this research problem, one sample is small ($N=3$ for case study towns) and sample sizes are unequal ($N=3$ and $N=40$). This situation requires further probing of assumptions necessary for a valid t-test. The assumption of a normal distribution is not as critical as the assumption of homogeneous variance.

So long as the sample size is even moderate for each group, quite severe departures for normality seem to make little practical difference in the conclusions reached.²

The assumption of equal population variances is more important if statistical results are to be valid. In the case where population variances are unequal and sample sizes are different, a correction in calculating degrees of freedom can be made to insure greater accuracy of results. Such a correction, called Satterthwaite's approximation, was applied in calculating degrees of freedom used in interpretation of t values computed for the two samples tested in this research.³

Some readers may question whether or not the three case study towns accurately represent the population of towns where military bases

nearby have been closed. It should be remembered that case study towns were chosen for intensive study in relation to their location, size, type of Air Force activity, and time of base closure. Few base closure towns that fit these criteria could have been chosen. Another question may be raised concerning the "randomness" of the case study sample. Obviously, the three case study towns were not selected at random from a larger population but were chosen specifically for intensive study of impacts experienced and recovery strategies used by small towns in remote locations.

Statistically speaking, satisfying the assumption of normality and equal variance are more important for a t-test than the question of random selection. However, the author realizes that some bias is inherent when a random sample is not used; it is not believed that "lack of randomness" in using case study towns to comprise one sample for the t-test will statistically alter the results obtained. The question in this research problem is one of difference, not of random selection; and it is precisely the attribute of base closure that makes the test for difference between the two populations the item of interest.

Footnotes

¹Hubert M. Blalock, Jr., Social Statistics (2nd ed; New York: McGraw-Hill, Inc., 1972), p. 193.

²William L. Hays, Statistics for the Social Sciences (New York: Holt, Rinehart, and Winston, Inc., 1973), p. 410.

³Hays, 410.

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